Energy Efficiency Potential Study
Volume 2: Technical Appendices

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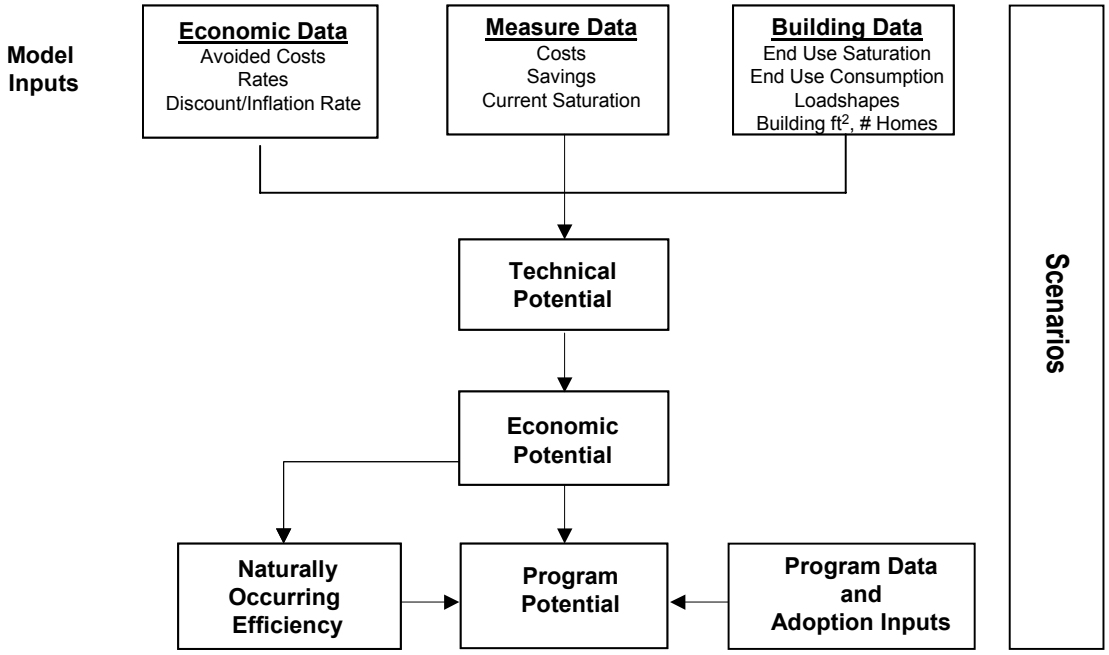
A. Detailed Methodology and Model Description

In this appendix we present and discuss our basic methodology for conducting market potential studies. We also present an overview of DSM ASSYST^{TM}, our model used to develop market potential estimates. Information presented here has been extracted from several recent energy efficiency potential reports.

A.1 Overview of DSM Forecasting Method

The crux of any DSM forecasting process involves carrying out a number of systematic analytical steps that are necessary to produce accurate estimates of energy efficiency (EE) effects on system load. A simplified overview of these basic analytical steps is shown in Figure A-1.

Figure A-1
Simplified Conceptual Overview of Modeling Process



Developing a DSM forecast is viewed by KEMA as a five-step process. The steps include:

Step 1: Develop Initial Input Data

- Develop list of EE measure opportunities to include in scope
- Gather and develop technical data (costs and savings) on efficient measure opportunities
- Gather, analyze, and develop information on building characteristics, including total square metres and households, electricity consumption and intensity by end use, end-use consumption load patterns by time of day and year (i.e., load shapes), market shares of key electric consuming equipment, and market shares of EE technologies and practices.

Step 2: Estimate Technical Potential and Develop Supply Curves

- Match and integrate data on efficient measures to data on existing building characteristics to produce estimates of technical potential and EE supply curves.

Step 3: Estimate Economic Potential

- Gather economic input data such as current and forecasted retail electric prices and current and forecasted costs of electricity generation, along with estimates of other potential benefits of reducing supply, such as the value of reducing environmental impacts associated with electricity production
- Match and integrate measure and building data with economic assumptions to produce indicators of costs from different viewpoints (e.g., utility, societal, and consumer)
- Estimate total economic potential using supply curve approach

Step 4: Estimate Achievable Program and Naturally Occurring Potentials

- Gather and develop estimates of program costs (e.g., for administration and marketing) and historic program savings
- Develop estimates of customer adoption of EE measures as a function of the economic attractiveness of the measures, barriers to their adoption, and the effects of program intervention
- Estimate achievable program and naturally occurring potentials; calibrate achievable and naturally occurring potential to recent program and market data
- Develop alternative economic estimates associated with alternative future scenarios

Step 5: Scenario Analyses and Resource Planning Inputs

- Recalculate potentials under alternate economic scenarios and deliver data in format required for resource planning.

Provided below is additional discussion of KEMA's modeling approaches for technical, economic, and achievable DSM forecasts.

A.1.1 Estimate Technical Potential and Develop Energy-Efficiency Supply Curves

Technical potential refers to the amount of energy savings or peak demand reduction that would occur with the complete penetration of all measures analyzed in applications where they were deemed technically feasible from an engineering perspective. Total technical potential is developed from estimates of the technical potential of individual measures as they are applied to discrete market segments (commercial building types, residential dwelling types, etc.).

A.1.1.1 Core Equation

The core equation used to calculate the energy technical potential for each individual efficiency measure, by market segment, is shown below (using a commercial example):[1]

[1] Note that stock turnover is not accounted for in our estimates of technical and economic potential, stock turnover *is accounted for* in our estimates of achievable potential. Our definition of technical potential assumes instantaneous replacement of standard-efficiency with high-efficiency measures.

Technical Potential of Efficient Measure	=	Total Square Metres	×	Base Case Equipment EUI	×	Applicability Factor	×	Not Complete Factor	×	Feasibility Factor	×	Savings Factor

where:

- **Square metres** is the total floor space for all buildings in the market segment. For the residential analysis, the **number of dwelling units** is substituted for square metres.
- **Base-case equipment EUI** is the energy used per square metre by each base-case technology in each market segment. This is the consumption of the energy-using equipment that the efficient technology replaces or affects. For example, if the efficient measure were a CFL, the base EUI would be the annual kWh per square metre of an equivalent incandescent lamp. For the residential analysis, unit energy consumption (UECs), energy used per dwelling, are substituted for EUIs.
- **Applicability factor** is the fraction of the floor space (or dwelling units) that is applicable for the efficient technology in a given market segment; for the example above, the percentage of floor space lit by incandescent bulbs.
- **Not complete factor** is the fraction of applicable floor space (or dwelling units) that has not yet been converted to the efficient measure; that is, (1 minus the fraction of floor space that already has the EE measure installed).
- **Feasibility factor** is the fraction of the applicable floor space (or dwelling units) that is technically feasible for conversion to the efficient technology from an *engineering* perspective.
- **Savings factor** is the reduction in energy consumption resulting from application of the efficient technology.

Technical potential for peak demand reduction is calculated analogously.

An example of the core equation is shown in Table A-1 for the case of standard 32 W T-8 Fixture/magnetic ballast replaced with a next generation T-8 fixture/electronic ballast in the office segment of a large utility service territory.

Table A-1
Example of Technical Potential Calculation
Replace Standard 32 W T-8 Fixtures/Magnetic Ballasts with
Next Generation T-8 Fixtures/Electronic Ballasts
(*Note: Data are illustrative only*)

Technical Potential of Efficient Measure	=	Total square metre	× Base Case Equipment UEC	× Applicability Factor	× Not Complete Factor	× Feasibility Factor	× Savings Factor
57 million kWh		195 million	5.74	0.34	0.95	1.00	0.16

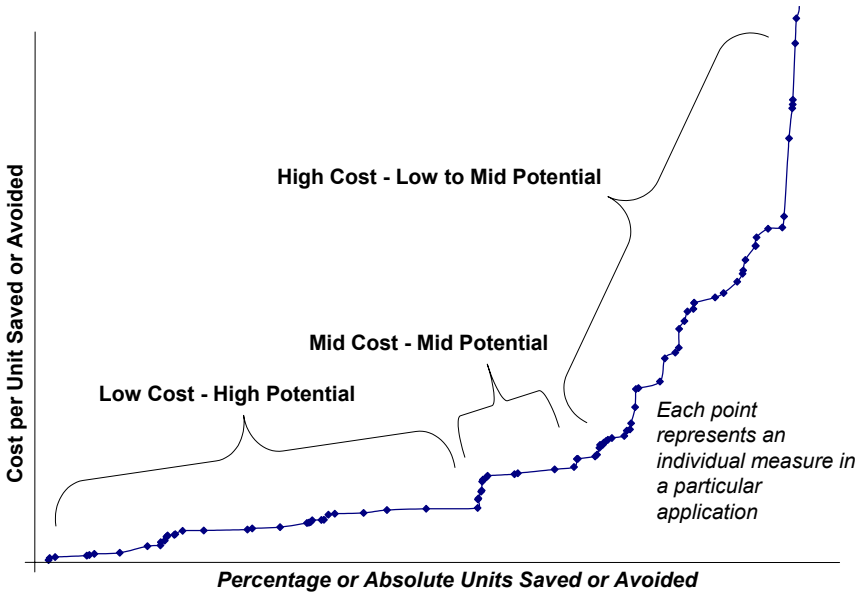
Technical EE potential is calculated in two steps. In the first step, all measures are treated *independently*; that is, the savings of each measure are not marginalized or otherwise adjusted for overlap between competing or synergistic measures. By treating measures independently, their relative economics are analyzed without making assumptions about the order or combinations in which they might be implemented in customer buildings. However, the total technical potential across measures cannot be estimated by summing the individual measure potentials directly. The cumulative savings cannot be estimated by adding the savings from the individual savings estimates because some savings would be double counted. For example, the savings from a measure that reduces heat gain into a building, such as window film, are partially dependent on other measures that affect the efficiency of the system being used to cool the building, such as a high-efficiency chiller; the more efficient the chiller, the less energy saved from the application of the window film.

A.1.1.2 Use of Supply Curves

In the second step, cumulative technical potential is estimated using an EE supply curve approach.[2] This method eliminates the double-counting problem. In Figure A-2, we present a generic example of a supply curve. As shown in the figure, a supply curve typically consists of two axes—one that captures the cost per unit of saving a resource or mitigating an impact (e.g., $/kWh saved or $/ton of carbon avoided) and the other that shows the amount of savings or mitigation that could be achieved at each level of cost. The curve is typically built up across individual measures that are applied to specific base-case practices or technologies by market segment. Savings or mitigation measures are sorted on a least-cost basis, and total savings or impacts mitigated are calculated incrementally with respect to measures that precede them. Supply curves typically, but not always, end up reflecting diminishing returns, i.e., as costs increase rapidly and savings decrease significantly at the end of the curve.

[2] This section describes conservation supply curves as they have been defined and implemented in numerous studies. Readers should note that Stoft 1995 describes several technical errors in the definition and implementation of conservation supply curves in the original and subsequent conservation supply curve studies. Stoft concludes that conservation supply curves are not "true" supply curves in the standard economic sense but can still be useful (albeit with his recommended improvements) for their intended purpose (demonstration of cost-effective conservation opportunities).

Figure A-2
Generic Illustration of EE Supply Curve



As noted above, the cost dimension of most EE supply curves is usually represented in dollars per unit of energy savings. Costs are usually annualized (often referred to as "levelized") in supply curves. For example, EE supply curves usually present levelized costs per kWh or kW saved by multiplying the initial investment in an efficient technology or program by the "capital recovery rate" (CRR):

$$\text{CRR} = \frac{d}{1-(1+d)^{-n}}$$

where d is the real discount rate and n is the number of years over which the investment is written off (i.e., amortized).

Thus,

Levelized Cost per kWh Saved = Initial Cost x CRR/Annual Energy Savings

Levelized Cost per kW Saved = Initial Cost x CRR/Peak Demand Savings

The levelized cost per kWh and kW saved are useful because they allow simple comparison of the characteristics of EE with the characteristics of energy supply technologies. However, the levelized cost per kW saved is a biased indicator of cost-effectiveness because all of the efficiency measure costs are arbitrarily allocated to peak savings.

Returning to the issue of EE supply curves, Table A-2 shows a simplified numeric example of a supply curve calculation for several EE measures applied to commercial lighting for a hypothetical population of buildings. What is important to note is that in an EE supply curve, the measures are sorted by relative

cost—from least to most expensive. In addition, the energy consumption of the system being affected by the efficiency measures goes down as each measure is applied. As a result, the savings attributable to each subsequent measure decrease if the measures are interactive. For example, the occupancy sensor measure shown in Table 1-2 would save more at less cost per unit saved if it were applied to the base-case consumption before the T8 lamp and electronic ballast combination. Because the T8 electronic ballast combination is more cost-effective, however, it is applied first, reducing the energy savings potential for the occupancy sensor. Thus, in a typical EE supply curve, the base-case end-use consumption is reduced with each unit of EE that is acquired. Notice in Table 1-2 that the total end-use GWh consumption is recalculated after each measure is implemented, thus reducing the base energy available to be saved by the next measure.

Table A-2 shows an example that would represent measures for one base-case technology in one market segment. These calculations are performed for all of the base-case technologies, market segments, and measure combinations in the scope of a study. The results are then ordered by levelized cost and the individual measure savings are summed to produce the EE potential for the entire sector.

In the next subsection, we discuss how economic potential is estimated as a subset of the technical potential.

Table A-2
Sample Technical Potential Supply Curve Calculation for Commercial Lighting
(*Note: Data are illustrative only*)

Measure	Total End Use Consumption of Population (GWh)	Applicable, Not Complete and Feasible (1000s of m^2)	Average kWh/m^2 of population	Savings %	GWh Savings	Levelized Cost ($/kWh saved)
Base Case: T-8 lamps with Magnetic Ballast	425	100,000	4.3	N/A	N/A	N/A
1. T-8 w. Elec. Ballast	425	100,000	4.3	21%	89	$0.04
2. Occupancy Sensors	336	40,000	3.4	10%	13	$0.11
3. Perimeter Dimming	322	10,000	3.2	45%	14	$0.25
With all measures	309		3.1	27%	116	

A.1.2 Estimation of Economic Potential

Economic potential is typically used to refer to the technical potential of those energy conservation measures that are cost effective when compared to either supply-side alternatives or the price of energy. Economic potential takes into account the fact that many EE measures cost more to purchase initially than do their standard-efficiency counterparts. The incremental costs of each efficiency measure are compared to the savings delivered by the measure to produce estimates of energy savings per unit of additional cost. These estimates of EE resource costs can then be compared to estimates of other resources such as building and operating new power plants.

A.1.2.1 Cost Effectiveness Tests

To estimate economic potential, it is necessary to develop a method by which it can be determined that a measure or program is *economic*. There is a large body of literature that debates the merits of different approaches to calculating whether a public purpose investment in EE is cost effective (Chamberlin and Herman 1993, RER 2000, Ruff 1988, Stoft 1995, and Sutherland 2000). We usually utilize the total resource cost (TRC) test to assess cost effectiveness. The TRC is a form of societal benefit-cost test. Other tests that have been used in analyses of program cost-effectiveness by EE analysts include the utility cost, ratepayer impact measure (RIM), and participant tests. These tests are discussed in detail the CASPM.

Before discussing the TRC test and how it is often used in our DSM forecasts, we present below a brief introduction to the basic tests as described in the CASPM:[3]

- **Total Resource Cost Test**—The TRC test measures the net costs of a demand-side management program as a resource option based on the total costs of the program, including both the participants' and the utility's costs. The test is applicable to conservation, load management, and fuel substitution programs. For fuel substitution programs, the test measures the net effect of the impacts from the fuel not chosen versus the impacts from the fuel that is chosen as a result of the program. TRC test results for fuel substitution programs should be viewed as a measure of the economic efficiency implications of the total energy supply system (gas and electric). A variant on the TRC test is the societal test. The societal test differs from the TRC test in that it includes the effects of externalities (e.g. environmental, national security), excludes tax credit benefits, and uses a different (societal) discount rate.
- **Participant Test**—The participant test is the measure of the quantifiable benefits and costs to the customer due to participation in a program. Since many customers do not base their decision to participate in a program entirely on quantifiable variables, this test cannot be a complete measure of the benefits and costs of a program to a customer.
- **Utility (Program Administrator) Test**—The program administrator cost test measures the net costs of a demand-side management program as a resource option based on the costs incurred by the program administrator (including incentive costs) and excluding any net costs incurred by the participant. The benefits are similar to the TRC benefits. Costs are defined more narrowly.
- **Ratepayer Impact Measure Test**—The ratepayer impact measure (RIM) test measures what happens to customer bills or rates due to changes in utility revenues and operating costs caused by the program. Rates will go down if the change in revenues from the program is greater than the change in utility costs. Conversely, rates or bills will go up if revenues collected after program implementation are less than the total costs incurred by the utility in implementing the program. This test

[3] These definitions are direct excerpts from the California Standard Practice Manual, October 2001.

indicates the direction and magnitude of the expected change in customer bills or rate levels.

The key benefits and costs of the various cost-effectiveness tests are summarized in Table A-3.

Table A-3
Summary of Benefits and Costs Tests*

Test	Benefits	Costs
TRC Test	Generation, transmission and distribution savings Participants avoided equipment costs (fuel switching only)	Generation costs Program costs paid by the administrator Participant measure costs
Participant Test	Bill reductions Incentives Participants avoided equipment costs (fuel switching only)	Bill increases Participant measure costs
Utility (Program Administrator) Test	Generation, transmission and distribution savings	Generation costs Program costs paid by the administrator Incentives
Ratepayer Impact Measure Test	Generation, transmission and distribution savings Revenue gain	Generation costs Revenue loss Program costs paid by the administrator Incentives

From the California Standard Practice Manual

Generation, transmission and distribution savings (hereafter, energy benefits) are defined as the economic value of the energy and demand savings stimulated by the interventions being assessed. These benefits are typically measured as induced changes in energy consumption, valued using some mix of avoided costs. Statewide values of avoided costs are prescribed for use in implementing the test. Electricity benefits are valued using three types of avoided electricity costs: avoided distribution costs, avoided transmission costs, and avoided electricity generation costs.

Participant costs are comprised primarily of incremental measure costs. Incremental measure costs are essentially the costs of obtaining EE. In the case of an add-on device (say, an adjustable-speed drive or ceiling insulation), the incremental cost is simply the installed cost of the measure itself. In the case of equipment that is available in various levels of efficiency (e.g., a central air conditioner), the incremental cost is the excess of the cost of the high-efficiency unit over the cost of the base (reference) unit.

Administrative costs encompass the real resource costs of program administration, including the costs of administrative personnel, program promotions, overhead, measurement and evaluation, and shareholder incentives. In this context, administrative costs are not defined to include the costs of various incentives (e.g., customer rebates and salesperson incentives) that may be offered to encourage certain types of behavior. The exclusion of these incentive costs reflects the fact that they are essentially transfer payments. That is, from a societal perspective they involve offsetting costs (to the program administrator) and benefits (to the recipient).

A.1.2.2 Use of the Total Resource Cost to Estimate Economic Potential

We often use the TRC test in two ways in our model. First, we develop an estimate of economic potential by calculating the TRC of individual measures and applying the methodology described below. Second, we develop estimates of whether different program scenarios are cost effective.

Economic potential can be defined either inclusively or exclusively of the costs of programs that are designed to increase the adoption rate of EE measures. *In many of our projects, we define economic potential to* ***exclude*** *program costs*. We do so primarily because program costs are dependent on a number of factors that vary significantly as a function of program delivery strategy. There is no single estimate of program costs that would accurately represent such costs across the wide range of program types and funding levels possible. Once an assumption is made about program costs, one must also link those assumptions to expectations about market response to the types of interventions assumed. Because of this, we believe it is more appropriate to factor program costs into our analysis of *program potential*. Thus, our definition of *economic potential* is that portion of the technical potential that passes our economic screening test (described below) exclusive of program costs. Economic potential, like technical potential, is a theoretical quantity that will exceed the amount of potential we estimate to be achievable through current or more aggressive program activities.

As implied in Table A-3 and defined in the CASPM 2001, the TRC focuses on resource savings and counts benefits as utility-avoided supply costs and costs as participant costs and utility program costs. It ignores any impact on rates. It also treats financial incentives and rebates as transfer payments; i.e., the TRC is not affected by incentives. The somewhat simplified benefit and cost formulas for the TRC are presented in Equations A-1 and A-2 below.

$$\text{Benefits} = \sum_{t=1}^{N} \frac{\text{Avoided Costs of Supply}_{p,t}}{(1+d)^{t-1}} \qquad \textbf{Equation A-1}$$

$$\text{Costs} = \sum_{t=1}^{N} \frac{\text{Program Cost}_{t} + \text{Participant Cost}_{t}}{(1+d)^{t-1}} \qquad \textbf{Equation A-2}$$

where

d = the discount rate

p = the costing period

t = time (in years)

n = 20 years

A nominal discount rate is typically used in the analysis, as inflation is taken into account separately. We use a *normalized* measure life of 20 years to capture the benefit of long-lived measures. Measures with measure lives shorter than 20 years are "re-installed" in our analysis as many times as necessary to reach the normalized 20-year life of the analysis.

The avoided costs of supply are calculated by multiplying measure energy savings and peak demand impacts by per-unit avoided costs by costing period. Energy savings are allocated to costing periods and peak impacts estimated using load shape factors.

As noted previously, in the *measure-level* TRC calculation used to estimate economic potential, program costs are excluded from Equation A-2. Using the supply curve methodology discussed previously, measures are ordered by TRC (highest to lowest) and then the *economic* potential is calculated by summing the energy savings for all of the technologies for which the marginal TRC test is greater than 1.0. In the example in Table A-4, the economic potential would include the savings for measures 1 and 2, but exclude saving for measure 3 because the TRC is less than 1.0 for measure 3. The supply curve methodology, when combined with estimates of the TRC for individual measures, produces estimates of the economic potential of efficiency improvements. By definition and intent, this estimate of economic potential is a theoretical quantity that will exceed the amount of potential we estimate to be achievable through program activities in the final steps of our analyses.

Table A-4
Sample Use of Supply Curve Framework to Estimate Economic Potential
(*Note: Data are illustrative only*)

Measure	Total End Use Consumption of Population (GWh)	Applicable, Not Complete and Feasible Sq. M (000s)	Average kWh/m^2 of population	Savings %	GWh Savings	Total Resource Cost Test	Savings Included in Economic Potential?
Base Case: T12 lamps with Magnetic Ballast	425	100,000	4.3	N/A	N/A	N/A	N/A
1. T8 w. Elec. Ballast	425	100,000	4.3	21%	89	2.5	Yes
2. Occupancy Sensors	336	40,000	3.4	10%	13	1.3	Yes
3. Perimeter Dimming	322	10,000	3.2	45%	14	0.8	No
Technical Potential with all measures				27%	116		
Economic Potential with measures for which TRC Ratio > 1.0				24%	102		

A.1.3 Estimation of Program and Naturally Occurring Potentials

In this section we present the method we employ to estimate the fraction of the market that adopts each EE measure in the presence and absence of EE programs. We define:

- **Program potential** as the amount of savings that would occur in response to one or more specific market interventions
- **Naturally occurring potential** as the amount of savings estimated to occur as a result of normal market forces, that is, in the absence of any utility or governmental intervention.

Our estimates of program potential are typically the most important results of the modeling process. Estimating technical and economic potentials are necessary steps in the process from which important information can be obtained; however, the end goal of the process is better understanding how much of

the remaining potential can be captured in programs, whether it would be cost-effective to increase program spending, and how program costs may be expected to change in response to measure adoption over time.

A.1.3.1 Adoption Method Overview

We use a method of estimating adoption of EE measures that applies equally to be our program and naturally occurring analyses. Whether as a result of natural market forces or aided by a program intervention, the rate at which measures are adopted is modeled in our method as a function of the following factors:

- The availability of the adoption opportunity as a function of capital equipment turnover rates and changes in building stock over time
- Customer awareness of the efficiency measure
- The cost-effectiveness of the efficiency measure
- Market barriers associated with the efficiency measure.

The method we employ is executed in the measure penetration module of KEMA's DSM ASSYST™ model.

In many of our projects, only measures that pass the measure-level TRC test are put into the penetration module for estimation of customer adoption.

A.1.3.1.1 Availability

A crucial part of the model is a stock accounting algorithm that handles capital turnover and stock decay over a period of up to 20 years. In the first step of our achievable potential method, we calculate the number of customers for whom each measure will apply. The input to this calculation is the total floor space available for the measure from the technical potential analysis, i.e., the total floor space multiplied by the applicability, not complete, and feasibility factors described previously. We call this the *eligible* stock. The stock algorithm keeps track of the amount of floor space available for each efficiency measure in each year based on the total eligible stock and whether the application is new construction, retrofit, or replace-on-burnout.[4]

Retrofit measures are available for implementation by the entire eligible stock. The eligible stock is reduced over time as a function of adoptions[5] and building decay.[6] Replace-on-burnout measures are

[4] Replace-on-burnout measures are defined as the efficiency opportunities that are available only when the base equipment turns over at the end of its service life. For example, a high-efficiency chiller measure is usually only considered at the end of the life of an existing chiller. By contrast, retrofit measures are defined to be constantly available, for example, application of a window film to existing glazing.

[5] That is, each square metre that adopts the retrofit measure is removed from the eligible stock for retrofit in the subsequent year.

[6] Buildings do not last forever. An input to the model is the rate of decay of the existing floor space. Floor space typically decays at a very slow rate.

available only on an annual basis, approximated as equal to the inverse of the service life.[7] The annual portion of the eligible market that does not accept the replace-on-burnout measure does not have an opportunity again until the end of the service life.

New construction applications are available for implementation in the first year. Those customers that do not accept the measure are given subsequent opportunities corresponding to whether the measure is a replacement or retrofit-type measure.

A.1.3.1.2 Awareness

In our modeling framework, customers cannot adopt an efficient measure merely because there is stock available for conversion. Before they can make the adoption choice, they must be aware and informed about the efficiency measure. Thus, in the second stage of the process, the model calculates the portion of the available market that is *informed*. An initial user-specified parameter sets the initial level of awareness for all measures. Incremental awareness occurs in the model as a function of the amount of money spent on awareness/information building and how well those information-building resources are directed to target markets. User-defined program characteristics determine how well information-building money is targeted. Well-targeted programs are those for which most of the money is spent informing only those customers that are in a position to implement a particular group of measures. Untargeted programs are those in which advertising cannot be well focused on the portion of the market that is available to implement particular measures. The penetration module in DSM ASSYST has a target effectiveness parameter that is used to adjust for differences in program advertising efficiency associated with alternative program types.

The model also controls for information retention. An information decay parameter in the model is used to control for the percentage of customers that will retain program information from one year to the next. Information retention is based on the characteristics of the target audience and the temporal effectiveness of the marketing techniques employed.

A.1.3.1.3 Adoption

The portion of the total market this is available and informed can now face the choice of whether or not to adopt a particular measure. Only those customers for whom a measure is available for implementation (stage 1) and, of those customers, only those who have been informed about the program/measure (stage 2), are in a position to make the implementation decision.

[7] For example, a base-case technology with a service life of 15 years is only available for replacement to a high-efficiency alternative each year at the rate of 1/15 times the total eligible stock. For example, the fraction of the market that does not adopt the high-efficiency measure in year t will not be available to adopt the efficient alternative again until year $t + 15$.

In the third stage of our penetration process, the model calculates the fraction of the market that adopts each efficiency measure as a function of the participant test. The participant test is a benefit-cost ratio that is generally calculated as follows:

$$\text{Benefits} = \sum_{t=1}^{N} \frac{\text{Customer Bill Savings (\$)}_t}{(1+d)^{t-1}} \qquad \text{Eqn. A-3}$$

$$\text{Costs} = \sum_{t=1}^{N} \frac{\text{Participant Costs (\$)}_t}{(1+d)^{t-1}} \qquad \text{Eqn. A-4}$$

where

d = the discount rate

t = time (in years)

n = 20 years

We use a *normalized* measure life of 20 years in order to capture the benefits associated with long-lived measures. Measures with lives shorter than 20 years are "re-installed" in our analysis as many times as necessary to reach the normalized 20-year life of the analysis.

The bill reductions are calculated by multiplying measure energy savings and customer peak demand impacts by retail energy and demand rates.

The model uses measure implementation curves to estimate the percentage of the informed market that will accept each measure based on the participant's benefit-cost ratio. The model provides enough flexibility so that each measure in each market segment can have a separate implementation rate curve. The functional form used for the implementation curves is:

$$y = \frac{a}{\left(1+e^{-\ln\frac{x}{4}}\right) \times \left(1+e^{-c\ln(bx)}\right)}$$

where:

y = the fraction of the market that installs a measure in a given year from the pool of informed applicable customers;

x = the customer's benefit-cost ratio for the measure;

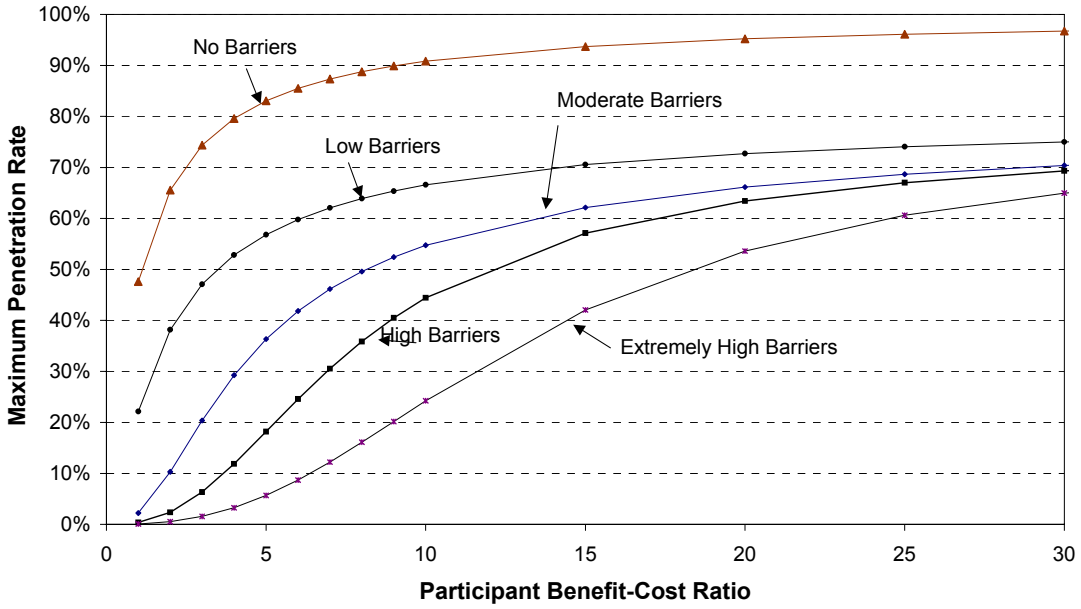
a = the maximum annual acceptance rate for the technology;

b = the inflection point of the curve. It is generally 1 over the benefit-cost ratio that will give a value of 1/2 the maximum value; and

c = the parameter that determines the general shape (slope) of the curve.

The primary curves utilized in our model are shown in Figure A-3. These curves produce base year program results that are calibrated to actual measure implementation results associated with major IOU commercial efficiency programs over the past several years. Different curves are used to reflect different levels of market barriers for different efficiency measures. A list of market barriers is shown in Table A-5. It is the existence of these barriers that necessitates program interventions to increase the adoption of EE measures.

Figure A-3
Primary Measure Implementation Curves Used in Adoption Model



Note that for the moderate, high barrier, and extremely high curves, the participant benefit-cost ratios have to be very high before significant adoption occurs. This is because the participant benefit-cost ratios are based on a 15-percent discount rate. This discount rate reflects likely adoption if there were no market barriers or market failures, as reflected in the no-barriers curve in the figure. Experience has shown, however, that actual adoption behavior correlates with implicit discount rates several times those that would be expected in a perfect market.[8]

[8] For some, it is easier to consider adoption as a function of simple payback. However, the relationship between payback and the participant benefit-cost ratio varies depending on measure life and discount rate. For a long-lived measure of 15 years with a 15-percent discount rate, the equivalent payback at which half of the market would adopt a measure is roughly 6 months, based on the high barrier curve in Figure 2-3. At a 1-year payback, one-quarter of the market would adopt the measure. Adoption reaches near its maximum at a 3-month payback. The curves reflect the real-world observation that implicit discount rates can average up to 100 percent.

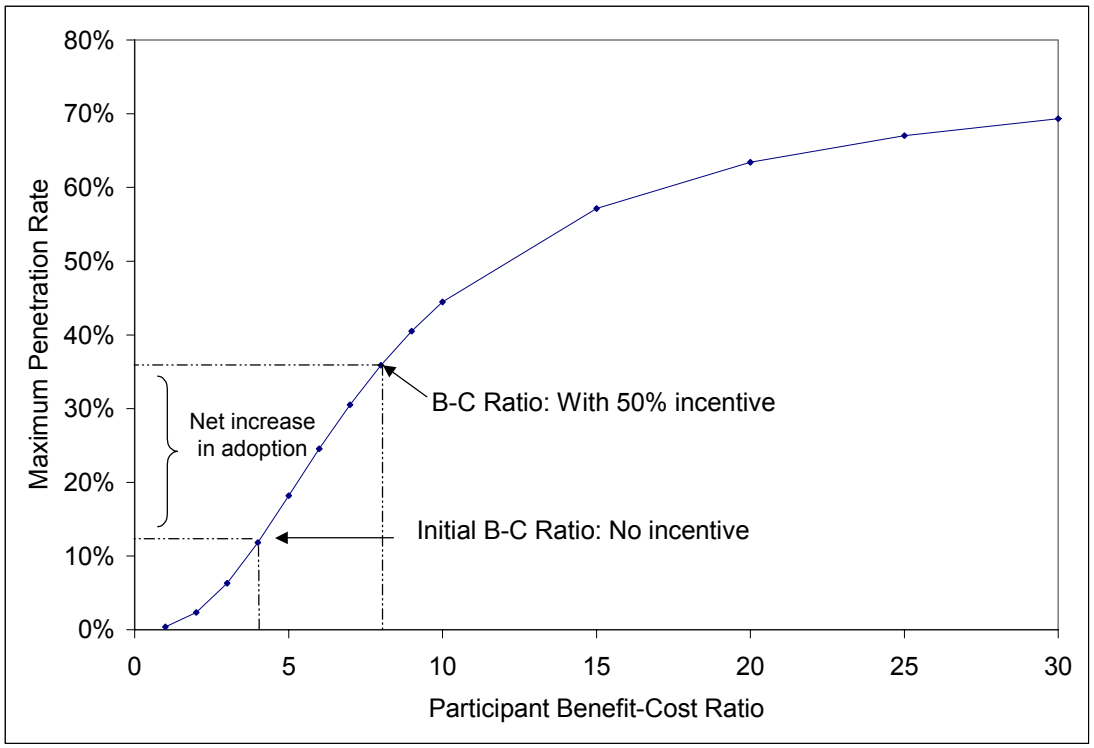
The model estimates adoption under both naturally occurring and program intervention situations. There are only two differences between the naturally occurring and program analyses. First, in any program intervention case in which measure incentives are provided, the participant benefit-cost ratios are adjusted based on the incentives. Thus, if an incentive that pays 50 percent of the incremental measure cost is

Table A-5
Summary Description of Market Barriers from Eto, Prahl, Schlegel 1997

Barrier	Description
Information or Search Costs	The costs of identifying energy-efficient products or services or of learning about energy-efficient practices, including the value of time spent finding out about or locating a product or service or hiring someone else to do so.
Performance Uncertainties	The difficulties consumers face in evaluating claims about future benefits. Closely related to high search costs, in that acquiring the information needed to evaluate claims regarding future performance is rarely costless.
Asymmetric Information and Opportunism	The tendency of sellers of energy-efficient products or services to have more and better information about their offerings than do consumers, which, combined with potential incentives to mislead, can lead to sub-optimal purchasing behavior.
Hassle or Transaction Costs	The indirect costs of acquiring EE, including the time, materials and labor involved in obtaining or contracting for an energy-efficient product or service. (Distinct from search costs in that it refers to what happens once a product has been located.)
Hidden Costs	Unexpected costs associated with reliance on or operation of energy-efficient products or services - for example, extra operating and maintenance costs.
Access to Financing	The difficulties associated with the lending industry's historic inability to account for the unique features of loans for energy savings products (i.e., that future reductions in utility bills increase the borrower's ability to repay a loan) in underwriting procedures.
Bounded Rationality	The behavior of an individual during the decision-making process that either seems or actually is inconsistent with the individual's goals.
Organization Practices or Customs	Organizational behavior or systems of practice that discourage or inhibit cost-effective EE decisions, for example, procurement rules that make it difficult to act on EE decisions based on economic merit.
Misplaced or Split incentives	Cases in which the incentives of an agent charged with purchasing EE are not aligned with those of the persons who would benefit from the purchase.
Product or Service Unavailability	The failure of manufacturers, distributors or vendors to make a product or service available in a given area or market. May result from collusion, bounded rationality, or supply constraints.
Externalities	Costs that are associated with transactions, but which are not reflected in the price paid in the transaction.
Non-externality Pricing	Factors other than externalities that move prices away from marginal cost. An example arises when utility commodity prices are set using ratemaking practices based on average (rather than marginal) costs.
Inseparability of Product Features	The difficulties consumers sometimes face in acquiring desirable EE features in products without also acquiring (and paying for) additional undesired features that increase the total cost of the product beyond what the consumer is willing to pay.
Irreversibility	The difficulty of reversing a purchase decision in light of new information that may become available, which may deter the initial purchase, for example, if energy prices decline, one cannot resell insulation that has been blown into a wall.

applied in the program analysis, the participant benefit-cost ratio for that measure will double (since the costs have been halved). The effect on the amount of adoption estimated will depend on where the pre- and post-incentive benefit-cost ratios fall on the curve. This effect is illustrated in Figure A-4.

Figure A-4
Illustration of Effect of Incentives on Adoption Level
as Characterized in Implementation Curves



In many of our projects achievable potential EE forecasts are developed for several scenarios, ranging from base levels of program intervention, through moderate levels, up to an aggressive EE acquisition scenario. Uncertainty in rates and avoided costs are often characterized in alternate scenarios. The final results produced are annual streams of achievable program impacts (energy and demand by time-of-use period) and all societal and participant costs (program costs plus end-user costs).

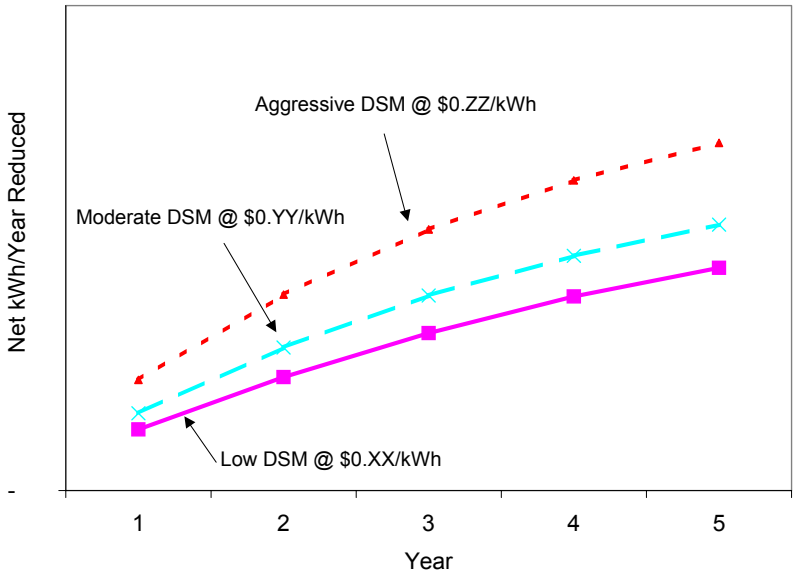
A.1.4 Scenario Analyses

Achievable potential forecasts can be developed for multiple scenarios. For example, program savings can be modeled under low levels of program intervention, through moderate levels, up to an aggressive DSM acquisition scenario. Uncertainty in rates and avoided costs can be characterized in alternate scenarios as well. The final results produced will be annual streams of achievable DSM program impacts (energy and demand by time-of-use period) and all societal and participant costs. An example of the types of outputs that have been produced for similar studies in the past is shown in Table A-6 and Figure A-5.

Table A-6
Example Format of DSM ASSYST Achievable Potential Outputs

DSM ASSYST Program Output	2006	2007	2008	etc.
Annual Energy Savings (kWh)				
Summer Period Energy Savings (kWh)				
Non Summer Period Energy Savings (kWh)				
Net Annual Energy Savings (kWh)				
Summer Period Net Energy Savings (kWh)				
Non Summer Period Net Energy Savings (kWh)				
Peak Demand Savings (kW)				
Net Peak Demand Savings (kW)				
Annual Program Costs				
Supplemental Customer Costs				

Figure A-5
Example of DSM Scenario Outputs



A.1.5 Measure "Bundles" for Complex End Uses

Although potential can be estimated through measure-specific analyses for many sectors and end uses, there are some cases where the measure-specific approach becomes problematic because of the complexity or heterogeneity of the base-case energy systems being addressed. Two key examples are industrial processes and some aspects of residential and commercial new construction.

In the industrial case, there may be dozens or even hundreds of individual measures that can be applied to industrial processes throughout the population of industrial facilities in a service territory; however, analyzing each of these opportunities, though possible, is impractical within a resource and time-constrained study such as this one.

In the case of new construction, the problem is sometimes that an equipment substitution paradigm does not fit the real-world circumstances in which efficiency levels are improved. For example, in commercial lighting, virtually all new buildings tend to have electronic ballasts and T-8 lamps, as well as CFLs, and other high-efficiency components. These high-efficiency components are generally needed to meet Title 24 efficiency requirements; however, the overall lighting system efficiency can often be increased by using these same components in smarter designs configurations or by combining with other features such as daylighting.

For both of these situations, our approach on recent related work has been to bundle multiple individual efficiency measures into somewhat simplified efficiency levels. For example, lighting levels for commercial new construction might be set at 10- and 20-percent improvement over Title 24 standards (as they are often specified in the Savings by Design program planning documents). Similarly, for industrial compressed air systems, we have bundled savings opportunities into three levels where both savings and costs increase with each level. We then estimate an incremental cost for achieving each of the efficiency levels. An example of these results developed in a recent study for industrial motors, compressed air, and processes in California is shown in Table A-7.

Once the levels efficiency are specified in terms of costs and savings, they are run through the modeling system as if they were individual measures. Thus, cost-effectiveness indicators are calculated for each level, those that pass the TRC are included in the achievable potential forecasting, and adoption is modeled using the same process as described above. Although we recommend using this approach for complex end uses in the proposed study because it creates a manageable forecasting process, care must be taken in developing the levels and recognizing that this approach results in some aggregation bias.

A.2 DSM ASSYST™ Model Description

DSM ASSYST™ (Demand-Side Management Technology Assessment System) is a tool developed to assess the technical, economic and market potential of DSM technologies in the residential, commercial and industrial sectors. Based on user-specified information about base technologies, conservation technologies, load shapes, utility avoided costs, utility service rates, and economic parameters, DSM ASSYST yields numeric data for a variety of criteria. The user can then evaluate and compare technologies. DSM ASSYST allows the user to analyze each DSM technology in multiple combinations of building types, market segments, end uses, and vintages both individually and compared to other DSM technology options.

Table A-7
Example of Industrial Efficiency Levels
Developed for a Recent California Potential Study

DSM ASSYST ADDITIVE SUPPLY ANALYSIS		Year 2011					
		Vintage: Existing					
		Sector: Industrial Scenario: Base					
End Use	Measure Number	Measure	GWH Savings	MW Savings	Levelized Cost per KWh Saved $/kWH	Levelized Cost per KW Saved $/kW	Total Resource Cost Test TRC
Motors	101	Replace 1-5 HP Motor	248.7	34.1	$0.10	$698	0.8
Motors	102	Add 1-5 HP VSD	447.1	61.3	$0.14	$1,019	0.6
Motors	103	Motor Practices Level 1	607.0	83.2	$0.06	$440	1.3
Motors	104	Motor Practices Level 2	539.1	73.9	$0.24	$1,764	0.3
Motors	121	Replace 21-50 HP Motor	78.1	10.7	$0.09	$661	0.9
Motors	122	Add 21-50 HP VSD	319.0	43.7	$0.04	$278	2.1
Motors	123	Motor Practices Level 1	404.3	55.4	$0.03	$211	2.7
Motors	124	Motor Practices Level 2	361.9	49.6	$0.12	$840	0.7
Motors	151	Replace 201-500 HP Motor	143.5	19.7	$0.03	$201	2.8
Motors	152	Add 201-500 HP VSD	516.6	70.8	$0.01	$106	5.4
Motors	153	Motor Practices Level 1	598.6	82.0	$0.02	$152	3.7
Motors	154	Motor Practices Level 2	554.9	76.0	$0.08	$586	1.0
Compressed Air	202	CAS Level 1	433.9	59.5	$0.02	$168	3.4
Compressed Air	203	CAS Level 2	453.6	62.2	$0.05	$362	1.6
Compressed Air	204	CAS Level 3	325.5	44.6	$0.13	$936	0.6
Other Process	301	Process Level 1	1,031.8	141.4	$0.03	$190	3.0
Other Process	302	Process Level 2	1,219.7	167.1	$0.05	$345	1.7
Other Process	303	Process Level 3	767.3	105.1	$0.25	$1,831	0.3

The current version of DSM ASSYST uses a combination of Microsoft Excel spreadsheets and Visual Basic (VB) programming software. All input and output data are stored in spreadsheets. The VB modules read input data from various spreadsheets, perform the various analyses, and store output results into spreadsheets.

There are three major VB analysis modules: Basic, Supply, and Penetration. Figure A-6 provides an overview of the model process and key inputs. Each module is briefly described below.

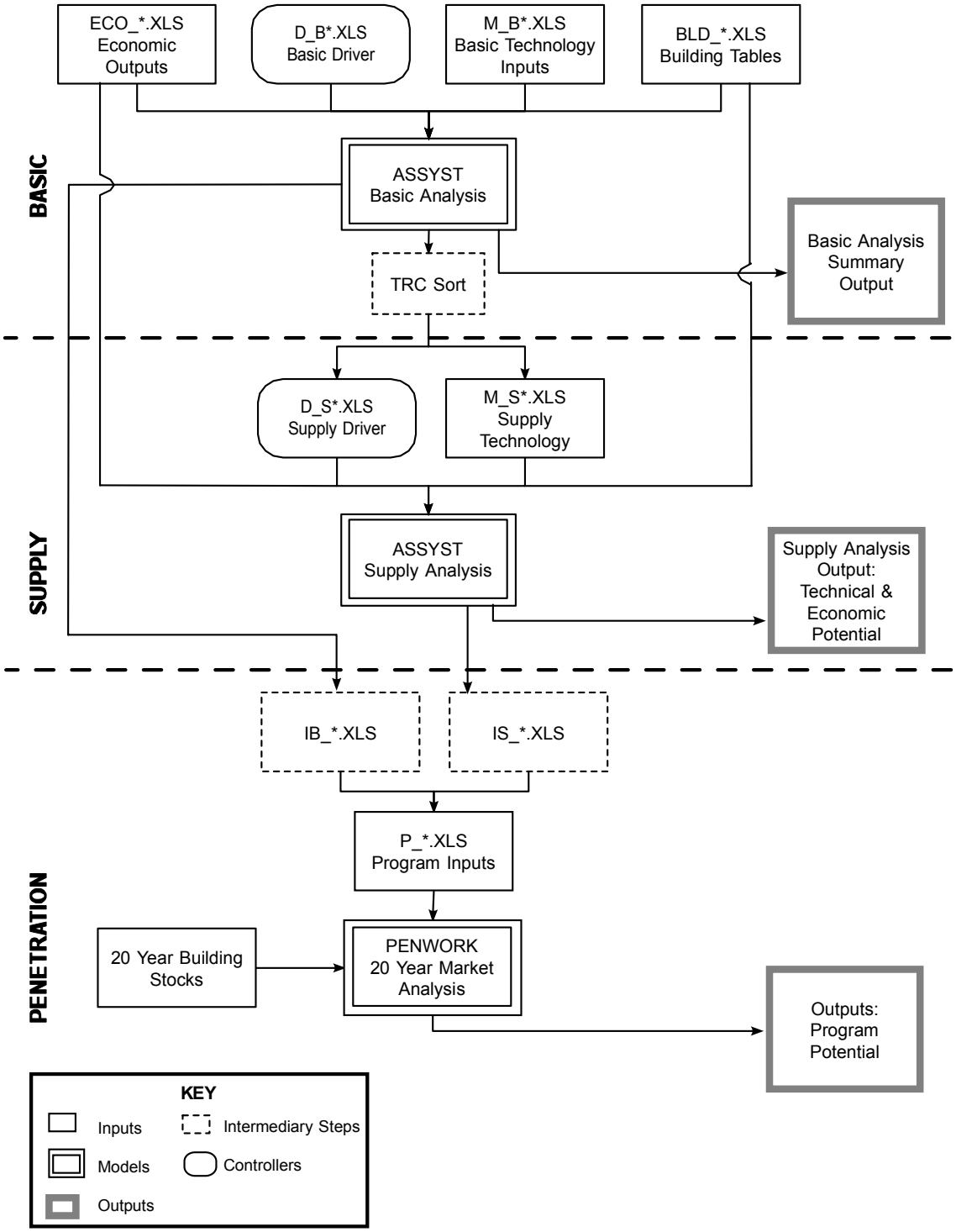
A.2.1 Basic Module

In the Basic module, each technology is assessed individually by comparing it to a base case. Comparisons are made at a high degree of segmentation. The segmentation may include, but is not limited to sector, building type, end use, vintage and geographic area.

The Basic module reads four types of information, contained within four spreadsheet files. These files include:

- **Economic**: containing utility rates paid by customers, discount rates, avoided costs, and other utility-specific economic parameters
- **Building**: containing square metres or number of households and load shape data
- **Measure**: containing technology based inputs for the Basic Analysis
- **Driver**: containing information that drives the analysis process.

Figure A-6
DSM ASSYST Analytic Flow



The output files produced by the Basic module include a Summary Basic Output file that contains an assessment of how much energy and demand each technology will save relative to the base case within each segment. In addition, the summary contains cost data, savings fractions, before and after EUIs or UECs, service life, the levelized costs of implementing the technology, and results of economic tests including the TRC test, participant test, and customer payback.

This module also produces a second file that contains all the measures that were assessed in the Basic Analysis sorted in the highest to lowest TRC order within each market segment and end use. This file serves as an input file for the Supply module.

A.2.2 Supply Module

In the Supply Module each technology, within each market segment, is stacked, or implemented, such that all energy savings are realized from preceding technologies prior to the implementation of all subsequent technologies. The stacking order generally follows the TRC sort order, highest to lowest, resulting from the Basic module.

The Supply module requires two input files: a Driver file and a modified output file from the Basic module. As in the Basic module, the Driver file contains instructions for the analysis process. The output file from the basic analysis must be modified in Excel to address overlapping measures, such as different Seasonal Energy Efficiency Ratio (SEER) levels or measures that are direct substitutes for each other.

Output from the Supply module contains the technical and economic potential plus energy and demand supply curves. The Supply module produces measure-level information that can be incorporated into the input file for the Penetration module

A.2.3 Penetration Module

The Penetration (or Program Potential) module of ASSYST is designed to calculate the costs and net energy and demand savings from DSM programs under a variety of marketing scenarios. This module estimates the net impact and cost of a program over time by forecasting the naturally occurring penetration of each measure as well as the penetration of each measure given the program activities (i.e., incentives and awareness building).

Using a stock accounting algorithm over a period of 20 years, this module first calculates the number of customers for whom the measure will apply. Second, the model calculates the number of informed customers based on the amount of money spent on advertising. Third, the model calculates the number of customers who will implement the technology based on their benefit/cost ratio. Finally, the model compares the number of customers that implement the technology due to the program with those who would take the technology anyway (naturally occurring). Per-unit energy and demand savings are applied to the net number of customers (total minus naturally occurring) over the 20-year period. After completing the analysis, the results are automatically summed across measures to provide program-level costs and savings for 20 years, and formatted for input into Integrated Resource Planning models.

A program input file is used to define a program and provide the building stock forecast. The program characterization variables include:

- Incentive Levels
- Incentive Budget Constraints
- Yearly Incentive Adjuster
- Technology Acceptance Curve Parameters
- Administration Budgets
- Advertising Budgets
- Awareness Decay Rate
- Target Effectiveness
- Advertising Effective Ratio.

B. Measure Descriptions

This appendix describes the energy efficiency measures used in the study.

B.1 Residential Measures

This subsection provides brief descriptions of the residential measures included in this study. Measures are grouped by end use.

B.1.1 HVAC Equipment

Heat Pump: Heat pumps consist of a refrigeration system using a direct expansion cycle. Equipment includes a compressor, an air-cooled or evaporatively-cooled condenser (located outdoors), an expansion valve, an evaporator coil (located in the supply air duct near the supply fan) and a reversing valve to change the DX cycle from cooling to heating when required. The cooling and heating efficiencies vary based on the quality of the materials used, the size of equipment, the condenser type and the configuration of the system. Heat pumps may be of the unitary variety (all components housed in a factory-built assembly) or be a split system (an outdoor condenser section and an indoor evaporator section connected by refrigerant lines and with the compressor at either the outdoor or indoor location). High efficiency heat pumps are 20 percent more efficient than standard heat pumps.

Geothermal Heat Pump: Geothermal heat pumps (also known as ground-source, water-source, GeoExchange, or earth-coupled heat pumps) are similar to ordinary heat pumps, but use the constant temperature of the earth as the exchange medium instead of the outside air temperature. They are more efficient than air-source heat pumps but also cost significantly more.

Inbuilt Natural Gas or Propane Fire: Replacing an electric room heat with a natural gas or lpg fireplace results in electricity savings but increased fuel consumption.

B.1.1.1 Building Envelope

High Performance Windows: Window efficiency can be improved in a number of ways. This analysis looks at using windows with two layers of glazing, rather than a single layer (dual-pane vs. single pane). Additional savings can be achieved by improving the thermal performance of the frame, either by incorporating a thermal break to an aluminum frame or through the use of vinyl or wood frames, both of which have better thermal performance than aluminum.

Ceiling and Floor Insulation: Thermal insulation is material or combinations of materials that are used to inhibit the flow of heat energy by conductive, convective, and radiative transfer modes. By inhibiting the flow of heat energy, thermal insulation can conserve energy by reducing heat loss or gain of a structure. An important characteristic of insulating materials is the thermal resistivity, or R-value. The R-value of a material is the reciprocal of the time rate of heat flow through a unit of this material in a direction perpendicular to two areas of different temperatures.

Wall Insulation: For existing construction, this measure involves adding R-13 insulation to un-insulated walls. This is usually accomplished by drilling holes into the building's siding and blowing in insulation

material. For new construction, higher performance insulation may be used or the building's frame may be designed to increase the depth of the wall cavity to allow for more insulation.

Infiltration Reduction: Infiltration reduction measures include weather stripping and caulking. These measures reduce energy consumption by improving the tightness of the building shell and limiting heat gain and loss. Home installation of these measures is usually most effective at fixing easily found leaks. Professional installation of these measures sometimes includes use of blower doors and is usually much more effective than home installation methods. Measure costs for this study reflect professional weatherization.

High Performance Doors: Steel or aluminum doors with a core of foam insulation replace standard entry doors.

B.1.1.2 Lighting

Compact Fluorescent Lighting (CFLs): Compact fluorescent lamps are designed to replace standard incandescent lamps. They are approximately four times more efficient than incandescent light sources. Screw-in modular lamps have reusable ballasts that typically last the life of four lamps.

High-Efficiency Halogen: High-efficiency halogen lamps replace standard-efficiency halogens in halogen fixtures. They are approximately 30% more efficient than standard halogens.

B.1.1.3 Water Heat

Heat Pump Water Heater: (Emerging Technology) Air-to-water heat pump water heaters extract low-grade heat from the air then transfer this heat to the water by means of an immersion coil. This is the most commonly utilized residential heat pump water heater. The air-to-water heat pump unit includes a compressor, air-to-refrigerant evaporator coil, evaporator fan, water circulating pump, refrigerant-to-water condenser coil, expansion valve, and controls. Residential heat pump water heaters replace base electric units with the same tank capacities.

High Efficiency Water Heater: Higher efficiency water heaters have greater insulation to reduce standby heat loss.

Solar Water Heater: Heat transfer technology that uses the sun's energy to warm water. Solar water heaters preheat water supplied to a conventional domestic hot water heating system. The energy savings for the system depend on solar radiation, air temperatures, water temperatures at the site, and the hot water use pattern.

Instant-On (Tankless) Water Heater (Natural Gas & LPG): Also known as "instant" or "on-demand" water heaters, tankless units function only when a hot water faucet is turned on. There is no energy required to maintain the temperature of the water in a tank, which results in significant energy savings.

Switch from Electric to Natural Gas or LPG Water Heater: Replacing an electric water heater with a natural gas or LPG water heater results in electricity savings but increased fuel consumption.

Low-Flow Showerhead: Many households are still equipped with showerheads using 3+ gallons per minute. Low flow showerheads can significantly reduce water heating energy for a nominal cost. Typical low-flow showerheads use 1.0-2.5 gallons per minute compared to conventional flow rate of 3.5-6.0 gallons per minute. The reduction in shower water use can substantially lower water heating energy use since showering accounts for about one-fourth of total domestic hot water energy use.

Pipe Wrap: Thermal insulation is material or combinations of materials that are used to inhibit the flow of heat energy by conductive, convective, and radiative transfer modes. By inhibiting the flow of heat energy, thermal insulation can conserve energy by reducing heat loss or gain.

Water Heater Blanket: Thermal insulation is wrapped around the exterior of a water heater to reduce standby losses.

Tap Aerators: Water tap aerators are threaded screens that attach to existing taps. They reduce the volume of water coming out of taps while introducing air into the water stream. A standard non-conserving faucet tap has a typical flow rate of 3-5 gallons per minute. A water-saving aerator can reduce the flow to 1-2 gallons per minute. The reduction in the flow rate will lower hot water use and save energy (kitchen and bathroom sinks utilize approximately 7 percent of total domestic hot water energy use).

B.1.1.4 Appliances

High Efficiency Refrigerators, Refrigerator/Freezers, and Freezers: An energy efficient refrigerator/freezer is designed by improving the various components of the cabinet and refrigeration system. These component improvements include cabinet insulation, compressor efficiency, evaporator fan efficiency, defrost controls, mullion heaters, oversized condenser coils, and improved door seals.

Remove Secondary Refrigerator/Freezer: Twelve percent of homes that have a refrigerator/freezer have more than one. While some of these units may be used heavily and regularly, many are used infrequently or are filled significantly below their capacity. Retiring these units can result in significant savings.

High Efficiency Dishwasher: High efficiency dishwashers save by using both improved technology for the primary wash cycle, and by using less hot water to clean. They include more effective washing action, energy efficient motors and other advanced technology such as sensors that determine the length of the wash cycle and the temperature of the water necessary to clean the dishes.

Switch from Electric to Natural Gas or LPG Cooking Equipment: Replacing electric cooking equipment with natural gas or LPG equipment results in electricity savings but increased fuel consumption.

Towel Rail Timer: Heated towel rails normally operate continuously. Installing a timer to turn off the device during periods of low or no use produces significant energy savings.

B.2 Commercial Measures

This subsection provides brief descriptions of the commercial measures included in this study.

B.2.1 Lighting

Next Generation T-8 Lamps with Magnetic Ballast: T-8 lamps are smaller diameter fluorescent lamps than T-12 lamps and provide more lumens per watt, resulting in energy savings. For existing T-12 systems, this measure is specified as an upgrade to efficiency levels associated with optimal T-8 lamp/magnetic ballast combinations on a replace-on-burnout basis.

Next Generation T-8 Lamps with Electronic Ballast: Electronic ballasts replace the standard core and coil technology in magnetic ballasts with solid-state components. This technology allows for more consistent control over ballast output and converts power to higher frequencies, causing the fluorescent lamps to operate more efficiently. For existing first generation T-8 systems with magnetic ballasts, this measure is specified as an upgrade to efficiency levels associated with optimal Super T-8 lamp-electronic ballast combinations on a replace-on-burnout basis.

Screw-in Compact Fluorescent Lighting (CFLs): Screw-based compact fluorescent lamps are designed to replace standard incandescent lamps. They are approximately four times more efficacious compared to incandescent light sources.

Hard-wired Compact Fluorescent Lighting (CFLs): Hard-wired (or modular) compact fluorescent lamps are designed to replace standard incandescent lamps. They are approximately four times more efficacious compared to incandescent light sources. Modular CFL lamps have reusable ballasts that typically last for four lamp lives and reduce lifecycle costs.

High Pressure Sodium Lamps: In many situations, 400 watt mercury vapor lamps can be replaced by 250 watt high pressure sodium (HPS) lamps. HPS lamps are HID lighting and emit a golden-white or yellow light. The color rendition for HPS lamps is worse than for MV lamps, but the number of lumens per watt, although dependent on the size of the lamps, is much improved over MV lamps.

Lighting Control Tune-up: This involves various measures to optimize the customer's current lighting control systems, with measures such as: relocating/tuning occupancy sensors, relocating photocells, optimizing sweep timers, repairing lighting timers, and adjust lighting schedules.

Occupancy Sensors: Occupancy sensors (infrared or ultrasonic motion detection devices) turn lights on upon entry of a person into a room, and then turn the lights off from ½ minute to 20 minutes after they have left. Occupancy sensors require proper installation and calibration. Their savings depend on the mounting type.

Continuous Dimming: Dimming electronic ballasts can be incorporated into a daylighting strategy around the perimeter of office buildings or in areas under skylights. These systems use photocells to reduce power consumption and light output when daylight is available.

Outdoor Lighting Controls (Photocells and Time Clocks): Photocells can be used to automatically control both outdoor lamps and indoor lamps adjacent to skylights and windows. When lights do not need to be on all night, a photocell in series with a time clock provides maximum savings and eliminates the need for manual operation and seasonal time clock adjustments. Time clocks enable users to turn on and off electrical equipment at specific times during the day or week.

15% More Efficient Design (Lighting): This scenario represents a 15% reduction in lighting power densities and associated energy usage below current practice in the construction and design of new commercial buildings. This decrease would be achieved through modest design changes that focus on better optimization of fixture layout and product choices, but would not require aggressive use of controls and daylighting.

25% More Efficient Design (Lighting): This new construction scenario incorporates all of the savings associated with the 10% reduction case and adds savings associated with advanced lighting controls and daylighting. This represents a 25% reduction in energy usage below current practice.

B.2.2 Space Cooling and Heating

Chiller Efficiency Upgrade: Centrifugal chillers are used in building types which normally use water-based cooling systems and have cooling requirements greater than 200 tons. Centrifugal chillers reject heat through a water cooled condenser or cooling tower. In general, efficiency levels for centrifugal chillers start at 0.80 kW/ton (for older units) and may go as high as 0.4 kW/ton. This measure involves installation of a high-efficiency chiller (0.51 kW per ton) versus a standard unit (0.58 kW per ton). This measure also serves in the potential analysis as a proxy for other non-centrifugal chiller systems.

VSD – Cooling Circulation Pumps: Variable speed drives installed on chilled water pumps can reduce energy use by varying the pump speed according to the building's demand for cooling. There is also a reduction in piping losses associated with this measure, which can have a major impact on the heating loads and energy use for a building. Pump speeds, however, can generally only be reduced to a minimum specified rate, because chillers and the control valves may require a minimum flow rate to operate.

VSD – Cooling Tower Fans: Energy usage in cooling tower fans can be reduced by installing electronic variable speed drives (VSDs). VSDs are a far more efficient method of regulating speed or torque than other control mechanisms. Energy required to operate a fan motor can be reduced significantly during reduced load conditions by installing a VSD.

Chiller Tune-up/Diagnostics: In addition to some of the activities conducted in a DX tune-up, an optimization of the chilled water plant can include activities such as: optimizing CW/CHW setpoints, improving chiller staging, trimming pump impellers, resetting chilled water supply temperature, and staging cooling tower fan operation.

Building Management Systems: The term Building Management System (BMS) refers to a complete building control system which usually can include controls for both lighting and HVAC systems. The HVAC control system may include on\off scheduling and warm-up routines. The complete lighting and HVAC control systems are generally integrated using a personal computer and control system software.

BMS Optimization: Building management systems are frequently underutilized and have hundreds of minor inefficiencies throughout the system. Optimization of the existing system frequently results in substantial savings to the measures controlled by the BMS (e.g. lighting, HVAC) by minimizing waste. Improvements can include building start-up schedule adjustments, improving integrated sequence of operations, calibration of sensors, and relocation of OA sensors.

DX Packaged System Efficiency Upgrade: A single-packaged direction expansion (DX) air-conditioning system consists of a single package (or cabinet housing) containing a condensing unit, a

compressor, and an indoor fan/coil. A benefit of packaged units is that there is no need for field-installed refrigerant piping, thus minimizing labor costs and the possibility of contaminating the system with dirt, metal, oxides or non-condensing gases. This measure involves installation of a high-efficiency unit (Energy Efficiency Ratio (EER) =3.5) as compared to a base case unit with an assumed efficiency of EER=2.65.

Tune up/Advanced Diagnostics: The assumed tune-up includes cleaning the condenser and evaporator coils, establishing optimal refrigerant levels, and purging refrigerant loops of entrained air. The qualifying relative performance range for a tune-up is between 60 and 85 percent of the rated efficiency of the unit. Includes fresh air economizer controls providing demand control ventilation and consisting of a logic module, enthalpy sensor(s), and CO2 sensors in appropriate applications.

Programmable Thermostat: Setback programmable thermostats are appropriate controls for HVAC equipment that serve spaces with regular occupied and unoccupied periods, resulting in long periods of time when heating and cooling setpoints can be adjusted.

Installation of Air-Side Economizers: Air-side economizers reduce the energy consumption associated with cooling by providing access to outside air – when temperatures permit – in lieu of using mechanical cooling of recirculated indoor air.

Split-System Heat Pump Efficiency Upgrade: A split-system heat pumps are made up of two components, where the compressor and condenser are located outside and the supply air fan is usually mounted on the wall or ceiling indoors. Split-systems heat pumps can provide both space heating and space cooling, depending on the season. Split-systems are available in a range of capacities that can serve one room (i.e. one condenser/compressor unit and one supply air fan unit) or multiple rooms (i.e. one condenser/compressor unit and multiple supply air fans). This measure involves installation of a high-efficiency unit (EER=3.5) as compared to a base case unit with an assumed efficiency of EER=2.3.

Room Air Conditioner Efficiency Upgrade: A room air conditioner is a single-packaged air-conditioning that is sized to provide conditioned air to a single room. Room air conditioners are typically through-the-window or through-the-wall units and can sometimes be referred to as Packaged Terminal Air Conditioners (PTACs). This measure involves installation of a high-efficiency unit (EER=3.5) as compared to a base case unit with an assumed efficiency of EER=2.3.

10% More Efficient Design (Cooling and Ventilation): This scenario represents a 10% reduction in cooling and ventilation power densities and associated energy usage below current practice in the construction of new commercial buildings. This decrease would be achieved through modest design changes that focus on better optimization of cooling and ventilation deign and product choices.

30% More Efficient Design (Cooling and Ventilation): This new construction scenario incorporates all of the savings associated with the 10% improvement case and adds savings associated with more advanced design practices.

B.2.3 Ventilation

Motor Efficiency Upgrade: Premium-efficiency motors use additional copper to reduce electrical losses and better magnetic materials to reduce core losses, and are generally built to more precise tolerances.

Consequently, such motors are more reliable, resulting in reduced downtime and replacement costs. Premium-efficiency motors may also carry longer manufacturer's warranties.

VFD on Motor Installation: Energy usage in HVAC systems can be reduced by installing electronic variable frequency drives (VFDs) on ventilation fans. VFDs are a far more efficient method of regulating speed or torque than throttling valves, inlet vanes and fan dampers. Energy required to operate a fan motor can be reduced as much as 85% during reduced load conditions by installing a VFD.

Air Handler Optimization: Optimization of a building's air-handling system is concerned principally with the proper sizing and configuration of its HVAC units. Energy savings can result from a variety of improvements, including reduced equipment loads and better functionality of existing equipment.

B.2.4 Refrigeration

Motor Efficiency Upgrade for Fans and Compressors: In addition to saving energy, premium-efficiency motors are more reliable, resulting in reduced downtime and replacement costs.

Strip Curtains: Installing strip curtains on doorways to walk-in boxes and refrigerated warehouses can produce energy savings due to decreased infiltration of outside air into the refrigerated space. Although refrigerated spaces have doors, these doors are often left open, for example during product delivery and store stocking activities.

Night Covers: Installing film or blanket type night covers on display cases can significantly reduce the infiltration of warm ambient air into the refrigerated space. This reduction in display case loads in turn reduces the electric use of the central plant, including compressors and condensers, thus saving energy. The target market for this measure is small, independently owned grocery stores and other stores that are typically closed at night and restock their shelves during the day. The target cases are vertical displays, with a single- or double-air curtain, and tub (coffin) type cases.

Evaporator Fan Controller for Medium Temperature Walk-Ins: In response to the temperature setpoint being satisfied in a medium temperature walk-in cooler, evaporator fans are cycled to maintain minimum necessary air flow, which prevents ice build-up on the evaporator coils. In conventional systems, fans run constantly whether the temperature setpoint is satisfied or not.

Variable Speed Compressor Retrofit: A variable speed compressor is a screw or reciprocating compressor whose current is modulated by a frequency inverter. A controller senses the compressor suction pressure and modulates the current and therefore the motor speed in response to changes in this pressure. When low load conditions exist, the current to the compressor motor is decreased, decreasing the compressor work done on the refrigerant.

Floating Head Pressure Controls: Floating head pressure controls allow a refrigeration system to operate under lower condensing temperature and pressure settings, where compressor operation is most efficient, working against a relatively low head pressure. The condensing temperature is allowed to float below the design setpoint of, say, 35 deg. C under lower outdoor temperatures, which in-turn lowers the condensate pressure. In a conventional system a higher fixed condensing temperature setpoint is used which results in a lowered capacity for the system, requires extra power, and may overload the compressor motor. Energy savings can be realized if the refrigeration system head pressure is allowed to

float during periods of low ambient temperature, when the condensing temperature can be dramatically reduced.

Refrigeration Commissioning: Refrigeration commissioning refers to a process whereby refrigeration systems are subject to inspection on a variety of criteria to ensure efficiency. The commissioning process can involve tests that cover a system's controls for humidity and temperature, anti-condensation, and heat recovery, among others.

Demand Defrost: Defrost of a refrigeration system is critical to its efficient operation. Demand defrost uses a pressure-sensing device to activate the defrost cycle when it detects a significant drop in pressure of the air across the refrigeration coil. Because load during defrost can be three times that of normal operation, defrosting on demand only – not when an individual operator deems it necessary – can save energy by minimizing the amount of time spent on defrosting.

Humidistat Controls: A humidistat control is a control device to turn refrigeration display case anti-sweat heaters off when ambient relative humidity is low enough that sweating will not occur. Anti-sweat heaters evaporate moisture by heating the door rails, case frame and glass of display cases. Savings result from reducing the operating hours of the anti-sweat heaters, which without a humidistat control generally run continuously. There are various types of control strategies including cycling on a fixed schedule.

B.2.5 Office Equipment

Power Management Enabling: This measure can be applied to PCs, monitors, copiers, and laser printers. For copiers and laser printers, manual enabling of the power management features is the only viable solution. For PCs and monitors, both manual enabling and group enabling via network software are options.

ENERGY STAR Monitors: LCDs are becoming more attractive options in terms of both quality and cost. Additionally, LCD monitors consume approximately half of the power needed to run CRT monitors of the same screen size. This measure involves the installation of ENERGY STAR-qualified LCD monitors on a replace-on-burnout basis.
ENERGY STAR Copiers: ENERGY STAR-qualified photocopiers deliver the same performance as less efficient, conventional copiers and are at least 30% more efficient and must offer automatic duplexing as a standard feature (for large capacity copiers) or an optional accessory (for mid-range capacity copiers) at the time purchase. This measure involves the installation of ENERGY STAR-qualified copiers on a replace-on-burnout basis.

B.3 Industrial Measures

This subsection provides brief descriptions of the industrial measures included in this study. First measures that cut across industries are described, followed by descriptions of industry-specific measures.

B.3.1 Cross-Cutting Electricity Efficiency Measures

Replace motors: This measure refers to the replacement of existing motors with high-efficiency motors. High-efficiency motors reduce energy losses through improved design, better materials, tighter tolerances, and improved manufacturing techniques. With proper installation, high-efficiency motors can run cooler

than standard motors and can consequently have higher service factors, longer bearing life, longer insulation life, and less vibration.

Adjustable speed drives (ASDs): Adjustable speed drives better match motor speed to load and can therefore lead to significant energy savings compared to constant speed motors. Typical energy savings associated with ASDs range from 7-60%.

Motor practices: This measure refers to proper motor maintenance. The purposes of motor maintenance are to prolong motor life and to foresee a motor failure. Motor maintenance measures can be categorized as either preventive or predictive. Preventive measures, whose purpose is to prevent unexpected downtime of motors, include electrical consideration, voltage imbalance minimization, motor ventilation, alignment, and lubrication, and load consideration. The purpose of predictive motor maintenance is to observe ongoing motor temperature, vibration, and other operating data to identify when it becomes necessary to overhaul or replace a motor before failure occurs. The savings associated with ongoing motor maintenance could range from 2-30% of total motor system energy use.

Compressed air - operation and maintenance (O&M): Inadequate maintenance can lower compression efficiency and increase air leakage or pressure variability, as well as lead to increased operating temperatures, poor moisture control, and excessive contamination. Improved maintenance will reduce these problems and save energy. Proper maintenance includes regular motor lubrication, replacement of air lubricant separators, fan and pump inspection, and filter replacement.

Compressed air – controls: The objective of any control strategy is to shut off unneeded compressors or delay bringing on additional compressors until needed. Energy savings for sophisticated controls have been around 12% annually. Available controls for compressed air systems include start/stop, load/unload, throttling, multi-step, variable speed, and network controls.

Compressed air - system optimization: This is a general measure that refers to compressed air system improvements (besides sizing, controls, and maintenance) that allow it to perform at maximum energy efficiency. Such improvements could include reducing leaks, better load management, minimizing pressure drops throughout the system, reducing air inlet temperatures, and recovering waste compressor heat for other facility applications.

Compressed air – sizing: This measure refers to the proper sizing of compressors, regulators, and distribution pipes. Oversizing of compressors can result in wasted energy. By properly sizing regulators, compressed air will be saved that is otherwise wasted as excess air. Pipes must be sized correctly for optimal performance or resized to fit the current compressor system. Increasing pipe diameters typically reduces annual energy consumption by 3%.

Pumps - operation and maintenance (O&M): Inadequate maintenance can lower pump system efficiency, cause pumps to wear out more quickly, and increase costs. Better maintenance will reduce these problems and also save energy. Proper pump system maintenance includes bearing inspection and repair, bearing lubrication, replacement of worn impellers, and inspection and replacement of mechanical seals.

Pumps – controls: The objective of pump control strategies is to shut off unneeded pumps or, alternatively, to reduce pump load until needed. In addition to energy savings, proper pump control can lead to reduced maintenance costs and increased pump life.

Pumps - system optimization: This is a general measure that refers to pump system improvements (besides sizing, controls, and maintenance) that allow it to perform at maximum energy efficiency. Such improvements could include pump demand reduction, high-efficiency pumps, impeller trimming, and installing multiple pumps for variable loads.

Pumps – sizing: Pumps that are sized inappropriately result in unnecessary losses. Where peak loads can be reduced, pump size can also be reduced. Replacing oversized pumps with pumps that are properly sized can save 15-25% of the electricity consumption of a pumping system (on average for U.S. industry).

Fans - operation and maintenance (O&M): This measure refers to the improvement of general O&M practice for fans, such as tightening belts, cleaning fans, and changing filters regularly.

Fans – controls: The objective of fan control strategies is to shut off unneeded fans or, alternatively, to reduce fan load until needed. In addition to energy savings, proper fan control can lead to reduced maintenance costs and increased pump life.

Fans - system optimization: This measure refers to general strategies for optimizing fans from a systems perspective, and includes such actions as better inlet and outlet design and reduction of fan sizing, where appropriate.

Fans - improve components: This measure refers to the improvement of fan components, such as replacing standard v-belts with cog v-belts and upgrading to the most energy efficient motors possible.

Replace T-12 by T-8 and electronic ballasts: T-12 tubes consume significant amounts of electricity, and also have extremely poor efficacy, lamp life, lumen depreciation, and color rendering index. Replacing T-12 lamps with T-8 lamps (smaller diameter) approximately doubles the efficacy of the former. Electronic ballasts save 12-30% power over their magnetic predecessors; typical energy savings associated with replacing magnetic ballasts by electronic ballasts are estimated to be roughly 25%.

Metal halides/fluorescents: Metal halide lamps can replace mercury or fluorescent lamps with energy savings of 50%. For even further savings, high-intensity fluorescent lamps can be installed, which can yield 50% electricity savings over standard metal halide (high-intensity discharge) systems.

Switch off/O&M: Lighting is often left on, even when the area or room is not occupied. Sensors can be installed (see below), but savings can also be realized by training personnel to switch off lights (and other equipment) when not needed. Furthermore, adapting switching to the use pattern of the building will enable to control the lighting in those areas where it is needed (e.g. in many assembly areas a single switch controls all lighting, even when lighting would only be needed in a few zones within the assembly hall).

Controls/sensors: Lights can be shut off during non-working hours by automatic controls, such as occupancy sensors, which turn off lights when a space becomes unoccupied. Manual controls can also be used in addition to automatic controls to save additional energy in small areas.

Super T-8s: Super T-8 fluorescent systems are a further development of (standard) T-8 tubes. Super T-8s combine further improvement of the fluorescent tube (e.g. barrier coating, improved fill, enhanced phosphors) with electronic ballasts in a single system.

HVAC management system: An energy monitoring and control system supports the efficient operation of HVAC systems by monitoring, controlling, and tracking system energy consumption. Such systems continuously manage and optimize HVAC system energy consumption while also providing building engineers and energy managers with a valuable diagnostic tool for tracking energy consumption and identifying potential HVAC system problems.

Cooling system improvements: The efficiency of chillers can be improved by lowering the temperature of the condenser water, thereby increasing the chilled water temperature differential. This can reduce pumping energy requirements. Another possible efficiency measure is the installation of separate high-temperature chillers for process cooling.

Duct/pipe insulation/leakage: Duct leakage can waste significant amounts of energy in HVAC systems. Measures for reducing duct leakage include installing duct insulation and performing regular duct inspection and maintenance, including ongoing leak detection and repair. Improved duct and pipe insulation can prevent excessive heat/cooling dissipation, thereby improving system energy efficiency.

Cooling circulation pumps – variable speed drives (VSDs): Variable speed drives better match motor speed to load and can therefore lead to significant energy savings compared to constant speed drives. This measure considers the installation of VSDs on cooling circulation pumps.

DX tune up/advanced diagnostics: The tune-up includes cleaning the condenser and evaporator coils, establishing optimal refrigerant levels, and purging refrigerant loops of entrained air. The qualifying relative performance range for a tune-up is between 60 and 85 percent of the rated efficiency of the unit. Includes fresh air economizer controls providing demand control ventilation and consisting of a logic module, enthalpy sensor(s), and CO^2 sensors in appropriate applications.

DX packaged system, EER=10.9, 10 tons: A single-package A/C unit consists of a single package (or cabinet housing) containing a condensing unit, a compressor, and an indoor fan/coil. An additional benefit of package units is that there is no need for field-installed refrigerant piping, thus minimizing labor costs and the possibility of contaminating the system with dirt, metal, oxides or non-condensing gases. This measure involves installation of a TIER 2 high-efficiency unit (EER=10.9) versus a standard unit (EER=10.3.

Window film: Low-emittance windows are an effective strategy for improving building insulation. Low-emittance windows can lower the heat transmitted into a building and therefore increase its insulating ability. There are two types of Low-E glass, high solar transmitting (for regions with higher winter utility bills) and low solar transmitting (for regions with higher summer utility bills).

Programmable thermostat: A programmable thermostat allows control of temperature settings of space heating and cooling, and optimizing settings based on occupancy and use of the building. This will reduce unnecessary heating and cooling outside hours of building use. It may also help in building cooling using nighttime cooling.

Chiller O&M/tune up: This measure refers to the proper inspection and maintenance of chilled water systems. This can include setting correct head pressure, maintaining correct levels of refrigerant, and selecting and running appropriate compressors for part load. Energy saving can also be achieved by cleaning the condensers and evaporators to prevent scale buildup.

Setback temperatures (weekends and off duty): Setting back building temperatures (i.e., turning building temperatures down in winter or up in summer) during periods of non-use, such as weekends or non-production times, can lead to significant savings in HVAC energy consumption.

Replace v-belts: Inventory data suggest that 4% of pumps have V-belt drives, many of which can be replaced with direct couplings to save energy. Based on assessments in several industries, the savings associated with V-belt replacement are estimated at 4%.

ENERGY STAR transformers: This measure refers to the replacement of existing transformers, where feasible, by the latest ENERGY STAR certified transformers. ENERGY STAR transformers ensure a high level of energy efficiency.

B.3.2 Sector-Specific Efficiency Measures (Electricity)

B.3.2.1 SIC 20: Food and Kindred Products

Efficient refrigeration – operations: Refrigeration is an important energy user in the food industries. Operations of refrigeration systems can be improved by applying appropriate settings, opening refrigerated space as short as possible, reducing leakage by controlling doorways, making sure that refrigerated space is used optimally, optimization of defrosting cycle, as well as other small operational changes.

Optimization refrigeration: The refrigeration system can be optimized by improving the operation of the compressors, selecting cooling systems with high COP values, reducing losses in the coolant distribution system, improved insulation of the cooled space, variable speed drives on cooling system, and optimizing the temperature setting of the cooling system.

Bakery – process: Process improvements in the bakery can reduce electricity consumption through selection of energy-efficient equipment for the different processes, optimization of electric ovens, and good housekeeping (e.g. switching equipment off when not in use).

Bakery – process (mixing): About 35% of electricity in bakeries is used to mix and knead the dough. When selecting equipment electricity use should be one of the considerations as energy is the largest cost on a life-cycle basis. Today, energy use is not a criterion. High-efficiency motors, speed control and other measures may reduce electricity consumption.

B.3.2.2 SIC 22: Textile Mill Products
SIC 23: Apparel and Other Textile Products

Drying (UV/IR): This measure refers to the use of direct heating methods, such as infrared dryers. Direct heating provides significant energy savings because it eliminates the inefficiency of transferring heat to air and from the air to the wet material. The energy efficiency of direct heating is about 90%.

Membranes for wastewater: Membrane technologies focus on separating the water from the contaminants using semi-permeable membranes and applied pressure differentials. Membrane filtration of wastewater is typically more energy efficient than evaporation methods, and can lead to significant reductions in facility freshwater intake.

O&M/drives spinning machines: Electric motors are the single largest electricity user in spinning mills. Optimization of motor use, proper maintenance procedures (e.g. preventative maintenance), use of new high-efficiency motors instead of re-winding, switching off equipment when not in use can help improve energy efficiency.

B.3.2.3 SIC 24: Lumber and Wood Products
SIC 25: Furniture and Fixtures

Air conveying systems: Pneumatic or air conveying systems are used to transport material (e.g. sawdust, fibers) in the lumber industry. Energy efficiency improvement is feasible by optimizing the lay-out of the systems, reducing leakages, reducing bends in the system, and improving compressor operations (see also with compressed air systems).

Optimize drying processes: This is a general measure, which refers to the optimization of drying systems through such actions as the use of controls, heat recovery, insulation, and good housekeeping/maintenance.

Heat pumps – drying: This measure refers to the recovery of low grade heat from the drying process via a heat pump, where cost effective.

B.3.2.4 SIC 26: Paper and Allied Products

Gap forming paper machine: The gap former produces a paper of equal and uniform quality at a higher rate of speed. Coupling the former with a press section rebuild or an improvement in the drying capacity increases production capacity by as much as 30%. Energy savings from gap formers come from reduced electricity consumption per ton of product produced.

High consistency forming: In high consistency forming, the furnish (process pulp) which enters at the forming stage has more than double the consistency (3%) than normal furnish. This measure increases forming speed, and reduces dewatering and vacuum power requirements. Application of this technology is limited to specific paper grades, especially low-basis weight grades such as tissue, toweling, and newsprint. Electricity savings are estimated at 8%.

Optimization control PM: Large electric motors are used to run the paper machine. Optimization of the paper machine will reduce electricity use of the drives. Improved control strategies will improve throughput, reduce breakage and downtime, improving the energy efficiency per unit of throughput. Variable speed drives may help to optimize the energy use in water pumps in the paper machine.

B.3.2.5 SIC 27: Printing and Publishing

Efficient practices printing press: Optimizing the use of the printing press by reducing production losses, switching off of the press when not in use and other improved operational practices.

Efficient printing press (fewer cylinders): New printing press designs allow the use of fewer cylinders (or rollers). This reduces the electricity use to drive the printing machine.

Light cylinders: Reducing the weight of the cylinders (or rollers) in the printing machine will reduce the power needed to drive the machine. Using lightweight materials for cylinders has been demonstrated in Europe.

B.3.2.6 SIC 28: Chemicals and Allied Products

Clean room – controls: Reduced recirculation air change rates, while still meeting quality control and regulatory standards can reduce energy use, optimized chilled water systems, reduction of cleanroom exhaust, and, occasionally, a cleanroom is classified at a higher cleanliness level than is necessary for its current use, and by declassifying energy can be saved.

Clean room – new designs: When designing a clean room, energy use should be a primary consideration. Benchmarking tools and design tools are being developed to help improve the energy efficiency of new cleanroom systems. Furthermore, in the design phase the system can be optimized for improved air filtration quality and efficiency, and the use of cooling towers in lieu of water chillers.

Process controls (batch + site): This is a general measure to implement computer-based process controls, where applicable, to monitor and optimize various processes from an energy consumption perspective. In general, by monitoring key process parameters, processes can be fine tuned to minimize energy consumption while still meeting quality and productivity requirements. Control systems can also reduce the time required to perform complex tasks and can often improve product quality and consistency while optimizing process operations. This measure could include the installation of controls based on neural networks, knowledge based systems, or improved sensor technology.

B.3.2.7 SIC 29: Petroleum and Coal Products

Controls: See discussion for SIC 28.

Power recovery: Various processes run at elevated pressures, enabling the opportunity for power recovery from the pressure in the flue gas. The major application for power recovery in the petroleum refinery is the fluid catalytic cracker (FCC). However, power recovery can also be applied to hydrocrackers or other equipment operated at elevated pressures. A power recovery turbine or turbo expander is used to recover energy from the pressure. The recovered energy can be used to drive the FCC compressor or to generate power.

Efficient desalter: Alternative designs for desalting include multi-stage desalters and a combination of AC and DC fields. These alternative designs may lead to increased efficiency and lower energy consumption.

B.3.2.8 SIC 30: Rubber and Miscellaneous Plastic Products

O&M – extruders/injection molding: Improved operation and maintenance procedures of extruders, optimization of extruder settings, optimization of the extruder screw shape, optimization of the shape/thickness of the product, and reduction of standby time.

Extruders/injection molding – multipump: The use of multiple pumps and an appropriate control system allow reduction of energy use of the extruder when not working at full capacity, only using the pump(s) needed.

Direct drive extruders: Use of a direct drive, instead of a gearbox or belt, will reduce the losses by approximately 15% in extruders.

Injection molding – impulse cooling: Impulse cooling regulates the cooling water use increasing the cooling rate and reducing productivity (and downtime).

Injection molding – direct drive: Use of a direct drive, instead of a gearbox or belt, will reduce the losses by approximately 20% in injection molding machines.

B.3.2.9 SIC 32: Stone, Clay, Glass, and Concrete Products

Efficient grinding: This is a general measure that refers to efficient grinding technologies, which can include the use of high-efficiency classifiers or separators.

Process controls: See discussion for SIC 28.

Top-heating (glass): Most electric furnaces use electrodes in the batch to melt the raw materials into glass. Newer designs with top-mounted electrodes can improve and maintain product quality, and obtain a higher share of salable glass, which leads to lower energy intensities (energy per kg of glass produced).

Autoclave optimization: In various processes autoclaves are used to press materials. Multiple autoclaves are used. By synchronizing the time of the use of the individual autoclaves, energy can be reduced by re-using the output of one to operate the other autoclave.

B.3.2.10 SIC 33: Primary Metal Industries

Process controls: See discussion for SIC 28.

Efficient electric melting: Electric arc furnaces are used in the steel industry to melt scrap. Only one minimill is operating in California. Multiple options are available to reduce the electricity consumption of the furnace, e.g. foamy slag, oxy-fuel injection, improved transformers, eccentric bottom tapping (EBT), as well as scrap preheating.

Near net shape casting: Near net shape casting is the direct casting of the metal into very nearly the final shape, thereby eliminating other processing steps such as hot rolling, which can lead to significant energy savings.

B.3.2.11 SIC 34: Fabricated Metal Products
SIC 35: Industrial Machinery and Equipment
SIC 37: Transportation Equipment
SIC 38: Instruments and Related Products

Optimization process (M&T): This is a general measure for optimizing the efficiency of painting processes, via such actions as the use of process controls, proper maintenance, and reducing the airflow rates in paint booths.

Scheduling: Optimization of the scheduling of various pieces of equipment can reduce downtime and hence save energy. Furthermore, improved control strategies can reduce standby energy use of equipment as part of an optimized scheduling system.

Efficient curing ovens: Efficiency options for curing ovens include the optimization of oven insulation, the use of heat recovery techniques, and the use of direct heating methods, such as infrared heating, microwave heating, and ultraviolet heating.

Machinery: Many machines (e.g. metal processing) use electricity or compressed air to drive the equipment. The use of compressed air systems should be minimized and replaced by direct drive systems, because of the low efficiency of the compressed air supply. Furthermore, many machines do not use high-efficiency motors or speed controls.

B.3.2.12 SIC 36: Electrical and Electronic Products

Scheduling: See previous subsection.

Efficient curing ovens: See previous subsection.

Machinery: See previous subsection.

Efficient processes (welding, etc.): New more power efficient welding technology is developed. For welding robots, new servo-based systems reduce energy use. See also new transformers welding (see section 1.1).

B.3.2.13 SIC 39: Miscellaneous Manufacturing Industries

Scheduling: See discussion for SIC 34.

Efficient Machinery: See discussion for SIC 34.

Process heating: Induction furnaces are often used for electric process heating. Improved operation and maintenance can reduce part-load operation, downtime and tap-to-tap time. Furthermore, high-frequency induction furnaces improve energy use.

Process controls: See discussion for SIC 28.

C. Economic Inputs

This appendix presents economic data used for the New Zealand Energy Efficiency Potential Study. These data include discount rates, inflation rates, loss rates, avoided cost forecasts, and customer rate forecasts. The avoided cost forecasts are provided by time-of-use (TOU) period. The following TOU period definitions are used.

Summer	**October-April**
On Peak	7 am - 10 pm weekdays
Off Peak	10 pm - 7 am weekdays, and all weekends
Winter	**May-September**
On Peak	7 am - 9 pm weekday and weekends
Off Peak	9 pm - 7 am

ECONOMIC PARAMETERS

UTILITY NAME	Commission
SECTOR	All
BATCH #	1
UTILITY DISCOUNT RATE	7.00%
CUSTOMER DISCOUNT RATE	15.00%
GENERAL INFLATION RATE (Measure)	2.50%
BASE YEAR	2007
START YEAR	2007
DIFFERENCE	0
UTILITY LINE LOSS RATE	3.40%

RATE/TIME PERIODS

Name	Winter On-Peak	Winter Off-Peak	Summer On-Peak	Summer Off-Peak	Annual
Abbreviation	WP	WOP	SP	SOP	TOTAL
Hours	2142	1530	2280	2808	8760
Monthly Adjustment for rates	5	5	7	7	

ENERGY COSTS AND RATES

	Avoided Energy Costs (WP)	Avoided Demand Costs By Time Period (WP)	Electricity Rates		
			Residential	Commercial	Industrial
Year	$/kWh	$/kW	$/kWh	$/kWh	$/kWh
2007	0.070	118.000	0.180	0.137	0.080
2008	0.072	120.950	0.185	0.141	0.083
2009	0.074	123.974	0.191	0.145	0.086
2010	0.075	127.073	0.196	0.149	0.089
2011	0.077	130.250	0.203	0.155	0.093
2012	0.079	133.506	0.211	0.162	0.098
2013	0.081	136.844	0.219	0.168	0.103
2014	0.083	140.265	0.227	0.175	0.108
2015	0.085	143.772	0.235	0.182	0.114
2016	0.087	147.366	0.245	0.191	0.120
2017	0.090	151.050	0.255	0.200	0.128
2018	0.092	154.826	0.266	0.209	0.135
2019	0.094	158.697	0.277	0.218	0.143
2020	0.096	162.664	0.289	0.228	0.151
2021	0.099	166.731	0.297	0.235	0.156
2022	0.101	170.899	0.306	0.243	0.161
2023	0.104	175.172	0.315	0.250	0.167
2024	0.107	179.551	0.324	0.258	0.172
2025	0.109	184.040	0.334	0.266	0.178
2026	0.112	188.641	0.342	0.273	0.183
2027	0.115	193.357	0.351	0.279	0.187
2028	0.118	198.191	0.360	0.286	0.192
2029	0.121	203.145	0.369	0.294	0.197
2030	0.124	208.224	0.378	0.301	0.202

D. Building and TOU Factor Inputs

This appendix presents building and TOU (time of use) data used for the New Zealand Energy Efficiency Study. Data are shown by sector: residential, commercial, and industrial.

RESIDENTIAL

Residential Building Stock Table

Units: Number of Dwellings	
Segment	
Existing	1,617,798
New Construction	15,890

End Use Load Shape Table

Fraction of Annual Use in Cost Period

Building	End Use 1--Heating				End Use 2--Water Heating				End Use 3--Lighting				End Use 4--Refrigeration			
Type	WP	WOP	SP	SOP	WP	WOP	SP	SOP	WP	WOP	SP	SOP	WP	WOP	SP	SOP
Existing	0.459	0.318	0.117	0.107	0.314	0.145	0.276	0.265	0.354	0.186	0.234	0.226	0.250	0.169	0.266	0.315
New	0.459	0.318	0.117	0.107	0.314	0.145	0.276	0.265	0.354	0.186	0.234	0.226	0.250	0.169	0.266	0.315

Building	End Use 5--Dishwashers				End Use 6--Cooking				End Use 7--Clothes Dryer				End Use 8--Towel Rail			
Type	WP	WOP	SP	SOP	WP	WOP	SP	SOP	WP	WOP	SP	SOP	WP	WOP	SP	SOP
Existing	0.350	0.101	0.322	0.228	0.404	0.054	0.355	0.187	0.350	0.101	0.322	0.228	0.350	0.101	0.322	0.228
New	0.350	0.101	0.322	0.228	0.404	0.054	0.355	0.187	0.350	0.101	0.322	0.228	0.350	0.101	0.322	0.228

Building	End Use 9--Miscellaneous			
Type	WP	WOP	SP	SOP
Existing	0.350	0.101	0.322	0.228
New	0.350	0.101	0.322	0.228

Peak To Energy Relationship Table (Utility Coincidence)

Peak = Average kW * Factor

Building	End Use 1--Heating				End Use 2--Water Heating				End Use 3--Lighting				End Use 4--Refrigeration			
Type	WP	WOP	SP	SOP	WP	WOP	SP	SOP	WP	WOP	SP	SOP	WP	WOP	SP	SOP
Existing	3.067	3.817	2.308	2.771	1.064	1.661	1.019	1.490	3.075	3.425	2.745	3.353	1.084	1.097	1.090	1.134
New	3.067	3.817	2.308	2.771	1.064	1.661	1.019	1.490	3.075	3.425	2.745	3.353	1.084	1.097	1.090	1.134

Building	End Use 5--Dishwashers				End Use 6--Cooking				End Use 7--Clothes Dryer				End Use 8--Towel Rail			
Type	WP	WOP	SP	SOP	WP	WOP	SP	SOP	WP	WOP	SP	SOP	WP	WOP	SP	SOP
Existing	1.398	3.073	1.407	2.586	2.476	2.483	2.928	6.288	1.398	3.073	1.407	2.586	1.398	3.073	1.407	2.586
New	1.398	3.073	1.407	2.586	2.476	2.483	2.928	6.288	1.398	3.073	1.407	2.586	1.398	3.073	1.407	2.586

Building	End Use 9--Miscellaneous			
Type	WP	WOP	SP	SOP
Existing	1.398	3.073	1.407	2.586
New	1.398	3.073	1.407	2.586

Commercial Building Stock Table

Units: Square Metres									
Segment	Office	Restaurant	Retail	Food Store	Schools Colleges	Tertiary Education	Hospital	Hotel Motel	Misc.
Existing	8,082,780	467,373	8,591,626	3,789,399	8,317,928	1,622,400	4,790,772	3,649,342	20,741,432
New	185,904	10,750	197,607	87,156	191,312	37,315	110,188	83,935	477,053

End Use Load Shape Table

Fraction of Annual Use in Cost Period

Building Type	End Use 1--Indoor Lighting				End Use 2--Outdoor Lighting				End Use 3--Cooling			
	WP	WOP	SP	SOP	WP	WOP	SP	SOP	WP	WOP	SP	SOP
Office	0.309	0.099	0.405	0.187	0.112	0.336	0.139	0.412	0.196	0.045	0.567	0.193
Restaurant	0.322	0.089	0.389	0.199	0.174	0.263	0.223	0.340	0.178	0.019	0.569	0.235
Retail	0.321	0.091	0.365	0.222	0.119	0.332	0.140	0.408	0.138	0.012	0.591	0.259
FoodStore	0.284	0.129	0.328	0.259	0.153	0.299	0.164	0.384	0.159	0.025	0.541	0.274
Schools/Colleges	0.365	0.065	0.434	0.136	0.119	0.335	0.143	0.403	0.147	0.009	0.805	0.039
Tertiary Education	0.303	0.115	0.372	0.210	0.120	0.346	0.120	0.414	0.241	0.040	0.520	0.199
Hospital	0.285	0.127	0.334	0.254	0.112	0.337	0.135	0.415	0.182	0.054	0.482	0.283
Hotel/Motel	0.255	0.159	0.300	0.287	0.120	0.330	0.142	0.408	0.158	0.063	0.452	0.327
Miscellaneous	0.319	0.098	0.355	0.228	0.139	0.306	0.206	0.348	0.104	0.016	0.606	0.274

Building Type	End Use 4--Ventilation				End Use 5--Refrigeration				End Use 6--Office Equipment			
	WP	WOP	SP	SOP	WP	WOP	SP	SOP	WP	WOP	SP	SOP
Office	0.295	0.111	0.389	0.205	0.249	0.164	0.289	0.298	0.281	0.129	0.344	0.246
Restaurant	0.276	0.099	0.364	0.261	0.249	0.159	0.291	0.300	0.335	0.077	0.391	0.198
Retail	0.294	0.097	0.361	0.247	0.240	0.155	0.298	0.307	0.322	0.088	0.405	0.186
FoodStore	0.285	0.123	0.332	0.259	0.238	0.155	0.297	0.310	0.308	0.105	0.349	0.237
Schools/Colleges	0.379	0.065	0.492	0.065	0.250	0.164	0.289	0.297	0.335	0.098	0.394	0.173
Tertiary Education	0.291	0.120	0.372	0.217	0.252	0.164	0.288	0.296	0.280	0.135	0.346	0.239
Hospital	0.255	0.154	0.306	0.285	0.252	0.159	0.291	0.299	0.280	0.132	0.327	0.261
Hotel/Motel	0.241	0.166	0.290	0.304	0.250	0.158	0.291	0.300	0.265	0.148	0.302	0.284
Miscellaneous	0.284	0.120	0.357	0.239	0.246	0.161	0.289	0.304	0.320	0.090	0.404	0.186

Building Type	End Use 7--Space Heating				End Use 8--Water Heating				End Use 9--Vending			
	WP	WOP	SP	SOP	WP	WOP	SP	SOP	WP	WOP	SP	SOP
Office	0.390	0.132	0.301	0.178	0.297	0.145	0.321	0.237	0.314	0.095	0.395	0.196
Restaurant	0.426	0.523	0.011	0.039	0.361	0.071	0.350	0.218	0.326	0.086	0.369	0.219
Retail	0.464	0.262	0.087	0.187	0.349	0.087	0.351	0.214	0.319	0.091	0.349	0.240
FoodStore	0.337	0.609	0.010	0.044	0.328	0.103	0.334	0.234	0.318	0.094	0.344	0.244
Schools/Colleges	0.557	0.185	0.166	0.092	0.366	0.071	0.438	0.125	0.402	0.046	0.460	0.092
Tertiary Education	0.283	0.185	0.260	0.271	0.325	0.100	0.411	0.164	0.320	0.131	0.321	0.227
Hospital	0.282	0.241	0.194	0.283	0.310	0.127	0.321	0.242	0.296	0.118	0.332	0.255
Hotel/Motel	0.355	0.363	0.096	0.187	0.295	0.133	0.305	0.267	0.293	0.119	0.334	0.254
Miscellaneous	0.328	0.359	0.078	0.235	0.312	0.121	0.330	0.237	0.322	0.087	0.377	0.214

Building Type	End Use 10--HVAC			
	WP	WOP	SP	SOP
Office	0.258	0.082	0.463	0.197
Restaurant	0.223	0.057	0.474	0.246
Retail	0.236	0.068	0.446	0.250
FoodStore	0.246	0.094	0.396	0.264
Schools/Colleges	0.293	0.049	0.602	0.056
Tertiary Education	0.277	0.106	0.399	0.218
Hospital	0.231	0.127	0.359	0.284
Hotel/Motel	0.222	0.151	0.332	0.296
Miscellaneous	0.215	0.101	0.431	0.253

Peak To Energy Relationship Table (Utility Coincidence)

Peak = Average kW * Factor

Building Type	End Use 1--Indoor Lighting						End Use 2--Outdoor Lighting						End Use 3--Cooling					
	WP	WOP	SP	SOP	n/a	n/a	WP	WOP	SP	SOP	n/a	n/a	WP	WOP	SP	SOP	n/a	n/a
Office	0.922	1.000	1.000	1.000	1.000	1.000	2.923	1.000	1.000	1.000	1.000	1.000	0.605	1.000	1.000	1.000	1.000	1.000
Restaurant	1.268	1.000	1.000	1.000	1.000	1.000	3.045	1.000	1.000	1.000	1.000	1.000	0.826	1.000	1.000	1.000	1.000	1.000
Retail	1.063	1.000	1.000	1.000	1.000	1.000	3.152	1.000	1.000	1.000	1.000	1.000	0.550	1.000	1.000	1.000	1.000	1.000
FoodStore	1.043	1.000	1.000	1.000	1.000	1.000	2.342	1.000	1.000	1.000	1.000	1.000	0.659	1.000	1.000	1.000	1.000	1.000
Schools/Colleges	0.605	1.000	1.000	1.000	1.000	1.000	3.825	1.000	1.000	1.000	1.000	1.000	0.130	1.000	1.000	1.000	1.000	1.000
Tertiary Education	0.663	1.000	1.000	1.000	1.000	1.000	4.013	1.000	1.000	1.000	1.000	1.000	0.451	1.000	1.000	1.000	1.000	1.000
Hospital	1.004	1.000	1.000	1.000	1.000	1.000	2.903	1.000	1.000	1.000	1.000	1.000	0.746	1.000	1.000	1.000	1.000	1.000
Hotel/Motel	1.056	1.000	1.000	1.000	1.000	1.000	3.240	1.000	1.000	1.000	1.000	1.000	0.549	1.000	1.000	1.000	1.000	1.000
Miscellaneous	0.972	1.000	1.000	1.000	1.000	1.000	3.357	1.000	1.000	1.000	1.000	1.000	0.224	1.000	1.000	1.000	1.000	1.000

Building Type	End Use 4--Ventilation						End Use 5--Refrigeration						End Use 6--Office Equipment					
	WP	WOP	SP	SOP	n/a	n/a	WP	WOP	SP	SOP	n/a	n/a	WP	WOP	SP	SOP	n/a	n/a
Office	0.910	1.000	1.000	1.000	1.000	1.000	0.989	1.000	1.000	1.000	1.000	1.000	0.919	1.000	1.000	1.000	1.000	1.000
Restaurant	1.155	1.000	1.000	1.000	1.000	1.000	1.031	1.000	1.000	1.000	1.000	1.000	1.307	1.000	1.000	1.000	1.000	1.000
Retail	1.137	1.000	1.000	1.000	1.000	1.000	1.019	1.000	1.000	1.000	1.000	1.000	1.112	1.000	1.000	1.000	1.000	1.000
FoodStore	1.063	1.000	1.000	1.000	1.000	1.000	1.031	1.000	1.000	1.000	1.000	1.000	1.108	1.000	1.000	1.000	1.000	1.000
Schools/Colleges	0.286	1.000	1.000	1.000	1.000	1.000	0.964	1.000	1.000	1.000	1.000	1.000	0.472	1.000	1.000	1.000	1.000	1.000
Tertiary Education	0.836	1.000	1.000	1.000	1.000	1.000	0.935	1.000	1.000	1.000	1.000	1.000	0.726	1.000	1.000	1.000	1.000	1.000
Hospital	1.027	1.000	1.000	1.000	1.000	1.000	1.005	1.000	1.000	1.000	1.000	1.000	0.896	1.000	1.000	1.000	1.000	1.000
Hotel/Motel	1.044	1.000	1.000	1.000	1.000	1.000	1.016	1.000	1.000	1.000	1.000	1.000	0.971	1.000	1.000	1.000	1.000	1.000
Miscellaneous	1.031	1.000	1.000	1.000	1.000	1.000	1.023	1.000	1.000	1.000	1.000	1.000	1.069	1.000	1.000	1.000	1.000	1.000

Building Type	End Use 7--Space Heating						End Use 8--Water Heating						End Use 9--Vending					
	WP	WOP	SP	SOP	n/a	n/a	WP	WOP	SP	SOP	n/a	n/a	WP	WOP	SP	SOP	n/a	n/a
Office	0.858	1.000	1.000	1.000	1.000	1.000	0.869	1.000	1.000	1.000	1.000	1.000	0.764	1.000	1.000	1.000	1.000	1.000
Restaurant	0.000	1.000	1.000	1.000	1.000	1.000	0.676	1.000	1.000	1.000	1.000	1.000	1.204	1.000	1.000	1.000	1.000	1.000
Retail	1.208	1.000	1.000	1.000	1.000	1.000	0.977	1.000	1.000	1.000	1.000	1.000	1.069	1.000	1.000	1.000	1.000	1.000
FoodStore	0.272	1.000	1.000	1.000	1.000	1.000	0.992	1.000	1.000	1.000	1.000	1.000	0.852	1.000	1.000	1.000	1.000	1.000
Schools/Colleges	1.129	1.000	1.000	1.000	1.000	1.000	0.455	1.000	1.000	1.000	1.000	1.000	0.279	1.000	1.000	1.000	1.000	1.000
Tertiary Education	1.067	1.000	1.000	1.000	1.000	1.000	0.348	1.000	1.000	1.000	1.000	1.000	0.567	1.000	1.000	1.000	1.000	1.000
Hospital	1.300	1.000	1.000	1.000	1.000	1.000	0.999	1.000	1.000	1.000	1.000	1.000	0.961	1.000	1.000	1.000	1.000	1.000
Hotel/Motel	1.423	1.000	1.000	1.000	1.000	1.000	0.919	1.000	1.000	1.000	1.000	1.000	1.054	1.000	1.000	1.000	1.000	1.000
Miscellaneous	0.805	1.000	1.000	1.000	1.000	1.000	0.646	1.000	1.000	1.000	1.000	1.000	0.890	1.000	1.000	1.000	1.000	1.000

Building Type	End Use 10--HVAC					
	WP	WOP	SP	SOP	n/a	n/a
Office	0.797	1.000	1.000	1.000	1.000	1.000
Restaurant	1.000	1.000	1.000	1.000	1.000	1.000
Retail	0.999	1.000	1.000	1.000	1.000	1.000
FoodStore	0.981	1.000	1.000	1.000	1.000	1.000
Schools/Colleges	0.352	1.000	1.000	1.000	1.000	1.000
Tertiary Education	0.772	1.000	1.000	1.000	1.000	1.000
Hospital	0.983	1.000	1.000	1.000	1.000	1.000
Hotel/Motel	0.981	1.000	1.000	1.000	1.000	1.000
Miscellaneous	0.842	1.000	1.000	1.000	1.000	1.000

INDUSTRIAL

Industrial Building Stock Table

Units: Base kWh (1,000)																		
Segment	**Aluminium**	**Steel**	**Oil Refining**	**Paper**	**Dairy**	**Other Food**	**Wood**	**Chemicals**	**Textiles**	**Printing**	**Rubber Plastics**	**Non-metal Minerals**	**Metal Products**	**Elec/Ind Equip**	**Transp Equip**	**Photo/Sci Equip**	**Other Mfg**	**Ag**
All	5,240,287	1,294,788	250,508	1,802,858	807,375	1,323,304	1,507,952	142,652	156,739	232,239	235,667	228,589	142,349	238,667	84,979	14,497	171,350	1,242,118

Segment	**Water/WW**	**Mining**
All	233,681	229,202

End Use Load Shape Table

(Fraction of annual energy)

	End Use 1 -Compressed Air				End Use 2 - Fans				End Use 3 - Pumping			
SIC Group	**WP**	**WOP**	**SP**	**SOP**	**WP**	**WOP**	**SP**	**SOP**	**WP**	**WOP**	**SP**	**SOP**
Aluminium	0.2422	0.1732	0.2616	0.3230	0.2422	0.1732	0.2616	0.3230	0.2422	0.1732	0.2616	0.3230
Steel	0.2439	0.1793	0.2748	0.3021	0.2439	0.1793	0.2748	0.3021	0.2439	0.1793	0.2748	0.3021
Oil Refining	0.2433	0.1667	0.2702	0.3198	0.2433	0.1667	0.2702	0.3198	0.2433	0.1667	0.2702	0.3198
Paper	0.2369	0.1784	0.2514	0.3333	0.2369	0.1784	0.2514	0.3333	0.2369	0.1784	0.2514	0.3333
Dairy	0.3060	0.1576	0.2720	0.2644	0.3060	0.1576	0.2720	0.2644	0.3060	0.1576	0.2720	0.2644
Other Food	0.2954	0.1458	0.3054	0.2534	0.2954	0.1458	0.3054	0.2534	0.2954	0.1458	0.3054	0.2534
Wood	0.2609	0.1650	0.2808	0.2934	0.2609	0.1650	0.2808	0.2934	0.2609	0.1650	0.2808	0.2934
Chemicals	0.2450	0.1769	0.2602	0.3179	0.2450	0.1769	0.2602	0.3179	0.2450	0.1769	0.2602	0.3179
Textiles	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558
Printing	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558
Rubber/ Plastics	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558
Non-metal Minerals	0.2370	0.1880	0.2474	0.3275	0.2370	0.1880	0.2474	0.3275	0.2370	0.1880	0.2474	0.3275
Metal Products	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558
Elec/ Ind Equipment	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558
Transp Equipment	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558
Photo/ Science Equipment	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558
Other Mfg	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558
Ag	0.1759	0.1069	0.3479	0.3694	0.1759	0.1069	0.3479	0.3694	0.1759	0.1069	0.3479	0.3694
Water/WW	0.2919	0.1458	0.3002	0.2621	0.2919	0.1458	0.3002	0.2621	0.2919	0.1458	0.3002	0.2621
Mining	0.2698	0.1504	0.2859	0.2939	0.2698	0.1504	0.2859	0.2939	0.2698	0.1504	0.2859	0.2939

	End Use 4 -Drives				End Use 5 - Heating				End Use 6 - Refridgeration			
SIC Group	**WP**	**WOP**	**SP**	**SOP**	**WP**	**WOP**	**SP**	**SOP**	**WP**	**WOP**	**SP**	**SOP**
Aluminium	0.2422	0.1732	0.2616	0.3230	0.2422	0.1732	0.2616	0.3230	0.2422	0.1732	0.2616	0.3230
Steel	0.2439	0.1793	0.2748	0.3021	0.2439	0.1793	0.2748	0.3021	0.2439	0.1793	0.2748	0.3021
Oil Refining	0.2433	0.1667	0.2702	0.3198	0.2433	0.1667	0.2702	0.3198	0.2433	0.1667	0.2702	0.3198
Paper	0.2369	0.1784	0.2514	0.3333	0.2369	0.1784	0.2514	0.3333	0.2369	0.1784	0.2514	0.3333
Dairy	0.3060	0.1576	0.2720	0.2644	0.3060	0.1576	0.2720	0.2644	0.3060	0.1576	0.2720	0.2644
Other Food	0.2954	0.1458	0.3054	0.2534	0.2954	0.1458	0.3054	0.2534	0.2954	0.1458	0.3054	0.2534
Wood	0.2609	0.1650	0.2808	0.2934	0.2609	0.1650	0.2808	0.2934	0.2609	0.1650	0.2808	0.2934
Chemicals	0.2450	0.1769	0.2602	0.3179	0.2450	0.1769	0.2602	0.3179	0.2450	0.1769	0.2602	0.3179
Textiles	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558
Printing	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558
Rubber/ Plastics	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558
Non-metal Minerals	0.2370	0.1880	0.2474	0.3275	0.2370	0.1880	0.2474	0.3275	0.2370	0.1880	0.2474	0.3275
Metal Products	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558
Elec/ Ind Equipment	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558
Transp Equipment	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558
Photo/ Science Equipment	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558
Other Mfg	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558
Ag	0.1759	0.1069	0.3479	0.3694	0.1759	0.1069	0.3479	0.3694	0.1759	0.1069	0.3479	0.3694
Water/WW	0.2919	0.1458	0.3002	0.2621	0.2919	0.1458	0.3002	0.2621	0.2919	0.1458	0.3002	0.2621
Mining	0.2698	0.1504	0.2859	0.2939	0.2698	0.1504	0.2859	0.2939	0.2698	0.1504	0.2859	0.2939

INDUSTRIAL

	End Use 7 - Other Process				End Use 8 - Cooling				End Use 9 - Lighting			
SIC Group	**WP**	**WOP**	**SP**	**SOP**	**WP**	**WOP**	**SP**	**SOP**	**WP**	**WOP**	**SP**	**SOP**
Aluminium	0.2422	0.1732	0.2616	0.3230	0.2422	0.1732	0.2616	0.3230	0.2422	0.1732	0.2616	0.3230
Steel	0.2439	0.1793	0.2748	0.3021	0.2439	0.1793	0.2748	0.3021	0.2439	0.1793	0.2748	0.3021
Oil Refining	0.2433	0.1667	0.2702	0.3198	0.2433	0.1667	0.2702	0.3198	0.2433	0.1667	0.2702	0.3198
Paper	0.2369	0.1784	0.2514	0.3333	0.2369	0.1784	0.2514	0.3333	0.2369	0.1784	0.2514	0.3333
Dairy	0.3060	0.1576	0.2720	0.2644	0.3060	0.1576	0.2720	0.2644	0.3060	0.1576	0.2720	0.2644
Other Food	0.2954	0.1458	0.3054	0.2534	0.2954	0.1458	0.3054	0.2534	0.2954	0.1458	0.3054	0.2534
Wood	0.2609	0.1650	0.2808	0.2934	0.2609	0.1650	0.2808	0.2934	0.2609	0.1650	0.2808	0.2934
Chemicals	0.2450	0.1769	0.2602	0.3179	0.2450	0.1769	0.2602	0.3179	0.2450	0.1769	0.2602	0.3179
Textiles	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558
Printing	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558
Rubber/ Plastics	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558
Non-metal Minerals	0.2370	0.1880	0.2474	0.3275	0.2370	0.1880	0.2474	0.3275	0.2370	0.1880	0.2474	0.3275
Metal Products	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558
Elec/ Ind Equipment	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558
Transp Equipment	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558
Photo/ Science Equipment	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558
Other Mfg	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558	0.3040	0.1596	0.2807	0.2558
Ag	0.1759	0.1069	0.3479	0.3694	0.1759	0.1069	0.3479	0.3694	0.1759	0.1069	0.3479	0.3694
Water/WW	0.2919	0.1458	0.3002	0.2621	0.2919	0.1458	0.3002	0.2621	0.2919	0.1458	0.3002	0.2621
Mining	0.2698	0.1504	0.2859	0.2939	0.2698	0.1504	0.2859	0.2939	0.2698	0.1504	0.2859	0.2939

	End Use 10 - Other Process			
SIC Group	**WP**	**WOP**	**SP**	**SOP**
Aluminium	0.2422	0.1732	0.2616	0.3230
Steel	0.2439	0.1793	0.2748	0.3021
Oil Refining	0.2433	0.1667	0.2702	0.3198
Paper	0.2369	0.1784	0.2514	0.3333
Dairy	0.3060	0.1576	0.2720	0.2644
Other Food	0.2954	0.1458	0.3054	0.2534
Wood	0.2609	0.1650	0.2808	0.2934
Chemicals	0.2450	0.1769	0.2602	0.3179
Textiles	0.3040	0.1596	0.2807	0.2558
Printing	0.3040	0.1596	0.2807	0.2558
Rubber/ Plastics	0.3040	0.1596	0.2807	0.2558
Non-metal Minerals	0.2370	0.1880	0.2474	0.3275
Metal Products	0.3040	0.1596	0.2807	0.2558
Elec/ Ind Equipment	0.3040	0.1596	0.2807	0.2558
Transp Equipment	0.3040	0.1596	0.2807	0.2558
Photo/ Science Equipment	0.3040	0.1596	0.2807	0.2558
Other Mfg	0.3040	0.1596	0.2807	0.2558
Ag	0.1759	0.1069	0.3479	0.3694
Water/WW	0.2919	0.1458	0.3002	0.2621
Mining	0.2698	0.1504	0.2859	0.2939

Peak To Energy Relationship Table (Utility Coincidence)

(Ratio of peak kW to average kW)

	End Use 1 -Compressed Air				End Use 2 - Fans				End Use 3 - Pumping			
SIC Group	**WP**	**WOP**	**SP**	**SOP**	**WP**	**WOP**	**SP**	**SOP**	**WP**	**WOP**	**SP**	**SOP**
Aluminium	1.0360	1.0345	1.0882	1.0345	1.0360	1.0345	1.0882	1.0850	1.0360	1.0345	1.0882	1.0345
Steel	1.1459	1.1583	1.1379	1.1583	1.1459	1.1583	1.1379	0.9136	1.1459	1.1583	1.1379	1.1583
Oil Refining	1.0981	1.1264	1.0712	1.1264	1.0981	1.1264	1.0712	1.0964	1.0981	1.1264	1.0712	1.1264
Paper	1.0830	1.0380	1.1322	1.0380	1.0830	1.0380	1.1322	1.0985	1.0830	1.0380	1.1322	1.0380
Dairy	1.2518	1.4382	1.2209	1.4382	1.2518	1.4382	1.2209	1.5214	1.2518	1.4382	1.2209	1.4382
Other Food	1.1967	1.3806	1.1899	1.3806	1.1967	1.3806	1.1899	1.4935	1.1967	1.3806	1.1899	1.3806
Wood	1.1133	1.1510	1.1182	1.1510	1.1133	1.1510	1.1182	1.1962	1.1133	1.1510	1.1182	1.1510
Chemicals	1.0634	1.0677	1.2284	1.0677	1.0634	1.0677	1.2284	1.2257	1.0634	1.0677	1.2284	1.0677
Textiles	1.2427	1.4455	1.1683	1.4455	1.2427	1.4455	1.1683	1.4335	1.2427	1.4455	1.1683	1.4455
Printing	1.2427	1.4455	1.1683	1.4455	1.2427	1.4455	1.1683	1.4335	1.2427	1.4455	1.1683	1.4455
Rubber/ Plastics	1.2427	1.4455	1.1683	1.4455	1.2427	1.4455	1.1683	1.4335	1.2427	1.4455	1.1683	1.4455
Non-metal Minerals	1.1198	1.1023	1.1085	1.1023	1.1198	1.1023	1.1085	1.0537	1.1198	1.1023	1.1085	1.1023
Metal Products	1.2427	1.4455	1.1683	1.4455	1.2427	1.4455	1.1683	1.4335	1.2427	1.4455	1.1683	1.4455
Elec/ Ind Equipment	1.2427	1.4455	1.1683	1.4455	1.2427	1.4455	1.1683	1.4335	1.2427	1.4455	1.1683	1.4455
Transp Equipment	1.2427	1.4455	1.1683	1.4455	1.2427	1.4455	1.1683	1.4335	1.2427	1.4455	1.1683	1.4455
Photo/ Science Equipment	1.2427	1.4455	1.1683	1.4455	1.2427	1.4455	1.1683	1.4335	1.2427	1.4455	1.1683	1.4455
Other Mfg	1.2427	1.4455	1.1683	1.4455	1.2427	1.4455	1.1683	1.4335	1.2427	1.4455	1.1683	1.4455
Ag	1.1849	1.2118	1.3136	1.2118	1.1849	1.2118	1.3136	1.4311	1.1849	1.2118	1.3136	1.2118
Water/WW	1.1652	1.4119	1.0683	1.4119	1.1652	1.4119	1.0683	1.2812	1.1652	1.4119	1.0683	1.4119
Mining	1.1629	1.2656	1.1660	1.2656	1.1629	1.2656	1.1660	1.3882	1.1629	1.2656	1.1660	1.2656

	End Use 4 -Drives				End Use 5 - Heating				End Use 6 - Refridgeration			
SIC Group	**WP**	**WOP**	**SP**	**SOP**	**WP**	**WOP**	**SP**	**SOP**	**WP**	**WOP**	**SP**	**SOP**
Aluminium	1.0360	1.0345	1.0882	1.0345	1.0360	1.0345	1.0882	1.0850	1.0360	1.0345	1.0882	1.0345
Steel	1.1459	1.1583	1.1379	1.1583	1.1459	1.1583	1.1379	0.9136	1.1459	1.1583	1.1379	1.1583
Oil Refining	1.0981	1.1264	1.0712	1.1264	1.0981	1.1264	1.0712	1.0964	1.0981	1.1264	1.0712	1.1264
Paper	1.0830	1.0380	1.1322	1.0380	1.0830	1.0380	1.1322	1.0985	1.0830	1.0380	1.1322	1.0380
Dairy	1.2518	1.4382	1.2209	1.4382	1.2518	1.4382	1.2209	1.5214	1.2518	1.4382	1.2209	1.4382
Other Food	1.1967	1.3806	1.1899	1.3806	1.1967	1.3806	1.1899	1.4935	1.1967	1.3806	1.1899	1.3806
Wood	1.1133	1.1510	1.1182	1.1510	1.1133	1.1510	1.1182	1.1962	1.1133	1.1510	1.1182	1.1510
Chemicals	1.0634	1.0677	1.2284	1.0677	1.0634	1.0677	1.2284	1.2257	1.0634	1.0677	1.2284	1.0677
Textiles	1.2427	1.4455	1.1683	1.4455	1.2427	1.4455	1.1683	1.4335	1.2427	1.4455	1.1683	1.4455
Printing	1.2427	1.4455	1.1683	1.4455	1.2427	1.4455	1.1683	1.4335	1.2427	1.4455	1.1683	1.4455
Rubber/ Plastics	1.2427	1.4455	1.1683	1.4455	1.2427	1.4455	1.1683	1.4335	1.2427	1.4455	1.1683	1.4455
Non-metal Minerals	1.1198	1.1023	1.1085	1.1023	1.1198	1.1023	1.1085	1.0537	1.1198	1.1023	1.1085	1.1023
Metal Products	1.2427	1.4455	1.1683	1.4455	1.2427	1.4455	1.1683	1.4335	1.2427	1.4455	1.1683	1.4455
Elec/ Ind Equipment	1.2427	1.4455	1.1683	1.4455	1.2427	1.4455	1.1683	1.4335	1.2427	1.4455	1.1683	1.4455
Transp Equipment	1.2427	1.4455	1.1683	1.4455	1.2427	1.4455	1.1683	1.4335	1.2427	1.4455	1.1683	1.4455
Photo/ Science Equipment	1.2427	1.4455	1.1683	1.4455	1.2427	1.4455	1.1683	1.4335	1.2427	1.4455	1.1683	1.4455
Other Mfg	1.2427	1.4455	1.1683	1.4455	1.2427	1.4455	1.1683	1.4335	1.2427	1.4455	1.1683	1.4455
Ag	1.1849	1.2118	1.3136	1.2118	1.1849	1.2118	1.3136	1.4311	1.1849	1.2118	1.3136	1.2118
Water/WW	1.1652	1.4119	1.0683	1.4119	1.1652	1.4119	1.0683	1.2812	1.1652	1.4119	1.0683	1.4119
Mining	1.1629	1.2656	1.1660	1.2656	1.1629	1.2656	1.1660	1.3882	1.1629	1.2656	1.1660	1.2656

INDUSTRIAL

	End Use 7 - Other Process				End Use 8 - Cooling				End Use 9 - Lighting			
SIC Group	WP	WOP	SP	SOP	WP	WOP	SP	SOP	WP	WOP	SP	SOP
Aluminium	1.0360	1.0345	1.0882	1.0345	1.0360	1.0345	1.0882	1.0850	1.0360	1.0345	1.0882	1.0345
Steel	1.1459	1.1583	1.1379	1.1583	1.1459	1.1583	1.1379	0.9136	1.1459	1.1583	1.1379	1.1583
Oil Refining	1.0981	1.1264	1.0712	1.1264	1.0981	1.1264	1.0712	1.0964	1.0981	1.1264	1.0712	1.1264
Paper	1.0830	1.0380	1.1322	1.0380	1.0830	1.0380	1.1322	1.0985	1.0830	1.0380	1.1322	1.0380
Dairy	1.2518	1.4382	1.2209	1.4382	1.2518	1.4382	1.2209	1.5214	1.2518	1.4382	1.2209	1.4382
Other Food	1.1967	1.3806	1.1899	1.3806	1.1967	1.3806	1.1899	1.4935	1.1967	1.3806	1.1899	1.3806
Wood	1.1133	1.1510	1.1182	1.1510	1.1133	1.1510	1.1182	1.1962	1.1133	1.1510	1.1182	1.1510
Chemicals	1.0634	1.0677	1.2284	1.0677	1.0634	1.0677	1.2284	1.2257	1.0634	1.0677	1.2284	1.0677
Textiles	1.2427	1.4455	1.1683	1.4455	1.2427	1.4455	1.1683	1.4335	1.2427	1.4455	1.1683	1.4455
Printing	1.2427	1.4455	1.1683	1.4455	1.2427	1.4455	1.1683	1.4335	1.2427	1.4455	1.1683	1.4455
Rubber/ Plastics	1.2427	1.4455	1.1683	1.4455	1.2427	1.4455	1.1683	1.4335	1.2427	1.4455	1.1683	1.4455
Non-metal Minerals	1.1198	1.1023	1.1085	1.1023	1.1198	1.1023	1.1085	1.0537	1.1198	1.1023	1.1085	1.1023
Metal Products	1.2427	1.4455	1.1683	1.4455	1.2427	1.4455	1.1683	1.4335	1.2427	1.4455	1.1683	1.4455
Elec/ Ind Equipment	1.2427	1.4455	1.1683	1.4455	1.2427	1.4455	1.1683	1.4335	1.2427	1.4455	1.1683	1.4455
Transp Equipment	1.2427	1.4455	1.1683	1.4455	1.2427	1.4455	1.1683	1.4335	1.2427	1.4455	1.1683	1.4455
Photo/ Science Equipment	1.2427	1.4455	1.1683	1.4455	1.2427	1.4455	1.1683	1.4335	1.2427	1.4455	1.1683	1.4455
Other Mfg	1.2427	1.4455	1.1683	1.4455	1.2427	1.4455	1.1683	1.4335	1.2427	1.4455	1.1683	1.4455
Ag	1.1849	1.2118	1.3136	1.2118	1.1849	1.2118	1.3136	1.4311	1.1849	1.2118	1.3136	1.2118
Water/WW	1.1652	1.4119	1.0683	1.4119	1.1652	1.4119	1.0683	1.2812	1.1652	1.4119	1.0683	1.4119
Mining	1.1629	1.2656	1.1660	1.2656	1.1629	1.2656	1.1660	1.3882	1.1629	1.2656	1.1660	1.2656

	End Use 10 - Other Process			
SIC Group	WP	WOP	SP	SOP
Aluminium	1.0360	1.0345	1.0882	1.0345
Steel	1.1459	1.1583	1.1379	1.1583
Oil Refining	1.0981	1.1264	1.0712	1.1264
Paper	1.0830	1.0380	1.1322	1.0380
Dairy	1.2518	1.4382	1.2209	1.4382
Other Food	1.1967	1.3806	1.1899	1.3806
Wood	1.1133	1.1510	1.1182	1.1510
Chemicals	1.0634	1.0677	1.2284	1.0677
Textiles	1.2427	1.4455	1.1683	1.4455
Printing	1.2427	1.4455	1.1683	1.4455
Rubber/ Plastics	1.2427	1.4455	1.1683	1.4455
Non-metal Minerals	1.1198	1.1023	1.1085	1.1023
Metal Products	1.2427	1.4455	1.1683	1.4455
Elec/ Ind Equipment	1.2427	1.4455	1.1683	1.4455
Transp Equipment	1.2427	1.4455	1.1683	1.4455
Photo/ Science Equipment	1.2427	1.4455	1.1683	1.4455
Other Mfg	1.2427	1.4455	1.1683	1.4455
Ag	1.1849	1.2118	1.3136	1.2118
Water/WW	1.1652	1.4119	1.0683	1.4119
Mining	1.1629	1.2656	1.1660	1.2656

E. Measure Inputs

This appendix presents measure data used for the New Zealand Energy Efficiency Potential Study. Data are shown by sector: residential, commercial, and industrial.

RESIDENTIAL

DSM TECHNOLOGY INPUT TABLES			
UTILITY:	Example	BATCH:	1
SECTOR:	RES	ANALYSIS:	Basic
SEGMENT:	All Electric	VINTAGE:	Existing and New Construction

RESIDENTIAL

MEASURE COSTS								NPV of				Full = 1 Incr. = 0				
Segment	Measure #	Measure Description	Savings Units	Cost Units	Unit Equipment Cost	Unit Labor Cost		Lifetime O & M Cost	Implementation Cost Factor	Cost Units per Savings Unit	Service Life	Initial Cost	Replace Cost	Full Unit Cost	Relative Energy Reduction WP	WPP
Existing	100	Base Electric Resistance Heating CZ 1, Homes with electric as primary heating	home	home	$130.00				$130.00	1	12	1	1	$130.00	1.00	1.00
Existing	101	Heat Pump Space Heater	home	unit	$1,582.00	$900.00			$2,482.00	1	18	0	0	$2,482.00	1.00	1.00
Existing	102	High Efficiency Heat pump	home	unit	$1,786.00	$900.00			$2,686.00	1	18	0	0	$2,686.00	1.00	1.00
Existing	103	Geothermal Heat Pump	home	unit	$10,903.85				$10,903.85	1	18	0	0	$10,903.85	1.00	1.00
Existing	104	Dual-Pane Windows (1.3 U to 0.5 U)	home	home	$1,140.00				$1,140.00	1	40	1	1	$1,140.00	1.00	1.00
Existing	105	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	home	unit	$292.50	$113.00			$405.50	1	40	1	1	$405.50	1.00	1.00
Existing	106	Ceiling Insulation R-0 to R-1.9 (R-11)	home	square meter	$8.82				$8.82	1	20	1	1	$8.82	1.00	1.00
Existing	107	Ceiling Insulation R-1.9 to R-3.6 (R-20)	home	square meter	$10.98				$10.98	1	20	1	1	$10.98	1.00	1.00
Existing	108	Wall Insulation R-0 to R-2.3 (R-13)	home	square meter	$15.98				$15.98	1	20	1	1	$15.98	1.00	1.00
Existing	109	Floor Insulation R-0 to R-1.5 (R-11)	home	square meter	$15.74				$15.74	1	20	1	1	$15.74	1.00	1.00
Existing	110	Infiltration Reduction	home	home	$244.90				$244.90	1	10	1	1	$244.90	1.00	1.00
Existing	111	6.5 kW Inbuilt Gas Fire	home	unit	$3,309.00			$2,507	$3,309.00	1	18	1	1	$5,816.00	1.00	1.00
Existing	112	6.5 kW Inbuilt Propane Fire	home	unit	$3,309.00			$2,086	$3,309.00	1	18	1	1	$5,395.00	1.00	1.00
Existing	140	Base Electric Resistance Heating CZ 2, Homes with electric as primary heating	home	home	$125.00				$125.00	1	12	1	1	$125.00	1.00	1.00
Existing	141	Heat Pump Space Heater	home	unit	$1,582.00	$900.00			$2,482.00	1	18	0	0	$2,482.00	1.00	1.00
Existing	142	High Efficiency Heat pump	home	unit	$1,786.00	$900.00			$2,686.00	1	18	0	0	$2,686.00	1.00	1.00
Existing	143	Geothermal Heat Pump	home	unit	$10,903.85				$10,903.85	1	18	0	0	$10,903.85	1.00	1.00
Existing	144	Dual-Pane Windows (1.3 U to 0.5 U)	home	home	$1,140.00				$1,140.00	1	40	1	1	$1,140.00	1.00	1.00
Existing	145	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	home	unit	$292.50	$113.00			$405.50	1	40	1	1	$405.50	1.00	1.00
Existing	146	Ceiling Insulation R-0 to R-1.9 (R-11)	home	square meter	$8.82				$8.82	1	20	1	1	$8.82	1.00	1.00
Existing	147	Ceiling Insulation R-1.9 to R-3.6 (R-20)	home	square meter	$10.98				$10.98	1	20	1	1	$10.98	1.00	1.00
Existing	148	Wall Insulation R-0 to R-2.3 (R-13)	home	square meter	$15.98				$15.98	1	20	1	1	$15.98	1.00	1.00
Existing	149	Floor Insulation R-0 to R-1.5 (R-11)	home	square meter	$15.74				$15.74	1	20	1	1	$15.74	1.00	1.00
Existing	150	Infiltration Reduction	home	home	$244.90				$244.90	1	10	1	1	$244.90	1.00	1.00
Existing	151	6.5 kW Inbuilt Gas Fire	home	unit	$3,309.00			$2,672	$3,309.00	1	18	0	0	$5,981.00	1.00	1.00
Existing	152	6.5 kW Inbuilt Propane Fire	home	unit	$3,309.00			$2,233	$3,309.00	1	18	0	0	$5,542.00	1.00	1.00
Existing	170	Base Electric Resistance Heating CZ 3, Homes with electric as primary heating	home	home	$230.00				$230.00	1	12	1	1	$230.00	1.00	1.00
Existing	171	Heat Pump Space Heater	home	unit	$1,582.00	$900.00			$2,482.00	1	18	0	0	$2,482.00	1.00	1.00
Existing	172	High Efficiency Heat pump	home	unit	$1,786.00	$900.00			$2,686.00	1	18	0	0	$2,686.00	1.00	1.00
Existing	173	Geothermal Heat Pump	home	unit	$10,903.85				$10,903.85	1	18	0	0	$10,903.85	1.00	1.00
Existing	174	Dual-Pane Windows (1.3 U to 0.5 U)	home	home	$1,140.00				$1,140.00	1	40	1	1	$1,140.00	1.00	1.00
Existing	175	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	home	unit	$292.50	$113.00			$405.50	1	40	1	1	$405.50	1.00	1.00
Existing	176	Ceiling Insulation R-0 to R-1.9 (R-11)	home	square meter	$8.82				$8.82	1	20	1	1	$8.82	1.00	1.00
Existing	177	Ceiling Insulation R-1.9 to R-3.6 (R-20)	home	square meter	$10.98				$10.98	1	20	1	1	$10.98	1.00	1.00
Existing	178	Wall Insulation R-0 to R-2.3 (R-13)	home	square meter	$15.98				$15.98	1	20	1	1	$15.98	1.00	1.00
Existing	179	Floor Insulation R-0 to R-1.5 (R-11)	home	square meter	$15.74				$15.74	1	20	1	1	$15.74	1.00	1.00
Existing	180	Infiltration Reduction	home	home	$244.90				$244.90	1	10	1	1	$244.90	1.00	1.00
Existing	181	6.5 kW Inbuilt Gas Fire	home	unit	$3,309.00			$4,663	$3,309.00	1	18	0	0	$7,972.00	1.00	1.00
Existing	182	6.5 kW Inbuilt Propane Fire	home	unit	$3,309.00			$4,054	$3,309.00	1	18	0	0	$7,363.00	1.00	1.00
Existing	200	Base 180 Litre Low Pressure Water Heating	unit	unit	$1,248.00	$0.00			$1,248.00	1	30	1	1	$1,248.00	1.00	1.00
Existing	201	Heat Pump Water Heater	unit	unit	$5,420.00	$0.00			$5,420.00	1	13	0	0	$5,420.00	1.00	1.00
Existing	202	HE Water Heater	unit	unit	$125.13	$0.00			$125.13	1	13	1	1	$125.13	1.00	1.00
Existing	203	Solar Water Heat	unit	unit	$7,000.00	$0.00			$7,000.00	1	13	1	1	$7,000.00	1.00	1.00
Existing	204	Low Flow Showerhead	unit	unit	$37.95	$17.31			$55.25	1	10	1	1	$55.25	1.00	1.00

RESIDENTIAL

MEASURE COSTS			Factors					Implementation Type 1=1 time
Segment	Measure #	Measure Description	WOP	SP	SPP	SOP	End Use	2=ROB
Existing	100	Base Electric Resistance Heating CZ 1, Homes with electric as primary heating	1.00	1.00	1.00	1.00	1	2
Existing	101	Heat Pump Space Heater	1.00	1.00	1.00	1.00	1	2
Existing	102	High Efficiency Heat pump	1.00	1.00	1.00	1.00	1	2
Existing	103	Geothermal Heat Pump	1.00	1.00	1.00	1.00	1	2
Existing	104	Dual-Pane Windows (1.3 U to 0.5 U)	1.00	1.00	1.00	1.00	1	2
Existing	105	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	1.00	1.00	1.00	1.00	1	1
Existing	106	Ceiling Insulation R-0 to R-1.9 (R-11)	1.00	1.00	1.00	1.00	1	1
Existing	107	Ceiling Insulation R-1.9 to R-3.6 (R-20)	1.00	1.00	1.00	1.00	1	1
Existing	108	Wall Insulation R-0 to R-2.3 (R-13)	1.00	1.00	1.00	1.00	1	1
Existing	109	Floor Insulation R-0 to R-1.5 (R-11)	1.00	1.00	1.00	1.00	1	1
Existing	110	Infiltration Reduction	1.00	1.00	1.00	1.00	1	1
Existing	111	6.5 kW Inbuilt Gas Fire	1.00	1.00	1.00	1.00	1	2
Existing	112	6.5 kW Inbuilt Propane Fire	1.00	1.00	1.00	1.00	1	2
Existing	140	Base Electric Resistance Heating CZ 2, Homes with electric as primary heating	1.00	1.00	1.00	1.00	1	2
Existing	141	Heat Pump Space Heater	1.00	1.00	1.00	1.00	1	2
Existing	142	High Efficiency Heat pump	1.00	1.00	1.00	1.00	1	2
Existing	143	Geothermal Heat Pump	1.00	1.00	1.00	1.00	1	2
Existing	144	Dual-Pane Windows (1.3 U to 0.5 U)	1.00	1.00	1.00	1.00	1	2
Existing	145	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	1.00	1.00	1.00	1.00	1	1
Existing	146	Ceiling Insulation R-0 to R-1.9 (R-11)	1.00	1.00	1.00	1.00	1	1
Existing	147	Ceiling Insulation R-1.9 to R-3.6 (R-20)	1.00	1.00	1.00	1.00	1	1
Existing	148	Wall Insulation R-0 to R-2.3 (R-13)	1.00	1.00	1.00	1.00	1	1
Existing	149	Floor Insulation R-0 to R-1.5 (R-11)	1.00	1.00	1.00	1.00	1	1
Existing	150	Infiltration Reduction	1.00	1.00	1.00	1.00	1	1
Existing	151	6.5 kW Inbuilt Gas Fire	1.00	1.00	1.00	1.00	1	2
Existing	152	6.5 kW Inbuilt Propane Fire	1.00	1.00	1.00	1.00	1	2
Existing	170	Base Electric Resistance Heating CZ 3, Homes with electric as primary heating	1.00	1.00	1.00	1.00	1	2
Existing	171	Heat Pump Space Heater	1.00	1.00	1.00	1.00	1	2
Existing	172	High Efficiency Heat pump	1.00	1.00	1.00	1.00	1	2
Existing	173	Geothermal Heat Pump	1.00	1.00	1.00	1.00	1	2
Existing	174	Dual-Pane Windows (1.3 U to 0.5 U)	1.00	1.00	1.00	1.00	1	2
Existing	175	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	1.00	1.00	1.00	1.00	1	1
Existing	176	Ceiling Insulation R-0 to R-1.9 (R-11)	1.00	1.00	1.00	1.00	1	1
Existing	177	Ceiling Insulation R-1.9 to R-3.6 (R-20)	1.00	1.00	1.00	1.00	1	1
Existing	178	Wall Insulation R-0 to R-2.3 (R-13)	1.00	1.00	1.00	1.00	1	1
Existing	179	Floor Insulation R-0 to R-1.5 (R-11)	1.00	1.00	1.00	1.00	1	1
Existing	180	Infiltration Reduction	1.00	1.00	1.00	1.00	1	1
Existing	181	6.5 kW Inbuilt Gas Fire	1.00	1.00	1.00	1.00	1	2
Existing	182	6.5 kW Inbuilt Propane Fire	1.00	1.00	1.00	1.00	1	2
Existing	200	Base 180 Litre Low Pressure Water Heating	1.00	1.00	1.00	1.00	2	2
Existing	201	Heat Pump Water Heater	1.00	1.00	1.00	1.00	2	2
Existing	202	HE Water Heater	1.00	1.00	1.00	1.00	2	2
Existing	203	Solar Water Heat	1.00	1.00	1.00	1.00	2	1
Existing	204	Low Flow Showerhead	1.00	1.00	1.00	1.00	2	1

RESIDENTIAL

MEASURE COSTS							NPV of				Full = 1				
					Unit	Unit	Lifetime	Implementation	Cost Units		Incr. = 0		Full		
			Savings	Cost	Equipment	Labor	O & M	Cost	per Savings	Service	Initial	Replace	Unit	Relative Energy Reduction	
Segment	Measure #	Measure Description	Units	Units	Cost	Cost	Cost	Factor	Unit	Life	Cost	Cost	Cost	WP	WPP
Existing	205	Faucent Aerators	unit	unit	$21.97	$17.31		$39.28	1	10	1	1	$39.28	1.00	1.00
Existing	206	Pipe Wrap	unit	linear meter	$6.00	$1.42		$7.42	1	13	1	1	$7.42	1.00	1.00
Existing	207	Water Heater Blanket	unit	unit	$50.00	$17.31		$67.31	1	13	1	1	$67.31	1.00	1.00
Existing	208	Switch from Elec to NG DHW	unit	home	$2,162.00		$4,367	$2,162.00	1	13	0	0	$6,529.00	1.00	1.00
Existing	209	Switch from Elec to LPG DHW	unit	home	$2,162.00		$3,666	$2,162.00	1	13	0	0	$5,828.00	1.00	1.00
Existing	210	Instant-on DHW (NG)	unit	home	$2,649.00		$4,541	$2,649.00	1	20	0	0	$7,190.00	1.00	1.00
Existing	211	Instant-on DHW (LPG)	unit	home	$2,649.00		$3,760	$2,649.00	1	20	0	0	$6,409.00	1.00	1.00
Existing	300	Base Lighting, 0-1.5 hrs/day	lamp	lamp	$1.00	$0.00		$1.00	1	1,000	1	1	$1.00	1.00	1.00
Existing	301	CFL, 0-1.5 hrs/day	lamp	lamp	$6.00	$0.00		$6.00	1	10,000	0	0	$6.00	1.00	1.00
Existing	310	Base Lighting, 1.5-2.5 hrs/day	lamp	lamp	$1.00	$0.00		$1.00	1	1,000	1	1	$1.00	1.00	1.00
Existing	311	CFL, 1.5-2.5 hrs/day	lamp	lamp	$6.00	$0.00		$6.00	1	10,000	0	0	$6.00	1.00	1.00
Existing	320	Base Lighting, >2.5 hrs/day	lamp	lamp	$1.00	$0.00		$1.00	1	1,000	1	1	$1.00	1.00	1.00
Existing	321	CFL, >2.5 hrs/day	lamp	lamp	$6.00	$0.00		$6.00	1	10,000	0	0	$6.00	1.00	1.00
Existing	330	Base 50W Halogen	lamp	lamp	$7.98	$0.00		$7.98	1	2,000	1	1	$7.98	1.00	1.00
Existing	331	High-efficiency Halogen (35 W)	lamp	lamp	$9.66	$0.00		$9.66	1	2,000	1	1	$9.66	1.00	1.00
Existing	400	Base Refrigerator/Freezer	home	unit	$1,478.00			$1,478.00	1	15	1	1	$1,478.00	1.00	1.00
Existing	401	HE Refrigerator/Freezer - Energy Star	home	unit	$1,779.00			$1,779.00	1	15	0	0	$1,779.00	1.00	1.00
Existing	402	Remove secondary refrigerator/freezer	home	unit	$369.50	$173.00		$542.50	1	7	1	1	$542.50	1.00	1.00
Existing	420	Base Refrigerator	home	unit	$1,500.00			$1,500.00	1	15	1	1	$1,500.00	1.00	1.00
Existing	421	HE Refrigerator - Energy Star	home	unit	$1,801.00			$1,801.00	1	15	0	0	$1,801.00	1.00	1.00
Existing	422	Remove secondary refrigerator	home	unit	$375.00	$173.00		$548.00	1	7	1	1	$548.00	1.00	1.00
Existing	450	Base Freezer	home	unit	$900.00			$900.00	1	15	1	1	$900.00	1.00	1.00
Existing	451	HE Freezer	home	unit	$1,201.00			$1,201.00	1	15	0	0	$1,201.00	1.00	1.00
Existing	500	Base Dishwasher	home	unit	$1,250.00			$1,250.00	1	13	1	1	$1,250.00	1.00	1.00
Existing	501	Energy Star Dishwasher	home	unit	$1,481.00			$1,481.00	1	13	0	0	$1,481.00	1.00	1.00
Existing	600	Base Electric Resistance Heating CZ 1, Homes with electric as secondary heating	home	home	$110.00			$110.00	1	12	1	1	$110.00	1.00	1.00
Existing	601	Heat Pump Space Heater	home	unit	$1,582.00	$900.00		$2,482.00	1	18	0	0	$2,482.00	1.00	1.00
Existing	602	High Efficiency Heat pump	home	unit	$1,786.00	$900.00		$2,686.00	1	18	0	0	$2,686.00	1.00	1.00
Existing	603	Geothermal Heat Pump	home	unit	$10,903.85			$10,903.85	1	18	0	0	$10,903.85	1.00	1.00
Existing	604	Dual-Pane Windows (1.3 U to 0.5 U)	home	home	$1,140.00			$1,140.00	1	40	1	1	$1,140.00	1.00	1.00
Existing	605	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	home	unit	$292.50	$113.00		$405.50	1	40	1	1	$405.50	1.00	1.00
Existing	606	Ceiling Insulation R-0 to R-1.9 (R-11)	home	square meter	$8.82			$8.82	1	20	1	1	$8.82	1.00	1.00
Existing	607	Ceiling Insulation R-1.9 to R-3.6 (R-20)	home	square meter	$10.98			$10.98	1	20	1	1	$10.98	1.00	1.00
Existing	608	Wall Insulation R-0 to R-2.3 (R-13)	home	square meter	$15.98			$15.98	1	20	1	1	$15.98	1.00	1.00
Existing	609	Floor Insulation R-0 to R-1.5 (R-11)	home	square meter	$15.74			$15.74	1	20	1	1	$15.74	1.00	1.00
Existing	610	Infiltration Reduction	home	home	$244.90			$244.90	1	10	1	1	$244.90	1.00	1.00
Existing	611	6.5 kW Inbuilt Gas Fire	home	unit	$3,309.00		$2,083	$3,309.00	1	18	1	1	$5,392.00	1.00	1.00
Existing	612	6.5 kW Inbuilt Propane Fire	home	unit	$3,309.00		$1,718	$3,309.00	1	18	1	1	$5,027.00	1.00	1.00
Existing	640	Base Electric Resistance Heating CZ 2, Homes with electric as secondary heating	home	home	$130.00			$130.00	1	12	1	1	$130.00	1.00	1.00
Existing	641	Heat Pump Space Heater	home	unit	$1,582.00	$900.00		$2,482.00	1	18	0	0	$2,482.00	1.00	1.00
Existing	642	High Efficiency Heat pump	home	unit	$1,786.00	$900.00		$2,686.00	1	18	0	0	$2,686.00	1.00	1.00
Existing	643	Geothermal Heat Pump	home	unit	$10,903.85			$10,903.85	1	18	0	0	$10,903.85	1.00	1.00
Existing	644	Dual-Pane Windows (1.3 U to 0.5 U)	home	home	$1,140.00			$1,140.00	1	40	1	1	$1,140.00	1.00	1.00
Existing	645	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	home	unit	$292.50	$113.00		$405.50	1	40	1	1	$405.50	1.00	1.00
Existing	646	Ceiling Insulation R-0 to R-1.9 (R-11)	home	square meter	$8.82			$8.82	1	20	1	1	$8.82	1.00	1.00
Existing	647	Ceiling Insulation R-1.9 to R-3.6 (R-20)	home	square meter	$10.98			$10.98	1	20	1	1	$10.98	1.00	1.00

RESIDENTIAL

MEASURE COSTS			Factors					Implementation Type 1=1 time
Segment	Measure #	Measure Description	WOP	SP	SPP	SOP	End Use	2=ROB
Existing	205	Faucent Aerators	1.00	1.00	1.00	1.00	2	1
Existing	206	Pipe Wrap	1.00	1.00	1.00	1.00	2	1
Existing	207	Water Heater Blanket	1.00	1.00	1.00	1.00	2	1
Existing	208	Switch from Elec to NG DHW	1.00	1.00	1.00	1.00	2	2
Existing	209	Switch from Elec to LPG DHW	1.00	1.00	1.00	1.00	2	2
Existing	210	Instant-on DHW (NG)	1.00	1.00	1.00	1.00	2	2
Existing	211	Instant-on DHW (LPG)	1.00	1.00	1.00	1.00	2	2
Existing	300	Base Lighting, 0-1.5 hrs/day	1.00	1.00	1.00	1.00	3	1
Existing	301	CFL, 0-1.5 hrs/day	1.00	1.00	1.00	1.00	3	1
Existing	310	Base Lighting, 1.5-2.5 hrs/day	1.00	1.00	1.00	1.00	3	1
Existing	311	CFL, 1.5-2.5 hrs/day	1.00	1.00	1.00	1.00	3	1
Existing	320	Base Lighting, >2.5 hrs/day	1.00	1.00	1.00	1.00	3	1
Existing	321	CFL, >2.5 hrs/day	1.00	1.00	1.00	1.00	3	1
Existing	330	Base 50W Halogen	1.00	1.00	1.00	1.00	3	1
Existing	331	High-efficiency Halogen (35 W)	1.00	1.00	1.00	1.00	3	1
Existing	400	Base Refrigerator/Freezer	1.00	1.00	1.00	1.00	4	2
Existing	401	HE Refrigerator/Freezer - Energy Star	1.00	1.00	1.00	1.00	4	2
Existing	402	Remove secondary refrigerator/freezer	1.00	1.00	1.00	1.00	4	1
Existing	420	Base Refrigerator	1.00	1.00	1.00	1.00	4	2
Existing	421	HE Refrigerator - Energy Star	1.00	1.00	1.00	1.00	4	2
Existing	422	Remove secondary refrigerator	1.00	1.00	1.00	1.00	4	1
Existing	450	Base Freezer	1.00	1.00	1.00	1.00	4	2
Existing	451	HE Freezer	1.00	1.00	1.00	1.00	4	2
Existing	500	Base Dishwasher	1.00	1.00	1.00	1.00	5	2
Existing	501	Energy Star Dishwasher	1.00	1.00	1.00	1.00	5	2
Existing	600	Base Electric Resistance Heating CZ 1, Homes with electric as secondary heating	1.00	1.00	1.00	1.00	1	2
Existing	601	Heat Pump Space Heater	1.00	1.00	1.00	1.00	1	2
Existing	602	High Efficiency Heat pump	1.00	1.00	1.00	1.00	1	2
Existing	603	Geothermal Heat Pump	1.00	1.00	1.00	1.00	1	2
Existing	604	Dual-Pane Windows (1.3 U to 0.5 U)	1.00	1.00	1.00	1.00	1	2
Existing	605	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	1.00	1.00	1.00	1.00	1	1
Existing	606	Ceiling Insulation R-0 to R-1.9 (R-11)	1.00	1.00	1.00	1.00	1	1
Existing	607	Ceiling Insulation R-1.9 to R-3.6 (R-20)	1.00	1.00	1.00	1.00	1	1
Existing	608	Wall Insulation R-0 to R-2.3 (R-13)	1.00	1.00	1.00	1.00	1	1
Existing	609	Floor Insulation R-0 to R-1.5 (R-11)	1.00	1.00	1.00	1.00	1	1
Existing	610	Infiltration Reduction	1.00	1.00	1.00	1.00	1	1
Existing	611	6.5 kW Inbuilt Gas Fire	1.00	1.00	1.00	1.00	1	2
Existing	612	6.5 kW Inbuilt Propane Fire	1.00	1.00	1.00	1.00	1	2
Existing	640	Base Electric Resistance Heating CZ 2, Homes with electric as secondary heating	1.00	1.00	1.00	1.00	1	2
Existing	641	Heat Pump Space Heater	1.00	1.00	1.00	1.00	1	2
Existing	642	High Efficiency Heat pump	1.00	1.00	1.00	1.00	1	2
Existing	643	Geothermal Heat Pump	1.00	1.00	1.00	1.00	1	2
Existing	644	Dual-Pane Windows (1.3 U to 0.5 U)	1.00	1.00	1.00	1.00	1	2
Existing	645	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	1.00	1.00	1.00	1.00	1	1
Existing	646	Ceiling Insulation R-0 to R-1.9 (R-11)	1.00	1.00	1.00	1.00	1	1
Existing	647	Ceiling Insulation R-1.9 to R-3.6 (R-20)	1.00	1.00	1.00	1.00	1	1

RESIDENTIAL

MEASURE COSTS								NPV of				Full = 1				
					Unit	Unit	Lifetime	Implementation	Cost Units			Incr. = 0		Full		
			Savings	Cost	Equipment	Labor	O & M	Cost	per Savings	Service	Initial	Replace	Unit	Relative Energy Reduction	
Segment	Measure #	Measure Description	Units	Units	Cost	Cost	Cost	Factor	Unit	Life	Cost	Cost	Cost	WP	WPP
Existing	648	Wall Insulation R-0 to R-2.3 (R-13)	home	square meter	$15.98			$15.98	1	20	1	1	$15.98	1.00	1.00
Existing	649	Floor Insulation R-0 to R-1.5 (R-11)	home	square meter	$15.74			$15.74	1	20	1	1	$15.74	1.00	1.00
Existing	650	Infiltration Reduction	home	home	$244.90			$244.90	1	10	1	1	$244.90	1.00	1.00
Existing	651	6.5 kW Inbuilt Gas Fire	home	unit	$3,309.00		$2,185	$3,309.00	1	18	0	0	$5,494.00	1.00	1.00
Existing	652	6.5 kW Inbuilt Propane Fire	home	unit	$3,309.00		$1,805	$3,309.00	1	18	0	0	$5,114.00	1.00	1.00
Existing	670	Base Electric Resistance Heating CZ 3, Homes with electric as secondary heating	home	home	$170.00			$170.00	1	12	1	1	$170.00	1.00	1.00
Existing	671	Heat Pump Space Heater	home	unit	$1,582.00	$900.00		$2,482.00	1	18	0	0	$2,482.00	1.00	1.00
Existing	672	High Efficiency Heat pump	home	unit	$1,786.00	$900.00		$2,686.00	1	18	0	0	$2,686.00	1.00	1.00
Existing	673	Geothermal Heat Pump	home	unit	$10,903.85			$10,903.85	1	18	0	0	$10,903.85	1.00	1.00
Existing	674	Dual-Pane Windows (1.3 U to 0.5 U)	home	home	$1,140.00			$1,140.00	1	40	1	1	$1,140.00	1.00	1.00
Existing	675	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	home	unit	$292.50	$113.00		$405.50	1	40	1	1	$405.50	1.00	1.00
Existing	676	Ceiling Insulation R-0 to R-1.9 (R-11)	home	square meter	$8.82			$8.82	1	20	1	1	$8.82	1.00	1.00
Existing	677	Ceiling Insulation R-1.9 to R-3.6 (R-20)	home	square meter	$10.98			$10.98	1	20	1	1	$10.98	1.00	1.00
Existing	678	Wall Insulation R-0 to R-2.3 (R-13)	home	square meter	$15.98			$15.98	1	20	1	1	$15.98	1.00	1.00
Existing	679	Floor Insulation R-0 to R-1.5 (R-11)	home	square meter	$15.74			$15.74	1	20	1	1	$15.74	1.00	1.00
Existing	680	Infiltration Reduction	home	home	$244.90			$244.90	1	10	1	1	$244.90	1.00	1.00
Existing	681	6.5 kW Inbuilt Gas Fire	home	unit	$3,309.00		$2,277	$3,309.00	1	18	0	0	$5,586.00	1.00	1.00
Existing	682	6.5 kW Inbuilt Propane Fire	home	unit	$3,309.00		$1,886	$3,309.00	1	18	0	0	$5,195.00	1.00	1.00
Existing	700	Base Cooking	home	unit	$924.00	$0.00		$924.00	1	15	1	1	$924.00	1.00	1.00
Existing	701	Switch from electric to NG cooking equipment	home	home	$1,009.00		$639	$1,009.00	1	15	0	0	$1,648.00	1.00	1.00
Existing	702	Switch from electric to LPG cooking equipment	home	home	$1,009.00		$539	$1,009.00	1	15	0	0	$1,548.00	1.00	1.00
Existing	800	Base Clothes Drying	home	unit	$750.00	$0.00		$750.00	1	15	1	1	$750.00	1.00	1.00
Existing	900	Base Heated Towel Rail	home	unit	$100.00			$100.00	1	12	1	1	$100.00	1.00	1.00
Existing	901	Towel Rail Timer	home	unit	$34.62			$34.62	1	12	1	1	$34.62	1.00	1.00
Existing	920	Base Miscellaneous	home	unit	$0.00	$0.00		$0.00	1	15	1	1	$0.00	1.00	1.00
Existing	921	Xmisc	home	unit	$0.00	$0.00		$0.00	1	15	1	1	$0.00	1.00	1.00
New	100	Base Electric Resistance Heating CZ 1	home	Unit	$300.00	$300.00		$600.00	1	18	1	1	$600.00	1.00	1.00
New	101	Heat Pump Space Heater	home	unit	$1,582.00	$900.00		$2,482.00	1	18	0	0	$2,482.00	1.00	1.00
New	102	High Efficiency Heat pump	home	unit	$1,786.00	$900.00		$2,686.00	1	18	0	0	$2,686.00	1.00	1.00
New	103	High Performance Windows (single-glazed AL to dual AL)	home	home	$1,771.00			$1,771.00	1	40	1	1	$1,771.00	1.00	1.00
New	104	High Performance Windows (single-glazed AL to dual vinyl)	home	home	$6,346.00			$6,346.00	1	40	1	1	$6,346.00	1.00	1.00
New	105	High Performance Windows (Dual-pane AL to dual vinyl)	home	home	$1,328.00			$1,328.00	1	40	1	1	$1,328.00	1.00	1.00
New	106	Ceiling Insulation R-2.6 to R-3.2	home	home	$393.00			$393.00	1	20	1	1	$393.00	1.00	1.00
New	107	Ceiling Insulation R-3.2 to R-3.6	home	home	$242.00			$242.00	1	20	1	1	$242.00	1.00	1.00
New	108	Ceiling Insulation R-2.6 to R-3.6	home	home	$635.00			$635.00	1	20	1	1	$635.00	1.00	1.00
New	109	Wall insulation upgrade (increase from 1.8 to 2.2)	home	home	$176.00			$176.00	1	20	1	1	$176.00	1.00	1.00
New	110	Wall insulation upgrade (increase from 2.2 to 2.6)	home	home	$525.00			$525.00	1	20	1	1	$525.00	1.00	1.00
New	111	Wall insulation upgrade (increase from 1.8 to 2.6)	home	home	$701.00			$701.00	1	20	1	1	$701.00	1.00	1.00
New	112	Slab Insulation (50 mm polystyrene)	home	home	$1,745.00			$1,745.00	1	20	1	1	$1,745.00	1.00	1.00
New	113	Slab Insulation perimeter	home	home	$160.00			$160.00	1	20	1	1	$160.00	1.00	1.00
New	114	Floor Insulation (foil to polystyrene)	home	home	$1,015.00			$1,015.00	1	20	1	1	$1,015.00	1.00	1.00
New	115	6.5 kW Inbuilt Gas Fire	home	unit	$3,309.00		$3,099	$3,309.00	1	18	0	0	$6,408.00	1.00	1.00
New	116	6.5 kW Inbuilt Propane Fire	home	unit	$3,309.00		$2,614	$3,309.00	1	18	0	0	$5,923.00	1.00	1.00
New	117	Base Electric Resistance Heating CZ 2	home	Unit	$300.00	$300.00		$600.00	1	18	1	1	$600.00	1.00	1.00
New	118	Heat Pump Space Heater	home	unit	$1,582.00	$900.00		$2,482.00	1	18	0	0	$2,482.00	1.00	1.00

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MEASURE COSTS			Factors					Implementation Type 1=1 time
Segment	Measure #	Measure Description	WOP	SP	SPP	SOP	End Use	2=ROB
Existing	648	Wall Insulation R-0 to R-2.3 (R-13)	1.00	1.00	1.00	1.00	1	1
Existing	649	Floor Insulation R-0 to R-1.5 (R-11)	1.00	1.00	1.00	1.00	1	1
Existing	650	Infiltration Reduction	1.00	1.00	1.00	1.00	1	1
Existing	651	6.5 kW Inbuilt Gas Fire	1.00	1.00	1.00	1.00	1	2
Existing	652	6.5 kW Inbuilt Propane Fire	1.00	1.00	1.00	1.00	1	2
Existing	670	Base Electric Resistance Heating CZ 3, Homes with electric as secondary heating	1.00	1.00	1.00	1.00	1	2
Existing	671	Heat Pump Space Heater	1.00	1.00	1.00	1.00	1	2
Existing	672	High Efficiency Heat pump	1.00	1.00	1.00	1.00	1	2
Existing	673	Geothermal Heat Pump	1.00	1.00	1.00	1.00	1	2
Existing	674	Dual-Pane Windows (1.3 U to 0.5 U)	1.00	1.00	1.00	1.00	1	2
Existing	675	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	1.00	1.00	1.00	1.00	1	1
Existing	676	Ceiling Insulation R-0 to R-1.9 (R-11)	1.00	1.00	1.00	1.00	1	1
Existing	677	Ceiling Insulation R-1.9 to R-3.6 (R-20)	1.00	1.00	1.00	1.00	1	1
Existing	678	Wall Insulation R-0 to R-2.3 (R-13)	1.00	1.00	1.00	1.00	1	1
Existing	679	Floor Insulation R-0 to R-1.5 (R-11)	1.00	1.00	1.00	1.00	1	1
Existing	680	Infiltration Reduction	1.00	1.00	1.00	1.00	1	1
Existing	681	6.5 kW Inbuilt Gas Fire	1.00	1.00	1.00	1.00	1	2
Existing	682	6.5 kW Inbuilt Propane Fire	1.00	1.00	1.00	1.00	1	2
Existing	700	Base Cooking	1.00	1.00	1.00	1.00	6	2
Existing	701	Switch from electric to NG cooking equipment	1.00	1.00	1.00	1.00	6	1
Existing	702	Switch from electric to LPG cooking equipment	1.00	1.00	1.00	1.00	6	1
Existing	800	Base Clothes Drying	1.00	1.00	1.00	1.00	7	2
Existing	900	Base Heated Towel Rail	1.00	1.00	1.00	1.00	8	1
Existing	901	Towel Rail Timer	1.00	1.00	1.00	1.00	8	1
Existing	920	Base Miscellaneous	1.00	1.00	1.00	1.00	9	2
Existing	921	Xmisc	1.00	1.00	1.00	1.00	9	2
New	100	Base Electric Resistance Heating CZ 1	1.00	1.00	1.00	1.00	1	1
New	101	Heat Pump Space Heater	1.00	1.00	1.00	1.00	1	1
New	102	High Efficiency Heat pump	1.00	1.00	1.00	1.00	1	1
New	103	High Performance Windows (single-glazed AL to dual AL)	1.00	1.00	1.00	1.00	1	1
New	104	High Performance Windows (single-glazed AL to dual vinyl)	1.00	1.00	1.00	1.00	1	1
New	105	High Performance Windows (Dual-pane AL to dual vinyl)	1.00	1.00	1.00	1.00	1	1
New	106	Ceiling Insulation R-2.6 to R-3.2	1.00	1.00	1.00	1.00	1	1
New	107	Ceiling Insulation R-3.2 to R-3.6	1.00	1.00	1.00	1.00	1	1
New	108	Ceiling Insulation R-2.6 to R-3.6	1.00	1.00	1.00	1.00	1	1
New	109	Wall insulation upgrade (increase from 1.8 to 2.2)	1.00	1.00	1.00	1.00	1	1
New	110	Wall insulation upgrade (increase from 2.2 to 2.6)	1.00	1.00	1.00	1.00	1	1
New	111	Wall insulation upgrade (increase from 1.8 to 2.6)	1.00	1.00	1.00	1.00	1	1
New	112	Slab Insulation (50 mm polystyrene)	1.00	1.00	1.00	1.00	1	1
New	113	Slab Insulation perimeter	1.00	1.00	1.00	1.00	1	1
New	114	Floor Insulation (foil to polystyrene)	1.00	1.00	1.00	1.00	1	1
New	115	6.5 kW Inbuilt Gas Fire	1.00	1.00	1.00	1.00	1	1
New	116	6.5 kW Inbuilt Propane Fire	1.00	1.00	1.00	1.00	1	1
New	117	Base Electric Resistance Heating CZ 2	1.00	1.00	1.00	1.00	1	1
New	118	Heat Pump Space Heater	1.00	1.00	1.00	1.00	1	1

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MEASURE COSTS								NPV of				Full = 1				
					Unit	Unit	Lifetime	Implementation	Cost Units			Incr. = 0		Full		
			Savings	Cost	Equipment	Labor	O & M	Cost	per Savings	Service	Initial	Replace	Unit	Relative Energy Reduction	
Segment	Measure #	Measure Description	Units	Units	Cost	Cost	Cost	Factor	Unit	Life	Cost	Cost	Cost	WP	WPP
New	119	High Efficiency Heat pump	home	unit	$1,786.00	$900.00		$2,686.00	1	18	0	0	$2,686.00	1.00	1.00
New	120	High Performance Windows (single-glazed AL to dual AL)	home	home	$1,771.00			$1,771.00	1	40	1	1	$1,771.00	1.00	1.00
New	121	High Performance Windows (single-glazed AL to dual vinyl)	home	home	$6,346.00			$6,346.00	1	40	1	1	$6,346.00	1.00	1.00
New	122	High Performance Windows (Dual-pane AL to dual vinyl)	home	home	$1,328.00			$1,328.00	1	40	1	1	$1,328.00	1.00	1.00
New	123	Ceiling Insulation R-2.6 to R-3.2	home	home	$393.00			$393.00	1	20	1	1	$393.00	1.00	1.00
New	124	Ceiling Insulation R-3.2 to R-3.6	home	home	$242.00			$242.00	1	20	1	1	$242.00	1.00	1.00
New	125	Ceiling Insulation R-2.6 to R-3.6	home	home	$635.00			$635.00	1	20	1	1	$635.00	1.00	1.00
New	126	Wall insulation upgrade (increase from 1.8 to 2.2)	home	home	$176.00			$176.00	1	20	1	1	$176.00	1.00	1.00
New	127	Wall insulation upgrade (increase from 2.2 to 2.6)	home	home	$525.00			$525.00	1	20	1	1	$525.00	1.00	1.00
New	128	Wall insulation upgrade (increase from 1.8 to 2.6)	home	home	$701.00			$701.00	1	20	1	1	$701.00	1.00	1.00
New	129	Slab Insulation (50 mm polystyrene)	home	home	$1,745.00			$1,745.00	1	20	1	1	$1,745.00	1.00	1.00
New	130	Slab Insulation perimeter	home	home	$160.00			$160.00	1	20	1	1	$160.00	1.00	1.00
New	131	Floor Insulation (foil to polystyrene)	home	home	$1,015.00			$1,015.00	1	20	1	1	$1,015.00	1.00	1.00
New	132	6.5 kW Inbuilt Gas Fire	home	unit	$3,309.00		$3,222	$3,309.00	1	18	1	1	$6,531.00	1.00	1.00
New	133	6.5 kW Inbuilt Propane Fire	home	unit	$3,309.00		$2,724	$3,309.00	1	18	1	1	$6,033.00	1.00	1.00
New	134	Base Electric Resistance Heating CZ 3	home	Unit	$300.00	$300.00		$600.00	1	18	1	1	$600.00	1.00	1.00
New	135	Heat Pump Space Heater	home	unit	$1,582.00	$900.00		$2,482.00	1	18	0	0	$2,482.00	1.00	1.00
New	136	High Efficiency Heat pump	home	unit	$1,786.00	$900.00		$2,686.00	1	18	0	0	$2,686.00	1.00	1.00
New	137	High Performance Windows (single-glazed AL to dual AL)	home	home	$1,771.00			$1,771.00	1	40	1	1	$1,771.00	1.00	1.00
New	138	High Performance Windows (single-glazed AL to dual vinyl)	home	home	$6,346.00			$6,346.00	1	40	1	1	$6,346.00	1.00	1.00
New	139	High Performance Windows (Dual-pane AL to dual vinyl)	home	home	$1,328.00			$1,328.00	1	40	1	1	$1,328.00	1.00	1.00
New	140	Ceiling Insulation R-2.6 to R-3.2	home	home	$393.00			$393.00	1	20	1	1	$393.00	1.00	1.00
New	141	Ceiling Insulation R-3.2 to R-3.6	home	home	$242.00			$242.00	1	20	1	1	$242.00	1.00	1.00
New	142	Ceiling Insulation R-2.6 to R-3.6	home	home	$635.00			$635.00	1	20	1	1	$635.00	1.00	1.00
New	143	Wall insulation upgrade (increase from 1.8 to 2.2)	home	home	$176.00			$176.00	1	20	1	1	$176.00	1.00	1.00
New	144	Wall insulation upgrade (increase from 2.2 to 2.6)	home	home	$525.00			$525.00	1	20	1	1	$525.00	1.00	1.00
New	145	Wall insulation upgrade (increase from 1.8 to 2.6)	home	home	$701.00			$701.00	1	20	1	1	$701.00	1.00	1.00
New	146	Slab Insulation (50 mm polystyrene)	home	home	$1,745.00			$1,745.00	1	20	1	1	$1,745.00	1.00	1.00
New	147	Slab Insulation perimeter	home	home	$160.00			$160.00	1	20	1	1	$160.00	1.00	1.00
New	148	Floor Insulation (foil to polystyrene)	home	home	$1,015.00			$1,015.00	1	20	1	1	$1,015.00	1.00	1.00
New	149	6.5 kW Inbuilt Gas Fire	home	unit	$3,309.00		$5,074	$3,309.00	1	18	0	0	$8,383.00	1.00	1.00
New	150	6.5 kW Inbuilt Propane Fire	home	unit	$3,309.00		$4,443	$3,309.00	1	18	0	0	$7,752.00	1.00	1.00
New	151	Base Heat Pump Space Heater CZ 1	home	unit	$1,582.00	$900.00		$2,482.00	1	18	1	1	$2,482.00	1.00	1.00
New	152	High Efficiency Heat pump	home	unit	$1,786.00	$900.00		$2,686.00	1	18	0	0	$2,686.00	1.00	1.00
New	153	High Performance Windows (single-glazed AL to dual AL)	home	home	$1,771.00			$1,771.00	1	40	1	1	$1,771.00	1.00	1.00
New	154	High Performance Windows (single-glazed AL to dual vinyl)	home	home	$6,346.00			$6,346.00	1	40	1	1	$6,346.00	1.00	1.00
New	155	High Performance Windows (Dual-pane AL to dual vinyl)	home	home	$1,328.00			$1,328.00	1	40	1	1	$1,328.00	1.00	1.00
New	156	Ceiling Insulation R-2.6 to R-3.2	home	home	$393.00			$393.00	1	20	1	1	$393.00	1.00	1.00
New	157	Ceiling Insulation R-3.2 to R-3.6	home	home	$242.00			$242.00	1	20	1	1	$242.00	1.00	1.00
New	158	Ceiling Insulation R-2.6 to R-3.6	home	home	$635.00			$635.00	1	20	1	1	$635.00	1.00	1.00
New	159	Wall insulation upgrade (increase from 1.8 to 2.2)	home	home	$176.00			$176.00	1	20	1	1	$176.00	1.00	1.00
New	160	Wall insulation upgrade (increase from 2.2 to 2.6)	home	home	$525.00			$525.00	1	20	1	1	$525.00	1.00	1.00

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MEASURE COSTS			Factors					Implementation Type 1=1 time
Segment	Measure #	Measure Description	WOP	SP	SPP	SOP	End Use	2=ROB
New	119	High Efficiency Heat pump	1.00	1.00	1.00	1.00	1	1
New	120	High Performance Windows (single-glazed AL to dual AL)	1.00	1.00	1.00	1.00	1	1
New	121	High Performance Windows (single-glazed AL to dual vinyl)	1.00	1.00	1.00	1.00	1	1
New	122	High Performance Windows (Dual-pane AL to dual vinyl)	1.00	1.00	1.00	1.00	1	1
New	123	Ceiling Insulation R-2.6 to R-3.2	1.00	1.00	1.00	1.00	1	1
New	124	Ceiling Insulation R-3.2 to R-3.6	1.00	1.00	1.00	1.00	1	1
New	125	Ceiling Insulation R-2.6 to R-3.6	1.00	1.00	1.00	1.00	1	1
New	126	Wall insulation upgrade (increase from 1.8 to 2.2)	1.00	1.00	1.00	1.00	1	1
New	127	Wall insulation upgrade (increase from 2.2 to 2.6)	1.00	1.00	1.00	1.00	1	1
New	128	Wall insulation upgrade (increase from 1.8 to 2.6)	1.00	1.00	1.00	1.00	1	1
New	129	Slab Insulation (50 mm polystyrene)	1.00	1.00	1.00	1.00	1	1
New	130	Slab Insulation perimeter	1.00	1.00	1.00	1.00	1	1
New	131	Floor Insulation (foil to polystyrene)	1.00	1.00	1.00	1.00	1	1
New	132	6.5 kW Inbuilt Gas Fire	1.00	1.00	1.00	1.00	1	1
New	133	6.5 kW Inbuilt Propane Fire	1.00	1.00	1.00	1.00	1	1
New	134	Base Electric Resistance Heating CZ 3	1.00	1.00	1.00	1.00	1	1
New	135	Heat Pump Space Heater	1.00	1.00	1.00	1.00	1	1
New	136	High Efficiency Heat pump	1.00	1.00	1.00	1.00	1	1
New	137	High Performance Windows (single-glazed AL to dual AL)	1.00	1.00	1.00	1.00	1	1
New	138	High Performance Windows (single-glazed AL to dual vinyl)	1.00	1.00	1.00	1.00	1	1
New	139	High Performance Windows (Dual-pane AL to dual vinyl)	1.00	1.00	1.00	1.00	1	1
New	140	Ceiling Insulation R-2.6 to R-3.2	1.00	1.00	1.00	1.00	1	1
New	141	Ceiling Insulation R-3.2 to R-3.6	1.00	1.00	1.00	1.00	1	1
New	142	Ceiling Insulation R-2.6 to R-3.6	1.00	1.00	1.00	1.00	1	1
New	143	Wall insulation upgrade (increase from 1.8 to 2.2)	1.00	1.00	1.00	1.00	1	1
New	144	Wall insulation upgrade (increase from 2.2 to 2.6)	1.00	1.00	1.00	1.00	1	1
New	145	Wall insulation upgrade (increase from 1.8 to 2.6)	1.00	1.00	1.00	1.00	1	1
New	146	Slab Insulation (50 mm polystyrene)	1.00	1.00	1.00	1.00	1	1
New	147	Slab Insulation perimeter	1.00	1.00	1.00	1.00	1	1
New	148	Floor Insulation (foil to polystyrene)	1.00	1.00	1.00	1.00	1	1
New	149	6.5 kW Inbuilt Gas Fire	1.00	1.00	1.00	1.00	1	1
New	150	6.5 kW Inbuilt Propane Fire	1.00	1.00	1.00	1.00	1	1
New	151	Base Heat Pump Space Heater CZ 1	1.00	1.00	1.00	1.00	1	1
New	152	High Efficiency Heat pump	1.00	1.00	1.00	1.00	1	1
New	153	High Performance Windows (single-glazed AL to dual AL)	1.00	1.00	1.00	1.00	1	1
New	154	High Performance Windows (single-glazed AL to dual vinyl)	1.00	1.00	1.00	1.00	1	1
New	155	High Performance Windows (Dual-pane AL to dual vinyl)	1.00	1.00	1.00	1.00	1	1
New	156	Ceiling Insulation R-2.6 to R-3.2	1.00	1.00	1.00	1.00	1	1
New	157	Ceiling Insulation R-3.2 to R-3.6	1.00	1.00	1.00	1.00	1	1
New	158	Ceiling Insulation R-2.6 to R-3.6	1.00	1.00	1.00	1.00	1	1
New	159	Wall insulation upgrade (increase from 1.8 to 2.2)	1.00	1.00	1.00	1.00	1	1
New	160	Wall insulation upgrade (increase from 2.2 to 2.6)	1.00	1.00	1.00	1.00	1	1

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MEASURE COSTS															
					Unit	Unit	NPV of Lifetime	Implementation	Cost Units		Full = 1 Incr. = 0		Full		
			Savings	Cost	Equipment	Labor	O & M	Cost	per Savings	Service	Initial	Replace	Unit	Relative Energy Reduction	
Segment	Measure #	Measure Description	Units	Units	Cost	Cost	Cost	Factor	Unit	Life	Cost	Cost	Cost	WP	WPP
New	161	Wall insulation upgrade (increase from 1.8 to 2.6)	home	home	$701.00			$701.00	1	20	1	1	$701.00	1.00	1.00
New	162	Slab Insulation (50 mm polystyrene)	home	home	$1,745.00			$1,745.00	1	20	1	1	$1,745.00	1.00	1.00
New	163	Slab Insulation perimeter	home	home	$160.00			$160.00	1	20	1	1	$160.00	1.00	1.00
New	164	Floor Insulation (foil to polystyrene)	home	home	$1,015.00			$1,015.00	1	20	1	1	$1,015.00	1.00	1.00
New	165	6.5 kW Inbuilt Gas Fire	home	unit	$3,309.00		$3,416	$3,309.00	1	18	0	0	$6,725.00	1.00	1.00
New	166	6.5 kW Inbuilt Propane Fire	home	unit	$3,309.00		$2,901	$3,309.00	1	18	0	0	$6,210.00	1.00	1.00
New	167	Base Heat Pump Space Heater CZ 2	home	unit	$1,582.00	$900.00		$2,482.00	1	18	1	1	$2,482.00	1.00	1.00
New	168	High Efficiency Heat pump	home	unit	$1,786.00	$900.00		$2,686.00	1	18	0	0	$2,686.00	1.00	1.00
New	169	High Performance Windows (single-glazed AL to dual AL)	home	home	$1,771.00			$1,771.00	1	40	1	1	$1,771.00	1.00	1.00
New	170	High Performance Windows (single-glazed AL to dual vinyl)	home	home	$6,346.00			$6,346.00	1	40	1	1	$6,346.00	1.00	1.00
New	171	High Performance Windows (Dual-pane AL to dual vinyl)	home	home	$1,328.00			$1,328.00	1	40	1	1	$1,328.00	1.00	1.00
New	172	Ceiling Insulation R-2.6 to R-3.2	home	home	$393.00			$393.00	1	20	1	1	$393.00	1.00	1.00
New	173	Ceiling Insulation R-3.2 to R-3.6	home	home	$242.00			$242.00	1	20	1	1	$242.00	1.00	1.00
New	174	Ceiling Insulation R-2.6 to R-3.6	home	home	$635.00			$635.00	1	20	1	1	$635.00	1.00	1.00
New	175	Wall insulation upgrade (increase from 1.8 to 2.2)	home	home	$176.00			$176.00	1	20	1	1	$176.00	1.00	1.00
New	176	Wall insulation upgrade (increase from 2.2 to 2.6)	home	home	$525.00			$525.00	1	20	1	1	$525.00	1.00	1.00
New	177	Wall insulation upgrade (increase from 1.8 to 2.6)	home	home	$701.00			$701.00	1	20	1	1	$701.00	1.00	1.00
New	178	Slab Insulation (50 mm polystyrene)	home	home	$1,745.00			$1,745.00	1	20	1	1	$1,745.00	1.00	1.00
New	179	Slab Insulation perimeter	home	home	$160.00			$160.00	1	20	1	1	$160.00	1.00	1.00
New	180	Floor Insulation (foil to polystyrene)	home	home	$1,015.00			$1,015.00	1	20	1	1	$1,015.00	1.00	1.00
New	181	6.5 kW Inbuilt Gas Fire	home	unit	$3,309.00		$3,551	$3,309.00	1	18	0	0	$6,860.00	1.00	1.00
New	182	6.5 kW Inbuilt Propane Fire	home	unit	$3,309.00		$3,023	$3,309.00	1	18	0	0	$6,332.00	1.00	1.00
New	183	Base Heat Pump Space Heater CZ 3	home	unit	$1,582.00	$900.00		$2,482.00	1	18	1	1	$2,482.00	1.00	1.00
New	184	High Efficiency Heat pump	home	unit	$1,786.00	$900.00		$2,686.00	1	18	0	0	$2,686.00	1.00	1.00
New	185	High Performance Windows (single-glazed AL to dual AL)	home	home	$1,771.00			$1,771.00	1	40	1	1	$1,771.00	1.00	1.00
New	186	High Performance Windows (single-glazed AL to dual vinyl)	home	home	$6,346.00			$6,346.00	1	40	1	1	$6,346.00	1.00	1.00
New	187	High Performance Windows (Dual-pane AL to dual vinyl)	home	home	$1,328.00			$1,328.00	1	40	1	1	$1,328.00	1.00	1.00
New	188	Ceiling Insulation R-2.6 to R-3.2	home	home	$393.00			$393.00	1	20	1	1	$393.00	1.00	1.00
New	189	Ceiling Insulation R-3.2 to R-3.6	home	home	$242.00			$242.00	1	20	1	1	$242.00	1.00	1.00
New	190	Ceiling Insulation R-2.6 to R-3.6	home	home	$635.00			$635.00	1	20	1	1	$635.00	1.00	1.00
New	191	Wall insulation upgrade (increase from 1.8 to 2.2)	home	home	$176.00			$176.00	1	20	1	1	$176.00	1.00	1.00
New	192	Wall insulation upgrade (increase from 2.2 to 2.6)	home	home	$525.00			$525.00	1	20	1	1	$525.00	1.00	1.00
New	193	Wall insulation upgrade (increase from 1.8 to 2.6)	home	home	$701.00			$701.00	1	20	1	1	$701.00	1.00	1.00
New	194	Slab Insulation (50 mm polystyrene)	home	home	$1,745.00			$1,745.00	1	20	1	1	$1,745.00	1.00	1.00
New	195	Slab Insulation perimeter	home	home	$160.00			$160.00	1	20	1	1	$160.00	1.00	1.00
New	196	Floor Insulation (foil to polystyrene)	home	home	$1,015.00			$1,015.00	1	20	1	1	$1,015.00	1.00	1.00
New	197	6.5 kW Inbuilt Gas Fire	home	unit	$3,309.00		$5,581	$3,309.00	1	18	0	0	$8,890.00	1.00	1.00
New	198	6.5 kW Inbuilt Propane Fire	home	unit	$3,309.00		$4,928	$3,309.00	1	18	0	0	$8,237.00	1.00	1.00
New	200	Base 180 Litre Mains Pressure Water Heating	home	home	$1,248.00	$0.00		$1,248.00	1	13	1	1	$1,248.00	1.00	1.00
New	202	HE Water Heater (0.90 to 0.94 EF)	home	home	$125.00			$125.00	1	13	1	1	$125.00	1.00	1.00
New	203	Solar Water Heat	home	home	$5,000.00			$5,000.00	1	13	1	1	$5,000.00	1.00	1.00
New	204	Low Flow Showerhead	home	unit	$37.95	$17.31		$55.25	1	10	1	1	$55.25	1.00	1.00
New	205	Faucent Aerators	home	unit	$21.97	$17.31		$39.28	1	10	1	1	$39.28	1.00	1.00
New	206	Pipe Wrap	home	linear meter	$6.00	$1.42		$7.42	1	13	1	1	$7.42	1.00	1.00

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MEASURE COSTS			Factors					Implementation Type 1=1 time
Segment	Measure #	Measure Description	WOP	SP	SPP	SOP	End Use	2=ROB
New	161	Wall insulation upgrade (increase from 1.8 to 2.6)	1.00	1.00	1.00	1.00	1	1
New	162	Slab Insulation (50 mm polystyrene)	1.00	1.00	1.00	1.00	1	1
New	163	Slab Insulation perimeter	1.00	1.00	1.00	1.00	1	1
New	164	Floor Insulation (foil to polystyrene)	1.00	1.00	1.00	1.00	1	1
New	165	6.5 kW Inbuilt Gas Fire	1.00	1.00	1.00	1.00	1	1
New	166	6.5 kW Inbuilt Propane Fire	1.00	1.00	1.00	1.00	1	1
New	167	Base Heat Pump Space Heater CZ 2	1.00	1.00	1.00	1.00	1	1
New	168	High Efficiency Heat pump	1.00	1.00	1.00	1.00	1	1
New	169	High Performance Windows (single-glazed AL to dual AL)	1.00	1.00	1.00	1.00	1	1
New	170	High Performance Windows (single-glazed AL to dual vinyl)	1.00	1.00	1.00	1.00	1	1
New	171	High Performance Windows (Dual-pane AL to dual vinyl)	1.00	1.00	1.00	1.00	1	1
New	172	Ceiling Insulation R-2.6 to R-3.2	1.00	1.00	1.00	1.00	1	1
New	173	Ceiling Insulation R-3.2 to R-3.6	1.00	1.00	1.00	1.00	1	1
New	174	Ceiling Insulation R-2.6 to R-3.6	1.00	1.00	1.00	1.00	1	1
New	175	Wall insulation upgrade (increase from 1.8 to 2.2)	1.00	1.00	1.00	1.00	1	1
New	176	Wall insulation upgrade (increase from 2.2 to 2.6)	1.00	1.00	1.00	1.00	1	1
New	177	Wall insulation upgrade (increase from 1.8 to 2.6)	1.00	1.00	1.00	1.00	1	1
New	178	Slab Insulation (50 mm polystyrene)	1.00	1.00	1.00	1.00	1	1
New	179	Slab Insulation perimeter	1.00	1.00	1.00	1.00	1	1
New	180	Floor Insulation (foil to polystyrene)	1.00	1.00	1.00	1.00	1	1
New	181	6.5 kW Inbuilt Gas Fire	1.00	1.00	1.00	1.00	1	1
New	182	6.5 kW Inbuilt Propane Fire	1.00	1.00	1.00	1.00	1	1
New	183	Base Heat Pump Space Heater CZ 3	1.00	1.00	1.00	1.00	1	1
New	184	High Efficiency Heat pump	1.00	1.00	1.00	1.00	1	1
New	185	High Performance Windows (single-glazed AL to dual AL)	1.00	1.00	1.00	1.00	1	1
New	186	High Performance Windows (single-glazed AL to dual vinyl)	1.00	1.00	1.00	1.00	1	1
New	187	High Performance Windows (Dual-pane AL to dual vinyl)	1.00	1.00	1.00	1.00	1	1
New	188	Ceiling Insulation R-2.6 to R-3.2	1.00	1.00	1.00	1.00	1	1
New	189	Ceiling Insulation R-3.2 to R-3.6	1.00	1.00	1.00	1.00	1	1
New	190	Ceiling Insulation R-2.6 to R-3.6	1.00	1.00	1.00	1.00	1	1
New	191	Wall insulation upgrade (increase from 1.8 to 2.2)	1.00	1.00	1.00	1.00	1	1
New	192	Wall insulation upgrade (increase from 2.2 to 2.6)	1.00	1.00	1.00	1.00	1	1
New	193	Wall insulation upgrade (increase from 1.8 to 2.6)	1.00	1.00	1.00	1.00	1	1
New	194	Slab Insulation (50 mm polystyrene)	1.00	1.00	1.00	1.00	1	1
New	195	Slab Insulation perimeter	1.00	1.00	1.00	1.00	1	1
New	196	Floor Insulation (foil to polystyrene)	1.00	1.00	1.00	1.00	1	1
New	197	6.5 kW Inbuilt Gas Fire	1.00	1.00	1.00	1.00	1	1
New	198	6.5 kW Inbuilt Propane Fire	1.00	1.00	1.00	1.00	1	1
New	200	Base 180 Litre Mains Pressure Water Heating	1.00	1.00	1.00	1.00	2	1
New	202	HE Water Heater (0.90 to 0.94 EF)	1.00	1.00	1.00	1.00	2	1
New	203	Solar Water Heat	1.00	1.00	1.00	1.00	2	1
New	204	Low Flow Showerhead	1.00	1.00	1.00	1.00	2	1
New	205	Faucent Aerators	1.00	1.00	1.00	1.00	2	1
New	206	Pipe Wrap	1.00	1.00	1.00	1.00	2	1

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MEASURE COSTS								NPV of				Full = 1				
					Unit	Unit	Lifetime	Implementation	Cost Units			Incr. = 0		Full		
			Savings	Cost	Equipment	Labor	O & M	Cost	per Savings	Service	Initial	Replace	Unit	Relative Energy Reduction	
Segment	Measure #	Measure Description	Units	Units	Cost	Cost	Cost	Factor	Unit	Life	Cost	Cost	Cost	WP	WPP
New	207	Water Heater Blanket	home	home	$100.00			$100.00	1	13	1	1	$100.00	1.00	1.00
New	208	Switch from Elec to NG DHW	home	home	$1,962.00		$4,367	$1,962.00	1	13	0	1	$6,329.00	1.00	1.00
New	209	Switch from Elec to LPG DHW	home	home	$1,962.00		$3,666	$1,962.00	1	13	0	1	$5,628.00	1.00	1.00
New	210	Instant-on DHW (NG)	home	home	$2,449.00		$4,541	$2,449.00	1	20	0	0	$6,990.00	1.00	1.00
New	211	Instant-on DHW (LPG)	home	home	$2,449.00		$3,760	$2,449.00	1	20	0	0	$6,209.00	1.00	1.00
New	300	Base Lighting, 0-1.5 hrs/day	lamp	lamp	$1.00	$0.00		$1.00	1	1,000	1	1	$1.00	1.00	1.00
New	301	CFL, 0-1.5 hrs/day	lamp	lamp	$6.00	$0.00		$6.00	1	10,000	0	0	$6.00	1.00	1.00
New	310	Base Lighting, 1.5-2.5 hrs/day	lamp	lamp	$1.00	$0.00		$1.00	1	1,000	1	1	$1.00	1.00	1.00
New	311	CFL, 1.5-2.5 hrs/day	lamp	lamp	$6.00	$0.00		$6.00	1	10,000	0	0	$6.00	1.00	1.00
New	320	Base Lighting, >2.5 hrs/day	lamp	lamp	$1.00	$0.00		$1.00	1	1,000	1	1	$1.00	1.00	1.00
New	321	CFL, >2.5 hrs/day	lamp	lamp	$6.00	$0.00		$6.00	1	10,000	0	0	$6.00	1.00	1.00
New	330	Base 50W Halogen	lamp	lamp	$7.98	$0.00		$7.98	1	2,000	1	1	$7.98	1.00	1.00
New	331	High-efficiency Halogen (35 W)	lamp	lamp	$9.66	$0.00		$9.66	1	2,000	0	0	$9.66	1.00	1.00
New	400	Base Refrigerator/Freezer	home	home	$1,478.00			$1,478.00	1	15	1	1	$1,478.00	1.00	1.00
New	420	Base Refrigerator	home	unit	$1,500.00			$1,500.00	1	15	1	1	$1,500.00	1.00	1.00
New	450	Base Freezer	home	unit	$900.00			$900.00	1	15	1	1	$900.00	1.00	1.00
New	500	Base Dishwasher	home	home	$1,250.00			$1,250.00	1	13	1	1	$1,250.00	1.00	1.00
New	700	Base Cooking	home	home	$924.00	$0.00		$924.00	1	15	1	1	$924.00	1.00	1.00
New	701	Switch from electric to NG cooking equipment	home	home	$1,009.00		$639	$1,009.00	1	15	0	0	$1,648.00	1.00	1.00
New	702	Switch from electric to LPG cooking equipment	home	home	$1,009.00		$539	$1,009.00	1	15	0	0	$1,548.00	1.00	1.00
New	800	Base Clothes Drying	home	home	$750.00	$0.00		$750.00	1	15	1	1	$750.00	1.00	1.00
New	900	Base Heated Towel Rail	home	unit	$100.00			$100.00	1	12	1	1	$100.00	1.00	1.00
New	901	Towel Rail Timer	home	unit	$34.62			$34.62	1	12	1	1	$34.62	1.00	1.00
New	920	Base Miscellaneous	home	home	$0.00	$0.00		$0.00	1	15	1	1	$0.00	1.00	1.00
New	921	Xmisc	home	home	$0.00	$0.00		$0.00	1	15	1	1	$0.00	1.00	1.00

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MEASURE COSTS			Factors					Implementation Type 1=1 time
Segment	Measure #	Measure Description	WOP	SP	SPP	SOP	End Use	2=ROB
New	207	Water Heater Blanket	1.00	1.00	1.00	1.00	2	1
New	208	Switch from Elec to NG DHW	1.00	1.00	1.00	1.00	2	1
New	209	Switch from Elec to LPG DHW	1.00	1.00	1.00	1.00	2	1
New	210	Instant-on DHW (NG)	1.00	1.00	1.00	1.00	2	1
New	211	Instant-on DHW (LPG)	1.00	1.00	1.00	1.00	2	1
New	300	Base Lighting, 0-1.5 hrs/day	1.00	1.00	1.00	1.00	3	1
New	301	CFL, 0-1.5 hrs/day	1.00	1.00	1.00	1.00	3	1
New	310	Base Lighting, 1.5-2.5 hrs/day	1.00	1.00	1.00	1.00	3	1
New	311	CFL, 1.5-2.5 hrs/day	1.00	1.00	1.00	1.00	3	1
New	320	Base Lighting, >2.5 hrs/day	1.00	1.00	1.00	1.00	3	1
New	321	CFL, >2.5 hrs/day	1.00	1.00	1.00	1.00	3	1
New	330	Base 50W Halogen	1.00	1.00	1.00	1.00	3	1
New	331	High-efficiency Halogen (35 W)	1.00	1.00	1.00	1.00	3	1
New	400	Base Refrigerator/Freezer	1.00	1.00	1.00	1.00	4	1
New	420	Base Refrigerator	1.00	1.00	1.00	1.00	4	1
New	450	Base Freezer	1.00	1.00	1.00	1.00	4	1
New	500	Base Dishwasher	1.00	1.00	1.00	1.00	5	1
New	700	Base Cooking	1.00	1.00	1.00	1.00	6	1
New	701	Switch from electric to NG cooking equipment	1.00	1.00	1.00	1.00	6	1
New	702	Switch from electric to LPG cooking equipment	1.00	1.00	1.00	1.00	6	1
New	800	Base Clothes Drying	1.00	1.00	1.00	1.00	7	1
New	900	Base Heated Towel Rail	1.00	1.00	1.00	1.00	8	1
New	901	Towel Rail Timer	1.00	1.00	1.00	1.00	8	1
New	920	Base Miscellaneous	1.00	1.00	1.00	1.00	9	1
New	921	Xmisc	1.00	1.00	1.00	1.00	9	1

RESIDENTIAL

BASE TECHNOLOGY EUIs
(kWh/home)

Segment	Measure #	Measure Description	Single Family
Existing	140	Base Electric Resistance Heating CZ 2, Homes with	1651
Existing	170	Base Electric Resistance Heating CZ 3, Homes with	3105
Existing	200	Base 180 Litre low pressure Water Heating	2780
Existing	300	Base Lighting, 0-1.5 hrs/day	316
Existing	310	Base Lighting, 1.5-2.5 hrs/day	286
Existing	320	Base Lighting, >2.5 hr/day	214
Existing	330	Base 50W Halogen	78
Existing	400	Base Refrigerator/Freezer	696
Existing	420	Base Refrigerator	440
Existing	450	Base Freezer	749
Existing	500	Base Dishwasher	211
Existing	600	Base Electric Resistance Heating CZ 1, Homes with	1254
Existing	640	Base Electric Resistance Heating CZ 2, Homes with	1321
Existing	670	Base Electric Resistance Heating CZ 3, Homes with	1383
Existing	700	Base Cooking	545
Existing	800	Base Clothes Drying	175
Existing	900	Base Heated Towel Rail	440
Existing	920	Base Miscellaneous	1501
New	100	Base Electric Resistance Heating CZ 1	1949
New	117	Base Electric Resistance Heating CZ 2	2036
New	134	Base Electric Resistance Heating CZ 3	3423
New	151	Base Heat Pump Space Heater CZ 1	1306
New	167	Base Heat Pump Space Heater CZ 2	1364
New	183	Base Heat Pump Space Heater CZ 3	2294
New	200	Base 180 Litre Mains Pressure Water Heating	2502
New	300	Base Lighting, 0-1.5 hrs/day	316
New	310	Base Lighting, 1.5-2.5 hrs/day	286
New	320	Base Lighting, >2.5 hr/day	214
New	330	Base Halogen (50 W)	394
New	400	Base Refrigerator/Freezer	556
New	420	Base Refrigerator	440
New	450	Base Freezer	450
New	500	Base Dishwasher	211
New	700	Base Cooking	545
New	800	Base Clothes Drying	173
New	900	Base Heated Towel Rail	440
New	920	Base Miscellaneous	1501

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Segment	Measure #	Measure Description	Applicability Factor (percent) Single Family	Incomplete Factor (percent) Single Family	Feasibility Factor (percent) Single Family	Energy Savings (percent) Single Family	UEC Adjustment (percent) Single Family	Technology Saturation (Units per home) Single Family	Lighting Adjustment (Hours/year) Single Family
Existing	100	Base Electric Resistance Heating CZ 1, Homes with electric as primary heating	17.6%	100.0%	100%	0%	100.0%	1.0	
Existing	101	Heat Pump Space Heater	17.6%	98.0%	70%	60%	100.0%	1.2	
Existing	102	High Efficiency Heat pump	17.6%	100.0%	70%	72%	100.0%	1.2	
Existing	103	Geothermal Heat Pump	17.6%	100.0%	25%	76%	100.0%	1	
Existing	104	Dual-Pane Windows (1.3 U to 0.5 U)	17.6%	100.0%	100%	8%	100.0%	1	
Existing	105	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	17.6%	100.0%	100%	3%	100.0%	3.6	
Existing	106	Ceiling Insulation R-0 to R-1.9 (R-11)	17.6%	14.0%	100%	40%	100.0%	87	
Existing	107	Ceiling Insulation R-1.9 to R-3.6 (R-20)	17.6%	100.0%	80%	8%	100.0%	87	
Existing	108	Wall Insulation R-0 to R-2.3 (R-13)	17.6%	57.0%	100%	57%	100.0%	126.4	
Existing	109	Floor Insulation R-0 to R-1.5 (R-11)	8.8%	57.0%	80%	11%	100.0%	87	
Existing	110	Infiltration Reduction	17.6%	57.0%	100%	3%	100.0%	1	
Existing	111	6.5 kW Inbuilt Gas Fire	17.6%	100.0%	52%	100%	100.0%	1.5	
Existing	112	6.5 kW Inbuilt Propane Fire	17.6%	100.0%	90%	100%	100.0%	1.5	
Existing	140	Base Electric Resistance Heating CZ 2, Homes with electric as primary heating	3.8%	100.0%	100%	0%	100.0%	1.0	
Existing	141	Heat Pump Space Heater	3.8%	100.0%	70%	60.0%	100.0%	1.2	
Existing	142	High Efficiency Heat pump	3.8%	100.0%	70%	72.0%	100.0%	1.2	
Existing	143	Geothermal Heat Pump	3.8%	100.0%	25%	76.0%	100.0%	1	
Existing	144	Dual-Pane Windows (1.3 U to 0.5 U)	3.8%	100.0%	100%	6.5%	100.0%	1	
Existing	145	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	3.8%	100.0%	100%	3.0%	100.0%	3.6	
Existing	146	Ceiling Insulation R-0 to R-1.9 (R-11)	3.8%	14.0%	100%	37.0%	100.0%	87	
Existing	147	Ceiling Insulation R-1.9 to R-3.6 (R-20)	3.8%	100.0%	80%	6.7%	100.0%	87	
Existing	148	Wall Insulation R-0 to R-2.3 (R-13)	3.8%	57.0%	100%	51.0%	100.0%	126.4	
Existing	149	Floor Insulation R-0 to R-1.5 (R-11)	1.9%	57.0%	80%	13.0%	100.0%	87	
Existing	150	Infiltration Reduction	3.8%	57.0%	100%	3.0%	100.0%	1	
Existing	151	6.5 kW Inbuilt Gas Fire	3.8%	100.0%	63%	100.0%	100.0%	1.36	
Existing	152	6.5 kW Inbuilt Propane Fire	3.8%	100.0%	90%	100.0%	100.0%	1.36	
Existing	170	Base Electric Resistance Heating CZ 3, Homes with electric as primary heating	8.6%	100.0%	100%	0%	100.0%	1.0	
Existing	171	Heat Pump Space Heater	8.6%	99.0%	70%	60.0%	100.0%	1.2	
Existing	172	High Efficiency Heat pump	8.6%	100.0%	70%	72.0%	100.0%	1.2	
Existing	173	Geothermal Heat Pump	8.6%	100.0%	25%	76.0%	100.0%	1	
Existing	174	Dual-Pane Windows (1.3 U to 0.5 U)	8.6%	90.0%	100%	6.3%	100.0%	1	
Existing	175	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	8.6%	90.0%	100%	3.0%	100.0%	3.6	
Existing	176	Ceiling Insulation R-0 to R-1.9 (R-11)	8.6%	14.0%	100%	35.0%	100.0%	87	
Existing	177	Ceiling Insulation R-1.9 to R-3.6 (R-20)	8.6%	90.0%	80%	6.2%	100.0%	87	
Existing	178	Wall Insulation R-0 to R-2.3 (R-13)	8.6%	57.0%	100%	49.0%	100.0%	126.4	
Existing	179	Floor Insulation R-0 to R-1.5 (R-11)	4.3%	57.0%	80%	12.0%	100.0%	87	
Existing	180	Infiltration Reduction	8.6%	57.0%	100%	3.0%	100.0%	1	
Existing	181	6.5 kW Inbuilt Gas Fire	8.6%	100.0%	1%	100.0%	100.0%	1	
Existing	182	6.5 kW Inbuilt Propane Fire	8.6%	100.0%	90%	100.0%	100.0%	1	
Existing	200	Base 180 Litre Low Pressure Water Heating	71.2%	100.0%	100%	0%	90.0%	1	
Existing	201	Heat Pump Water Heater	71.2%	100.0%	50%	50%	100.0%	1	
Existing	202	HE Water Heater	71.2%	90.0%	100%	5%	100.0%	1	
Existing	203	Solar Water Heat	71.2%	98.4%	50%	80%	100.0%	1	

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Segment	Measure #	Measure Description	Applicability Factor (percent) Single Family	Incomplete Factor (percent) Single Family	Feasibility Factor (percent) Single Family	Energy Savings (percent) Single Family	UEC Adjustment (percent) Single Family	Technology Saturation (Units per home) Single Family	Lighting Adjustment (Hours/year) Single Family
Existing	204	Low Flow Showerhead	71.2%	100.0%	30%	8%	100.0%	1	
Existing	205	Faucent Aerators	71.2%	100.0%	50%	3%	100.0%	2	
Existing	206	Pipe Wrap	71.2%	100.0%	50%	2%	100.0%	3	
Existing	207	Water Heater Blanket	71.2%	93.0%	50%	10%	100.0%	1	
Existing	208	Switch from Elec to NG DHW	71.2%	100%	43%	100%	100.0%	1	
Existing	209	Switch from Elec to LPG DHW	71.2%	100%	90%	100%	100.0%	1	
Existing	210	Instant-on DHW (NG)	71.2%	100%	43%	100%	100.0%	1	
Existing	211	Instant-on DHW (LPG)	71.2%	100%	90%	100%	100.0%	1	
Existing	300	Base Lighting, 0-2 hrs/hday	100.0%	100.0%	100%	0%	100.0%	17.9	182.5
Existing	301	CFL, 0-2 hrs/day	100.0%	98.0%	66%	66%	100.0%	17.9	182.5
Existing	310	Base Lighting, 2-5 hrs/hday	100.0%	100.0%	100%	0%	100.0%	4.0	730
Existing	311	CFL, 2-5 hrs/day	100.0%	93.0%	66%	66%	100.0%	4.0	730
Existing	320	Base Lighting, >5 hrs/hday	100.0%	100.0%	100%	0%	100.0%	2.0	1095
Existing	321	CFL, >5 hrs/day	100.0%	90.0%	66%	66%	100.0%	2.0	1095
Existing	330	Base 50W Halogen	100.0%	100%	100%	0%	100.0%	1.53	1022
Existing	331	High-efficiency Halogen (35 W)	100.0%	100%	100%	26%	100.0%	1.53	1022
Existing	400	Base Refrigerator/Freezer	80.0%	100.0%	100%	0%	75.0%	1.12	
Existing	401	HE Refrigerator/Freezer - Energy Star	80.0%	80.0%	100%	24%	90.0%	1.12	
Existing	402	Remove secondary refrigerator/freezer	9.6%	100.0%	50%	100%	100.0%	1	
Existing	420	Base Refrigerator	31.0%	100.0%	100%	0%	100.0%	1.2	
Existing	421	HE Refrigerator - Energy Star	31.0%	80.0%	100%	39%	90.0%	1.2	
Existing	422	Remove secondary refrigerator	6.2%	100.0%	50%	100%	100.0%	1	
Existing	450	Base Freezer	64.0%	100.0%	100%	0%	53.0%	1.13	
Existing	451	HE Freezer	64.0%	70.0%	100%	55%	90.0%	1.13	
Existing	500	Base Dishwasher	48.0%	100.0%	100%	0%	100.0%	1	
Existing	501	Energy Star Dishwasher	48.0%	100.0%	100%	23%	100.0%	1	
Existing	600	Base Electric Resistance Heating CZ 1, Homes with electric as secondary heating	27.1%	100.0%	100%	0%	100.0%	1.0	
Existing	601	Heat Pump Space Heater	27.1%	98.0%	70%	60%	100.0%	1.2	
Existing	602	High Efficiency Heat pump	27.1%	100.0%	70%	72%	100.0%	1.2	
Existing	603	Geothermal Heat Pump	27.1%	100.0%	25%	76%	100.0%	1	
Existing	604	Dual-Pane Windows (1.3 U to 0.5 U)	27.1%	100.0%	100%	8%	100.0%	1	
Existing	605	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	27.1%	100.0%	100%	3%	100.0%	3.6	
Existing	606	Ceiling Insulation R-0 to R-1.9 (R-11)	27.1%	14.0%	100%	40%	100.0%	87	
Existing	607	Ceiling Insulation R-1.9 to R-3.6 (R-20)	27.1%	100.0%	80%	8%	100.0%	87	
Existing	608	Wall Insulation R-0 to R-2.3 (R-13)	27.1%	57.0%	100%	57%	100.0%	126.4	
Existing	609	Floor Insulation R-0 to R-1.5 (R-11)	13.6%	57.0%	80%	11%	100.0%	87	
Existing	610	Infiltration Reduction	27.1%	57.0%	100%	3%	100.0%	1	
Existing	611	6.5 kW Inbuilt Gas Fire	27.1%	100.0%	26%	100%	100.0%	1.5	
Existing	612	6.5 kW Inbuilt Propane Fire	27.1%	100.0%	45%	100%	100.0%	1.5	
Existing	640	Base Electric Resistance Heating CZ 2, Homes with electric as secondary heating	12.8%	100.0%	100%	0%	100.0%	1.0	
Existing	641	Heat Pump Space Heater	12.8%	100.0%	70%	60%	100.0%	1.2	
Existing	642	High Efficiency Heat pump	12.8%	100.0%	70%	72%	100.0%	1.2	
Existing	643	Geothermal Heat Pump	12.8%	100.0%	25%	76%	100.0%	1	
Existing	644	Dual-Pane Windows (1.3 U to 0.5 U)	12.8%	100.0%	100%	7%	100.0%	1	
Existing	645	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	12.8%	100.0%	100%	3%	100.0%	3.6	

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Existing	646	Ceiling Insulation R-0 to R-1.9 (R-11)	12.8%	14.0%	100%	37%	100.0%	87	
Existing	647	Ceiling Insulation R-1.9 to R-3.6 (R-20)	12.8%	100.0%	80%	7%	100.0%	87	
Existing	648	Wall Insulation R-0 to R-2.3 (R-13)	12.8%	57.0%	100%	51%	100.0%	126.4	
Existing	649	Floor Insulation R-0 to R-1.5 (R-11)	6.4%	57.0%	80%	13%	100.0%	87	
Existing	650	Infiltration Reduction	12.8%	57.0%	100%	3%	100.0%	1	
Existing	651	6.5 kW Inbuilt Gas Fire	12.8%	100.0%	25%	100%	100.0%	1.36	
Existing	652	6.5 kW Inbuilt Propane Fire	12.8%	100.0%	36%	100%	100.0%	1.36	
Existing	670	Base Electric Resistance Heating CZ 3, Homes with electric as secondary heating	15.2%	100.0%	100%	0%	100.0%	1.0	
Existing	671	Heat Pump Space Heater	15.2%	99.0%	70%	60%	100.0%	1.2	
Existing	672	High Efficiency Heat pump	15.2%	100.0%	70%	72%	100.0%	1.2	
Existing	673	Geothermal Heat Pump	15.2%	100.0%	25%	76%	100.0%	1	
Existing	674	Dual-Pane Windows (1.3 U to 0.5 U)	15.2%	90.0%	100%	6%	100.0%	1	
Existing	675	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	15.2%	90.0%	100%	3%	100.0%	3.6	
Existing	676	Ceiling Insulation R-0 to R-1.9 (R-11)	15.2%	14.0%	100%	35%	100.0%	87	
Existing	677	Ceiling Insulation R-1.9 to R-3.6 (R-20)	15.2%	90.0%	80%	6%	100.0%	87	
Existing	678	Wall Insulation R-0 to R-2.3 (R-13)	15.2%	57.0%	100%	49%	100.0%	126.4	
Existing	679	Floor Insulation R-0 to R-1.5 (R-11)	7.6%	57.0%	80%	12%	100.0%	87	
Existing	680	Infiltration Reduction	15.2%	57.0%	100%	3%	100.0%	1	
Existing	681	6.5 kW Inbuilt Gas Fire	15.2%	100.0%	0.3%	100%	100.0%	1	
Existing	682	6.5 kW Inbuilt Propane Fire	15.2%	100.0%	23%	100%	100.0%	1	
Existing	700	Base Cooking	85.0%	100.0%	100%	0%	100.0%	1	
Existing	701	Switch from electric to NG cooking equipment	85%	100%	43%	100%	100.0%	1	
Existing	702	Switch from electric to LPG cooking equipment	85%	100%	90%	100%	100.0%	1	
Existing	800	Base Clothes Drying	70%	100.0%	100%	0%	100.0%	1.01	
Existing	900	Base Heated Towel Rail	42%	100.0%	100%	0%	100.0%	1.32	
Existing	901	Towel Rail Timer	42%	100.0%	100%	70%	100.0%	1.32	
Existing	920	Base Miscellaneous	100%	100.0%	100%	0%	100.0%	1	
Existing	921	Xmisc	100%	100.0%	100%	0%	100.0%	1	
New	100	Base Electric Resistance Heating CZ 1	34%	100%	100.0%	0%	100.0%	1.57	
New	101	Heat Pump Space Heater	25%	100%	100.0%	60%	100.0%	1.2	
New	102	High Efficiency Heat pump	25%	100%	100.0%	72%	100.0%	1.2	
New	103	High Performance Windows (single-glazed AL to dual AL)	22%	100%	100.0%	17%	100.0%	1	
New	104	High Performance Windows (single-glazed AL to dual vinyl)	22%	100%	100.0%	33%	100.0%	1	
New	105	High Performance Windows (Dual-pane AL to dual vinyl)	12%	100%	100.0%	20%	100.0%	1	
New	106	Ceiling Insulation R-2.6 to R-3.2	23%	100%	100.0%	4%	100.0%	1	
New	107	Ceiling Insulation R-3.2 to R-3.6	5%	100%	100.0%	3%	100.0%	1	
New	108	Ceiling Insulation R-2.6 to R-3.6	23%	100%	100.0%	8%	100.0%	1	
New	109	Wall insulation upgrade (increase from 1.8 to 2.2)	11%	100%	100.0%	4%	100.0%	1	
New	110	Wall insulation upgrade (increase from 2.2 to 2.6)	17%	100%	100.0%	3%	100.0%	1	
New	111	Wall insulation upgrade (increase from 1.8 to 2.6)	11%	100%	100.0%	7%	100.0%	1	
New	112	Slab Insulation (50 mm polystyrene)	31%	82%	100.0%	23%	100.0%	1	
New	113	Slab Insulation perimeter	31%	82%	100.0%	8%	100.0%	1	
New	114	Floor Insulation (foil to polystyrene)	3%	67%	100.0%	10%	100.0%	1	
New	115	6.5 kW Inbuilt Gas Fire	25%	100%	52.0%	100%	100.0%	1.5	

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New	116	6.5 kW Inbuilt Propane Fire	25%	100%	90.0%	100%	100.0%	1.5	
New	117	Base Electric Resistance Heating CZ 2	27%	100%	100.0%	0%	100.0%	1.57	
New	118	Heat Pump Space Heater	19%	100%	100.0%	60%	100.0%	1.2	
New	119	High Efficiency Heat pump	19%	100%	100.0%	72%	100.0%	1.2	
New	120	High Performance Windows (single-glazed AL to dual AL)	17%	100%	100.0%	13%	100.0%	1	
New	121	High Performance Windows (single-glazed AL to dual vinyl)	17%	100%	100.0%	27%	100.0%	1	
New	122	High Performance Windows (Dual-pane AL to dual vinyl)	10%	100%	100.0%	16%	100.0%	1	
New	123	Ceiling Insulation R-2.6 to R-3.2	18%	100%	100.0%	4%	100.0%	1	
New	124	Ceiling Insulation R-3.2 to R-3.6	4%	100%	100.0%	3%	100.0%	1	
New	125	Ceiling Insulation R-2.6 to R-3.6	18%	100%	100.0%	7%	100.0%	1	
New	126	Wall insulation upgrade (increase from 1.8 to 2.2)	8%	100%	100.0%	3%	100.0%	1	
New	127	Wall insulation upgrade (increase from 2.2 to 2.6)	14%	100%	100.0%	3%	100.0%	1	
New	128	Wall insulation upgrade (increase from 1.8 to 2.6)	8%	100%	100.0%	6%	100.0%	1	
New	129	Slab Insulation (50 mm polystyrene)	24%	82%	100.0%	30%	100.0%	1	
New	130	Slab Insulation perimeter	24%	82%	100.0%	9%	100.0%	1	
New	131	Floor Insulation (foil to polystyrene)	3%	67%	100.0%	6%	100.0%	1	
New	132	6.5 kW Inbuilt Gas Fire	19%	100%	63.0%	100%	100.0%	1.36	
New	133	6.5 kW Inbuilt Propane Fire	19%	100%	90.0%	100%	100.0%	1.36	
New	134	Base Electric Resistance Heating CZ 3	22%	100%	100.0%	0%	100.0%	1.57	
New	135	Heat Pump Space Heater	16%	100%	100.0%	60%	100.0%	1.2	
New	136	High Efficiency Heat pump	16%	100%	100.0%	72%	100.0%	1.2	
New	137	High Performance Windows (single-glazed AL to dual AL)	0.4%	100%	100.0%	13%	100.0%	1	
New	138	High Performance Windows (single-glazed AL to dual vinyl)	0.4%	100%	100.0%	25%	100.0%	1	
New	139	High Performance Windows (Dual-pane AL to dual vinyl)	22%	100%	100.0%	14%	100.0%	1	
New	140	Ceiling Insulation R-2.6 to R-3.2	15%	100%	100.0%	4%	100.0%	1	
New	141	Ceiling Insulation R-3.2 to R-3.6	3%	100%	100.0%	3%	100.0%	1	
New	142	Ceiling Insulation R-2.6 to R-3.6	15%	100%	100.0%	6%	100.0%	1	
New	143	Wall insulation upgrade (increase from 1.8 to 2.2)	7%	100%	100.0%	3%	100.0%	1	
New	144	Wall insulation upgrade (increase from 2.2 to 2.6)	11%	100%	100.0%	2%	100.0%	1	
New	145	Wall insulation upgrade (increase from 1.8 to 2.6)	7%	100%	100.0%	5%	100.0%	1	
New	146	Slab Insulation (50 mm polystyrene)	20%	82%	100.0%	23%	100.0%	1	
New	147	Slab Insulation perimeter	20%	82%	100.0%	8%	100.0%	1	
New	148	Floor Insulation (foil to polystyrene)	2%	67%	100.0%	10%	100.0%	1	
New	149	6.5 kW Inbuilt Gas Fire	16%	100%	1.0%	100%	100.0%	1	
New	150	6.5 kW Inbuilt Propane Fire	16%	100%	90.0%	100%	100.0%	1	
New	151	Base Heat Pump Space Heater CZ 1	17%	100%	100.0%	0%	100.0%	1.2	
New	152	High Efficiency Heat pump	17%	100%	100.0%	30%	100.0%	1.2	
New	153	High Performance Windows (single-glazed AL to dual AL)	11%	100%	100.0%	17%	100.0%	1	
New	154	High Performance Windows (single-glazed AL to dual vinyl)	11%	100%	100.0%	33%	100.0%	1	
New	155	High Performance Windows (Dual-pane AL to dual vinyl)	6%	100%	100.0%	20%	100.0%	1	

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New	156	Ceiling Insulation R-2.6 to R-3.2	12%	100%	100.0%	4%	100.0%	1	
New	157	Ceiling Insulation R-3.2 to R-3.6	3%	100%	100.0%	3%	100.0%	1	
New	158	Ceiling Insulation R-2.6 to R-3.6	12%	100%	100.0%	8%	100.0%	1	
New	159	Wall insulation upgrade (increase from 1.8 to 2.2)	5%	100%	100.0%	4%	100.0%	1	
New	160	Wall insulation upgrade (increase from 2.2 to 2.6)	9%	100%	100.0%	3%	100.0%	1	
New	161	Wall insulation upgrade (increase from 1.8 to 2.6)	5%	100%	100.0%	7%	100.0%	1	
New	162	Slab Insulation (50 mm polystyrene)	15%	82%	100.0%	23%	100.0%	1	
New	163	Slab Insulation perimeter	15%	82%	100.0%	8%	100.0%	1	
New	164	Floor Insulation (foil to polystyrene)	2%	67%	100.0%	10%	100.0%	1	
New	165	6.5 kW Inbuilt Gas Fire	17%	100%	52.0%	100%	100.0%	1.5	
New	166	6.5 kW Inbuilt Propane Fire	17%	100%	90.0%	100%	100.0%	1.5	
New	167	Base Heat Pump Space Heater CZ 2	13%	100%	100.0%	0%	100.0%	1.2	
New	168	High Efficiency Heat pump	13%	100%	100.0%	30%	100.0%	1.2	
New	169	High Performance Windows (single-glazed AL to dual AL)	9%	100%	100.0%	13%	100.0%	1	
New	170	High Performance Windows (single-glazed AL to dual vinyl)	9%	100%	100.0%	27%	100.0%	1	
New	171	High Performance Windows (Dual-pane AL to dual vinyl)	5%	100%	100.0%	16%	100.0%	1	
New	172	Ceiling Insulation R-2.6 to R-3.2	9%	100%	100.0%	4%	100.0%	1	
New	173	Ceiling Insulation R-3.2 to R-3.6	2%	100%	100.0%	3%	100.0%	1	
New	174	Ceiling Insulation R-2.6 to R-3.6	9%	100%	100.0%	7%	100.0%	1	
New	175	Wall insulation upgrade (increase from 1.8 to 2.2)	4%	100%	100.0%	3%	100.0%	1	
New	176	Wall insulation upgrade (increase from 2.2 to 2.6)	7%	100%	100.0%	3%	100.0%	1	
New	177	Wall insulation upgrade (increase from 1.8 to 2.6)	4%	100%	100.0%	6%	100.0%	1	
New	178	Slab Insulation (50 mm polystyrene)	12%	82%	100.0%	30%	100.0%	1	
New	179	Slab Insulation perimeter	12%	82%	100.0%	9%	100.0%	1	
New	180	Floor Insulation (foil to polystyrene)	1%	67%	100.0%	6%	100.0%	1	
New	181	6.5 kW Inbuilt Gas Fire	13%	100%	63.0%	100%	100.0%	1.36	
New	182	6.5 kW Inbuilt Propane Fire	13%	100%	90.0%	100%	100.0%	1.36	
New	183	Base Heat Pump Space Heater CZ 3	11%	100%	100.0%	0%	100.0%	1.2	
New	184	High Efficiency Heat pump	11%	100%	100.0%	30%	100.0%	1.2	
New	185	High Performance Windows (single-glazed AL to dual AL)	0.2%	100%	100.0%	13%	100.0%	1	
New	186	High Performance Windows (single-glazed AL to dual vinyl)	0.2%	100%	100.0%	25%	100.0%	1	
New	187	High Performance Windows (Dual-pane AL to dual vinyl)	11%	100%	100.0%	14%	100.0%	1	
New	188	Ceiling Insulation R-2.6 to R-3.2	8%	100%	100.0%	4%	100.0%	1	
New	189	Ceiling Insulation R-3.2 to R-3.6	2%	100%	100.0%	3%	100.0%	1	
New	190	Ceiling Insulation R-2.6 to R-3.6	8%	100%	100.0%	6%	100.0%	1	
New	191	Wall insulation upgrade (increase from 1.8 to 2.2)	4%	100%	100.0%	3%	100.0%	1	
New	192	Wall insulation upgrade (increase from 2.2 to 2.6)	6%	100%	100.0%	2%	100.0%	1	
New	193	Wall insulation upgrade (increase from 1.8 to 2.6)	4%	100%	100.0%	5%	100.0%	1	
New	194	Slab Insulation (50 mm polystyrene)	10%	82%	100.0%	23%	100.0%	1	
New	195	Slab Insulation perimeter	10%	82%	100.0%	8%	100.0%	1	
New	196	Floor Insulation (foil to polystyrene)	1%	67%	100.0%	10%	100.0%	1	
New	197	6.5 kW Inbuilt Gas Fire	11%	100%	1.0%	100%	100.0%	1	
New	198	6.5 kW Inbuilt Propane Fire	11%	100%	90.0%	100%	100.0%	1	

RESIDENTIAL

Segment	Measure #	Measure Description	Applicability Factor (percent) Single Family	Incomplete Factor (percent) Single Family	Feasibility Factor (percent) Single Family	Energy Savings (percent) Single Family	UEC Adjustment (percent) Single Family	Technology Saturation (Units per home) Single Family	Lighting Adjustment (Hours/year) Single Family
New	200	Base 180 Litre Mains Pressure Water Heating	63%	100%	100.0%	0%	100.0%	1	
New	202	HE Water Heater (0.90 to 0.94 EF)	63%	85%	100.0%	5%	100.0%	1	
New	203	Solar Water Heat	65%	99%	50.0%	80%	100.0%	1	
New	204	Low Flow Showerhead	63%	100%	50.0%	8%	100.0%	1	
New	205	Faucent Aerators	63%	100%	50.0%	3%	100.0%	2	
New	206	Pipe Wrap	63%	100%	50.0%	2%	100.0%	3	
New	207	Water Heater Blanket	63%	100%	50.0%	10%	100.0%	1	
New	208	Switch from Elec to NG DHW	63%	100%	43.0%	100%	100.0%	1	
New	209	Switch from Elec to LPG DHW	63%	100%	90.0%	100%	100.0%	1	
New	210	Instant-on DHW (NG)	63%	100%	43.0%	100%	100.0%	1	
New	211	Instant-on DHW (LPG)	63%	100%	90.0%	100%	100.0%	1	
New	300	Base Lighting, 0-2 hrs/hday	100%	100%	100.0%	0%	100.0%	17.9	182.5
New	301	CFL, 0-2 hrs/day	100%	81%	66.0%	66%	100.0%	17.9	182.5
New	310	Base Lighting, 2-5 hrs/hday	100%	100%	100.0%	0%	100.0%	4.0	730
New	311	CFL, 2-5 hrs/day	100%	81%	66.0%	66%	100.0%	4.0	730
New	320	Base Lighting, >5 hrs/hday	100%	100%	100.0%	0%	100.0%	2.0	1095
New	321	CFL, >5 hrs/day	100%	81%	66.0%	66%	100.0%	2.0	1095
New	330	Base 50W Halogen	100%	100%	100.0%	0%	100.0%	7.74	1022
New	331	High-efficiency Halogen (35 W)	100%	100%	100.0%	26%	100.0%	7.74	1022
New	400	Base Refrigerator/Freezer	80%	100%	100.0%	0%	100.0%	1	
New	420	Base Refrigerator	31%	100%	100.0%	0%	100.0%	1	
New	450	Base Freezer	64%	100%	100.0%	0%	100.0%	1	
New	500	Base Dishwasher	48%	100%	100.0%	0%	100.0%	1	
New	700	Base Cooking	50%	100%	100.0%	0%	100.0%	1	
New	701	Switch from electric to NG cooking equipment	50%	100%	43.0%	100%	100.0%	1	
New	702	Switch from electric to LPG cooking equipment	50%	100%	90.0%	100%	100.0%	1	
New	800	Base Clothes Drying	70%	100%	100.0%	0%	100.0%	1	
New	900	Base Heated Towel Rail	52%	100%	100.0%	0%	100.0%	1.32	
New	901	Towel Rail Timer	52%	94%	100.0%	70%	100.0%	1.32	
New	920	Base Miscellaneous	100%	100%	100.0%	0%	100.0%	1	
New	921	Xmisc	100%	100%	100.0%	0%	100.0%	1	

COMMERCIAL

DSM TECHNOLOGY INPUT TABLES			
UTILITY:	NZ	BATCH:	1
SECTOR:	COM	ANALYSIS:	Basic
SEGMENT:	All Electric	VINTAGE:	Existing and New Construction

COMMERCIAL

MEASURE COSTS							NPV of				Full = 1						
NZ dollars					Unit	Unit	Lifetime	Implementation	Cost Units		Incr. = 0		Full				
			Savings	Cost	Equipment	Labor	O & M	Cost	per Savings	Service	Initial	Replace	Unit	Relative Energy Reduction Factors			
Segment	Measure #	Measure Description	Units	Units	Cost	Cost	Cost	Factor	Unit	Life	Cost	Cost	Cost	WP	WPP	WOP	
Existing	110	Base Fluorescent Fixture, T12, 34W, EEMAG	lin meter	fixture	$0.00	$0.00	$0.00	$0.00	1	45,000	1	1	$0.00	1.00	1.00	1.00	
Existing	113	RET Next Gen T8, EEMAG	lin meter	fixture	$22.80	$0.00	$0.00	$22.80	1	70,000	1	1	$22.80	1.00	1.00	1.00	
Existing	114	RET Next Gen T8, 1EB	lin meter	fixture	$64.80	$0.00	$0.00	$64.80	1	70,000	1	1	$64.80	1.00	1.00	1.00	
Existing	117	Occupancy Sensor	lin meter	fixture	$24.39	$20.19	$0.00	$44.59	1	40,000	1	1	$44.59	1.00	1.00	0.50	
Existing	118	Continuous Dimming	lin meter	fixture	$312.63	$185.67	$0.00	$498.30	1	50,000	1	1	$498.30	1.00	0.75	0.00	
Existing	120	Lighting Control Tuneup	m2	m2	$0.00	$0.27	$0.00	$0.27	1	6	1	1	$0.27	1.00	1.00	1.00	
Existing	130	Base Fluorescent Fixture, T8, 32W, EEMAG	lin meter	fixture	$0.00	$0.00	$0.00	$0.00	1	70,000	1	1	$0.00	1.00	1.00	1.00	
Existing	133	RET Next Gen T8, 1EB	lin meter	fixture	$42.00	$0.00	$0.00	$42.00	1	70,000	1	1	$42.00	1.00	1.00	1.00	
Existing	136	Occupancy Sensor	lin meter	fixture	$24.39	$20.19	$0.00	$44.59	1	40,000	1	1	$44.59	1.00	1.00	0.50	
Existing	137	Continuous Dimming	lin meter	fixture	$312.63	$185.67	$0.00	$498.30	1	50,000	1	1	$498.30	1.00	0.75	0.00	
Existing	139	Lighting Control Tuneup	m2	m2	$0.00	$0.27	$0.00	$0.27	1	6	1	1	$0.27	1.00	1.00	1.00	
Existing	150	Base Fluorescent Fixture, T8, 32W, EB	fixture	fixture	$0.00	$0.00	$0.00	$0.00	1	70,000	1	1	$0.00	1.00	1.00	1.00	
Existing	155	Occupancy Sensor	fixture	fixture	$24.39	$20.19	$0.00	$44.59	1	40,000	1	1	$44.59	1.00	1.00	0.50	
Existing	156	Continuous Dimming	fixture	fixture	$312.63	$185.67	$0.00	$498.30	1	50,000	1	1	$498.30	1.00	0.75	0.00	
Existing	157	Lighting Control Tuneup	m2	m2	$0.00	$0.27	$0.00	$0.27	1	6	1	1	$0.27	1.00	1.00	1.00	
Existing	160	Base Incandescent Flood, 75W to Screw-in CFL	fixture	fixture	$2.18	$0.00	$0.00	$2.18	1	2,000	1	1	$2.18	1.00	1.00	1.00	
Existing	161	CFL Screw-in 18W	fixture	fixture	$6.50	$0.00	$0.00	$6.50	1	8,000	1	0	$6.50	1.00	1.00	1.00	
Existing	165	Base Incandescent Flood, 75W to Hardwired CFL	fixture	fixture	$2.18	$0.00	$0.00	$2.18	1	2,000	1	1	$2.18	1.00	1.00	1.00	
Existing	166	CFL Hardwired, Modular 18W	fixture	fixture	$65.15	$35.00	$0.00	$100.15	1	20,000	1	0	$100.15	1.00	1.00	1.00	
Existing	170	Base Halogen Flood,50W	fixture	fixture	$17.95	$0.00	$0.00	$17.95	1	4,000	1	1	$17.95	1.00	1.00	1.00	
Existing	172	RET - Efficient Halogen Flood, 35W	fixture	fixture	$24.50	$0.00	$0.00	$24.50	1	6,000	1	0	$24.50	1.00	1.00	1.00	
Existing	175	Base High Bay Metal Halide, 400W	fixture	fixture	$285.00	$0.00	$0.00	$285.00	1	24,000	1	1	$285.00	1.00	1.00	1.00	
Existing	176	High Bay T5	fixture	fixture	$425.00	$100.00	$0.00	$525.00	1	45,000	1	0	$525.00	1.00	1.00	1.00	
Existing	190	Base Exit Sign	fixture	fixture	$0.00	$0.00	$0.00	$0.00	1	16	1	1	$0.00	1.00	1.00	1.00	
Existing	220	Base Outdoor Mercury Vapor 400W Lamp	fixture	fixture	$0.00	$0.00	$0.00	$0.00	1	24,000	1	1	$0.00	1.00	1.00	1.00	
Existing	221	High Pressure Sodium 250W Lamp	fixture	fixture	$45.10	$0.00	$0.00	$45.10	1	24,000	1	1	$45.10	1.00	1.00	1.00	
Existing	222	Outdoor Lighting Controls (Photocell/Timeclock)	fixture	fixture	$152.00	$0.00	$0.00	$152.00	1	24,000	1	1	$152.00	1.00	0.90	1.00	
Existing	300	Base Centrifugal Chiller, 0.165 kW/kWt, 1750 kWt	ton	kWt	$108.79	$0.00	$0.00	$108.79	1	20	1	1	$108.79	1.00	1.00	1.00	
Existing	301	Centrifugal Chiller, 0.15 kW/kWt, 1750 kWt	ton	kWt	$126.10	$0.00	$0.00	$126.10	1	20	0	0	$126.10	1.00	1.00	1.00	
Existing	303	BMS - Chiller	ton	kWt	$29.67	$0.00	$0.00	$29.67	1	10	1	1	$29.67	1.00	1.00	1.00	
Existing	305	Chiller Tune Up/Diagnostics	m2	m2	$0.00	$0.00	$1.66	$1.66	1	10	1	1	$1.66	1.00	1.00	1.00	
Existing	306	VSD for Chiller Pumps and Towers	ton	kWt	$15.82	$4.95	$0.00	$20.77	1	15	1	1	$20.77	1.00	1.00	1.00	
Existing	307	BMS Optimization	m2	m2	$0.00	$0.00	$0.50	$0.50	1	5	1	1	$0.50	1.00	1.00	1.00	
Existing	308	Economizer	ton	kWt	$62.68	$21.43	$0.00	$84.12	1	15	1	1	$84.12	1.00	1.00	1.00	
Existing	310	Base DX Packaged System, EER=2.65, 35 kWt	ton	kWt	$332.51	$0.00	$0.00	$332.51	1	15	1	1	$332.51	1.00	1.00	1.00	
Existing	311	DX Tune Up/ Advanced Diagnostics	m2	m2	$0.00	$0.00	$2.07	$2.07	1	10	1	1	$2.07	1.00	1.00	1.00	
Existing	312	DX Packaged System, EER=3.5, 35 kWt	ton	kWt	$345.82	$0.00	$0.00	$345.82	1	15	0	0	$345.82	1.00	1.00	1.00	
Existing	315	Prog. Thermostat - DX	ton	kWt	$2.72	$7.42	$0.00	$10.14	1	10	1	1	$10.14	1.00	1.00	1.00	
Existing	317	Optimize Controls	m2	m2	$0.00	$0.00	$0.66	$0.66	1	5	1	1	$0.66	1.00	1.00	1.00	
Existing	318	Economizer	ton	kWt	$62.68	$21.43	$0.00	$84.12	1	15	1	1	$84.12	1.00	1.00	1.00	
Existing	320	Base Split-system Air Conditioner, EER=2.3	ton	unit	$0.00	$0.00	$0.00	$0.00	1	18	1	1	$0.00	1.00	1.00	1.00	
Existing	321	3.5 EER Split-system Air Conditioner	ton	unit	$489.13	$0.00	$0.00	$489.13	1	18	1	1	$489.13	1.00	1.00	1.00	
Existing	322	Tune Up/Proper Refrigerant Charge	m2	unit	$0.00	$75.00	$0.00	$75.00	1	10	1	1	$75.00	1.00	1.00	1.00	
Existing	324	Programmable Thermostat	m2	unit	$175.00	$50.00	$0.00	$225.00	1	12	1	1	$225.00	1.00	1.00	1.00	
Existing	330	Base Room Air Conditioner, EER=2.3	ton	unit	$0.00	$0.00	$0.00	$0.00	1	15	1	1	$0.00	1.00	1.00	1.00	
Existing	331	3.0 EER Room Air Conditioner	ton	unit	$153.85	$0.00	$0.00	$153.85	1	15	1	1	$153.85	1.00	1.00	1.00	
Existing	333	Programmable Thermostat	m2	unit	$130.00	$50.00	$0.00	$180.00	1	12	1	1	$180.00	1.00	1.00	1.00	
Existing	400	Base Fan Motor, 7kW, 1800rpm, 87.5%	HP	kW	$67.14	$0.00	$0.00	$67.14	1	15	1	1	$67.14	1.00	1.00	1.00	
Existing	401	Fan Motor, 7kW, 1800rpm, 89.5%	HP	kW	$92.96	$0.00	$0.00	$92.96	1	15	0	0	$92.96	1.00	1.00	1.00	
Existing	402	Variable Speed Drive Control, 7kW	HP	kW	$276.31	$220.79	$0.00	$497.09	1	15	1	1	$497.09	1.00	1.00	1.00	
Existing	410	Base Fan Motor, 20kW, 1800rpm, 91.0%	HP	kW	$55.52	$0.00	$0.00	$55.52	1	15	1	1	$55.52	1.00	1.00	1.00	
Existing	411	Fan Motor, 20kW, 1800rpm, 92.4%	HP	kW	$69.72	$0.00	$0.00	$69.72	1	15	0	0	$69.72	1.00	1.00	1.00	
Existing	412	Variable Speed Drive Control, 20kW	HP	kW	$166.56	$131.70	$0.00	$298.26	1	15	1	1	$298.26	1.00	1.00	1.00	
Existing	413	Air Handler Optimization, 20kW	m2	m2	$0.00	$0.00	$0.50	$0.50	1	8	1	1	$0.50	1.00	1.00	1.00	
Existing	420	Base Fan Motor, 54kW, 1800rpm, 93.0%	HP	kW	$47.77	$0.00	$0.00	$47.77	1	15	1	1	$47.77	1.00	1.00	1.00	
Existing	421	Fan Motor, 54kW, 1800rpm, 94.1%	HP	kW	$60.68	$0.00	$0.00	$60.68	1	15	0	0	$60.68	1.00	1.00	1.00	
Existing	422	Variable Speed Drive Control, 54kW	HP	kW	$154.94	$47.77	$0.00	$202.71	1	15	1	1	$202.71	1.00	1.00	1.00	

COMMERCIAL

MEASURE COSTS NZ dollars							Implementation Type 1=1 time 2=ROB
Segment	Measure #	Measure Description	SP	SPP	SOP	End Use	
Existing	110	Base Fluorescent Fixture, T12, 34W, EEMAG	1.00	1.00	1.00	1	2
Existing	113	RET Next Gen T8, EEMAG	1.00	1.00	1.00	1	1
Existing	114	RET Next Gen T8, 1EB	1.00	1.00	1.00	1	1
Existing	117	Occupancy Sensor	1.00	1.00	0.50	1	1
Existing	118	Continuous Dimming	1.00	0.50	0.00	1	1
Existing	120	Lighting Control Tuneup	0.25	1.00	1.00	1	1
Existing	130	Base Fluorescent Fixture, T8, 32W, EEMAG	1.00	1.00	1.00	1	2
Existing	133	RET Next Gen T8, 1EB	1.00	1.00	1.00	1	1
Existing	136	Occupancy Sensor	1.00	1.00	0.50	1	1
Existing	137	Continuous Dimming	1.00	0.50	0.00	1	1
Existing	139	Lighting Control Tuneup	0.25	1.00	1.00	1	1
Existing	150	Base Fluorescent Fixture, T8, 32W, EB	1.00	1.00	1.00	1	2
Existing	155	Occupancy Sensor	1.00	1.00	0.50	1	1
Existing	156	Continuous Dimming	1.00	0.50	0.00	1	1
Existing	157	Lighting Control Tuneup	0.25	1.00	1.00	1	1
Existing	160	Base Incandescent Flood, 75W to Screw-in CFL	1.00	1.00	1.00	1	2
Existing	161	CFL Screw-in 18W	1.00	1.00	1.00	1	1
Existing	165	Base Incandescent Flood, 75W to Hardwired CFL	1.00	1.00	1.00	1	2
Existing	166	CFL Hardwired, Modular 18W	1.00	1.00	1.00	1	1
Existing	170	Base Halogen Flood,50W	1.00	1.00	1.00	1	2
Existing	172	RET - Efficient Halogen Flood, 35W	1.00	1.00	1.00	1	1
Existing	175	Base High Bay Metal Halide, 400W	1.00	1.00	1.00	1	2
Existing	176	High Bay T5	1.00	1.00	1.00	1	1
Existing	190	Base Exit Sign	1.00	1.00	1.00	1	1
Existing	220	Base Outdoor Mercury Vapor 400W Lamp	1.00	1.00	1.00	2	2
Existing	221	High Pressure Sodium 250W Lamp	1.00	1.00	1.00	2	1
Existing	222	Outdoor Lighting Controls (Photocell/Timeclock)	0.00	1.70	1.00	2	1
Existing	300	Base Centrifugal Chiller, 0.165 kW/kWt, 1750 kWt	1.00	1.00	1.00	3	2
Existing	301	Centrifugal Chiller, 0.15 kW/kWt, 1750 kWt	1.00	1.00	1.00	3	2
Existing	303	BMS - Chiller	1.00	1.00	1.00	3	1
Existing	305	Chiller Tune Up/Diagnostics	0.50	1.00	1.00	3	1
Existing	306	VSD for Chiller Pumps and Towers	1.00	1.00	1.00	3	1
Existing	307	BMS Optimization	0.25	1.00	1.00	3	1
Existing	308	Economizer	0.25	1.00	1.00	3	1
Existing	310	Base DX Packaged System, EER=2.65, 35 kWt	1.00	1.00	1.00	3	2
Existing	311	DX Tune Up/ Advanced Diagnostics	0.75	1.00	1.00	3	1
Existing	312	DX Packaged System, EER=3.5, 35 kWt	1.00	1.00	1.00	3	2
Existing	315	Prog. Thermostat - DX	0.25	1.00	1.00	3	1
Existing	317	Optimize Controls	0.25	1.00	1.00	3	1
Existing	318	Economizer	0.25	1.00	1.00	3	1
Existing	320	Base Split-system Air Conditioner, EER=2.3	1.00	1.00	1.00	3	2
Existing	321	3.5 EER Split-system Air Conditioner	1.00	1.00	1.00	3	2
Existing	322	Tune Up/Proper Refrigerant Charge	0.75	1.00	1.00	3	1
Existing	324	Programmable Thermostat	0.25	1.00	1.00	3	1
Existing	330	Base Room Air Conditioner, EER=2.3	1.00	1.00	1.00	3	2
Existing	331	3.0 EER Room Air Conditioner	1.00	1.00	1.00	3	2
Existing	333	Programmable Thermostat	0.25	1.00	1.00	3	1
Existing	400	Base Fan Motor, 7kW, 1800rpm, 87.5%	1.00	1.00	1.00	4	2
Existing	401	Fan Motor, 7kW, 1800rpm, 89.5%	1.00	1.00	1.00	4	2
Existing	402	Variable Speed Drive Control, 7kW	0.25	1.00	1.00	4	1
Existing	410	Base Fan Motor, 20kW, 1800rpm, 91.0%	1.00	1.00	1.00	4	2
Existing	411	Fan Motor, 20kW, 1800rpm, 92.4%	1.00	1.00	1.00	4	2
Existing	412	Variable Speed Drive Control, 20kW	0.25	1.00	1.00	4	1
Existing	413	Air Handler Optimization, 20kW	0.25	1.00	1.00	4	1
Existing	420	Base Fan Motor, 54kW, 1800rpm, 93.0%	1.00	1.00	1.00	4	2
Existing	421	Fan Motor, 54kW, 1800rpm, 94.1%	1.00	1.00	1.00	4	2
Existing	422	Variable Speed Drive Control, 54kW	0.25	1.00	1.00	4	1

COMMERCIAL

MEASURE COSTS NZ dollars							NPV of				Full = 1 Incr. = 0			Full			
			Savings	Cost	Unit Equipment	Unit Labor	Lifetime O & M	Implementation Cost	Cost Units per Savings	Service	Initial	Replace	Unit	Relative Energy Reduction Factors			
Segment	Measure #	Measure Description	Units	Units	Cost	Cost	Cost	Factor	Unit	Life	Cost	Cost	Cost	WP	WPP	WOP	
Existing	423	Air Handler Optimization, 54kW	m2	m2	$0.00	$0.00	$0.50	$0.50	1	8	1	1	$0.50	1.00	1.00	1.00	
Existing	500	Base Refrigeration System	,000 m2 stor	4,000 m2 store	$0.00	$0.00	$0.00	$0.00	1	10	1	1	$0.00	1.00	1.00	1.00	
Existing	501	High-efficiency fan motors	,000 m2 stor	4,000 m2 store	$80,358.23	$0.00	$0.00	$80,358.23	1	16	1	1	$80,358.23	1.00	1.00	1.00	
Existing	502	Strip curtains for walk-ins	,000 m2 stor	4,000 m2 store	$3,452.88	$0.00	$0.00	$3,452.88	1	4	1	1	$3,452.88	1.00	1.00	1.00	
Existing	503	Night covers for display cases	ar meter dis	linear meter display	$52.52	$0.00	$0.00	$52.52	1	4.8	1	1	$52.52	1.00	1.00	1.00	
Existing	504	Evaporator fan controller for MT walk-ins	controller	controller	$519.23	$0.00	$0.00	$519.23	1	5	1	1	$519.23	1.00	1.00	1.00	
Existing	505	Efficient compressor motor	,000 m2 stor	4,000 m2 store	$6,075.00	$0.00	$0.00	$6,075.00	1	10	1	1	$6,075.00	1.00	1.00	1.00	
Existing	506	Compressor VSD retrofit	,000 m2 stor	4,000 m2 store	$28,038.46	$0.00	$0.00	$28,038.46	1	10	1	1	$28,038.46	1.00	1.00	1.00	
Existing	507	Floating head pressure controls	,000 m2 stor	4,000 m2 store	$8,645.19	$0.00	$0.00	$8,645.19	1	14	1	1	$8,645.19	1.00	1.00	1.00	
Existing	508	Refrigeration Commissioning	Ton of Load	kWt	$55.88	$0.00	$0.00	$55.88	1	3	1	1	$55.88	1.00	1.00	1.00	
Existing	509	Demand Hot Gas Defrost	HP	kW	$32.28	$0.00	$0.00	$32.28	1	10	1	1	$32.28	1.00	1.00	1.00	
Existing	510	Demand Defrost Electric	HP	kW	$32.28	$0.00	$0.00	$32.28	1	10	1	1	$32.28	1.00	1.00	1.00	
Existing	511	Anti-sweat (humidistat) controls	,000 m2 stor	4,000 m2 store	$11,164.15	$0.00	$0.00	$11,164.15	1	12	1	1	$11,164.15	1.00	1.00	1.00	
Existing	610	Base Desktop PC	PC	PC	$0.00	$0.00	$0.00	$0.00	1	4	1	1	$0.00	1.00	1.00	1.00	
Existing	611	PC Manual Power Management Enabling	PC	PC	$0.00	$13.85	$0.00	$13.85	1	4	1	1	$13.85	1.00	0.81	1.32	
Existing	612	PC Network Power Management Enabling	PC	PC	$0.00	$6.92	$0.00	$6.92	1	4	1	1	$6.92	1.00	0.81	1.32	
Existing	620	Base Monitor, CRT	PC	PC	$0.00	$0.00	$0.00	$0.00	1	4	1	1	$0.00	1.00	1.00	1.00	
Existing	621	Energy Star or Better Monitor	PC	PC	$0.00	$0.00	$0.00	$0.00	1	4	1	1	$0.00	1.00	1.00	1.00	
Existing	622	Monitor Power Management Enabling	PC	PC	$0.00	$13.85	$0.00	$13.85	1	4	1	1	$13.85	1.00	0.81	1.32	
Existing	630	Base Monitor, LCD	Monitor	Monitor	$0.00	$0.00	$0.00	$0.00	1	4	1	1	$0.00	1.00	1.00	1.00	
Existing	631	Energy Star or Better Monitor	Monitor	Monitor	$0.00	$0.00	$0.00	$0.00	1	4	1	1	$0.00	1.00	1.00	1.00	
Existing	632	Monitor Power Management Enabling	Monitor	Monitor	$0.00	$13.85	$0.00	$13.85	1	4	1	1	$13.85	1.00	0.81	1.32	
Existing	640	Base Copier	Copier	Copier	$0.00	$0.00	$0.00	$0.00	1	6	1	1	$0.00	1.00	1.00	1.00	
Existing	641	Energy Star or Better Copier	Copier	Copier	$0.00	$0.00	$0.00	$0.00	1	6	1	1	$0.00	1.00	1.00	1.00	
Existing	642	Copier Power Management Enabling	Copier	Copier	$0.00	$77.88	$0.00	$77.88	1	6	1	1	$77.88	1.00	0.81	1.32	
Existing	650	Base Laser Printer	Printer	Printer	$0.00	$0.00	$0.00	$0.00	1	5	1	1	$0.00	1.00	1.00	1.00	
Existing	651	Printer Power Management Enabling	Printer	Printer	$0.00	$77.88	$0.00	$77.88	1	5	1	1	$77.88	1.00	0.81	1.32	
Existing	700	Base Split-system Heat Pump, 2.3 EER	ton	unit	$0.00	$0.00	$0.00	$0.00	1	18	1	1	$0.00	1.00	1.00	1.00	
Existing	701	3.5 EER Split-system Heat Pump	ton	unit	$489.13	$0.00	$0.00	$489.13	1	18	1	1	$489.13	1.00	1.00	1.00	
Existing	702	Tune Up/ Proper Refrigerant Charge	m2	unit	$0.00	$75.00	$0.00	$75.00	1	10	1	1	$75.00	1.00	1.00	1.00	
Existing	703	Programmable Thermostat	m2	unit	$175.00	$50.00	$0.00	$225.00	1	12	1	1	$225.00	1.00	1.00	1.00	
Existing	710	Base Electric Resistance Reheat Coils	unit	unit	$0.00	$0.00	$0.00	$0.00	1	15	1	1	$0.00	1.00	1.00	1.00	
Existing	711	BMS - Reheat Coils	m2	m2	$1.00	$1.00	$0.00	$2.00	1	10	1	1	$2.00	1.00	1.00	1.00	
Existing	712	BMS Optimization	m2	m2	$0.00	$0.50	$0.00	$0.50	1	5	1	1	$0.50	1.00	1.00	1.00	
Existing	720	Base Wall-mounted Fan Heater	unit	unit	$0.00	$0.00	$0.00	$0.00	1	15	1	1	$0.00	1.00	1.00	1.00	
Existing	721	Programmable Thermostat	m2	unit	$130.00	$50.00	$0.00	$180.00	1	12	1	1	$180.00	1.00	1.00	1.00	
Existing	800	Base Water Heating	kBtu/hr	kW	$0.00	$0.00	$0.00	$0.00	1	15	1	1	$0.00	1.00	1.00	1.00	
Existing	801	Demand controlled circulating systems	kBtu/hr	unit	$102.12	$285.58	$0.00	$387.69	1	15	1	1	$387.69	1.00	1.00	1.00	
Existing	803	High Efficiency Water Heater (electric)	kBtu/hr	kW	$6.88	$0.00	$0.00	$6.88	1	15	1	1	$6.88	1.00	1.00	1.00	
Existing	804	Hot Water Pipe Insulation	kBtu/hr	Lin meter pipe	$2.10	$13.86	$0.00	$15.96	1	15	1	1	$15.96	1.00	1.00	1.00	
Existing	805	Tankless Water Heater	kBtu/hr	kW	$39.75	$2.10	$13.86	$55.70	1	20	1	1	$55.70	1.00	1.00	1.00	
Existing	910	Base Vending Machines	machine	machine	$0.00	$39.75	$26.81	$66.56	1	10	1	1	$66.56	1.00	1.00	1.00	
Existing	911	Vending Misers (cooled machines only)	machine	machine	$311.54	$0.00	$0.00	$311.54	1	10	1	1	$311.54	1.00	0.81	1.32	
New	100	Base Lighting	fixture	fixture	$0.00		$0.00	$0.00	1	70,000	1	1	$0.00	1.00	1.00	1.00	
New	101	Lighting 15% More Efficient Design	m2	m2	$1.66		$0.00	$1.66	1	20	1	1	$1.66	1.00	1.00	1.00	
New	102	Lighting 25% More Efficient Design	m2	m2	$4.14		$0.00	$4.14	1	20	1	1	$4.14	1.00	1.00	1.00	
New	1000	Base HVAC	ton	ton	$0.00		$0.00	$0.00	1	20	1	1	$0.00	1.00	1.00	1.00	
New	1001	HVAC 10% More Efficient Design	m2	m2	$1.66		$0.00	$1.66	1	20	1	1	$1.66	1.00	1.00	1.00	
New	1002	HVAC 30% More Efficient Design	m2	m2	$8.28		$0.00	$8.28	1	20	1	1	$8.28	1.00	1.00	1.00	
New	500	Base Refrigeration System	m2	m2	$0.00		$0.00	$0.00	1	10	1	1	$0.00	1.00	1.00	1.00	
New	501	Refrigeration 10% More Efficient Design	m2	m2	$8.28		$0.00	$8.28	1	10	1	1	$8.28	1.00	1.00	1.00	
New	502	Refrigeration 20% More Efficient Design	m2	m2	$24.84		$0.00	$24.84	1	10	1	1	$24.84	1.00	1.00	1.00	

COMMERCIAL

MEASURE COSTS NZ dollars							Implementation Type 1=1 time 2=ROB
Segment	Measure #	Measure Description	SP	SPP	SOP	End Use	
Existing	423	Air Handler Optimization, 54kW	0.25	1.00	1.00	4	1
Existing	500	Base Refrigeration System	1.00	1.00	1.00	5	2
Existing	501	High-efficiency fan motors	1.00	1.00	1.00	5	1
Existing	502	Strip curtains for walk-ins	1.00	1.00	1.00	5	1
Existing	503	Night covers for display cases	0.00	1.00	1.00	5	1
Existing	504	Evaporator fan controller for MT walk-ins	0.00	1.00	1.00	5	1
Existing	505	Efficient compressor motor	1.00	1.00	1.00	5	2
Existing	506	Compressor VSD retrofit	0.50	1.00	1.00	5	1
Existing	507	Floating head pressure controls	0.00	1.00	1.00	5	1
Existing	508	Refrigeration Commissioning	1.00	1.00	1.00	5	1
Existing	509	Demand Hot Gas Defrost	1.00	1.00	1.00	5	1
Existing	510	Demand Defrost Electric	1.00	1.00	1.00	5	1
Existing	511	Anti-sweat (humidistat) controls	0.50	1.00	1.00	5	1
Existing	610	Base Desktop PC	1.00	1.00	1.00	6	2
Existing	611	PC Manual Power Management Enabling	0.66	0.94	1.32	6	1
Existing	612	PC Network Power Management Enabling	0.66	0.94	1.32	6	1
Existing	620	Base Monitor, CRT	1.00	1.00	1.00	6	2
Existing	621	Energy Star or Better Monitor	1.00	1.00	1.00	6	2
Existing	622	Monitor Power Management Enabling	0.66	0.94	1.32	6	1
Existing	630	Base Monitor, LCD	1.00	1.00	1.00	6	2
Existing	631	Energy Star or Better Monitor	1.00	1.00	1.00	6	2
Existing	632	Monitor Power Management Enabling	0.66	0.94	1.32	6	1
Existing	640	Base Copier	1.00	1.00	1.00	6	2
Existing	641	Energy Star or Better Copier	1.00	1.00	1.00	6	2
Existing	642	Copier Power Management Enabling	0.66	0.94	1.32	6	1
Existing	650	Base Laser Printer	1.00	1.00	1.00	6	2
Existing	651	Printer Power Management Enabling	0.66	0.94	1.32	6	1
Existing	700	Base Split-system Heat Pump, 2.3 EER	1.00	1.00	1.00	7	2
Existing	701	3.5 EER Split-system Heat Pump	1.00	1.00	1.00	7	2
Existing	702	Tune Up/ Proper Refrigerant Charge	1.00	1.00	1.00	7	1
Existing	703	Programmable Thermostat	1.00	1.00	1.00	7	1
Existing	710	Base Electric Resistance Reheat Coils	1.00	1.00	1.00	7	2
Existing	711	BMS - Reheat Coils	1.00	1.00	1.00	7	1
Existing	712	BMS Optimization	1.00	1.00	1.00	7	1
Existing	720	Base Wall-mounted Fan Heater	1.00	1.00	1.00	7	2
Existing	721	Programmable Thermostat	1.00	1.00	1.00	7	1
Existing	800	Base Water Heating	1.00	1.00	1.00	8	2
Existing	801	Demand controlled circulating systems	1.00	1.00	1.00	8	1
Existing	803	High Efficiency Water Heater (electric)	1.00	1.00	1.00	8	2
Existing	804	Hot Water Pipe Insulation	1.00	1.00	1.00	8	1
Existing	805	Tankless Water Heater	1.00	1.00	1.00	8	1
Existing	910	Base Vending Machines	1.00	1.00	1.00	9	2
Existing	911	Vending Misers (cooled machines only)	0.66	0.94	1.32	9	1
New	100	Base Lighting	1.00	1.00	1.00	1	2
New	101	Lighting 15% More Efficient Design	1.00	1.00	1.00	1	2
New	102	Lighting 25% More Efficient Design	1.00	1.00	1.00	1	2
New	1000	Base HVAC	1.00	1.00	1.00	10	2
New	1001	HVAC 10% More Efficient Design	1.00	1.00	1.00	10	2
New	1002	HVAC 30% More Efficient Design	1.00	1.00	1.00	10	2
New	500	Base Refrigeration System	1.00	1.00	1.00	5	2
New	501	Refrigeration 10% More Efficient Design	1.00	1.00	1.00	5	2
New	502	Refrigeration 20% More Efficient Design	1.00	1.00	1.00	5	2

COMMERCIAL

BASE TECHNOLOGY EUIs
(kWh/square meter)

Segment	Measure #	Measure Description	Office	Restaurant	Retail	FoodStore	Schools/ Colleges	Tertiary Education	Hospital	Hotel/Motel	Miscellaneous
Existing	110	Base Fluorescent Fixture, T12, 34W, EEMAG	32.6	31.7	42.8	48.9	21.7	27.2	36.3	13.6	16.3
Existing	130	Base Fluorescent Fixture, T8, 32W, EEMAG	29.4	28.6	38.6	44.1	19.6	24.5	32.7	12.3	14.7
Existing	150	Base Fluorescent Fixture, T8, 32W, EB	24.9	24.2	32.7	37.4	16.6	20.8	27.7	10.4	12.5
Existing	160	Base Incandescent Flood, 75W to Screw-in CFL	121.1	117.7	159.1	181.6	80.7	100.9	134.8	50.5	60.5
Existing	165	Base Incandescent Flood, 75W to Hardwired CFL	121.1	117.7	159.1	181.6	80.7	100.9	134.8	50.5	60.5
Existing	170	Base Halogen Flood, 50W	114.0	110.8	149.7	171.0	76.0	95.0	126.9	47.5	57.0
Existing	175	Base High Bay Metal Halide, 400W	22.9	22.2	30.0	34.3	15.2	19.1	25.4	9.5	11.4
Existing	190	Base Exit Sign (13 w)	0.4	0.6	0.2	0.1	0.1	0.2	0.6	0.3	0.2
Existing	220	Base Mercury Vapor 400W Lamp	3.5	11.7	6.1	10.0	9.1	6.9	4.9	5.1	12.0
Existing	300	Base Centrifugal Chiller, 0.165 kW/kWt, 1750 kWt	17.8	30.6	11.4	11.9	4.7	17.0	22.3	10.4	7.6
Existing	310	Base DX Packaged System, EER=2.65, 35 kWt	30.7	52.7	19.6	20.5	8.1	29.3	38.5	17.9	13.0
Existing	320	Base Split-system Air Conditioner, EER=2.3	33.8	58.0	21.6	22.6	8.9	32.2	42.4	19.6	14.3
Existing	330	Base Room Air Conditioner, EER=2.3	36.8	63.3	23.5	24.6	9.7	35.2	46.2	21.4	15.6
Existing	400	Base Fan Motor, 7kW, 1800rpm, 87.5%	28.6	24.8	22.8	35.1	5.3	42.3	44.1	14.6	13.0
Existing	410	Base Fan Motor, 20kW, 1800rpm, 91.0%	26.5	23.0	21.1	32.5	4.9	39.3	40.8	13.6	12.0
Existing	420	Base Fan Motor, 54kW, 1800rpm, 93.0%	26.1	22.6	20.8	32.0	4.8	38.6	40.2	13.3	11.8
Existing	500	Base Refrigeration System		104.7		262.3					
Existing	610	Base Desktop PC	6.3	1.4	1.6	1.2	6.7	1.0	2.0	0.5	0.4
Existing	620	Base Monitor, 17" CRT	1.2	0.7	0.5	0.6	4.2	0.4	0.2	0.1	0.1
Existing	630	Base Monitor, 17" LCD	0.4	0.1	0.1	0.0	0.2	0.0	0.1	0.0	0.0
Existing	640	Base Copier	7.4	3.8	4.4	3.3	6.2	1.5	5.5	1.0	0.7
Existing	650	Base Laser Printer	5.7	2.4	3.7	2.1	6.1	1.3	3.1	1.5	0.5
Existing	700	Base Split-system Heat Pump, 2.3 EER	23.3	12.7	6.4	20.0	10.6	28.9	46.1	6.0	14.0
Existing	710	Base Electric Resistance Reheat Coils	67.6	36.8	18.5	58.0	30.6	83.9	133.7	17.4	40.6
Existing	720	Base Wall-mounted Fan Heater	75.1	40.9	20.5	64.4	34.0	93.3	148.5	19.3	45.1
Existing	800	Base Water Heating	3.3	39.7	2.9	14.9	5.2	8.8	45.5	28.3	25.6
Existing	910	Base Vending Machines	3.5	4.8	0.5	0.9	2.4	1.3	1.1	1.9	0.7
New	100	Base Lighting	37.5	39.2	49.0	55.9	22.7	29.4	43.9	23.9	25.0
New	1000	Base HVAC	54.8	50.7	31.7	38.1	17.0	66.8	88.6	24.2	28.0
New	500	Base Refrigeration System		104.7		262.3					

COMMERCIAL

APPLICABILITY FACTOR
(percent)

Segment	Measure #	Measure Description	Office	Restaurant	Retail	FoodStore	Schools/ Colleges	Tertiary Education	Hospital	Hotel/Motel	Miscellaneous
Existing	110	Base Fluorescent Fixture, T12, 34W, EEMAG	24%	31%	25%	25%	19%	19%	32%	11%	38%
Existing	113	RET Next Gen T8, EEMAG	24%	31%	25%	25%	19%	19%	32%	11%	38%
Existing	114	RET Next Gen T8, 1EB	24%	31%	25%	25%	19%	19%	32%	11%	38%
Existing	117	Occupancy Sensor	24%	31%	25%	25%	19%	19%	32%	11%	38%
Existing	118	Continuous Dimming	24%	31%	25%	25%	19%	19%	32%	11%	38%
Existing	120	Lighting Control Tuneup	24%	31%	25%	25%	19%	19%	32%	11%	38%
Existing	130	Base Fluorescent Fixture, T8, 32W, EEMAG	37%	15%	36%	36%	26%	42%	26%	6%	9%
Existing	133	RET Next Gen T8, 1EB	37%	15%	36%	36%	26%	42%	26%	6%	9%
Existing	136	Occupancy Sensor	37%	15%	36%	36%	26%	42%	26%	6%	9%
Existing	137	Continuous Dimming	37%	15%	36%	36%	26%	42%	26%	6%	9%
Existing	139	Lighting Control Tuneup	37%	15%	36%	36%	26%	42%	26%	6%	9%
Existing	150	Base Fluorescent Fixture, T8, 32W, EB	10%	4%	9%	9%	7%	11%	7%	1%	2%
Existing	155	Occupancy Sensor	10%	4%	9%	9%	7%	11%	7%	1%	2%
Existing	156	Continuous Dimming	10%	4%	9%	9%	7%	11%	7%	1%	2%
Existing	157	Lighting Control Tuneup	10%	4%	9%	9%	7%	11%	7%	1%	2%
Existing	160	Base Incandescent Flood, 75W to Screw-in CFL	14%	21%	12%	12%	16%	8%	22%	47%	22%
Existing	161	CFL Screw-in 18W	14%	21%	12%	12%	16%	8%	22%	47%	22%
Existing	165	Base Incandescent Flood, 75W to Hardwired CFL	5%	7%	4%	4%	5%	3%	7%	16%	7%
Existing	166	CFL Hardwired, Modular 18W	5%	7%	4%	4%	5%	3%	7%	16%	7%
Existing	170	Base Halogen Flood,50W	6%	4%	7%	7%	0%	7%	3%	8%	16%
Existing	172	RET - Efficient Halogen Flood, 35W	6%	4%	7%	7%	0%	7%	3%	8%	16%
Existing	175	Base High Bay Metal Halide, 400W	6%	6%	6%	6%	14%	9%	2%	4%	5%
Existing	176	High Bay T5	6%	6%	6%	6%	14%	9%	2%	4%	5%
Existing	190	Base Exit Sign	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	220	Base Outdoor Mercury Vapor 400W Lamp	17%	31%	21%	43%	44%	54%	15%	49%	25%
Existing	221	High Pressure Sodium 250W Lamp	17%	31%	21%	43%	44%	54%	15%	49%	25%
Existing	222	Outdoor Lighting Controls (Photocell/Timeclock)	17%	31%	21%	43%	44%	54%	15%	49%	25%
Existing	300	Base Centrifugal Chiller, 0.165 kW/kWt, 1750 kWt	7%	1%	1%	8%	3%	7%	4%	2%	5%
Existing	301	Centrifugal Chiller, 0.15 kW/kWt, 1750 kWt	7%	1%	1%	8%	3%	7%	4%	2%	5%
Existing	303	BMS - Chiller	7%	1%	1%	8%	3%	7%	4%	2%	5%
Existing	305	Chiller Tune Up/Diagnostics	7%	1%	1%	8%	3%	7%	4%	2%	5%
Existing	306	VSD for Chiller Pumps and Towers	7%	1%	1%	8%	3%	7%	4%	2%	5%
Existing	307	BMS Optimization	7%	1%	1%	8%	3%	7%	4%	2%	5%
Existing	308	Economizer	7%	1%	1%	8%	3%	7%	4%	2%	5%
Existing	310	Base DX Packaged System, EER=2.65, 35 kWt	26%	23%	10%	4%	4%	4%	15%	3%	10%
Existing	311	DX Tune Up/ Advanced Diagnostics	26%	23%	10%	4%	4%	4%	15%	3%	10%
Existing	312	DX Packaged System, EER=3.5, 35 kWt	26%	23%	10%	4%	4%	4%	15%	3%	10%
Existing	315	Prog. Thermostat - DX	26%	23%	10%	4%	4%	4%	15%	3%	10%
Existing	317	Optimize Controls	26%	23%	10%	4%	4%	4%	15%	3%	10%
Existing	318	Economizer	26%	23%	10%	4%	4%	4%	15%	3%	10%
Existing	320	Base Split-system Air Conditioner, EER=2.3	16%	5%	8%	8%	4%	7%	12%	4%	11%
Existing	321	3.5 EER Split-system Air Conditioner	16%	5%	8%	8%	4%	7%	12%	4%	11%
Existing	322	Tune Up/Proper Refrigerant Charge	16%	5%	8%	8%	4%	7%	12%	4%	11%
Existing	324	Programmable Thermostat	16%	5%	8%	8%	4%	7%	12%	4%	11%

COMMERCIAL

APPLICABILITY FACTOR
(percent)

Segment	Measure #	Measure Description	Office	Restaurant	Retail	FoodStore	Schools/ Colleges	Tertiary Education	Hospital	Hotel/Motel	Miscellaneous
Existing	330	Base Room Air Conditioner, EER=2.3	4%	3%	8%	4%	6%	7%	8%	2%	10%
Existing	331	3.0 EER Room Air Conditioner	4%	3%	8%	4%	6%	7%	8%	2%	10%
Existing	333	Programmable Thermostat	4%	3%	8%	4%	6%	7%	8%	2%	10%
Existing	400	Base Fan Motor, 7kW, 1800rpm, 87.5%	31%	34%	39%	25%	44%	35%	21%	21%	28%
Existing	401	Fan Motor, 7kW, 1800rpm, 89.5%	31%	34%	39%	25%	44%	35%	21%	21%	28%
Existing	402	Variable Speed Drive Control, 7kW	31%	34%	39%	25%	44%	35%	21%	21%	28%
Existing	410	Base Fan Motor, 20kW, 1800rpm, 91.0%	12%	32%	0%	10%	12%	25%	20%	6%	10%
Existing	411	Fan Motor, 20kW, 1800rpm, 92.4%	12%	32%	0%	10%	12%	25%	20%	6%	10%
Existing	412	Variable Speed Drive Control, 20kW	12%	32%	0%	10%	12%	25%	20%	6%	10%
Existing	413	Air Handler Optimization, 20kW	12%	32%	0%	10%	12%	25%	20%	6%	10%
Existing	420	Base Fan Motor, 54kW, 1800rpm, 93.0%	15%	0%	0%	8%	0%	9%	14%	2%	3%
Existing	421	Fan Motor, 54kW, 1800rpm, 94.1%	15%	0%	0%	8%	0%	9%	14%	2%	3%
Existing	422	Variable Speed Drive Control, 54kW	15%	0%	0%	8%	0%	9%	14%	2%	3%
Existing	423	Air Handler Optimization, 54kW	15%	0%	0%	8%	0%	9%	14%	2%	3%
Existing	500	Base Refrigeration System		100%		100%					
Existing	501	High-efficiency fan motors		100%		100%					
Existing	502	Strip curtains for walk-ins		100%		100%					
Existing	503	Night covers for display cases		100%		100%					
Existing	504	Evaporator fan controller for MT walk-ins		100%		100%					
Existing	505	Efficient compressor motor		100%		100%					
Existing	506	Compressor VSD retrofit		100%		100%					
Existing	507	Floating head pressure controls		100%		100%					
Existing	508	Refrigeration Commissioning		100%		100%					
Existing	509	Demand Hot Gas Defrost		100%		100%					
Existing	510	Demand Defrost Electric		100%		100%					
Existing	511	Anti-sweat (humidistat) controls		100%		100%					
Existing	610	Base Desktop PC	96%	66%	88%	71%	98%	100%	97%	95%	81%
Existing	611	PC Manual Power Management Enabling	96%	66%	88%	71%	98%	100%	97%	95%	81%
Existing	612	PC Network Power Management Enabling	96%	66%	88%	71%	98%	100%	97%	95%	81%
Existing	620	Base Monitor, CRT	9%	20%	13%	21%	11%	23%	18%	21%	16%
Existing	621	Energy Star or Better Monitor	9%	20%	13%	21%	11%	23%	18%	21%	16%
Existing	622	Monitor Power Management Enabling	9%	20%	13%	21%	11%	23%	18%	21%	16%
Existing	630	Base Monitor, LCD	88%	46%	74%	50%	87%	77%	78%	74%	66%
Existing	631	Energy Star or Better Monitor	88%	46%	74%	50%	87%	77%	78%	74%	66%
Existing	632	Monitor Power Management Enabling	88%	46%	74%	50%	87%	77%	78%	74%	66%
Existing	640	Base Copier	91%	41%	69%	50%	100%	100%	85%	74%	63%
Existing	641	Energy Star or Better Copier	91%	41%	69%	50%	100%	100%	85%	74%	63%
Existing	642	Copier Power Management Enabling	91%	41%	69%	50%	100%	100%	85%	74%	63%
Existing	650	Base Laser Printer	84%	46%	70%	50%	82%	92%	75%	59%	59%
Existing	651	Printer Power Management Enabling	84%	46%	70%	50%	82%	92%	75%	59%	59%
Existing	700	Base Split-system Heat Pump, 2.3 EER	25%	10%	13%	7%	11%	29%	18%	9%	14%
Existing	701	3.5 EER Split-system Heat Pump	25%	10%	13%	7%	11%	29%	18%	9%	14%
Existing	702	Tune Up/ Proper Refrigerant Charge	25%	10%	13%	7%	11%	29%	18%	9%	14%
Existing	703	Programmable Thermostat	25%	10%	13%	7%	11%	29%	18%	9%	14%

COMMERCIAL

APPLICABILITY FACTOR
(percent)

Segment	Measure #	Measure Description	Office	Restaurant	Retail	FoodStore	Schools/ Colleges	Tertiary Education	Hospital	Hotel/Motel	Miscellaneous
Existing	710	Base Electric Resistance Reheat Coils	21%	15%	10%	7%	26%	10%	12%	16%	11%
Existing	711	BMS - Reheat Coils	21%	15%	10%	7%	26%	10%	12%	16%	11%
Existing	712	BMS Optimization	21%	15%	10%	7%	26%	10%	12%	16%	11%
Existing	720	Base Wall-mounted Fan Heater	12%	13%	14%	7%	30%	29%	27%	29%	24%
Existing	721	Programmable Thermostat	12%	13%	14%	7%	30%	29%	27%	29%	24%
Existing	800	Base Water Heating	72%	64%	71%	50%	85%	69%	68%	52%	76%
Existing	801	Demand controlled circulating systems	72%	64%	71%	50%	85%	69%	68%	52%	76%
Existing	803	High Efficiency Water Heater (electric)	72%	64%	71%	50%	85%	69%	68%	52%	76%
Existing	804	Hot Water Pipe Insulation	72%	64%	71%	50%	85%	69%	68%	52%	76%
Existing	805	Tankless Water Heater	72%	64%	71%	50%	85%	69%	68%	52%	76%
Existing	910	Base Vending Machines	12%	7%	6%	0%	11%	31%	13%	10%	16%
Existing	911	Vending Misers (cooled machines only)	12%	7%	6%	0%	11%	31%	13%	10%	16%
New	100	Base Lighting	100%	100%	100%	100%	100%	100%	100%	100%	100%
New	101	Lighting 15% More Efficient Design	100%	100%	100%	100%	100%	100%	100%	100%	100%
New	102	Lighting 25% More Efficient Design	100%	100%	100%	100%	100%	100%	100%	100%	100%
New	1000	Base HVAC	95%	95%	95%	95%	95%	95%	95%	95%	95%
New	1001	HVAC 10% More Efficient Design	95%	95%	95%	95%	95%	95%	95%	95%	95%
New	1002	HVAC 30% More Efficient Design	95%	95%	95%	95%	95%	95%	95%	95%	95%
New	500	Base Refrigeration System		100%		100%					
New	501	Refrigeration 10% More Efficient Design		100%		100%					
New	502	Refrigeration 20% More Efficient Design		100%		100%					

COMMERCIAL

INCOMPLETE FACTOR
(percent)

Segment	Measure #	Measure Description	Office	Restaurant	Retail	FoodStore	Schools/ Colleges	Tertiary Education	Hospital	Hotel/Motel	Miscellaneous
Existing	110	Base Fluorescent Fixture, T12, 34W, EEMAG	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	113	RET Next Gen T8, EEMAG	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	114	RET Next Gen T8, 1EB	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	117	Occupancy Sensor	99%	99%	99%	99%	99%	99%	99%	99%	99%
Existing	118	Continuous Dimming	99%	99%	99%	99%	99%	99%	99%	99%	99%
Existing	120	Lighting Control Tuneup	98%	98%	98%	98%	98%	98%	98%	98%	98%
Existing	130	Base Fluorescent Fixture, T8, 32W, EEMAG	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	133	RET Next Gen T8, 1EB	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	136	Occupancy Sensor	99%	99%	99%	99%	99%	99%	99%	99%	99%
Existing	137	Continuous Dimming	99%	99%	99%	99%	99%	99%	99%	99%	99%
Existing	139	Lighting Control Tuneup	98%	98%	98%	98%	98%	98%	98%	98%	98%
Existing	150	Base Fluorescent Fixture, T8, 32W, EB	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	155	Occupancy Sensor	99%	99%	99%	99%	99%	99%	99%	99%	99%
Existing	156	Continuous Dimming	99%	99%	99%	99%	99%	99%	99%	99%	99%
Existing	157	Lighting Control Tuneup	98%	98%	98%	98%	98%	98%	98%	98%	98%
Existing	160	Base Incandescent Flood, 75W to Screw-in CFL	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	161	CFL Screw-in 18W	98%	86%	71%	71%	71%	45%	97%	81%	63%
Existing	165	Base Incandescent Flood, 75W to Hardwired CFL	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	166	CFL Hardwired, Modular 18W	95%	76%	79%	79%	100%	94%	95%	70%	99%
Existing	170	Base Halogen Flood,50W	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	172	RET - Efficient Halogen Flood, 35W	95%	95%	95%	95%	95%	95%	95%	95%	95%
Existing	175	Base High Bay Metal Halide, 400W	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	176	High Bay T5	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	190	Base Exit Sign	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	220	Base Outdoor Mercury Vapor 400W Lamp	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	221	High Pressure Sodium 250W Lamp	66%	66%	66%	66%	66%	66%	66%	66%	66%
Existing	222	Outdoor Lighting Controls (Photocell/Timeclock)	65%	65%	65%	65%	65%	65%	65%	65%	65%
Existing	300	Base Centrifugal Chiller, 0.165 kW/kWt, 1750 kWt	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	301	Centrifugal Chiller, 0.15 kW/kWt, 1750 kWt	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	303	BMS - Chiller	34%	34%	34%	34%	34%	34%	34%	34%	34%
Existing	305	Chiller Tune Up/Diagnostics	50%	50%	50%	50%	50%	50%	50%	50%	50%
Existing	306	VSD for Chiller Pumps and Towers	89%	89%	89%	89%	89%	89%	89%	89%	89%
Existing	307	BMS Optimization	83%	83%	83%	83%	83%	83%	83%	83%	83%
Existing	308	Economizer	13%	13%	13%	13%	13%	13%	13%	13%	13%
Existing	310	Base DX Packaged System, EER=2.65, 35 kWt	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	311	DX Tune Up/ Advanced Diagnostics	38%	38%	38%	38%	38%	38%	38%	38%	38%
Existing	312	DX Packaged System, EER=3.5, 35 kWt	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	315	Prog. Thermostat - DX	59%	59%	59%	59%	59%	59%	59%	59%	59%
Existing	317	Optimize Controls	66%	66%	66%	66%	66%	66%	66%	66%	66%
Existing	318	Economizer	13%	13%	13%	13%	13%	13%	13%	13%	13%
Existing	320	Base Split-system Air Conditioner, EER=2.3	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	321	3.5 EER Split-system Air Conditioner	89%	89%	89%	89%	89%	89%	89%	89%	89%
Existing	322	Tune Up/Proper Refrigerant Charge	17%	17%	17%	17%	17%	17%	17%	17%	17%
Existing	324	Programmable Thermostat	50%	50%	50%	50%	50%	50%	50%	50%	50%
Existing	330	Base Room Air Conditioner, EER=2.3	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	331	3.0 EER Room Air Conditioner	97%	97%	97%	97%	97%	97%	97%	97%	97%

COMMERCIAL

INCOMPLETE FACTOR (percent)											
Segment	Measure #	Measure Description	Office	Restaurant	Retail	FoodStore	Schools/ Colleges	Tertiary Education	Hospital	Hotel/Motel	Miscellaneous
Existing	333	Programmable Thermostat	77%	77%	77%	77%	77%	77%	77%	77%	77%
Existing	400	Base Fan Motor, 7kW, 1800rpm, 87.5%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	401	Fan Motor, 7kW, 1800rpm, 89.5%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	402	Variable Speed Drive Control, 7kW	95%	95%	95%	95%	95%	95%	95%	95%	95%
Existing	410	Base Fan Motor, 20kW, 1800rpm, 91.0%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	411	Fan Motor, 20kW, 1800rpm, 92.4%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	412	Variable Speed Drive Control, 20kW	39%	95%	75%	75%	50%	50%	75%	75%	75%
Existing	413	Air Handler Optimization, 20kW	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	420	Base Fan Motor, 54kW, 1800rpm, 93.0%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	421	Fan Motor, 54kW, 1800rpm, 94.1%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	422	Variable Speed Drive Control, 54kW	39%	95%	75%	75%	50%	50%	75%	75%	75%
Existing	423	Air Handler Optimization, 54kW	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	500	Base Refrigeration System		100%		100%					
Existing	501	High-efficiency fan motors		95%		95%					
Existing	502	Strip curtains for walk-ins		70%		70%					
Existing	503	Night covers for display cases		95%		95%					
Existing	504	Evaporator fan controller for MT walk-ins		80%		80%					
Existing	505	Efficient compressor motor		70%		70%					
Existing	506	Compressor VSD retrofit		80%		80%					
Existing	507	Floating head pressure controls		25%		25%					
Existing	508	Refrigeration Commissioning		50%		50%					
Existing	509	Demand Hot Gas Defrost		30%		30%					
Existing	510	Demand Defrost Electric		95%		95%					
Existing	511	Anti-sweat (humidistat) controls		75%		75%					
Existing	610	Base Desktop PC	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	611	PC Manual Power Management Enabling	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	612	PC Network Power Management Enabling	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	620	Base Monitor, CRT	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	621	Energy Star or Better Monitor	5%	5%	5%	5%	5%	5%	5%	5%	5%
Existing	622	Monitor Power Management Enabling	40%	40%	40%	40%	40%	40%	40%	40%	40%
Existing	630	Base Monitor, LCD	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	631	Energy Star or Better Monitor	5%	5%	5%	5%	5%	5%	5%	5%	5%
Existing	632	Monitor Power Management Enabling	40%	40%	40%	40%	40%	40%	40%	40%	40%
Existing	640	Base Copier	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	641	Energy Star or Better Copier	10%	10%	10%	10%	10%	10%	10%	10%	10%
Existing	642	Copier Power Management Enabling	66%	66%	66%	66%	66%	66%	66%	66%	66%
Existing	650	Base Laser Printer	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	651	Printer Power Management Enabling	46%	46%	46%	46%	46%	46%	46%	46%	46%
Existing	700	Base Split-system Heat Pump, 2.3 EER	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	701	3.5 EER Split-system Heat Pump	89%	89%	89%	89%	89%	89%	89%	89%	89%
Existing	702	Tune Up/ Proper Refrigerant Charge	62%	62%	62%	62%	62%	62%	62%	62%	62%
Existing	703	Programmable Thermostat	56%	56%	56%	56%	56%	56%	56%	56%	56%
Existing	710	Base Electric Resistance Reheat Coils	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	711	BMS - Reheat Coils	85%	85%	85%	85%	85%	85%	85%	85%	85%
Existing	712	BMS Optimization	95%	95%	95%	95%	95%	95%	95%	95%	95%
Existing	720	Base Wall-mounted Fan Heater	100%	100%	100%	100%	100%	100%	100%	100%	100%

COMMERCIAL

INCOMPLETE FACTOR
(percent)

Segment	Measure #	Measure Description	Office	Restaurant	Retail	FoodStore	Schools/ Colleges	Tertiary Education	Hospital	Hotel/Motel	Miscellaneous
Existing	721	Programmable Thermostat	69%	69%	69%	69%	69%	69%	69%	69%	69%
Existing	800	Base Water Heating	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	801	Demand controlled circulating systems	66%	66%	66%	66%	66%	66%	66%	66%	66%
Existing	803	High Efficiency Water Heater (electric)	93%	93%	93%	93%	93%	93%	93%	93%	93%
Existing	804	Hot Water Pipe Insulation	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	805	Tankless Water Heater	93%	93%	93%	93%	93%	93%	93%	93%	93%
Existing	910	Base Vending Machines	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	911	Vending Misers (cooled machines only)	100%	100%	87%	100%	100%	100%	100%	53%	100%
New	100	Base Lighting	100%	100%	100%	100%	100%	100%	100%	100%	100%
New	101	Lighting 15% More Efficient Design	100%	100%	100%	100%	100%	100%	100%	100%	100%
New	102	Lighting 25% More Efficient Design	100%	100%	100%	100%	100%	100%	100%	100%	100%
New	1000	Base HVAC	100%	100%	100%	100%	100%	100%	100%	100%	100%
New	1001	HVAC 10% More Efficient Design	100%	100%	100%	100%	100%	100%	100%	100%	100%
New	1002	HVAC 30% More Efficient Design	100%	100%	100%	100%	100%	100%	100%	100%	100%
New	500	Base Refrigeration System		100%		100%					
New	501	Refrigeration 10% More Efficient Design		95%		95%					
New	502	Refrigeration 20% More Efficient Design		70%		70%					

COMMERCIAL

FEASIBILITY FACTOR (percent)											
Segment	Measure #	Measure Description	Office	Restaurant	Retail	FoodStore	Schools/ Colleges	Tertiary Education	Hospital	Hotel/Motel	Miscellaneous
Existing	110	Base Fluorescent Fixture, T12, 34W, EEMAG	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	113	RET Next Gen T8, EEMAG	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	114	RET Next Gen T8, 1EB	70%	80%	80%	80%	80%	80%	80%	80%	80%
Existing	117	Occupancy Sensor	40%	10%	10%	10%	50%	50%	50%	20%	20%
Existing	118	Continuous Dimming	40%	50%	12%	26%	30%	30%	10%	30%	30%
Existing	120	Lighting Control Tuneup	40%	10%	40%	25%	25%	40%	40%	40%	25%
Existing	130	Base Fluorescent Fixture, T8, 32W, EEMAG	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	133	RET Next Gen T8, 1EB	90%	90%	90%	90%	90%	90%	90%	90%	90%
Existing	136	Occupancy Sensor	40%	10%	10%	10%	50%	50%	50%	20%	20%
Existing	137	Continuous Dimming	40%	50%	12%	26%	30%	30%	10%	30%	30%
Existing	139	Lighting Control Tuneup	40%	10%	40%	25%	25%	40%	40%	40%	25%
Existing	150	Base Fluorescent Fixture, T8, 32W, EB	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	155	Occupancy Sensor	40%	10%	10%	10%	50%	50%	50%	20%	20%
Existing	156	Continuous Dimming	40%	50%	12%	26%	30%	30%	10%	30%	30%
Existing	157	Lighting Control Tuneup	40%	10%	40%	25%	25%	40%	40%	40%	25%
Existing	160	Base Incandescent Flood, 75W to Screw-in CFL	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	161	CFL Screw-in 18W	90%	50%	50%	90%	90%	90%	90%	70%	90%
Existing	165	Base Incandescent Flood, 75W to Hardwired CFL	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	166	CFL Hardwired, Modular 18W	90%	50%	50%	90%	90%	90%	90%	70%	90%
Existing	170	Base Halogen Flood,50W	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	172	RET - Efficient Halogen Flood, 35W	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	175	Base High Bay Metal Halide, 400W	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	176	High Bay T5	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	190	Base Exit Sign	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	220	Base Outdoor Mercury Vapor 400W Lamp	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	221	High Pressure Sodium 250W Lamp	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	222	Outdoor Lighting Controls (Photocell/Timeclock)	90%	90%	90%	90%	90%	90%	90%	90%	90%
Existing	300	Base Centrifugal Chiller, 0.165 kW/kWt, 1750 kWt	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	301	Centrifugal Chiller, 0.15 kW/kWt, 1750 kWt	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	303	BMS - Chiller	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	305	Chiller Tune Up/Diagnostics	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	306	VSD for Chiller Pumps and Towers	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	307	BMS Optimization	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	308	Economizer	50%	50%	50%	50%	50%	50%	50%	50%	50%
Existing	310	Base DX Packaged System, EER=2.65, 35 kWt	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	311	DX Tune Up/ Advanced Diagnostics	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	312	DX Packaged System, EER=3.5, 35 kWt	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	315	Prog. Thermostat - DX	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	317	Optimize Controls	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	318	Economizer	50%	50%	50%	50%	50%	50%	50%	50%	50%
Existing	320	Base Split-system Air Conditioner, EER=2.3	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	321	3.5 EER Split-system Air Conditioner	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	322	Tune Up/Proper Refrigerant Charge	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	324	Programmable Thermostat	100%	100%	100%	100%	100%	100%	100%	100%	100%

COMMERCIAL

FEASIBILITY FACTOR (percent)											
Segment	Measure #	Measure Description	Office	Restaurant	Retail	FoodStore	Schools/ Colleges	Tertiary Education	Hospital	Hotel/Motel	Miscellaneous
Existing	330	Base Room Air Conditioner, EER=2.3	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	331	3.0 EER Room Air Conditioner	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	333	Programmable Thermostat	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	400	Base Fan Motor, 7kW, 1800rpm, 87.5%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	401	Fan Motor, 7kW, 1800rpm, 89.5%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	402	Variable Speed Drive Control, 7kW	24%	20%	20%	0%	20%	31%	18%	4%	10%
Existing	410	Base Fan Motor, 20kW, 1800rpm, 91.0%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	411	Fan Motor, 20kW, 1800rpm, 92.4%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	412	Variable Speed Drive Control, 20kW	71%	60%	60%	0%	60%	88%	86%	7%	35%
Existing	413	Air Handler Optimization, 20kW	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	420	Base Fan Motor, 54kW, 1800rpm, 93.0%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	421	Fan Motor, 54kW, 1800rpm, 94.1%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	422	Variable Speed Drive Control, 54kW	87%	80%	80%	0%	80%	90%	88%	30%	55%
Existing	423	Air Handler Optimization, 54kW	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	500	Base Refrigeration System		100%		100%					
Existing	501	High-efficiency fan motors		100%		100%					
Existing	502	Strip curtains for walk-ins		100%		100%					
Existing	503	Night covers for display cases		50%		50%					
Existing	504	Evaporator fan controller for MT walk-ins		100%		100%					
Existing	505	Efficient compressor motor		100%		100%					
Existing	506	Compressor VSD retrofit		50%		50%					
Existing	507	Floating head pressure controls		100%		100%					
Existing	508	Refrigeration Commissioning		100%		100%					
Existing	509	Demand Hot Gas Defrost		100%		100%					
Existing	510	Demand Defrost Electric		100%		100%					
Existing	511	Anti-sweat (humidistat) controls		100%		100%					
Existing	610	Base Desktop PC	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	611	PC Manual Power Management Enabling	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	612	PC Network Power Management Enabling	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	620	Base Monitor, CRT	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	621	Energy Star or Better Monitor	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	622	Monitor Power Management Enabling	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	630	Base Monitor, LCD	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	631	Energy Star or Better Monitor	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	632	Monitor Power Management Enabling	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	640	Base Copier	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	641	Energy Star or Better Copier	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	642	Copier Power Management Enabling	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	650	Base Laser Printer	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	651	Printer Power Management Enabling	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	700	Base Split-system Heat Pump, 2.3 EER	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	701	3.5 EER Split-system Heat Pump	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	702	Tune Up/ Proper Refrigerant Charge	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	703	Programmable Thermostat	100%	100%	100%	100%	100%	100%	100%	100%	100%

COMMERCIAL

FEASIBILITY FACTOR
(percent)

Segment	Measure #	Measure Description	Office	Restaurant	Retail	FoodStore	Schools/ Colleges	Tertiary Education	Hospital	Hotel/Motel	Miscellaneous
Existing	710	Base Electric Resistance Reheat Coils	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	711	BMS - Reheat Coils	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	712	BMS Optimization	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	720	Base Wall-mounted Fan Heater	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	721	Programmable Thermostat	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	800	Base Water Heating	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	801	Demand controlled circulating systems	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	803	High Efficiency Water Heater (electric)	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	804	Hot Water Pipe Insulation	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	805	Tankless Water Heater	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	910	Base Vending Machines	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	911	Vending Misers (cooled machines only)	70%	70%	70%	70%	70%	70%	70%	70%	70%
New	100	Base Lighting	100%	100%	100%	100%	100%	100%	100%	100%	100%
New	101	Lighting 15% More Efficient Design	95%	95%	95%	95%	95%	95%	95%	95%	95%
New	102	Lighting 25% More Efficient Design	80%	80%	80%	80%	80%	80%	80%	80%	80%
New	1000	Base HVAC	100%	100%	100%	100%	100%	100%	100%	100%	100%
New	1001	HVAC 10% More Efficient Design	100%	100%	100%	100%	100%	100%	100%	100%	100%
New	1002	HVAC 30% More Efficient Design	90%	90%	90%	90%	90%	90%	90%	90%	90%
New	500	Base Refrigeration System		100%		100%					
New	501	Refrigeration 10% More Efficient Design		100%		100%					
New	502	Refrigeration 20% More Efficient Design		100%		100%					

COMMERCIAL

ENERGY SAVINGS
(percent)

Segment	Measure #	Measure Description	Office	Restaurant	Retail	FoodStore	Schools/ Colleges	Tertiary Education	Hospital	Hotel/Motel	Miscellaneous
Existing	110	Base Fluorescent Fixture, T12, 34W, EEMAG									
Existing	113	RET Next Gen T8, EEMAG	15%	15%	15%	15%	15%	15%	15%	15%	15%
Existing	114	RET Next Gen T8, 1EB	28%	28%	28%	28%	28%	28%	28%	28%	28%
Existing	117	Occupancy Sensor	30%	20%	20%	20%	20%	20%	20%	20%	20%
Existing	118	Continuous Dimming	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	120	Lighting Control Tuneup	5%	5%	5%	5%	5%	5%	5%	5%	5%
Existing	130	Base Fluorescent Fixture, T8, 32W, EEMAG									
Existing	133	RET Next Gen T8, 1EB	15%	15%	15%	15%	15%	15%	15%	15%	15%
Existing	136	Occupancy Sensor	30%	20%	20%	20%	20%	20%	20%	20%	20%
Existing	137	Continuous Dimming	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	139	Lighting Control Tuneup	5%	5%	5%	5%	5%	5%	5%	5%	5%
Existing	150	Base Fluorescent Fixture, T8, 32W, EB									
Existing	155	Occupancy Sensor	30%	20%	20%	20%	20%	20%	20%	20%	20%
Existing	156	Continuous Dimming	75%	75%	75%	75%	75%	75%	75%	75%	75%
Existing	157	Lighting Control Tuneup	5%	5%	5%	5%	5%	5%	5%	5%	5%
Existing	160	Base Incandescent Flood, 75W to Screw-in CFL									
Existing	161	CFL Screw-in 18W	76%	76%	76%	76%	76%	76%	76%	76%	76%
Existing	165	Base Incandescent Flood, 75W to Hardwired CFL									
Existing	166	CFL Hardwired, Modular 18W	76%	76%	76%	76%	76%	76%	76%	76%	76%
Existing	170	Base Halogen Flood,50W									
Existing	172	RET - Efficient Halogen Flood, 35W	30%	30%	30%	30%	30%	30%	30%	30%	30%
Existing	175	Base High Bay Metal Halide, 400W									
Existing	176	High Bay T5	15%	15%	15%	15%	15%	15%	15%	15%	15%
Existing	190	Base Exit Sign									
Existing	220	Base Outdoor Mercury Vapor 400W Lamp									
Existing	221	High Pressure Sodium 250W Lamp	35%	35%	35%	35%	35%	35%	35%	35%	35%
Existing	222	Outdoor Lighting Controls (Photocell/Timeclock)	22%	22%	22%	22%	22%	22%	22%	22%	22%
Existing	300	Base Centrifugal Chiller, 0.165 kW/kWt, 1750 kWt									
Existing	301	Centrifugal Chiller, 0.15 kW/kWt, 1750 kWt	12%	12%	12%	12%	12%	12%	12%	12%	12%
Existing	303	BMS - Chiller	10%	10%	10%	10%	10%	10%	10%	10%	10%
Existing	305	Chiller Tune Up/Diagnostics	8%	8%	8%	8%	8%	8%	8%	8%	8%
Existing	306	VSD for Chiller Pumps and Towers	10%	10%	10%	10%	10%	10%	10%	10%	10%
Existing	307	BMS Optimization	20%	20%	20%	20%	20%	20%	20%	20%	20%
Existing	308	Economizer	27%	12%	21%	0%	12%	19%	18%	43%	0%
Existing	310	Base DX Packaged System, EER=2.65, 35 kWt									
Existing	311	DX Tune Up/ Advanced Diagnostics	5%	5%	5%	5%	5%	5%	5%	5%	5%
Existing	312	DX Packaged System, EER=3.5, 35 kWt	24%	24%	24%	24%	24%	24%	24%	24%	24%
Existing	315	Prog. Thermostat - DX	5%	5%	5%	5%	5%	5%	5%	5%	5%
Existing	317	Optimize Controls	20%	20%	20%	20%	20%	20%	20%	20%	20%
Existing	318	Economizer	28%	12%	27%	2%	12%	4%	0%	4%	4%
Existing	320	Base Split-system Air Conditioner, EER=2.3									
Existing	321	3.5 EER Split-system Air Conditioner	34%	34%	34%	34%	34%	34%	34%	34%	34%
Existing	322	Tune Up/Proper Refrigerant Charge	10%	10%	10%	10%	10%	10%	10%	10%	10%
Existing	324	Programmable Thermostat	5%	5%	5%	5%	5%	5%	5%	5%	5%
Existing	330	Base Room Air Conditioner, EER=2.3									

COMMERCIAL

ENERGY SAVINGS
(percent)

Segment	Measure #	Measure Description	Office	Restaurant	Retail	FoodStore	Schools/ Colleges	Tertiary Education	Hospital	Hotel/Motel	Miscellaneous
Existing	331	3.0 EER Room Air Conditioner	23%	23%	23%	23%	23%	23%	23%	23%	23%
Existing	333	Programmable Thermostat	5%	5%	5%	5%	5%	5%	5%	5%	5%
Existing	400	Base Fan Motor, 7kW, 1800rpm, 87.5%									
Existing	401	Fan Motor, 7kW, 1800rpm, 89.5%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Existing	402	Variable Speed Drive Control, 7kW	30%	30%	30%	30%	30%	30%	30%	30%	30%
Existing	410	Base Fan Motor, 20kW, 1800rpm, 91.0%									
Existing	411	Fan Motor, 20kW, 1800rpm, 92.4%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Existing	412	Variable Speed Drive Control, 20kW	30%	30%	30%	30%	30%	30%	30%	30%	30%
Existing	413	Air Handler Optimization, 20kW	20%	20%	20%	20%	20%	20%	20%	20%	20%
Existing	420	Base Fan Motor, 54kW, 1800rpm, 93.0%									
Existing	421	Fan Motor, 54kW, 1800rpm, 94.1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Existing	422	Variable Speed Drive Control, 54kW	30%	30%	30%	30%	30%	30%	30%	30%	30%
Existing	423	Air Handler Optimization, 54kW	20%	20%	20%	20%	20%	20%	20%	20%	20%
Existing	500	Base Refrigeration System									
Existing	501	High-efficiency fan motors		12%		12%					
Existing	502	Strip curtains for walk-ins		4%		4%					
Existing	503	Night covers for display cases		6%		6%					
Existing	504	Evaporator fan controller for MT walk-ins		1%		1%					
Existing	505	Efficient compressor motor		7%		7%					
Existing	506	Compressor VSD retrofit		6%		6%					
Existing	507	Floating head pressure controls		7%		7%					
Existing	508	Refrigeration Commissioning		5%		5%					
Existing	509	Demand Hot Gas Defrost		3%		3%					
Existing	510	Demand Defrost Electric		8%		8%					
Existing	511	Anti-sweat (humidistat) controls		5%		5%					
Existing	610	Base Desktop PC									
Existing	611	PC Manual Power Management Enabling	68%	68%	68%	68%	68%	68%	68%	68%	68%
Existing	612	PC Network Power Management Enabling	68%	68%	68%	68%	68%	68%	68%	68%	68%
Existing	620	Base Monitor, CRT									
Existing	621	Energy Star or Better Monitor	56%	56%	56%	56%	56%	56%	56%	56%	56%
Existing	622	Monitor Power Management Enabling	53%	53%	53%	53%	53%	53%	53%	53%	53%
Existing	630	Base Monitor, LCD									
Existing	631	Energy Star or Better Monitor	2%	2%	2%	2%	2%	2%	2%	2%	2%
Existing	632	Monitor Power Management Enabling	28%	28%	28%	28%	28%	28%	28%	28%	28%
Existing	640	Base Copier									
Existing	641	Energy Star or Better Copier	21%	21%	21%	21%	21%	21%	21%	21%	21%
Existing	642	Copier Power Management Enabling	19%	19%	19%	19%	19%	19%	19%	19%	19%
Existing	650	Base Laser Printer									
Existing	651	Printer Power Management Enabling	49%	49%	49%	49%	49%	49%	49%	49%	49%
Existing	700	Base Split-system Heat Pump, 2.3 EER									
Existing	701	3.5 EER Split-system Heat Pump	34%	34%	34%	34%	34%	34%	34%	34%	34%
Existing	702	Tune Up/ Proper Refrigerant Charge	10%	10%	10%	10%	10%	10%	10%	10%	10%
Existing	703	Programmable Thermostat	5%	5%	5%	5%	5%	5%	5%	5%	5%
Existing	710	Base Electric Resistance Reheat Coils									
Existing	711	BMS - Reheat Coils	10%	10%	10%	10%	10%	10%	10%	10%	10%

COMMERCIAL

ENERGY SAVINGS
(percent)

Segment	Measure #	Measure Description	Office	Restaurant	Retail	FoodStore	Schools/ Colleges	Tertiary Education	Hospital	Hotel/Motel	Miscellaneous
Existing	712	BMS Optimization	20%	20%	20%	20%	20%	20%	20%	20%	20%
Existing	720	Base Wall-mounted Fan Heater									
Existing	721	Programmable Thermostat	5%	5%	5%	5%	5%	5%	5%	5%	5%
Existing	800	Base Water Heating									
Existing	801	Demand controlled circulating systems	5%	5%	5%	5%	5%	5%	5%	5%	5%
Existing	803	High Efficiency Water Heater (electric)	2%	2%	2%	2%	2%	2%	2%	2%	2%
Existing	804	Hot Water Pipe Insulation	2%	2%	2%	2%	2%	2%	2%	2%	2%
Existing	805	Tankless Water Heater	10%	10%	10%	10%	10%	10%	10%	10%	10%
Existing	910	Base Vending Machines									
Existing	911	Vending Misers (cooled machines only)	40%	40%	40%	40%	40%	40%	40%	40%	40%
New	100	Base Lighting									
New	101	Lighting 15% More Efficient Design	15%	15%	15%	15%	15%	15%	15%	15%	15%
New	102	Lighting 25% More Efficient Design	25%	25%	25%	25%	25%	25%	25%	25%	25%
New	1000	Base HVAC									
New	1001	HVAC 10% More Efficient Design	10%	10%	10%	10%	10%	10%	10%	10%	10%
New	1002	HVAC 30% More Efficient Design	30%	30%	30%	30%	30%	30%	30%	30%	30%
New	500	Base Refrigeration System									
New	501	Refrigeration 10% More Efficient Design		10%		10%					
New	502	Refrigeration 20% More Efficient Design		20%		20%					

COMMERCIAL

Standards Adjustment Factor
(percent)

Segment	Measure #	Measure Description	Office	Restaurant	Retail	FoodStore	Schools/ Colleges	Tertiary Education	Hospital	Hotel/Motel	Miscellaneous
Existing	110	Base Fluorescent Fixture, T12, 34W, EEMAG	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	113	RET Next Gen T8, EEMAG	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	114	RET Next Gen T8, 1EB	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	117	Occupancy Sensor	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	118	Continuous Dimming	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	120	Lighting Control Tuneup	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	130	Base Fluorescent Fixture, T8, 32W, EEMAG	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	133	RET Next Gen T8, 1EB	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	136	Occupancy Sensor	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	137	Continuous Dimming	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	139	Lighting Control Tuneup	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	150	Base Fluorescent Fixture, T8, 32W, EB	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	155	Occupancy Sensor	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	156	Continuous Dimming	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	157	Lighting Control Tuneup	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	160	Base Incandescent Flood, 75W to Screw-in CFL	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	161	CFL Screw-in 18W	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	165	Base Incandescent Flood, 75W to Hardwired CFL	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	166	CFL Hardwired, Modular 18W	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	170	Base Halogen Flood,50W	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	172	RET - Efficient Halogen Flood, 35W	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	175	Base High Bay Metal Halide, 400W	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	176	High Bay T5	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	190	Base Exit Sign	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	220	Base Outdoor Mercury Vapor 400W Lamp	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	221	High Pressure Sodium 250W Lamp	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	222	Outdoor Lighting Controls (Photocell/Timeclock)	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	300	Base Centrifugal Chiller, 0.165 kW/kWt, 1750 kWt	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	301	Centrifugal Chiller, 0.15 kW/kWt, 1750 kWt	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	303	BMS - Chiller	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	305	Chiller Tune Up/Diagnostics	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	306	VSD for Chiller Pumps and Towers	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	307	BMS Optimization	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	308	Economizer	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	310	Base DX Packaged System, EER=2.65, 35 kWt	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	311	DX Tune Up/ Advanced Diagnostics	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	312	DX Packaged System, EER=3.5, 35 kWt	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	315	Prog. Thermostat - DX	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	317	Optimize Controls	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	318	Economizer	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	320	Base Split-system Air Conditioner, EER=2.3	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	321	3.5 EER Split-system Air Conditioner	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	322	Tune Up/Proper Refrigerant Charge	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	324	Programmable Thermostat	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	330	Base Room Air Conditioner, EER=2.3	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	331	3.0 EER Room Air Conditioner	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	333	Programmable Thermostat	100%	100%	100%	100%	100%	100%	100%	100%	100%

COMMERCIAL

Standards Adjustment Factor
(percent)

Segment	Measure #	Measure Description	Office	Restaurant	Retail	FoodStore	Schools/ Colleges	Tertiary Education	Hospital	Hotel/Motel	Miscellaneous
Existing	400	Base Fan Motor, 7kW, 1800rpm, 87.5%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	401	Fan Motor, 7kW, 1800rpm, 89.5%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	402	Variable Speed Drive Control, 7kW	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	410	Base Fan Motor, 20kW, 1800rpm, 91.0%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	411	Fan Motor, 20kW, 1800rpm, 92.4%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	412	Variable Speed Drive Control, 20kW	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	413	Air Handler Optimization, 20kW	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	420	Base Fan Motor, 54kW, 1800rpm, 93.0%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	421	Fan Motor, 54kW, 1800rpm, 94.1%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	422	Variable Speed Drive Control, 54kW	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	423	Air Handler Optimization, 54kW	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	500	Base Refrigeration System		100%		100%					
Existing	501	High-efficiency fan motors		100%		100%					
Existing	502	Strip curtains for walk-ins		100%		100%					
Existing	503	Night covers for display cases		100%		100%					
Existing	504	Evaporator fan controller for MT walk-ins		100%		100%					
Existing	505	Efficient compressor motor		100%		100%					
Existing	506	Compressor VSD retrofit		100%		100%					
Existing	507	Floating head pressure controls		100%		100%					
Existing	508	Refrigeration Commissioning		100%		100%					
Existing	509	Demand Hot Gas Defrost		100%		100%					
Existing	510	Demand Defrost Electric		100%		100%					
Existing	511	Anti-sweat (humidistat) controls		100%		100%					
Existing	610	Base Desktop PC	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	611	PC Manual Power Management Enabling	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	612	PC Network Power Management Enabling	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	620	Base Monitor, CRT	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	621	Energy Star or Better Monitor	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	622	Monitor Power Management Enabling	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	630	Base Monitor, LCD	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	631	Energy Star or Better Monitor	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	632	Monitor Power Management Enabling	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	640	Base Copier	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	641	Energy Star or Better Copier	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	642	Copier Power Management Enabling	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	650	Base Laser Printer	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	651	Printer Power Management Enabling	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	700	Base Split-system Heat Pump, 2.3 EER	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	701	3.5 EER Split-system Heat Pump	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	702	Tune Up/ Proper Refrigerant Charge	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	703	Programmable Thermostat	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	710	Base Electric Resistance Reheat Coils	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	711	BMS - Reheat Coils	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	712	BMS Optimization	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	720	Base Wall-mounted Fan Heater	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	721	Programmable Thermostat	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	800	Base Water Heating	100%	100%	100%	100%	100%	100%	100%	100%	100%

COMMERCIAL

Standards Adjustment Factor
(percent)

Segment	Measure #	Measure Description	Office	Restaurant	Retail	FoodStore	Schools/ Colleges	Tertiary Education	Hospital	Hotel/Motel	Miscellaneous
Existing	801	Demand controlled circulating systems	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	803	High Efficiency Water Heater (electric)	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	804	Hot Water Pipe Insulation	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	805	Tankless Water Heater	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	910	Base Vending Machines	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	911	Vending Misers (cooled machines only)	100%	100%	100%	100%	100%	100%	100%	100%	100%
New	100	Base Lighting	100%	100%	100%	100%	100%	100%	100%	100%	100%
New	101	Lighting 15% More Efficient Design	100%	100%	100%	100%	100%	100%	100%	100%	100%
New	102	Lighting 25% More Efficient Design	100%	100%	100%	100%	100%	100%	100%	100%	100%
New	1000	Base HVAC	100%	100%	100%	100%	100%	100%	100%	100%	100%
New	1001	HVAC 10% More Efficient Design	100%	100%	100%	100%	100%	100%	100%	100%	100%
New	1002	HVAC 30% More Efficient Design	100%	100%	100%	100%	100%	100%	100%	100%	100%
New	500	Base Refrigeration System		100%		100%					
New	501	Refrigeration 10% More Efficient Design		100%		100%					
New	502	Refrigeration 20% More Efficient Design		100%		100%					

COMMERCIAL

TECHNOLOGY SATURATION
(units/square meter)

Segment	Measure #	Measure Description	Office	Restaurant	Retail	FoodStore	Schools/ Colleges	Tertiary Education	Hospital	Hotel/Motel	Miscellaneous
Existing	110	Base Fluorescent Fixture, T12, 34W, EEMAG	0.07248	0.06040	0.09521	0.07248	0.07248	0.07248	0.06051	0.03020	0.03624
Existing	113	RET Next Gen T8, EEMAG	0.07248	0.06040	0.09521	0.07248	0.07248	0.07248	0.06051	0.03020	0.03624
Existing	114	RET Next Gen T8, 1EB	0.07248	0.06040	0.09521	0.07248	0.07248	0.07248	0.06051	0.03020	0.03624
Existing	117	Occupancy Sensor	0.07248	0.06040	0.09521	0.07248	0.07248	0.07248	0.06051	0.03020	0.03624
Existing	118	Continuous Dimming	0.07248	0.06040	0.09521	0.07248	0.07248	0.07248	0.06051	0.03020	0.03624
Existing	120	Lighting Control Tuneup	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Existing	130	Base Fluorescent Fixture, T8, 32W, EEMAG	0.07689	0.06407	0.10099	0.07689	0.07689	0.07689	0.06419	0.03204	0.03844
Existing	133	RET Next Gen T8, 1EB	0.07689	0.06407	0.10099	0.07689	0.07689	0.07689	0.06419	0.03204	0.03844
Existing	136	Occupancy Sensor	0.07689	0.06407	0.10099	0.07689	0.07689	0.07689	0.06419	0.03204	0.03844
Existing	137	Continuous Dimming	0.07689	0.06407	0.10099	0.07689	0.07689	0.07689	0.06419	0.03204	0.03844
Existing	139	Lighting Control Tuneup	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Existing	150	Base Fluorescent Fixture, T8, 32W, EB	0.07689	0.06407	0.10099	0.07689	0.07689	0.07689	0.06419	0.03204	0.03844
Existing	155	Occupancy Sensor	0.07689	0.06407	0.10099	0.07689	0.07689	0.07689	0.06419	0.03204	0.03844
Existing	156	Continuous Dimming	0.07689	0.06407	0.10099	0.07689	0.07689	0.07689	0.06419	0.03204	0.03844
Existing	157	Lighting Control Tuneup	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Existing	160	Base Incandescent Flood, 75W to Screw-in CFL	0.53820	0.44850	0.70690	0.53820	0.53820	0.53820	0.44932	0.22425	0.26910
Existing	161	CFL Screw-in 18W	0.53820	0.44850	0.70690	0.53820	0.53820	0.53820	0.44932	0.22425	0.26910
Existing	165	Base Incandescent Flood, 75W to Hardwired CFL	0.53820	0.44850	0.70690	0.53820	0.53820	0.53820	0.44932	0.22425	0.26910
Existing	166	CFL Hardwired, Modular 18W	0.53820	0.44850	0.70690	0.53820	0.53820	0.53820	0.44932	0.22425	0.26910
Existing	170	Base Halogen Flood,50W	1.26634	1.05529	1.66330	1.26634	1.26634	1.26634	1.05723	0.52764	0.63317
Existing	172	RET - Efficient Halogen Flood, 35W	1.26634	1.05529	1.66330	1.26634	1.26634	1.26634	1.05723	0.52764	0.63317
Existing	175	Base High Bay Metal Halide, 400W	0.01905	0.01588	0.02502	0.01905	0.01905	0.01905	0.01591	0.00794	0.00953
Existing	176	High Bay T5	0.01905	0.01588	0.02502	0.01905	0.01905	0.01905	0.01591	0.00794	0.00953
Existing	190	Base Exit Sign	0.00374	0.00522	0.00176	0.00080	0.00125	0.00197	0.00515	0.00294	0.00159
Existing	220	Base Outdoor Mercury Vapor 400W Lamp	0.00201	0.00669	0.00350	0.00573	0.00519	0.00394	0.00279	0.00288	0.00687
Existing	221	High Pressure Sodium 250W Lamp	0.00201	0.00669	0.00350	0.00573	0.00519	0.00394	0.00279	0.00288	0.00687
Existing	222	Outdoor Lighting Controls (Photocell/Timeclock)	0.00201	0.00669	0.00350	0.00573	0.00519	0.00394	0.00279	0.00288	0.00687
Existing	300	Base Centrifugal Chiller, 0.165 kW/kWt, 1750 kWt	0.07162	0.10544	0.04573	0.03190	0.02824	0.08205	0.06740	0.04167	0.03042
Existing	301	Centrifugal Chiller, 0.15 kW/kWt, 1750 kWt	0.07162	0.10544	0.04573	0.03190	0.02824	0.08205	0.06740	0.04167	0.03042
Existing	303	BMS - Chiller	0.07162	0.10544	0.04573	0.03190	0.02824	0.08205	0.06740	0.04167	0.03042
Existing	305	Chiller Tune Up/Diagnostics	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Existing	306	VSD for Chiller Pumps and Towers	0.07162	0.10544	0.04573	0.03190	0.02824	0.08205	0.06740	0.04167	0.03042
Existing	307	BMS Optimization	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Existing	308	Economizer	0.07162	0.10544	0.04573	0.03190	0.02824	0.08205	0.06740	0.04167	0.03042
Existing	310	Base DX Packaged System, EER=2.65, 35 kWt	0.07162	0.10544	0.04573	0.03190	0.02824	0.08205	0.06740	0.04167	0.03042
Existing	311	DX Tune Up/ Advanced Diagnostics	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Existing	312	DX Packaged System, EER=3.5, 35 kWt	0.07162	0.10544	0.04573	0.03190	0.02824	0.08205	0.06740	0.04167	0.03042
Existing	315	Prog. Thermostat - DX	0.07162	0.10544	0.04573	0.03190	0.02824	0.08205	0.06740	0.04167	0.03042
Existing	317	Optimize Controls	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Existing	318	Economizer	0.07162	0.10544	0.04573	0.03190	0.02824	0.08205	0.06740	0.04167	0.03042
Existing	320	Base Split-system Air Conditioner, EER=2.3	0.00450	0.00663	0.00287	0.00201	0.00178	0.00516	0.00424	0.00262	0.00191
Existing	321	3.5 EER Split-system Air Conditioner	0.00450	0.00663	0.00287	0.00201	0.00178	0.00516	0.00424	0.00262	0.00191
Existing	322	Tune Up/Proper Refrigerant Charge	0.00450	0.00663	0.00287	0.00201	0.00178	0.00516	0.00424	0.00262	0.00191
Existing	324	Programmable Thermostat	0.00450	0.00663	0.00287	0.00201	0.00178	0.00516	0.00424	0.00262	0.00191
Existing	330	Base Room Air Conditioner, EER=2.3	0.02456	0.03615	0.01568	0.01094	0.00968	0.02813	0.02311	0.01429	0.01043
Existing	331	3.0 EER Room Air Conditioner	0.02456	0.03615	0.01568	0.01094	0.00968	0.02813	0.02311	0.01429	0.01043
Existing	333	Programmable Thermostat	0.02456	0.03615	0.01568	0.01094	0.00968	0.02813	0.02311	0.01429	0.01043
Existing	400	Base Fan Motor, 7kW, 1800rpm, 87.5%	0.01156	0.00651	0.00467	0.00523	0.00461	0.01293	0.01039	0.00511	0.00384
Existing	401	Fan Motor, 7kW, 1800rpm, 89.5%	0.01156	0.00651	0.00467	0.00523	0.00461	0.01293	0.01039	0.00511	0.00384
Existing	402	Variable Speed Drive Control, 7kW	0.01156	0.00651	0.00467	0.00523	0.00461	0.01293	0.01039	0.00511	0.00384

COMMERCIAL

TECHNOLOGY SATURATION
(units/square meter)

Segment	Measure #	Measure Description	Office	Restaurant	Retail	FoodStore	Schools/ Colleges	Tertiary Education	Hospital	Hotel/Motel	Miscellaneous
Existing	410	Base Fan Motor, 20kW, 1800rpm, 91.0%	0.01071	0.00604	0.00432	0.00484	0.00428	0.01199	0.00963	0.00474	0.00356
Existing	411	Fan Motor, 20kW, 1800rpm, 92.4%	0.01071	0.00604	0.00432	0.00484	0.00428	0.01199	0.00963	0.00474	0.00356
Existing	412	Variable Speed Drive Control, 20kW	0.01071	0.00604	0.00432	0.00484	0.00428	0.01199	0.00963	0.00474	0.00356
Existing	413	Air Handler Optimization, 20kW	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Existing	420	Base Fan Motor, 54kW, 1800rpm, 93.0%	0.01054	0.00594	0.00425	0.00476	0.00421	0.01179	0.00947	0.00466	0.00350
Existing	421	Fan Motor, 54kW, 1800rpm, 94.1%	0.01054	0.00594	0.00425	0.00476	0.00421	0.01179	0.00947	0.00466	0.00350
Existing	422	Variable Speed Drive Control, 54kW	0.01054	0.00594	0.00425	0.00476	0.00421	0.01179	0.00947	0.00466	0.00350
Existing	423	Air Handler Optimization, 54kW	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Existing	500	Base Refrigeration System		0.00003		0.00003					
Existing	501	High-efficiency fan motors		0.00025		0.00025					
Existing	502	Strip curtains for walk-ins		0.00025		0.00025					
Existing	503	Night covers for display cases		0.04035		0.04035					
Existing	504	Evaporator fan controller for MT walk-ins		0.00150		0.00150					
Existing	505	Efficient compressor motor		0.00025		0.00025					
Existing	506	Compressor VSD retrofit		0.00025		0.00025					
Existing	507	Floating head pressure controls		0.00025		0.00025					
Existing	508	Refrigeration Commissioning		0.05425		0.05425					
Existing	509	Demand Hot Gas Defrost		0.01738		0.01738					
Existing	510	Demand Defrost Electric		0.01738		0.01738					
Existing	511	Anti-sweat (humidistat) controls		0.00025		0.00025					
Existing	610	Base Desktop PC	0.02111	0.00457	0.00526	0.00411	0.02239	0.00330	0.00671	0.00174	0.00147
Existing	611	PC Manual Power Management Enabling	0.02111	0.00457	0.00526	0.00411	0.02239	0.00330	0.00671	0.00174	0.00147
Existing	612	PC Network Power Management Enabling	0.02111	0.00457	0.00526	0.00411	0.02239	0.00330	0.00671	0.00174	0.00147
Existing	620	Base Monitor, CRT	0.00398	0.00219	0.00155	0.00195	0.01373	0.00119	0.00076	0.00035	0.00021
Existing	621	Energy Star or Better Monitor	0.00398	0.00219	0.00155	0.00195	0.01373	0.00119	0.00076	0.00035	0.00021
Existing	622	Monitor Power Management Enabling	0.00398	0.00219	0.00155	0.00195	0.01373	0.00119	0.00076	0.00035	0.00021
Existing	630	Base Monitor, LCD	0.01713	0.00238	0.00371	0.00216	0.00867	0.00211	0.00595	0.00139	0.00126
Existing	631	Energy Star or Better Monitor	0.01713	0.00238	0.00371	0.00216	0.00867	0.00211	0.00595	0.00139	0.00126
Existing	632	Monitor Power Management Enabling	0.01713	0.00238	0.00371	0.00216	0.00867	0.00211	0.00595	0.00139	0.00126
Existing	640	Base Copier	0.00702	0.00362	0.00415	0.00308	0.00585	0.00141	0.00519	0.00099	0.00063
Existing	641	Energy Star or Better Copier	0.00702	0.00362	0.00415	0.00308	0.00585	0.00141	0.00519	0.00099	0.00063
Existing	642	Copier Power Management Enabling	0.00702	0.00362	0.00415	0.00308	0.00585	0.00141	0.00519	0.00099	0.00063
Existing	650	Base Laser Printer	0.00845	0.00362	0.00545	0.00308	0.00910	0.00199	0.00460	0.00226	0.00068
Existing	651	Printer Power Management Enabling	0.00845	0.00362	0.00545	0.00308	0.00910	0.00199	0.00460	0.00226	0.00068
Existing	700	Base Split-system Heat Pump, 2.3 EER	0.00692	0.00271	0.00215	0.00529	0.00292	0.00802	0.00802	0.00149	0.00262
Existing	701	3.5 EER Split-system Heat Pump	0.00692	0.00271	0.00215	0.00529	0.00292	0.00802	0.00802	0.00149	0.00262
Existing	702	Tune Up/ Proper Refrigerant Charge	0.00692	0.00271	0.00215	0.00529	0.00292	0.00802	0.00802	0.00149	0.00262
Existing	703	Programmable Thermostat	0.00692	0.00271	0.00215	0.00529	0.00292	0.00802	0.00802	0.00149	0.00262
Existing	710	Base Electric Resistance Reheat Coils	0.10033	0.03931	0.03118	0.07671	0.04239	0.11626	0.11622	0.02162	0.03802
Existing	711	BMS - Reheat Coils	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Existing	712	BMS Optimization	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Existing	720	Base Wall-mounted Fan Heater	0.04645	0.01820	0.01443	0.03551	0.01963	0.05382	0.05381	0.01001	0.01760
Existing	721	Programmable Thermostat	0.04645	0.01820	0.01443	0.03551	0.01963	0.05382	0.05381	0.01001	0.01760
Existing	800	Base Water Heating	0.01571	0.02915	0.01405	0.02285	0.02736	0.02736	0.02850	0.04071	0.01694
Existing	801	Demand controlled circulating systems	0.00108	0.00215	0.00054	0.00054	0.00054	0.00022	0.00022	0.00054	0.00108
Existing	803	High Efficiency Water Heater (electric)	0.01571	0.02915	0.01405	0.02285	0.02736	0.02736	0.02850	0.04071	0.01694
Existing	804	Hot Water Pipe Insulation	0.01203	0.02233	0.01076	0.01751	0.02096	0.02096	0.02183	0.03119	0.01298
Existing	805	Tankless Water Heater	0.01571	0.02915	0.01405	0.02285	0.02736	0.02736	0.02850	0.04071	0.01694
Existing	910	Base Vending Machines	0.00087	0.00117	0.00013	0.00022	0.00059	0.00031	0.00026	0.00046	0.00018
Existing	911	Vending Misers (cooled machines only)	0.00087	0.00117	0.00013	0.00022	0.00059	0.00031	0.00026	0.00046	0.00018

COMMERCIAL

TECHNOLOGY SATURATION
(units/square meter)

Segment	Measure #	Measure Description	Office	Restaurant	Retail	FoodStore	Schools/ Colleges	Tertiary Education	Hospital	Hotel/Motel	Miscellaneous
New	100	Base Lighting	0.11207	0.10738	0.14723	0.11202	0.08592	0.09578	0.11539	0.11058	0.09152
New	101	Lighting 15% More Efficient Design	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
New	102	Lighting 25% More Efficient Design	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
New	1000	Base HVAC	0.02040	0.03013	0.01306	0.00911	0.00800	0.02344	0.01918	0.01182	0.00906
New	1001	HVAC 10% More Efficient Design	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
New	1002	HVAC 30% More Efficient Design	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
New	500	Base Refrigeration System		1.00000		1.00000					
New	501	Refrigeration 10% More Efficient Design		1.00000		1.00000					
New	502	Refrigeration 20% More Efficient Design		1.00000		1.00000					

Hour Adjustment For Lighting
(Hours/year)

Segment	Measure #	Measure Description	Office	Restaurant	Retail	FoodStore	Schools/ Colleges	Tertiary Education	Hospital	Hotel/Motel	Miscellaneous
Existing	110	Base Fluorescent Fixture, T12, 34W, EEMAG	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
Existing	113	RET Next Gen T8, EEMAG	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
Existing	114	RET Next Gen T8, 1EB	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
Existing	117	Occupancy Sensor	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
Existing	118	Continuous Dimming	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
Existing	120	Lighting Control Tuneup	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
Existing	130	Base Fluorescent Fixture, T8, 32W, EEMAG	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
Existing	133	RET Next Gen T8, 1EB	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
Existing	136	Occupancy Sensor	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
Existing	137	Continuous Dimming	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
Existing	139	Lighting Control Tuneup	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
Existing	150	Base Fluorescent Fixture, T8, 32W, EB	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
Existing	155	Occupancy Sensor	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
Existing	156	Continuous Dimming	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
Existing	157	Lighting Control Tuneup	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
Existing	160	Base Incandescent Flood, 75W to Screw-in CFL	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
Existing	161	CFL Screw-in 18W	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
Existing	165	Base Incandescent Flood, 75W to Hardwired CFL	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
Existing	166	CFL Hardwired, Modular 18W	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
Existing	170	Base Halogen Flood,50W	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
Existing	172	RET - Efficient Halogen Flood, 35W	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
Existing	175	Base High Bay Metal Halide, 400W	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
Existing	176	High Bay T5	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
Existing	190	Base Exit Sign	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760
Existing	220	Base Outdoor Mercury Vapor 400W Lamp	4,380	4,380	4,380	4,380	4,380	4,380	4,380	4,380	4,380
Existing	221	High Pressure Sodium 250W Lamp	4,380	4,380	4,380	4,380	4,380	4,380	4,380	4,380	4,380
Existing	222	Outdoor Lighting Controls (Photocell/Timeclock)	4,380	4,380	4,380	4,380	4,380	4,380	4,380	4,380	4,380
Existing	210	Base Centrifugal Chiller, 0.165 kW/kWt, 1750 kWt									
Existing	211	Centrifugal Chiller, 0.15 kW/kWt, 1750 kWt									
Existing	220	BMS - Chiller									
Existing	222	Chiller Tune Up/Diagnostics									
Existing	300	VSD for Chiller Pumps and Towers									
Existing	307	BMS Optimization									
Existing	308	Economizer									
Existing	301	Base DX Packaged System, EER=2.65, 35 kWt									
Existing	302	DX Tune Up/ Advanced Diagnostics									
Existing	303	DX Packaged System, EER=3.5, 35 kWt									
Existing	306	Prog. Thermostat - DX									
Existing	317	Optimize Controls									
Existing	318	Economizer									
Existing	320	Base Split-system Air Conditioner, EER=2.3									
Existing	321	3.5 EER Split-system Air Conditioner									
Existing	322	Tune Up/Proper Refrigerant Charge									
Existing	324	Programmable Thermostat									

COMMERCIAL

Hour Adjustment For Lighting
(Hours/year)

Segment	Measure #	Measure Description	Office	Restaurant	Retail	FoodStore	Schools/ Colleges	Tertiary Education	Hospital	Hotel/Motel	Miscellaneous
Existing	330	Base Room Air Conditioner, EER=2.3									
Existing	331	3.0 EER Room Air Conditioner									
Existing	333	Programmable Thermostat									
Existing	311	Base Fan Motor, 7kW, 1800rpm, 87.5%									
Existing	312	Fan Motor, 7kW, 1800rpm, 89.5%									
Existing	313	Variable Speed Drive Control, 7kW									
Existing	314	Base Fan Motor, 20kW, 1800rpm, 91.0%									
Existing	315	Fan Motor, 20kW, 1800rpm, 92.4%									
Existing	316	Variable Speed Drive Control, 20kW									
Existing	413	Air Handler Optimization, 20kW									
Existing	400	Base Fan Motor, 54kW, 1800rpm, 93.0%									
Existing	401	Fan Motor, 54kW, 1800rpm, 94.1%									
Existing	402	Variable Speed Drive Control, 54kW									
Existing	423	Air Handler Optimization, 54kW									
Existing	410	Base Refrigeration System									
Existing	411	High-efficiency fan motors									
Existing	412	Strip curtains for walk-ins									
Existing	420	Night covers for display cases									
Existing	421	Evaporator fan controller for MT walk-ins									
Existing	422	Efficient compressor motor									
Existing	500	Compressor VSD retrofit									
Existing	501	Floating head pressure controls									
Existing	502	Refrigeration Commissioning									
Existing	503	Demand Hot Gas Defrost									
Existing	504	Demand Defrost Electric									
Existing	505	Anti-sweat (humidistat) controls									
Existing	506	Base Desktop PC									
Existing	611	PC Manual Power Management Enabling									
Existing	612	PC Network Power Management Enabling									
Existing	620	Base Monitor, CRT									
Existing	621	Energy Star or Better Monitor									
Existing	622	Monitor Power Management Enabling									
Existing	630	Base Monitor, LCD									
Existing	631	Energy Star or Better Monitor									
Existing	632	Monitor Power Management Enabling									
Existing	640	Base Copier									
Existing	641	Energy Star or Better Copier									
Existing	642	Copier Power Management Enabling									
Existing	650	Base Laser Printer									
Existing	651	Printer Power Management Enabling									
Existing	700	Base Split-system Heat Pump, 2.3 EER									
Existing	701	3.5 EER Split-system Heat Pump									
Existing	702	Tune Up/ Proper Refrigerant Charge									
Existing	703	Programmable Thermostat									

COMMERCIAL

Hour Adjustment For Lighting
(Hours/year)

Segment	Measure #	Measure Description	Office	Restaurant	Retail	FoodStore	Schools/ Colleges	Tertiary Education	Hospital	Hotel/Motel	Miscellaneous
Existing	710	Base Electric Resistance Reheat Coils									
Existing	711	BMS - Reheat Coils									
Existing	712	BMS Optimization									
Existing	720	Base Wall-mounted Fan Heater									
Existing	721	Programmable Thermostat									
Existing	800	Base Water Heating									
Existing	801	Demand controlled circulating systems									
Existing	803	High Efficiency Water Heater (electric)									
Existing	804	Hot Water Pipe Insulation									
Existing	805	Tankless Water Heater									
Existing	910	Base Vending Machines									
Existing	911	Vending Misers (cooled machines only)									
New	100	Base Lighting	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
New	101	Lighting 15% More Efficient Design	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
New	102	Lighting 25% More Efficient Design	3,000	3,500	3,000	4,500	2,000	2,500	4,000	3,000	3,000
New	1000	Base HVAC									
New	1001	HVAC 10% More Efficient Design									
New	1002	HVAC 30% More Efficient Design									
New	410	Base Fan Motor, 15hp, 1800rpm, 91.0%									
New	411	Refrigeration 10% More Efficient Design									
New	412	Refrigeration 20% More Efficient Design									

INDUSTRIAL

DSM TECHNOLOGY INPUT TABLES			
UTILITY:	NZ	BATCH:	1
SECTOR:	IND	ANALYSIS:	Basic
SEGMENT:	All Electric	VINTAGE:	Existing

INDUSTRIAL

MEASURE COSTS								NPV of					Full = 1			
					Unit	Unit	Lifetime	Implementation	Cost Units				Incr. = 0		Full	
			Savings	Cost	Equipment	Labor	O & M	Cost	per Savings	Service	Initial	Replace	Unit	Relative Ener
Segment	Measure #	Measure Description	Units	Units	Cost	Cost	Cost	Factor	Unit	Life	Cost	Cost	Cost	SP
Existing	100	Base Compressed Air	$/kWh	$/kWh					1	14.5	1	1		1.00
Existing	101	Compressed Air-O&M	$/kWh	$/kWh	$0.017			$0.017	1	10.0	1	1	$0.017	1.00
Existing	102	Compressed Air - Controls	$/kWh	$/kWh	$0.029			$0.029	1	10.0	1	1	$0.029	1.00
Existing	103	Compressed Air - System Optimization	$/kWh	$/kWh	$0.027			$0.027	1	10.0	1	1	$0.027	1.00
Existing	104	Compressed Air- Sizing	$/kWh	$/kWh	$0.008			$0.008	1	10.0	1	1	$0.008	1.00
Existing	105	Comp Air - Replace motor	$/kWh	$/kWh	$0.022			$0.022	1	7.8	1	1	$0.022	1.00
Existing	106	Comp Air - ASD	$/kWh	$/kWh	$0.014			$0.014	1	7.8	1	1	$0.014	1.00
Existing	107	Comp Air - Motor practices-1	$/kWh	$/kWh	$0.007			$0.007	1	7.8	1	1	$0.007	1.00
Existing	108	Power recovery	$/kWh	$/kWh	$0.005			$0.005	1	10.0	1	1	$0.005	1.00
Existing	109	Refinery Controls	$/kWh	$/kWh	$0.006			$0.006	1	10.0	1	1	$0.006	1.00
Existing	110	Efficient Transformers	$/kWh	$/kWh	$0.119			$0.119	1	25.0	1	1	$0.119	1.00
Existing	200	Base Fans	$/kWh	$/kWh					1	14.5	1	1		1.00
Existing	201	Fans - O&M	$/kWh	$/kWh	$0.002			$0.002	1	10.0	1	1	$0.002	1.00
Existing	202	Fans - Controls	$/kWh	$/kWh	$0.156			$0.156	1	10.0	1	1	$0.156	1.00
Existing	203	Fans - System Optimization	$/kWh	$/kWh	$0.102			$0.102	1	10.0	1	1	$0.102	1.00
Existing	204	Fans- Improve components	$/kWh	$/kWh	$0.008			$0.008	1	10.0	1	1	$0.008	1.00
Existing	205	Fans - Replace motor	$/kWh	$/kWh	$0.022			$0.022	1	7.8	1	1	$0.022	1.00
Existing	206	Fans - ASD	$/kWh	$/kWh	$0.014			$0.014	1	7.8	1	1	$0.014	1.00
Existing	207	Fans - Motor practices-1	$/kWh	$/kWh	$0.007			$0.007	1	7.8	1	1	$0.007	1.00
Existing	208	Optimize drying process	$/kWh	$/kWh	$0.085			$0.085	1	10.0	1	1	$0.085	1.00
Existing	209	Power recovery	$/kWh	$/kWh	$0.005			$0.005	1	10.0	1	1	$0.005	1.00
Existing	210	Refinery Controls	$/kWh	$/kWh	$0.006			$0.006	1	10.0	1	1	$0.006	1.00
Existing	211	Efficient Transformers	$/kWh	$/kWh	$0.119			$0.119	1	25.0	1	1	$0.119	1.00
Existing	300	Base Pumps	$/kWh	$/kWh					1	14.5	1	1		1.00
Existing	301	Pumps - O&M	$/kWh	$/kWh	$0.008			$0.008	1	10.0	1	1	$0.008	1.00
Existing	302	Pumps - Controls	$/kWh	$/kWh	$0.046			$0.046	1	10.0	1	1	$0.046	1.00
Existing	303	Pumps - System Optimization	$/kWh	$/kWh	$0.112			$0.112	1	10.0	1	1	$0.112	1.00
Existing	304	Pumps - Sizing	$/kWh	$/kWh	$0.034			$0.034	1	10.0	1	1	$0.034	1.00
Existing	305	Pumps - Replace motor	$/kWh	$/kWh	$0.022			$0.022	1	7.8	1	1	$0.022	1.00
Existing	306	Pumps - ASD	$/kWh	$/kWh	$0.014			$0.014	1	7.8	1	1	$0.014	1.00
Existing	307	Pumps - Motor practices-1	$/kWh	$/kWh	$0.007			$0.007	1	7.8	1	1	$0.007	1.00
Existing	308	Power recovery	$/kWh	$/kWh	$0.005			$0.005	1	10.0	1	1	$0.005	1.00
Existing	309	Refinery Controls	$/kWh	$/kWh	$0.006			$0.006	1	10.0	1	1	$0.006	1.00
Existing	310	Efficient Transformers	$/kWh	$/kWh	$0.119			$0.119	1	25.0	1	1	$0.119	1.00
Existing	311	Low Pressure Nozzle	$/kWh	$/kWh	$0.031			$0.031	1	8.0	1	1	$0.031	1.00
Existing	312	Micro Watering System	$/kWh	$/kWh	$0.091			$0.091	1	20.0	1	1	$0.091	1.00
Existing	313	Pump Retrofit - Irrigation	$/kWh	$/kWh	$0.017			$0.010	1	9.0	1	1	$0.010	1.00
Existing	400	Base Drives	$/kWh	$/kWh					1	20.0	1	1		1.00
Existing	401	Bakery - Process (Mixing) - O&M	$/kWh	$/kWh	$0.008			$0.008	1	10.0	1	1	$0.008	1.00
Existing	402	O&M/drives spinning machines	$/kWh	$/kWh	$0.054			$0.054	1	10.0	1	1	$0.054	1.00
Existing	403	Air conveying systems	$/kWh	$/kWh	$0.064			$0.064	1	14.0	1	1	$0.064	1.00
Existing	404	Replace V-Belts	$/kWh	$/kWh	$0.010			$0.010	1	10.0	1	1	$0.010	1.00
Existing	405	Drives - Replace motor	$/kWh	$/kWh	$0.022			$0.022	1	7.8	1	1	$0.022	1.00
Existing	406	Gap Forming papermachine	$/kWh	$/kWh	$0.013			$0.013	1	20.0	1	1	$0.013	1.00
Existing	407	High Consistency forming	$/kWh	$/kWh	$0.013			$0.013	1	20.0	1	1	$0.013	1.00
Existing	408	Optimization control PM	$/kWh	$/kWh	$0.021			$0.021	1	10.0	1	1	$0.021	1.00
Existing	409	Efficient practices printing press	$/kWh	$/kWh	$0.017			$0.017	1	20.0	1	1	$0.017	1.00
Existing	410	Efficient Printing press (fewer cylinders)	$/kWh	$/kWh	$0.102			$0.102	1	10.0	1	1	$0.102	1.00
Existing	411	Light cylinders	$/kWh	$/kWh	$0.119			$0.119	1	10.0	1	1	$0.119	1.00

INDUSTRIAL

MEASURE COSTS			rgy Reduction Factors						Implementation Type 1=1 time
Segment	Measure #	Measure Description	SPP	SOP	WP	WPP	WOP	End Use	2=ROB
Existing	100	Base Compressed Air	1.00	1.00	1.00	1.00	1.00	1	1
Existing	101	Compressed Air-O&M	1.00	1.00	1.00	1.00	1.00	1	1
Existing	102	Compressed Air - Controls	1.00	1.00	1.00	1.00	1.00	1	1
Existing	103	Compressed Air - System Optimization	1.00	1.00	1.00	1.00	1.00	1	1
Existing	104	Compressed Air- Sizing	1.00	1.00	1.00	1.00	1.00	1	1
Existing	105	Comp Air - Replace motor	1.00	1.00	1.00	1.00	1.00	1	2
Existing	106	Comp Air - ASD	1.00	1.00	1.00	1.00	1.00	1	1
Existing	107	Comp Air - Motor practices-1	1.00	1.00	1.00	1.00	1.00	1	1
Existing	108	Power recovery	1.00	1.00	1.00	1.00	1.00	1	1
Existing	109	Refinery Controls	1.00	1.00	1.00	1.00	1.00	1	1
Existing	110	Efficient Transformers	1.00	1.00	1.00	1.00	1.00	1	2
Existing	200	Base Fans	1.00	1.00	1.00	1.00	1.00	2	1
Existing	201	Fans - O&M	1.00	1.00	1.00	1.00	1.00	2	1
Existing	202	Fans - Controls	1.00	1.00	1.00	1.00	1.00	2	1
Existing	203	Fans - System Optimization	1.00	1.00	1.00	1.00	1.00	2	1
Existing	204	Fans- Improve components	1.00	1.00	1.00	1.00	1.00	2	2
Existing	205	Fans - Replace motor	1.00	1.00	1.00	1.00	1.00	2	2
Existing	206	Fans - ASD	1.00	1.00	1.00	1.00	1.00	2	1
Existing	207	Fans - Motor practices-1	1.00	1.00	1.00	1.00	1.00	2	1
Existing	208	Optimize drying process	1.00	1.00	1.00	1.00	1.00	2	1
Existing	209	Power recovery	1.00	1.00	1.00	1.00	1.00	2	1
Existing	210	Refinery Controls	1.00	1.00	1.00	1.00	1.00	2	1
Existing	211	Efficient Transformers	1.00	1.00	1.00	1.00	1.00	2	2
Existing	300	Base Pumps	1.00	1.00	1.00	1.00	1.00	3	1
Existing	301	Pumps - O&M	1.00	1.00	1.00	1.00	1.00	3	1
Existing	302	Pumps - Controls	1.00	1.00	1.00	1.00	1.00	3	1
Existing	303	Pumps - System Optimization	1.00	1.00	1.00	1.00	1.00	3	1
Existing	304	Pumps - Sizing	1.00	1.00	1.00	1.00	1.00	3	2
Existing	305	Pumps - Replace motor	1.00	1.00	1.00	1.00	1.00	3	2
Existing	306	Pumps - ASD	1.00	1.00	1.00	1.00	1.00	3	1
Existing	307	Pumps - Motor practices-1	1.00	1.00	1.00	1.00	1.00	3	1
Existing	308	Power recovery	1.00	1.00	1.00	1.00	1.00	3	1
Existing	309	Refinery Controls	1.00	1.00	1.00	1.00	1.00	3	1
Existing	310	Efficient Transformers	1.00	1.00	1.00	1.00	1.00	3	2
Existing	311	Low Pressure Nozzle	1.00	1.00	1.00	1.00	1.00	3	1
Existing	312	Micro Watering System	1.00	1.00	1.00	1.00	1.00	3	1
Existing	313	Pump Retrofit - Irrigation	1.00	1.00	1.00	1.00	1.00	3	1
Existing	400	Base Drives	1.00	1.00	1.00	1.00	1.00	4	1
Existing	401	Bakery - Process (Mixing) - O&M	1.00	1.00	1.00	1.00	1.00	4	1
Existing	402	O&M/drives spinning machines	1.00	1.00	1.00	1.00	1.00	4	1
Existing	403	Air conveying systems	1.00	1.00	1.00	1.00	1.00	4	2
Existing	404	Replace V-Belts	1.00	1.00	1.00	1.00	1.00	4	2
Existing	405	Drives - Replace motor	1.00	1.00	1.00	1.00	1.00	4	2
Existing	406	Gap Forming papermachine	1.00	1.00	1.00	1.00	1.00	4	2
Existing	407	High Consistency forming	1.00	1.00	1.00	1.00	1.00	4	2
Existing	408	Optimization control PM	1.00	1.00	1.00	1.00	1.00	4	1
Existing	409	Efficient practices printing press	1.00	1.00	1.00	1.00	1.00	4	1
Existing	410	Efficient Printing press (fewer cylinders)	1.00	1.00	1.00	1.00	1.00	4	2
Existing	411	Light cylinders	1.00	1.00	1.00	1.00	1.00	4	2

INDUSTRIAL

MEASURE COSTS								NPV of					Full = 1			
					Unit	Unit	Lifetime	Implementation	Cost Units				Incr. = 0		Full	
			Savings	Cost	Equipment	Labor	O & M	Cost	per Savings	Service	Initial	Replace	Unit	Relative Ener
Segment	Measure #	Measure Description	Units	Units	Cost	Cost	Cost	Factor	Unit	Life	Cost	Cost	Cost	SP
Existing	412	Efficient drives	$/kWh	$/kWh	$0.009			$0.009	1	10.0	1	1	$0.009	1.00
Existing	413	Clean Room - Controls	$/kWh	$/kWh	$0.037			$0.037	1	10.0	1	1	$0.037	1.00
Existing	414	Clean Room - New Designs	$/kWh	$/kWh	$0.223			$0.223	1	10.0	1	1	$0.223	1.00
Existing	415	Drives - Process Control	$/kWh	$/kWh	$0.041			$0.041	1	10.0	1	1	$0.041	1.00
Existing	416	Process Drives - ASD	$/kWh	$/kWh	$0.003			$0.003	1	10.0	1	1	$0.003	1.00
Existing	417	O&M - Extruders/Injection Moulding	$/kWh	$/kWh	$0.008			$0.008	1	12.0	1	1	$0.008	1.00
Existing	418	Extruders/injection Moulding-multipump	$/kWh	$/kWh	$0.168			$0.168	1	12.0	1	1	$0.168	1.00
Existing	419	Direct drive Extruders	$/kWh	$/kWh	$0.521			$0.521	1	12.0	1	1	$0.521	1.00
Existing	420	Injection Moulding - Impulse Cooling	$/kWh	$/kWh	$0.117			$0.117	1	12.0	1	1	$0.117	1.00
Existing	421	Injection Moulding - Direct drive	$/kWh	$/kWh	$0.164			$0.164	1	12.0	1	1	$0.164	1.00
Existing	422	Efficient grinding	$/kWh	$/kWh	$0.391			$0.391	1	15.0	1	1	$0.391	1.00
Existing	423	Process optimization	$/kWh	$/kWh	$0.051			$0.051	1	10.0	1	1	$0.051	1.00
Existing	424	Efficient drives - rolling	$/kWh	$/kWh	$0.016			$0.016	1	10.0	1	1	$0.016	1.00
Existing	425	Drives - Optimization process (M&T)	$/kWh	$/kWh	$0.014			$0.014	1	10.0	1	1	$0.014	1.00
Existing	426	Drives - Scheduling	$/kWh	$/kWh	$0.017			$0.017	1	10.0	1	1	$0.017	1.00
Existing	427	Machinery	$/kWh	$/kWh	$0.021			$0.021	1	10.0	1	1	$0.021	1.00
Existing	428	Efficient Machinery	$/kWh	$/kWh	$0.011			$0.011	1	10.0	1	1	$0.011	1.00
Existing	429	Efficient Transformers	$/kWh	$/kWh	$0.119			$0.119	1	25.0	1	1	$0.119	1.00
Existing	500	Base Heating	$/kWh	$/kWh					1	20.0	1	1		1.00
Existing	501	Bakery - Process	$/kWh	$/kWh	$0.085			$0.085	1	15.0	1	1	$0.085	1.00
Existing	502	Drying (UV/IR)	$/kWh	$/kWh	$0.127			$0.127	1	8.0	1	1	$0.127	1.00
Existing	503	Heat Pumps - Drying	$/kWh	$/kWh	$0.298			$0.298	1	15.0	1	1	$0.298	1.00
Existing	504	Top-heating (glass)	$/kWh	$/kWh	$0.007			$0.007	1	8.0	1	1	$0.007	1.00
Existing	505	Efficient electric melting	$/kWh	$/kWh	$0.056			$0.056	1	20.0	1	1	$0.056	1.00
Existing	506	Intelligent extruder (DOE)	$/kWh	$/kWh	$0.027			$0.027	1	10.0	1	1	$0.027	1.00
Existing	507	Near Net Shape Casting	$/kWh	$/kWh	$0.020			$0.020	1	15.0	1	1	$0.020	1.00
Existing	508	Heating - Process Control	$/kWh	$/kWh	$0.025			$0.025	1	15.0	1	1	$0.025	1.00
Existing	509	Efficient Curing ovens	$/kWh	$/kWh	$0.136			$0.136	1	15.0	1	1	$0.136	1.00
Existing	510	Heating - Optimization process (M&T)	$/kWh	$/kWh	$0.014			$0.014	1	10.0	1	1	$0.014	1.00
Existing	511	Heating - Scheduling	$/kWh	$/kWh	$0.017			$0.017	1	10.0	1	1	$0.017	1.00
Existing	512	Efficient Transformers	$/kWh	$/kWh	$0.119			$0.119	1	25.0	1	1	$0.119	1.00
Existing	550	Base Refrigeration	$/kWh	$/kWh					1	20.0	1	1		1.00
Existing	551	Efficient Refrigeration - Operations	$/kWh	$/kWh	$0.012			$0.012	1	10.0	1	1	$0.012	1.00
Existing	552	Optimization Refrigeration	$/kWh	$/kWh	$0.185			$0.185	1	15.0	1	1	$0.185	1.00
Existing	553	Efficient Transformers	$/kWh	$/kWh	$0.119			$0.119	1	25.0	1	1	$0.119	1.00
Existing	600	Base Other Process	$/kWh	$/kWh					1	15.0	1	1		1.00
Existing	601	Other Process Controls (batch + site)	$/kWh	$/kWh	$0.041			$0.041	1	10.0	1	1	$0.041	1.00
Existing	602	Efficient desalter	$/kWh	$/kWh	$0.068			$0.068	1	10.0	1	1	$0.068	1.00
Existing	603	New transformers welding	$/kWh	$/kWh	$0.085			$0.085	1	15.0	1	1	$0.085	1.00
Existing	604	Efficient processes (welding, etc.)	$/kWh	$/kWh	$0.085			$0.085	1	15.0	1	1	$0.085	1.00
Existing	605	Process control	$/kWh	$/kWh	$0.027			$0.027	1	15.0	1	1	$0.027	1.00
Existing	606	Power recovery	$/kWh	$/kWh	$0.005			$0.005	1	10.0	1	1	$0.005	1.00
Existing	607	Refinery Controls	$/kWh	$/kWh	$0.006			$0.006	1	10.0	1	1	$0.006	1.00
Existing	608	Efficient Transformers	$/kWh	$/kWh	$0.119			$0.119	1	25.0	1	1	$0.119	1.00
Existing	700	Base DX Packaged System, EER=2.65, 10 tons	$/kWh	$/kWt					1	15.0	1	1		1.00
Existing	701	DX Packaged System, EER=3.5, 10 tons	$/kWh	$/kWt	$13.319			$13.319	1	15.0	1	1	$13.319	1.00
Existing	702	DX Tune Up/ Advanced Diagnostics	$/kWh	$/kWt	$68.046			$68.046	1	10.0	1	1	$68.046	1.00
Existing	703	Optimize HVAC Controls	$/kWh	$/kWt	$21.775			$21.775	1	5.0	1	1	$21.775	1.00
Existing	704	BMS	$/kWh	$/kWt	$29.670			$29.670	1	10.0	1	1	$29.670	0.25

INDUSTRIAL

MEASURE COSTS			rgy Reduction Factors						Implementation Type 1=1 time
Segment	Measure #	Measure Description	SPP	SOP	WP	WPP	WOP	End Use	2=ROB
Existing	412	Efficient drives	1.00	1.00	1.00	1.00	1.00	4	2
Existing	413	Clean Room - Controls	1.00	1.00	1.00	1.00	1.00	4	2
Existing	414	Clean Room - New Designs	1.00	1.00	1.00	1.00	1.00	4	2
Existing	415	Drives - Process Control	1.00	1.00	1.00	1.00	1.00	4	2
Existing	416	Process Drives - ASD	1.00	1.00	1.00	1.00	1.00	4	1
Existing	417	O&M - Extruders/Injection Moulding	1.00	1.00	1.00	1.00	1.00	4	2
Existing	418	Extruders/injection Moulding-multipump	1.00	1.00	1.00	1.00	1.00	4	2
Existing	419	Direct drive Extruders	1.00	1.00	1.00	1.00	1.00	4	2
Existing	420	Injection Moulding - Impulse Cooling	1.00	1.00	1.00	1.00	1.00	4	2
Existing	421	Injection Moulding - Direct drive	1.00	1.00	1.00	1.00	1.00	4	2
Existing	422	Efficient grinding	1.00	1.00	1.00	1.00	1.00	4	2
Existing	423	Process optimization	1.00	1.00	1.00	1.00	1.00	4	1
Existing	424	Efficient drives - rolling	1.00	1.00	1.00	1.00	1.00	4	2
Existing	425	Drives - Optimization process (M&T)	1.00	1.00	1.00	1.00	1.00	4	1
Existing	426	Drives - Scheduling	1.00	1.00	1.00	1.00	1.00	4	1
Existing	427	Machinery	1.00	1.00	1.00	1.00	1.00	4	2
Existing	428	Efficient Machinery	1.00	1.00	1.00	1.00	1.00	4	2
Existing	429	Efficient Transformers	1.00	1.00	1.00	1.00	1.00	4	2
Existing	500	Base Heating	1.00	1.00	1.00	1.00	1.00	5	1
Existing	501	Bakery - Process	1.00	1.00	1.00	1.00	1.00	5	2
Existing	502	Drying (UV/IR)	1.00	1.00	1.00	1.00	1.00	5	2
Existing	503	Heat Pumps - Drying	1.00	1.00	1.00	1.00	1.00	5	2
Existing	504	Top-heating (glass)	1.00	1.00	1.00	1.00	1.00	5	2
Existing	505	Efficient electric melting	1.00	1.00	1.00	1.00	1.00	5	2
Existing	506	Intelligent extruder (DOE)	1.00	1.00	1.00	1.00	1.00	5	2
Existing	507	Near Net Shape Casting	1.00	1.00	1.00	1.00	1.00	5	2
Existing	508	Heating - Process Control	1.00	1.00	1.00	1.00	1.00	5	2
Existing	509	Efficient Curing ovens	1.00	1.00	1.00	1.00	1.00	5	2
Existing	510	Heating - Optimization process (M&T)	1.00	1.00	1.00	1.00	1.00	5	1
Existing	511	Heating - Scheduling	1.00	1.00	1.00	1.00	1.00	5	1
Existing	512	Efficient Transformers	1.00	1.00	1.00	1.00	1.00	5	2
Existing	550	Base Refrigeration	1.00	1.00	1.00	1.00	1.00	6	1
Existing	551	Efficient Refrigeration - Operations	1.00	1.00	1.00	1.00	1.00	6	2
Existing	552	Optimization Refrigeration	1.00	1.00	1.00	1.00	1.00	6	1
Existing	553	Efficient Transformers	1.00	1.00	1.00	1.00	1.00	6	2
Existing	600	Base Other Process	1.00	1.00	1.00	1.00	1.00	7	1
Existing	601	Other Process Controls (batch + site)	1.00	1.00	1.00	1.00	1.00	7	2
Existing	602	Efficient desalter	1.00	1.00	1.00	1.00	1.00	7	2
Existing	603	New transformers welding	1.00	1.00	1.00	1.00	1.00	7	2
Existing	604	Efficient processes (welding, etc.)	1.00	1.00	1.00	1.00	1.00	7	2
Existing	605	Process control	1.00	1.00	1.00	1.00	1.00	7	2
Existing	606	Power recovery	1.00	1.00	1.00	1.00	1.00	7	1
Existing	607	Refinery Controls	1.00	1.00	1.00	1.00	1.00	7	2
Existing	608	Efficient Transformers	1.00	1.00	1.00	1.00	1.00	7	2
Existing	700	Base DX Packaged System, EER=2.65, 10 tons	1.00	1.00	1.00	1.00	1.00	8	2
Existing	701	DX Packaged System, EER=3.5, 10 tons	1.00	1.00	1.00	1.00	1.00	8	2
Existing	702	DX Tune Up/ Advanced Diagnostics	1.00	1.00	1.00	1.00	1.00	8	1
Existing	703	Optimize HVAC Controls	1.00	1.00	1.00	1.00	1.00	8	1
Existing	704	BMS	1.00	1.00	1.00	1.00	1.00	8	1

INDUSTRIAL

MEASURE COSTS												Full = 1			
					Unit	Unit	NPV of Lifetime	Implementation	Cost Units			Incr. = 0		Full	
			Savings	Cost	Equipment	Labor	O & M	Cost	per Savings	Service	Initial	Replace	Unit	Relative Ener
Segment	Measure #	Measure Description	Units	Units	Cost	Cost	Cost	Factor	Unit	Life	Cost	Cost	Cost	SP
Existing	705	Prog. Thermostat	$/kWh	$/kWt	$10.137			$10.137	1	10.0	1	1	$10.137	0.25
Existing	706	Efficient Transformers	$/kWh	$/kWh	$0.108			$0.108	1	25.0	1	1	$0.108	1.00
Existing	800	Base Lighting	$/kWh	fixture					1	10.0	1	1		1.00
Existing	801	RET T12 to Next Gen T8, 1EB	$/kWh	fixture	$64.800			$64.800	1	14.0	1	1	$64.800	1.00
Existing	802	RET T8 to Next Gen T8, 1EB	$/kWh	fixture	$42.000			$42.000	1	14.0	1	1	$42.000	1.00
Existing	803	RET - Hardwired 18W CFL	$/kWh	fixture	$65.150	$35.000		$100.150	1	4.0	1	1	$100.150	1.00
Existing	804	RET - Screw-in 18W CFL	$/kWh	fixture	$4.320			$4.320	1	1.6	1	1	$4.320	1.00
Existing	805	400W MV to 250W HPS	$/kWh	fixture	$45.100			$45.100	1	5.0	1	1	$45.100	1.00
Existing	806	Lighting Controls	$/kWh	fixture	$24.390	$20.190		$44.580	1	8.0	1	1	$44.580	1.00
Existing	807	Efficient Transformers	$/kWh	$/kWh	$0.108			$0.108	1	25.0	1	1	$0.108	1.00
Existing	900	Base Other	$/kWh	$/kWh					1	15.0	1	1		1.00
Existing	901	Replace V-belts	$/kWh	$/kWh	$0.000			$0.000	1	5.0	1	1	$0.000	1.00
Existing	902	Membranes for wastewater	$/kWh	$/kWh	$0.059			$0.059	1	15.0	1	1	$0.059	1.00
Existing	903	Efficient Transformers	$/kWh	$/kWh	$0.119			$0.119	1	25.0	1	1	$0.119	1.00

INDUSTRIAL

MEASURE COSTS			rgy Reduction Factors						Implementation Type 1=1 time
Segment	Measure #	Measure Description	SPP	SOP	WP	WPP	WOP	End Use	2=ROB
Existing	705	Prog. Thermostat	1.00	1.00	1.00	1.00	1.00	8	1
Existing	706	Efficient Transformers	1.00	1.00	1.00	1.00	1.00	8	2
Existing	800	Base Lighting	1.00	1.00	1.00	1.00	1.00	9	1
Existing	801	RET T12 to Next Gen T8, 1EB	1.00	1.00	1.00	1.00	1.00	9	1
Existing	802	RET T8 to Next Gen T8, 1EB	1.00	1.00	1.00	1.00	1.00	9	1
Existing	803	RET - Hardwired 18W CFL	1.00	1.00	1.00	1.00	1.00	9	1
Existing	804	RET - Screw-in 18W CFL	1.00	1.00	1.00	1.00	1.00	9	1
Existing	805	400W MV to 250W HPS	1.00	1.00	1.00	1.00	1.00	9	1
Existing	806	Lighting Controls	1.00	0.50	1.00	1.00	0.50	9	1
Existing	807	Efficient Transformers	1.00	1.00	1.00	1.00	1.00	9	2
Existing	900	Base Other	1.00	1.00	1.00	1.00	1.00	10	1
Existing	901	Replace V-belts	1.00	1.00	1.00	1.00	1.00	10	2
Existing	902	Membranes for wastewater	1.00	1.00	1.00	1.00	1.00	10	2
Existing	903	Efficient Transformers	1.00	1.00	1.00	1.00	1.00	10	2

APPLICABILITY FACTOR (percent)														
Segment	Measure #	Measure Description	Aluminium	Steel	Oil Refining	Paper	Dairy	Other Food	Wood	Chemicals	SIC22	SIC27	SIC30	SIC32
Existing	100	Base Compressed Air	2%	14%	13%	5%	8%	8%	6%	28%	8%	3%	7%	15%
Existing	101	Compressed Air-O&M	2%	14%	13%	5%	8%	8%	6%	28%	8%	3%	7%	15%
Existing	102	Compressed Air - Controls	2%	14%	13%	5%	8%	8%	6%	28%	8%	3%	7%	15%
Existing	103	Compressed Air - System Optimization	2%	14%	13%	5%	8%	8%	6%	28%	8%	3%	7%	15%
Existing	104	Compressed Air- Sizing	2%	14%	13%	5%	8%	8%	6%	28%	8%	3%	7%	15%
Existing	105	Comp Air - Replace motor	2%	14%	13%	5%	8%	8%	6%	28%	8%	3%	7%	15%
Existing	106	Comp Air - ASD	2%	14%	13%	5%	8%	8%	6%	28%	8%	3%	7%	15%
Existing	107	Comp Air - Motor practices-1	2%	14%	13%	5%	8%	8%	6%	28%	8%	3%	7%	15%
Existing	108	Power recovery	2%	15%	13%									
Existing	109	Refinery Controls			13%									
Existing	110	Efficient Transformers	2%	14%	13%	5%	8%	8%	6%	28%	8%	3%	7%	15%
Existing	200	Base Fans	2%	15%	8%	20%	8%	8%	11%	12%	9%	7%	3%	15%
Existing	201	Fans - O&M	2%	15%	8%	20%	8%	8%	11%	12%	9%	7%	3%	15%
Existing	202	Fans - Controls	2%	15%	8%	20%	8%	8%	11%	12%	9%	7%	3%	15%
Existing	203	Fans - System Optimization	2%	15%	8%	20%	8%	8%	11%	12%	9%	7%	3%	15%
Existing	204	Fans- Improve components	2%	15%	8%	20%	8%	8%	11%	12%	9%	7%	3%	15%
Existing	205	Fans - Replace motor	2%	15%	8%	20%	8%	8%	11%	12%	9%	7%	3%	15%
Existing	206	Fans - ASD	2%	15%	8%	20%	8%	8%	11%	12%	9%	7%	3%	15%
Existing	207	Fans - Motor practices-1	2%	15%	8%	20%	8%	8%	11%	12%	9%	7%	3%	15%
Existing	208	Optimize drying process							11%					
Existing	209	Power recovery	2%	15%	8%									
Existing	210	Refinery Controls			8%									
Existing	211	Efficient Transformers	2%	15%	8%	20%	8%	8%	11%	12%	9%	7%	3%	15%
Existing	300	Base Pumps	1%	9%	51%	31%	16%	16%	3%	26%	9%	1%	13%	2%
Existing	301	Pumps - O&M	1%	9%	51%	31%	16%	16%	3%	26%	9%	1%	13%	2%
Existing	302	Pumps - Controls	1%	9%	51%	31%	16%	16%	3%	26%	9%	1%	13%	2%
Existing	303	Pumps - System Optimization	1%	9%	51%	31%	16%	16%	3%	26%	9%	1%	13%	2%
Existing	304	Pumps - Sizing	1%	9%	51%	31%	16%	16%	3%	26%	9%	1%	13%	2%
Existing	305	Pumps - Replace motor	1%	9%	51%	31%	16%	16%	3%	26%	9%	1%	13%	2%
Existing	306	Pumps - ASD	1%	9%	51%	31%	16%	16%	3%	26%	9%	1%	13%	2%
Existing	307	Pumps - Motor practices-1	1%	9%	51%	31%	16%	16%	3%	26%	9%	1%	13%	2%
Existing	308	Power recovery	2%	15%	51%									
Existing	309	Refinery Controls			51%									
Existing	310	Efficient Transformers	1%	9%	51%	31%	16%	16%	3%	26%	9%	1%	13%	2%
Existing	311	Low Pressure Nozzle												
Existing	312	Micro Watering System												
Existing	313	Pump Retrofit - Irrigation												
Existing	400	Base Drives	8%	60%	14%	29%	32%	32%	48%	25%	27%	35%	29%	26%
Existing	401	Bakery - Process (Mixing) - O&M					3%	3%						
Existing	402	O&M/drives spinning machines									27%			
Existing	403	Air conveying systems							47%					
Existing	404	Replace V-Belts							47%					
Existing	405	Drives - Replace motor	8%	60%	14%	29%	32%	32%	48%	25%	27%	35%	29%	26%
Existing	406	Gap Forming papermachine				29%								
Existing	407	High Consistency forming				29%								
Existing	408	Optimization control PM				29%								
Existing	409	Efficient practices printing press										31%		
Existing	410	Efficient Printing press (fewer cylinders)										31%		
Existing	411	Light cylinders										31%		
Existing	412	Efficient drives										31%		
Existing	413	Clean Room - Controls								16%				
Existing	414	Clean Room - New Designs								16%				
Existing	415	Drives - Process Control	8%	60%						16%				20%

INDUSTRIAL

APPLICABILITY FACTOR
(percent)

Segment	Measure #	Measure Description	SIC34	SIC36	SIC37	SIC38	SIC39	Ag	Water/WW	Mining
Existing	100	Base Compressed Air	12%	7%	8%	4%	11%		15%	5%
Existing	101	Compressed Air-O&M	12%	7%	8%	4%	11%		15%	5%
Existing	102	Compressed Air - Controls	12%	7%	8%	4%	11%		15%	5%
Existing	103	Compressed Air - System Optimization	12%	7%	8%	4%	11%		15%	5%
Existing	104	Compressed Air- Sizing	12%	7%	8%	4%	11%		15%	5%
Existing	105	Comp Air - Replace motor	12%	7%	8%	4%	11%		15%	5%
Existing	106	Comp Air - ASD	12%	7%	8%	4%	11%		15%	5%
Existing	107	Comp Air - Motor practices-1	12%	7%	8%	4%	11%		15%	5%
Existing	108	Power recovery								
Existing	109	Refinery Controls								
Existing	110	Efficient Transformers	12%	7%	8%	4%	11%		15%	5%
Existing	200	Base Fans	4%	1%	9%	7%	4%		15%	7%
Existing	201	Fans - O&M	4%	1%	9%	7%	4%		15%	7%
Existing	202	Fans - Controls	4%	1%	9%	7%	4%		15%	7%
Existing	203	Fans - System Optimization	4%	1%	9%	7%	4%		15%	7%
Existing	204	Fans- Improve components	4%	1%	9%	7%	4%		15%	7%
Existing	205	Fans - Replace motor	4%	1%	9%	7%	4%		15%	7%
Existing	206	Fans - ASD	4%	1%	9%	7%	4%		15%	7%
Existing	207	Fans - Motor practices-1	4%	1%	9%	7%	4%		15%	7%
Existing	208	Optimize drying process								
Existing	209	Power recovery								
Existing	210	Refinery Controls								
Existing	211	Efficient Transformers	4%	1%	9%	7%	4%		15%	7%
Existing	300	Base Pumps	6%	18%	8%	3%	6%	100%	51%	11%
Existing	301	Pumps - O&M	6%	18%	8%	3%	6%		51%	11%
Existing	302	Pumps - Controls	6%	18%	8%	3%	6%		51%	11%
Existing	303	Pumps - System Optimization	6%	18%	8%	3%	6%		51%	11%
Existing	304	Pumps - Sizing	6%	18%	8%	3%	6%		51%	11%
Existing	305	Pumps - Replace motor	6%	18%	8%	3%	6%		51%	11%
Existing	306	Pumps - ASD	6%	18%	8%	3%	6%		51%	11%
Existing	307	Pumps - Motor practices-1	6%	18%	8%	3%	6%		51%	11%
Existing	308	Power recovery								
Existing	309	Refinery Controls								
Existing	310	Efficient Transformers	6%	18%	8%	3%	6%		51%	11%
Existing	311	Low Pressure Nozzle						100%		
Existing	312	Micro Watering System						100%		
Existing	313	Pump Retrofit - Irrigation						100%		
Existing	400	Base Drives	27%	5%	17%	20%	21%			67%
Existing	401	Bakery - Process (Mixing) - O&M								
Existing	402	O&M/drives spinning machines								
Existing	403	Air conveying systems								
Existing	404	Replace V-Belts								
Existing	405	Drives - Replace motor	27%	5%	17%	20%	21%			67%
Existing	406	Gap Forming papermachine								
Existing	407	High Consistency forming								
Existing	408	Optimization control PM								
Existing	409	Efficient practices printing press								
Existing	410	Efficient Printing press (fewer cylinders)								
Existing	411	Light cylinders								
Existing	412	Efficient drives								
Existing	413	Clean Room - Controls		5%						
Existing	414	Clean Room - New Designs								
Existing	415	Drives - Process Control								67%

INDUSTRIAL

APPLICABILITY FACTOR (percent)														
Segment	Measure #	Measure Description	Aluminium	Steel	Oil Refining	Paper	Dairy	Other Food	Wood	Chemicals	SIC22	SIC27	SIC30	SIC32
Existing	416	Process Drives - ASD								16%				
Existing	417	O&M - Extruders/Injection Moulding											29%	
Existing	418	Extruders/injection Moulding-multipump											29%	
Existing	419	Direct drive Extruders											29%	
Existing	420	Injection Moulding - Impulse Cooling											29%	
Existing	421	Injection Moulding - Direct drive											29%	
Existing	422	Efficient grinding												20%
Existing	423	Process optimization												20%
Existing	424	Efficient drives - rolling	8%	60%										
Existing	425	Drives - Optimization process (M&T)												
Existing	426	Drives - Scheduling												
Existing	427	Machinery												
Existing	428	Efficient Machinery												
Existing	429	Efficient Transformers	8%	60%		29%	3%	3%	47%	16%	27%	31%	29%	20%
Existing	500	Base Heating	12%	1%			3%	3%	6%		5%			23%
Existing	501	Bakery - Process					3%	3%						
Existing	502	Drying (UV/IR)									5%			
Existing	503	Heat Pumps - Drying							6%					
Existing	504	Top-heating (glass)												23%
Existing	505	Efficient electric melting		1%										
Existing	506	Intelligent extruder (DOE)		1%										
Existing	507	Near Net Shape Casting		1%										
Existing	508	Heating - Process Control		1%										
Existing	509	Efficient Curing ovens												
Existing	510	Heating - Optimization process (M&T)												
Existing	511	Heating - Scheduling												
Existing	512	Efficient Transformers	12%	1%			3%	3%	6%		5%			23%
Existing	550	Base Refrigeration					3%	3%						
Existing	551	Efficient Refrigeration - Operations					3%	3%						
Existing	552	Optimization Refrigeration					3%	3%						
Existing	553	Efficient Transformers					3%	3%						
Existing	600	Base Other Process								2%				
Existing	601	Other Process Controls (batch + site)								2%				
Existing	602	Efficient desalter												
Existing	603	New transformers welding												
Existing	604	Efficient processes (welding, etc.)												
Existing	605	Process control												
Existing	606	Power recovery												
Existing	607	Refinery Controls												
Existing	608	Efficient Transformers								2%				
Existing	700	Base DX Packaged System, EER=2.65, 10 tons	2%	0%	0%	1%	2%	2%	2%	0%	6%	8%	1%	1%
Existing	701	DX Packaged System, EER=3.5, 10 tons	2%	0%	0%	1%	2%	2%	2%	0%	6%	8%	1%	1%
Existing	702	DX Tune Up/ Advanced Diagnostics	2%	0%	0%	1%	2%	2%	2%	0%	6%	8%	1%	1%
Existing	703	Optimize HVAC Controls	2%	0%	0%	1%	2%	2%	2%	0%	6%	8%	1%	1%
Existing	704	BMS	2%	0%	0%	1%	2%	2%	2%	0%	6%	8%	1%	1%
Existing	705	Prog. Thermostat	2%	0%	0%	1%	2%	2%	2%	0%	6%	8%	1%	1%
Existing	706	Efficient Transformers	2%	0%	0%	1%	2%	2%	2%	0%	6%	8%	1%	1%
Existing	800	Base Lighting	1%	0%	3%	1%	4%	4%	8%	1%	12%	21%	10%	6%
Existing	801	RET T12 to Next Gen T8, 1EB	1%	0%	3%	1%	4%	4%	8%	1%	12%	21%	10%	6%
Existing	802	RET T8 to Next Gen T8, 1EB	1%	0%	3%	1%	4%	4%	8%	1%	12%	21%	10%	6%
Existing	803	RET - Hardwired 18W CFL	1%	0%	3%	1%	4%	4%	8%	1%	12%	21%	10%	6%
Existing	804	RET - Screw-in 18W CFL	1%	0%	3%	1%	4%	4%	8%	1%	12%	21%	10%	6%
Existing	805	400W MV to 250W HPS	1%	0%	3%	1%	4%	4%	8%	1%	12%	21%	10%	6%

INDUSTRIAL

APPLICABILITY FACTOR
(percent)

Segment	Measure #	Measure Description	SIC34	SIC36	SIC37	SIC38	SIC39	Ag	Water/WW	Mining
Existing	416	Process Drives - ASD					20%			
Existing	417	O&M - Extruders/Injection Moulding								
Existing	418	Extruders/injection Moulding-multipump								
Existing	419	Direct drive Extruders								
Existing	420	Injection Moulding - Impulse Cooling								
Existing	421	Injection Moulding - Direct drive								
Existing	422	Efficient grinding								
Existing	423	Process optimization								67%
Existing	424	Efficient drives - rolling								
Existing	425	Drives - Optimization process (M&T)	22%		14%	13%				
Existing	426	Drives - Scheduling	22%	5%	14%	13%	20%			
Existing	427	Machinery	22%	5%	14%	13%				
Existing	428	Efficient Machinery					20%			
Existing	429	Efficient Transformers	22%	5%	14%	13%	20%			67%
Existing	500	Base Heating	15%	15%	10%	11%	10%			
Existing	501	Bakery - Process								
Existing	502	Drying (UV/IR)								
Existing	503	Heat Pumps - Drying								
Existing	504	Top-heating (glass)								
Existing	505	Efficient electric melting								
Existing	506	Intelligent extruder (DOE)								
Existing	507	Near Net Shape Casting								
Existing	508	Heating - Process Control								
Existing	509	Efficient Curing ovens	15%	15%	10%	11%	10%			
Existing	510	Heating - Optimization process (M&T)	15%		10%					
Existing	511	Heating - Scheduling	15%							
Existing	512	Efficient Transformers	15%	15%	10%	11%	10%			
Existing	550	Base Refrigeration								
Existing	551	Efficient Refrigeration - Operations								
Existing	552	Optimization Refrigeration								
Existing	553	Efficient Transformers								
Existing	600	Base Other Process	5%	5%	4%	2%	1%			
Existing	601	Other Process Controls (batch + site)								
Existing	602	Efficient desalter								
Existing	603	New transformers welding	5%		4%	2%				
Existing	604	Efficient processes (welding, etc.)		5%						
Existing	605	Process control					1%			
Existing	606	Power recovery								
Existing	607	Refinery Controls								
Existing	608	Efficient Transformers	5%	5%	4%	2%	1%			
Existing	700	Base DX Packaged System, EER=2.65, 10 tons	3%	4%	6%	2%	5%		2%	3%
Existing	701	DX Packaged System, EER=3.5, 10 tons	3%	4%	6%	2%	5%		2%	3%
Existing	702	DX Tune Up/ Advanced Diagnostics	3%	4%	6%	2%	5%		2%	3%
Existing	703	Optimize HVAC Controls	3%	4%	6%	2%	5%		2%	3%
Existing	704	BMS	3%	4%	6%	2%	5%		2%	3%
Existing	705	Prog. Thermostat	3%	4%	6%	2%	5%		2%	3%
Existing	706	Efficient Transformers	3%	4%	6%	2%	5%		2%	3%
Existing	800	Base Lighting	15%	13%	16%	18%	16%		2%	3%
Existing	801	RET T12 to Next Gen T8, 1EB	15%	13%	16%	18%	16%		2%	3%
Existing	802	RET T8 to Next Gen T8, 1EB	15%	13%	16%	18%	16%		2%	3%
Existing	803	RET - Hardwired 18W CFL	15%	13%	16%	18%	16%		2%	3%
Existing	804	RET - Screw-in 18W CFL	15%	13%	16%	18%	16%		2%	3%
Existing	805	400W MV to 250W HPS	15%	13%	16%	18%	16%		2%	3%

INDUSTRIAL

APPLICABILITY FACTOR
(percent)

Segment	Measure #	Measure Description	Aluminium	Steel	Oil Refining	Paper	Dairy	Other Food	Wood	Chemicals	SIC22	SIC27	SIC30	SIC32
Existing	806	Lighting Controls	1%	0%	3%	1%	4%	4%	8%	1%	12%	21%	10%	6%
Existing	807	Efficient Transformers	1%	0%	3%	1%	4%	4%	8%	1%	12%	21%	10%	6%
Existing	900	Base Other	1%	0%	1%	1%	4%	4%	8%	0%	7%	5%	4%	5%
Existing	901	Replace V-belts	1%	0%	1%	1%	4%	4%	8%	0%	7%	5%	4%	5%
Existing	902	Membranes for wastewater									7%			
Existing	903	Efficient Transformers	1%	0%	1%	1%	4%	4%	8%	0%	7%	5%	4%	5%

INDUSTRIAL

APPLICABILITY FACTOR
(percent)

Segment	Measure #	Measure Description	SIC34	SIC36	SIC37	SIC38	SIC39	Ag	Water/WW	Mining
Existing	806	Lighting Controls	15%	13%	16%	18%	16%		2%	3%
Existing	807	Efficient Transformers	15%	13%	16%	18%	16%		2%	3%
Existing	900	Base Other	4%	6%	7%	5%	8%			
Existing	901	Replace V-belts	4%	6%	7%	5%	8%			
Existing	902	Membranes for wastewater								
Existing	903	Efficient Transformers	4%	6%	7%	5%	8%			

INDUSTRIAL

INCOMPLETE FACTOR
(percent)

Segment	Measure #	Measure Description	Aluminium	Steel	Oil Refining	Paper	Dairy	Other Food	Wood	Chemicals	SIC22	SIC27	SIC30	SIC32	SIC34
Existing	100	Base Compressed Air	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	101	Compressed Air-O&M	20%	20%	10%	20%	16%	23%	75%	75%	75%	75%	75%	75%	75%
Existing	102	Compressed Air - Controls	50%	30%	20%	15%	18%	64%	25%	25%	25%	25%	25%	25%	25%
Existing	103	Compressed Air - System Optimization	80%	50%	30%	80%	37%	61%	50%	50%	50%	50%	50%	50%	50%
Existing	104	Compressed Air- Sizing	30%	20%	5%	43%	10%	37%	40%	40%	40%	40%	40%	40%	40%
Existing	105	Comp Air - Replace motor	100%	100%	100%	100%	100%	100%	49%	49%	49%	49%	49%	49%	49%
Existing	106	Comp Air - ASD	80%	40%	90%	48%	25%	69%	100%	100%	100%	100%	100%	100%	100%
Existing	107	Comp Air - Motor practices-1	40%	50%	10%	20%	14%	34%	100%	100%	100%	100%	100%	100%	100%
Existing	108	Power recovery	100%	90%	80%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	109	Refinery Controls	100%	100%	50%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	110	Efficient Transformers	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
Existing	200	Base Fans	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	201	Fans - O&M	20%	10%	10%	10%	9%	14%	50%	50%	50%	50%	50%	50%	50%
Existing	202	Fans - Controls	70%	40%	75%	50%	26%	21%	25%	25%	25%	25%	25%	25%	25%
Existing	203	Fans - System Optimization	90%	20%	70%	85%	46%	24%	15%	15%	15%	15%	15%	15%	15%
Existing	204	Fans- Improve components	80%	50%	50%	52%	48%	20%	20%	20%	20%	20%	20%	20%	20%
Existing	205	Fans - Replace motor	100%	100%	100%	100%	100%	100%	49%	49%	49%	49%	49%	49%	49%
Existing	206	Fans - ASD	80%	40%	90%	48%	25%	69%	100%	100%	100%	100%	100%	100%	100%
Existing	207	Fans - Motor practices-1	40%	50%	10%	20%	14%	34%	100%	100%	100%	100%	100%	100%	100%
Existing	208	Optimize drying process	100%	100%	100%	100%	100%	100%	50%	100%	100%	100%	100%	100%	100%
Existing	209	Power recovery	100%	90%	80%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	210	Refinery Controls	100%	100%	50%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	211	Efficient Transformers	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
Existing	300	Base Pumps	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	301	Pumps - O&M	20%	15%	10%	10%	15%	15%	40%	40%	40%	40%	40%	40%	40%
Existing	302	Pumps - Controls	60%	50%	80%	67%	36%	36%	35%	35%	35%	35%	35%	35%	35%
Existing	303	Pumps - System Optimization	25%	20%	80%	45%	28%	28%	30%	30%	30%	30%	30%	30%	30%
Existing	304	Pumps - Sizing	50%	15%	20%	10%	16%	16%	20%	20%	20%	20%	20%	20%	20%
Existing	305	Pumps - Replace motor	100%	100%	100%	100%	100%	100%	49%	49%	49%	49%	49%	49%	49%
Existing	306	Pumps - ASD	80%	40%	90%	48%	25%	69%	100%	100%	100%	100%	100%	100%	100%
Existing	307	Pumps - Motor practices-1	40%	50%	10%	20%	14%	34%	100%	100%	100%	100%	100%	100%	100%
Existing	308	Power recovery	100%	90%	80%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	309	Refinery Controls	100%	100%	50%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	310	Efficient Transformers	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
Existing	311	Low Pressure Nozzle													
Existing	312	Micro Watering System													
Existing	313	Pump Retrofit - Irrigation													
Existing	400	Base Drives	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	401	Bakery - Process (Mixing) - O&M	100%	100%	100%	100%	70%	70%	100%	100%	100%	100%	100%	100%	100%
Existing	402	O&M/drives spinning machines	40%	50%	10%	20%	14%	34%	100%	100%	40%	100%	100%	100%	100%
Existing	403	Air conveying systems	100%	100%	100%	100%	100%	100%	25%	100%	100%	100%	100%	100%	100%
Existing	404	Replace V-Belts	100%	100%	100%	100%	100%	100%	50%	100%	100%	100%	100%	100%	100%
Existing	405	Drives - Replace motor	100%	100%	100%	100%	100%	100%	40%	100%	100%	100%	100%	30%	100%
Existing	406	Gap Forming papermachine	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	407	High Consistency forming	100%	100%	100%	38%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	408	Optimization control PM	100%	100%	100%	80%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	409	Efficient practices printing press	100%	100%	100%	100%	100%	100%	100%	100%	100%	50%	100%	100%	100%
Existing	410	Efficient Printing press (fewer cylinders)	100%	100%	100%	100%	100%	100%	100%	100%	100%	20%	100%	100%	100%
Existing	411	Light cylinders	100%	100%	100%	100%	100%	100%	100%	100%	100%	20%	100%	100%	100%
Existing	412	Efficient drives	100%	100%	100%	100%	100%	100%	100%	100%	100%	30%	100%	100%	100%
Existing	413	Clean Room - Controls	100%	100%	100%	100%	100%	100%	100%	50%	100%	100%	100%	100%	100%
Existing	414	Clean Room - New Designs	100%	100%	100%	100%	100%	100%	100%	20%	100%	100%	100%	100%	100%
Existing	415	Drives - Process Control	30%	30%	60%	100%	100%	100%	100%	50%	100%	100%	100%	50%	100%

INDUSTRIAL

INCOMPLETE FACTOR (percent)									
Segment	Measure #	Measure Description	SIC36	SIC37	SIC38	SIC39	Ag	Water/WW	Mining
Existing	100	Base Compressed Air	100%	100%	100%	100%		100%	100%
Existing	101	Compressed Air-O&M	75%	75%	75%	75%		75%	75%
Existing	102	Compressed Air - Controls	25%	25%	25%	25%		25%	25%
Existing	103	Compressed Air - System Optimization	50%	50%	50%	50%		50%	50%
Existing	104	Compressed Air- Sizing	40%	40%	40%	40%		40%	40%
Existing	105	Comp Air - Replace motor	49%	49%	49%	49%		49%	49%
Existing	106	Comp Air - ASD	100%	100%	100%	100%		100%	100%
Existing	107	Comp Air - Motor practices-1	100%	100%	100%	100%		100%	100%
Existing	108	Power recovery	100%	100%	100%	100%		100%	100%
Existing	109	Refinery Controls	100%	100%	100%	100%		100%	100%
Existing	110	Efficient Transformers	40%	40%	40%	40%		40%	40%
Existing	200	Base Fans	100%	100%	100%	100%		100%	100%
Existing	201	Fans - O&M	50%	50%	50%	50%		50%	50%
Existing	202	Fans - Controls	25%	25%	25%	25%		25%	25%
Existing	203	Fans - System Optimization	15%	15%	15%	15%		15%	15%
Existing	204	Fans- Improve components	20%	20%	20%	20%		20%	20%
Existing	205	Fans - Replace motor	49%	49%	49%	49%	0%	49%	49%
Existing	206	Fans - ASD	100%	100%	100%	100%	0%	100%	100%
Existing	207	Fans - Motor practices-1	100%	100%	100%	100%	0%	100%	100%
Existing	208	Optimize drying process	100%	100%	100%	100%		100%	100%
Existing	209	Power recovery	100%	100%	100%	100%		100%	100%
Existing	210	Refinery Controls	100%	100%	100%	100%		100%	100%
Existing	211	Efficient Transformers	40%	40%	40%	40%		40%	40%
Existing	300	Base Pumps	100%	100%	100%	100%	100%	100%	100%
Existing	301	Pumps - O&M	40%	40%	40%	40%		40%	40%
Existing	302	Pumps - Controls	35%	35%	35%	35%		35%	35%
Existing	303	Pumps - System Optimization	30%	30%	30%	30%		30%	30%
Existing	304	Pumps - Sizing	20%	20%	20%	20%		20%	20%
Existing	305	Pumps - Replace motor	49%	49%	49%	49%	49%	49%	49%
Existing	306	Pumps - ASD	100%	100%	100%	100%	100%	100%	100%
Existing	307	Pumps - Motor practices-1	100%	100%	100%	100%	100%	100%	100%
Existing	308	Power recovery	100%	100%	100%	100%		100%	100%
Existing	309	Refinery Controls	100%	100%	100%	100%		100%	100%
Existing	310	Efficient Transformers	40%	40%	40%	40%		40%	40%
Existing	311	Low Pressure Nozzle					90%		
Existing	312	Micro Watering System					90%		
Existing	313	Pump Retrofit - Irrigation					20%		
Existing	400	Base Drives	100%	100%	100%	100%	100%	100%	100%
Existing	401	Bakery - Process (Mixing) - O&M	100%	100%	100%	100%	100%	100%	100%
Existing	402	O&M/drives spinning machines	100%	100%	100%	100%	100%	100%	100%
Existing	403	Air conveying systems	100%	100%	100%	100%	100%	100%	100%
Existing	404	Replace V-Belts	100%	100%	100%	100%	100%	100%	100%
Existing	405	Drives - Replace motor	100%	100%	100%	100%	30%	100%	30%
Existing	406	Gap Forming papermachine	100%	100%	100%	100%	100%	100%	100%
Existing	407	High Consistency forming	100%	100%	100%	100%	100%	100%	100%
Existing	408	Optimization control PM	100%	100%	100%	100%	100%	100%	100%
Existing	409	Efficient practices printing press	100%	100%	100%	100%	100%	100%	100%
Existing	410	Efficient Printing press (fewer cylinders)	100%	100%	100%	100%	100%	100%	100%
Existing	411	Light cylinders	100%	100%	100%	100%	100%	100%	100%
Existing	412	Efficient drives	100%	100%	100%	100%	100%	100%	100%
Existing	413	Clean Room - Controls	50%	100%	100%	100%	100%	100%	100%
Existing	414	Clean Room - New Designs	100%	100%	100%	100%	100%	100%	100%
Existing	415	Drives - Process Control	100%	100%	100%	100%	50%	100%	50%

INDUSTRIAL

INCOMPLETE FACTOR
(percent)

Segment	Measure #	Measure Description	Aluminium	Steel	Oil Refining	Paper	Dairy	Other Food	Wood	Chemicals	SIC22	SIC27	SIC30	SIC32	SIC34
Existing	416	Process Drives - ASD	80%	40%	90%	48%	25%	69%	100%	100%	100%	100%	100%	100%	100%
Existing	417	O&M - Extruders/Injection Moulding	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	50%	100%	100%
Existing	418	Extruders/injection Moulding-multipump	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	20%	100%	100%
Existing	419	Direct drive Extruders	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	10%	100%	100%
Existing	420	Injection Moulding - Impulse Cooling	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	25%	100%	100%
Existing	421	Injection Moulding - Direct drive	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	25%	100%	100%
Existing	422	Efficient grinding	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	20%	100%
Existing	423	Process optimization	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	25%	100%
Existing	424	Efficient drives - rolling	50%	50%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	425	Drives - Optimization process (M&T)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	50%
Existing	426	Drives - Scheduling	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	30%
Existing	427	Machinery	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	25%
Existing	428	Efficient Machinery	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	429	Efficient Transformers	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
Existing	500	Base Heating	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	501	Bakery - Process	100%	100%	100%	100%	30%	30%	100%	100%	100%	100%	100%	100%	100%
Existing	502	Drying (UV/IR)	100%	100%	100%	100%	100%	100%	100%	100%	20%	100%	100%	100%	100%
Existing	503	Heat Pumps - Drying	100%	100%	100%	100%	100%	100%	20%	100%	100%	100%	100%	100%	100%
Existing	504	Top-heating (glass)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	50%	100%
Existing	505	Efficient electric melting	100%	25%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	506	Intelligent extruder (DOE)	100%	25%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	507	Near Net Shape Casting	100%	25%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	508	Heating - Process Control	100%	50%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	509	Efficient Curing ovens	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	25%
Existing	510	Heating - Optimization process (M&T)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	50%
Existing	511	Heating - Scheduling	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	30%
Existing	512	Efficient Transformers	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
Existing	550	Base Refrigeration	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	551	Efficient Refrigeration - Operations	100%	100%	100%	100%	28%	74%	100%	100%	100%	100%	100%	100%	100%
Existing	552	Optimization Refrigeration	100%	100%	100%	100%	41%	84%	100%	100%	100%	100%	100%	100%	100%
Existing	553	Efficient Transformers	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
Existing	600	Base Other Process	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	601	Other Process Controls (batch + site)	100%	100%	100%	100%	100%	100%	100%	50%	100%	100%	100%	100%	100%
Existing	602	Efficient desalter	100%	100%	50%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	603	New transformers welding	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	50%
Existing	604	Efficient processes (welding, etc.)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	605	Process control	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	606	Power recovery	100%	100%	25%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	607	Refinery Controls	100%	100%	50%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	608	Efficient Transformers	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
Existing	700	Base DX Packaged System, EER=2.65, 10	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	701	DX Packaged System, EER=3.5, 10 tons	0%	0%	90%	90%	0%	90%	90%	90%	90%	90%	90%	90%	90%
Existing	702	DX Tune Up/ Advanced Diagnostics	0%	0%	80%	80%	0%	80%	80%	80%	80%	80%	80%	80%	80%
Existing	703	Optimize HVAC Controls	0%	0%	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	704	BMS	0%	0%	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	705	Prog. Thermostat	0%	0%	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	706	Efficient Transformers	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
Existing	800	Base Lighting	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	801	RET T12 to Next Gen T8, 1EB	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	802	RET T8 to Next Gen T8, 1EB	50%	50%	60%	52%	47%	60%	51%	51%	51%	51%	51%	51%	51%
Existing	803	RET - Hardwired 18W CFL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	804	RET - Screw-in 18W CFL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	805	400W MV to 250W HPS	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

INCOMPLETE FACTOR (percent)									
Segment	Measure #	Measure Description	SIC36	SIC37	SIC38	SIC39	Ag	Water/WW	Mining
Existing	416	Process Drives - ASD	100%	100%	100%	50%	100%	100%	100%
Existing	417	O&M - Extruders/Injection Moulding	100%	100%	100%	100%	100%	100%	100%
Existing	418	Extruders/injection Moulding-multipump	100%	100%	100%	100%	100%	100%	100%
Existing	419	Direct drive Extruders	100%	100%	100%	100%	100%	100%	100%
Existing	420	Injection Moulding - Impulse Cooling	100%	100%	100%	100%	100%	100%	100%
Existing	421	Injection Moulding - Direct drive	100%	100%	100%	100%	100%	100%	100%
Existing	422	Efficient grinding	100%	100%	100%	100%	20%	100%	20%
Existing	423	Process optimization	100%	100%	100%	100%	25%	100%	25%
Existing	424	Efficient drives - rolling	100%	100%	100%	100%	100%	100%	100%
Existing	425	Drives - Optimization process (M&T)	100%	40%	50%	100%	100%	100%	100%
Existing	426	Drives - Scheduling	30%	30%	30%	30%	100%	100%	100%
Existing	427	Machinery	25%	20%	25%	100%	100%	100%	100%
Existing	428	Efficient Machinery	100%	100%	100%	25%	100%	100%	100%
Existing	429	Efficient Transformers	40%	40%	40%	40%	40%	40%	40%
Existing	500	Base Heating	100%	100%	100%	100%	100%	100%	100%
Existing	501	Bakery - Process	100%	100%	100%	100%	100%	100%	100%
Existing	502	Drying (UV/IR)	100%	100%	100%	100%	100%	100%	100%
Existing	503	Heat Pumps - Drying	100%	100%	100%	100%	100%	100%	100%
Existing	504	Top-heating (glass)	100%	100%	100%	100%	50%	50%	50%
Existing	505	Efficient electric melting	100%	100%	100%	100%	100%	100%	100%
Existing	506	Intelligent extruder (DOE)	100%	100%	100%	100%	100%	100%	100%
Existing	507	Near Net Shape Casting	100%	100%	100%	100%	100%	100%	100%
Existing	508	Heating - Process Control	100%	100%	100%	100%	100%	100%	100%
Existing	509	Efficient Curing ovens	25%	25%	25%	25%	100%	100%	100%
Existing	510	Heating - Optimization process (M&T)	100%	40%	100%	100%	100%	100%	100%
Existing	511	Heating - Scheduling	100%	100%	100%	100%	100%	100%	100%
Existing	512	Efficient Transformers	40%	40%	40%	40%	40%	40%	40%
Existing	550	Base Refrigeration	100%	100%	100%	100%	100%	100%	100%
Existing	551	Efficient Refrigeration - Operations	100%	100%	100%	100%	100%	100%	100%
Existing	552	Optimization Refrigeration	100%	100%	100%	100%	100%	100%	100%
Existing	553	Efficient Transformers	40%	40%	40%	40%	40%	40%	40%
Existing	600	Base Other Process	100%	100%	100%	100%	100%	100%	100%
Existing	601	Other Process Controls (batch + site)	100%	100%	100%	100%	100%	100%	100%
Existing	602	Efficient desalter	100%	100%	100%	100%	100%	100%	100%
Existing	603	New transformers welding	100%	50%	50%	100%	100%	100%	100%
Existing	604	Efficient processes (welding, etc.)	50%	100%	100%	100%	100%	100%	100%
Existing	605	Process control	100%	100%	100%	25%	100%	100%	100%
Existing	606	Power recovery	100%	100%	100%	100%	100%	100%	100%
Existing	607	Refinery Controls	100%	100%	100%	100%	100%	100%	100%
Existing	608	Efficient Transformers	40%	40%	40%	40%	40%	40%	40%
Existing	700	Base DX Packaged System, EER=2.65, 10	100%	100%	100%	100%	100%	100%	100%
Existing	701	DX Packaged System, EER=3.5, 10 tons	90%	90%	90%	90%	90%	90%	90%
Existing	702	DX Tune Up/ Advanced Diagnostics	80%	80%	80%	80%	80%	80%	80%
Existing	703	Optimize HVAC Controls	100%	100%	100%	100%	100%	100%	100%
Existing	704	BMS	100%	100%	100%	100%	100%	100%	100%
Existing	705	Prog. Thermostat	100%	100%	100%	100%	100%	100%	100%
Existing	706	Efficient Transformers	40%	40%	40%	40%	40%	40%	40%
Existing	800	Base Lighting	100%	100%	100%	100%	100%	100%	100%
Existing	801	RET T12 to Next Gen T8, 1EB	100%	100%	100%	100%	100%	100%	100%
Existing	802	RET T8 to Next Gen T8, 1EB	51%	51%	51%	51%	51%	51%	51%
Existing	803	RET - Hardwired 18W CFL	100%	100%	100%	100%	100%	100%	100%
Existing	804	RET - Screw-in 18W CFL	100%	100%	100%	100%	100%	100%	100%
Existing	805	400W MV to 250W HPS	100%	100%	100%	100%	100%	100%	100%

INDUSTRIAL

INCOMPLETE FACTOR
(percent)

Segment	Measure #	Measure Description	Aluminium	Steel	Oil Refining	Paper	Dairy	Other Food	Wood	Chemicals	SIC22	SIC27	SIC30	SIC32	SIC34
Existing	806	Lighting Controls	100%	90%	80%	80%	48%	78%	93%	93%	93%	93%	93%	93%	93%
Existing	807	Efficient Transformers	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
Existing	900	Base Other	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	901	Replace V-belts	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
Existing	902	Membranes for wastewater	100%	100%	100%	100%	100%	100%	100%	100%	15%	100%	100%	100%	100%
Existing	903	Efficient Transformers	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%

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INCOMPLETE FACTOR
(percent)

Segment	Measure #	Measure Description	SIC36	SIC37	SIC38	SIC39	Ag	Water/WW	Mining
Existing	806	Lighting Controls	93%	93%	93%	93%	93%	93%	93%
Existing	807	Efficient Transformers	40%	40%	40%	40%	40%	40%	40%
Existing	900	Base Other	100%	100%	100%	100%	100%	100%	100%
Existing	901	Replace V-belts	50%	50%	50%	50%	50%	50%	50%
Existing	902	Membranes for wastewater	100%	100%	100%	100%	100%	100%	100%
Existing	903	Efficient Transformers	40%	40%	40%	40%	40%	40%	40%

INDUSTRIAL

FEASIBILITY FACTOR (percent)														
Segment	Measure #	Measure Description	Aluminium	Steel	Oil Refining	Paper	Dairy	Other Food	Wood	Chemicals	SIC22	SIC27	SIC30	SIC32	SIC34
Existing	100	Base Compressed Air	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	101	Compressed Air-O&M	100%	100%	1%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	102	Compressed Air - Controls	100%	100%	1%	100%	100%	90%	100%	100%	100%	100%	100%	100%	100%
Existing	103	Compressed Air - System Optimization	100%	80%	5%	85%	100%	83%	100%	100%	100%	100%	100%	100%	100%
Existing	104	Compressed Air- Sizing	100%	100%	3%	100%	100%	83%	100%	100%	100%	100%	100%	100%	100%
Existing	105	Comp Air - Replace motor	100%	100%	100%	36%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	106	Comp Air - ASD	40%	30%	20%	38%	30%	40%	100%	100%	100%	100%	100%	100%	100%
Existing	107	Comp Air - Motor practices-1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	108	Power recovery	35%	35%	60%										
Existing	109	Refinery Controls			100%										
Existing	110	Efficient Transformers	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Existing	200	Base Fans	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	201	Fans - O&M	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	202	Fans - Controls	70%	70%	50%	70%	60%	83%	100%	100%	100%	100%	100%	100%	100%
Existing	203	Fans - System Optimization	100%	100%	100%	100%	60%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	204	Fans- Improve components	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	205	Fans - Replace motor	100%	100%	100%	36%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	206	Fans - ASD	40%	30%	20%	38%	30%	40%	100%	100%	100%	100%	100%	100%	100%
Existing	207	Fans - Motor practices-1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	208	Optimize drying process							100%						
Existing	209	Power recovery	35%	35%	60%										
Existing	210	Refinery Controls			100%										
Existing	211	Efficient Transformers	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Existing	300	Base Pumps	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	301	Pumps - O&M	80%	80%	20%	80%	64%	64%	100%	100%	100%	100%	100%	100%	100%
Existing	302	Pumps - Controls	80%	80%	60%	80%	80%	80%	100%	100%	100%	100%	100%	100%	100%
Existing	303	Pumps - System Optimization	80%	80%	40%	80%	80%	80%	100%	100%	100%	100%	100%	100%	100%
Existing	304	Pumps - Sizing	80%	80%	90%	57%	80%	80%	100%	100%	100%	100%	100%	100%	100%
Existing	305	Pumps - Replace motor	100%	100%	100%	36%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	306	Pumps - ASD	40%	30%	20%	38%	30%	40%	100%	100%	100%	100%	100%	100%	100%
Existing	307	Pumps - Motor practices-1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	308	Power recovery	35%	35%	60%										
Existing	309	Refinery Controls			100%										
Existing	310	Efficient Transformers	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Existing	311	Low Pressure Nozzle													
Existing	312	Micro Watering System													
Existing	313	Pump Retrofit - Irrigation													
Existing	400	Base Drives	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	401	Bakery - Process (Mixing) - O&M					100%	100%							
Existing	402	O&M/drives spinning machines									60%				
Existing	403	Air conveying systems							30%						
Existing	404	Replace V-Belts							70%						
Existing	405	Drives - Replace motor	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
Existing	406	Gap Forming papermachine				52%									
Existing	407	High Consistency forming				100%									
Existing	408	Optimization control PM				100%									
Existing	409	Efficient practices printing press										100%			
Existing	410	Efficient Printing press (fewer cylinders)										100%			
Existing	411	Light cylinders										100%			
Existing	412	Efficient drives										100%			
Existing	413	Clean Room - Controls								30%					
Existing	414	Clean Room - New Designs								30%					
Existing	415	Drives - Process Control	80%	72%	63%					86%				100%	

INDUSTRIAL

FEASIBILITY FACTOR (percent)									
Segment	Measure #	Measure Description	SIC36	SIC37	SIC38	SIC39	Ag	Water/WW	Mining
Existing	100	Base Compressed Air	100%	100%	100%	100%		100%	100%
Existing	101	Compressed Air-O&M	100%	100%	100%	100%		100%	100%
Existing	102	Compressed Air - Controls	100%	100%	100%	100%		100%	100%
Existing	103	Compressed Air - System Optimization	100%	100%	100%	100%		100%	100%
Existing	104	Compressed Air- Sizing	100%	100%	100%	100%		100%	100%
Existing	105	Comp Air - Replace motor	100%	100%	100%	100%		100%	100%
Existing	106	Comp Air - ASD	100%	100%	100%	100%		100%	100%
Existing	107	Comp Air - Motor practices-1	100%	100%	100%	100%		100%	100%
Existing	108	Power recovery							
Existing	109	Refinery Controls							
Existing	110	Efficient Transformers	2%	2%	2%	2%		2%	2%
Existing	200	Base Fans	100%	100%	100%	100%		100%	100%
Existing	201	Fans - O&M	100%	100%	100%	100%		100%	100%
Existing	202	Fans - Controls	100%	100%	100%	100%		100%	100%
Existing	203	Fans - System Optimization	100%	100%	100%	100%		100%	100%
Existing	204	Fans- Improve components	100%	100%	100%	100%		100%	100%
Existing	205	Fans - Replace motor	100%	100%	100%	100%		100%	100%
Existing	206	Fans - ASD	100%	100%	100%	100%		100%	100%
Existing	207	Fans - Motor practices-1	100%	100%	100%	100%		100%	100%
Existing	208	Optimize drying process							
Existing	209	Power recovery							
Existing	210	Refinery Controls							
Existing	211	Efficient Transformers	2%	2%	2%	2%		2%	2%
Existing	300	Base Pumps	100%	100%	100%	100%	100%	100%	100%
Existing	301	Pumps - O&M	100%	100%	100%	100%	100%	100%	100%
Existing	302	Pumps - Controls	100%	100%	100%	100%	100%	100%	100%
Existing	303	Pumps - System Optimization	100%	100%	100%	100%	100%	100%	100%
Existing	304	Pumps - Sizing	100%	100%	100%	100%	100%	100%	100%
Existing	305	Pumps - Replace motor	100%	100%	100%	100%	100%	100%	100%
Existing	306	Pumps - ASD	100%	100%	100%	100%	100%	100%	100%
Existing	307	Pumps - Motor practices-1	100%	100%	100%	100%	100%	100%	100%
Existing	308	Power recovery							
Existing	309	Refinery Controls							
Existing	310	Efficient Transformers	2%	2%	2%	2%	2%	2%	2%
Existing	311	Low Pressure Nozzle					50%		
Existing	312	Micro Watering System					50%		
Existing	313	Pump Retrofit - Irrigation					70%		
Existing	400	Base Drives	100%	100%	100%	100%	100%	100%	100%
Existing	401	Bakery - Process (Mixing) - O&M							
Existing	402	O&M/drives spinning machines							
Existing	403	Air conveying systems							
Existing	404	Replace V-Belts							
Existing	405	Drives - Replace motor	50%	50%	50%	50%	50%	50%	50%
Existing	406	Gap Forming papermachine							
Existing	407	High Consistency forming							
Existing	408	Optimization control PM							
Existing	409	Efficient practices printing press							
Existing	410	Efficient Printing press (fewer cylinders)							
Existing	411	Light cylinders							
Existing	412	Efficient drives							
Existing	413	Clean Room - Controls	60%						
Existing	414	Clean Room - New Designs							
Existing	415	Drives - Process Control							50%

INDUSTRIAL

FEASIBILITY FACTOR (percent)															
Segment	Measure #	Measure Description	Aluminium	Steel	Oil Refining	Paper	Dairy	Other Food	Wood	Chemicals	SIC22	SIC27	SIC30	SIC32	SIC34
Existing	416	Process Drives - ASD								70%					
Existing	417	O&M - Extruders/Injection Moulding											100%		
Existing	418	Extruders/injection Moulding-multipump											100%		
Existing	419	Direct drive Extruders											50%		
Existing	420	Injection Moulding - Impulse Cooling											50%		
Existing	421	Injection Moulding - Direct drive											50%		
Existing	422	Efficient grinding												100%	
Existing	423	Process optimization												25%	
Existing	424	Efficient drives - rolling	50%	50%											
Existing	425	Drives - Optimization process (M&T)													40%
Existing	426	Drives - Scheduling													40%
Existing	427	Machinery													50%
Existing	428	Efficient Machinery													
Existing	429	Efficient Transformers	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Existing	500	Base Heating	50%	50%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	501	Bakery - Process					100%	100%							
Existing	502	Drying (UV/IR)									100%				
Existing	503	Heat Pumps - Drying							100%						
Existing	504	Top-heating (glass)												25%	
Existing	505	Efficient electric melting		90%											
Existing	506	Intelligent extruder (DOE)		10%											
Existing	507	Near Net Shape Casting		20%											
Existing	508	Heating - Process Control		100%											
Existing	509	Efficient Curing ovens													70%
Existing	510	Heating - Optimization process (M&T)													40%
Existing	511	Heating - Scheduling													40%
Existing	512	Efficient Transformers	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Existing	550	Base Refrigeration	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	551	Efficient Refrigeration - Operations					100%	100%							
Existing	552	Optimization Refrigeration					100%	100%							
Existing	553	Efficient Transformers	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Existing	600	Base Other Process	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	601	Other Process Controls (batch + site)								86%					
Existing	602	Efficient desalter			100%										
Existing	603	New transformers welding													100%
Existing	604	Efficient processes (welding, etc.)													
Existing	605	Process control													
Existing	606	Power recovery			100%										
Existing	607	Refinery Controls			100%										
Existing	608	Efficient Transformers	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Existing	700	Base DX Packaged System, EER=2.65, 10	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	701	DX Packaged System, EER=3.5, 10 tons			80%	95%		80%	4%	4%	4%	4%	4%	4%	4%
Existing	702	DX Tune Up/ Advanced Diagnostics			100%	100%		100%	5%	5%	5%	5%	5%	5%	5%
Existing	703	Optimize HVAC Controls			100%	100%		100%	5%	5%	5%	5%	5%	5%	5%
Existing	704	BMS			21%	60%		39%	3%	3%	3%	3%	3%	3%	3%
Existing	705	Prog. Thermostat			100%	100%		100%	5%	5%	5%	5%	5%	5%	5%
Existing	706	Efficient Transformers	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Existing	800	Base Lighting	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	801	RET T12 to Next Gen T8, 1EB	2%	1%	2%	4%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Existing	802	RET T8 to Next Gen T8, 1EB	20%	10%	30%	15%	38%	22%	19%	19%	19%	19%	19%	19%	19%
Existing	803	RET - Hardwired 18W CFL		2%	5%	4%	0%	3%	1%	1%	1%	1%	1%	1%	1%
Existing	804	RET - Screw-in 18W CFL		2%	5%	4%	0%	3%	1%	1%	1%	1%	1%	1%	1%
Existing	805	400W MV to 250W HPS	20%	40%	30%	39%	19%	44%	26%	26%	26%	26%	26%	26%	26%

INDUSTRIAL

FEASIBILITY FACTOR (percent)									
Segment	Measure #	Measure Description	SIC36	SIC37	SIC38	SIC39	Ag	Water/WW	Mining
Existing	416	Process Drives - ASD				40%			
Existing	417	O&M - Extruders/Injection Moulding							
Existing	418	Extruders/injection Moulding-multipump							
Existing	419	Direct drive Extruders							
Existing	420	Injection Moulding - Impulse Cooling							
Existing	421	Injection Moulding - Direct drive							
Existing	422	Efficient grinding							50%
Existing	423	Process optimization							25%
Existing	424	Efficient drives - rolling							
Existing	425	Drives - Optimization process (M&T)		40%	40%				
Existing	426	Drives - Scheduling	40%	40%	40%	40%			
Existing	427	Machinery	50%	50%	50%				
Existing	428	Efficient Machinery				50%			
Existing	429	Efficient Transformers	2%	2%	2%	2%		2%	2%
Existing	500	Base Heating	100%	100%	100%	100%		100%	100%
Existing	501	Bakery - Process							
Existing	502	Drying (UV/IR)							
Existing	503	Heat Pumps - Drying							
Existing	504	Top-heating (glass)							
Existing	505	Efficient electric melting							
Existing	506	Intelligent extruder (DOE)							
Existing	507	Near Net Shape Casting							
Existing	508	Heating - Process Control							
Existing	509	Efficient Curing ovens	50%	50%	50%	50%	50%	50%	50%
Existing	510	Heating - Optimization process (M&T)		40%					
Existing	511	Heating - Scheduling							
Existing	512	Efficient Transformers	2%	2%	2%	2%	2%	2%	2%
Existing	550	Base Refrigeration	100%	100%	100%	100%	100%	100%	100%
Existing	551	Efficient Refrigeration - Operations							
Existing	552	Optimization Refrigeration							
Existing	553	Efficient Transformers	2%	2%	2%	2%	2%	2%	2%
Existing	600	Base Other Process	100%	100%	100%	100%	100%	100%	100%
Existing	601	Other Process Controls (batch + site)							
Existing	602	Efficient desalter							
Existing	603	New transformers welding		100%	50%				
Existing	604	Efficient processes (welding, etc.)	100%						
Existing	605	Process control				100%	100%	100%	100%
Existing	606	Power recovery							
Existing	607	Refinery Controls							
Existing	608	Efficient Transformers	2%	2%	2%	2%	2%	2%	2%
Existing	700	Base DX Packaged System, EER=2.65, 10	100%	100%	100%	100%	100%	100%	100%
Existing	701	DX Packaged System, EER=3.5, 10 tons	4%	4%	4%	4%	4%	4%	4%
Existing	702	DX Tune Up/ Advanced Diagnostics	5%	5%	5%	5%	5%	5%	5%
Existing	703	Optimize HVAC Controls	5%	5%	5%	5%	5%	5%	5%
Existing	704	BMS	3%	3%	3%	3%	3%	3%	3%
Existing	705	Prog. Thermostat	5%	5%	5%	5%	5%	5%	5%
Existing	706	Efficient Transformers	2%	2%	2%	2%	2%	2%	2%
Existing	800	Base Lighting	100%	100%	100%	100%	100%	100%	100%
Existing	801	RET T12 to Next Gen T8, 1EB	2%	2%	2%	2%	2%	2%	2%
Existing	802	RET T8 to Next Gen T8, 1EB	19%	19%	19%	19%	19%	19%	19%
Existing	803	RET - Hardwired 18W CFL	1%	1%	1%	1%	1%	1%	1%
Existing	804	RET - Screw-in 18W CFL	1%	1%	1%	1%	1%	1%	1%
Existing	805	400W MV to 250W HPS	26%	26%	26%	26%	26%	26%	26%

INDUSTRIAL

FEASIBILITY FACTOR
(percent)

Segment	Measure #	Measure Description	Aluminium	Steel	Oil Refining	Paper	Dairy	Other Food	Wood	Chemicals	SIC22	SIC27	SIC30	SIC32	SIC34
Existing	806	Lighting Controls	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Existing	807	Efficient Transformers	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Existing	900	Base Other	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Existing	901	Replace V-belts	20%	20%	7%	79%	73%	73%	80%		71%	39%	53%	70%	53%
Existing	902	Membranes for wastewater									29%				
Existing	903	Efficient Transformers	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%

INDUSTRIAL

FEASIBILITY FACTOR
(percent)

Segment	Measure #	Measure Description	SIC36	SIC37	SIC38	SIC39	Ag	Water/WW	Mining
Existing	806	Lighting Controls	20%	20%	20%	20%	20%	20%	20%
Existing	807	Efficient Transformers	2%	2%	2%	2%	2%	2%	2%
Existing	900	Base Other	100%	100%	100%	100%	100%	100%	100%
Existing	901	Replace V-belts	33%	55%	32%	55%	55%	55%	55%
Existing	902	Membranes for wastewater							
Existing	903	Efficient Transformers	2%	2%	2%	2%	2%	2%	2%

INDUSTRIAL

ENERGY SAVINGS
(percent)

Segment	Measure #	Measure Description	Aluminium	Steel	Oil Refining	Paper	Dairy	Other Food	Wood	Chemicals	SIC22	SIC27	SIC30	SIC32	SIC34
Existing	100	Base Compressed Air													
Existing	101	Compressed Air-O&M	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%
Existing	102	Compressed Air - Controls	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
Existing	103	Compressed Air - System Optimization	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Existing	104	Compressed Air- Sizing	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Existing	105	Comp Air - Replace motor	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Existing	106	Comp Air - ASD	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Existing	107	Comp Air - Motor practices-1	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Existing	108	Power recovery	1%	1%	1%										
Existing	109	Refinery Controls			3%										
Existing	110	Efficient Transformers	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Existing	200	Base Fans													
Existing	201	Fans - O&M	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Existing	202	Fans - Controls	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
Existing	203	Fans - System Optimization	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%
Existing	204	Fans- Improve components	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Existing	205	Fans - Replace motor	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Existing	206	Fans - ASD	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Existing	207	Fans - Motor practices-1	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Existing	208	Optimize drying process							20%						
Existing	209	Power recovery	1%	1%	1%										
Existing	210	Refinery Controls			3%										
Existing	211	Efficient Transformers	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Existing	300	Base Pumps													
Existing	301	Pumps - O&M	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Existing	302	Pumps - Controls	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
Existing	303	Pumps - System Optimization	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
Existing	304	Pumps - Sizing	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Existing	305	Pumps - Replace motor	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Existing	306	Pumps - ASD	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Existing	307	Pumps - Motor practices-1	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Existing	308	Power recovery	1%	1%	1%										
Existing	309	Refinery Controls			3%										
Existing	310	Efficient Transformers	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Existing	311	Low Pressure Nozzle													
Existing	312	Micro Watering System													
Existing	313	Pump Retrofit - Irrigation													
Existing	400	Base Drives													
Existing	401	Bakery - Process (Mixing) - O&M					10%	10%							
Existing	402	O&M/drives spinning machines									16%				
Existing	403	Air conveying systems							41%						
Existing	404	Replace V-Belts							6%						
Existing	405	Drives - Replace motor	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Existing	406	Gap Forming papermachine				8%									
Existing	407	High Consistency forming				8%									
Existing	408	Optimization control PM				5%									
Existing	409	Efficient practices printing press										10%			
Existing	410	Efficient Printing press (fewer cylinders)										20%			
Existing	411	Light cylinders										10%			
Existing	412	Efficient drives										4%			
Existing	413	Clean Room - Controls								10%					
Existing	414	Clean Room - New Designs								30%					
Existing	415	Drives - Process Control	5%	5%						8%				2%	
Existing	416	Process Drives - ASD								1%					
Existing	417	O&M - Extruders/Injection Moulding											10%		
Existing	418	Extruders/injection Moulding-multipump											30%		

INDUSTRIAL

ENERGY SAVINGS (percent)									
Segment	Measure #	Measure Description	SIC36	SIC37	SIC38	SIC39	Ag	Water/WW	Mining
Existing	100	Base Compressed Air							
Existing	101	Compressed Air-O&M	17%	17%	17%	17%		17%	17%
Existing	102	Compressed Air - Controls	12%	12%	12%	12%		12%	12%
Existing	103	Compressed Air - System Optimization	20%	20%	20%	20%		20%	20%
Existing	104	Compressed Air- Sizing	9%	9%	9%	9%		9%	9%
Existing	105	Comp Air - Replace motor	10%	10%	10%	10%		10%	10%
Existing	106	Comp Air - ASD	6%	6%	6%	6%		6%	6%
Existing	107	Comp Air - Motor practices-1	2%	2%	2%	2%		2%	2%
Existing	108	Power recovery							
Existing	109	Refinery Controls							
Existing	110	Efficient Transformers	20%	20%	20%	20%		20%	20%
Existing	200	Base Fans							
Existing	201	Fans - O&M	2%	2%	2%	2%		2%	2%
Existing	202	Fans - Controls	30%	30%	30%	30%		30%	30%
Existing	203	Fans - System Optimization	21%	21%	21%	21%		21%	21%
Existing	204	Fans- Improve components	5%	5%	5%	5%		5%	5%
Existing	205	Fans - Replace motor	10%	10%	10%	10%		10%	10%
Existing	206	Fans - ASD	6%	6%	6%	6%		6%	6%
Existing	207	Fans - Motor practices-1	2%	2%	2%	2%		2%	2%
Existing	208	Optimize drying process							
Existing	209	Power recovery							
Existing	210	Refinery Controls							
Existing	211	Efficient Transformers	20%	20%	20%	20%		20%	20%
Existing	300	Base Pumps							
Existing	301	Pumps - O&M	10%	10%	10%	10%	10%	10%	10%
Existing	302	Pumps - Controls	30%	30%	30%	30%	30%	30%	30%
Existing	303	Pumps - System Optimization	33%	33%	33%	33%	33%	33%	33%
Existing	304	Pumps - Sizing	20%	20%	20%	20%	20%	20%	20%
Existing	305	Pumps - Replace motor	10%	10%	10%	10%		10%	10%
Existing	306	Pumps - ASD	6%	6%	6%	6%	6%	6%	6%
Existing	307	Pumps - Motor practices-1	2%	2%	2%	2%	2%	2%	2%
Existing	308	Power recovery							
Existing	309	Refinery Controls							
Existing	310	Efficient Transformers	20%	20%	20%	20%	20%	20%	20%
Existing	311	Low Pressure Nozzle					22%		
Existing	312	Micro Watering System					13%		
Existing	313	Pump Retrofit - Irrigation					16%		
Existing	400	Base Drives							
Existing	401	Bakery - Process (Mixing) - O&M							
Existing	402	O&M/drives spinning machines							
Existing	403	Air conveying systems							
Existing	404	Replace V-Belts							
Existing	405	Drives - Replace motor	10%	10%	10%	10%		10%	10%
Existing	406	Gap Forming papermachine							
Existing	407	High Consistency forming							
Existing	408	Optimization control PM							
Existing	409	Efficient practices printing press							
Existing	410	Efficient Printing press (fewer cylinders)							
Existing	411	Light cylinders							
Existing	412	Efficient drives							
Existing	413	Clean Room - Controls	10%						
Existing	414	Clean Room - New Designs							
Existing	415	Drives - Process Control							2%
Existing	416	Process Drives - ASD				1%			
Existing	417	O&M - Extruders/Injection Moulding							
Existing	418	Extruders/injection Moulding-multipump							

INDUSTRIAL

ENERGY SAVINGS
(percent)

Segment	Measure #	Measure Description	Aluminium	Steel	Oil Refining	Paper	Dairy	Other Food	Wood	Chemicals	SIC22	SIC27	SIC30	SIC32	SIC34
Existing	419	Direct drive Extruders											50%		
Existing	420	Injection Moulding - Impulse Cooling											21%		
Existing	421	Injection Moulding - Direct drive											20%		
Existing	422	Efficient grinding												21%	
Existing	423	Process optimization												10%	
Existing	424	Efficient drives - rolling	6%	6%											
Existing	425	Drives - Optimization process (M&T)													10%
Existing	426	Drives - Scheduling													5%
Existing	427	Machinery													7%
Existing	428	Efficient Machinery													
Existing	429	Efficient Transformers	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Existing	500	Base Heating													
Existing	501	Bakery - Process					37%	37%							
Existing	502	Drying (UV/IR)									26%				
Existing	503	Heat Pumps - Drying							22%						
Existing	504	Top-heating (glass)												4%	
Existing	505	Efficient electric melting		10%											
Existing	506	Intelligent extruder (DOE)		2%											
Existing	507	Near Net Shape Casting		12%											
Existing	508	Heating - Process Control		5%											
Existing	509	Efficient Curing ovens													20%
Existing	510	Heating - Optimization process (M&T)													10%
Existing	511	Heating - Scheduling													5%
Existing	512	Efficient Transformers	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Existing	550	Base Refrigeration													
Existing	551	Efficient Refrigeration - Operations					12%	12%							
Existing	552	Optimization Refrigeration					26%	26%							
Existing	553	Efficient Transformers	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Existing	600	Base Other Process													
Existing	601	Other Process Controls (batch + site)								8%					
Existing	602	Efficient desalter			20%										
Existing	603	New transformers welding													25%
Existing	604	Efficient processes (welding, etc.)													
Existing	605	Process control													
Existing	606	Power recovery			1%										
Existing	607	Refinery Controls			3%										
Existing	608	Efficient Transformers	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Existing	700	Base DX Packaged System, EER=2.65, 10 tons													
Existing	701	DX Packaged System, EER=3.5, 10 tons	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%
Existing	702	DX Tune Up/ Advanced Diagnostics	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Existing	703	Optimize HVAC Controls	5%	5%	5%	5%	5%	5%	5%	5%	5%	20%	20%	20%	20%
Existing	704	BMS	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Existing	705	Prog. Thermostat	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Existing	706	Efficient Transformers	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Existing	800	Base Lighting													
Existing	801	RET T12 to Next Gen T8, 1EB	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%
Existing	802	RET T8 to Next Gen T8, 1EB	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
Existing	803	RET - Hardwired 18W CFL	64%	64%	64%	64%	64%	64%	64%	64%	64%	76%	76%	76%	76%
Existing	804	RET - Screw-in 18W CFL	64%	64%	64%	64%	64%	64%	64%	64%	64%	76%	76%	76%	76%
Existing	805	400W MV to 250W HPS	58%	58%	58%	58%	58%	58%	58%	58%	58%	35%	35%	35%	35%
Existing	806	Lighting Controls	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Existing	807	Efficient Transformers	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Existing	900	Base Other													
Existing	901	Replace V-belts	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Existing	902	Membranes for wastewater									10%				
Existing	903	Efficient Transformers	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%

ENERGY SAVINGS (percent)									
Segment	Measure #	Measure Description	SIC36	SIC37	SIC38	SIC39	Ag	Water/WW	Mining
Existing	419	Direct drive Extruders							
Existing	420	Injection Moulding - Impulse Cooling							
Existing	421	Injection Moulding - Direct drive							
Existing	422	Efficient grinding							21%
Existing	423	Process optimization							10%
Existing	424	Efficient drives - rolling							
Existing	425	Drives - Optimization process (M&T)		10%	10%				
Existing	426	Drives - Scheduling	5%	5%	5%	5%			
Existing	427	Machinery	4%	11%	7%				
Existing	428	Efficient Machinery				4%	4%	4%	4%
Existing	429	Efficient Transformers	20%	20%	20%	20%	20%	20%	20%
Existing	500	Base Heating							
Existing	501	Bakery - Process							
Existing	502	Drying (UV/IR)							
Existing	503	Heat Pumps - Drying							
Existing	504	Top-heating (glass)							
Existing	505	Efficient electric melting							
Existing	506	Intelligent extruder (DOE)							
Existing	507	Near Net Shape Casting							
Existing	508	Heating - Process Control							
Existing	509	Efficient Curing ovens	20%	20%	20%	20%			
Existing	510	Heating - Optimization process (M&T)		10%					
Existing	511	Heating - Scheduling							
Existing	512	Efficient Transformers	20%	20%	20%	20%	20%	20%	20%
Existing	550	Base Refrigeration							
Existing	551	Efficient Refrigeration - Operations							
Existing	552	Optimization Refrigeration							
Existing	553	Efficient Transformers	20%	20%	20%	20%	20%	20%	20%
Existing	600	Base Other Process							
Existing	601	Other Process Controls (batch + site)							
Existing	602	Efficient desalter							
Existing	603	New transformers welding		25%	25%				
Existing	604	Efficient processes (welding, etc.)	25%						
Existing	605	Process control				4%			
Existing	606	Power recovery							
Existing	607	Refinery Controls							
Existing	608	Efficient Transformers	20%	20%	20%	20%	20%	20%	20%
Existing	700	Base DX Packaged System, EER=2.65, 10 tons							
Existing	701	DX Packaged System, EER=3.5, 10 tons	24%	24%	24%	24%	24%	24%	24%
Existing	702	DX Tune Up/ Advanced Diagnostics	5%	5%	5%	5%	5%	5%	5%
Existing	703	Optimize HVAC Controls	20%	20%	20%	20%	20%	20%	20%
Existing	704	BMS	10%	10%	10%	10%	10%	10%	10%
Existing	705	Prog. Thermostat	5%	5%	5%	5%	5%	5%	5%
Existing	706	Efficient Transformers	20%	20%	20%	20%	20%	20%	20%
Existing	800	Base Lighting							
Existing	801	RET T12 to Next Gen T8, 1EB	28%	28%	28%	28%	28%	28%	28%
Existing	802	RET T8 to Next Gen T8, 1EB	15%	15%	15%	15%	15%	15%	15%
Existing	803	RET - Hardwired 18W CFL	76%	76%	76%	76%	76%	76%	76%
Existing	804	RET - Screw-in 18W CFL	76%	76%	76%	76%	76%	76%	76%
Existing	805	400W MV to 250W HPS	35%	35%	35%	35%	35%	35%	35%
Existing	806	Lighting Controls	20%	20%	20%	20%	20%	20%	20%
Existing	807	Efficient Transformers	20%	20%	20%	20%	20%	20%	20%
Existing	900	Base Other							
Existing	901	Replace V-belts	0%	0%	0%	0%	0%	0%	0%
Existing	902	Membranes for wastewater							
Existing	903	Efficient Transformers	20%	20%	20%	20%	20%	20%	20%

INDUSTRIAL

TECHNOLOGY SATURATION (units/square metre)															
Segment	Measure #	Measure Description	Aluminium	Steel	Oil Refining	Paper	Dairy	Food	Wood	Chemicals	SIC22	SIC27	SIC30	SIC32	SIC34	SIC36
Existing	100	Base Compressed Air	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	101	Compressed Air-O&M	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	102	Compressed Air - Controls	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	103	Compressed Air - System Optimization	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	104	Compressed Air- Sizing	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	105	Comp Air - Replace motor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	106	Comp Air - ASD	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	107	Comp Air - Motor practices-1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	108	Power recovery	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	109	Refinery Controls	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	110	Efficient Transformers	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	200	Base Fans	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	201	Fans - O&M	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	202	Fans - Controls	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	203	Fans - System Optimization	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	204	Fans- Improve components	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	205	Fans - Replace motor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	206	Fans - ASD	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	207	Fans - Motor practices-1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	208	Optimize drying process	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	209	Power recovery	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	210	Refinery Controls	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	211	Efficient Transformers	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	300	Base Pumps	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	301	Pumps - O&M	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	302	Pumps - Controls	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	303	Pumps - System Optimization	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	304	Pumps - Sizing	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	305	Pumps - Replace motor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	306	Pumps - ASD	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	307	Pumps - Motor practices-1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	308	Power recovery	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	309	Refinery Controls	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	310	Efficient Transformers	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	311	Low Pressure Nozzle	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	312	Micro Watering System	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	313	Pump Retrofit - Irrigation	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	400	Base Drives	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	401	Bakery - Process (Mixing) - O&M	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	402	O&M/drives spinning machines	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	403	Air conveying systems	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	404	Replace V-Belts	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

INDUSTRIAL

TECHNOLOGY SATURATION (units/square metre)									
Segment	Measure #	Measure Description	SIC37	SIC38	SIC39	Ag	Water/WW	Mining
Existing	100	Base Compressed Air	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	101	Compressed Air-O&M	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	102	Compressed Air - Controls	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	103	Compressed Air - System Optimization	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	104	Compressed Air- Sizing	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	105	Comp Air - Replace motor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	106	Comp Air - ASD	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	107	Comp Air - Motor practices-1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	108	Power recovery	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	109	Refinery Controls	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	110	Efficient Transformers	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	200	Base Fans	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	201	Fans - O&M	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	202	Fans - Controls	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	203	Fans - System Optimization	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	204	Fans- Improve components	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	205	Fans - Replace motor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	206	Fans - ASD	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	207	Fans - Motor practices-1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	208	Optimize drying process	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	209	Power recovery	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	210	Refinery Controls	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	211	Efficient Transformers	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	300	Base Pumps	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	301	Pumps - O&M	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	302	Pumps - Controls	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	303	Pumps - System Optimization	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	304	Pumps - Sizing	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	305	Pumps - Replace motor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	306	Pumps - ASD	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	307	Pumps - Motor practices-1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	308	Power recovery	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	309	Refinery Controls	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	310	Efficient Transformers	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	311	Low Pressure Nozzle	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	312	Micro Watering System	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	313	Pump Retrofit - Irrigation	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	400	Base Drives	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	401	Bakery - Process (Mixing) - O&M	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	402	O&M/drives spinning machines	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	403	Air conveying systems	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	404	Replace V-Belts	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

INDUSTRIAL

TECHNOLOGY SATURATION (units/square metre)															
Segment	Measure #	Measure Description	Aluminium	Steel	Oil Refining	Paper	Dairy	Food	Wood	Chemicals	SIC22	SIC27	SIC30	SIC32	SIC34	SIC36
Existing	405	Drives - Replace motor	1.0000	1.0000	1.0000	0.8860	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.8330	1.0000	1.0000
Existing	406	Gap Forming papermachine	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	407	High Consistency forming	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	408	Optimization control PM	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	409	Efficient practices printing press	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	410	Efficient Printing press (fewer cylinders)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	411	Light cylinders	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	412	Efficient drives	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	413	Clean Room - Controls	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.2500
Existing	414	Clean Room - New Designs	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	415	Drives - Process Control	0.6250	0.6250	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0833	1.0000	1.0000
Existing	416	Process Drives - ASD	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	417	O&M - Extruders/Injection Moulding	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	418	Extruders/injection Moulding-multipump	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	419	Direct drive Extruders	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	420	Injection Moulding - Impulse Cooling	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	421	Injection Moulding - Direct drive	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	422	Efficient grinding	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	423	Process optimization	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	424	Efficient drives - rolling	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	425	Drives - Optimization process (M&T)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	426	Drives - Scheduling	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	427	Machinery	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.5000
Existing	428	Efficient Machinery	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	429	Efficient Transformers	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	500	Base Heating	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	501	Bakery - Process	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	502	Drying (UV/IR)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	503	Heat Pumps - Drying	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	504	Top-heating (glass)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	505	Efficient electric melting	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	506	Intelligent extruder (DOE)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	507	Near Net Shape Casting	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	508	Heating - Process Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	509	Efficient Curing ovens	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	510	Heating - Optimization process (M&T)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	511	Heating - Scheduling	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	512	Efficient Transformers	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	550	Base Refrigeration	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	551	Efficient Refrigeration - Operations	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	552	Optimization Refrigeration	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	553	Efficient Transformers	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

INDUSTRIAL

TECHNOLOGY SATURATION (units/square metre)									
Segment	Measure #	Measure Description	SIC37	SIC38	SIC39	Ag	Water/WW	Mining
Existing	405	Drives - Replace motor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	406	Gap Forming papermachine	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	407	High Consistency forming	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	408	Optimization control PM	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	409	Efficient practices printing press	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	410	Efficient Printing press (fewer cylinders)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	411	Light cylinders	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	412	Efficient drives	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	413	Clean Room - Controls	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	414	Clean Room - New Designs	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	415	Drives - Process Control	1.0000	1.0000	1.0000	1.0000	1.0000	0.0833
Existing	416	Process Drives - ASD	1.0000	1.0000	1.0320	1.0320	1.0320	1.0320
Existing	417	O&M - Extruders/Injection Moulding	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	418	Extruders/injection Moulding-multipump	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	419	Direct drive Extruders	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	420	Injection Moulding - Impulse Cooling	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	421	Injection Moulding - Direct drive	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	422	Efficient grinding	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	423	Process optimization	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	424	Efficient drives - rolling	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	425	Drives - Optimization process (M&T)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	426	Drives - Scheduling	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	427	Machinery	1.5430	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	428	Efficient Machinery	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	429	Efficient Transformers	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	500	Base Heating	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	501	Bakery - Process	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	502	Drying (UV/IR)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	503	Heat Pumps - Drying	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	504	Top-heating (glass)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	505	Efficient electric melting	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	506	Intelligent extruder (DOE)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	507	Near Net Shape Casting	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	508	Heating - Process Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	509	Efficient Curing ovens	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	510	Heating - Optimization process (M&T)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	511	Heating - Scheduling	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	512	Efficient Transformers	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	550	Base Refrigeration	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	551	Efficient Refrigeration - Operations	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	552	Optimization Refrigeration	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	553	Efficient Transformers	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

INDUSTRIAL

TECHNOLOGY SATURATION (units/square metre)															
Segment	Measure #	Measure Description	Aluminium	Steel	Oil Refining	Paper	Dairy	Food	Wood	Chemicals	SIC22	SIC27	SIC30	SIC32	SIC34	SIC36
Existing	600	Base Other Process	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	601	Other Process Controls (batch + site)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	602	Efficient desalter	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	603	New transformers welding	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	604	Efficient processes (welding, etc.)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	605	Process control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	606	Power recovery	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	607	Refinery Controls	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	608	Efficient Transformers	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	700	Base DX Packaged System, EER=2.65, 10 tons	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024
Existing	701	DX Packaged System, EER=3.5, 10 tons	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024
Existing	702	DX Tune Up/ Advanced Diagnostics	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024
Existing	703	Optimize HVAC Controls	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024
Existing	704	BMS	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024
Existing	705	Prog. Thermostat	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024
Existing	706	Efficient Transformers	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	800	Base Lighting	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028
Existing	801	RET T12 to Next Gen T8, 1EB	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028
Existing	802	RET T8 to Next Gen T8, 1EB	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028
Existing	803	RET - Hardwired 18W CFL	0.0027	0.0027	0.0027	0.0027	0.0027	0.0027	0.0027	0.0027	0.0027	0.0027	0.0027	0.0027	0.0027	0.0027
Existing	804	RET - Screw-in 18W CFL	0.0027	0.0027	0.0027	0.0027	0.0027	0.0027	0.0027	0.0027	0.0027	0.0027	0.0027	0.0027	0.0027	0.0027
Existing	805	400W MV to 250W HPS	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Existing	806	Lighting Controls	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014
Existing	807	Efficient Transformers	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	900	Base Other	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	901	Replace V-belts	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	902	Membranes for wastewater	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	903	Efficient Transformers	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

INDUSTRIAL

TECHNOLOGY SATURATION (units/square metre)									
Segment	Measure #	Measure Description	SIC37	SIC38	SIC39	Ag	Water/WW	Mining
Existing	600	Base Other Process	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	601	Other Process Controls (batch + site)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	602	Efficient desalter	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	603	New transformers welding	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	604	Efficient processes (welding, etc.)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	605	Process control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	606	Power recovery	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	607	Refinery Controls	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	608	Efficient Transformers	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	700	Base DX Packaged System, EER=2.65, 10 tons	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024
Existing	701	DX Packaged System, EER=3.5, 10 tons	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024
Existing	702	DX Tune Up/ Advanced Diagnostics	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024
Existing	703	Optimize HVAC Controls	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024
Existing	704	BMS	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024
Existing	705	Prog. Thermostat	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024
Existing	706	Efficient Transformers	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	800	Base Lighting	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028
Existing	801	RET T12 to Next Gen T8, 1EB	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028
Existing	802	RET T8 to Next Gen T8, 1EB	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028
Existing	803	RET - Hardwired 18W CFL	0.0027	0.0027	0.0027	0.0027	0.0027	0.0027
Existing	804	RET - Screw-in 18W CFL	0.0027	0.0027	0.0027	0.0027	0.0027	0.0027
Existing	805	400W MV to 250W HPS	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Existing	806	Lighting Controls	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014
Existing	807	Efficient Transformers	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	900	Base Other	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	901	Replace V-belts	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	902	Membranes for wastewater	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Existing	903	Efficient Transformers	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

F. Non-Additive Measure Level Results

This appendix presents non-additive measure level results for the Energy Efficiency Potential Study. Results are shown by sector and vintage: residential existing, residential new construction, commercial existing, commercial new construction, and industrial.

RESIDENTIAL EXISTING

DSM ASSYST SUMMARY				Year	2007											
Measure Number	Measure	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Household	Base UEC	UEC	Peak Watts/ HH	Service Life (yrs) (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
	Base Electric Resistance Heating CZ 1, Homes															
100	with electric as primary heating	0%	0%	130	1592	1592	1046	12	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A
101	Heat Pump Space Heater	60%	60%	2822	1611	645	423	18	188.8	124.0	0.290	441	0.66	0.60	14.34	1.15
102	High Efficiency Heat pump	72%	72%	3067	1592	446	293	18	228.4	150.0	0.266	404	0.72	0.65	13.14	1.15
103	Geothermal Heat Pump	76%	76%	10774	1592	382	251	18	86.1	56.6	0.884	1345	0.22	0.20	43.73	1.15
104	Dual-Pane Windows (1.3 U to 0.5 U)	8%	8%	1140	1592	1466	963	40	35.8	23.5	0.680	1035	0.22	0.19	44.52	1.15
	High Performance Doors (R-0.53 solid door to															
105	R-1.23insulated steel or composite door)	3%	3%	1460	1592	1544	1015	40	13.6	8.9	2.292	3489	0.07	0.06	150.12	1.15
106	Ceiling Insulation R-0 to R-1.9 (R-11)	40%	40%	767	2427	1456	957	20	38.7	25.4	0.075	114	2.56	2.23	3.88	1.15
107	Ceiling Insulation R-1.9 to R-3.6 (R-20)	8%	8%	955	1592	1471	967	20	27.6	18.1	0.745	1134	0.26	0.22	38.78	1.15
108	Wall Insulation R-0 to R-2.3 (R-13)	57%	57%	2020	2109	907	596	20	195.0	128.1	0.159	241	1.20	1.05	8.25	1.15
109	Floor Insulation R-0 to R-1.5 (R-11)	11%	11%	1369	1671	1487	977	20	11.9	7.8	0.703	1070	0.27	0.24	36.59	1.15
110	Infiltration Reduction	3%	3%	245	1613	1565	1028	10	7.9	5.2	0.789	1200	0.24	0.27	24.86	1.15
111	6.5 kW Inbuilt Gas Fire	100%	100%	8724	1592	0	0	18	235.6	154.8	0.544	828	0.35	0.32	26.91	1.15
112	6.5 kW Inbuilt Propane Fire	100%	100%	8093	1592	0	0	18	407.8	267.9	0.504	768	0.38	0.34	24.97	1.15
	Base Electric Resistance Heating CZ 2, Homes															
140	with electric as primary heating	0%	0%	125	1709	1709	1123	12	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A
141	Heat Pump Space Heater	60%	60%	2828	1709	684	449	18	44.4	29.2	0.274	417	0.70	0.63	13.55	1.15
142	High Efficiency Heat pump	72%	72%	3073	1709	479	314	18	53.3	35.0	0.248	377	0.77	0.70	12.27	1.15
143	Geothermal Heat Pump	76%	76%	10779	1709	410	270	18	20.1	13.2	0.823	1253	0.23	0.21	40.76	1.15
144	Dual-Pane Windows (1.3 U to 0.5 U)	7%	7%	1140	1709	1598	1050	40	6.9	4.5	0.770	1171	0.20	0.17	50.40	1.15
	High Performance Doors (R-0.53 solid door to															
145	R-1.23insulated steel or composite door)	3%	3%	1460	1709	1658	1089	40	3.2	2.1	2.135	3250	0.07	0.06	139.83	1.15
146	Ceiling Insulation R-0 to R-1.9 (R-11)	37%	37%	767	2507	1579	1038	20	8.0	5.3	0.078	119	2.44	2.13	4.06	1.15
147	Ceiling Insulation R-1.9 to R-3.6 (R-20)	7%	7%	955	1709	1595	1048	20	5.7	3.7	0.787	1198	0.24	0.21	40.97	1.15
148	Wall Insulation R-0 to R-2.3 (R-13)	51%	51%	2020	2189	1073	705	20	39.4	25.9	0.171	260	1.12	0.98	8.89	1.15
149	Floor Insulation R-0 to R-1.5 (R-11)	13%	13%	1369	1811	1575	1035	20	3.3	2.2	0.549	836	0.35	0.30	28.58	1.15
150	Infiltration Reduction	3%	3%	245	1732	1680	1104	10	1.8	1.2	0.735	1118	0.26	0.28	23.16	1.15
151	6.5 kW Inbuilt Gas Fire	100%	100%	7964	1709	0	0	18	66.6	43.8	0.462	704	0.41	0.37	22.89	1.15
152	6.5 kW Inbuilt Propane Fire	100%	100%	7367	1709	0	0	18	95.2	62.5	0.428	651	0.45	0.40	21.17	1.15
	Base Electric Resistance Heating CZ 3, Homes															
170	with electric as primary heating	0%	0%	230	3214	3214	2111	12	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A
171	Heat Pump Space Heater	60%	60%	2702	3233	1293	850	18	187.3	123.1	0.138	210	1.38	1.25	6.84	1.15
172	High Efficiency Heat pump	72%	72%	2947	3214	900	591	18	225.7	148.3	0.126	192	1.51	1.37	6.26	1.15
173	Geothermal Heat Pump	76%	76%	10674	3214	771	507	18	85.1	55.9	0.434	660	0.44	0.40	21.47	1.15
174	Dual-Pane Windows (1.3 U to 0.5 U)	6%	6%	1140	3234	3030	1991	40	25.6	16.8	0.420	639	0.36	0.32	27.48	1.15
	High Performance Doors (R-0.53 solid door to															
175	R-1.23insulated steel or composite door)	3%	3%	1460	3223	3127	2054	40	12.1	8.0	1.132	1724	0.13	0.12	74.15	1.15
176	Ceiling Insulation R-0 to R-1.9 (R-11)	35%	35%	767	4598	2989	1963	20	31.4	20.6	0.045	69	4.24	3.70	2.34	1.15
177	Ceiling Insulation R-1.9 to R-3.6 (R-20)	6%	6%	955	3234	3033	1993	20	20.1	13.2	0.450	685	0.42	0.37	23.40	1.15
178	Wall Insulation R-0 to R-2.3 (R-13)	49%	49%	2020	4072	2077	1364	20	158.5	104.1	0.096	145	2.00	1.74	4.97	1.15
179	Floor Insulation R-0 to R-1.5 (R-11)	12%	12%	1369	3389	2982	1959	20	12.9	8.5	0.318	484	0.60	0.52	16.54	1.15
180	Infiltration Reduction	3%	3%	245	3256	3158	2075	10	7.8	5.1	0.391	595	0.49	0.53	12.32	1.15
181	6.5 kW Inbuilt Gas Fire	100%	100%	7742	3214	0	0	18	4.5	2.9	0.239	364	0.80	0.72	11.83	1.15
182	6.5 kW Inbuilt Propane Fire	100%	100%	7133	3214	0	0	18	403.0	264.8	0.220	335	0.87	0.78	10.90	1.15
200	Base 180 Litre Low Pressure Water Heating	0%	0%	1248	2590	2590	404	30	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A
201	Heat Pump Water Heater	50%	50%	4172	2878	1439	225	13	828.7	129.3	0.358	2294	0.32	0.54	14.24	0.69
202	HE Water Heater	5%	5%	125	2893	2737	427	13	162.0	25.3	0.099	634	1.16	1.97	3.93	0.69
203	Solar Water Heat	80%	80%	7000	2915	583	91	13	1321.7	206.3	0.371	2374	0.31	0.52	14.74	0.69
204	Low Flow Showerhead	8%	8%	55	2878	2662	415	10	74.6	11.6	0.040	256	2.87	5.24	1.26	0.69
205	Faucent Aerators	3%	3%	79	2878	2792	436	10	49.7	7.8	0.142	908	0.81	1.47	4.47	0.69
206	Pipe Wrap	2%	2%	22	2878	2820	440	13	33.1	5.2	0.048	306	2.39	4.07	1.90	0.69
207	Water Heater Blanket	10%	10%	67	2898	2608	407	13	155.2	24.2	0.029	184	3.99	6.78	1.14	0.69
208	Switch from Elec to NG DHW	100%	100%	5281	2878	0	0	13	1425.4	222.5	0.227	1452	0.50	0.86	9.01	0.69
209	Switch from Elec to LPG DHW	100%	100%	4580	2878	0	0	13	2983.4	465.6	0.196	1259	0.58	0.99	7.82	0.69
210	Instant-on DHW (NG)	100%	100%	5942	2878	0	0	20	1425.4	222.5	0.195	1249	0.59	0.86	10.14	0.69
211	Instant-on DHW (LPG)	100%	100%	5161	2878	0	0	20	2983.4	465.6	0.169	1085	0.68	0.98	8.81	0.69
300	Base Lighting, 0-1.5 hrs/day	0%	0%	18	327	327	166	5	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A
301	CFL, 0-1.5 hrs/day	66%	66%	89	332	112	57	55	230.1	116.8	0.029	58	4.37	4.33	2.00	1.01
310	Base Lighting, 1.5-2.5 hrs/day	0%	0%	4	296	296	150	1	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A
311	CFL, 1.5-2.5 hrs/day	66%	66%	20	310	105	53	14	204.2	103.7	0.012	23	14.38	16.21	0.49	1.01

RESIDENTIAL EXISTING

DSM ASSYST SUMMARY				Year	2007											
Measure Number	Measure	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Household	Base UEC	UEC	Peak Watts/ HH	Service Life (yrs) (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
320	Base Lighting, >2.5 hrs/day	0%	0%	2	222	222	113	1	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A
321	CFL, >2.5 hrs/day	66%	66%	10	237	80	41	9	151.3	76.8	0.011	21	15.83	20.22	0.31	1.01
330	Base 50W Halogen	0%	0%	12	81	81	41	2	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A
331	High-efficiency Halogen (35 W)	26%	26%	15	81	60	31	2	33.3	16.9	0.485	955	0.35	0.55	3.60	1.01
400	Base Refrigerator/Freezer	0%	0%	1655	540	540	68	15	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A
401	HE Refrigerator/Freezer - Energy Star	24%	24%	337	681	518	65	15	169.3	21.4	0.229	1808	0.48	0.81	10.13	0.66
402	Remove secondary refrigerator/freezer	100%	100%	543	720	0	0	7	55.9	7.1	0.157	1241	0.70	1.45	3.70	0.66
420	Base Refrigerator	0%	0%	1800	455	455	58	15	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A
421	HE Refrigerator - Energy Star	39%	39%	361	445	271	34	15	69.6	8.8	0.231	1826	0.48	0.80	10.23	0.66
422	Remove secondary refrigerator	100%	100%	548	455	0	0	7	22.8	2.9	0.251	1984	0.44	0.91	5.91	0.66
450	Base Freezer	0%	0%	1017	411	411	52	15	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A
451	HE Freezer	55%	55%	340	836	376	48	15	333.1	42.1	0.082	649	1.34	2.25	3.63	0.66
500	Base Dishwasher	0%	0%	1250	218	218	50	13	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A
501	Energy Star Dishwasher	23%	23%	231	218	167	38	13	39.7	9.1	0.558	2443	0.22	0.35	22.20	0.75
600	Base Electric Resistance Heating CZ 1, Homes with electric as secondary heating	0%	0%	110	1298	1298	853	12	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A
601	Heat Pump Space Heater	60%	60%	2846	1314	525	345	18	237.1	155.8	0.358	545	0.53	0.48	17.74	1.15
602	High Efficiency Heat pump	72%	72%	3091	1298	363	239	18	286.8	188.4	0.328	500	0.58	0.53	16.25	1.15
603	Geothermal Heat Pump	76%	76%	10794	1298	311	205	18	108.1	71.0	1.086	1653	0.18	0.16	53.75	1.15
604	Dual-Pane Windows (1.3 U to 0.5 U)	8%	8%	1140	1298	1195	785	40	45.0	29.5	0.834	1269	0.18	0.16	54.62	1.15
605	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	3%	3%	1460	1298	1259	827	40	17.1	11.2	2.812	4281	0.05	0.05	184.17	1.15
606	Ceiling Insulation R-0 to R-1.9 (R-11)	40%	40%	767	1978	1187	780	20	48.6	31.9	0.092	139	2.09	1.82	4.76	1.15
607	Ceiling Insulation R-1.9 to R-3.6 (R-20)	8%	8%	955	1298	1199	788	20	34.6	22.7	0.914	1391	0.21	0.18	47.57	1.15
608	Wall Insulation R-0 to R-2.3 (R-13)	57%	57%	2020	1719	739	486	20	244.9	160.9	0.195	296	0.98	0.86	10.12	1.15
609	Floor Insulation R-0 to R-1.5 (R-11)	11%	11%	1369	1362	1212	797	20	15.0	9.8	0.863	1313	0.22	0.19	44.89	1.15
610	Infiltration Reduction	3%	3%	245	1315	1275	838	10	9.9	6.5	0.967	1473	0.20	0.22	30.50	1.15
611	6.5 kW Inbuilt Gas Fire	100%	100%	8088	1298	0	0	18	148.0	97.2	0.618	941	0.31	0.28	30.61	1.15
612	6.5 kW Inbuilt Propane Fire	100%	100%	7541	1298	0	0	18	256.1	168.2	0.577	878	0.33	0.30	28.54	1.15
640	Base Electric Resistance Heating CZ 2, Homes with electric as secondary heating	0%	0%	130	1367	1367	898	12	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A
641	Heat Pump Space Heater	60%	60%	2822	1367	547	359	18	118.9	78.1	0.341	520	0.56	0.51	16.90	1.15
642	High Efficiency Heat pump	72%	72%	3067	1367	383	252	18	142.7	93.8	0.309	471	0.62	0.56	15.30	1.15
643	Geothermal Heat Pump	76%	76%	10774	1367	328	216	18	53.8	35.3	1.029	1566	0.19	0.17	50.93	1.15
644	Dual-Pane Windows (1.3 U to 0.5 U)	7%	7%	1140	1367	1278	840	40	18.4	12.1	0.962	1465	0.16	0.14	63.01	1.15
645	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	3%	3%	1460	1367	1326	871	40	8.5	5.6	2.669	4063	0.06	0.05	174.81	1.15
646	Ceiling Insulation R-0 to R-1.9 (R-11)	37%	37%	767	2005	1263	830	20	21.5	14.1	0.098	149	1.96	1.71	5.08	1.15
647	Ceiling Insulation R-1.9 to R-3.6 (R-20)	7%	7%	955	1367	1276	838	20	15.2	10.0	0.984	1498	0.19	0.17	51.22	1.15
648	Wall Insulation R-0 to R-2.3 (R-13)	51%	51%	2020	1751	858	564	20	105.4	69.3	0.213	325	0.89	0.78	11.11	1.15
649	Floor Insulation R-0 to R-1.5 (R-11)	13%	13%	1369	1448	1260	828	20	8.9	5.8	0.687	1045	0.28	0.24	35.73	1.15
650	Infiltration Reduction	3%	3%	245	1385	1344	883	10	4.9	3.2	0.918	1398	0.21	0.23	28.95	1.15
651	6.5 kW Inbuilt Gas Fire	100%	100%	7295	1367	0	0	18	71.4	46.9	0.529	806	0.36	0.33	26.21	1.15
652	6.5 kW Inbuilt Propane Fire	100%	100%	6778	1367	0	0	18	101.9	67.0	0.492	749	0.39	0.35	24.35	1.15
670	Base Electric Resistance Heating CZ 3, Homes with electric as secondary heating	0%	0%	170	1432	1432	941	12	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A
671	Heat Pump Space Heater	60%	60%	2774	1440	576	378	18	146.9	96.5	0.319	485	0.60	0.54	15.77	1.15
672	High Efficiency Heat pump	72%	72%	3019	1432	401	263	18	177.0	116.3	0.291	442	0.66	0.59	14.39	1.15
673	Geothermal Heat Pump	76%	76%	10734	1432	344	226	18	66.7	43.8	0.979	1490	0.20	0.18	48.46	1.15
674	Dual-Pane Windows (1.3 U to 0.5 U)	6%	6%	1140	1441	1350	887	40	20.0	13.2	0.942	1434	0.16	0.14	61.69	1.15
675	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	3%	3%	1460	1436	1393	915	40	9.5	6.2	2.542	3869	0.06	0.05	166.45	1.15
676	Ceiling Insulation R-0 to R-1.9 (R-11)	35%	35%	767	2048	1331	875	20	24.6	16.2	0.101	154	1.89	1.65	5.26	1.15
677	Ceiling Insulation R-1.9 to R-3.6 (R-20)	6%	6%	955	1441	1351	888	20	15.8	10.4	1.010	1537	0.19	0.17	52.54	1.15
678	Wall Insulation R-0 to R-2.3 (R-13)	49%	49%	2020	1814	925	608	20	124.3	81.7	0.215	327	0.89	0.78	11.16	1.15
679	Floor Insulation R-0 to R-1.5 (R-11)	12%	12%	1369	1510	1328	873	20	10.1	6.7	0.714	1086	0.27	0.23	37.13	1.15
680	Infiltration Reduction	3%	3%	245	1450	1407	924	10	6.1	4.0	0.877	1335	0.22	0.24	27.65	1.15
681	6.5 kW Inbuilt Gas Fire	100%	100%	5416	1432	0	0	18	0.9	0.6	0.375	571	0.51	0.46	18.58	1.15

RESIDENTIAL EXISTING

DSM ASSYST SUMMARY				Year	2007											
Measure Number	Measure	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Household	Base UEC	UEC	Peak Watts/ HH	Service Life (yrs) (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
682	6.5 kW Inbuilt Propane Fire	100%	100%	5025	1432	0	0	18	79.0	51.9	0.348	530	0.55	0.50	17.24	1.15
700	Base Cooking	0%	0%	924	564	564	263	15	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A
701	Switch from electric to NG cooking equipment	100%	100%	724	564	0	0	15	333.6	155.7	0.142	305	1.14	1.30	6.30	0.97
702	Switch from electric to LPG cooking equipment	100%	100%	624	564	0	0	15	698.2	325.8	0.123	263	1.32	1.51	5.43	0.97
800	Base Clothes Drying	0%	0%	758	181	181	41	15	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A
900	Base Heated Towel Rail	0%	0%	132	455	455	104	12	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A
901	Towel Rail Timer	70%	70%	46	455	137	31	12	216.6	49.5	0.019	83	6.63	10.55	0.70	0.75
920	Base Miscellaneous	0%	0%	0	1554	1554	355	15	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A
921	Xmisc	0%	0%	0	1554	1554	355	15	0.0	0.0	N/A	N/A	99999.00	99999.00	N/A	N/A

RESIDENTIAL NEW CONSTRUCTION

DSM ASSYST SUMMARY

Measure Number	Measure	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Household	Base UEC	UEC	Peak Watts/ Household	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
100	Base Electric Resistance Heating CZ 1	0%	0%	942	2,017	2,017	1,325	18	0.0	-	N/A	N/A	N/A	N/A	N/A	N/A
101	Heat Pump Space Heater	60%	60%	2,258	2,017	807	530	18	4.7	3.1	0.185	282	1.03	0.80	10.71	1.33
102	High Efficiency Heat pump	72%	72%	2,503	2,017	565	371	18	5.7	3.7	0.171	260	1.12	0.87	9.89	1.33
103	High Performance Windows (single-glazed AL to dual AL)	17%	17%	1,771	2,017	1,681	1,104	40	1.2	0.8	0.394	600	0.38	0.29	30.18	1.33
104	High Performance Windows (single-glazed AL to dual vinyl)	33%	33%	6,346	2,017	1,354	889	40	2.3	1.5	0.717	1,092	0.21	0.16	54.89	1.33
105	High Performance Windows (Dual-pane AL to dual vinyl)	20%	20%	1,328	2,017	1,624	1,067	40	0.8	0.5	0.253	385	0.60	0.45	19.38	1.33
106	Ceiling Insulation R-2.6 to R-3.2	4%	4%	393	2,017	1,929	1,267	20	0.3	0.2	0.418	636	0.46	0.34	25.42	1.33
107	Ceiling Insulation R-3.2 to R-3.6	3%	3%	242	2,017	1,949	1,280	20	0.1	0.0	0.333	507	0.57	0.43	20.25	1.33
108	Ceiling Insulation R-2.6 to R-3.6	8%	8%	635	2,017	1,860	1,222	20	0.6	0.4	0.381	580	0.50	0.38	23.17	1.33
109	Wall insulation upgrade (increase from 1.8 to 2.2)	4%	4%	176	2,017	1,937	1,272	20	0.1	0.1	0.206	313	0.93	0.70	12.52	1.33
110	Wall insulation upgrade (increase from 2.2 to 2.6)	3%	3%	525	2,017	1,959	1,287	20	0.2	0.1	0.847	1,289	0.23	0.17	51.51	1.33
111	Wall insulation upgrade (increase from 1.8 to 2.6)	7%	7%	701	2,017	1,878	1,234	20	0.2	0.2	0.475	724	0.40	0.30	28.91	1.33
112	Slab Insulation (50 mm polystyrene)	23%	23%	1,745	2,106	1,615	1,061	20	2.0	1.3	0.336	511	0.57	0.43	20.42	1.33
113	Slab Insulation perimeter	8%	8%	160	2,047	1,885	1,238	20	0.6	0.4	0.093	142	2.04	1.54	5.68	1.33
114	Floor Insulation (foil to polystyrene)	10%	10%	1,015	2,083	1,883	1,237	20	0.1	0.0	0.479	729	0.40	0.30	29.13	1.33
115	6.5 kW Inbuilt Gas Fire	100%	100%	8,712	2,017	(0)	-	18	4.1	2.7	0.429	652	0.45	0.35	24.79	1.33
116	6.5 kW Inbuilt Propane Fire	100%	100%	7,985	2,017	(0)	-	18	7.1	4.7	0.393	598	0.49	0.38	22.72	1.33
117	Base Electric Resistance Heating CZ 2	0%	0%	942	2,108	2,108	1,385	18	0.0	-	N/A	N/A	N/A	N/A	N/A	N/A
118	Heat Pump Space Heater	60%	60%	2,258	2,108	843	554	18	3.9	2.5	0.177	270	1.08	0.84	10.25	1.33
119	High Efficiency Heat pump	72%	72%	2,503	2,108	590	388	18	4.6	3.0	0.164	249	1.17	0.91	9.47	1.33
120	High Performance Windows (single-glazed AL to dual AL)	13%	13%	1,771	2,108	1,830	1,202	40	0.8	0.5	0.477	727	0.32	0.24	36.54	1.33
121	High Performance Windows (single-glazed AL to dual vinyl)	27%	27%	6,346	2,108	1,543	1,014	40	1.5	1.0	0.843	1,283	0.18	0.14	64.49	1.33
122	High Performance Windows (Dual-pane AL to dual vinyl)	16%	16%	1,328	2,108	1,777	1,167	40	0.5	0.3	0.301	458	0.50	0.38	23.04	1.33
123	Ceiling Insulation R-2.6 to R-3.2	4%	4%	393	2,108	2,030	1,334	20	0.2	0.1	0.476	724	0.40	0.30	28.93	1.33
124	Ceiling Insulation R-3.2 to R-3.6	3%	3%	242	2,108	2,049	1,346	20	0.0	0.0	0.387	589	0.49	0.37	23.54	1.33
125	Ceiling Insulation R-2.6 to R-3.6	7%	7%	635	2,108	1,971	1,295	20	0.4	0.3	0.437	666	0.44	0.33	26.61	1.33
126	Wall insulation upgrade (increase from 1.8 to 2.2)	3%	3%	176	2,108	2,040	1,341	20	0.1	0.1	0.246	375	0.78	0.58	14.98	1.33
127	Wall insulation upgrade (increase from 2.2 to 2.6)	3%	3%	525	2,108	2,055	1,350	20	0.1	0.1	0.940	1,431	0.20	0.15	57.19	1.33
128	Wall insulation upgrade (increase from 1.8 to 2.6)	6%	6%	701	2,108	1,988	1,306	20	0.2	0.1	0.551	838	0.35	0.26	33.49	1.33
129	Slab Insulation (50 mm polystyrene)	30%	30%	1,745	2,227	1,567	1,030	20	2.1	1.3	0.250	380	0.76	0.57	15.20	1.33
130	Slab Insulation perimeter	9%	9%	160	2,143	1,950	1,281	20	0.6	0.4	0.078	119	2.44	1.83	4.76	1.33
131	Floor Insulation (foil to polystyrene)	6%	6%	1,015	2,148	2,026	1,331	20	0.0	0.0	0.782	1,191	0.24	0.18	47.58	1.33
132	6.5 kW Inbuilt Gas Fire	100%	100%	8,882	2,108	(0)	-	18	4.1	2.7	0.418	636	0.46	0.36	24.19	1.33
133	6.5 kW Inbuilt Propane Fire	100%	100%	8,205	2,108	(0)	-	18	5.8	3.8	0.386	588	0.49	0.39	22.35	1.33
134	Base Electric Resistance Heating CZ 3	0%	0%	942	3,544	3,544	2,328	18	0.0	-	N/A	N/A	N/A	N/A	N/A	N/A
135	Heat Pump Space Heater	60%	60%	2,258	3,544	1,417	931	18	5.5	3.6	0.105	160	1.81	1.41	6.10	1.33
136	High Efficiency Heat pump	72%	72%	2,503	3,544	992	652	18	6.6	4.3	0.097	148	1.96	1.53	5.63	1.33
137	High Performance Windows (single-glazed AL to dual AL)	13%	13%	1,771	3,544	3,101	2,037	40	0.0	0.0	0.300	456	0.51	0.38	22.95	1.33
138	High Performance Windows (single-glazed AL to dual vinyl)	25%	25%	6,346	3,544	2,668	1,753	40	0.1	0.0	0.544	828	0.28	0.21	41.62	1.33
139	High Performance Windows (Dual-pane AL to dual vinyl)	14%	14%	1,328	3,544	3,048	2,002	40	1.7	1.1	0.201	306	0.76	0.57	15.37	1.33
140	Ceiling Insulation R-2.6 to R-3.2	4%	4%	393	3,544	3,420	2,247	20	0.3	0.2	0.299	455	0.64	0.48	18.19	1.33
141	Ceiling Insulation R-3.2 to R-3.6	3%	3%	242	3,544	3,455	2,270	20	0.0	0.0	0.258	392	0.74	0.56	15.68	1.33
142	Ceiling Insulation R-2.6 to R-3.6	6%	6%	635	3,544	3,335	2,191	20	0.5	0.3	0.287	436	0.67	0.50	17.43	1.33
143	Wall insulation upgrade (increase from 1.8 to 2.2)	3%	3%	176	3,544	3,434	2,256	20	0.1	0.1	0.151	230	1.26	0.95	9.20	1.33
144	Wall insulation upgrade (increase from 2.2 to 2.6)	2%	2%	525	3,544	3,462	2,275	20	0.1	0.1	0.608	925	0.31	0.24	36.98	1.33
145	Wall insulation upgrade (increase from 1.8 to 2.6)	5%	5%	701	3,544	3,352	2,202	20	0.2	0.1	0.346	526	0.55	0.42	21.03	1.33
146	Slab Insulation (50 mm polystyrene)	23%	23%	1,745	3,700	2,834	1,862	20	2.3	1.5	0.190	290	1.00	0.76	11.57	1.33
147	Slab Insulation perimeter	8%	8%	160	3,592	3,323	2,183	20	0.7	0.5	0.056	85	3.41	2.56	3.41	1.33
148	Floor Insulation (foil to polystyrene)	10%	10%	1,015	3,661	3,306	2,172	20	0.1	0.1	0.270	411	0.71	0.53	16.41	1.33

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Measure Number	Measure	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Household	Base UEC	UEC	Peak Watts/ Household	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
149	6.5 kW Inbuilt Gas Fire	100%	100%	7,783	3,544	(0)	-	18	0.1	0.1	0.218	332	0.88	0.68	12.61	1.33
150	6.5 kW Inbuilt Propane Fire	100%	100%	7,152	3,544	(0)	-	18	8.2	5.4	0.200	305	0.95	0.74	11.59	1.33
151	Base Heat Pump Space Heater CZ 1	0%	0%	2,978	1,352	1,352	888	18	0.0	-	N/A	N/A	N/A	N/A	N/A	N/A
152	High Efficiency Heat pump	30%	30%	245	1,352	946	622	18	1.1	0.7	0.060	91	3.19	2.49	3.47	1.33
153	High Performance Windows (single-glazed AL to dual AL)	17%	17%	1,771	1,352	1,126	740	40	0.4	0.3	0.588	896	0.26	0.19	45.04	1.33
154	High Performance Windows (single-glazed AL to dual vinyl)	33%	33%	6,346	1,352	907	596	40	0.8	0.5	1.070	1,629	0.14	0.11	81.92	1.33
155	High Performance Windows (Dual-pane AL to dual vinyl)	20%	20%	1,328	1,352	1,088	715	40	0.3	0.2	0.378	575	0.40	0.30	28.92	1.33
156	Ceiling Insulation R-2.6 to R-3.2	4%	4%	393	1,352	1,292	849	20	0.1	0.1	0.624	949	0.31	0.23	37.93	1.33
157	Ceiling Insulation R-3.2 to R-3.6	3%	3%	242	1,352	1,306	858	20	0.0	0.0	0.497	757	0.38	0.29	30.23	1.33
158	Ceiling Insulation R-2.6 to R-3.6	8%	8%	635	1,352	1,246	819	20	0.2	0.1	0.569	865	0.34	0.25	34.57	1.33
159	Wall insulation upgrade (increase from 1.8 to 2.2)	4%	4%	176	1,352	1,298	853	20	0.0	0.0	0.307	468	0.62	0.47	18.69	1.33
160	Wall insulation upgrade (increase from 2.2 to 2.6)	3%	3%	525	1,352	1,313	862	20	0.1	0.0	1.264	1,924	0.15	0.11	76.88	1.33
161	Wall insulation upgrade (increase from 1.8 to 2.6)	7%	7%	701	1,352	1,258	827	20	0.1	0.1	0.709	1,080	0.27	0.20	43.15	1.33
162	Slab Insulation (50 mm polystyrene)	23%	23%	1,745	1,411	1,082	711	20	0.7	0.4	0.501	763	0.38	0.29	30.47	1.33
163	Slab Insulation perimeter	8%	8%	160	1,371	1,263	830	20	0.2	0.1	0.139	212	1.37	1.03	8.48	1.33
164	Floor Insulation (foil to polystyrene)	10%	10%	1,015	1,396	1,262	829	20	0.0	0.0	0.715	1,088	0.27	0.20	43.48	1.33
165	6.5 kW Inbuilt Gas Fire	100%	100%	6,365	1,352	(0)	-	18	1.9	1.3	0.467	711	0.41	0.32	27.03	1.33
166	6.5 kW Inbuilt Propane Fire	100%	100%	5,592	1,352	(0)	-	18	3.3	2.2	0.411	625	0.47	0.36	23.75	1.33
167	Base Heat Pump Space Heater CZ 2	0%	0%	2,978	1,412	1,412	928	18	0.0	-	N/A	N/A	N/A	N/A	N/A	N/A
168	High Efficiency Heat pump	30%	30%	245	1,412	989	649	18	0.9	0.6	0.057	87	3.33	2.60	3.32	1.33
169	High Performance Windows (single-glazed AL to dual AL)	13%	13%	1,771	1,412	1,226	805	40	0.3	0.2	0.713	1,085	0.21	0.16	54.54	1.33
170	High Performance Windows (single-glazed AL to dual vinyl)	27%	27%	6,346	1,412	1,034	679	40	0.5	0.3	1.258	1,914	0.12	0.09	96.25	1.33
171	High Performance Windows (Dual-pane AL to dual vinyl)	16%	16%	1,328	1,412	1,191	782	40	0.2	0.1	0.449	684	0.34	0.25	34.38	1.33
172	Ceiling Insulation R-2.6 to R-3.2	4%	4%	393	1,412	1,360	894	20	0.1	0.0	0.710	1,081	0.27	0.20	43.17	1.33
173	Ceiling Insulation R-3.2 to R-3.6	3%	3%	242	1,412	1,373	902	20	0.0	0.0	0.578	879	0.33	0.25	35.13	1.33
174	Ceiling Insulation R-2.6 to R-3.6	7%	7%	635	1,412	1,321	868	20	0.1	0.1	0.653	994	0.29	0.22	39.71	1.33
175	Wall insulation upgrade (increase from 1.8 to 2.2)	3%	3%	176	1,412	1,367	898	20	0.0	0.0	0.368	560	0.52	0.39	22.36	1.33
176	Wall insulation upgrade (increase from 2.2 to 2.6)	3%	3%	525	1,412	1,377	905	20	0.0	0.0	1.404	2,136	0.14	0.10	85.36	1.33
177	Wall insulation upgrade (increase from 1.8 to 2.6)	6%	6%	701	1,412	1,332	875	20	0.1	0.0	0.822	1,251	0.23	0.17	49.99	1.33
178	Slab Insulation (50 mm polystyrene)	30%	30%	1,745	1,492	1,050	690	20	0.7	0.5	0.373	568	0.51	0.39	22.69	1.33
179	Slab Insulation perimeter	9%	9%	160	1,436	1,306	858	20	0.2	0.1	0.117	178	1.63	1.23	7.11	1.33
180	Floor Insulation (foil to polystyrene)	6%	6%	1,015	1,439	1,357	892	20	0.0	0.0	1.168	1,778	0.16	0.12	71.02	1.33
181	6.5 kW Inbuilt Gas Fire	100%	100%	5,954	1,412	(0)	-	18	1.9	1.2	0.418	637	0.46	0.36	24.20	1.33
182	6.5 kW Inbuilt Propane Fire	100%	100%	5,236	1,412	(0)	-	18	2.7	1.8	0.368	560	0.52	0.40	21.28	1.33
183	Base Heat Pump Space Heater CZ 3	0%	0%	2,978	2,374	2,374	1,560	18	0.0	-	N/A	N/A	N/A	N/A	N/A	N/A
184	High Efficiency Heat pump	30%	30%	245	2,374	1,662	1,092	18	1.3	0.8	0.034	52	5.60	4.37	1.97	1.33
185	High Performance Windows (single-glazed AL to dual AL)	13%	13%	1,771	2,374	2,078	1,365	40	0.0	0.0	0.448	681	0.34	0.26	34.26	1.33
186	High Performance Windows (single-glazed AL to dual vinyl)	25%	25%	6,346	2,374	1,788	1,175	40	0.0	0.0	0.812	1,235	0.19	0.14	62.12	1.33
187	High Performance Windows (Dual-pane AL to dual vinyl)	14%	14%	1,328	2,374	2,042	1,341	40	0.6	0.4	0.300	456	0.51	0.38	22.93	1.33
188	Ceiling Insulation R-2.6 to R-3.2	4%	4%	393	2,374	2,291	1,505	20	0.1	0.1	0.446	679	0.43	0.32	27.15	1.33
189	Ceiling Insulation R-3.2 to R-3.6	3%	3%	242	2,374	2,315	1,521	20	0.0	0.0	0.385	586	0.50	0.37	23.40	1.33
190	Ceiling Insulation R-2.6 to R-3.6	6%	6%	635	2,374	2,234	1,468	20	0.2	0.1	0.428	651	0.45	0.34	26.02	1.33
191	Wall insulation upgrade (increase from 1.8 to 2.2)	3%	3%	176	2,374	2,301	1,511	20	0.0	0.0	0.226	344	0.85	0.64	13.73	1.33
192	Wall insulation upgrade (increase from 2.2 to 2.6)	2%	2%	525	2,374	2,320	1,524	20	0.1	0.0	0.907	1,381	0.21	0.16	55.19	1.33
193	Wall insulation upgrade (increase from 1.8 to 2.6)	5%	5%	701	2,374	2,246	1,476	20	0.1	0.0	0.516	786	0.37	0.28	31.39	1.33
194	Slab Insulation (50 mm polystyrene)	23%	23%	1,745	2,479	1,899	1,247	20	0.8	0.5	0.284	432	0.67	0.51	17.27	1.33
195	Slab Insulation perimeter	8%	8%	160	2,407	2,226	1,463	20	0.2	0.2	0.084	127	2.28	1.72	5.09	1.33
196	Floor Insulation (foil to polystyrene)	10%	10%	1,015	2,453	2,215	1,455	20	0.0	0.0	0.403	613	0.47	0.36	24.49	1.33
197	6.5 kW Inbuilt Gas Fire	100%	100%	6,408	2,374	(0)	-	18	0.0	0.0	0.268	408	0.71	0.56	15.49	1.33

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DSM ASSYST SUMMARY

Measure Number	Measure	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Household	Base UEC	UEC	Peak Watts/ Household	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
198	6.5 kW Inbuilt Propane Fire	100%	100%	5,755	2,374	(0)	-	18	3.9	2.5	0.241	366	0.79	0.62	13.91	1.33
200	Base 180 Litre Mains Pressure Water Heating	0%	0%	1,248	2,590	2,590	404	13	0.0	-	N/A	N/A	N/A	N/A	N/A	N/A
202	HE Water Heater (0.90 to 0.94 EF)	5%	5%	125	2,611	2,470	386	13	1.2	0.2	0.109	701	1.05	1.53	5.09	0.80
203	Solar Water Heat	80%	80%	5,000	2,611	522	82	13	10.7	1.7	0.296	1,894	0.39	0.57	13.74	0.80
204	Low Flow Showerhead	8%	8%	55	2,590	2,396	374	10	1.0	0.2	0.044	284	2.58	4.07	1.63	0.80
205	Faucent Aerators	3%	3%	79	2,590	2,512	392	10	0.4	0.1	0.158	1,009	0.73	1.14	5.80	0.80
206	Pipe Wrap	2%	2%	22	2,590	2,538	396	13	0.3	0.0	0.053	340	2.16	3.16	2.47	0.80
207	Water Heater Blanket	10%	10%	100	2,590	2,331	364	13	1.3	0.2	0.048	305	2.40	3.52	2.22	0.80
208	Switch from Elec to NG DHW	100%	100%	5,081	2,590	(0)	-	13	11.1	1.7	0.256	1,642	0.45	0.67	11.26	0.80
209	Switch from Elec to LPG DHW	100%	100%	4,380	2,590	(0)	-	13	23.3	3.6	0.223	1,428	0.51	0.78	9.71	0.80
210	Instant-on DHW (NG)	100%	100%	5,742	2,590	(0)	-	20	11.1	1.7	0.209	1,341	0.55	0.69	12.73	0.80
211	Instant-on DHW (LPG)	100%	100%	4,961	2,590	(0)	-	20	23.3	3.6	0.181	1,158	0.63	0.79	11.00	0.80
300	Base Lighting, 0-1.5 hrs/day	0%	0%	18	327	327	166	5	0.0	-	N/A	N/A	N/A	N/A	N/A	N/A
301	CFL, 0-1.5 hrs/day	66%	66%	89	374	126	64	55	2.1	1.1	0.026	51	4.93	4.21	2.07	1.17
310	Base Lighting, 1.5-2.5 hrs/day	0%	0%	4	296	296	150	1	0.0	-	N/A	N/A	N/A	N/A	N/A	N/A
311	CFL, 1.5-2.5 hrs/day	66%	66%	20	338	114	58	14	1.9	1.0	0.011	21	15.69	15.25	0.53	1.17
320	Base Lighting, >2.5 hrs/day	0%	0%	2	222	222	113	1	0.0	-	N/A	N/A	N/A	N/A	N/A	N/A
321	CFL, >2.5 hrs/day	66%	66%	10	254	85	43	9	1.4	0.7	0.010	20	16.91	18.62	0.34	1.17
330	Base 50W Halogen	0%	0%	62	408	408	207	2	0.0	-	N/A	N/A	N/A	N/A	N/A	N/A
331	High-efficiency Halogen (35 W)	26%	26%	13	408	304	154	2	1.7	0.8	0.084	166	1.99	2.73	0.73	1.17
400	Base Refrigerator/Freezer	0%	0%	1,478	576	576	73	15	0.0	-	N/A	N/A	N/A	N/A	N/A	N/A
420	Base Refrigerator	0%	0%	1,500	455	455	58	15	0.0	-	N/A	N/A	N/A	N/A	N/A	N/A
450	Base Freezer	0%	0%	900	466	466	59	15	0.0	-	N/A	N/A	N/A	N/A	N/A	N/A
500	Base Dishwasher	0%	0%	1,250	218	218	50	13	0.0	-	N/A	N/A	N/A	N/A	N/A	N/A
700	Base Cooking	0%	0%	924	564	564	263	15	0.0	-	N/A	N/A	N/A	N/A	N/A	N/A
701	Switch from electric to NG cooking equipment	100%	100%	724	564	-	-	15	1.9	0.9	0.142	305	1.14	1.12	7.37	1.13
702	Switch from electric to LPG cooking equipment	100%	100%	624	564	-	-	15	4.0	1.9	0.123	263	1.32	1.30	6.35	1.13
800	Base Clothes Drying	0%	0%	750	179	179	41	15	0.0	-	N/A	N/A	N/A	N/A	N/A	N/A
900	Base Heated Towel Rail	0%	0%	132	455	455	104	12	0.0	-	N/A	N/A	N/A	N/A	N/A	N/A
901	Towel Rail Timer	70%	70%	46	475	143	33	12	2.6	0.6	0.018	79	6.92	9.50	0.79	0.87
920	Base Miscellaneous	0%	0%	-	1,554	1,554	355	15	0.0	-	N/A	N/A	N/A	N/A	N/A	N/A
921	Xmisc	0%	0%	-	1,554	1,554	355	15	0.0	-	N/A	N/A	99,999.00	99,999.00	N/A	N/A

COMMERCIAL EXISTING

DSM ASSYST SUMMARY

Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Sq Ft	Base EUI	EUI	Peak Watts/ Sq Ft	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
110	Base Fluorescent Fixture, T12, 34W, EEMAG	Office	0%	0%	0.00	33.77	33.77	4.49	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
113	RET Next Gen T8, EEMAG	Office	15%	15%	1.65	33.77	28.70	3.82	23	10	1	0	215	4	4	2	1
114	RET Next Gen T8, 1EB	Office	28%	28%	4.70	33.77	24.31	3.23	23	13	2	0	327	2	2	4	1
117	Occupancy Sensor	Office	24%	30%	3.23	33.88	25.77	3.15	13	6	1	0	288	2	3	3	1
118	Continuous Dimming	Office	43%	75%	36.12	33.92	19.41	1.13	17	11	3	0	1,116	0	0	19	1
120	Lighting Control Tuneup	Office	4%	5%	0.27	33.80	32.35	4.27	6	1	0	0	284	3	4	1	1
130	Base Fluorescent Fixture, T8, 32W, EEMAG	Office	0%	0%	0.00	30.44	30.44	4.05	23	0	0	N/A	N/A	N/A	N/A	N/A	N/A
133	RET Next Gen T8, 1EB	Office	15%	15%	3.23	30.44	25.79	3.43	23	13	2	0	456	2	2	5	1
136	Occupancy Sensor	Office	24%	30%	3.43	30.54	23.23	2.84	13	9	1	0	339	2	2	3	1
137	Continuous Dimming	Office	43%	75%	38.31	30.58	17.50	1.02	17	16	4	0	1,313	0	0	23	1
139	Lighting Control Tuneup	Office	4%	5%	0.27	30.47	29.16	3.85	6	2	0	0	316	2	3	2	1
150	Base Fluorescent Fixture, T8, 32W, EB	Office	0%	0%	0.00	25.79	25.79	3.43	23	0	0	N/A	N/A	N/A	N/A	N/A	N/A
155	Occupancy Sensor	Office	24%	30%	3.43	25.87	19.68	2.41	13	2	0	0	400	2	2	4	1
156	Continuous Dimming	Office	43%	75%	38.31	25.90	14.82	0.86	17	3	1	0	1,550	0	0	27	1
157	Lighting Control Tuneup	Office	4%	5%	0.27	25.81	24.70	3.26	6	0	0	0	373	2	3	2	1
160	Base Incandescent Flood, 75W to Screw-in CFL	Office	0%	0%	1.17	125.36	125.36	16.67	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A
161	CFL Screw-in 18W	Office	76%	76%	3.50	127.61	30.63	4.07	3	95	13	0	101	8	12	0	1
165	Base Incandescent Flood, 75W to Hardwired CFL	Office	0%	0%	1.17	125.36	125.36	16.67	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A
166	CFL Hardwired, Modular 18W	Office	76%	76%	53.90	130.29	31.27	4.16	7	31	4	0	886	1	1	4	1
170	Base Halogen Flood,50W	Office	0%	0%	22.73	117.98	117.98	15.68	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A
172	RET - Efficient Halogen Flood, 35W	Office	30%	30%	31.03	119.78	83.85	11.15	2	16	2	0	1,597	1	1	7	1
175	Base High Bay Metal Halide, 400W	Office	0%	0%	5.43	23.67	23.67	3.15	8	0	0	N/A	N/A	N/A	N/A	N/A	N/A
176	High Bay T5	Office	15%	15%	10.00	24.56	21.00	2.79	15	1	0	0	2,154	0	0	21	1
190	Base Exit Sign	Office	0%	0%	0.00	0.44	0.44	0.06	16	0	0	N/A	N/A	N/A	N/A	N/A	N/A
220	Base Outdoor Mercury Vapor 400W Lamp	Office	0%	0%	0.00	3.64	3.64	0.56	5	0	0	N/A	N/A	N/A	N/A	N/A	N/A
221	High Pressure Sodium 250W Lamp	Office	35%	35%	0.09	4.14	2.69	0.41	5	1	0	0	105	7	10	0	1
222	Outdoor Lighting Controls (Photocell/Timeclock)	Office	12%	22%	0.31	3.80	3.34	0.45	5	0	0	0	606	1	1	5	1
300	Base Centrifugal Chiller, 0.165 kW/kWt, 1750 kWt	Office	0%	0%	7.79	18.43	18.43	1.02	20	0	0	N/A	N/A	N/A	N/A	N/A	N/A
301	Centrifugal Chiller, 0.15 kW/kWt, 1750 kWt	Office	12%	12%	1.24	18.43	16.21	0.90	20	1	0	0	951	2	2	4	1
303	BMS - Chiller	Office	10%	10%	2.13	19.73	17.75	0.98	10	0	0	0	3,034	1	1	8	1
305	Chiller Tune Up/Diagnostics	Office	7%	8%	1.66	19.12	17.74	0.97	10	0	0	0	3,049	1	1	9	1
306	VSD for Chiller Pumps and Towers	Office	10%	10%	1.49	18.64	16.78	0.93	15	1	0	0	1,599	1	1	6	1
307	BMS Optimization	Office	17%	20%	0.50	18.99	15.74	0.84	5	1	0	0	666	2	4	1	1
308	Economizer	Office	23%	27%	6.02	23.10	17.76	0.93	15	0	0	0	1,937	1	1	9	1
310	Base DX Packaged System, EER=2.65, 35 kWt	Office	0%	0%	23.81	31.78	31.78	1.76	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
311	DX Tune Up/ Advanced Diagnostics	Office	5%	5%	2.07	32.74	31.18	1.72	10	1	0	0	3,562	0	1	10	1
312	DX Packaged System, EER=3.5, 35 kWt	Office	24%	24%	0.95	31.78	24.06	1.33	15	16	1	0	248	7	9	1	1
315	Prog. Thermostat - DX	Office	4%	5%	0.73	32.34	30.96	1.70	10	1	0	0	1,265	1	2	4	1
317	Optimize Controls	Office	17%	20%	0.66	33.76	27.99	1.49	5	6	0	0	499	3	5	1	1
318	Economizer	Office	24%	28%	6.02	40.20	30.57	1.60	15	1	0	0	1,073	1	2	5	1
320	Base Split-system Air Conditioner, EER=2.3	Office	0%	0%	0.00	34.95	34.95	1.93	18	0	0	N/A	N/A	N/A	N/A	N/A	N/A
321	3.5 EER Split-system Air Conditioner	Office	34%	34%	2.20	36.36	23.89	1.32	18	15	1	0	317	6	7	1	1
322	Tune Up/Proper Refrigerant Charge	Office	10%	10%	0.34	37.95	34.34	1.89	10	1	0	0	251	7	10	1	1
324	Programmable Thermostat	Office	4%	5%	1.01	35.72	34.19	1.88	12	1	0	0	1,353	1	2	5	1
330	Base Room Air Conditioner, EER=2.3	Office	0%	0%	0.00	38.13	38.13	2.11	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
331	3.0 EER Room Air Conditioner	Office	23%	23%	3.78	38.41	29.45	1.63	15	3	0	0	845	2	3	3	1
333	Programmable Thermostat	Office	4%	5%	4.42	38.50	36.86	2.02	12	0	0	0	5,476	0	0	20	1
400	Base Fan Motor, 7kW, 1800rpm, 87.5%	Office	0%	0%	0.78	29.61	29.61	3.71	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
401	Fan Motor, 7kW, 1800rpm, 89.5%	Office	2%	2%	0.30	29.61	28.95	3.63	15	2	0	0	399	2	2	3	1
402	Variable Speed Drive Control, 7kW	Office	25%	30%	5.75	29.99	22.38	2.63	15	4	1	0	565	1	1	6	1
410	Base Fan Motor, 20kW, 1800rpm, 91.0%	Office	0%	0%	0.59	27.45	27.45	3.44	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
411	Fan Motor, 20kW, 1800rpm, 92.4%	Office	2%	2%	0.15	27.45	27.03	3.39	15	0	0	0	324	3	3	3	1
412	Variable Speed Drive Control, 20kW	Office	25%	30%	3.20	32.45	24.21	2.85	15	2	0	0	290	3	3	3	1
413	Air Handler Optimization, 20kW	Office	17%	20%	0.50	28.66	23.81	2.88	8	3	0	0	128	6	8	1	1
420	Base Fan Motor, 54kW, 1800rpm, 93.0%	Office	0%	0%	0.50	26.99	26.99	3.39	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
421	Fan Motor, 54kW, 1800rpm, 94.1%	Office	1%	1%	0.14	26.99	26.68	3.35	15	0	0	0	381	2	3	3	1
422	Variable Speed Drive Control, 54kW	Office	25%	30%	2.14	31.91	23.81	2.80	15	3	1	0	197	4	4	2	1
423	Air Handler Optimization, 54kW	Office	17%	20%	0.50	28.19	23.41	2.83	8	3	0	0	130	6	8	1	1
610	Base Desktop PC	Office	0%	0%	0.00	6.49	6.49	0.78	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
611	PC Manual Power Management Enabling	Office	68%	68%	0.29	7.82	2.50	0.30	4	23	3	0	157	6	9	0	1
612	PC Network Power Management Enabling	Office	68%	68%	0.15	7.82	2.50	0.30	4	23	3	0	79	12	18	0	1
620	Base Monitor, CRT	Office	0%	0%	0.00	1.26	1.26	0.15	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
621	Energy Star or Better Monitor	Office	56%	56%	0.00	2.70	1.18	0.14	4	0	0	0	0	99,999	99,999	0	N/A
622	Monitor Power Management Enabling	Office	53%	53%	0.06	1.85	0.86	0.10	4	0	0	0	159	6	9	0	1
630	Base Monitor, LCD	Office	0%	0%	0.00	0.40	0.40	0.05	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
631	Energy Star or Better Monitor	Office	2%	2%	0.00	0.41	0.40	0.05	4	0	0	0	0	99,999	99,999	0	N/A
632	Monitor Power Management Enabling	Office	28%	28%	0.24	0.48	0.35	0.04	4	0	0	1	5,061	0	0	13	1
640	Base Copier	Office	0%	0%	0.00	7.66	7.66	0.92	6	0	0	N/A	N/A	N/A	N/A	N/A	N/A
641	Energy Star or Better Copier	Office	21%	21%	0.00	9.40	7.47	0.90	6	1	0	0	0	99,999	99,999	0	N/A
642	Copier Power Management Enabling	Office	19%	19%	0.55	8.20	6.61	0.80	6	6	1	0	679	1	2	3	1
650	Base Laser Printer	Office	0%	0%	0.00	5.89	5.89	0.71	5	0	0	N/A	N/A	N/A	N/A	N/A	N/A

COMMERCIAL EXISTING

DSM ASSYST SUMMARY

Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Sq Ft	Base EUI	EUI	Peak Watts/ Sq Ft	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
651	Printer Power Management Enabling	Office	49%	49%	0.66	8.03	4.08	0.49	5	9	1	0	390	2	3	1	1
700	Base Split-system Heat Pump, 2.3 EER	Office	0%	0%	0.00	24.14	24.14	3.77	18	0	0	N/A	N/A	N/A	N/A	N/A	N/A
701	3.5 EER Split-system Heat Pump	Office	34%	34%	3.38	25.11	16.50	2.58	18	16	2	0	250	3	3	3	1
702	Tune Up/ Proper Refrigerant Charge	Office	10%	10%	0.52	25.10	22.59	3.53	10	3	0	0	206	4	4	2	1
703	Programmable Thermostat	Office	5%	5%	1.56	24.68	23.45	3.66	12	1	0	0	1,066	1	1	10	1
710	Base Electric Resistance Reheat Coils	Office	0%	0%	0.00	70.00	70.00	10.93	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
711	BMS - Reheat Coils	Office	10%	10%	2.00	71.06	63.95	9.99	10	10	2	0	281	3	3	2	1
712	BMS Optimization	Office	20%	20%	0.50	70.65	56.52	8.83	5	23	4	0	64	11	16	0	1
720	Base Wall-mounted Fan Heater	Office	0%	0%	0.00	77.78	77.78	12.14	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
721	Programmable Thermostat	Office	5%	5%	8.36	78.99	75.04	11.72	12	3	0	0	1,789	0	0	16	1
800	Base Water Heating	Office	0%	0%	0.00	3.41	3.41	0.41	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
801	Demand controlled circulating systems	Office	5%	5%	0.42	3.47	3.29	0.40	15	0	0	0	2,218	0	0	18	1
803	High Efficiency Water Heater (electric)	Office	2%	2%	0.11	3.41	3.35	0.40	15	0	0	0	1,458	1	1	12	1
804	Hot Water Pipe Insulation	Office	2%	2%	0.19	3.43	3.36	0.40	15	0	0	0	2,582	0	0	21	1
805	Tankless Water Heater	Office	10%	10%	0.87	3.43	3.09	0.37	20	1	0	0	2,000	0	0	19	1
910	Base Vending Machines	Office	0%	0%	0.06	3.66	3.66	0.41	10	0	0	N/A	N/A	N/A	N/A	N/A	N/A
911	Vending Misers (cooled machines only)	Office	42%	40%	0.27	3.66	2.14	0.25	10	1	0	0	258	4	5	1	1
110	Base Fluorescent Fixture, T12, 34W, EEMAG	Restaurant	0%	0%	0.00	32.83	32.83	6.26	13	0	0	N/A	N/A	N/A	N/A	N/A	N/A
113	RET Next Gen T8, EEMAG	Restaurant	15%	15%	1.38	32.83	27.90	5.32	20	1	0	0	138	5	4	2	1
114	RET Next Gen T8, 1EB	Restaurant	28%	28%	3.91	32.83	23.64	4.51	20	1	0	0	211	3	3	3	1
117	Occupancy Sensor	Restaurant	16%	20%	2.69	32.90	27.60	5.02	11	0	0	0	294	2	2	4	1
118	Continuous Dimming	Restaurant	44%	75%	30.10	32.98	18.42	1.57	14	1	0	0	728	1	1	15	1
120	Lighting Control Tuneup	Restaurant	4%	5%	0.27	32.86	31.46	5.96	6	0	0	0	204	3	3	1	1
130	Base Fluorescent Fixture, T8, 32W, EEMAG	Restaurant	0%	0%	0.00	29.60	29.60	5.65	20	0	0	N/A	N/A	N/A	N/A	N/A	N/A
133	RET Next Gen T8, 1EB	Restaurant	15%	15%	2.69	29.60	25.07	4.78	20	0	0	0	294	2	2	5	1
136	Occupancy Sensor	Restaurant	16%	20%	2.86	29.66	24.89	4.53	11	0	0	0	346	2	2	4	1
137	Continuous Dimming	Restaurant	44%	75%	31.93	29.74	16.61	1.42	14	0	0	0	857	1	0	18	1
139	Lighting Control Tuneup	Restaurant	4%	5%	0.27	29.63	28.37	5.37	6	0	0	0	226	2	3	2	1
150	Base Fluorescent Fixture, T8, 32W, EB	Restaurant	0%	0%	0.00	25.07	25.07	4.78	20	0	0	N/A	N/A	N/A	N/A	N/A	N/A
155	Occupancy Sensor	Restaurant	16%	20%	2.86	25.13	21.08	3.84	11	0	0	0	409	1	1	5	1
156	Continuous Dimming	Restaurant	44%	75%	31.93	25.19	14.07	1.20	14	0	0	0	1,012	0	0	21	1
157	Lighting Control Tuneup	Restaurant	4%	5%	0.27	25.10	24.03	4.55	6	0	0	0	267	2	3	2	1
160	Base Incandescent Flood, 75W to Screw-in CFL	Restaurant	0%	0%	0.98	121.87	121.87	23.26	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A
161	CFL Screw-in 18W	Restaurant	76%	76%	2.92	136.10	32.66	6.23	2	4	1	0	61	10	15	0	1
165	Base Incandescent Flood, 75W to Hardwired CFL	Restaurant	0%	0%	0.98	121.87	121.87	23.26	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A
166	CFL Hardwired, Modular 18W	Restaurant	76%	76%	44.92	148.83	35.72	6.82	6	1	0	0	514	1	2	3	1
170	Base Halogen Flood,50W	Restaurant	0%	0%	18.94	114.70	114.70	21.89	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A
172	RET - Efficient Halogen Flood, 35W	Restaurant	30%	30%	25.85	116.45	81.52	15.56	2	1	0	0	1,112	1	1	7	1
175	Base High Bay Metal Halide, 400W	Restaurant	0%	0%	4.52	23.01	23.01	4.39	7	0	0	N/A	N/A	N/A	N/A	N/A	N/A
176	High Bay T5	Restaurant	15%	15%	8.33	23.87	20.41	3.90	13	0	0	0	1,374	0	0	18	1
190	Base Exit Sign	Restaurant	0%	0%	0.00	0.62	0.62	0.12	16	0	0	N/A	N/A	N/A	N/A	N/A	N/A
220	Base Outdoor Mercury Vapor 400W Lamp	Restaurant	0%	0%	0.00	12.13	12.13	3.00	5	0	0	N/A	N/A	N/A	N/A	N/A	N/A
221	High Pressure Sodium 250W Lamp	Restaurant	35%	35%	0.30	13.80	8.96	2.22	5	0	0	0	65	8	10	0	1
222	Outdoor Lighting Controls (Photocell/Timeclock)	Restaurant	14%	22%	1.02	12.75	10.96	2.46	5	0	0	0	373	1	1	4	1
300	Base Centrifugal Chiller, 0.165 kW/kWt, 1750 kWt	Restaurant	0%	0%	11.47	31.66	31.66	2.17	20	0	0	N/A	N/A	N/A	N/A	N/A	N/A
301	Centrifugal Chiller, 0.15 kW/kWt, 1750 kWt	Restaurant	12%	12%	1.82	31.66	27.83	1.90	20	0	0	0	659	2	2	4	1
303	BMS - Chiller	Restaurant	10%	10%	3.13	33.88	30.49	2.09	10	0	0	0	2,103	1	1	7	1
305	Chiller Tune Up/Diagnostics	Restaurant	7%	8%	1.66	32.81	30.50	2.07	10	0	0	0	1,437	1	1	5	1
306	VSD for Chiller Pumps and Towers	Restaurant	10%	10%	2.19	32.02	28.82	1.97	15	0	0	0	1,109	1	2	5	1
307	BMS Optimization	Restaurant	16%	20%	0.50	32.58	27.21	1.78	5	0	0	0	314	4	6	1	1
308	Economizer	Restaurant	10%	12%	8.87	34.65	31.22	2.09	15	0	0	0	3,458	0	0	20	1
310	Base DX Packaged System, EER=2.65, 35 kWt	Restaurant	0%	0%	35.06	54.58	54.58	3.73	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
311	DX Tune Up/ Advanced Diagnostics	Restaurant	5%	5%	2.07	56.21	53.56	3.65	10	0	0	0	1,677	1	1	6	1
312	DX Packaged System, EER=3.5, 35 kWt	Restaurant	24%	24%	1.40	54.58	41.32	2.83	15	1	0	0	172	9	10	1	1
315	Prog. Thermostat - DX	Restaurant	4%	5%	1.07	55.51	53.22	3.61	10	0	0	0	877	1	2	4	1
317	Optimize Controls	Restaurant	16%	20%	0.66	57.86	48.32	3.17	5	1	0	0	236	5	8	1	1
318	Economizer	Restaurant	10%	12%	8.87	59.74	53.84	3.60	15	0	0	0	2,005	1	1	11	1
320	Base Split-system Air Conditioner, EER=2.3	Restaurant	0%	0%	0.00	60.04	60.04	4.11	18	0	0	N/A	N/A	N/A	N/A	N/A	N/A
321	3.5 EER Split-system Air Conditioner	Restaurant	34%	34%	3.24	62.44	41.03	2.81	18	0	0	0	220	7	8	1	1
322	Tune Up/Proper Refrigerant Charge	Restaurant	9%	10%	0.50	65.12	58.99	4.01	10	0	0	0	174	8	11	1	1
324	Programmable Thermostat	Restaurant	4%	5%	1.49	61.30	58.77	3.98	12	0	0	0	939	1	2	4	1
330	Base Room Air Conditioner, EER=2.3	Restaurant	0%	0%	0.00	65.49	65.49	4.48	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
331	3.0 EER Room Air Conditioner	Restaurant	23%	23%	5.56	65.98	50.58	3.46	15	0	0	0	586	3	3	3	1
333	Programmable Thermostat	Restaurant	4%	5%	6.51	66.11	63.39	4.30	12	0	0	0	3,797	0	0	18	1
400	Base Fan Motor, 7kW, 1800rpm, 87.5%	Restaurant	0%	0%	0.44	25.72	25.72	3.82	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
401	Fan Motor, 7kW, 1800rpm, 89.5%	Restaurant	2%	2%	0.17	25.72	25.14	3.74	15	0	0	0	218	3	4	2	1
402	Variable Speed Drive Control, 7kW	Restaurant	24%	30%	3.24	26.03	19.75	2.71	15	0	0	0	309	2	2	4	1
410	Base Fan Motor, 20kW, 1800rpm, 91.0%	Restaurant	0%	0%	0.34	23.84	23.84	3.54	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
411	Fan Motor, 20kW, 1800rpm, 92.4%	Restaurant	2%	2%	0.09	23.84	23.48	3.49	15	0	0	0	177	4	5	2	1
412	Variable Speed Drive Control, 20kW	Restaurant	24%	30%	1.80	24.13	18.31	2.51	15	1	0	0	186	3	4	2	1
413	Air Handler Optimization, 20kW	Restaurant	16%	20%	0.50	24.84	20.84	2.95	8	0	0	0	125	5	6	1	1

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Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Sq Ft	Base EUI	EUI	Peak Watts/ Sq Ft	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
500	Base Refrigeration System	Restaurant	0%	0%	0.00	108.35	108.35	12.99	10	0	0	N/A	N/A	N/A	N/A	N/A	N/A
501	High-efficiency fan motors	Restaurant	12%	12%	20.09	109.00	95.95	11.51	16	6	1	0	1,363	1	1	12	1
502	Strip curtains for walk-ins	Restaurant	4%	4%	0.86	109.67	105.26	12.62	4	1	0	0	562	2	2	1	1
503	Night covers for display cases	Restaurant	4%	6%	2.12	108.57	104.17	12.26	5	1	0	0	791	1	1	4	1
504	Evaporator fan controller for MT walk-ins	Restaurant	0%	1%	0.78	108.43	108.02	12.93	5	0	0	1	3,062	0	0	14	1
505	Efficient compressor motor	Restaurant	7%	7%	1.52	110.62	103.06	12.36	10	2	0	0	261	3	4	2	1
506	Compressor VSD retrofit	Restaurant	5%	6%	7.01	109.50	103.73	12.32	10	1	0	0	1,341	1	1	9	1
507	Floating head pressure controls	Restaurant	5%	7%	2.16	112.38	107.01	12.56	14	1	0	0	274	2	3	3	1
508	Refrigeration Commissioning	Restaurant	5%	5%	3.03	111.13	105.57	12.66	3	1	0	0	2,045	0	1	4	1
509	Demand Hot Gas Defrost	Restaurant	3%	3%	0.56	110.28	107.52	12.89	10	0	0	0	264	3	4	2	1
510	Demand Defrost Electric	Restaurant	8%	8%	0.56	108.77	100.33	12.03	10	4	0	0	86	11	13	1	1
511	Anti-sweat (humidistat) controls	Restaurant	4%	5%	2.79	109.51	104.87	12.48	12	2	0	0	562	1	2	5	1
610	Base Desktop PC	Restaurant	0%	0%	0.00	1.41	1.41	0.29	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
611	PC Manual Power Management Enabling	Restaurant	71%	68%	0.06	1.71	0.50	0.11	4	0	0	0	92	7	9	0	1
612	PC Network Power Management Enabling	Restaurant	71%	68%	0.03	1.71	0.50	0.11	4	0	0	0	46	13	18	0	1
620	Base Monitor, CRT	Restaurant	0%	0%	0.00	0.69	0.69	0.14	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
621	Energy Star or Better Monitor	Restaurant	56%	56%	0.00	1.49	0.65	0.13	4	0	0	0	0	99,999	99,999	0	N/A
622	Monitor Power Management Enabling	Restaurant	56%	53%	0.03	1.04	0.46	0.10	4	0	0	0	92	7	9	0	1
630	Base Monitor, LCD	Restaurant	0%	0%	0.00	0.06	0.06	0.01	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
631	Energy Star or Better Monitor	Restaurant	2%	2%	0.00	0.06	0.06	0.01	4	0	0	0	0	99,999	99,999	0	N/A
632	Monitor Power Management Enabling	Restaurant	29%	28%	0.03	0.07	0.05	0.01	4	0	0	1	2,961	0	0	13	1
640	Base Copier	Restaurant	0%	0%	0.00	3.95	3.95	0.81	6	0	0	N/A	N/A	N/A	N/A	N/A	N/A
641	Energy Star or Better Copier	Restaurant	21%	21%	0.00	4.84	3.85	0.79	6	0	0	0	0	99,999	99,999	0	N/A
642	Copier Power Management Enabling	Restaurant	20%	19%	0.28	4.24	3.38	0.70	6	0	0	0	399	2	2	2	1
650	Base Laser Printer	Restaurant	0%	0%	0.00	2.53	2.53	0.52	5	0	0	N/A	N/A	N/A	N/A	N/A	N/A
651	Printer Power Management Enabling	Restaurant	51%	49%	0.28	3.49	1.70	0.36	5	0	0	0	227	3	4	1	1
700	Base Split-system Heat Pump, 2.3 EER	Restaurant	0%	0%	0.00	13.15	13.15	0.00	18	0	0	N/A	N/A	N/A	N/A	N/A	N/A
701	3.5 EER Split-system Heat Pump	Restaurant	34%	34%	1.33	13.68	8.99	0.00	18	0	0	0	N/A	3	4	2	1
702	Tune Up/ Proper Refrigerant Charge	Restaurant	10%	10%	0.20	13.67	12.31	0.00	10	0	0	0	N/A	4	6	1	1
703	Programmable Thermostat	Restaurant	5%	5%	0.61	13.45	12.77	0.00	12	0	0	0	N/A	1	1	7	1
710	Base Electric Resistance Reheat Coils	Restaurant	0%	0%	0.00	38.14	38.14	0.00	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
711	BMS - Reheat Coils	Restaurant	10%	10%	2.00	38.71	34.84	0.00	10	0	0	0	N/A	1	2	4	1
712	BMS Optimization	Restaurant	20%	20%	0.50	38.49	30.79	0.00	5	1	0	0	N/A	5	9	0	1
720	Base Wall-mounted Fan Heater	Restaurant	0%	0%	0.00	42.37	42.37	0.00	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
721	Programmable Thermostat	Restaurant	5%	5%	3.28	43.04	40.88	0.00	12	0	0	0	N/A	0	1	12	1
800	Base Water Heating	Restaurant	0%	0%	0.00	41.13	41.13	4.69	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
801	Demand controlled circulating systems	Restaurant	5%	5%	0.83	41.84	39.75	4.53	15	0	0	0	388	2	3	3	1
803	High Efficiency Water Heater (electric)	Restaurant	2%	2%	0.20	41.19	40.37	4.60	15	0	0	0	237	4	5	2	1
804	Hot Water Pipe Insulation	Restaurant	2%	2%	0.36	41.34	40.51	4.62	15	0	0	0	419	2	3	3	1
805	Tankless Water Heater	Restaurant	10%	10%	1.62	41.41	37.27	4.25	20	1	0	0	324	3	3	3	1
910	Base Vending Machines	Restaurant	0%	0%	0.08	4.92	4.92	0.90	10	0	0	N/A	N/A	N/A	N/A	N/A	N/A
911	Vending Misers (cooled machines only)	Restaurant	41%	40%	0.37	4.92	2.90	0.54	10	0	0	0	158	4	5	1	1
110	Base Fluorescent Fixture, T12, 34W, EEMAG	Retail	0%	0%	0.00	44.35	44.35	7.06	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
113	RET Next Gen T8, EEMAG	Retail	15%	15%	2.17	44.35	37.70	6.00	23	14	2	0	179	4	4	2	1
114	RET Next Gen T8, 1EB	Retail	28%	28%	6.17	44.35	31.93	5.09	23	21	3	0	273	2	2	4	1
117	Occupancy Sensor	Retail	16%	20%	4.24	44.45	37.18	5.66	13	2	0	0	361	2	2	4	1
118	Continuous Dimming	Retail	46%	75%	47.44	44.57	24.12	1.77	17	5	1	0	931	1	0	18	1
120	Lighting Control Tuneup	Retail	4%	5%	0.27	44.39	42.54	6.72	6	2	0	0	181	3	5	1	1
130	Base Fluorescent Fixture, T8, 32W, EEMAG	Retail	0%	0%	0.00	39.99	39.99	6.37	23	0	0	N/A	N/A	N/A	N/A	N/A	N/A
133	RET Next Gen T8, 1EB	Retail	15%	15%	4.24	39.99	33.87	5.39	23	17	3	0	381	2	2	5	1
136	Occupancy Sensor	Retail	16%	20%	4.50	40.08	33.53	5.11	13	2	0	0	425	1	2	5	1
137	Continuous Dimming	Retail	46%	75%	50.32	40.18	21.75	1.60	17	7	2	0	1,095	0	0	21	1
139	Lighting Control Tuneup	Retail	4%	5%	0.27	40.02	38.36	6.06	6	2	0	0	201	3	4	1	1
150	Base Fluorescent Fixture, T8, 32W, EB	Retail	0%	0%	0.00	33.87	33.87	5.39	23	0	0	N/A	N/A	N/A	N/A	N/A	N/A
155	Occupancy Sensor	Retail	16%	20%	4.50	33.95	28.40	4.32	13	0	0	0	501	1	1	6	1
156	Continuous Dimming	Retail	46%	75%	50.32	34.04	18.42	1.36	17	1	0	0	1,293	0	0	25	1
157	Lighting Control Tuneup	Retail	4%	5%	0.27	33.90	32.49	5.13	6	0	0	0	237	3	3	1	1
160	Base Incandescent Flood, 75W to Screw-in CFL	Retail	0%	0%	1.54	164.65	164.65	26.22	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A
161	CFL Screw-in 18W	Retail	76%	76%	4.59	212.15	50.92	8.11	3	59	9	0	67	11	15	0	1
165	Base Incandescent Flood, 75W to Hardwired CFL	Retail	0%	0%	1.54	164.65	164.65	26.22	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A
166	CFL Hardwired, Modular 18W	Retail	76%	76%	70.80	196.21	47.09	7.50	7	20	3	0	645	1	1	4	1
170	Base Halogen Flood,50W	Retail	0%	0%	29.86	154.97	154.97	24.68	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A
172	RET - Efficient Halogen Flood, 35W	Retail	30%	30%	40.75	157.33	110.13	17.54	2	26	4	0	1,333	1	1	7	1
175	Base High Bay Metal Halide, 400W	Retail	0%	0%	7.13	31.08	31.08	4.95	8	0	0	N/A	N/A	N/A	N/A	N/A	N/A
176	High Bay T5	Retail	14%	15%	13.14	32.25	27.58	4.39	15	2	0	0	1,798	0	0	21	1
190	Base Exit Sign	Retail	0%	0%	0.00	0.21	0.21	0.03	16	0	0	N/A	N/A	N/A	N/A	N/A	N/A
220	Base Outdoor Mercury Vapor 400W Lamp	Retail	0%	0%	0.00	6.34	6.34	1.11	5	0	0	N/A	N/A	N/A	N/A	N/A	N/A
221	High Pressure Sodium 250W Lamp	Retail	35%	35%	0.16	7.21	4.68	0.82	5	3	1	0	92	7	10	0	1
222	Outdoor Lighting Controls (Photocell/Timeclock)	Retail	12%	22%	0.53	6.62	5.80	0.90	5	1	0	0	530	1	1	4	1
300	Base Centrifugal Chiller, 0.165 kW/kWt, 1750 kWt	Retail	0%	0%	4.98	11.77	11.77	0.42	20	0	0	N/A	N/A	N/A	N/A	N/A	N/A
301	Centrifugal Chiller, 0.15 kW/kWt, 1750 kWt	Retail	12%	12%	0.79	11.77	10.35	0.37	20	0	0	0	1,485	2	2	4	1

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Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Sq Ft	Base EUI	EUI	Peak Watts/ Sq Ft	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
303	BMS - Chiller	Retail	10%	10%	1.36	12.60	11.34	0.40	10	0	0	0	4,739	1	1	8	1
305	Chiller Tune Up/Diagnostics	Retail	7%	8%	1.66	12.19	11.34	0.40	10	0	0	0	7,468	0	0	15	1
306	VSD for Chiller Pumps and Towers	Retail	10%	10%	0.95	11.90	10.71	0.38	15	0	0	0	2,498	1	1	6	1
307	BMS Optimization	Retail	16%	20%	0.50	12.10	10.15	0.34	5	0	0	0	1,631	1	2	2	1
308	Economizer	Retail	17%	21%	3.85	13.81	11.47	0.39	15	0	0	0	4,153	1	1	12	1
310	Base DX Packaged System, EER=2.65, 35 kWt	Retail	0%	0%	15.21	20.29	20.29	0.72	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
311	DX Tune Up/ Advanced Diagnostics	Retail	5%	5%	2.07	20.89	19.91	0.70	10	0	0	0	8,717	0	0	16	1
312	DX Packaged System, EER=3.5, 35 kWt	Retail	24%	24%	0.61	20.29	15.36	0.54	15	4	0	0	387	7	9	1	1
315	Prog. Thermostat - DX	Retail	4%	5%	0.46	20.63	19.80	0.69	10	0	0	0	1,977	1	2	4	1
317	Optimize Controls	Retail	16%	20%	0.66	21.48	18.02	0.61	5	2	0	0	1,225	2	3	1	1
318	Economizer	Retail	22%	27%	3.85	25.06	19.61	0.65	15	0	0	0	1,780	1	2	5	1
320	Base Split-system Air Conditioner, EER=2.3	Retail	0%	0%	0.00	22.32	22.32	0.79	18	0	0	N/A	N/A	N/A	N/A	N/A	N/A
321	3.5 EER Split-system Air Conditioner	Retail	34%	34%	1.41	23.21	15.25	0.54	18	5	0	0	495	5	7	1	1
322	Tune Up/Proper Refrigerant Charge	Retail	9%	10%	0.22	24.20	21.93	0.77	10	0	0	0	392	6	9	1	1
324	Programmable Thermostat	Retail	4%	5%	0.65	22.78	21.86	0.77	12	0	0	0	2,116	1	1	5	1
330	Base Room Air Conditioner, EER=2.3	Retail	0%	0%	0.00	24.35	24.35	0.86	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
331	3.0 EER Room Air Conditioner	Retail	23%	23%	2.41	24.53	18.81	0.67	15	4	0	0	1,320	2	3	3	1
333	Programmable Thermostat	Retail	4%	5%	2.82	24.57	23.58	0.83	12	0	0	0	8,559	0	0	22	1
400	Base Fan Motor, 7kW, 1800rpm, 87.5%	Retail	0%	0%	0.31	23.59	23.59	3.68	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
401	Fan Motor, 7kW, 1800rpm, 89.5%	Retail	2%	2%	0.12	23.59	23.06	3.60	15	2	0	0	163	5	5	2	1
402	Variable Speed Drive Control, 7kW	Retail	24%	30%	2.32	23.88	18.04	2.61	15	4	1	0	230	3	3	3	1
610	Base Desktop PC	Retail	0%	0%	0.00	1.62	1.62	0.27	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
611	PC Manual Power Management Enabling	Retail	71%	68%	0.07	1.97	0.57	0.11	4	6	1	0	112	6	9	0	1
612	PC Network Power Management Enabling	Retail	71%	68%	0.04	1.97	0.57	0.11	4	6	1	0	56	13	19	0	1
620	Base Monitor, CRT	Retail	0%	0%	0.00	0.49	0.49	0.08	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
621	Energy Star or Better Monitor	Retail	56%	56%	0.00	1.06	0.46	0.08	4	0	0	0	0	99,999	99,999	0	N/A
622	Monitor Power Management Enabling	Retail	56%	53%	0.02	0.74	0.33	0.06	4	0	0	0	112	6	9	0	1
630	Base Monitor, LCD	Retail	0%	0%	0.00	0.09	0.09	0.01	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
631	Energy Star or Better Monitor	Retail	2%	2%	0.00	0.09	0.09	0.01	4	0	0	0	0	99,999	99,999	0	N/A
632	Monitor Power Management Enabling	Retail	29%	28%	0.05	0.11	0.07	0.01	4	0	0	1	3,616	0	0	13	1
640	Base Copier	Retail	0%	0%	0.00	4.53	4.53	0.76	6	0	0	N/A	N/A	N/A	N/A	N/A	N/A
641	Energy Star or Better Copier	Retail	21%	21%	0.00	5.56	4.42	0.74	6	1	0	0	0	99,999	99,999	0	N/A
642	Copier Power Management Enabling	Retail	20%	19%	0.32	4.87	3.88	0.65	6	3	0	0	488	1	2	2	1
650	Base Laser Printer	Retail	0%	0%	0.00	3.80	3.80	0.63	5	0	0	N/A	N/A	N/A	N/A	N/A	N/A
651	Printer Power Management Enabling	Retail	52%	49%	0.42	5.27	2.55	0.45	5	6	1	0	276	3	4	1	1
700	Base Split-system Heat Pump, 2.3 EER	Retail	0%	0%	0.00	6.59	6.59	1.72	18	0	0	N/A	N/A	N/A	N/A	N/A	N/A
701	3.5 EER Split-system Heat Pump	Retail	34%	34%	1.05	6.85	4.50	1.18	18	2	1	0	170	3	3	3	1
702	Tune Up/ Proper Refrigerant Charge	Retail	10%	10%	0.16	6.85	6.17	1.61	10	0	0	0	140	4	4	2	1
703	Programmable Thermostat	Retail	5%	5%	0.48	6.74	6.40	1.68	12	0	0	0	724	1	1	11	1
710	Base Electric Resistance Reheat Coils	Retail	0%	0%	0.00	19.11	19.11	5.00	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
711	BMS - Reheat Coils	Retail	10%	10%	2.00	19.40	17.46	4.57	10	1	0	0	614	1	1	8	1
712	BMS Optimization	Retail	20%	20%	0.50	19.29	15.43	4.04	5	3	1	0	139	4	4	1	1
720	Base Wall-mounted Fan Heater	Retail	0%	0%	0.00	21.23	21.23	5.56	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
721	Programmable Thermostat	Retail	5%	5%	2.60	21.57	20.49	5.36	12	1	0	0	1,215	0	0	18	1
800	Base Water Heating	Retail	0%	0%	0.00	3.03	3.03	0.48	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
801	Demand controlled circulating systems	Retail	5%	5%	0.21	3.08	2.93	0.47	15	0	0	0	945	1	1	10	1
803	High Efficiency Water Heater (electric)	Retail	2%	2%	0.10	3.03	2.97	0.47	15	0	0	0	1,112	1	1	12	1
804	Hot Water Pipe Insulation	Retail	2%	2%	0.17	3.04	2.98	0.47	15	0	0	0	1,969	0	0	21	1
805	Tankless Water Heater	Retail	10%	10%	0.78	3.05	2.74	0.44	20	1	0	0	1,525	0	0	19	1
910	Base Vending Machines	Retail	0%	0%	0.01	0.55	0.55	0.09	10	0	0	N/A	N/A	N/A	N/A	N/A	N/A
911	Vending Misers (cooled machines only)	Retail	40%	40%	0.04	0.58	0.34	0.06	10	0	0	0	172	4	5	1	1
110	Base Fluorescent Fixture, T12, 34W, EEMAG	FoodStore	0%	0%	0.00	50.65	50.65	7.01	10	0	0	N/A	N/A	N/A	N/A	N/A	N/A
113	RET Next Gen T8, EEMAG	FoodStore	15%	15%	1.65	50.65	43.05	5.96	16	7	1	0	172	5	5	2	1
114	RET Next Gen T8, 1EB	FoodStore	28%	28%	4.70	50.65	36.47	5.05	16	11	1	0	261	3	3	3	1
117	Occupancy Sensor	FoodStore	17%	20%	3.23	50.77	42.28	5.62	9	1	0	0	392	2	2	3	1
118	Continuous Dimming	FoodStore	48%	75%	36.12	50.91	26.47	1.76	11	6	1	0	964	1	1	11	1
120	Lighting Control Tuneup	FoodStore	4%	5%	0.27	50.70	48.65	6.67	6	0	0	0	182	4	5	1	1
130	Base Fluorescent Fixture, T8, 32W, EEMAG	FoodStore	0%	0%	0.00	45.67	45.67	6.32	16	0	0	N/A	N/A	N/A	N/A	N/A	N/A
133	RET Next Gen T8, 1EB	FoodStore	15%	15%	3.23	45.67	38.68	5.35	16	9	1	0	365	2	2	4	1
136	Occupancy Sensor	FoodStore	17%	20%	3.43	45.77	38.12	5.07	9	1	0	0	461	2	2	3	1
137	Continuous Dimming	FoodStore	48%	75%	38.31	45.90	23.86	1.59	11	8	2	0	1,134	1	1	13	1
139	Lighting Control Tuneup	FoodStore	4%	5%	0.27	45.71	43.87	6.01	6	1	0	0	202	3	4	1	1
150	Base Fluorescent Fixture, T8, 32W, EB	FoodStore	0%	0%	0.00	38.68	38.68	5.35	16	0	0	N/A	N/A	N/A	N/A	N/A	N/A
155	Occupancy Sensor	FoodStore	17%	20%	3.43	38.77	32.29	4.29	9	0	0	0	544	1	2	4	1
156	Continuous Dimming	FoodStore	48%	75%	38.31	38.88	20.21	1.35	11	2	0	0	1,339	0	0	15	1
157	Lighting Control Tuneup	FoodStore	4%	5%	0.27	38.72	37.16	5.09	6	0	0	0	238	3	4	1	1
160	Base Incandescent Flood, 75W to Screw-in CFL	FoodStore	0%	0%	1.17	188.03	188.03	26.03	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A
161	CFL Screw-in 18W	FoodStore	76%	76%	3.50	242.28	58.15	8.05	2	54	7	0	73	11	17	0	1
165	Base Incandescent Flood, 75W to Hardwired CFL	FoodStore	0%	0%	1.17	188.03	188.03	26.03	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A
166	CFL Hardwired, Modular 18W	FoodStore	76%	76%	53.90	224.08	53.78	7.45	4	19	3	0	698	1	2	2	1
170	Base Halogen Flood,50W	FoodStore	0%	0%	22.73	176.97	176.97	24.50	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A

COMMERCIAL EXISTING

DSM ASSYST SUMMARY

Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Sq Ft	Base EUI	EUI	Peak Watts/ Sq Ft	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
172	RET - Efficient Halogen Flood, 35W	FoodStore	30%	30%	31.03	179.67	125.77	17.41	1	13	2	0	1,294	1	1	3	1
175	Base High Bay Metal Halide, 400W	FoodStore	0%	0%	5.43	35.50	35.50	4.91	5	0	0	N/A	N/A	N/A	N/A	N/A	N/A
176	High Bay T5	FoodStore	15%	15%	10.00	36.83	31.49	4.36	10	1	0	0	1,657	0	1	14	1
190	Base Exit Sign	FoodStore	0%	0%	0.00	0.09	0.09	0.01	16	0	0	N/A	N/A	N/A	N/A	N/A	N/A
220	Base Outdoor Mercury Vapor 400W Lamp	FoodStore	0%	0%	0.00	10.40	10.40	1.74	5	0	0	N/A	N/A	N/A	N/A	N/A	N/A
221	High Pressure Sodium 250W Lamp	FoodStore	35%	35%	0.26	11.83	7.69	1.29	5	4	1	0	96	7	10	0	1
222	Outdoor Lighting Controls (Photocell/Timeclock)	FoodStore	13%	22%	0.87	10.89	9.47	1.42	5	1	0	0	553	1	1	4	1
300	Base Centrifugal Chiller, 0.165 kW/kWt, 1750 kWt	FoodStore	0%	0%	3.47	12.31	12.31	0.60	20	0	0	N/A	N/A	N/A	N/A	N/A	N/A
301	Centrifugal Chiller, 0.15 kW/kWt, 1750 kWt	FoodStore	12%	12%	0.55	12.31	10.83	0.53	20	0	0	0	715	3	3	3	1
303	BMS - Chiller	FoodStore	10%	10%	0.95	13.18	11.86	0.58	10	0	0	0	2,282	1	1	5	1
305	Chiller Tune Up/Diagnostics	FoodStore	7%	8%	1.66	12.75	11.87	0.58	10	0	0	0	5,158	0	0	14	1
306	VSD for Chiller Pumps and Towers	FoodStore	10%	10%	0.66	12.45	11.21	0.55	15	0	0	0	1,203	2	2	4	1
307	BMS Optimization	FoodStore	16%	20%	0.50	12.66	10.65	0.50	5	0	0	0	1,127	1	2	2	1
308	Economizer	FoodStore	0%	0%	2.68	12.31	12.31	0.60	15	0	0	30,426	N/A	0	0	2,077,022	1
310	Base DX Packaged System, EER=2.65, 35 kWt	FoodStore	0%	0%	10.61	21.23	21.23	1.04	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
311	DX Tune Up/ Advanced Diagnostics	FoodStore	5%	5%	2.07	21.86	20.84	1.02	10	0	0	0	6,019	0	0	15	1
312	DX Packaged System, EER=3.5, 35 kWt	FoodStore	24%	24%	0.42	21.23	16.07	0.79	15	1	0	0	186	11	13	1	1
315	Prog. Thermostat - DX	FoodStore	4%	5%	0.32	21.58	20.72	1.01	10	0	0	0	952	2	2	3	1
317	Optimize Controls	FoodStore	16%	20%	0.66	22.46	18.89	0.88	5	0	0	0	847	2	3	1	1
318	Economizer	FoodStore	2%	2%	2.68	21.53	21.19	1.03	15	0	0	1	14,095	0	0	59	1
320	Base Split-system Air Conditioner, EER=2.3	FoodStore	0%	0%	0.00	23.35	23.35	1.15	18	0	0	N/A	N/A	N/A	N/A	N/A	N/A
321	3.5 EER Split-system Air Conditioner	FoodStore	34%	34%	0.98	24.29	15.96	0.78	18	2	0	0	238	8	10	1	1
322	Tune Up/Proper Refrigerant Charge	FoodStore	9%	10%	0.15	25.31	22.95	1.12	10	0	0	0	189	10	14	0	1
324	Programmable Thermostat	FoodStore	4%	5%	0.45	23.82	22.88	1.11	12	0	0	0	1,019	2	2	4	1
330	Base Room Air Conditioner, EER=2.3	FoodStore	0%	0%	0.00	25.47	25.47	1.25	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
331	3.0 EER Room Air Conditioner	FoodStore	23%	23%	1.68	25.66	19.68	0.96	15	1	0	0	636	3	4	2	1
333	Programmable Thermostat	FoodStore	4%	5%	1.97	25.71	24.68	1.20	12	0	0	0	4,122	0	1	15	1
400	Base Fan Motor, 7kW, 1800rpm, 87.5%	FoodStore	0%	0%	0.35	36.34	36.34	5.15	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
401	Fan Motor, 7kW, 1800rpm, 89.5%	FoodStore	2%	2%	0.13	36.34	35.53	5.03	15	1	0	0	130	6	7	1	1
402	Variable Speed Drive Control, 7kW	FoodStore	24%	30%	2.60	36.79	27.90	3.65	15	0	0	0	184	4	4	2	1
410	Base Fan Motor, 20kW, 1800rpm, 91.0%	FoodStore	0%	0%	0.27	33.69	33.69	4.77	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
411	Fan Motor, 20kW, 1800rpm, 92.4%	FoodStore	2%	2%	0.07	33.69	33.18	4.70	15	0	0	0	106	8	8	1	1
412	Variable Speed Drive Control, 20kW	FoodStore	24%	30%	1.44	35.86	27.19	3.55	15	0	0	0	105	6	7	1	1
413	Air Handler Optimization, 20kW	FoodStore	16%	20%	0.50	35.10	29.45	3.98	8	1	0	0	92	7	9	1	1
420	Base Fan Motor, 54kW, 1800rpm, 93.0%	FoodStore	0%	0%	0.23	33.13	33.13	4.69	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
421	Fan Motor, 54kW, 1800rpm, 94.1%	FoodStore	1%	1%	0.06	33.13	32.74	4.64	15	0	0	0	124	6	7	1	1
422	Variable Speed Drive Control, 54kW	FoodStore	24%	30%	0.97	35.26	26.74	3.49	15	0	0	0	72	9	10	1	1
423	Air Handler Optimization, 54kW	FoodStore	16%	20%	0.50	34.52	28.96	3.91	8	1	0	0	94	7	9	1	1
500	Base Refrigeration System	FoodStore	0%	0%	0.00	271.58	271.58	31.10	10	0	0	N/A	N/A	N/A	N/A	N/A	N/A
501	High-efficiency fan motors	FoodStore	12%	12%	20.09	273.21	240.49	27.54	16	118	13	0	570	2	2	5	1
502	Strip curtains for walk-ins	FoodStore	4%	4%	0.86	274.89	263.84	30.22	4	29	3	0	235	4	6	1	1
503	Night covers for display cases	FoodStore	4%	6%	2.12	272.12	261.23	29.36	5	20	3	0	330	2	3	1	1
504	Evaporator fan controller for MT walk-ins	FoodStore	0%	1%	0.78	271.78	270.75	30.96	5	3	1	0	1,279	1	1	6	1
505	Efficient compressor motor	FoodStore	7%	7%	1.52	277.26	258.33	29.59	10	50	6	0	109	9	11	1	1
506	Compressor VSD retrofit	FoodStore	5%	6%	7.01	274.45	260.07	29.48	10	22	3	0	560	1	2	4	1
507	Floating head pressure controls	FoodStore	5%	7%	2.16	281.53	268.26	30.04	14	13	2	0	114	6	7	1	1
508	Refrigeration Commissioning	FoodStore	5%	5%	3.03	278.54	264.61	30.31	3	26	3	0	854	1	2	2	1
509	Demand Hot Gas Defrost	FoodStore	3%	3%	0.56	276.43	269.50	30.87	10	8	1	0	110	9	11	1	1
510	Demand Defrost Electric	FoodStore	8%	8%	0.56	272.64	251.47	28.80	10	76	9	0	36	26	34	0	1
511	Anti-sweat (humidistat) controls	FoodStore	4%	5%	2.79	274.47	262.89	29.87	12	33	4	0	235	3	4	2	1
610	Base Desktop PC	FoodStore	0%	0%	0.00	1.26	1.26	0.20	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
611	PC Manual Power Management Enabling	FoodStore	69%	68%	0.06	1.53	0.48	0.08	4	2	0	0	119	6	9	0	1
612	PC Network Power Management Enabling	FoodStore	69%	68%	0.03	1.53	0.48	0.08	4	2	0	0	59	12	18	0	1
620	Base Monitor, CRT	FoodStore	0%	0%	0.00	0.62	0.62	0.10	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
621	Energy Star or Better Monitor	FoodStore	56%	56%	0.00	1.33	0.58	0.09	4	0	0	0	0	99,999	99,999	0	N/A
622	Monitor Power Management Enabling	FoodStore	54%	53%	0.03	0.91	0.42	0.07	4	0	0	0	120	6	9	0	1
630	Base Monitor, LCD	FoodStore	0%	0%	0.00	0.05	0.05	0.01	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
631	Energy Star or Better Monitor	FoodStore	2%	2%	0.00	0.05	0.05	0.01	4	0	0	0	0	99,999	99,999	0	N/A
632	Monitor Power Management Enabling	FoodStore	28%	28%	0.03	0.06	0.04	0.01	4	0	0	1	3,817	0	0	13	1
640	Base Copier	FoodStore	0%	0%	0.00	3.37	3.37	0.54	6	0	0	N/A	N/A	N/A	N/A	N/A	N/A
641	Energy Star or Better Copier	FoodStore	21%	21%	0.00	4.13	3.28	0.52	6	0	0	0	0	99,999	99,999	0	N/A
642	Copier Power Management Enabling	FoodStore	20%	19%	0.24	3.61	2.90	0.46	6	1	0	0	513	1	2	3	1
650	Base Laser Printer	FoodStore	0%	0%	0.00	2.15	2.15	0.34	5	0	0	N/A	N/A	N/A	N/A	N/A	N/A
651	Printer Power Management Enabling	FoodStore	50%	49%	0.24	2.94	1.48	0.24	5	1	0	0	294	2	3	1	1
700	Base Split-system Heat Pump, 2.3 EER	FoodStore	0%	0%	0.00	20.70	20.70	0.89	18	0	0	N/A	N/A	N/A	N/A	N/A	N/A
701	3.5 EER Split-system Heat Pump	FoodStore	34%	34%	2.59	21.53	14.15	0.61	18	2	0	0	811	3	3	3	1
702	Tune Up/ Proper Refrigerant Charge	FoodStore	10%	10%	0.40	21.53	19.38	0.83	10	0	0	0	670	3	5	1	1
703	Programmable Thermostat	FoodStore	5%	5%	1.19	21.17	20.11	0.86	12	0	0	0	3,460	1	1	9	1
720	Base Wall-mounted Fan Heater	FoodStore	0%	0%	0.00	66.71	66.71	2.86	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
721	Programmable Thermostat	FoodStore	5%	5%	6.39	67.76	64.37	2.76	12	1	0	0	5,806	0	1	14	1
800	Base Water Heating	FoodStore	0%	0%	0.00	15.46	15.46	2.35	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A

DSM ASSYST SUMMARY

Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Sq Ft	Base EUI	EUI	Peak Watts/ Sq Ft	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
801	Demand controlled circulating systems	FoodStore	5%	5%	0.21	15.73	14.94	2.27	15	1	0	0	193	4	4	2	1
803	High Efficiency Water Heater (electric)	FoodStore	2%	2%	0.16	15.48	15.17	2.31	15	1	0	0	370	2	2	4	1
804	Hot Water Pipe Insulation	FoodStore	2%	2%	0.28	15.54	15.23	2.32	15	0	0	0	655	1	1	7	1
805	Tankless Water Heater	FoodStore	10%	10%	1.27	15.56	14.01	2.13	20	2	0	0	507	1	1	6	1
110	Base Fluorescent Fixture, T12, 34W, EEMAG	Schools/Colleges	0%	0%	0.00	22.51	22.51	2.32	22	0	0	N/A	N/A	N/A	N/A	N/A	N/A
113	RET Next Gen T8, EEMAG	Schools/Colleges	15%	15%	1.65	22.51	19.13	1.97	35	5	1	0	366	2	2	4	1
114	RET Next Gen T8, 1EB	Schools/Colleges	28%	28%	4.70	22.51	16.21	1.67	35	8	1	0	558	2	2	6	1
117	Occupancy Sensor	Schools/Colleges	16%	20%	3.23	22.56	19.03	1.86	20	3	0	0	655	1	1	7	1
118	Continuous Dimming	Schools/Colleges	41%	75%	36.12	22.61	13.28	0.58	25	4	1	0	1,771	0	0	29	1
120	Lighting Control Tuneup	Schools/Colleges	4%	5%	0.27	22.53	21.52	2.21	6	0	0	0	550	2	2	2	1
130	Base Fluorescent Fixture, T8, 32W, EEMAG	Schools/Colleges	0%	0%	0.00	20.30	20.30	2.09	35	0	0	N/A	N/A	N/A	N/A	N/A	N/A
133	RET Next Gen T8, 1EB	Schools/Colleges	15%	15%	3.23	20.30	17.19	1.77	35	6	1	0	779	1	1	8	1
136	Occupancy Sensor	Schools/Colleges	16%	20%	3.43	20.34	17.15	1.68	20	3	0	0	771	1	1	8	1
137	Continuous Dimming	Schools/Colleges	41%	75%	38.31	20.38	11.97	0.53	25	5	1	0	2,084	0	0	34	1
139	Lighting Control Tuneup	Schools/Colleges	4%	5%	0.27	20.32	19.40	1.99	6	0	0	0	610	2	2	2	1
150	Base Fluorescent Fixture, T8, 32W, EB	Schools/Colleges	0%	0%	0.00	17.19	17.19	1.77	35	0	0	N/A	N/A	N/A	N/A	N/A	N/A
155	Occupancy Sensor	Schools/Colleges	16%	20%	3.43	17.23	14.53	1.42	20	1	0	0	910	1	1	10	1
156	Continuous Dimming	Schools/Colleges	41%	75%	38.31	17.27	10.14	0.45	25	1	0	0	2,460	0	0	41	1
157	Lighting Control Tuneup	Schools/Colleges	4%	5%	0.27	17.21	16.44	1.69	6	0	0	0	720	1	2	3	1
160	Base Incandescent Flood, 75W to Screw-in CFL	Schools/Colleges	0%	0%	1.17	83.57	83.57	8.62	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A
161	CFL Screw-in 18W	Schools/Colleges	76%	76%	3.50	107.07	25.70	2.65	4	71	7	0	109	9	14	0	1
165	Base Incandescent Flood, 75W to Hardwired CFL	Schools/Colleges	0%	0%	1.17	83.57	83.57	8.62	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A
166	CFL Hardwired, Modular 18W	Schools/Colleges	76%	76%	53.90	83.62	20.07	2.07	10	26	3	0	1,270	1	1	6	1
170	Base Halogen Flood,50W	Schools/Colleges	0%	0%	22.73	78.65	78.65	8.12	2	0	0	N/A	N/A	N/A	N/A	N/A	N/A
172	RET - Efficient Halogen Flood, 35W	Schools/Colleges	30%	30%	31.03	79.85	55.90	5.77	3	0	0	0	2,376	0	1	10	1
175	Base High Bay Metal Halide, 400W	Schools/Colleges	0%	0%	5.43	15.78	15.78	1.63	12	0	0	N/A	N/A	N/A	N/A	N/A	N/A
176	High Bay T5	Schools/Colleges	15%	15%	10.00	16.37	14.00	1.44	22	2	0	0	3,610	0	0	31	1
190	Base Exit Sign	Schools/Colleges	0%	0%	0.00	0.15	0.15	0.02	16	0	0	N/A	N/A	N/A	N/A	N/A	N/A
220	Base Outdoor Mercury Vapor 400W Lamp	Schools/Colleges	0%	0%	0.00	9.42	9.42	2.01	5	0	0	N/A	N/A	N/A	N/A	N/A	N/A
221	High Pressure Sodium 250W Lamp	Schools/Colleges	35%	35%	0.23	10.71	6.96	1.48	5	9	2	0	75	8	10	0	1
222	Outdoor Lighting Controls (Photocell/Timeclock)	Schools/Colleges	13%	22%	0.79	9.85	8.62	1.63	5	3	1	0	436	1	1	4	1
300	Base Centrifugal Chiller, 0.165 kW/kWt, 1750 kWt	Schools/Colleges	0%	0%	3.07	4.85	4.85	0.04	20	0	0	N/A	N/A	N/A	N/A	N/A	N/A
301	Centrifugal Chiller, 0.15 kW/kWt, 1750 kWt	Schools/Colleges	12%	12%	0.49	4.85	4.26	0.04	20	0	0	0	8,893	1	1	6	1
303	BMS - Chiller	Schools/Colleges	10%	10%	0.84	5.19	4.67	0.04	10	0	0	0	28,377	0	1	12	1
305	Chiller Tune Up/Diagnostics	Schools/Colleges	8%	8%	1.66	5.04	4.65	0.04	10	0	0	1	72,082	0	0	32	1
306	VSD for Chiller Pumps and Towers	Schools/Colleges	10%	10%	0.59	4.90	4.41	0.04	15	0	0	0	14,960	1	1	9	1
307	BMS Optimization	Schools/Colleges	19%	20%	0.50	5.01	4.04	0.04	5	0	0	0	15,724	1	1	4	1
308	Economizer	Schools/Colleges	12%	12%	2.38	5.39	4.77	0.04	15	0	0	0	45,873	0	0	29	1
310	Base DX Packaged System, EER=2.65, 35 kWt	Schools/Colleges	0%	0%	9.39	8.35	8.35	0.07	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
311	DX Tune Up/ Advanced Diagnostics	Schools/Colleges	5%	5%	2.07	8.62	8.19	0.07	10	0	0	1	84,374	0	0	37	1
312	DX Packaged System, EER=3.5, 35 kWt	Schools/Colleges	24%	24%	0.38	8.35	6.33	0.06	15	1	0	0	2,318	4	6	1	1
315	Prog. Thermostat - DX	Schools/Colleges	5%	5%	0.29	8.52	8.11	0.07	10	0	0	0	11,799	1	1	5	1
317	Optimize Controls	Schools/Colleges	19%	20%	0.66	8.95	7.21	0.06	5	0	0	0	11,739	1	1	3	1
318	Economizer	Schools/Colleges	12%	12%	2.38	9.30	8.22	0.07	15	0	0	0	26,606	0	1	17	1
320	Base Split-system Air Conditioner, EER=2.3	Schools/Colleges	0%	0%	0.00	9.19	9.19	0.08	18	0	0	N/A	N/A	N/A	N/A	N/A	N/A
321	3.5 EER Split-system Air Conditioner	Schools/Colleges	34%	34%	0.87	9.56	6.28	0.06	18	1	0	0	2,964	3	4	2	1
322	Tune Up/Proper Refrigerant Charge	Schools/Colleges	10%	10%	0.13	10.01	9.02	0.08	10	0	0	0	2,336	4	7	1	1
324	Programmable Thermostat	Schools/Colleges	5%	5%	0.40	9.42	8.96	0.08	12	0	0	0	12,617	1	1	7	1
330	Base Room Air Conditioner, EER=2.3	Schools/Colleges	0%	0%	0.00	10.02	10.02	0.09	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
331	3.0 EER Room Air Conditioner	Schools/Colleges	23%	23%	1.49	10.10	7.74	0.07	15	1	0	0	7,903	1	2	5	1
333	Programmable Thermostat	Schools/Colleges	5%	5%	1.74	10.14	9.64	0.09	12	0	0	0	51,155	0	0	27	1
400	Base Fan Motor, 7kW, 1800rpm, 87.5%	Schools/Colleges	0%	0%	0.31	5.50	5.50	0.28	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
401	Fan Motor, 7kW, 1800rpm, 89.5%	Schools/Colleges	2%	2%	0.12	5.50	5.38	0.27	15	0	0	0	2,124	1	1	7	1
402	Variable Speed Drive Control, 7kW	Schools/Colleges	29%	30%	2.29	5.58	3.99	0.20	15	1	0	0	3,002	1	1	11	1
410	Base Fan Motor, 20kW, 1800rpm, 91.0%	Schools/Colleges	0%	0%	0.24	5.10	5.10	0.26	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
411	Fan Motor, 20kW, 1800rpm, 92.4%	Schools/Colleges	2%	2%	0.06	5.10	5.02	0.25	15	0	0	0	1,723	1	1	6	1
412	Variable Speed Drive Control, 20kW	Schools/Colleges	29%	30%	1.28	5.95	4.25	0.21	15	1	0	0	1,566	1	1	6	1
413	Air Handler Optimization, 20kW	Schools/Colleges	19%	20%	0.50	5.35	4.33	0.22	8	1	0	0	1,696	1	2	4	1
610	Base Desktop PC	Schools/Colleges	0%	0%	0.00	6.89	6.89	0.51	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
611	PC Manual Power Management Enabling	Schools/Colleges	71%	68%	0.31	8.38	2.41	0.20	4	27	2	0	254	6	9	0	1
612	PC Network Power Management Enabling	Schools/Colleges	71%	68%	0.16	8.38	2.41	0.20	4	27	2	0	127	11	19	0	1
620	Base Monitor, CRT	Schools/Colleges	0%	0%	0.00	4.35	4.35	0.32	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
621	Energy Star or Better Monitor	Schools/Colleges	56%	56%	0.00	9.32	4.09	0.30	4	0	0	0	0	99,999	99,999	0	N/A
622	Monitor Power Management Enabling	Schools/Colleges	56%	53%	0.19	6.54	2.89	0.23	4	1	0	0	254	6	9	0	1
630	Base Monitor, LCD	Schools/Colleges	0%	0%	0.00	0.20	0.20	0.01	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
631	Energy Star or Better Monitor	Schools/Colleges	2%	2%	0.00	0.21	0.20	0.01	4	0	0	0	0	99,999	99,999	0	N/A
632	Monitor Power Management Enabling	Schools/Colleges	29%	28%	0.12	0.25	0.17	0.01	4	0	0	1	8,168	0	0	13	1
640	Base Copier	Schools/Colleges	0%	0%	0.00	6.38	6.38	0.47	6	0	0	N/A	N/A	N/A	N/A	N/A	N/A
641	Energy Star or Better Copier	Schools/Colleges	21%	21%	0.00	7.83	6.22	0.46	6	1	0	0	0	99,999	99,999	0	N/A
642	Copier Power Management Enabling	Schools/Colleges	20%	19%	0.46	6.86	5.46	0.41	6	6	0	0	1,103	1	2	2	1
650	Base Laser Printer	Schools/Colleges	0%	0%	0.00	6.35	6.35	0.47	5	0	0	N/A	N/A	N/A	N/A	N/A	N/A

COMMERCIAL EXISTING

DSM ASSYST SUMMARY

Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Sq Ft	Base EUI	EUI	Peak Watts/ Sq Ft	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
651	Printer Power Management Enabling	Schools/Colleges	51%	49%	0.71	8.80	4.27	0.33	5	11	1	0	624	2	4	1	1
700	Base Split-system Heat Pump, 2.3 EER	Schools/Colleges	0%	0%	0.00	10.93	10.93	3.21	18	0	0	N/A	N/A	N/A	N/A	N/A	N/A
701	3.5 EER Split-system Heat Pump	Schools/Colleges	34%	34%	1.43	11.36	7.47	2.19	18	3	1	0	124	4	3	3	1
702	Tune Up/ Proper Refrigerant Charge	Schools/Colleges	10%	10%	0.22	11.36	10.23	3.00	10	1	0	0	102	5	5	1	1
703	Programmable Thermostat	Schools/Colleges	5%	5%	0.66	11.17	10.61	3.12	12	0	0	0	529	1	1	9	1
710	Base Electric Resistance Reheat Coils	Schools/Colleges	0%	0%	0.00	31.68	31.68	9.30	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
711	BMS - Reheat Coils	Schools/Colleges	10%	10%	2.00	32.16	28.95	8.50	10	6	2	0	330	1	1	5	1
712	BMS Optimization	Schools/Colleges	20%	20%	0.50	31.98	25.58	7.51	5	13	4	0	75	6	7	1	1
720	Base Wall-mounted Fan Heater	Schools/Colleges	0%	0%	0.00	35.20	35.20	10.33	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
721	Programmable Thermostat	Schools/Colleges	5%	5%	3.53	35.76	33.97	9.97	12	3	1	0	888	1	1	15	1
800	Base Water Heating	Schools/Colleges	0%	0%	0.00	5.42	5.42	0.42	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
801	Demand controlled circulating systems	Schools/Colleges	5%	5%	0.21	5.51	5.24	0.41	15	1	0	0	1,081	1	1	6	1
803	High Efficiency Water Heater (electric)	Schools/Colleges	2%	2%	0.19	5.43	5.32	0.41	15	1	0	0	2,475	1	1	13	1
804	Hot Water Pipe Insulation	Schools/Colleges	2%	2%	0.33	5.45	5.34	0.41	15	0	0	0	4,383	0	0	23	1
805	Tankless Water Heater	Schools/Colleges	10%	10%	1.52	5.46	4.91	0.38	20	3	0	0	3,394	0	0	21	1
910	Base Vending Machines	Schools/Colleges	0%	0%	0.04	2.46	2.46	0.13	10	0	0	N/A	N/A	N/A	N/A	N/A	N/A
911	Vending Misers (cooled machines only)	Schools/Colleges	44%	40%	0.18	2.46	1.37	0.08	10	1	0	0	553	4	5	1	1
110	Base Fluorescent Fixture, T12, 34W, EEMAG	Tertiary Education	0%	0%	0.00	28.14	28.14	2.64	18	0	0	N/A	N/A	N/A	N/A	N/A	N/A
113	RET Next Gen T8, EEMAG	Tertiary Education	15%	15%	1.65	28.14	23.92	2.24	28	1	0	0	344	3	3	3	1
114	RET Next Gen T8, 1EB	Tertiary Education	28%	28%	4.70	28.14	20.26	1.90	28	2	0	0	524	2	2	5	1
117	Occupancy Sensor	Tertiary Education	16%	20%	3.23	28.20	23.61	2.11	16	1	0	0	650	1	2	5	1
118	Continuous Dimming	Tertiary Education	45%	75%	36.12	28.27	15.57	0.66	20	1	0	0	1,716	0	0	22	1
120	Lighting Control Tuneup	Tertiary Education	4%	5%	0.27	28.17	26.98	2.51	6	0	0	0	485	2	3	2	1
130	Base Fluorescent Fixture, T8, 32W, EEMAG	Tertiary Education	0%	0%	0.00	25.37	25.37	2.38	28	0	0	N/A	N/A	N/A	N/A	N/A	N/A
133	RET Next Gen T8, 1EB	Tertiary Education	15%	15%	3.23	25.37	21.49	2.01	28	2	0	0	732	1	1	6	1
136	Occupancy Sensor	Tertiary Education	16%	20%	3.43	25.43	21.29	1.91	16	1	0	0	765	1	1	6	1
137	Continuous Dimming	Tertiary Education	45%	75%	38.31	25.49	14.04	0.60	20	2	0	0	2,019	0	0	25	1
139	Lighting Control Tuneup	Tertiary Education	4%	5%	0.27	25.39	24.32	2.26	6	0	0	0	537	2	3	2	1
150	Base Fluorescent Fixture, T8, 32W, EB	Tertiary Education	0%	0%	0.00	21.49	21.49	2.01	28	0	0	N/A	N/A	N/A	N/A	N/A	N/A
155	Occupancy Sensor	Tertiary Education	16%	20%	3.43	21.54	18.03	1.61	16	0	0	0	903	1	1	7	1
156	Continuous Dimming	Tertiary Education	45%	75%	38.31	21.59	11.89	0.51	20	0	0	0	2,384	0	0	30	1
157	Lighting Control Tuneup	Tertiary Education	4%	5%	0.27	21.51	20.60	1.91	6	0	0	0	634	2	2	2	1
160	Base Incandescent Flood, 75W to Screw-in CFL	Tertiary Education	0%	0%	1.17	104.46	104.46	9.79	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A
161	CFL Screw-in 18W	Tertiary Education	76%	76%	3.50	178.69	42.88	4.02	3	7	1	0	85	13	20	0	1
165	Base Incandescent Flood, 75W to Hardwired CFL	Tertiary Education	0%	0%	1.17	104.46	104.46	9.79	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A
166	CFL Hardwired, Modular 18W	Tertiary Education	76%	76%	53.90	109.46	26.27	2.46	8	3	0	0	1,266	1	1	5	1
170	Base Halogen Flood,50W	Tertiary Education	0%	0%	22.73	98.32	98.32	9.21	2	0	0	N/A	N/A	N/A	N/A	N/A	N/A
172	RET - Efficient Halogen Flood, 35W	Tertiary Education	30%	30%	31.03	99.82	69.87	6.54	2	3	0	0	2,266	0	1	7	1
175	Base High Bay Metal Halide, 400W	Tertiary Education	0%	0%	5.43	19.72	19.72	1.85	10	0	0	N/A	N/A	N/A	N/A	N/A	N/A
176	High Bay T5	Tertiary Education	14%	15%	10.00	20.46	17.50	1.64	18	0	0	0	3,476	0	0	26	1
190	Base Exit Sign	Tertiary Education	0%	0%	0.00	0.23	0.23	0.02	16	0	0	N/A	N/A	N/A	N/A	N/A	N/A
220	Base Outdoor Mercury Vapor 400W Lamp	Tertiary Education	0%	0%	0.00	7.15	7.15	1.60	5	0	0	N/A	N/A	N/A	N/A	N/A	N/A
221	High Pressure Sodium 250W Lamp	Tertiary Education	35%	35%	0.18	8.13	5.28	1.18	5	2	0	0	71	8	10	0	1
222	Outdoor Lighting Controls (Photocell/Timeclock)	Tertiary Education	12%	22%	0.60	7.46	6.55	1.30	5	0	0	0	414	1	1	5	1
300	Base Centrifugal Chiller, 0.165 kW/kWt, 1750 kWt	Tertiary Education	0%	0%	8.93	17.59	17.59	0.89	20	0	0	N/A	N/A	N/A	N/A	N/A	N/A
301	Centrifugal Chiller, 0.15 kW/kWt, 1750 kWt	Tertiary Education	12%	12%	1.42	17.59	15.47	0.79	20	0	0	0	1,243	2	2	5	1
303	BMS - Chiller	Tertiary Education	10%	10%	2.43	18.83	16.95	0.86	10	0	0	0	3,966	0	1	10	1
305	Chiller Tune Up/Diagnostics	Tertiary Education	7%	8%	1.66	18.25	16.94	0.85	10	0	0	0	3,480	1	1	10	1
306	VSD for Chiller Pumps and Towers	Tertiary Education	10%	10%	1.70	17.80	16.02	0.81	15	0	0	0	2,091	1	1	7	1
307	BMS Optimization	Tertiary Education	17%	20%	0.50	18.12	15.04	0.74	5	0	0	0	760	2	4	1	1
308	Economizer	Tertiary Education	16%	19%	6.90	20.49	17.18	0.84	15	0	0	0	3,872	0	1	16	1
310	Base DX Packaged System, EER=2.65, 35 kWt	Tertiary Education	0%	0%	27.28	30.33	30.33	1.54	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
311	DX Tune Up/ Advanced Diagnostics	Tertiary Education	5%	5%	2.07	31.25	29.76	1.51	10	0	0	0	4,065	0	1	11	1
312	DX Packaged System, EER=3.5, 35 kWt	Tertiary Education	24%	24%	1.09	30.33	22.97	1.17	15	0	0	0	324	6	7	1	1
315	Prog. Thermostat - DX	Tertiary Education	4%	5%	0.83	30.87	29.56	1.49	10	0	0	0	1,653	1	1	5	1
317	Optimize Controls	Tertiary Education	17%	20%	0.66	32.22	26.74	1.31	5	0	0	0	570	3	5	1	1
318	Economizer	Tertiary Education	3%	4%	6.90	31.26	30.20	1.52	15	0	0	1	12,052	0	0	49	1
320	Base Split-system Air Conditioner, EER=2.3	Tertiary Education	0%	0%	0.00	33.37	33.37	1.69	18	0	0	N/A	N/A	N/A	N/A	N/A	N/A
321	3.5 EER Split-system Air Conditioner	Tertiary Education	34%	34%	2.52	34.70	22.81	1.16	18	1	0	0	414	5	5	2	1
322	Tune Up/Proper Refrigerant Charge	Tertiary Education	10%	10%	0.39	36.22	32.78	1.66	10	0	0	0	328	6	8	1	1
324	Programmable Thermostat	Tertiary Education	4%	5%	1.16	34.09	32.64	1.64	12	0	0	0	1,769	1	1	6	1
330	Base Room Air Conditioner, EER=2.3	Tertiary Education	0%	0%	0.00	36.40	36.40	1.85	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
331	3.0 EER Room Air Conditioner	Tertiary Education	23%	23%	4.33	36.67	28.11	1.43	15	1	0	0	1,105	2	2	4	1
333	Programmable Thermostat	Tertiary Education	4%	5%	5.06	36.75	35.19	1.77	12	0	0	0	7,160	0	0	25	1
400	Base Fan Motor, 7kW, 1800rpm, 87.5%	Tertiary Education	0%	0%	0.87	43.84	43.84	4.98	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
401	Fan Motor, 7kW, 1800rpm, 89.5%	Tertiary Education	2%	2%	0.33	43.84	42.86	4.86	15	1	0	0	333	3	3	3	1
402	Variable Speed Drive Control, 7kW	Tertiary Education	25%	30%	6.43	44.39	33.24	3.53	15	2	0	0	472	2	2	4	1
410	Base Fan Motor, 20kW, 1800rpm, 91.0%	Tertiary Education	0%	0%	0.67	40.63	40.63	4.61	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
411	Fan Motor, 20kW, 1800rpm, 92.4%	Tertiary Education	2%	2%	0.17	40.63	40.02	4.54	15	0	0	0	270	4	4	2	1
412	Variable Speed Drive Control, 20kW	Tertiary Education	25%	30%	3.58	46.47	34.80	3.69	15	2	0	0	251	3	4	2	1
413	Air Handler Optimization, 20kW	Tertiary Education	17%	20%	0.50	42.41	35.31	3.85	8	2	0	0	95	9	11	1	1

DSM ASSYST SUMMARY

Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Sq Ft	Base EUI	EUI	Peak Watts/ Sq Ft	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
420	Base Fan Motor, 54kW, 1800rpm, 93.0%	Tertiary Education	0%	0%	0.56	39.96	39.96	4.54	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
421	Fan Motor, 54kW, 1800rpm, 94.1%	Tertiary Education	1%	1%	0.15	39.96	39.49	4.48	15	0	0	0	318	3	3	2	1
422	Variable Speed Drive Control, 54kW	Tertiary Education	25%	30%	2.39	45.70	34.22	3.63	15	1	0	0	170	5	5	2	1
423	Air Handler Optimization, 54kW	Tertiary Education	17%	20%	0.50	41.71	34.72	3.79	8	1	0	0	97	8	11	1	1
610	Base Desktop PC	Tertiary Education	0%	0%	0.00	1.02	1.02	0.10	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
611	PC Manual Power Management Enabling	Tertiary Education	68%	68%	0.05	1.22	0.39	0.04	4	1	0	0	199	6	9	0	1
612	PC Network Power Management Enabling	Tertiary Education	68%	68%	0.02	1.22	0.39	0.04	4	1	0	0	100	11	18	0	1
620	Base Monitor, CRT	Tertiary Education	0%	0%	0.00	0.38	0.38	0.04	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
621	Energy Star or Better Monitor	Tertiary Education	56%	56%	0.00	0.81	0.35	0.03	4	0	0	0	0	99,999	99,999	0	N/A
622	Monitor Power Management Enabling	Tertiary Education	53%	53%	0.02	0.55	0.26	0.02	4	0	0	0	202	5	9	0	1
630	Base Monitor, LCD	Tertiary Education	0%	0%	0.00	0.05	0.05	0.00	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
631	Energy Star or Better Monitor	Tertiary Education	2%	2%	0.00	0.05	0.05	0.00	4	0	0	0	0	99,999	99,999	0	N/A
632	Monitor Power Management Enabling	Tertiary Education	28%	28%	0.03	0.06	0.04	0.00	4	0	0	1	6,414	0	0	13	1
640	Base Copier	Tertiary Education	0%	0%	0.00	1.54	1.54	0.15	6	0	0	N/A	N/A	N/A	N/A	N/A	N/A
641	Energy Star or Better Copier	Tertiary Education	21%	21%	0.00	1.89	1.50	0.14	6	0	0	0	0	99,999	99,999	0	N/A
642	Copier Power Management Enabling	Tertiary Education	19%	19%	0.11	1.65	1.33	0.13	6	0	0	0	861	1	2	3	1
650	Base Laser Printer	Tertiary Education	0%	0%	0.00	1.39	1.39	0.13	5	0	0	N/A	N/A	N/A	N/A	N/A	N/A
651	Printer Power Management Enabling	Tertiary Education	49%	49%	0.15	1.89	0.96	0.09	5	0	0	0	494	2	3	1	1
700	Base Split-system Heat Pump, 2.3 EER	Tertiary Education	0%	0%	0.00	29.96	29.96	4.23	18	0	0	N/A	N/A	N/A	N/A	N/A	N/A
701	3.5 EER Split-system Heat Pump	Tertiary Education	34%	34%	3.92	31.16	20.48	2.89	18	4	1	0	258	3	3	3	1
702	Tune Up/ Proper Refrigerant Charge	Tertiary Education	10%	10%	0.60	31.16	28.04	3.96	10	1	0	0	213	4	5	1	1
703	Programmable Thermostat	Tertiary Education	5%	5%	1.80	30.64	29.11	4.11	12	0	0	0	1,101	1	1	9	1
710	Base Electric Resistance Reheat Coils	Tertiary Education	0%	0%	0.00	86.89	86.89	12.26	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
711	BMS - Reheat Coils	Tertiary Education	10%	10%	2.00	88.21	79.39	11.20	10	1	0	0	250	3	4	2	1
712	BMS Optimization	Tertiary Education	20%	20%	0.50	87.70	70.16	9.90	5	3	0	0	57	14	20	0	1
720	Base Wall-mounted Fan Heater	Tertiary Education	0%	0%	0.00	96.54	96.54	13.62	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
721	Programmable Thermostat	Tertiary Education	5%	5%	9.69	98.06	93.15	13.14	12	2	0	0	1,848	0	1	15	1
800	Base Water Heating	Tertiary Education	0%	0%	0.00	9.16	9.16	0.48	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
801	Demand controlled circulating systems	Tertiary Education	5%	5%	0.08	9.32	8.85	0.47	15	0	0	0	376	5	6	1	1
803	High Efficiency Water Heater (electric)	Tertiary Education	2%	2%	0.19	9.17	8.99	0.48	15	0	0	0	2,152	1	1	8	1
804	Hot Water Pipe Insulation	Tertiary Education	2%	2%	0.33	9.21	9.02	0.48	15	0	0	0	3,811	0	1	14	1
805	Tankless Water Heater	Tertiary Education	10%	10%	1.52	9.22	8.30	0.44	20	1	0	0	2,951	1	1	13	1
910	Base Vending Machines	Tertiary Education	0%	0%	0.02	1.30	1.30	0.11	10	0	0	N/A	N/A	N/A	N/A	N/A	N/A
911	Vending Misers (cooled machines only)	Tertiary Education	40%	40%	0.10	1.30	0.78	0.07	10	0	0	0	341	4	5	1	1
110	Base Fluorescent Fixture, T12, 34W, EEMAG	Hospital	0%	0%	0.00	37.59	37.59	5.03	11	0	0	N/A	N/A	N/A	N/A	N/A	N/A
113	RET Next Gen T8, EEMAG	Hospital	15%	15%	1.38	37.59	31.95	4.27	18	9	1	0	187	4	5	2	1
114	RET Next Gen T8, 1EB	Hospital	28%	28%	3.92	37.59	27.06	3.62	18	13	2	0	284	3	3	3	1
117	Occupancy Sensor	Hospital	17%	20%	2.70	37.67	31.40	4.03	10	5	1	0	417	2	2	3	1
118	Continuous Dimming	Hospital	48%	75%	30.15	37.78	19.80	1.26	12	3	1	0	1,009	1	1	12	1
120	Lighting Control Tuneup	Hospital	4%	5%	0.27	37.62	36.10	4.78	6	1	0	0	254	3	4	1	1
130	Base Fluorescent Fixture, T8, 32W, EEMAG	Hospital	0%	0%	0.00	33.89	33.89	4.53	18	0	0	N/A	N/A	N/A	N/A	N/A	N/A
133	RET Next Gen T8, 1EB	Hospital	15%	15%	2.70	33.89	28.71	3.84	18	6	1	0	397	2	2	4	1
136	Occupancy Sensor	Hospital	17%	20%	2.86	33.97	28.31	3.63	10	3	1	0	491	1	2	4	1
137	Continuous Dimming	Hospital	48%	75%	31.99	34.06	17.85	1.14	12	2	0	0	1,187	0	1	14	1
139	Lighting Control Tuneup	Hospital	4%	5%	0.27	33.92	32.55	4.31	6	1	0	0	282	2	3	1	1
150	Base Fluorescent Fixture, T8, 32W, EB	Hospital	0%	0%	0.00	28.71	28.71	3.84	18	0	0	N/A	N/A	N/A	N/A	N/A	N/A
155	Occupancy Sensor	Hospital	17%	20%	2.86	28.77	23.98	3.08	10	1	0	0	580	1	1	5	1
156	Continuous Dimming	Hospital	48%	75%	31.99	28.85	15.12	0.96	12	0	0	0	1,401	0	0	17	1
157	Lighting Control Tuneup	Hospital	4%	5%	0.27	28.73	27.57	3.65	6	0	0	0	333	2	3	2	1
160	Base Incandescent Flood, 75W to Screw-in CFL	Hospital	0%	0%	0.98	139.54	139.54	18.66	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A
161	CFL Screw-in 18W	Hospital	76%	76%	2.92	142.85	34.29	4.58	2	98	13	0	95	9	13	0	1
165	Base Incandescent Flood, 75W to Hardwired CFL	Hospital	0%	0%	0.98	139.54	139.54	18.66	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A
166	CFL Hardwired, Modular 18W	Hospital	76%	76%	45.00	145.05	34.81	4.65	5	32	4	0	847	1	1	3	1
170	Base Halogen Flood,50W	Hospital	0%	0%	18.98	131.33	131.33	17.56	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A
172	RET - Efficient Halogen Flood, 35W	Hospital	30%	30%	25.90	133.33	93.33	12.48	2	5	1	0	1,588	1	1	7	1
175	Base High Bay Metal Halide, 400W	Hospital	0%	0%	4.53	26.34	26.34	3.52	6	0	0	N/A	N/A	N/A	N/A	N/A	N/A
176	High Bay T5	Hospital	14%	15%	8.35	27.33	23.37	3.12	11	0	0	0	1,794	0	1	16	1
190	Base Exit Sign	Hospital	0%	0%	0.00	0.61	0.61	0.08	16	0	0	N/A	N/A	N/A	N/A	N/A	N/A
220	Base Outdoor Mercury Vapor 400W Lamp	Hospital	0%	0%	0.00	5.05	5.05	0.77	5	0	0	N/A	N/A	N/A	N/A	N/A	N/A
221	High Pressure Sodium 250W Lamp	Hospital	35%	35%	0.13	5.74	3.73	0.57	5	1	0	0	105	7	10	0	1
222	Outdoor Lighting Controls (Photocell/Timeclock)	Hospital	12%	22%	0.42	5.27	4.63	0.62	5	0	0	0	610	1	1	5	1
300	Base Centrifugal Chiller, 0.165 kW/kWt, 1750 kWt	Hospital	0%	0%	7.33	23.12	23.12	1.47	20	0	0	N/A	N/A	N/A	N/A	N/A	N/A
301	Centrifugal Chiller, 0.15 kW/kWt, 1750 kWt	Hospital	12%	12%	1.17	23.12	20.33	1.29	20	1	0	0	622	3	3	3	1
303	BMS - Chiller	Hospital	10%	10%	2.00	24.75	22.28	1.41	10	0	0	0	1,986	1	1	6	1
305	Chiller Tune Up/Diagnostics	Hospital	7%	8%	1.66	23.95	22.30	1.40	10	0	0	0	2,125	1	1	8	1
306	VSD for Chiller Pumps and Towers	Hospital	10%	10%	1.40	23.39	21.05	1.33	15	0	0	0	1,047	2	2	5	1
307	BMS Optimization	Hospital	16%	20%	0.50	23.77	20.02	1.21	5	0	0	0	464	3	4	1	1
308	Economizer	Hospital	14%	18%	5.67	26.40	22.65	1.37	15	0	0	0	2,087	1	1	11	1
310	Base DX Packaged System, EER=2.65, 35 kWt	Hospital	0%	0%	22.41	39.87	39.87	2.53	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
311	DX Tune Up/ Advanced Diagnostics	Hospital	5%	5%	2.07	41.04	39.14	2.47	10	0	0	0	2,479	1	1	8	1
312	DX Packaged System, EER=3.5, 35 kWt	Hospital	24%	24%	0.90	39.87	30.19	1.91	15	7	0	0	162	10	12	1	1

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Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Sq Ft	Base EUI	EUI	Peak Watts/ Sq Ft	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
315	Prog. Thermostat - DX	Hospital	4%	5%	0.68	40.52	38.92	2.44	10	1	0	0	829	2	2	3	1
317	Optimize Controls	Hospital	16%	20%	0.66	42.15	35.51	2.14	5	2	0	0	349	4	6	1	1
318	Economizer	Hospital	0%	0%	5.67	39.87	39.87	2.53	15	0	0	20,015	N/A	0	0	1,366,307	1
320	Base Split-system Air Conditioner, EER=2.3	Hospital	0%	0%	0.00	43.86	43.86	2.78	18	0	0	N/A	N/A	N/A	N/A	N/A	N/A
321	3.5 EER Split-system Air Conditioner	Hospital	34%	34%	2.07	45.61	29.98	1.90	18	8	1	0	207	8	9	1	1
322	Tune Up/Proper Refrigerant Charge	Hospital	9%	10%	0.32	47.52	43.10	2.71	10	0	0	0	164	9	12	1	1
324	Programmable Thermostat	Hospital	4%	5%	0.95	44.74	42.97	2.69	12	1	0	0	887	1	2	4	1
330	Base Room Air Conditioner, EER=2.3	Hospital	0%	0%	0.00	47.84	47.84	3.03	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
331	3.0 EER Room Air Conditioner	Hospital	23%	23%	3.56	48.20	36.95	2.34	15	4	0	0	553	3	4	2	1
333	Programmable Thermostat	Hospital	4%	5%	4.16	48.27	46.37	2.91	12	1	0	0	3,588	0	0	17	1
400	Base Fan Motor, 7kW, 1800rpm, 87.5%	Hospital	0%	0%	0.70	45.61	45.61	5.57	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
401	Fan Motor, 7kW, 1800rpm, 89.5%	Hospital	2%	2%	0.27	45.61	44.59	5.45	15	1	0	0	239	4	4	2	1
402	Variable Speed Drive Control, 7kW	Hospital	24%	30%	5.16	46.15	35.26	3.95	15	2	0	0	338	2	2	4	1
410	Base Fan Motor, 20kW, 1800rpm, 91.0%	Hospital	0%	0%	0.53	42.28	42.28	5.16	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
411	Fan Motor, 20kW, 1800rpm, 92.4%	Hospital	2%	2%	0.14	42.28	41.64	5.09	15	1	0	0	194	5	5	2	1
412	Variable Speed Drive Control, 20kW	Hospital	24%	30%	2.87	44.93	34.33	3.84	15	7	1	0	193	4	4	2	1
413	Air Handler Optimization, 20kW	Hospital	16%	20%	0.50	44.01	37.09	4.30	8	4	1	0	86	9	11	1	1
420	Base Fan Motor, 54kW, 1800rpm, 93.0%	Hospital	0%	0%	0.45	41.58	41.58	5.08	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
421	Fan Motor, 54kW, 1800rpm, 94.1%	Hospital	1%	1%	0.12	41.58	41.09	5.02	15	0	0	0	228	4	4	2	1
422	Variable Speed Drive Control, 54kW	Hospital	24%	30%	1.92	44.18	33.76	3.78	15	5	1	0	131	6	6	1	1
423	Air Handler Optimization, 54kW	Hospital	16%	20%	0.50	43.28	36.47	4.23	8	3	0	0	87	8	11	1	1
610	Base Desktop PC	Hospital	0%	0%	0.00	2.06	2.06	0.24	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
611	PC Manual Power Management Enabling	Hospital	67%	68%	0.09	2.48	0.81	0.09	4	4	1	0	162	6	9	0	1
612	PC Network Power Management Enabling	Hospital	67%	68%	0.05	2.48	0.81	0.09	4	4	1	0	81	11	17	0	1
620	Base Monitor, CRT	Hospital	0%	0%	0.00	0.24	0.24	0.03	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
621	Energy Star or Better Monitor	Hospital	56%	56%	0.00	0.52	0.23	0.03	4	0	0	0	0	99,999	99,999	0	N/A
622	Monitor Power Management Enabling	Hospital	53%	53%	0.01	0.35	0.17	0.02	4	0	0	0	164	6	9	0	1
630	Base Monitor, LCD	Hospital	0%	0%	0.00	0.14	0.14	0.02	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
631	Energy Star or Better Monitor	Hospital	2%	2%	0.00	0.14	0.14	0.02	4	0	0	0	0	99,999	99,999	0	N/A
632	Monitor Power Management Enabling	Hospital	28%	28%	0.08	0.17	0.12	0.01	4	0	0	1	5,211	0	0	14	1
640	Base Copier	Hospital	0%	0%	0.00	5.67	5.67	0.66	6	0	0	N/A	N/A	N/A	N/A	N/A	N/A
641	Energy Star or Better Copier	Hospital	21%	21%	0.00	6.95	5.52	0.65	6	1	0	0	0	99,999	99,999	0	N/A
642	Copier Power Management Enabling	Hospital	19%	19%	0.40	6.06	4.90	0.57	6	2	0	0	698	1	2	3	1
650	Base Laser Printer	Hospital	0%	0%	0.00	3.21	3.21	0.38	5	0	0	N/A	N/A	N/A	N/A	N/A	N/A
651	Printer Power Management Enabling	Hospital	49%	49%	0.36	4.35	2.24	0.26	5	3	0	0	402	2	3	1	1
700	Base Split-system Heat Pump, 2.3 EER	Hospital	0%	0%	0.00	47.71	47.71	8.17	18	0	0	N/A	N/A	N/A	N/A	N/A	N/A
701	3.5 EER Split-system Heat Pump	Hospital	34%	34%	3.92	49.62	32.61	5.58	18	13	2	0	134	5	5	2	1
702	Tune Up/ Proper Refrigerant Charge	Hospital	10%	10%	0.60	49.61	44.65	7.65	10	3	0	0	110	6	7	1	1
703	Programmable Thermostat	Hospital	5%	5%	1.80	48.79	46.35	7.94	12	1	0	0	570	1	1	6	1
710	Base Electric Resistance Reheat Coils	Hospital	0%	0%	0.00	138.36	138.36	23.69	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
711	BMS - Reheat Coils	Hospital	10%	10%	2.00	140.45	126.41	21.65	10	7	1	0	130	5	6	1	1
712	BMS Optimization	Hospital	20%	20%	0.50	139.65	111.72	19.13	5	15	3	0	29	23	32	0	1
720	Base Wall-mounted Fan Heater	Hospital	0%	0%	0.00	153.73	153.73	26.33	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
721	Programmable Thermostat	Hospital	5%	5%	9.68	156.14	148.33	25.40	12	7	1	0	956	1	1	9	1
800	Base Water Heating	Hospital	0%	0%	0.00	47.12	47.12	6.82	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
801	Demand controlled circulating systems	Hospital	5%	5%	0.08	47.94	45.54	6.59	15	4	1	0	27	29	32	0	1
803	High Efficiency Water Heater (electric)	Hospital	2%	2%	0.20	47.19	46.25	6.70	15	3	0	0	159	5	5	2	1
804	Hot Water Pipe Insulation	Hospital	2%	2%	0.35	47.36	46.41	6.72	15	2	0	0	282	3	3	3	1
805	Tankless Water Heater	Hospital	10%	10%	1.59	47.44	42.70	6.18	20	11	2	0	218	4	4	3	1
910	Base Vending Machines	Hospital	0%	0%	0.02	1.10	1.10	0.15	10	0	0	N/A	N/A	N/A	N/A	N/A	N/A
911	Vending Misers (cooled machines only)	Hospital	40%	40%	0.08	1.10	0.66	0.09	10	0	0	0	218	4	5	1	1
110	Base Fluorescent Fixture, T12, 34W, EEMAG	Hotel/Motel	0%	0%	0.00	14.07	14.07	1.77	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
113	RET Next Gen T8, EEMAG	Hotel/Motel	15%	15%	0.69	14.07	11.96	1.50	23	1	0	0	227	4	4	2	1
114	RET Next Gen T8, 1EB	Hotel/Motel	28%	28%	1.96	14.07	10.13	1.27	23	1	0	0	346	2	2	4	1
117	Occupancy Sensor	Hotel/Motel	17%	20%	1.35	14.10	11.70	1.42	13	0	0	0	458	2	2	4	1
118	Continuous Dimming	Hotel/Motel	50%	75%	15.05	14.14	7.14	0.44	17	1	0	0	1,180	1	1	17	1
120	Lighting Control Tuneup	Hotel/Motel	4%	5%	0.27	14.08	13.53	1.68	6	0	0	0	723	1	1	4	1
130	Base Fluorescent Fixture, T8, 32W, EEMAG	Hotel/Motel	0%	0%	0.00	12.68	12.68	1.59	23	0	0	N/A	N/A	N/A	N/A	N/A	N/A
133	RET Next Gen T8, 1EB	Hotel/Motel	15%	15%	1.35	12.68	10.74	1.35	23	0	0	0	483	2	2	5	1
136	Occupancy Sensor	Hotel/Motel	17%	20%	1.43	12.71	10.55	1.28	13	0	0	0	538	1	2	5	1
137	Continuous Dimming	Hotel/Motel	50%	75%	15.96	12.75	6.43	0.40	17	0	0	0	1,389	0	0	20	1
139	Lighting Control Tuneup	Hotel/Motel	4%	5%	0.27	12.70	12.20	1.51	6	0	0	0	802	1	1	4	1
150	Base Fluorescent Fixture, T8, 32W, EB	Hotel/Motel	0%	0%	0.00	10.74	10.74	1.35	23	0	0	N/A	N/A	N/A	N/A	N/A	N/A
155	Occupancy Sensor	Hotel/Motel	17%	20%	1.43	10.77	8.94	1.08	13	0	0	0	636	1	1	6	1
156	Continuous Dimming	Hotel/Motel	50%	75%	15.96	10.80	5.45	0.34	17	0	0	0	1,639	0	0	23	1
157	Lighting Control Tuneup	Hotel/Motel	4%	5%	0.27	10.75	10.33	1.28	6	0	0	0	947	1	1	5	1
160	Base Incandescent Flood, 75W to Screw-in CFL	Hotel/Motel	0%	0%	0.49	52.23	52.23	6.56	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A
161	CFL Screw-in 18W	Hotel/Motel	76%	76%	1.46	60.92	14.62	1.84	3	45	6	0	93	9	14	0	1
165	Base Incandescent Flood, 75W to Hardwired CFL	Hotel/Motel	0%	0%	0.49	52.23	52.23	6.56	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A
166	CFL Hardwired, Modular 18W	Hotel/Motel	76%	76%	22.46	67.66	16.24	2.04	7	14	2	0	753	1	2	3	1
170	Base Halogen Flood,50W	Hotel/Motel	0%	0%	9.47	49.16	49.16	6.17	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A

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Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Sq Ft	Base EUI	EUI	Peak Watts/ Sq Ft	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
172	RET - Efficient Halogen Flood, 35W	Hotel/Motel	30%	30%	12.93	49.91	34.94	4.39	2	4	1	0	1,690	1	1	7	1
175	Base High Bay Metal Halide, 400W	Hotel/Motel	0%	0%	2.26	9.86	9.86	1.24	8	0	0	N/A	N/A	N/A	N/A	N/A	N/A
176	High Bay T5	Hotel/Motel	15%	15%	4.17	10.23	8.75	1.10	15	0	0	0	2,280	0	0	21	1
190	Base Exit Sign	Hotel/Motel	0%	0%	0.00	0.35	0.35	0.04	16	0	0	N/A	N/A	N/A	N/A	N/A	N/A
220	Base Outdoor Mercury Vapor 400W Lamp	Hotel/Motel	0%	0%	0.00	5.23	5.23	0.95	5	0	0	N/A	N/A	N/A	N/A	N/A	N/A
221	High Pressure Sodium 250W Lamp	Hotel/Motel	35%	35%	0.13	5.95	3.87	0.70	5	2	0	0	89	7	10	0	1
222	Outdoor Lighting Controls (Photocell/Timeclock)	Hotel/Motel	12%	22%	0.44	5.47	4.79	0.77	5	1	0	0	512	1	1	4	1
300	Base Centrifugal Chiller, 0.165 kW/kWt, 1750 kWt	Hotel/Motel	0%	0%	4.53	10.72	10.72	0.43	20	0	0	N/A	N/A	N/A	N/A	N/A	N/A
301	Centrifugal Chiller, 0.15 kW/kWt, 1750 kWt	Hotel/Motel	12%	12%	0.72	10.72	9.43	0.38	20	0	0	0	1,297	2	2	4	1
303	BMS - Chiller	Hotel/Motel	10%	10%	1.24	11.48	10.33	0.42	10	0	0	0	4,140	1	1	8	1
305	Chiller Tune Up/Diagnostics	Hotel/Motel	7%	8%	1.66	11.09	10.35	0.41	10	0	0	0	7,171	0	0	17	1
306	VSD for Chiller Pumps and Towers	Hotel/Motel	10%	10%	0.87	10.85	9.76	0.40	15	0	0	0	2,183	1	1	6	1
307	BMS Optimization	Hotel/Motel	15%	20%	0.50	11.01	9.34	0.36	5	0	0	0	1,567	1	2	2	1
308	Economizer	Hotel/Motel	32%	43%	3.50	14.97	10.11	0.35	15	0	0	0	1,489	1	2	5	1
310	Base DX Packaged System, EER=2.65, 35 kWt	Hotel/Motel	0%	0%	13.85	18.49	18.49	0.75	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
311	DX Tune Up/ Advanced Diagnostics	Hotel/Motel	5%	5%	2.07	19.02	18.15	0.73	10	0	0	0	8,363	0	0	18	1
312	DX Packaged System, EER=3.5, 35 kWt	Hotel/Motel	24%	24%	0.55	18.49	14.00	0.57	15	0	0	0	338	7	9	1	1
315	Prog. Thermostat - DX	Hotel/Motel	4%	5%	0.42	18.77	18.07	0.72	10	0	0	0	1,729	1	1	5	1
317	Optimize Controls	Hotel/Motel	15%	20%	0.66	19.50	16.55	0.63	5	0	0	0	1,179	2	3	2	1
318	Economizer	Hotel/Motel	3%	4%	3.50	18.99	18.41	0.74	15	0	0	1	12,623	0	0	46	1
320	Base Split-system Air Conditioner, EER=2.3	Hotel/Motel	0%	0%	0.00	20.33	20.33	0.82	18	0	0	N/A	N/A	N/A	N/A	N/A	N/A
321	3.5 EER Split-system Air Conditioner	Hotel/Motel	34%	34%	1.28	21.15	13.90	0.56	18	1	0	0	432	6	7	1	1
322	Tune Up/Proper Refrigerant Charge	Hotel/Motel	9%	10%	0.20	22.01	19.99	0.80	10	0	0	0	343	6	9	1	1
324	Programmable Thermostat	Hotel/Motel	4%	5%	0.59	20.73	19.94	0.80	12	0	0	0	1,851	1	1	6	1
330	Base Room Air Conditioner, EER=2.3	Hotel/Motel	0%	0%	0.00	22.18	22.18	0.90	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
331	3.0 EER Room Air Conditioner	Hotel/Motel	23%	23%	2.20	22.35	17.13	0.69	15	0	0	0	1,153	2	3	3	1
333	Programmable Thermostat	Hotel/Motel	4%	5%	2.57	22.37	21.53	0.86	12	0	0	0	7,481	0	0	23	1
400	Base Fan Motor, 7kW, 1800rpm, 87.5%	Hotel/Motel	0%	0%	0.34	15.15	15.15	1.78	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
401	Fan Motor, 7kW, 1800rpm, 89.5%	Hotel/Motel	2%	2%	0.13	15.15	14.81	1.74	15	0	0	0	369	3	3	3	1
402	Variable Speed Drive Control, 7kW	Hotel/Motel	23%	30%	2.54	15.33	11.78	1.26	15	0	0	0	523	1	2	5	1
410	Base Fan Motor, 20kW, 1800rpm, 91.0%	Hotel/Motel	0%	0%	0.26	14.04	14.04	1.65	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
411	Fan Motor, 20kW, 1800rpm, 92.4%	Hotel/Motel	2%	2%	0.07	14.04	13.83	1.62	15	0	0	0	299	3	4	2	1
412	Variable Speed Drive Control, 20kW	Hotel/Motel	23%	30%	1.41	14.91	11.45	1.22	15	0	0	0	299	3	3	3	1
413	Air Handler Optimization, 20kW	Hotel/Motel	15%	20%	0.50	14.61	12.35	1.37	8	0	0	0	269	3	4	2	1
420	Base Fan Motor, 54kW, 1800rpm, 93.0%	Hotel/Motel	0%	0%	0.22	13.81	13.81	1.62	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
421	Fan Motor, 54kW, 1800rpm, 94.1%	Hotel/Motel	1%	1%	0.06	13.81	13.65	1.60	15	0	0	0	353	3	3	3	1
422	Variable Speed Drive Control, 54kW	Hotel/Motel	23%	30%	0.94	14.66	11.26	1.20	15	0	0	0	203	4	4	2	1
423	Air Handler Optimization, 54kW	Hotel/Motel	15%	20%	0.50	14.36	12.15	1.35	8	0	0	0	273	3	4	2	1
610	Base Desktop PC	Hotel/Motel	0%	0%	0.00	0.54	0.54	0.06	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
611	PC Manual Power Management Enabling	Hotel/Motel	66%	68%	0.02	0.64	0.22	0.02	4	1	0	0	159	6	8	0	1
612	PC Network Power Management Enabling	Hotel/Motel	66%	68%	0.01	0.64	0.22	0.02	4	1	0	0	79	11	17	0	1
620	Base Monitor, CRT	Hotel/Motel	0%	0%	0.00	0.11	0.11	0.01	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
621	Energy Star or Better Monitor	Hotel/Motel	56%	56%	0.00	0.24	0.10	0.01	4	0	0	0	0	99,999	99,999	0	N/A
622	Monitor Power Management Enabling	Hotel/Motel	52%	53%	0.00	0.16	0.08	0.01	4	0	0	0	162	5	8	0	1
630	Base Monitor, LCD	Hotel/Motel	0%	0%	0.00	0.03	0.03	0.00	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
631	Energy Star or Better Monitor	Hotel/Motel	2%	2%	0.00	0.03	0.03	0.00	4	0	0	0	0	99,999	99,999	0	N/A
632	Monitor Power Management Enabling	Hotel/Motel	27%	28%	0.02	0.04	0.03	0.00	4	0	0	1	5,110	0	0	14	1
640	Base Copier	Hotel/Motel	0%	0%	0.00	1.08	1.08	0.13	6	0	0	N/A	N/A	N/A	N/A	N/A	N/A
641	Energy Star or Better Copier	Hotel/Motel	21%	21%	0.00	1.32	1.05	0.13	6	0	0	0	0	99,999	99,999	0	N/A
642	Copier Power Management Enabling	Hotel/Motel	19%	19%	0.08	1.15	0.93	0.11	6	0	0	0	683	1	2	3	1
650	Base Laser Printer	Hotel/Motel	0%	0%	0.00	1.58	1.58	0.19	5	0	0	N/A	N/A	N/A	N/A	N/A	N/A
651	Printer Power Management Enabling	Hotel/Motel	48%	49%	0.18	2.12	1.11	0.13	5	1	0	0	395	2	3	1	1
700	Base Split-system Heat Pump, 2.3 EER	Hotel/Motel	0%	0%	0.00	6.20	6.20	1.46	18	0	0	N/A	N/A	N/A	N/A	N/A	N/A
701	3.5 EER Split-system Heat Pump	Hotel/Motel	34%	34%	0.73	6.45	4.24	1.00	18	1	0	0	139	4	4	2	1
702	Tune Up/ Proper Refrigerant Charge	Hotel/Motel	10%	10%	0.11	6.45	5.80	1.37	10	0	0	0	115	5	5	1	1
703	Programmable Thermostat	Hotel/Motel	5%	5%	0.34	6.34	6.02	1.42	12	0	0	0	592	1	1	8	1
710	Base Electric Resistance Reheat Coils	Hotel/Motel	0%	0%	0.00	17.98	17.98	4.24	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
711	BMS - Reheat Coils	Hotel/Motel	10%	10%	2.00	18.26	16.43	3.88	10	1	0	0	723	1	1	8	1
712	BMS Optimization	Hotel/Motel	20%	20%	0.50	18.15	14.52	3.43	5	2	0	0	164	3	4	1	1
720	Base Wall-mounted Fan Heater	Hotel/Motel	0%	0%	0.00	19.98	19.98	4.72	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
721	Programmable Thermostat	Hotel/Motel	5%	5%	1.80	20.30	19.28	4.55	12	1	0	0	993	1	1	13	1
800	Base Water Heating	Hotel/Motel	0%	0%	0.00	29.28	29.28	3.70	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
801	Demand controlled circulating systems	Hotel/Motel	5%	5%	0.21	29.78	28.29	3.58	15	1	0	0	123	7	8	1	1
803	High Efficiency Water Heater (electric)	Hotel/Motel	2%	2%	0.28	29.32	28.73	3.63	15	1	0	0	419	2	2	4	1
804	Hot Water Pipe Insulation	Hotel/Motel	2%	2%	0.50	29.42	28.83	3.65	15	1	0	0	742	1	1	6	1
805	Tankless Water Heater	Hotel/Motel	10%	10%	2.27	29.47	26.53	3.35	20	4	0	0	574	2	2	6	1
910	Base Vending Machines	Hotel/Motel	0%	0%	0.03	1.96	1.96	0.28	10	0	0	N/A	N/A	N/A	N/A	N/A	N/A
911	Vending Misers (cooled machines only)	Hotel/Motel	40%	40%	0.14	2.41	1.45	0.21	10	0	0	0	162	5	6	1	1
110	Base Fluorescent Fixture, T12, 34W, EEMAG	Miscellaneous	0%	0%	0.00	16.88	16.88	2.45	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
113	RET Next Gen T8, EEMAG	Miscellaneous	15%	15%	0.83	16.88	14.35	2.08	23	20	3	0	197	4	4	2	1
114	RET Next Gen T8, 1EB	Miscellaneous	28%	28%	2.35	16.88	12.16	1.76	23	30	4	0	300	2	2	4	1

COMMERCIAL EXISTING

DSM ASSYST SUMMARY

Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Sq Ft	Base EUI	EUI	Peak Watts/ Sq Ft	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
117	Occupancy Sensor	Miscellaneous	16%	20%	1.62	16.92	14.14	1.96	13	4	1	0	397	2	2	4	1
118	Continuous Dimming	Miscellaneous	47%	75%	18.06	16.97	9.07	0.61	17	19	4	0	1,023	1	0	18	1
120	Lighting Control Tuneup	Miscellaneous	4%	5%	0.27	16.90	16.20	2.33	6	1	0	0	522	1	2	3	1
130	Base Fluorescent Fixture, T8, 32W, EEMAG	Miscellaneous	0%	0%	0.00	15.22	15.22	2.21	23	0	0	N/A	N/A	N/A	N/A	N/A	N/A
133	RET Next Gen T8, 1EB	Miscellaneous	15%	15%	1.61	15.22	12.89	1.87	23	4	1	0	419	2	2	5	1
136	Occupancy Sensor	Miscellaneous	16%	20%	1.71	15.26	12.75	1.77	13	1	0	0	467	1	2	5	1
137	Continuous Dimming	Miscellaneous	47%	75%	19.16	15.30	8.18	0.55	17	4	1	0	1,204	0	0	21	1
139	Lighting Control Tuneup	Miscellaneous	4%	5%	0.27	15.24	14.60	2.10	6	0	0	0	579	1	2	3	1
150	Base Fluorescent Fixture, T8, 32W, EB	Miscellaneous	0%	0%	0.00	12.89	12.89	1.87	23	0	0	N/A	N/A	N/A	N/A	N/A	N/A
155	Occupancy Sensor	Miscellaneous	16%	20%	1.71	12.92	10.80	1.50	13	0	0	0	551	1	1	6	1
156	Continuous Dimming	Miscellaneous	47%	75%	19.16	12.96	6.93	0.47	17	1	0	0	1,421	0	0	25	1
157	Lighting Control Tuneup	Miscellaneous	4%	5%	0.27	12.91	12.37	1.78	6	0	0	0	684	1	1	4	1
160	Base Incandescent Flood, 75W to Screw-in CFL	Miscellaneous	0%	0%	0.59	62.68	62.68	9.08	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A
161	CFL Screw-in 18W	Miscellaneous	76%	76%	1.75	87.37	20.97	3.04	3	174	25	0	68	12	17	0	1
165	Base Incandescent Flood, 75W to Hardwired CFL	Miscellaneous	0%	0%	0.59	62.68	62.68	9.08	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A
166	CFL Hardwired, Modular 18W	Miscellaneous	76%	76%	26.95	63.22	15.17	2.20	7	66	10	0	838	1	1	4	1
170	Base Halogen Flood,50W	Miscellaneous	0%	0%	11.37	58.99	58.99	8.55	1	0	0	N/A	N/A	N/A	N/A	N/A	N/A
172	RET - Efficient Halogen Flood, 35W	Miscellaneous	30%	30%	15.51	59.89	41.92	6.07	2	56	8	0	1,465	1	1	7	1
175	Base High Bay Metal Halide, 400W	Miscellaneous	0%	0%	2.71	11.83	11.83	1.71	8	0	0	N/A	N/A	N/A	N/A	N/A	N/A
176	High Bay T5	Miscellaneous	15%	15%	5.00	12.28	10.50	1.52	15	1	0	0	1,977	0	0	21	1
190	Base Exit Sign	Miscellaneous	0%	0%	0.00	0.19	0.19	0.03	16	0	0	N/A	N/A	N/A	N/A	N/A	N/A
220	Base Outdoor Mercury Vapor 400W Lamp	Miscellaneous	0%	0%	0.00	12.47	12.47	2.72	5	0	0	N/A	N/A	N/A	N/A	N/A	N/A
221	High Pressure Sodium 250W Lamp	Miscellaneous	35%	35%	0.31	14.18	9.21	2.01	5	17	4	0	74	8	10	0	1
222	Outdoor Lighting Controls (Photocell/Timeclock)	Miscellaneous	14%	22%	1.04	13.09	11.29	2.22	5	6	2	0	424	1	1	4	1
300	Base Centrifugal Chiller, 0.165 kW/kWt, 1750 kWt	Miscellaneous	0%	0%	3.31	7.83	7.83	0.08	20	0	0	N/A	N/A	N/A	N/A	N/A	N/A
301	Centrifugal Chiller, 0.15 kW/kWt, 1750 kWt	Miscellaneous	12%	12%	0.53	7.83	6.88	0.07	20	1	0	0	4,849	2	2	4	1
303	BMS - Chiller	Miscellaneous	10%	10%	0.90	8.38	7.54	0.08	10	0	0	0	15,471	1	1	8	1
305	Chiller Tune Up/Diagnostics	Miscellaneous	7%	8%	1.66	8.11	7.55	0.08	10	0	0	0	36,668	0	0	22	1
306	VSD for Chiller Pumps and Towers	Miscellaneous	10%	10%	0.63	7.92	7.13	0.08	15	1	0	0	8,157	1	1	6	1
307	BMS Optimization	Miscellaneous	16%	20%	0.50	8.05	6.77	0.07	5	1	0	0	8,010	1	1	3	1
308	Economizer	Miscellaneous	0%	0%	2.56	7.83	7.83	0.08	15	0	0	45,653	N/A	0	0	3,116,476	1
310	Base DX Packaged System, EER=2.65, 35 kWt	Miscellaneous	0%	0%	10.11	13.50	13.50	0.15	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
311	DX Tune Up/ Advanced Diagnostics	Miscellaneous	5%	5%	2.07	13.89	13.25	0.14	10	0	0	0	42,791	0	0	24	1
312	DX Packaged System, EER=3.5, 35 kWt	Miscellaneous	24%	24%	0.41	13.50	10.22	0.11	15	7	0	0	1,264	7	9	1	1
315	Prog. Thermostat - DX	Miscellaneous	4%	5%	0.31	13.72	13.17	0.14	10	1	0	0	6,457	1	2	4	1
317	Optimize Controls	Miscellaneous	16%	20%	0.66	14.28	12.01	0.12	5	2	0	0	6,020	1	2	2	1
318	Economizer	Miscellaneous	3%	4%	2.56	13.88	13.44	0.14	15	0	0	1	47,107	0	0	44	1
320	Base Split-system Air Conditioner, EER=2.3	Miscellaneous	0%	0%	0.00	14.85	14.85	0.16	18	0	0	N/A	N/A	N/A	N/A	N/A	N/A
321	3.5 EER Split-system Air Conditioner	Miscellaneous	34%	34%	0.94	15.44	10.15	0.11	18	11	0	0	1,616	5	7	1	1
322	Tune Up/Proper Refrigerant Charge	Miscellaneous	9%	10%	0.14	16.09	14.59	0.16	10	1	0	0	1,280	6	9	1	1
324	Programmable Thermostat	Miscellaneous	4%	5%	0.43	15.15	14.54	0.16	12	1	0	0	6,910	1	1	5	1
330	Base Room Air Conditioner, EER=2.3	Miscellaneous	0%	0%	0.00	16.20	16.20	0.18	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
331	3.0 EER Room Air Conditioner	Miscellaneous	23%	23%	1.60	16.32	12.51	0.14	15	8	0	0	4,309	2	3	3	1
333	Programmable Thermostat	Miscellaneous	4%	5%	1.88	16.34	15.69	0.17	12	1	0	0	27,947	0	0	22	1
400	Base Fan Motor, 7kW, 1800rpm, 87.5%	Miscellaneous	0%	0%	0.26	13.43	13.43	1.83	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
401	Fan Motor, 7kW, 1800rpm, 89.5%	Miscellaneous	2%	2%	0.10	13.43	13.13	1.79	15	2	0	0	268	3	3	3	1
402	Variable Speed Drive Control, 7kW	Miscellaneous	25%	30%	1.91	13.59	10.25	1.30	15	2	0	0	380	2	2	4	1
410	Base Fan Motor, 20kW, 1800rpm, 91.0%	Miscellaneous	0%	0%	0.20	12.45	12.45	1.70	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
411	Fan Motor, 20kW, 1800rpm, 92.4%	Miscellaneous	2%	2%	0.05	12.45	12.26	1.67	15	0	0	0	217	4	4	2	1
412	Variable Speed Drive Control, 20kW	Miscellaneous	25%	30%	1.06	13.26	10.00	1.27	15	2	0	0	216	3	3	2	1
413	Air Handler Optimization, 20kW	Miscellaneous	16%	20%	0.50	12.98	10.85	1.42	8	2	0	0	259	3	3	2	1
420	Base Fan Motor, 54kW, 1800rpm, 93.0%	Miscellaneous	0%	0%	0.17	12.24	12.24	1.67	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
421	Fan Motor, 54kW, 1800rpm, 94.1%	Miscellaneous	1%	1%	0.05	12.24	12.10	1.65	15	0	0	0	256	3	4	2	1
422	Variable Speed Drive Control, 54kW	Miscellaneous	25%	30%	0.71	13.04	9.83	1.25	15	1	0	0	147	5	5	2	1
423	Air Handler Optimization, 54kW	Miscellaneous	16%	20%	0.50	12.76	10.67	1.40	8	1	0	0	264	3	3	2	1
610	Base Desktop PC	Miscellaneous	0%	0%	0.00	0.45	0.45	0.07	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
611	PC Manual Power Management Enabling	Miscellaneous	71%	68%	0.02	0.55	0.16	0.03	4	4	1	0	117	6	9	0	1
612	PC Network Power Management Enabling	Miscellaneous	71%	68%	0.01	0.55	0.16	0.03	4	4	1	0	59	13	19	0	1
620	Base Monitor, CRT	Miscellaneous	0%	0%	0.00	0.07	0.07	0.01	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
621	Energy Star or Better Monitor	Miscellaneous	56%	56%	0.00	0.15	0.06	0.01	4	0	0	0	0	99,999	99,999	0	N/A
622	Monitor Power Management Enabling	Miscellaneous	56%	53%	0.00	0.10	0.05	0.01	4	0	0	0	117	6	9	0	1
630	Base Monitor, LCD	Miscellaneous	0%	0%	0.00	0.03	0.03	0.00	4	0	0	N/A	N/A	N/A	N/A	N/A	N/A
631	Energy Star or Better Monitor	Miscellaneous	2%	2%	0.00	0.03	0.03	0.00	4	0	0	0	0	99,999	99,999	0	N/A
632	Monitor Power Management Enabling	Miscellaneous	29%	28%	0.02	0.04	0.03	0.00	4	0	0	1	3,780	0	0	13	1
640	Base Copier	Miscellaneous	0%	0%	0.00	0.68	0.68	0.11	6	0	0	N/A	N/A	N/A	N/A	N/A	N/A
641	Energy Star or Better Copier	Miscellaneous	21%	21%	0.00	0.84	0.67	0.11	6	0	0	0	0	99,999	99,999	0	N/A
642	Copier Power Management Enabling	Miscellaneous	20%	19%	0.05	0.73	0.59	0.09	6	1	0	0	510	1	2	2	1
650	Base Laser Printer	Miscellaneous	0%	0%	0.00	0.47	0.47	0.08	5	0	0	N/A	N/A	N/A	N/A	N/A	N/A
651	Printer Power Management Enabling	Miscellaneous	52%	49%	0.05	0.66	0.32	0.05	5	1	0	0	289	3	4	1	1
700	Base Split-system Heat Pump, 2.3 EER	Miscellaneous	0%	0%	0.00	14.50	14.50	1.79	18	0	0	N/A	N/A	N/A	N/A	N/A	N/A
701	3.5 EER Split-system Heat Pump	Miscellaneous	34%	34%	1.28	15.08	9.91	1.22	18	13	2	0	200	4	5	2	1

COMMERCIAL EXISTING

DSM ASSYST SUMMARY

Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Sq Ft	Base EUI	EUI	Peak Watts/ Sq Ft	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
702	Tune Up/ Proper Refrigerant Charge	Miscellaneous	10%	10%	0.20	15.08	13.57	1.67	10	3	0	0	165	5	7	1	1
703	Programmable Thermostat	Miscellaneous	5%	5%	0.59	14.83	14.09	1.74	12	1	0	0	852	1	1	6	1
710	Base Electric Resistance Reheat Coils	Miscellaneous	0%	0%	0.00	42.06	42.06	5.18	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
711	BMS - Reheat Coils	Miscellaneous	10%	10%	2.00	42.70	38.43	4.73	10	8	1	0	592	1	2	4	1
712	BMS Optimization	Miscellaneous	20%	20%	0.50	42.45	33.96	4.18	5	18	2	0	135	7	10	0	1
720	Base Wall-mounted Fan Heater	Miscellaneous	0%	0%	0.00	46.73	46.73	5.76	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
721	Programmable Thermostat	Miscellaneous	5%	5%	3.17	47.46	45.09	5.56	12	8	1	0	1,430	1	1	10	1
800	Base Water Heating	Miscellaneous	0%	0%	0.00	26.52	26.52	2.50	15	0	0	N/A	N/A	N/A	N/A	N/A	N/A
801	Demand controlled circulating systems	Miscellaneous	5%	5%	0.42	26.98	25.63	2.41	15	11	1	0	365	3	4	2	1
803	High Efficiency Water Heater (electric)	Miscellaneous	2%	2%	0.12	26.56	26.03	2.45	15	8	1	0	258	4	5	2	1
804	Hot Water Pipe Insulation	Miscellaneous	2%	2%	0.21	26.66	26.12	2.46	15	5	0	0	458	2	3	3	1
805	Tankless Water Heater	Miscellaneous	10%	10%	0.94	26.71	24.03	2.26	20	30	3	0	354	3	3	3	1
910	Base Vending Machines	Miscellaneous	0%	0%	0.01	0.77	0.77	0.10	10	0	0	N/A	N/A	N/A	N/A	N/A	N/A
911	Vending Misers (cooled machines only)	Miscellaneous	41%	40%	0.06	0.77	0.45	0.06	10	1	0	0	216	4	5	1	1

COMMERCIAL NEW CONSTRUCTION

DSM ASSYST SUMMARY

Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Sq Ft	Base EUI	EUI	Peak Watts/ Sq Ft	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
100	Base Lighting	Office	0%	0%	0.00	38.83	38.83	5.16	23	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Lighting 15% More Efficient Design	Office	15%	15%	1.66	38.83	33.00	4.39	20	1.03	0.14	0.03	201.88	4.13	4.13	2.15	1.00
102	Lighting 25% More Efficient Design	Office	25%	25%	4.14	38.83	29.12	3.87	20	1.44	0.19	0.04	302.83	2.75	2.75	3.23	1.00
1000	Base HVAC	Office	0%	0%	0.00	56.73	56.73	5.45	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
1001	HVAC 10% More Efficient Design	Office	10%	10%	1.66	56.73	51.06	4.90	20	1.00	0.10	0.03	287.02	3.82	4.02	2.21	0.95
1002	HVAC 30% More Efficient Design	Office	30%	30%	8.28	56.73	39.71	3.81	20	2.71	0.26	0.05	478.37	2.29	2.41	3.68	0.95
100	Base Lighting	Restaurant	0%	0%	0.00	40.60	40.60	7.75	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Lighting 15% More Efficient Design	Restaurant	15%	15%	1.66	40.60	34.51	6.58	20	0.06	0.01	0.03	134.52	4.66	4.32	2.06	1.08
102	Lighting 25% More Efficient Design	Restaurant	25%	25%	4.14	40.60	30.45	5.81	20	0.09	0.02	0.04	201.79	3.11	2.88	3.09	1.08
1000	Base HVAC	Restaurant	0%	0%	0.00	52.51	52.51	5.46	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
1001	HVAC 10% More Efficient Design	Restaurant	10%	10%	1.66	52.51	47.26	4.92	20	0.05	0.01	0.03	286.13	3.58	3.72	2.39	0.96
1002	HVAC 30% More Efficient Design	Restaurant	30%	30%	8.28	52.51	36.76	3.82	20	0.14	0.02	0.05	476.87	2.15	2.23	3.98	0.96
500	Base Refrigeration System	Restaurant	0%	0%	0.00	108.35	108.35	12.99	10	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
501	Refrigeration 10% More Efficient Design	Restaurant	10%	10%	8.28	108.89	98.00	11.75	10	0.11	0.01	0.12	988.01	0.92	1.17	5.76	0.98
502	Refrigeration 20% More Efficient Design	Restaurant	20%	20%	24.84	115.27	92.21	11.06	10	0.17	0.02	0.17	1,400.11	0.65	0.83	8.16	0.98
100	Base Lighting	Retail	0%	0%	0.00	50.74	50.74	8.08	23	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Lighting 15% More Efficient Design	Retail	15%	15%	1.66	50.74	43.13	6.87	20	1.43	0.23	0.02	128.98	5.59	5.39	1.65	1.04
102	Lighting 25% More Efficient Design	Retail	25%	25%	4.14	50.74	38.05	6.06	20	2.01	0.32	0.03	193.47	3.73	3.60	2.47	1.04
1000	Base HVAC	Retail	0%	0%	0.00	32.80	32.80	3.61	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
1001	HVAC 10% More Efficient Design	Retail	10%	10%	1.66	32.80	29.52	3.25	20	0.62	0.07	0.05	433.49	2.25	2.32	3.82	0.97
1002	HVAC 30% More Efficient Design	Retail	30%	30%	8.28	32.80	22.96	2.52	20	1.66	0.18	0.08	722.47	1.35	1.39	6.37	0.97
100	Base Lighting	FoodStore	0%	0%	0.00	57.90	57.90	8.02	16	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Lighting 15% More Efficient Design	FoodStore	15%	15%	1.66	57.90	49.22	6.81	20	0.72	0.10	0.02	130.00	6.21	6.16	1.44	1.01
102	Lighting 25% More Efficient Design	FoodStore	25%	25%	4.14	57.90	43.43	6.01	20	1.01	0.14	0.03	195.00	4.14	4.10	2.17	1.01
1000	Base HVAC	FoodStore	0%	0%	0.00	39.42	39.42	4.44	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
1001	HVAC 10% More Efficient Design	FoodStore	10%	10%	1.66	39.42	35.48	4.00	20	0.33	0.04	0.04	351.70	2.72	2.79	3.18	0.97
1002	HVAC 30% More Efficient Design	FoodStore	30%	30%	8.28	39.42	27.59	3.11	20	0.88	0.10	0.07	586.16	1.63	1.68	5.30	0.97
500	Base Refrigeration System	FoodStore	0%	0%	0.00	271.58	271.58	31.10	10	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
501	Refrigeration 10% More Efficient Design	FoodStore	10%	10%	8.28	272.94	245.65	28.13	10	2.26	0.26	0.05	412.71	2.29	2.94	2.30	0.98
502	Refrigeration 20% More Efficient Design	FoodStore	20%	20%	24.84	288.91	231.13	26.47	10	3.53	0.40	0.07	584.85	1.61	2.07	3.25	0.98
100	Base Lighting	Schools/Colleges	0%	0%	0.00	23.55	23.55	2.43	35	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Lighting 15% More Efficient Design	Schools/Colleges	15%	15%	1.66	23.55	20.01	2.07	20	0.64	0.07	0.04	428.94	2.40	2.50	3.55	0.96
102	Lighting 25% More Efficient Design	Schools/Colleges	25%	25%	4.14	23.55	17.66	1.82	20	0.90	0.09	0.07	643.40	1.60	1.67	5.33	0.96
1000	Base HVAC	Schools/Colleges	0%	0%	0.00	17.60	17.60	0.85	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
1001	HVAC 10% More Efficient Design	Schools/Colleges	10%	10%	1.66	17.60	15.84	0.76	20	0.32	0.02	0.09	1,844.67	1.10	1.25	7.13	0.88
1002	HVAC 30% More Efficient Design	Schools/Colleges	30%	30%	8.28	17.60	12.32	0.59	20	0.86	0.04	0.15	3,074.41	0.66	0.75	11.88	0.88
100	Base Lighting	Tertiary Education	0%	0%	0.00	30.46	30.46	2.85	28	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Lighting 15% More Efficient Design	Tertiary Education	15%	15%	1.66	30.46	25.89	2.43	20	0.16	0.02	0.03	365.23	3.07	3.24	2.74	0.95
102	Lighting 25% More Efficient Design	Tertiary Education	25%	25%	4.14	30.46	22.85	2.14	20	0.23	0.02	0.05	547.84	2.04	2.16	4.12	0.95
1000	Base HVAC	Tertiary Education	0%	0%	0.00	69.11	69.11	6.91	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
1001	HVAC 10% More Efficient Design	Tertiary Education	10%	10%	1.66	69.11	62.20	6.22	20	0.25	0.02	0.02	226.31	4.68	4.90	1.81	0.96
1002	HVAC 30% More Efficient Design	Tertiary Education	30%	30%	8.28	69.11	48.38	4.84	20	0.66	0.07	0.04	377.17	2.81	2.94	3.02	0.96
100	Base Lighting	Hospital	0%	0%	0.00	45.49	45.49	6.08	18	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Lighting 15% More Efficient Design	Hospital	15%	15%	1.66	45.49	38.67	5.17	20	0.71	0.10	0.02	171.36	4.85	4.84	1.84	1.00
102	Lighting 25% More Efficient Design	Hospital	25%	25%	4.14	45.49	34.12	4.56	20	1.00	0.13	0.03	257.04	3.23	3.22	2.76	1.00
1000	Base HVAC	Hospital	0%	0%	0.00	91.73	91.73	9.71	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
1001	HVAC 10% More Efficient Design	Hospital	10%	10%	1.66	91.73	82.55	8.74	20	0.96	0.10	0.02	161.00	6.26	6.50	1.37	0.96
1002	HVAC 30% More Efficient Design	Hospital	30%	30%	8.28	91.73	64.21	6.80	20	2.59	0.27	0.03	268.32	3.76	3.90	2.28	0.96
100	Base Lighting	Hotel/Motel	0%	0%	0.00	24.70	24.70	3.10	23	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Lighting 15% More Efficient Design	Hotel/Motel	15%	15%	1.66	24.70	21.00	2.64	20	0.30	0.04	0.04	335.93	2.60	2.63	3.38	0.99
102	Lighting 25% More Efficient Design	Hotel/Motel	25%	25%	4.14	24.70	18.53	2.33	20	0.41	0.05	0.06	503.89	1.73	1.75	5.08	0.99
1000	Base HVAC	Hotel/Motel	0%	0%	0.00	25.04	25.04	2.54	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
1001	HVAC 10% More Efficient Design	Hotel/Motel	10%	10%	1.66	25.04	22.54	2.29	20	0.20	0.02	0.06	614.47	1.70	1.77	5.01	0.96
1002	HVAC 30% More Efficient Design	Hotel/Motel	30%	30%	8.28	25.04	17.53	1.78	20	0.54	0.05	0.10	1,024.10	1.02	1.06	8.34	0.96
100	Base Lighting	Miscellaneous	0%	0%	0.00	25.90	25.90	3.75	23	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Lighting 15% More Efficient Design	Miscellaneous	15%	15%	1.66	25.90	22.01	3.19	20	1.76	0.26	0.04	277.77	2.80	2.75	3.23	1.02
102	Lighting 25% More Efficient Design	Miscellaneous	25%	25%	4.14	25.90	19.42	2.81	20	2.47	0.36	0.06	416.66	1.87	1.84	4.84	1.02
1000	Base HVAC	Miscellaneous	0%	0%	0.00	28.96	28.96	2.45	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
1001	HVAC 10% More Efficient Design	Miscellaneous	10%	10%	1.66	28.96	26.06	2.21	20	1.31	0.11	0.05	637.46	1.92	2.05	4.33	0.93
1002	HVAC 30% More Efficient Design	Miscellaneous	30%	30%	8.28	28.96	20.27	1.72	20	3.54	0.30	0.09	1,062.42	1.15	1.23	7.22	0.93

INDUSTRIAL

DSM ASSYST SUMMARY

Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Base kWh	Base EUI	EUI	Peak Watts/ Base kWh	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
100	Base Compressed Air	Aluminium	0%	0%	0.00	1.04	1.04	0.12	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Compressed Air-O&M	Aluminium	17%	17%	0.02	1.20	1.00	0.12	10	3.93	0.46	0.01	113.21	8.18	6.46	1.09	1.59
102	Compressed Air - Controls	Aluminium	12%	12%	0.03	1.10	0.97	0.11	10	6.47	0.76	0.03	291.89	3.17	2.51	2.82	1.59
103	Compressed Air - System Optimization	Aluminium	20%	20%	0.03	1.08	0.86	0.10	10	16.89	1.98	0.02	167.14	5.54	4.38	1.62	1.59
104	Compressed Air- Sizing	Aluminium	9%	9%	0.01	1.10	1.01	0.12	10	2.92	0.34	0.01	101.67	9.11	7.20	0.98	1.59
105	Comp Air - Replace motor	Aluminium	10%	10%	0.02	1.04	0.93	0.11	8	10.13	1.19	0.04	331.15	2.80	2.34	2.70	1.59
106	Comp Air - ASD	Aluminium	6%	6%	0.01	1.05	0.98	0.11	8	2.11	0.25	0.04	317.08	2.92	2.44	2.58	1.59
107	Comp Air - Motor practices-1	Aluminium	2%	2%	0.01	1.05	1.03	0.12	8	0.81	0.10	0.06	540.56	1.71	1.43	4.40	1.59
108	Power recovery	Aluminium	1%	1%	0.01	1.04	1.02	0.12	10	0.38	0.04	0.08	655.30	1.41	1.12	6.34	1.59
110	Efficient Transformers	Aluminium	20%	20%	0.12	1.18	0.94	0.11	25	0.18	0.02	0.04	369.26	2.28	1.44	6.48	1.59
200	Base Fans	Aluminium	0%	0%	0.00	1.04	1.04	0.12	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
201	Fans - O&M	Aluminium	2%	2%	0.00	1.05	1.03	0.12	10	0.44	0.05	0.01	107.47	8.62	6.81	1.04	1.59
202	Fans - Controls	Aluminium	30%	30%	0.16	1.14	0.80	0.09	10	17.51	2.05	0.07	609.57	1.52	1.20	5.89	1.59
203	Fans - System Optimization	Aluminium	21%	21%	0.10	1.06	0.83	0.10	10	21.11	2.47	0.07	603.42	1.53	1.21	5.83	1.59
204	Fans- Improve components	Aluminium	5%	5%	0.01	1.05	0.99	0.12	10	4.38	0.51	0.03	216.25	4.28	3.38	2.09	1.59
205	Fans - Replace motor	Aluminium	10%	10%	0.02	1.04	0.93	0.11	8	10.84	1.27	0.04	331.15	2.80	2.34	2.70	1.59
206	Fans - ASD	Aluminium	6%	6%	0.01	1.05	0.98	0.11	8	2.25	0.26	0.04	317.08	2.92	2.44	2.58	1.59
207	Fans - Motor practices-1	Aluminium	2%	2%	0.01	1.05	1.03	0.12	8	0.87	0.10	0.06	540.56	1.71	1.43	4.40	1.59
209	Power recovery	Aluminium	1%	1%	0.01	1.04	1.02	0.12	10	0.38	0.04	0.08	655.30	1.41	1.12	6.34	1.59
211	Efficient Transformers	Aluminium	20%	20%	0.12	1.18	0.94	0.11	25	0.20	0.02	0.04	369.26	2.28	1.44	6.48	1.59
300	Base Pumps	Aluminium	0%	0%	0.00	1.04	1.04	0.12	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
301	Pumps - O&M	Aluminium	10%	10%	0.01	1.13	1.01	0.12	10	1.07	0.13	0.01	100.48	9.22	7.28	0.97	1.59
302	Pumps - Controls	Aluminium	30%	30%	0.05	1.18	0.82	0.10	10	10.09	1.18	0.02	172.25	5.38	4.25	1.67	1.59
303	Pumps - System Optimization	Aluminium	33%	33%	0.11	1.38	0.92	0.11	10	5.41	0.63	0.04	327.57	2.83	2.23	3.17	1.59
304	Pumps - Sizing	Aluminium	20%	20%	0.03	1.15	0.92	0.11	10	5.48	0.64	0.02	196.01	4.72	3.73	1.90	1.59
305	Pumps - Replace motor	Aluminium	10%	10%	0.02	1.04	0.93	0.11	8	6.16	0.72	0.04	331.15	2.80	2.34	2.70	1.59
306	Pumps - ASD	Aluminium	6%	6%	0.01	1.05	0.98	0.11	8	1.28	0.15	0.04	317.08	2.92	2.44	2.58	1.59
307	Pumps - Motor practices-1	Aluminium	2%	2%	0.01	1.05	1.03	0.12	8	0.49	0.06	0.06	540.56	1.71	1.43	4.40	1.59
308	Power recovery	Aluminium	1%	1%	0.01	1.04	1.02	0.12	10	0.38	0.04	0.08	655.30	1.41	1.12	6.34	1.59
310	Efficient Transformers	Aluminium	20%	20%	0.12	1.18	0.94	0.11	25	0.11	0.01	0.04	369.26	2.28	1.44	6.48	1.59
400	Base Drives	Aluminium	0%	0%	0.00	1.04	1.04	0.12	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
405	Drives - Replace motor	Aluminium	10%	10%	0.02	1.04	0.93	0.11	8	21.15	2.48	0.04	331.15	2.80	2.34	2.70	1.59
415	Drives - Process Control	Aluminium	5%	5%	0.03	1.07	1.02	0.12	10	5.26	0.62	0.07	630.81	1.47	1.16	6.10	1.59
424	Efficient drives - rolling	Aluminium	6%	6%	0.02	1.07	1.00	0.12	10	6.32	0.74	0.04	337.72	2.74	2.17	3.27	1.59
429	Efficient Transformers	Aluminium	20%	20%	0.12	1.18	0.94	0.11	25	0.77	0.09	0.04	369.26	2.28	1.44	6.48	1.59
500	Base Heating	Aluminium	0%	0%	0.00	1.04	1.04	0.12	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
512	Efficient Transformers	Aluminium	20%	20%	0.12	1.18	0.94	0.11	25	1.13	0.13	0.04	369.26	2.28	1.44	6.48	1.59
600	Base Other Process	Aluminium	0%	0%	0.00	1.04	1.04	0.12	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
700	Base DX Packaged System, EER=2.65, 10 tons	Aluminium	0%	0%	0.00	1.04	1.04	0.12	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
706	Efficient Transformers	Aluminium	20%	20%	0.11	1.18	0.94	0.11	25	0.18	0.02	0.04	335.63	2.51	1.58	5.89	1.59
800	Base Lighting	Aluminium	0%	0%	0.00	1.04	1.04	0.12	10	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
801	RET T12 to Next Gen T8, 1EB	Aluminium	28%	28%	0.18	1.04	0.75	0.09	14	0.43	0.05	0.07	617.90	1.50	1.07	7.99	1.59
802	RET T8 to Next Gen T8, 1EB	Aluminium	15%	15%	0.12	1.12	0.95	0.11	14	1.26	0.15	0.08	677.14	1.37	0.98	8.75	1.59
805	400W MV to 250W HPS	Aluminium	58%	58%	0.02	1.04	0.43	0.05	5	8.81	1.03	0.01	90.25	10.26	9.37	0.48	1.59
806	Lighting Controls	Aluminium	15%	20%	0.06	1.04	0.88	0.10	8	2.28	0.36	0.07	472.44	1.55	1.23	5.12	1.67
807	Efficient Transformers	Aluminium	20%	20%	0.11	1.18	0.94	0.11	25	0.14	0.02	0.04	335.63	2.51	1.58	5.89	1.59
900	Base Other	Aluminium	0%	0%	0.00	1.04	1.04	0.12	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
901	Replace V-belts	Aluminium	0%	0%	0.00	1.04	1.03	0.12	5	0.00	0.00	0.05	386.78	2.39	2.19	2.07	1.59
903	Efficient Transformers	Aluminium	20%	20%	0.12	1.18	0.94	0.11	25	0.09	0.01	0.04	369.26	2.28	1.44	6.48	1.59
100	Base Compressed Air	Steel	0%	0%	0.00	1.04	1.04	0.14	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Compressed Air-O&M	Steel	17%	17%	0.02	1.20	1.00	0.13	10	7.44	0.97	0.01	101.66	8.33	6.46	1.09	1.62
102	Compressed Air - Controls	Steel	12%	12%	0.03	1.13	0.99	0.13	10	7.53	0.98	0.03	255.43	3.32	2.57	2.75	1.62
103	Compressed Air - System Optimization	Steel	20%	20%	0.03	1.15	0.92	0.12	10	17.04	2.22	0.02	140.71	6.02	4.67	1.52	1.62
104	Compressed Air- Sizing	Steel	9%	9%	0.01	1.12	1.02	0.13	10	3.72	0.48	0.01	90.42	9.37	7.27	0.97	1.62
105	Comp Air - Replace motor	Steel	10%	10%	0.02	1.04	0.93	0.12	8	19.17	2.50	0.04	297.38	2.85	2.34	2.70	1.62
106	Comp Air - ASD	Steel	6%	6%	0.01	1.08	1.01	0.13	8	1.53	0.20	0.04	277.35	3.05	2.51	2.51	1.62
107	Comp Air - Motor practices-1	Steel	2%	2%	0.01	1.05	1.02	0.13	8	1.92	0.25	0.06	486.41	1.74	1.43	4.41	1.62
108	Power recovery	Steel	1%	1%	0.01	1.04	1.03	0.13	10	0.65	0.08	0.08	587.89	1.44	1.12	6.33	1.62
110	Efficient Transformers	Steel	20%	20%	0.12	1.18	0.94	0.12	25	0.35	0.05	0.04	331.60	2.32	1.44	6.48	1.62
200	Base Fans	Steel	0%	0%	0.00	1.04	1.04	0.14	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
201	Fans - O&M	Steel	2%	2%	0.00	1.05	1.03	0.13	10	0.42	0.05	0.01	96.31	8.80	6.82	1.04	1.62
202	Fans - Controls	Steel	30%	30%	0.16	1.26	0.88	0.12	10	21.01	2.74	0.06	493.27	1.72	1.33	5.31	1.62

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DSM ASSYST SUMMARY

Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Base kWh	Base EUI	EUI	Peak Watts/ Base kWh	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
203	Fans - System Optimization	Steel	21%	21%	0.10	1.25	0.98	0.13	10	10.46	1.36	0.06	459.82	1.84	1.43	4.95	1.62
204	Fans- Improve components	Steel	5%	5%	0.01	1.06	1.01	0.13	10	5.26	0.69	0.02	191.25	4.43	3.43	2.06	1.62
205	Fans - Replace motor	Steel	10%	10%	0.02	1.04	0.93	0.12	8	20.51	2.68	0.04	297.38	2.85	2.34	2.70	1.62
206	Fans - ASD	Steel	6%	6%	0.01	1.08	1.01	0.13	8	1.64	0.21	0.04	277.35	3.05	2.51	2.51	1.62
207	Fans - Motor practices-1	Steel	2%	2%	0.01	1.05	1.02	0.13	8	2.05	0.27	0.06	486.41	1.74	1.43	4.41	1.62
209	Power recovery	Steel	1%	1%	0.01	1.04	1.03	0.13	10	0.65	0.08	0.08	587.89	1.44	1.12	6.33	1.62
211	Efficient Transformers	Steel	20%	20%	0.12	1.18	0.94	0.12	25	0.37	0.05	0.04	331.60	2.32	1.44	6.48	1.62
300	Base Pumps	Steel	0%	0%	0.00	1.04	1.04	0.14	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
301	Pumps - O&M	Steel	10%	10%	0.01	1.13	1.02	0.13	10	1.53	0.20	0.01	89.74	9.44	7.32	0.97	1.62
302	Pumps - Controls	Steel	30%	30%	0.05	1.22	0.85	0.11	10	16.46	2.15	0.02	149.41	5.67	4.40	1.61	1.62
303	Pumps - System Optimization	Steel	33%	33%	0.11	1.41	0.94	0.12	10	8.37	1.09	0.04	287.72	2.94	2.28	3.10	1.62
304	Pumps - Sizing	Steel	20%	20%	0.03	1.25	1.00	0.13	10	3.37	0.44	0.02	162.33	5.22	4.05	1.75	1.62
305	Pumps - Replace motor	Steel	10%	10%	0.02	1.04	0.93	0.12	8	11.66	1.52	0.04	297.38	2.85	2.34	2.70	1.62
306	Pumps - ASD	Steel	6%	6%	0.01	1.08	1.01	0.13	8	0.93	0.12	0.04	277.35	3.05	2.51	2.51	1.62
307	Pumps - Motor practices-1	Steel	2%	2%	0.01	1.05	1.02	0.13	8	1.17	0.15	0.06	486.41	1.74	1.43	4.41	1.62
308	Power recovery	Steel	1%	1%	0.01	1.04	1.03	0.13	10	0.65	0.08	0.08	587.89	1.44	1.12	6.33	1.62
310	Efficient Transformers	Steel	20%	20%	0.12	1.18	0.94	0.12	25	0.21	0.03	0.04	331.60	2.32	1.44	6.48	1.62
400	Base Drives	Steel	0%	0%	0.00	1.04	1.04	0.14	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
405	Drives - Replace motor	Steel	10%	10%	0.02	1.04	0.93	0.12	8	40.01	5.22	0.04	297.38	2.85	2.34	2.70	1.62
415	Drives - Process Control	Steel	5%	5%	0.03	1.07	1.02	0.13	10	8.96	1.17	0.07	566.49	1.50	1.16	6.10	1.62
424	Efficient drives - rolling	Steel	6%	6%	0.02	1.07	1.00	0.13	10	11.95	1.56	0.04	303.28	2.79	2.17	3.27	1.62
429	Efficient Transformers	Steel	20%	20%	0.12	1.18	0.94	0.12	25	1.45	0.19	0.04	331.60	2.32	1.44	6.48	1.62
500	Base Heating	Steel	0%	0%	0.00	1.04	1.04	0.14	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
505	Efficient electric melting	Steel	10%	10%	0.06	1.12	1.01	0.13	20	0.42	0.06	0.05	360.79	2.35	1.45	6.41	1.62
506	Intelligent extruder (DOE)	Steel	2%	2%	0.03	1.05	1.03	0.13	10	0.01	0.00	0.20	1,540.04	0.55	0.43	16.58	1.62
507	Near Net Shape Casting	Steel	12%	12%	0.02	1.14	1.00	0.13	15	0.11	0.01	0.02	126.43	6.70	4.60	1.91	1.62
508	Heating - Process Control	Steel	5%	5%	0.03	1.06	1.01	0.13	15	0.44	0.06	0.05	406.80	2.08	1.43	6.15	1.62
512	Efficient Transformers	Steel	20%	20%	0.12	1.18	0.94	0.12	25	0.03	0.00	0.04	331.60	2.32	1.44	6.48	1.62
600	Base Other Process	Steel	0%	0%	0.00	1.04	1.04	0.14	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
700	Base DX Packaged System, EER=2.65, 10 tons	Steel	0%	0%	0.00	1.04	1.04	0.14	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
706	Efficient Transformers	Steel	20%	20%	0.11	1.18	0.94	0.12	25	0.01	0.00	0.04	301.41	2.55	1.58	5.89	1.62
800	Base Lighting	Steel	0%	0%	0.00	1.04	1.04	0.14	10	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
801	RET T12 to Next Gen T8, 1EB	Steel	28%	28%	0.18	1.04	0.75	0.10	14	0.01	0.00	0.07	554.89	1.53	1.07	7.99	1.62
802	RET T8 to Next Gen T8, 1EB	Steel	15%	15%	0.12	1.12	0.95	0.12	14	0.03	0.00	0.08	608.09	1.39	0.98	8.75	1.62
803	RET - Hardwired 18W CFL	Steel	64%	64%	0.27	1.04	0.37	0.05	4	0.03	0.00	0.14	1,065.02	0.80	0.74	5.18	1.62
804	RET - Screw-in 18W CFL	Steel	64%	64%	0.01	1.04	0.37	0.05	2	0.03	0.00	0.01	88.10	9.62	9.51	0.22	1.62
805	400W MV to 250W HPS	Steel	58%	58%	0.02	1.04	0.43	0.06	5	0.84	0.11	0.01	81.05	10.45	9.37	0.48	1.62
806	Lighting Controls	Steel	15%	20%	0.06	1.05	0.89	0.11	8	0.10	0.02	0.07	417.82	1.63	1.26	4.99	1.71
807	Efficient Transformers	Steel	20%	20%	0.11	1.18	0.94	0.12	25	0.01	0.00	0.04	301.41	2.55	1.58	5.89	1.62
900	Base Other	Steel	0%	0%	0.00	1.04	1.04	0.14	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
901	Replace V-belts	Steel	0%	0%	0.00	1.04	1.03	0.13	5	0.00	0.00	0.05	347.34	2.44	2.19	2.07	1.62
903	Efficient Transformers	Steel	20%	20%	0.12	1.18	0.94	0.12	25	0.00	0.00	0.04	331.60	2.32	1.44	6.48	1.62
100	Base Compressed Air	Oil Refining	0%	0%	0.00	1.04	1.04	0.13	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Compressed Air-O&M	Oil Refining	17%	17%	0.02	1.22	1.01	0.13	10	0.00	0.00	0.01	104.25	8.43	6.59	1.07	1.60
102	Compressed Air - Controls	Oil Refining	12%	12%	0.03	1.15	1.01	0.13	10	0.01	0.00	0.03	263.63	3.33	2.61	2.71	1.60
103	Compressed Air - System Optimization	Oil Refining	20%	20%	0.03	1.20	0.96	0.12	10	0.11	0.01	0.02	140.62	6.25	4.89	1.45	1.60
104	Compressed Air- Sizing	Oil Refining	9%	9%	0.01	1.13	1.03	0.13	10	0.00	0.00	0.01	93.19	9.43	7.37	0.96	1.60
105	Comp Air - Replace motor	Oil Refining	10%	10%	0.02	1.04	0.93	0.12	8	3.40	0.42	0.04	311.00	2.83	2.34	2.70	1.60
106	Comp Air - ASD	Oil Refining	6%	6%	0.01	1.04	0.98	0.12	8	0.39	0.05	0.04	299.72	2.93	2.43	2.60	1.60
107	Comp Air - Motor practices-1	Oil Refining	2%	2%	0.01	1.05	1.03	0.13	8	0.07	0.01	0.06	504.61	1.74	1.44	4.37	1.60
108	Power recovery	Oil Refining	1%	1%	0.01	1.04	1.03	0.13	10	0.16	0.02	0.08	614.19	1.43	1.12	6.32	1.60
109	Refinery Controls	Oil Refining	3%	3%	0.01	1.05	1.02	0.13	10	0.43	0.05	0.04	305.06	2.88	2.25	3.14	1.60
110	Efficient Transformers	Oil Refining	20%	20%	0.12	1.18	0.94	0.12	25	0.06	0.01	0.04	346.79	2.30	1.44	6.48	1.60
200	Base Fans	Oil Refining	0%	0%	0.00	1.04	1.04	0.13	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
201	Fans - O&M	Oil Refining	2%	2%	0.00	1.05	1.03	0.13	10	0.04	0.01	0.01	100.72	8.73	6.82	1.04	1.60
202	Fans - Controls	Oil Refining	30%	30%	0.16	1.12	0.78	0.10	10	2.57	0.32	0.07	581.91	1.51	1.18	5.99	1.60
203	Fans - System Optimization	Oil Refining	21%	21%	0.10	1.11	0.87	0.11	10	3.34	0.42	0.07	542.18	1.62	1.27	5.58	1.60
204	Fans- Improve components	Oil Refining	5%	5%	0.01	1.06	1.01	0.13	10	0.54	0.07	0.02	200.01	4.39	3.43	2.06	1.60
205	Fans - Replace motor	Oil Refining	10%	10%	0.02	1.04	0.93	0.12	8	2.11	0.26	0.04	311.00	2.83	2.34	2.70	1.60
206	Fans - ASD	Oil Refining	6%	6%	0.01	1.04	0.98	0.12	8	0.25	0.03	0.04	299.72	2.93	2.43	2.60	1.60
207	Fans - Motor practices-1	Oil Refining	2%	2%	0.01	1.05	1.03	0.13	8	0.04	0.01	0.06	504.61	1.74	1.44	4.37	1.60
209	Power recovery	Oil Refining	1%	1%	0.01	1.04	1.03	0.13	10	0.10	0.01	0.08	614.19	1.43	1.12	6.32	1.60

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DSM ASSYST SUMMARY

Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Base kWh	Base EUI	EUI	Peak Watts/ Base kWh	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
210	Refinery Controls	Oil Refining	3%	3%	0.01	1.05	1.02	0.13	10	0.27	0.03	0.04	305.06	2.88	2.25	3.14	1.60
211	Efficient Transformers	Oil Refining	20%	20%	0.12	1.18	0.94	0.12	25	0.04	0.00	0.04	346.79	2.30	1.44	6.48	1.60
300	Base Pumps	Oil Refining	0%	0%	0.00	1.04	1.04	0.13	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
301	Pumps - O&M	Oil Refining	10%	10%	0.01	1.14	1.02	0.13	10	0.29	0.04	0.01	93.34	9.42	7.36	0.96	1.60
302	Pumps - Controls	Oil Refining	30%	30%	0.05	1.10	0.77	0.10	10	20.11	2.51	0.02	172.79	5.09	3.98	1.78	1.60
303	Pumps - System Optimization	Oil Refining	33%	33%	0.11	1.11	0.74	0.09	10	14.84	1.85	0.05	381.84	2.30	1.80	3.93	1.60
304	Pumps - Sizing	Oil Refining	20%	20%	0.03	1.23	0.99	0.12	10	5.63	0.70	0.02	171.81	5.12	4.00	1.77	1.60
305	Pumps - Replace motor	Oil Refining	10%	10%	0.02	1.04	0.93	0.12	8	13.13	1.64	0.04	311.00	2.83	2.34	2.70	1.60
306	Pumps - ASD	Oil Refining	6%	6%	0.01	1.04	0.98	0.12	8	1.53	0.19	0.04	299.72	2.93	2.43	2.60	1.60
307	Pumps - Motor practices-1	Oil Refining	2%	2%	0.01	1.05	1.03	0.13	8	0.26	0.03	0.06	504.61	1.74	1.44	4.37	1.60
308	Power recovery	Oil Refining	1%	1%	0.01	1.04	1.03	0.13	10	0.63	0.08	0.08	614.19	1.43	1.12	6.32	1.60
309	Refinery Controls	Oil Refining	3%	3%	0.01	1.05	1.02	0.13	10	1.66	0.21	0.04	305.06	2.88	2.25	3.14	1.60
310	Efficient Transformers	Oil Refining	20%	20%	0.12	1.18	0.94	0.12	25	0.24	0.03	0.04	346.79	2.30	1.44	6.48	1.60
400	Base Drives	Oil Refining	0%	0%	0.00	1.04	1.04	0.13	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
405	Drives - Replace motor	Oil Refining	10%	10%	0.02	1.04	0.93	0.12	8	1.81	0.23	0.04	311.00	2.83	2.34	2.70	1.60
500	Base Heating	Oil Refining	0%	0%	0.00	1.04	1.04	0.13	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
600	Base Other Process	Oil Refining	0%	0%	0.00	1.04	1.04	0.13	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
700	Base DX Packaged System, EER=2.65, 10 tons	Oil Refining	0%	0%	0.00	1.04	1.04	0.13	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
701	DX Packaged System, EER=3.5, 10 tons	Oil Refining	24%	24%	0.03	1.06	0.80	0.10	15	0.21	0.03	0.01	111.71	7.87	5.44	1.62	1.60
702	DX Tune Up/ Advanced Diagnostics	Oil Refining	5%	5%	0.17	1.05	0.99	0.12	10	0.05	0.01	0.49	3,951.64	0.22	0.17	40.68	1.60
703	Optimize HVAC Controls	Oil Refining	5%	5%	0.05	1.04	0.98	0.12	5	0.06	0.01	0.29	2,307.67	0.38	0.34	13.15	1.60
704	BMS	Oil Refining	8%	3%	0.07	1.04	0.95	0.13	10	0.02	0.00	0.13	3,480.89	0.73	0.65	10.96	1.41
705	Prog. Thermostat	Oil Refining	4%	1%	0.02	1.04	0.99	0.13	10	0.05	0.00	0.09	2,378.62	1.06	0.94	7.49	1.41
706	Efficient Transformers	Oil Refining	20%	20%	0.11	1.18	0.94	0.12	25	0.00	0.00	0.04	315.21	2.53	1.58	5.89	1.60
800	Base Lighting	Oil Refining	0%	0%	0.00	1.04	1.04	0.13	10	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
801	RET T12 to Next Gen T8, 1EB	Oil Refining	28%	28%	0.18	1.04	0.75	0.09	14	0.04	0.01	0.07	580.30	1.51	1.07	7.99	1.60
802	RET T8 to Next Gen T8, 1EB	Oil Refining	15%	15%	0.12	1.10	0.93	0.12	14	0.22	0.03	0.08	646.47	1.36	0.96	8.90	1.60
803	RET - Hardwired 18W CFL	Oil Refining	64%	64%	0.27	1.04	0.37	0.05	4	0.24	0.03	0.14	1,113.79	0.79	0.74	5.18	1.60
804	RET - Screw-in 18W CFL	Oil Refining	64%	64%	0.01	1.04	0.37	0.05	2	0.24	0.03	0.01	92.13	9.54	9.51	0.22	1.60
805	400W MV to 250W HPS	Oil Refining	58%	58%	0.02	1.04	0.43	0.05	5	1.31	0.16	0.01	84.76	10.37	9.37	0.48	1.60
806	Lighting Controls	Oil Refining	15%	20%	0.06	1.07	0.91	0.11	8	0.19	0.03	0.07	430.26	1.63	1.28	4.93	1.69
807	Efficient Transformers	Oil Refining	20%	20%	0.11	1.18	0.94	0.12	25	0.01	0.00	0.04	315.21	2.53	1.58	5.89	1.60
900	Base Other	Oil Refining	0%	0%	0.00	1.04	1.04	0.13	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
901	Replace V-belts	Oil Refining	0%	0%	0.00	1.04	1.03	0.13	5	0.00	0.00	0.05	363.25	2.42	2.19	2.07	1.60
903	Efficient Transformers	Oil Refining	20%	20%	0.12	1.18	0.94	0.12	25	0.00	0.00	0.04	346.79	2.30	1.44	6.48	1.60
100	Base Compressed Air	Paper	0%	0%	0.00	1.04	1.04	0.12	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Compressed Air-O&M	Paper	17%	17%	0.02	1.20	1.00	0.12	10	3.33	0.40	0.01	110.72	8.21	6.46	1.09	1.59
102	Compressed Air - Controls	Paper	12%	12%	0.03	1.15	1.01	0.12	10	1.68	0.20	0.03	272.58	3.33	2.62	2.69	1.59
103	Compressed Air - System Optimization	Paper	20%	20%	0.03	1.08	0.86	0.10	10	12.11	1.45	0.02	163.47	5.56	4.38	1.62	1.59
104	Compressed Air- Sizing	Paper	9%	9%	0.01	1.09	0.99	0.12	10	3.51	0.42	0.01	100.68	9.03	7.11	1.00	1.59
105	Comp Air - Replace motor	Paper	10%	10%	0.02	1.04	0.93	0.11	8	3.10	0.37	0.04	323.88	2.81	2.34	2.70	1.59
106	Comp Air - ASD	Paper	6%	6%	0.01	1.07	1.00	0.12	8	1.02	0.12	0.04	303.60	2.99	2.49	2.53	1.59
107	Comp Air - Motor practices-1	Paper	2%	2%	0.01	1.05	1.03	0.12	8	0.35	0.04	0.06	526.56	1.73	1.44	4.38	1.59
110	Efficient Transformers	Paper	20%	20%	0.12	1.18	0.94	0.11	25	0.16	0.02	0.04	361.15	2.29	1.44	6.48	1.59
200	Base Fans	Paper	0%	0%	0.00	1.04	1.04	0.12	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
201	Fans - O&M	Paper	2%	2%	0.00	1.05	1.03	0.12	10	0.75	0.09	0.01	104.89	8.67	6.82	1.04	1.59
202	Fans - Controls	Paper	30%	30%	0.16	1.22	0.85	0.10	10	45.65	5.47	0.07	556.87	1.63	1.28	5.51	1.59
203	Fans - System Optimization	Paper	21%	21%	0.10	1.07	0.84	0.10	10	68.95	8.26	0.07	584.27	1.56	1.22	5.78	1.59
204	Fans- Improve components	Paper	5%	5%	0.01	1.06	1.01	0.12	10	9.90	1.19	0.02	208.54	4.36	3.43	2.06	1.59
205	Fans - Replace motor	Paper	10%	10%	0.02	1.04	0.93	0.11	8	13.36	1.60	0.04	323.88	2.81	2.34	2.70	1.59
206	Fans - ASD	Paper	6%	6%	0.01	1.07	1.00	0.12	8	4.41	0.53	0.04	303.60	2.99	2.49	2.53	1.59
207	Fans - Motor practices-1	Paper	2%	2%	0.01	1.05	1.03	0.12	8	1.49	0.18	0.06	526.56	1.73	1.44	4.38	1.59
211	Efficient Transformers	Paper	20%	20%	0.12	1.18	0.94	0.11	25	0.67	0.08	0.04	361.15	2.29	1.44	6.48	1.59
300	Base Pumps	Paper	0%	0%	0.00	1.04	1.04	0.12	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
301	Pumps - O&M	Paper	10%	10%	0.01	1.14	1.02	0.12	10	5.15	0.62	0.01	97.20	9.35	7.36	0.96	1.59
302	Pumps - Controls	Paper	30%	30%	0.05	1.15	0.80	0.10	10	104.96	12.57	0.02	172.66	5.26	4.14	1.71	1.59
303	Pumps - System Optimization	Paper	33%	33%	0.11	1.27	0.85	0.10	10	84.46	10.12	0.04	347.93	2.61	2.06	3.44	1.59
304	Pumps - Sizing	Paper	20%	20%	0.03	1.26	1.01	0.12	10	8.14	0.97	0.02	174.66	5.20	4.10	1.73	1.59
305	Pumps - Replace motor	Paper	10%	10%	0.02	1.04	0.93	0.11	8	21.19	2.54	0.04	323.88	2.81	2.34	2.70	1.59
306	Pumps - ASD	Paper	6%	6%	0.01	1.07	1.00	0.12	8	6.99	0.84	0.04	303.60	2.99	2.49	2.53	1.59
307	Pumps - Motor practices-1	Paper	2%	2%	0.01	1.05	1.03	0.12	8	2.36	0.28	0.06	526.56	1.73	1.44	4.38	1.59
310	Efficient Transformers	Paper	20%	20%	0.12	1.18	0.94	0.11	25	1.07	0.13	0.04	361.15	2.29	1.44	6.48	1.59

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DSM ASSYST SUMMARY

Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Base kWh	Base EUI	EUI	Peak Watts/ Base kWh	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
400	Base Drives	Paper	0%	0%	0.00	1.04	1.04	0.12	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
405	Drives - Replace motor	Paper	10%	10%	0.02	1.04	0.93	0.11	8	26.78	3.21	0.03	286.96	3.17	2.64	2.39	1.59
406	Gap Forming papermachine	Paper	8%	8%	0.01	1.04	0.95	0.11	20	22.00	2.64	0.02	129.13	7.04	4.42	2.11	1.59
407	High Consistency forming	Paper	8%	8%	0.01	1.09	1.00	0.12	20	16.43	1.97	0.01	123.17	7.38	4.63	2.01	1.59
408	Optimization control PM	Paper	5%	5%	0.02	1.05	0.99	0.12	10	21.64	2.59	0.06	527.50	1.72	1.36	5.22	1.59
429	Efficient Transformers	Paper	20%	20%	0.12	1.18	0.94	0.11	25	0.97	0.12	0.04	361.15	2.29	1.44	6.48	1.59
500	Base Heating	Paper	0%	0%	0.00	1.04	1.04	0.12	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
600	Base Other Process	Paper	0%	0%	0.00	1.04	1.04	0.12	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
700	Base DX Packaged System, EER=2.65, 10 tons	Paper	0%	0%	0.00	1.04	1.04	0.12	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
701	DX Packaged System, EER=3.5, 10 tons	Paper	24%	24%	0.03	1.06	0.80	0.10	15	3.42	0.41	0.01	116.34	7.81	5.44	1.62	1.59
702	DX Tune Up/ Advanced Diagnostics	Paper	5%	5%	0.17	1.05	0.99	0.12	10	0.65	0.08	0.49	4,115.24	0.22	0.17	40.68	1.59
703	Optimize HVAC Controls	Paper	5%	5%	0.05	1.04	0.98	0.12	5	0.80	0.10	0.29	2,403.21	0.38	0.34	13.15	1.59
704	BMS	Paper	8%	3%	0.07	1.04	0.95	0.12	10	0.79	0.03	0.13	3,625.00	0.73	0.65	10.90	1.41
705	Prog. Thermostat	Paper	4%	1%	0.02	1.04	0.99	0.12	10	0.66	0.02	0.09	2,477.09	1.07	0.95	7.45	1.41
706	Efficient Transformers	Paper	20%	20%	0.11	1.18	0.94	0.11	25	0.03	0.00	0.04	328.26	2.52	1.58	5.89	1.59
800	Base Lighting	Paper	0%	0%	0.00	1.04	1.04	0.12	10	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
801	RET T12 to Next Gen T8, 1EB	Paper	28%	28%	0.18	1.04	0.75	0.09	14	0.19	0.02	0.07	604.33	1.50	1.07	7.99	1.59
802	RET T8 to Next Gen T8, 1EB	Paper	15%	15%	0.12	1.12	0.95	0.11	14	0.22	0.03	0.08	664.79	1.37	0.98	8.79	1.59
803	RET - Hardwired 18W CFL	Paper	64%	64%	0.27	1.04	0.37	0.04	4	0.40	0.05	0.14	1,159.90	0.78	0.74	5.18	1.59
804	RET - Screw-in 18W CFL	Paper	64%	64%	0.01	1.04	0.37	0.04	2	0.40	0.05	0.01	95.95	9.47	9.51	0.22	1.59
805	400W MV to 250W HPS	Paper	58%	58%	0.02	1.04	0.43	0.05	5	3.81	0.46	0.01	88.27	10.30	9.37	0.48	1.59
806	Lighting Controls	Paper	15%	20%	0.06	1.07	0.91	0.10	8	0.41	0.07	0.07	448.31	1.60	1.26	5.01	1.69
807	Efficient Transformers	Paper	20%	20%	0.11	1.18	0.94	0.11	25	0.03	0.00	0.04	328.26	2.52	1.58	5.89	1.59
900	Base Other	Paper	0%	0%	0.00	1.04	1.04	0.12	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
901	Replace V-belts	Paper	0%	0%	0.00	1.04	1.03	0.12	5	0.01	0.00	0.05	378.29	2.40	2.19	2.07	1.59
903	Efficient Transformers	Paper	20%	20%	0.12	1.18	0.94	0.11	25	0.04	0.00	0.04	361.15	2.29	1.44	6.48	1.59
100	Base Compressed Air	Dairy	0%	0%	0.00	1.04	1.04	0.19	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Compressed Air-O&M	Dairy	17%	17%	0.02	1.21	1.00	0.18	10	2.02	0.36	0.01	73.59	8.96	6.51	1.09	1.73
102	Compressed Air - Controls	Dairy	12%	12%	0.03	1.15	1.01	0.18	10	1.56	0.28	0.03	183.42	3.59	2.61	2.71	1.73
103	Compressed Air - System Optimization	Dairy	20%	20%	0.03	1.18	0.95	0.17	10	5.50	0.98	0.02	99.76	6.61	4.80	1.47	1.73
104	Compressed Air- Sizing	Dairy	9%	9%	0.01	1.13	1.03	0.18	10	0.63	0.11	0.01	65.32	10.09	7.34	0.96	1.73
105	Comp Air - Replace motor	Dairy	10%	10%	0.02	1.04	0.93	0.17	8	6.44	1.15	0.04	216.92	3.04	2.34	2.70	1.73
106	Comp Air - ASD	Dairy	6%	6%	0.01	1.09	1.02	0.18	8	0.33	0.06	0.04	200.31	3.29	2.53	2.49	1.73
107	Comp Air - Motor practices-1	Dairy	2%	2%	0.01	1.05	1.03	0.18	8	0.18	0.03	0.06	352.23	1.87	1.44	4.38	1.73
110	Efficient Transformers	Dairy	20%	20%	0.12	1.18	0.94	0.17	25	0.12	0.02	0.04	241.88	2.48	1.44	6.48	1.73
200	Base Fans	Dairy	0%	0%	0.00	1.04	1.04	0.19	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
201	Fans - O&M	Dairy	2%	2%	0.00	1.05	1.03	0.18	10	0.11	0.02	0.01	70.24	9.39	6.82	1.04	1.73
202	Fans - Controls	Dairy	30%	30%	0.16	1.33	0.93	0.17	10	3.74	0.67	0.06	341.09	1.93	1.40	5.03	1.73
203	Fans - System Optimization	Dairy	21%	21%	0.10	1.17	0.92	0.16	10	4.12	0.74	0.06	357.45	1.84	1.34	5.28	1.73
204	Fans- Improve components	Dairy	5%	5%	0.01	1.06	1.01	0.18	10	1.56	0.28	0.02	139.39	4.73	3.44	2.06	1.73
205	Fans - Replace motor	Dairy	10%	10%	0.02	1.04	0.93	0.17	8	6.27	1.12	0.04	216.92	3.04	2.34	2.70	1.73
206	Fans - ASD	Dairy	6%	6%	0.01	1.09	1.02	0.18	8	0.32	0.06	0.04	200.31	3.29	2.53	2.49	1.73
207	Fans - Motor practices-1	Dairy	2%	2%	0.01	1.05	1.03	0.18	8	0.18	0.03	0.06	352.23	1.87	1.44	4.38	1.73
211	Efficient Transformers	Dairy	20%	20%	0.12	1.18	0.94	0.17	25	0.11	0.02	0.04	241.88	2.48	1.44	6.48	1.73
300	Base Pumps	Dairy	0%	0%	0.00	1.04	1.04	0.19	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
301	Pumps - O&M	Dairy	10%	10%	0.01	1.13	1.02	0.18	10	1.44	0.26	0.01	65.46	10.07	7.32	0.97	1.73
302	Pumps - Controls	Dairy	30%	30%	0.05	1.28	0.90	0.16	10	14.58	2.61	0.02	103.51	6.37	4.63	1.53	1.73
303	Pumps - System Optimization	Dairy	33%	33%	0.11	1.36	0.91	0.16	10	13.47	2.41	0.04	217.79	3.03	2.20	3.21	1.73
304	Pumps - Sizing	Dairy	20%	20%	0.03	1.24	0.99	0.18	10	4.30	0.77	0.02	118.78	5.55	4.03	1.75	1.73
305	Pumps - Replace motor	Dairy	10%	10%	0.02	1.04	0.93	0.17	8	13.71	2.45	0.04	216.92	3.04	2.34	2.70	1.73
306	Pumps - ASD	Dairy	6%	6%	0.01	1.09	1.02	0.18	8	0.70	0.13	0.04	200.31	3.29	2.53	2.49	1.73
307	Pumps - Motor practices-1	Dairy	2%	2%	0.01	1.05	1.03	0.18	8	0.39	0.07	0.06	352.23	1.87	1.44	4.38	1.73
310	Efficient Transformers	Dairy	20%	20%	0.12	1.18	0.94	0.17	25	0.25	0.04	0.04	241.88	2.48	1.44	6.48	1.73
400	Base Drives	Dairy	0%	0%	0.00	1.04	1.04	0.19	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
401	Bakery - Process (Mixing) - O&M	Dairy	10%	10%	0.01	1.07	0.96	0.17	10	2.06	0.37	0.01	69.39	9.50	6.91	1.02	1.73
405	Drives - Replace motor	Dairy	10%	10%	0.02	1.04	0.93	0.17	8	13.46	2.41	0.04	216.92	3.04	2.34	2.70	1.73
429	Efficient Transformers	Dairy	20%	20%	0.12	1.18	0.94	0.17	25	0.05	0.01	0.04	241.88	2.48	1.44	6.48	1.73
500	Base Heating	Dairy	0%	0%	0.00	1.04	1.04	0.19	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
501	Bakery - Process	Dairy	37%	37%	0.08	1.40	0.88	0.16	15	3.25	0.58	0.02	101.62	6.49	4.17	2.11	1.73
512	Efficient Transformers	Dairy	20%	20%	0.12	1.18	0.94	0.17	25	0.04	0.01	0.04	241.88	2.48	1.44	6.48	1.73
550	Base Refrigeration	Dairy	0%	0%	0.00	1.04	1.04	0.19	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
551	Efficient Refrigeration - Operations	Dairy	12%	12%	0.01	1.13	1.00	0.18	10	0.81	0.14	0.01	78.22	8.43	6.13	1.15	1.73

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DSM ASSYST SUMMARY

Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Base kWh	Base EUI	EUI	Peak Watts/ Base kWh	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
552	Optimization Refrigeration	Dairy	26%	26%	0.19	1.22	0.91	0.16	15	2.70	0.48	0.06	360.35	1.83	1.18	7.47	1.73
553	Efficient Transformers	Dairy	20%	20%	0.12	1.18	0.94	0.17	25	0.04	0.01	0.04	241.88	2.48	1.44	6.48	1.73
600	Base Other Process	Dairy	0%	0%	0.00	1.04	1.04	0.19	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
700	Base DX Packaged System, EER=2.65, 10 tons	Dairy	0%	0%	0.00	1.04	1.04	0.19	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
706	Efficient Transformers	Dairy	20%	20%	0.11	1.18	0.94	0.17	25	0.03	0.00	0.04	219.85	2.73	1.58	5.89	1.73
800	Base Lighting	Dairy	0%	0%	0.00	1.04	1.04	0.19	10	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
801	RET T12 to Next Gen T8, 1EB	Dairy	28%	28%	0.18	1.04	0.75	0.13	14	0.14	0.02	0.07	404.75	1.63	1.07	7.99	1.73
802	RET T8 to Next Gen T8, 1EB	Dairy	15%	15%	0.12	1.13	0.95	0.17	14	0.97	0.17	0.08	441.62	1.49	0.98	8.71	1.73
803	RET - Hardwired 18W CFL	Dairy	64%	64%	0.27	1.04	0.37	0.07	4	0.05	0.01	0.14	776.84	0.85	0.74	5.18	1.73
804	RET - Screw-in 18W CFL	Dairy	64%	64%	0.01	1.04	0.37	0.07	2	0.05	0.01	0.01	64.26	10.26	9.51	0.22	1.73
805	400W MV to 250W HPS	Dairy	58%	58%	0.02	1.04	0.43	0.08	5	3.62	0.65	0.01	59.12	11.15	9.37	0.48	1.73
806	Lighting Controls	Dairy	16%	20%	0.06	1.13	0.95	0.16	8	0.53	0.12	0.06	284.28	1.94	1.41	4.48	1.83
807	Efficient Transformers	Dairy	20%	20%	0.11	1.18	0.94	0.17	25	0.06	0.01	0.04	219.85	2.73	1.58	5.89	1.73
900	Base Other	Dairy	0%	0%	0.00	1.04	1.04	0.19	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
901	Replace V-belts	Dairy	0%	0%	0.00	1.04	1.03	0.19	5	0.01	0.00	0.05	253.36	2.60	2.19	2.07	1.73
903	Efficient Transformers	Dairy	20%	20%	0.12	1.18	0.94	0.17	25	0.06	0.01	0.04	241.88	2.48	1.44	6.48	1.73
100	Base Compressed Air	Other Food	0%	0%	0.00	1.04	1.04	0.17	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Compressed Air-O&M	Other Food	17%	17%	0.02	1.19	0.99	0.16	10	4.65	0.77	0.01	80.80	8.68	6.43	1.10	1.69
102	Compressed Air - Controls	Other Food	12%	12%	0.03	1.08	0.95	0.16	10	7.65	1.26	0.03	210.97	3.33	2.46	2.87	1.69
103	Compressed Air - System Optimization	Other Food	20%	20%	0.03	1.12	0.90	0.15	10	11.64	1.92	0.02	114.05	6.15	4.55	1.55	1.69
104	Compressed Air- Sizing	Other Food	9%	9%	0.01	1.10	1.00	0.16	10	3.10	0.51	0.01	72.66	9.66	7.15	0.99	1.69
105	Comp Air - Replace motor	Other Food	10%	10%	0.02	1.04	0.93	0.15	8	10.55	1.74	0.04	235.07	2.98	2.34	2.70	1.69
106	Comp Air - ASD	Other Food	6%	6%	0.01	1.06	0.99	0.16	8	1.89	0.31	0.04	223.40	3.14	2.46	2.56	1.69
107	Comp Air - Motor practices-1	Other Food	2%	2%	0.01	1.05	1.03	0.17	8	0.73	0.12	0.06	383.27	1.83	1.43	4.40	1.69
110	Efficient Transformers	Other Food	20%	20%	0.12	1.18	0.94	0.16	25	0.19	0.03	0.04	262.11	2.43	1.44	6.48	1.69
200	Base Fans	Other Food	0%	0%	0.00	1.04	1.04	0.17	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
201	Fans - O&M	Other Food	2%	2%	0.00	1.05	1.03	0.17	10	0.30	0.05	0.01	76.20	9.21	6.81	1.04	1.69
202	Fans - Controls	Other Food	30%	30%	0.16	1.35	0.95	0.16	10	7.16	1.18	0.06	363.41	1.93	1.43	4.95	1.69
203	Fans - System Optimization	Other Food	21%	21%	0.10	1.23	0.97	0.16	10	6.29	1.04	0.06	367.43	1.91	1.41	5.01	1.69
204	Fans- Improve components	Other Food	5%	5%	0.01	1.08	1.02	0.17	10	1.07	0.18	0.02	148.85	4.71	3.49	2.03	1.69
205	Fans - Replace motor	Other Food	10%	10%	0.02	1.04	0.93	0.15	8	10.27	1.70	0.04	235.07	2.98	2.34	2.70	1.69
206	Fans - ASD	Other Food	6%	6%	0.01	1.06	0.99	0.16	8	1.84	0.30	0.04	223.40	3.14	2.46	2.56	1.69
207	Fans - Motor practices-1	Other Food	2%	2%	0.01	1.05	1.03	0.17	8	0.71	0.12	0.06	383.27	1.83	1.43	4.40	1.69
211	Efficient Transformers	Other Food	20%	20%	0.12	1.18	0.94	0.16	25	0.19	0.03	0.04	262.11	2.43	1.44	6.48	1.69
300	Base Pumps	Other Food	0%	0%	0.00	1.04	1.04	0.17	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
301	Pumps - O&M	Other Food	10%	10%	0.01	1.13	1.02	0.17	10	2.36	0.39	0.01	70.94	9.89	7.32	0.97	1.69
302	Pumps - Controls	Other Food	30%	30%	0.05	1.28	0.90	0.15	10	23.90	3.94	0.02	112.17	6.25	4.63	1.53	1.69
303	Pumps - System Optimization	Other Food	33%	33%	0.11	1.36	0.91	0.15	10	22.07	3.64	0.04	236.01	2.97	2.20	3.21	1.69
304	Pumps - Sizing	Other Food	20%	20%	0.03	1.24	0.99	0.16	10	7.04	1.16	0.02	128.72	5.45	4.03	1.75	1.69
305	Pumps - Replace motor	Other Food	10%	10%	0.02	1.04	0.93	0.15	8	22.47	3.71	0.04	235.07	2.98	2.34	2.70	1.69
306	Pumps - ASD	Other Food	6%	6%	0.01	1.06	0.99	0.16	8	4.03	0.67	0.04	223.40	3.14	2.46	2.56	1.69
307	Pumps - Motor practices-1	Other Food	2%	2%	0.01	1.05	1.03	0.17	8	1.55	0.26	0.06	383.27	1.83	1.43	4.40	1.69
310	Efficient Transformers	Other Food	20%	20%	0.12	1.18	0.94	0.16	25	0.41	0.07	0.04	262.11	2.43	1.44	6.48	1.69
400	Base Drives	Other Food	0%	0%	0.00	1.04	1.04	0.17	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
401	Bakery - Process (Mixing) - O&M	Other Food	10%	10%	0.01	1.07	0.96	0.16	10	3.37	0.56	0.01	75.20	9.33	6.91	1.02	1.69
405	Drives - Replace motor	Other Food	10%	10%	0.02	1.04	0.93	0.15	8	22.06	3.64	0.04	235.07	2.98	2.34	2.70	1.69
429	Efficient Transformers	Other Food	20%	20%	0.12	1.18	0.94	0.16	25	0.08	0.01	0.04	262.11	2.43	1.44	6.48	1.69
500	Base Heating	Other Food	0%	0%	0.00	1.04	1.04	0.17	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
501	Bakery - Process	Other Food	37%	37%	0.08	1.40	0.88	0.15	15	5.33	0.88	0.02	110.12	6.37	4.17	2.11	1.69
512	Efficient Transformers	Other Food	20%	20%	0.12	1.18	0.94	0.16	25	0.06	0.01	0.04	262.11	2.43	1.44	6.48	1.69
550	Base Refrigeration	Other Food	0%	0%	0.00	1.04	1.04	0.17	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
551	Efficient Refrigeration - Operations	Other Food	12%	12%	0.01	1.07	0.94	0.16	10	3.27	0.54	0.01	89.87	7.81	5.78	1.22	1.69
552	Optimization Refrigeration	Other Food	26%	26%	0.19	1.08	0.80	0.13	15	8.13	1.34	0.07	443.06	1.58	1.04	8.48	1.69
553	Efficient Transformers	Other Food	20%	20%	0.12	1.18	0.94	0.16	25	0.06	0.01	0.04	262.11	2.43	1.44	6.48	1.69
600	Base Other Process	Other Food	0%	0%	0.00	1.04	1.04	0.17	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
700	Base DX Packaged System, EER=2.65, 10 tons	Other Food	0%	0%	0.00	1.04	1.04	0.17	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
701	DX Packaged System, EER=3.5, 10 tons	Other Food	24%	24%	0.03	1.06	0.80	0.13	15	4.22	0.70	0.01	84.43	8.31	5.44	1.62	1.69
702	DX Tune Up/ Advanced Diagnostics	Other Food	5%	5%	0.17	1.05	0.99	0.16	10	0.95	0.16	0.49	2,986.78	0.23	0.17	40.68	1.69
703	Optimize HVAC Controls	Other Food	5%	5%	0.05	1.04	0.98	0.16	5	1.18	0.19	0.29	1,744.21	0.40	0.34	13.15	1.69
704	BMS	Other Food	8%	3%	0.07	1.04	0.95	0.17	10	0.71	0.04	0.14	2,630.96	0.71	0.61	11.51	1.44
705	Prog. Thermostat	Other Food	4%	1%	0.02	1.04	0.99	0.17	10	0.92	0.05	0.10	1,797.83	1.04	0.90	7.86	1.44
706	Efficient Transformers	Other Food	20%	20%	0.11	1.18	0.94	0.16	25	0.04	0.01	0.04	238.25	2.68	1.58	5.89	1.69

INDUSTRIAL

DSM ASSYST SUMMARY																		
Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Base kWh	Base EUI	EUI	Peak Watts/ Base kWh	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
800	Base Lighting	Other Food	0%	0%	0.00	1.04	1.04	0.17	10	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
801	RET T12 to Next Gen T8, 1EB	Other Food	28%	28%	0.18	1.04	0.75	0.12	14	0.47	0.08	0.07	438.61	1.60	1.07	7.99	1.69
802	RET T8 to Next Gen T8, 1EB	Other Food	15%	15%	0.12	1.10	0.93	0.15	14	1.12	0.19	0.08	488.37	1.44	0.96	8.89	1.69
803	RET - Hardwired 18W CFL	Other Food	64%	64%	0.27	1.04	0.37	0.06	4	1.08	0.18	0.14	841.84	0.83	0.74	5.18	1.69
804	RET - Screw-in 18W CFL	Other Food	64%	64%	0.01	1.04	0.37	0.06	2	1.08	0.18	0.01	69.64	10.08	9.51	0.22	1.69
805	400W MV to 250W HPS	Other Food	58%	58%	0.02	1.04	0.43	0.07	5	13.35	2.20	0.01	64.07	10.95	9.37	0.48	1.69
806	Lighting Controls	Other Food	16%	20%	0.06	1.07	0.90	0.14	8	1.35	0.28	0.07	323.34	1.83	1.36	4.63	1.79
807	Efficient Transformers	Other Food	20%	20%	0.11	1.18	0.94	0.16	25	0.10	0.02	0.04	238.25	2.68	1.58	5.89	1.69
900	Base Other	Other Food	0%	0%	0.00	1.04	1.04	0.17	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
901	Replace V-belts	Other Food	0%	0%	0.00	1.04	1.03	0.17	5	0.01	0.00	0.05	274.55	2.56	2.19	2.07	1.69
903	Efficient Transformers	Other Food	20%	20%	0.12	1.18	0.94	0.16	25	0.10	0.02	0.04	262.11	2.43	1.44	6.48	1.69
100	Base Compressed Air	Wood	0%	0%	0.00	1.04	1.04	0.14	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Compressed Air-O&M	Wood	17%	17%	0.02	1.08	0.90	0.12	10	12.50	1.70	0.01	108.25	7.58	5.84	1.21	1.63
102	Compressed Air - Controls	Wood	12%	12%	0.03	1.14	1.00	0.14	10	3.13	0.42	0.03	244.13	3.36	2.59	2.73	1.63
103	Compressed Air - System Optimization	Wood	20%	20%	0.03	1.15	0.92	0.12	10	10.56	1.43	0.02	135.38	6.06	4.67	1.52	1.63
104	Compressed Air- Sizing	Wood	9%	9%	0.01	1.09	1.00	0.14	10	3.62	0.49	0.01	88.68	9.26	7.13	0.99	1.63
105	Comp Air - Replace motor	Wood	10%	10%	0.02	1.09	0.98	0.13	8	4.90	0.66	0.04	271.49	3.02	2.46	2.56	1.63
106	Comp Air - ASD	Wood	6%	6%	0.01	1.04	0.97	0.13	8	6.10	0.83	0.04	277.50	2.96	2.41	2.61	1.63
107	Comp Air - Motor practices-1	Wood	2%	2%	0.01	1.04	1.01	0.14	8	1.88	0.26	0.06	472.63	1.74	1.41	4.45	1.63
110	Efficient Transformers	Wood	20%	20%	0.12	1.18	0.94	0.13	25	0.17	0.02	0.04	319.02	2.34	1.44	6.48	1.63
200	Base Fans	Wood	0%	0%	0.00	1.04	1.04	0.14	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
201	Fans - O&M	Wood	2%	2%	0.00	1.05	1.02	0.14	10	1.78	0.24	0.01	93.41	8.79	6.77	1.05	1.63
202	Fans - Controls	Wood	30%	30%	0.16	1.34	0.94	0.13	10	17.01	2.31	0.06	448.51	1.83	1.41	5.02	1.63
203	Fans - System Optimization	Wood	21%	21%	0.10	1.26	1.00	0.13	10	6.81	0.92	0.06	436.74	1.88	1.45	4.89	1.63
204	Fans- Improve components	Wood	5%	5%	0.01	1.08	1.02	0.14	10	1.83	0.25	0.02	181.17	4.53	3.49	2.03	1.63
205	Fans - Replace motor	Wood	10%	10%	0.02	1.09	0.98	0.13	8	9.06	1.23	0.04	271.49	3.02	2.46	2.56	1.63
206	Fans - ASD	Wood	6%	6%	0.01	1.04	0.97	0.13	8	11.27	1.53	0.04	277.50	2.96	2.41	2.61	1.63
207	Fans - Motor practices-1	Wood	2%	2%	0.01	1.04	1.01	0.14	8	3.48	0.47	0.06	472.63	1.74	1.41	4.45	1.63
208	Optimize drying process	Wood	20%	20%	0.08	1.15	0.92	0.12	10	19.53	2.65	0.06	423.11	1.94	1.49	4.74	1.63
211	Efficient Transformers	Wood	20%	20%	0.12	1.18	0.94	0.13	25	0.32	0.04	0.04	319.02	2.34	1.44	6.48	1.63
300	Base Pumps	Wood	0%	0%	0.00	1.04	1.04	0.14	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
301	Pumps - O&M	Wood	10%	10%	0.01	1.10	0.99	0.13	10	2.12	0.29	0.01	88.70	9.25	7.13	0.99	1.63
302	Pumps - Controls	Wood	30%	30%	0.05	1.29	0.90	0.12	10	6.49	0.88	0.02	136.13	6.03	4.64	1.52	1.63
303	Pumps - System Optimization	Wood	33%	33%	0.11	1.35	0.90	0.12	10	6.41	0.87	0.04	289.21	2.84	2.19	3.24	1.63
304	Pumps - Sizing	Wood	20%	20%	0.03	1.23	0.99	0.13	10	2.37	0.32	0.02	158.06	5.19	4.00	1.77	1.63
305	Pumps - Replace motor	Wood	10%	10%	0.02	1.09	0.98	0.13	8	2.57	0.35	0.04	271.49	3.02	2.46	2.56	1.63
306	Pumps - ASD	Wood	6%	6%	0.01	1.04	0.97	0.13	8	3.19	0.43	0.04	277.50	2.96	2.41	2.61	1.63
307	Pumps - Motor practices-1	Wood	2%	2%	0.01	1.04	1.01	0.14	8	0.99	0.13	0.06	472.63	1.74	1.41	4.45	1.63
310	Efficient Transformers	Wood	20%	20%	0.12	1.18	0.94	0.13	25	0.09	0.01	0.04	319.02	2.34	1.44	6.48	1.63
400	Base Drives	Wood	0%	0%	0.00	1.04	1.04	0.14	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
403	Air conveying systems	Wood	41%	41%	0.06	1.50	0.88	0.12	14	33.24	4.51	0.01	89.40	9.18	6.41	1.34	1.63
404	Replace V-Belts	Wood	6%	6%	0.01	1.07	1.00	0.14	10	16.04	2.18	0.02	183.05	4.48	3.45	2.05	1.63
405	Drives - Replace motor	Wood	10%	10%	0.02	1.10	0.99	0.13	8	16.00	2.17	0.04	268.94	3.05	2.49	2.53	1.63
429	Efficient Transformers	Wood	20%	20%	0.12	1.18	0.94	0.13	25	1.35	0.18	0.04	319.02	2.34	1.44	6.48	1.63
500	Base Heating	Wood	0%	0%	0.00	1.04	1.04	0.14	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
503	Heat Pumps - Drying	Wood	22%	22%	0.30	1.26	0.98	0.13	15	5.00	0.68	0.12	882.22	0.93	0.63	13.87	1.63
512	Efficient Transformers	Wood	20%	20%	0.12	1.18	0.94	0.13	25	0.17	0.02	0.04	319.02	2.34	1.44	6.48	1.63
600	Base Other Process	Wood	0%	0%	0.00	1.04	1.04	0.14	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
700	Base DX Packaged System, EER=2.65, 10 tons	Wood	0%	0%	0.00	1.04	1.04	0.14	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
701	DX Packaged System, EER=3.5, 10 tons	Wood	24%	24%	0.03	1.06	0.80	0.11	15	0.37	0.05	0.01	102.77	7.99	5.44	1.62	1.63
702	DX Tune Up/ Advanced Diagnostics	Wood	5%	5%	0.17	1.05	0.99	0.13	10	0.07	0.01	0.49	3,635.26	0.23	0.17	40.68	1.63
703	Optimize HVAC Controls	Wood	5%	5%	0.05	1.04	0.98	0.13	5	0.09	0.01	0.29	2,122.91	0.39	0.34	13.15	1.63
704	BMS	Wood	8%	3%	0.07	1.04	0.95	0.14	10	0.08	0.00	0.13	3,202.19	0.72	0.64	11.14	1.42
705	Prog. Thermostat	Wood	4%	1%	0.02	1.04	0.99	0.14	10	0.07	0.00	0.09	2,188.18	1.05	0.93	7.61	1.42
706	Efficient Transformers	Wood	20%	20%	0.11	1.18	0.94	0.13	25	0.07	0.01	0.04	289.97	2.57	1.58	5.89	1.63
800	Base Lighting	Wood	0%	0%	0.00	1.04	1.04	0.14	10	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
801	RET T12 to Next Gen T8, 1EB	Wood	28%	28%	0.18	1.04	0.75	0.10	14	0.82	0.11	0.07	533.84	1.54	1.07	7.99	1.63
802	RET T8 to Next Gen T8, 1EB	Wood	15%	15%	0.12	1.12	0.95	0.13	14	2.06	0.28	0.08	585.82	1.40	0.98	8.76	1.63
803	RET - Hardwired 18W CFL	Wood	64%	64%	0.27	1.04	0.37	0.05	4	0.83	0.11	0.14	1,024.62	0.80	0.74	5.18	1.63
804	RET - Screw-in 18W CFL	Wood	64%	64%	0.01	1.04	0.37	0.05	2	0.83	0.11	0.01	84.75	9.68	9.51	0.22	1.63
805	400W MV to 250W HPS	Wood	58%	58%	0.02	1.04	0.43	0.06	5	19.55	2.65	0.01	77.98	10.53	9.37	0.48	1.63
806	Lighting Controls	Wood	15%	20%	0.06	1.05	0.88	0.11	8	3.76	0.66	0.07	403.91	1.65	1.28	4.94	1.72

INDUSTRIAL

DSM ASSYST SUMMARY

Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Base kWh	Base EUI	EUI	Peak Watts/ Base kWh	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
807	Efficient Transformers	Wood	20%	20%	0.11	1.18	0.94	0.13	25	0.24	0.03	0.04	289.97	2.57	1.58	5.89	1.63
900	Base Other	Wood	0%	0%	0.00	1.04	1.04	0.14	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
901	Replace V-belts	Wood	0%	0%	0.00	1.04	1.03	0.14	5	0.03	0.00	0.05	334.16	2.46	2.19	2.07	1.63
903	Efficient Transformers	Wood	20%	20%	0.12	1.18	0.94	0.13	25	0.23	0.03	0.04	319.02	2.34	1.44	6.48	1.63
100	Base Compressed Air	Chemicals	0%	0%	0.00	1.04	1.04	0.13	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Compressed Air-O&M	Chemicals	17%	17%	0.02	1.08	0.90	0.11	10	5.38	0.65	0.01	120.65	7.44	5.84	1.21	1.60
102	Compressed Air - Controls	Chemicals	12%	12%	0.03	1.14	1.00	0.12	10	1.35	0.16	0.03	272.11	3.30	2.59	2.73	1.60
103	Compressed Air - System Optimization	Chemicals	20%	20%	0.03	1.15	0.92	0.11	10	4.55	0.55	0.02	150.89	5.95	4.67	1.52	1.60
104	Compressed Air- Sizing	Chemicals	9%	9%	0.01	1.09	1.00	0.12	10	1.56	0.19	0.01	98.84	9.08	7.13	0.99	1.60
105	Comp Air - Replace motor	Chemicals	10%	10%	0.02	1.09	0.98	0.12	8	2.11	0.26	0.04	302.62	2.97	2.46	2.56	1.60
106	Comp Air - ASD	Chemicals	6%	6%	0.01	1.04	0.97	0.12	8	2.62	0.32	0.04	309.31	2.90	2.41	2.61	1.60
107	Comp Air - Motor practices-1	Chemicals	2%	2%	0.01	1.04	1.01	0.12	8	0.81	0.10	0.06	526.81	1.70	1.41	4.45	1.60
110	Efficient Transformers	Chemicals	20%	20%	0.12	1.18	0.94	0.11	25	0.07	0.01	0.04	355.59	2.29	1.44	6.48	1.60
200	Base Fans	Chemicals	0%	0%	0.00	1.04	1.04	0.13	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
201	Fans - O&M	Chemicals	2%	2%	0.00	1.05	1.02	0.12	10	0.18	0.02	0.01	104.12	8.62	6.77	1.05	1.60
202	Fans - Controls	Chemicals	30%	30%	0.16	1.34	0.94	0.11	10	1.70	0.21	0.06	499.93	1.79	1.41	5.02	1.60
203	Fans - System Optimization	Chemicals	21%	21%	0.10	1.26	1.00	0.12	10	0.68	0.08	0.06	486.80	1.84	1.45	4.89	1.60
204	Fans- Improve components	Chemicals	5%	5%	0.01	1.08	1.02	0.12	10	0.18	0.02	0.02	201.93	4.44	3.49	2.03	1.60
205	Fans - Replace motor	Chemicals	10%	10%	0.02	1.09	0.98	0.12	8	0.91	0.11	0.04	302.62	2.97	2.46	2.56	1.60
206	Fans - ASD	Chemicals	6%	6%	0.01	1.04	0.97	0.12	8	1.13	0.14	0.04	309.31	2.90	2.41	2.61	1.60
207	Fans - Motor practices-1	Chemicals	2%	2%	0.01	1.04	1.01	0.12	8	0.35	0.04	0.06	526.81	1.70	1.41	4.45	1.60
211	Efficient Transformers	Chemicals	20%	20%	0.12	1.18	0.94	0.11	25	0.03	0.00	0.04	355.59	2.29	1.44	6.48	1.60
300	Base Pumps	Chemicals	0%	0%	0.00	1.04	1.04	0.13	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
301	Pumps - O&M	Chemicals	10%	10%	0.01	1.10	0.99	0.12	10	1.63	0.20	0.01	98.86	9.08	7.13	0.99	1.60
302	Pumps - Controls	Chemicals	30%	30%	0.05	1.29	0.90	0.11	10	5.01	0.61	0.02	151.73	5.91	4.64	1.52	1.60
303	Pumps - System Optimization	Chemicals	33%	33%	0.11	1.35	0.90	0.11	10	4.94	0.60	0.04	322.36	2.78	2.19	3.24	1.60
304	Pumps - Sizing	Chemicals	20%	20%	0.03	1.23	0.99	0.12	10	1.83	0.22	0.02	176.17	5.09	4.00	1.77	1.60
305	Pumps - Replace motor	Chemicals	10%	10%	0.02	1.09	0.98	0.12	8	1.98	0.24	0.04	302.62	2.97	2.46	2.56	1.60
306	Pumps - ASD	Chemicals	6%	6%	0.01	1.04	0.97	0.12	8	2.46	0.30	0.04	309.31	2.90	2.41	2.61	1.60
307	Pumps - Motor practices-1	Chemicals	2%	2%	0.01	1.04	1.01	0.12	8	0.76	0.09	0.06	526.81	1.70	1.41	4.45	1.60
310	Efficient Transformers	Chemicals	20%	20%	0.12	1.18	0.94	0.11	25	0.07	0.01	0.04	355.59	2.29	1.44	6.48	1.60
400	Base Drives	Chemicals	0%	0%	0.00	1.04	1.04	0.13	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
405	Drives - Replace motor	Chemicals	10%	10%	0.02	1.04	0.93	0.11	8	1.85	0.22	0.04	318.90	2.81	2.34	2.70	1.60
413	Clean Room - Controls	Chemicals	10%	10%	0.04	1.09	0.98	0.12	10	0.37	0.05	0.05	437.28	2.05	1.61	4.39	1.60
414	Clean Room - New Designs	Chemicals	30%	30%	0.22	1.36	0.95	0.12	10	0.56	0.07	0.09	700.27	1.28	1.01	7.03	1.60
415	Drives - Process Control	Chemicals	8%	8%	0.04	1.08	0.99	0.12	10	0.84	0.10	0.07	604.32	1.48	1.17	6.07	1.60
416	Process Drives - ASD	Chemicals	1%	1%	0.00	1.04	1.03	0.13	10	0.10	0.01	0.08	640.01	1.40	1.10	6.43	1.60
429	Efficient Transformers	Chemicals	20%	20%	0.12	1.18	0.94	0.11	25	0.04	0.01	0.04	355.59	2.29	1.44	6.48	1.60
500	Base Heating	Chemicals	0%	0%	0.00	1.04	1.04	0.13	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
600	Base Other Process	Chemicals	0%	0%	0.00	1.04	1.04	0.13	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
601	Other Process Controls (batch + site)	Chemicals	8%	8%	0.04	1.08	0.99	0.12	10	0.10	0.01	0.07	604.32	1.48	1.17	6.07	1.60
608	Efficient Transformers	Chemicals	20%	20%	0.12	1.18	0.94	0.11	25	0.00	0.00	0.04	355.59	2.29	1.44	6.48	1.60
700	Base DX Packaged System, EER=2.65, 10 tons	Chemicals	0%	0%	0.00	1.04	1.04	0.13	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
701	DX Packaged System, EER=3.5, 10 tons	Chemicals	24%	24%	0.03	1.06	0.80	0.10	15	0.01	0.00	0.01	114.55	7.83	5.44	1.62	1.60
702	DX Tune Up/ Advanced Diagnostics	Chemicals	5%	5%	0.17	1.05	0.99	0.12	10	0.00	0.00	0.49	4,051.97	0.22	0.17	40.68	1.60
703	Optimize HVAC Controls	Chemicals	5%	5%	0.05	1.04	0.98	0.12	5	0.00	0.00	0.29	2,366.25	0.38	0.34	13.15	1.60
704	BMS	Chemicals	8%	3%	0.07	1.04	0.95	0.12	10	0.00	0.00	0.13	3,569.26	0.72	0.64	10.98	1.41
705	Prog. Thermostat	Chemicals	4%	1%	0.02	1.04	0.99	0.12	10	0.00	0.00	0.09	2,439.01	1.06	0.94	7.50	1.41
706	Efficient Transformers	Chemicals	20%	20%	0.11	1.18	0.94	0.11	25	0.00	0.00	0.04	323.21	2.52	1.58	5.89	1.60
800	Base Lighting	Chemicals	0%	0%	0.00	1.04	1.04	0.13	10	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
801	RET T12 to Next Gen T8, 1EB	Chemicals	28%	28%	0.18	1.04	0.75	0.09	14	0.01	0.00	0.07	595.03	1.51	1.07	7.99	1.60
802	RET T8 to Next Gen T8, 1EB	Chemicals	15%	15%	0.12	1.12	0.95	0.12	14	0.03	0.00	0.08	652.97	1.37	0.98	8.76	1.60
803	RET - Hardwired 18W CFL	Chemicals	64%	64%	0.27	1.04	0.37	0.05	4	0.01	0.00	0.14	1,142.07	0.79	0.74	5.18	1.60
804	RET - Screw-in 18W CFL	Chemicals	64%	64%	0.01	1.04	0.37	0.05	2	0.01	0.00	0.01	94.47	9.50	9.51	0.22	1.60
805	400W MV to 250W HPS	Chemicals	58%	58%	0.02	1.04	0.43	0.05	5	0.27	0.03	0.01	86.91	10.32	9.37	0.48	1.60
806	Lighting Controls	Chemicals	15%	20%	0.06	1.05	0.89	0.10	8	0.05	0.01	0.07	450.33	1.58	1.25	5.06	1.69
807	Efficient Transformers	Chemicals	20%	20%	0.11	1.18	0.94	0.11	25	0.00	0.00	0.04	323.21	2.52	1.58	5.89	1.60
900	Base Other	Chemicals	0%	0%	0.00	1.04	1.04	0.13	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
903	Efficient Transformers	Chemicals	20%	20%	0.12	1.18	0.94	0.11	25	0.00	0.00	0.04	355.59	2.29	1.44	6.48	1.60
100	Base Compressed Air	Textiles	0%	0%	0.00	1.04	1.04	0.18	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Compressed Air-O&M	Textiles	17%	17%	0.02	1.08	0.90	0.16	10	1.75	0.31	0.01	83.21	8.01	5.84	1.21	1.72
102	Compressed Air - Controls	Textiles	12%	12%	0.03	1.14	1.00	0.18	10	0.44	0.08	0.03	187.67	3.55	2.59	2.73	1.72

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DSM ASSYST SUMMARY

Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Base kWh	Base EUI	EUI	Peak Watts/ Base kWh	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
103	Compressed Air - System Optimization	Textiles	20%	20%	0.03	1.15	0.92	0.16	10	1.48	0.26	0.02	104.07	6.40	4.67	1.52	1.72
104	Compressed Air- Sizing	Textiles	9%	9%	0.01	1.09	1.00	0.18	10	0.51	0.09	0.01	68.17	9.77	7.13	0.99	1.72
105	Comp Air - Replace motor	Textiles	10%	10%	0.02	1.09	0.98	0.17	8	0.69	0.12	0.04	208.71	3.19	2.46	2.56	1.72
106	Comp Air - ASD	Textiles	6%	6%	0.01	1.04	0.97	0.17	8	0.85	0.15	0.04	213.33	3.12	2.41	2.61	1.72
107	Comp Air - Motor practices-1	Textiles	2%	2%	0.01	1.04	1.01	0.18	8	0.26	0.05	0.06	363.34	1.83	1.41	4.45	1.72
110	Efficient Transformers	Textiles	20%	20%	0.12	1.18	0.94	0.17	25	0.02	0.00	0.04	245.25	2.47	1.44	6.48	1.72
200	Base Fans	Textiles	0%	0%	0.00	1.04	1.04	0.18	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
201	Fans - O&M	Textiles	2%	2%	0.00	1.05	1.02	0.18	10	0.15	0.03	0.01	71.81	9.28	6.77	1.05	1.72
202	Fans - Controls	Textiles	30%	30%	0.16	1.34	0.94	0.16	10	1.44	0.25	0.06	344.80	1.93	1.41	5.02	1.72
203	Fans - System Optimization	Textiles	21%	21%	0.10	1.26	1.00	0.18	10	0.58	0.10	0.06	335.74	1.98	1.45	4.89	1.72
204	Fans- Improve components	Textiles	5%	5%	0.01	1.08	1.02	0.18	10	0.15	0.03	0.02	139.27	4.78	3.49	2.03	1.72
205	Fans - Replace motor	Textiles	10%	10%	0.02	1.09	0.98	0.17	8	0.77	0.14	0.04	208.71	3.19	2.46	2.56	1.72
206	Fans - ASD	Textiles	6%	6%	0.01	1.04	0.97	0.17	8	0.95	0.17	0.04	213.33	3.12	2.41	2.61	1.72
207	Fans - Motor practices-1	Textiles	2%	2%	0.01	1.04	1.01	0.18	8	0.29	0.05	0.06	363.34	1.83	1.41	4.45	1.72
211	Efficient Transformers	Textiles	20%	20%	0.12	1.18	0.94	0.17	25	0.03	0.00	0.04	245.25	2.47	1.44	6.48	1.72
300	Base Pumps	Textiles	0%	0%	0.00	1.04	1.04	0.18	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
301	Pumps - O&M	Textiles	10%	10%	0.01	1.10	0.99	0.17	10	0.60	0.11	0.01	68.19	9.77	7.13	0.99	1.72
302	Pumps - Controls	Textiles	30%	30%	0.05	1.29	0.90	0.16	10	1.84	0.32	0.02	104.65	6.37	4.64	1.52	1.72
303	Pumps - System Optimization	Textiles	33%	33%	0.11	1.35	0.90	0.16	10	1.81	0.32	0.04	222.33	3.00	2.19	3.24	1.72
304	Pumps - Sizing	Textiles	20%	20%	0.03	1.23	0.99	0.17	10	0.67	0.12	0.02	121.51	5.48	4.00	1.77	1.72
305	Pumps - Replace motor	Textiles	10%	10%	0.02	1.09	0.98	0.17	8	0.73	0.13	0.04	208.71	3.19	2.46	2.56	1.72
306	Pumps - ASD	Textiles	6%	6%	0.01	1.04	0.97	0.17	8	0.90	0.16	0.04	213.33	3.12	2.41	2.61	1.72
307	Pumps - Motor practices-1	Textiles	2%	2%	0.01	1.04	1.01	0.18	8	0.28	0.05	0.06	363.34	1.83	1.41	4.45	1.72
310	Efficient Transformers	Textiles	20%	20%	0.12	1.18	0.94	0.17	25	0.03	0.00	0.04	245.25	2.47	1.44	6.48	1.72
400	Base Drives	Textiles	0%	0%	0.00	1.04	1.04	0.18	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
402	O&M/drives spinning machines	Textiles	16%	16%	0.05	1.15	0.96	0.17	10	1.84	0.32	0.05	261.33	2.55	1.86	3.80	1.72
405	Drives - Replace motor	Textiles	10%	10%	0.02	1.04	0.93	0.16	8	2.16	0.38	0.04	219.94	3.03	2.34	2.70	1.72
429	Efficient Transformers	Textiles	20%	20%	0.12	1.18	0.94	0.17	25	0.08	0.01	0.04	245.25	2.47	1.44	6.48	1.72
500	Base Heating	Textiles	0%	0%	0.00	1.04	1.04	0.18	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
502	Drying (UV/IR)	Textiles	26%	26%	0.13	1.31	0.97	0.17	8	0.54	0.09	0.07	389.08	1.71	1.32	4.77	1.72
512	Efficient Transformers	Textiles	20%	20%	0.12	1.18	0.94	0.17	25	0.01	0.00	0.04	245.25	2.47	1.44	6.48	1.72
600	Base Other Process	Textiles	0%	0%	0.00	1.04	1.04	0.18	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
700	Base DX Packaged System, EER=2.65, 10 tons	Textiles	0%	0%	0.00	1.04	1.04	0.18	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
701	DX Packaged System, EER=3.5, 10 tons	Textiles	24%	24%	0.03	1.06	0.80	0.14	15	0.10	0.02	0.01	79.00	8.43	5.44	1.62	1.72
702	DX Tune Up/ Advanced Diagnostics	Textiles	5%	5%	0.17	1.05	0.99	0.18	10	0.02	0.00	0.49	2,794.62	0.24	0.17	40.68	1.72
703	Optimize HVAC Controls	Textiles	5%	5%	0.05	1.04	0.98	0.17	5	0.03	0.00	0.29	1,631.99	0.41	0.34	13.15	1.72
704	BMS	Textiles	8%	3%	0.07	1.04	0.96	0.18	10	0.02	0.00	0.14	2,461.70	0.71	0.61	11.61	1.45
705	Prog. Thermostat	Textiles	4%	1%	0.02	1.04	1.00	0.18	10	0.02	0.00	0.10	1,682.17	1.03	0.89	7.93	1.45
706	Efficient Transformers	Textiles	20%	20%	0.11	1.18	0.94	0.17	25	0.02	0.00	0.04	222.92	2.72	1.58	5.89	1.72
800	Base Lighting	Textiles	0%	0%	0.00	1.04	1.04	0.18	10	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
801	RET T12 to Next Gen T8, 1EB	Textiles	28%	28%	0.18	1.04	0.75	0.13	14	0.12	0.02	0.07	410.39	1.62	1.07	7.99	1.72
802	RET T8 to Next Gen T8, 1EB	Textiles	15%	15%	0.12	1.12	0.95	0.17	14	0.30	0.05	0.08	450.35	1.48	0.98	8.76	1.72
803	RET - Hardwired 18W CFL	Textiles	64%	64%	0.27	1.04	0.37	0.07	4	0.12	0.02	0.14	787.68	0.85	0.74	5.18	1.72
804	RET - Screw-in 18W CFL	Textiles	64%	64%	0.01	1.04	0.37	0.07	2	0.12	0.02	0.01	65.16	10.23	9.51	0.22	1.72
805	400W MV to 250W HPS	Textiles	58%	58%	0.02	1.04	0.43	0.08	5	2.86	0.51	0.01	59.94	11.11	9.37	0.48	1.72
806	Lighting Controls	Textiles	16%	20%	0.06	1.05	0.88	0.15	8	0.57	0.13	0.07	310.42	1.80	1.31	4.80	1.82
807	Efficient Transformers	Textiles	20%	20%	0.11	1.18	0.94	0.17	25	0.03	0.01	0.04	222.92	2.72	1.58	5.89	1.72
900	Base Other	Textiles	0%	0%	0.00	1.04	1.04	0.18	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
901	Replace V-belts	Textiles	0%	0%	0.00	1.04	1.03	0.18	5	0.00	0.00	0.05	256.89	2.59	2.19	2.07	1.72
902	Membranes for wastewater	Textiles	10%	10%	0.06	1.13	1.02	0.18	15	0.05	0.01	0.06	329.59	2.02	1.30	6.74	1.72
903	Efficient Transformers	Textiles	20%	20%	0.12	1.18	0.94	0.17	25	0.02	0.00	0.04	245.25	2.47	1.44	6.48	1.72
100	Base Compressed Air	Printing	0%	0%	0.00	1.04	1.04	0.18	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Compressed Air-O&M	Printing	17%	17%	0.02	1.08	0.90	0.16	10	1.08	0.19	0.01	83.21	8.01	5.84	1.21	1.72
102	Compressed Air - Controls	Printing	12%	12%	0.03	1.14	1.00	0.18	10	0.27	0.05	0.03	187.67	3.55	2.59	2.73	1.72
103	Compressed Air - System Optimization	Printing	20%	20%	0.03	1.15	0.92	0.16	10	0.92	0.16	0.02	104.07	6.40	4.67	1.52	1.72
104	Compressed Air- Sizing	Printing	9%	9%	0.01	1.09	1.00	0.18	10	0.31	0.06	0.01	68.17	9.77	7.13	0.99	1.72
105	Comp Air - Replace motor	Printing	10%	10%	0.02	1.09	0.98	0.17	8	0.43	0.08	0.04	208.71	3.19	2.46	2.56	1.72
106	Comp Air - ASD	Printing	6%	6%	0.01	1.04	0.97	0.17	8	0.53	0.09	0.04	213.33	3.12	2.41	2.61	1.72
107	Comp Air - Motor practices-1	Printing	2%	2%	0.01	1.04	1.01	0.18	8	0.16	0.03	0.06	363.34	1.83	1.41	4.45	1.72
110	Efficient Transformers	Printing	20%	20%	0.12	1.18	0.94	0.17	25	0.01	0.00	0.04	245.25	2.47	1.44	6.48	1.72
200	Base Fans	Printing	0%	0%	0.00	1.04	1.04	0.18	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
201	Fans - O&M	Printing	2%	2%	0.00	1.05	1.02	0.18	10	0.18	0.03	0.01	71.81	9.28	6.77	1.05	1.72

INDUSTRIAL

DSM ASSYST SUMMARY

Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Base kWh	Base EUI	EUI	Peak Watts/ Base kWh	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
202	Fans - Controls	Printing	30%	30%	0.16	1.34	0.94	0.16	10	1.74	0.31	0.06	344.80	1.93	1.41	5.02	1.72
203	Fans - System Optimization	Printing	21%	21%	0.10	1.26	1.00	0.18	10	0.70	0.12	0.06	335.74	1.98	1.45	4.89	1.72
204	Fans- Improve components	Printing	5%	5%	0.01	1.08	1.02	0.18	10	0.19	0.03	0.02	139.27	4.78	3.49	2.03	1.72
205	Fans - Replace motor	Printing	10%	10%	0.02	1.09	0.98	0.17	8	0.93	0.16	0.04	208.71	3.19	2.46	2.56	1.72
206	Fans - ASD	Printing	6%	6%	0.01	1.04	0.97	0.17	8	1.15	0.20	0.04	213.33	3.12	2.41	2.61	1.72
207	Fans - Motor practices-1	Printing	2%	2%	0.01	1.04	1.01	0.18	8	0.36	0.06	0.06	363.34	1.83	1.41	4.45	1.72
211	Efficient Transformers	Printing	20%	20%	0.12	1.18	0.94	0.17	25	0.03	0.01	0.04	245.25	2.47	1.44	6.48	1.72
300	Base Pumps	Printing	0%	0%	0.00	1.04	1.04	0.18	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
301	Pumps - O&M	Printing	10%	10%	0.01	1.10	0.99	0.17	10	0.07	0.01	0.01	68.19	9.77	7.13	0.99	1.72
302	Pumps - Controls	Printing	30%	30%	0.05	1.29	0.90	0.16	10	0.21	0.04	0.02	104.65	6.37	4.64	1.52	1.72
303	Pumps - System Optimization	Printing	33%	33%	0.11	1.35	0.90	0.16	10	0.20	0.04	0.04	222.33	3.00	2.19	3.24	1.72
304	Pumps - Sizing	Printing	20%	20%	0.03	1.23	0.99	0.17	10	0.08	0.01	0.02	121.51	5.48	4.00	1.77	1.72
305	Pumps - Replace motor	Printing	10%	10%	0.02	1.09	0.98	0.17	8	0.08	0.01	0.04	208.71	3.19	2.46	2.56	1.72
306	Pumps - ASD	Printing	6%	6%	0.01	1.04	0.97	0.17	8	0.10	0.02	0.04	213.33	3.12	2.41	2.61	1.72
307	Pumps - Motor practices-1	Printing	2%	2%	0.01	1.04	1.01	0.18	8	0.03	0.01	0.06	363.34	1.83	1.41	4.45	1.72
310	Efficient Transformers	Printing	20%	20%	0.12	1.18	0.94	0.17	25	0.00	0.00	0.04	245.25	2.47	1.44	6.48	1.72
400	Base Drives	Printing	0%	0%	0.00	1.04	1.04	0.18	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
405	Drives - Replace motor	Printing	10%	10%	0.02	1.04	0.93	0.16	8	4.23	0.75	0.04	219.94	3.03	2.34	2.70	1.72
409	Efficient practices printing press	Printing	10%	10%	0.02	1.09	0.98	0.17	20	3.93	0.69	0.01	83.00	8.03	4.67	1.99	1.72
410	Efficient Printing press (fewer cylinders)	Printing	20%	20%	0.10	1.23	0.99	0.17	10	3.56	0.63	0.06	364.16	1.83	1.33	5.30	1.72
411	Light cylinders	Printing	10%	10%	0.12	1.13	1.01	0.18	10	1.63	0.29	0.16	931.15	0.72	0.52	13.56	1.72
412	Efficient drives	Printing	3%	4%	0.01	1.06	1.02	0.18	10	0.80	0.14	0.04	225.96	2.95	2.15	3.29	1.72
429	Efficient Transformers	Printing	20%	20%	0.12	1.18	0.94	0.17	25	0.14	0.02	0.04	245.25	2.47	1.44	6.48	1.72
500	Base Heating	Printing	0%	0%	0.00	1.04	1.04	0.18	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
600	Base Other Process	Printing	0%	0%	0.00	1.04	1.04	0.18	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
700	Base DX Packaged System, EER=2.65, 10 tons	Printing	0%	0%	0.00	1.04	1.04	0.18	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
701	DX Packaged System, EER=3.5, 10 tons	Printing	24%	24%	0.03	1.06	0.80	0.14	15	0.19	0.03	0.01	79.00	8.43	5.44	1.62	1.72
702	DX Tune Up/ Advanced Diagnostics	Printing	5%	5%	0.17	1.05	0.99	0.18	10	0.04	0.01	0.49	2,794.62	0.24	0.17	40.68	1.72
703	Optimize HVAC Controls	Printing	20%	20%	0.05	1.04	0.83	0.15	5	0.18	0.03	0.07	408.00	1.63	1.38	3.29	1.72
704	BMS	Printing	8%	3%	0.07	1.04	0.96	0.18	10	0.04	0.00	0.14	2,461.70	0.71	0.61	11.61	1.45
705	Prog. Thermostat	Printing	4%	1%	0.02	1.04	1.00	0.18	10	0.03	0.00	0.10	1,682.17	1.03	0.89	7.93	1.45
706	Efficient Transformers	Printing	20%	20%	0.11	1.18	0.94	0.17	25	0.03	0.01	0.04	222.92	2.72	1.58	5.89	1.72
800	Base Lighting	Printing	0%	0%	0.00	1.04	1.04	0.18	10	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
801	RET T12 to Next Gen T8, 1EB	Printing	28%	28%	0.18	1.04	0.75	0.13	14	0.32	0.06	0.07	410.39	1.62	1.07	7.99	1.72
802	RET T8 to Next Gen T8, 1EB	Printing	15%	15%	0.12	1.12	0.95	0.17	14	0.81	0.14	0.08	450.35	1.48	0.98	8.76	1.72
803	RET - Hardwired 18W CFL	Printing	76%	76%	0.27	1.04	0.25	0.04	4	0.39	0.07	0.12	663.31	1.00	0.87	4.37	1.72
804	RET - Screw-in 18W CFL	Printing	76%	76%	0.01	1.04	0.25	0.04	2	0.39	0.07	0.01	54.87	12.14	11.30	0.19	1.72
805	400W MV to 250W HPS	Printing	35%	35%	0.02	1.04	0.67	0.12	5	4.64	0.82	0.02	99.34	6.71	5.66	0.80	1.72
806	Lighting Controls	Printing	16%	20%	0.06	1.05	0.88	0.15	8	1.52	0.34	0.07	310.42	1.80	1.31	4.80	1.82
807	Efficient Transformers	Printing	20%	20%	0.11	1.18	0.94	0.17	25	0.09	0.02	0.04	222.92	2.72	1.58	5.89	1.72
900	Base Other	Printing	0%	0%	0.00	1.04	1.04	0.18	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
901	Replace V-belts	Printing	0%	0%	0.00	1.04	1.03	0.18	5	0.00	0.00	0.05	256.89	2.59	2.19	2.07	1.72
903	Efficient Transformers	Printing	20%	20%	0.12	1.18	0.94	0.17	25	0.02	0.00	0.04	245.25	2.47	1.44	6.48	1.72
100	Base Compressed Air	Rubber/Plastics	0%	0%	0.00	1.04	1.04	0.18	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Compressed Air-O&M	Rubber/Plastics	17%	17%	0.02	1.08	0.90	0.16	10	2.19	0.39	0.01	83.21	8.01	5.84	1.21	1.72
102	Compressed Air - Controls	Rubber/Plastics	12%	12%	0.03	1.14	1.00	0.18	10	0.55	0.10	0.03	187.67	3.55	2.59	2.73	1.72
103	Compressed Air - System Optimization	Rubber/Plastics	20%	20%	0.03	1.15	0.92	0.16	10	1.85	0.33	0.02	104.07	6.40	4.67	1.52	1.72
104	Compressed Air- Sizing	Rubber/Plastics	9%	9%	0.01	1.09	1.00	0.18	10	0.63	0.11	0.01	68.17	9.77	7.13	0.99	1.72
105	Comp Air - Replace motor	Rubber/Plastics	10%	10%	0.02	1.09	0.98	0.17	8	0.86	0.15	0.04	208.71	3.19	2.46	2.56	1.72
106	Comp Air - ASD	Rubber/Plastics	6%	6%	0.01	1.04	0.97	0.17	8	1.07	0.19	0.04	213.33	3.12	2.41	2.61	1.72
107	Comp Air - Motor practices-1	Rubber/Plastics	2%	2%	0.01	1.04	1.01	0.18	8	0.33	0.06	0.06	363.34	1.83	1.41	4.45	1.72
110	Efficient Transformers	Rubber/Plastics	20%	20%	0.12	1.18	0.94	0.17	25	0.03	0.01	0.04	245.25	2.47	1.44	6.48	1.72
200	Base Fans	Rubber/Plastics	0%	0%	0.00	1.04	1.04	0.18	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
201	Fans - O&M	Rubber/Plastics	2%	2%	0.00	1.05	1.02	0.18	10	0.07	0.01	0.01	71.81	9.28	6.77	1.05	1.72
202	Fans - Controls	Rubber/Plastics	30%	30%	0.16	1.34	0.94	0.16	10	0.70	0.12	0.06	344.80	1.93	1.41	5.02	1.72
203	Fans - System Optimization	Rubber/Plastics	21%	21%	0.10	1.26	1.00	0.18	10	0.28	0.05	0.06	335.74	1.98	1.45	4.89	1.72
204	Fans- Improve components	Rubber/Plastics	5%	5%	0.01	1.08	1.02	0.18	10	0.07	0.01	0.02	139.27	4.78	3.49	2.03	1.72
205	Fans - Replace motor	Rubber/Plastics	10%	10%	0.02	1.09	0.98	0.17	8	0.37	0.07	0.04	208.71	3.19	2.46	2.56	1.72
206	Fans - ASD	Rubber/Plastics	6%	6%	0.01	1.04	0.97	0.17	8	0.46	0.08	0.04	213.33	3.12	2.41	2.61	1.72
207	Fans - Motor practices-1	Rubber/Plastics	2%	2%	0.01	1.04	1.01	0.18	8	0.14	0.03	0.06	363.34	1.83	1.41	4.45	1.72
211	Efficient Transformers	Rubber/Plastics	20%	20%	0.12	1.18	0.94	0.17	25	0.01	0.00	0.04	245.25	2.47	1.44	6.48	1.72
300	Base Pumps	Rubber/Plastics	0%	0%	0.00	1.04	1.04	0.18	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A

INDUSTRIAL

DSM ASSYST SUMMARY

Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Base kWh	Base EUI	EUI	Peak Watts/ Base kWh	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
301	Pumps - O&M	Rubber/Plastics	10%	10%	0.01	1.10	0.99	0.17	10	1.37	0.24	0.01	68.19	9.77	7.13	0.99	1.72
302	Pumps - Controls	Rubber/Plastics	30%	30%	0.05	1.29	0.90	0.16	10	4.20	0.74	0.02	104.65	6.37	4.64	1.52	1.72
303	Pumps - System Optimization	Rubber/Plastics	33%	33%	0.11	1.35	0.90	0.16	10	4.14	0.73	0.04	222.33	3.00	2.19	3.24	1.72
304	Pumps - Sizing	Rubber/Plastics	20%	20%	0.03	1.23	0.99	0.17	10	1.53	0.27	0.02	121.51	5.48	4.00	1.77	1.72
305	Pumps - Replace motor	Rubber/Plastics	10%	10%	0.02	1.09	0.98	0.17	8	1.66	0.29	0.04	208.71	3.19	2.46	2.56	1.72
306	Pumps - ASD	Rubber/Plastics	6%	6%	0.01	1.04	0.97	0.17	8	2.06	0.36	0.04	213.33	3.12	2.41	2.61	1.72
307	Pumps - Motor practices-1	Rubber/Plastics	2%	2%	0.01	1.04	1.01	0.18	8	0.64	0.11	0.06	363.34	1.83	1.41	4.45	1.72
310	Efficient Transformers	Rubber/Plastics	20%	20%	0.12	1.18	0.94	0.17	25	0.06	0.01	0.04	245.25	2.47	1.44	6.48	1.72
400	Base Drives	Rubber/Plastics	0%	0%	0.00	1.04	1.04	0.18	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
405	Drives - Replace motor	Rubber/Plastics	10%	10%	0.02	1.04	0.93	0.16	8	3.59	0.63	0.04	219.94	3.03	2.34	2.70	1.72
417	O&M - Extruders/Injection Moulding	Rubber/Plastics	10%	10%	0.01	1.09	0.98	0.17	12	3.78	0.67	0.01	58.36	11.42	7.95	1.00	1.72
418	Extruders/injection Moulding-multipump	Rubber/Plastics	30%	30%	0.17	1.36	0.95	0.17	12	5.67	1.00	0.05	306.70	2.17	1.51	5.27	1.72
419	Direct drive Extruders	Rubber/Plastics	50%	50%	0.52	1.88	0.94	0.17	12	3.27	0.58	0.07	414.39	1.61	1.12	7.12	1.72
420	Injection Moulding - Impulse Cooling	Rubber/Plastics	21%	21%	0.12	1.23	0.97	0.17	12	2.24	0.39	0.06	340.14	1.96	1.36	5.85	1.72
421	Injection Moulding - Direct drive	Rubber/Plastics	20%	20%	0.16	1.22	0.97	0.17	12	2.11	0.37	0.09	503.17	1.32	0.92	8.65	1.72
429	Efficient Transformers	Rubber/Plastics	20%	20%	0.12	1.18	0.94	0.17	25	0.13	0.02	0.04	245.25	2.47	1.44	6.48	1.72
500	Base Heating	Rubber/Plastics	0%	0%	0.00	1.04	1.04	0.18	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
600	Base Other Process	Rubber/Plastics	0%	0%	0.00	1.04	1.04	0.18	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
700	Base DX Packaged System, EER=2.65, 10 tons	Rubber/Plastics	0%	0%	0.00	1.04	1.04	0.18	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
701	DX Packaged System, EER=3.5, 10 tons	Rubber/Plastics	24%	24%	0.03	1.06	0.80	0.14	15	0.03	0.01	0.01	79.00	8.43	5.44	1.62	1.72
702	DX Tune Up/ Advanced Diagnostics	Rubber/Plastics	5%	5%	0.17	1.05	0.99	0.18	10	0.01	0.00	0.49	2,794.62	0.24	0.17	40.68	1.72
703	Optimize HVAC Controls	Rubber/Plastics	20%	20%	0.05	1.04	0.83	0.15	5	0.03	0.01	0.07	408.00	1.63	1.38	3.29	1.72
704	BMS	Rubber/Plastics	8%	3%	0.07	1.04	0.96	0.18	10	0.01	0.00	0.14	2,461.70	0.71	0.61	11.61	1.45
705	Prog. Thermostat	Rubber/Plastics	4%	1%	0.02	1.04	1.00	0.18	10	0.01	0.00	0.10	1,682.17	1.03	0.89	7.93	1.45
706	Efficient Transformers	Rubber/Plastics	20%	20%	0.11	1.18	0.94	0.17	25	0.01	0.00	0.04	222.92	2.72	1.58	5.89	1.72
800	Base Lighting	Rubber/Plastics	0%	0%	0.00	1.04	1.04	0.18	10	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
801	RET T12 to Next Gen T8, 1EB	Rubber/Plastics	28%	28%	0.18	1.04	0.75	0.13	14	0.15	0.03	0.07	410.39	1.62	1.07	7.99	1.72
802	RET T8 to Next Gen T8, 1EB	Rubber/Plastics	15%	15%	0.12	1.12	0.95	0.17	14	0.39	0.07	0.08	450.35	1.48	0.98	8.76	1.72
803	RET - Hardwired 18W CFL	Rubber/Plastics	76%	76%	0.27	1.04	0.25	0.04	4	0.19	0.03	0.12	663.31	1.00	0.87	4.37	1.72
804	RET - Screw-in 18W CFL	Rubber/Plastics	76%	76%	0.01	1.04	0.25	0.04	2	0.19	0.03	0.01	54.87	12.14	11.30	0.19	1.72
805	400W MV to 250W HPS	Rubber/Plastics	35%	35%	0.02	1.04	0.67	0.12	5	2.22	0.39	0.02	99.34	6.71	5.66	0.80	1.72
806	Lighting Controls	Rubber/Plastics	16%	20%	0.06	1.05	0.88	0.15	8	0.73	0.16	0.07	310.42	1.80	1.31	4.80	1.82
807	Efficient Transformers	Rubber/Plastics	20%	20%	0.11	1.18	0.94	0.17	25	0.04	0.01	0.04	222.92	2.72	1.58	5.89	1.72
900	Base Other	Rubber/Plastics	0%	0%	0.00	1.04	1.04	0.18	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
901	Replace V-belts	Rubber/Plastics	0%	0%	0.00	1.04	1.03	0.18	5	0.00	0.00	0.05	256.89	2.59	2.19	2.07	1.72
903	Efficient Transformers	Rubber/Plastics	20%	20%	0.12	1.18	0.94	0.17	25	0.02	0.00	0.04	245.25	2.47	1.44	6.48	1.72
100	Base Compressed Air	Non-metal Minerals	0%	0%	0.00	1.04	1.04	0.13	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Compressed Air-O&M	Non-metal Minerals	17%	17%	0.02	1.08	0.90	0.11	10	4.62	0.57	0.01	118.46	7.46	5.84	1.21	1.60
102	Compressed Air - Controls	Non-metal Minerals	12%	12%	0.03	1.14	1.00	0.12	10	1.16	0.14	0.03	267.16	3.31	2.59	2.73	1.60
103	Compressed Air - System Optimization	Non-metal Minerals	20%	20%	0.03	1.15	0.92	0.11	10	3.91	0.48	0.02	148.15	5.97	4.67	1.52	1.60
104	Compressed Air- Sizing	Non-metal Minerals	9%	9%	0.01	1.09	1.00	0.12	10	1.34	0.17	0.01	97.05	9.11	7.13	0.99	1.60
105	Comp Air - Replace motor	Non-metal Minerals	10%	10%	0.02	1.09	0.98	0.12	8	1.81	0.22	0.04	297.11	2.97	2.46	2.56	1.60
106	Comp Air - ASD	Non-metal Minerals	6%	6%	0.01	1.04	0.97	0.12	8	2.26	0.28	0.04	303.68	2.91	2.41	2.61	1.60
107	Comp Air - Motor practices-1	Non-metal Minerals	2%	2%	0.01	1.04	1.01	0.13	8	0.70	0.09	0.06	517.22	1.71	1.41	4.45	1.60
110	Efficient Transformers	Non-metal Minerals	20%	20%	0.12	1.18	0.94	0.12	25	0.06	0.01	0.04	349.12	2.30	1.44	6.48	1.60
200	Base Fans	Non-metal Minerals	0%	0%	0.00	1.04	1.04	0.13	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
201	Fans - O&M	Non-metal Minerals	2%	2%	0.00	1.05	1.02	0.13	10	0.36	0.04	0.01	102.23	8.65	6.77	1.05	1.60
202	Fans - Controls	Non-metal Minerals	30%	30%	0.16	1.34	0.94	0.12	10	3.44	0.43	0.06	490.83	1.80	1.41	5.02	1.60
203	Fans - System Optimization	Non-metal Minerals	21%	21%	0.10	1.26	1.00	0.12	10	1.38	0.17	0.06	477.94	1.85	1.45	4.89	1.60
204	Fans- Improve components	Non-metal Minerals	5%	5%	0.01	1.08	1.02	0.13	10	0.37	0.05	0.02	198.26	4.46	3.49	2.03	1.60
205	Fans - Replace motor	Non-metal Minerals	10%	10%	0.02	1.09	0.98	0.12	8	1.83	0.23	0.04	297.11	2.97	2.46	2.56	1.60
206	Fans - ASD	Non-metal Minerals	6%	6%	0.01	1.04	0.97	0.12	8	2.28	0.28	0.04	303.68	2.91	2.41	2.61	1.60
207	Fans - Motor practices-1	Non-metal Minerals	2%	2%	0.01	1.04	1.01	0.13	8	0.70	0.09	0.06	517.22	1.71	1.41	4.45	1.60
211	Efficient Transformers	Non-metal Minerals	20%	20%	0.12	1.18	0.94	0.12	25	0.06	0.01	0.04	349.12	2.30	1.44	6.48	1.60
300	Base Pumps	Non-metal Minerals	0%	0%	0.00	1.04	1.04	0.13	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
301	Pumps - O&M	Non-metal Minerals	10%	10%	0.01	1.10	0.99	0.12	10	0.24	0.03	0.01	97.06	9.11	7.13	0.99	1.60
302	Pumps - Controls	Non-metal Minerals	30%	30%	0.05	1.29	0.90	0.11	10	0.73	0.09	0.02	148.97	5.93	4.64	1.52	1.60
303	Pumps - System Optimization	Non-metal Minerals	33%	33%	0.11	1.35	0.90	0.11	10	0.72	0.09	0.04	316.49	2.79	2.19	3.24	1.60
304	Pumps - Sizing	Non-metal Minerals	20%	20%	0.03	1.23	0.99	0.12	10	0.27	0.03	0.02	172.97	5.11	4.00	1.77	1.60
305	Pumps - Replace motor	Non-metal Minerals	10%	10%	0.02	1.09	0.98	0.12	8	0.29	0.04	0.04	297.11	2.97	2.46	2.56	1.60
306	Pumps - ASD	Non-metal Minerals	6%	6%	0.01	1.04	0.97	0.12	8	0.36	0.04	0.04	303.68	2.91	2.41	2.61	1.60
307	Pumps - Motor practices-1	Non-metal Minerals	2%	2%	0.01	1.04	1.01	0.13	8	0.11	0.01	0.06	517.22	1.71	1.41	4.45	1.60

INDUSTRIAL

DSM ASSYST SUMMARY

Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Base kWh	Base EUI	EUI	Peak Watts/ Base kWh	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
310	Efficient Transformers	Non-metal Minerals	20%	20%	0.12	1.18	0.94	0.12	25	0.01	0.00	0.04	349.12	2.30	1.44	6.48	1.60
400	Base Drives	Non-metal Minerals	0%	0%	0.00	1.04	1.04	0.13	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
405	Drives - Replace motor	Non-metal Minerals	10%	10%	0.02	1.11	1.00	0.12	8	1.01	0.12	0.03	242.55	3.64	3.02	2.09	1.60
415	Drives - Process Control	Non-metal Minerals	2%	2%	0.00	1.05	1.02	0.13	10	0.48	0.06	0.03	203.95	4.33	3.39	2.09	1.60
422	Efficient grinding	Non-metal Minerals	21%	21%	0.39	1.24	0.98	0.12	15	2.41	0.30	0.17	1,340.54	0.66	0.46	19.26	1.60
423	Process optimization	Non-metal Minerals	10%	10%	0.05	1.12	1.01	0.12	10	0.32	0.04	0.07	570.84	1.55	1.21	5.84	1.60
429	Efficient Transformers	Non-metal Minerals	20%	20%	0.12	1.18	0.94	0.12	25	0.09	0.01	0.04	349.12	2.30	1.44	6.48	1.60
500	Base Heating	Non-metal Minerals	0%	0%	0.00	1.04	1.04	0.13	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
504	Top-heating (glass)	Non-metal Minerals	4%	4%	0.01	1.06	1.01	0.13	8	0.28	0.04	0.03	240.37	3.68	3.04	2.07	1.60
512	Efficient Transformers	Non-metal Minerals	20%	20%	0.12	1.18	0.94	0.12	25	0.10	0.01	0.04	349.12	2.30	1.44	6.48	1.60
600	Base Other Process	Non-metal Minerals	0%	0%	0.00	1.04	1.04	0.13	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
700	Base DX Packaged System, EER=2.65, 10 tons	Non-metal Minerals	0%	0%	0.00	1.04	1.04	0.13	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
701	DX Packaged System, EER=3.5, 10 tons	Non-metal Minerals	24%	24%	0.03	1.06	0.80	0.10	15	0.03	0.00	0.01	112.46	7.86	5.44	1.62	1.60
702	DX Tune Up/ Advanced Diagnostics	Non-metal Minerals	5%	5%	0.17	1.05	0.99	0.12	10	0.01	0.00	0.49	3,978.20	0.22	0.17	40.68	1.60
703	Optimize HVAC Controls	Non-metal Minerals	20%	20%	0.05	1.04	0.83	0.10	5	0.03	0.00	0.07	580.79	1.52	1.38	3.29	1.60
704	BMS	Non-metal Minerals	8%	3%	0.07	1.04	0.95	0.13	10	0.01	0.00	0.13	3,504.28	0.73	0.65	10.90	1.41
705	Prog. Thermostat	Non-metal Minerals	4%	1%	0.02	1.04	0.99	0.13	10	0.01	0.00	0.09	2,394.60	1.07	0.95	7.45	1.41
706	Efficient Transformers	Non-metal Minerals	20%	20%	0.11	1.18	0.94	0.12	25	0.01	0.00	0.04	317.33	2.53	1.58	5.89	1.60
800	Base Lighting	Non-metal Minerals	0%	0%	0.00	1.04	1.04	0.13	10	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
801	RET T12 to Next Gen T8, 1EB	Non-metal Minerals	28%	28%	0.18	1.04	0.75	0.09	14	0.08	0.01	0.07	584.20	1.51	1.07	7.99	1.60
802	RET T8 to Next Gen T8, 1EB	Non-metal Minerals	15%	15%	0.12	1.12	0.95	0.12	14	0.21	0.03	0.08	641.09	1.38	0.98	8.76	1.60
803	RET - Hardwired 18W CFL	Non-metal Minerals	76%	76%	0.27	1.04	0.25	0.03	4	0.10	0.01	0.12	944.23	0.94	0.87	4.37	1.60
804	RET - Screw-in 18W CFL	Non-metal Minerals	76%	76%	0.01	1.04	0.25	0.03	2	0.10	0.01	0.01	78.11	11.32	11.30	0.19	1.60
805	400W MV to 250W HPS	Non-metal Minerals	35%	35%	0.02	1.04	0.67	0.08	5	1.19	0.15	0.02	141.41	6.25	5.66	0.80	1.60
806	Lighting Controls	Non-metal Minerals	15%	20%	0.06	1.05	0.89	0.10	8	0.36	0.06	0.07	442.19	1.57	1.23	5.13	1.70
807	Efficient Transformers	Non-metal Minerals	20%	20%	0.11	1.18	0.94	0.12	25	0.02	0.00	0.04	317.33	2.53	1.58	5.89	1.60
900	Base Other	Non-metal Minerals	0%	0%	0.00	1.04	1.04	0.13	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
901	Replace V-belts	Non-metal Minerals	0%	0%	0.00	1.04	1.03	0.13	5	0.00	0.00	0.05	365.69	2.42	2.19	2.07	1.60
903	Efficient Transformers	Non-metal Minerals	20%	20%	0.12	1.18	0.94	0.12	25	0.02	0.00	0.04	349.12	2.30	1.44	6.48	1.60
100	Base Compressed Air	Metal Products	0%	0%	0.00	1.04	1.04	0.18	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Compressed Air-O&M	Metal Products	17%	17%	0.02	1.08	0.90	0.16	10	2.30	0.41	0.01	83.21	8.01	5.84	1.21	1.72
102	Compressed Air - Controls	Metal Products	12%	12%	0.03	1.14	1.00	0.18	10	0.58	0.10	0.03	187.67	3.55	2.59	2.73	1.72
103	Compressed Air - System Optimization	Metal Products	20%	20%	0.03	1.15	0.92	0.16	10	1.95	0.34	0.02	104.07	6.40	4.67	1.52	1.72
104	Compressed Air- Sizing	Metal Products	9%	9%	0.01	1.09	1.00	0.18	10	0.67	0.12	0.01	68.17	9.77	7.13	0.99	1.72
105	Comp Air - Replace motor	Metal Products	10%	10%	0.02	1.09	0.98	0.17	8	0.90	0.16	0.04	208.71	3.19	2.46	2.56	1.72
106	Comp Air - ASD	Metal Products	6%	6%	0.01	1.04	0.97	0.17	8	1.12	0.20	0.04	213.33	3.12	2.41	2.61	1.72
107	Comp Air - Motor practices-1	Metal Products	2%	2%	0.01	1.04	1.01	0.18	8	0.35	0.06	0.06	363.34	1.83	1.41	4.45	1.72
110	Efficient Transformers	Metal Products	20%	20%	0.12	1.18	0.94	0.17	25	0.03	0.01	0.04	245.25	2.47	1.44	6.48	1.72
200	Base Fans	Metal Products	0%	0%	0.00	1.04	1.04	0.18	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
201	Fans - O&M	Metal Products	2%	2%	0.00	1.05	1.02	0.18	10	0.06	0.01	0.01	71.81	9.28	6.77	1.05	1.72
202	Fans - Controls	Metal Products	30%	30%	0.16	1.34	0.94	0.16	10	0.58	0.10	0.06	344.80	1.93	1.41	5.02	1.72
203	Fans - System Optimization	Metal Products	21%	21%	0.10	1.26	1.00	0.18	10	0.23	0.04	0.06	335.74	1.98	1.45	4.89	1.72
204	Fans- Improve components	Metal Products	5%	5%	0.01	1.08	1.02	0.18	10	0.06	0.01	0.02	139.27	4.78	3.49	2.03	1.72
205	Fans - Replace motor	Metal Products	10%	10%	0.02	1.09	0.98	0.17	8	0.31	0.05	0.04	208.71	3.19	2.46	2.56	1.72
206	Fans - ASD	Metal Products	6%	6%	0.01	1.04	0.97	0.17	8	0.39	0.07	0.04	213.33	3.12	2.41	2.61	1.72
207	Fans - Motor practices-1	Metal Products	2%	2%	0.01	1.04	1.01	0.18	8	0.12	0.02	0.06	363.34	1.83	1.41	4.45	1.72
211	Efficient Transformers	Metal Products	20%	20%	0.12	1.18	0.94	0.17	25	0.01	0.00	0.04	245.25	2.47	1.44	6.48	1.72
300	Base Pumps	Metal Products	0%	0%	0.00	1.04	1.04	0.18	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
301	Pumps - O&M	Metal Products	10%	10%	0.01	1.10	0.99	0.17	10	0.38	0.07	0.01	68.19	9.77	7.13	0.99	1.72
302	Pumps - Controls	Metal Products	30%	30%	0.05	1.29	0.90	0.16	10	1.16	0.20	0.02	104.65	6.37	4.64	1.52	1.72
303	Pumps - System Optimization	Metal Products	33%	33%	0.11	1.35	0.90	0.16	10	1.15	0.20	0.04	222.33	3.00	2.19	3.24	1.72
304	Pumps - Sizing	Metal Products	20%	20%	0.03	1.23	0.99	0.17	10	0.42	0.07	0.02	121.51	5.48	4.00	1.77	1.72
305	Pumps - Replace motor	Metal Products	10%	10%	0.02	1.09	0.98	0.17	8	0.46	0.08	0.04	208.71	3.19	2.46	2.56	1.72
306	Pumps - ASD	Metal Products	6%	6%	0.01	1.04	0.97	0.17	8	0.57	0.10	0.04	213.33	3.12	2.41	2.61	1.72
307	Pumps - Motor practices-1	Metal Products	2%	2%	0.01	1.04	1.01	0.18	8	0.18	0.03	0.06	363.34	1.83	1.41	4.45	1.72
310	Efficient Transformers	Metal Products	20%	20%	0.12	1.18	0.94	0.17	25	0.02	0.00	0.04	245.25	2.47	1.44	6.48	1.72
400	Base Drives	Metal Products	0%	0%	0.00	1.04	1.04	0.18	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
405	Drives - Replace motor	Metal Products	10%	10%	0.02	1.04	0.93	0.16	8	1.97	0.35	0.04	219.94	3.03	2.34	2.70	1.72
425	Drives - Optimization process (M&T)	Metal Products	10%	10%	0.01	1.09	0.98	0.17	10	0.69	0.12	0.02	110.26	6.04	4.41	1.61	1.72
426	Drives - Scheduling	Metal Products	5%	5%	0.02	1.08	1.02	0.18	10	0.22	0.04	0.04	253.54	2.63	1.92	3.69	1.72
427	Machinery	Metal Products	7%	7%	0.02	1.09	1.02	0.18	10	0.30	0.05	0.04	246.04	2.71	1.97	3.58	1.72
429	Efficient Transformers	Metal Products	20%	20%	0.12	1.18	0.94	0.17	25	0.06	0.01	0.04	245.25	2.47	1.44	6.48	1.72

INDUSTRIAL

DSM ASSYST SUMMARY

Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Base kWh	Base EUI	EUI	Peak Watts/ Base kWh	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
500	Base Heating	Metal Products	0%	0%	0.00	1.04	1.04	0.18	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
509	Efficient Curing ovens	Metal Products	20%	20%	0.14	1.22	0.97	0.17	15	0.92	0.16	0.06	349.81	1.90	1.23	7.15	1.72
510	Heating - Optimization process (M&T)	Metal Products	10%	10%	0.01	1.09	0.98	0.17	10	0.47	0.08	0.02	110.26	6.04	4.41	1.61	1.72
511	Heating - Scheduling	Metal Products	5%	5%	0.02	1.08	1.02	0.18	10	0.15	0.03	0.04	253.54	2.63	1.92	3.69	1.72
512	Efficient Transformers	Metal Products	20%	20%	0.12	1.18	0.94	0.17	25	0.04	0.01	0.04	245.25	2.47	1.44	6.48	1.72
600	Base Other Process	Metal Products	0%	0%	0.00	1.04	1.04	0.18	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
603	New transformers welding	Metal Products	25%	25%	0.08	1.18	0.89	0.16	15	1.09	0.19	0.03	180.07	3.70	2.39	3.68	1.72
608	Efficient Transformers	Metal Products	20%	20%	0.12	1.18	0.94	0.17	25	0.01	0.00	0.04	245.25	2.47	1.44	6.48	1.72
700	Base DX Packaged System, EER=2.65, 10 tons	Metal Products	0%	0%	0.00	1.04	1.04	0.18	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
701	DX Packaged System, EER=3.5, 10 tons	Metal Products	24%	24%	0.03	1.06	0.80	0.14	15	0.04	0.01	0.01	79.00	8.43	5.44	1.62	1.72
702	DX Tune Up/ Advanced Diagnostics	Metal Products	5%	5%	0.17	1.05	0.99	0.18	10	0.01	0.00	0.49	2,794.62	0.24	0.17	40.68	1.72
703	Optimize HVAC Controls	Metal Products	20%	20%	0.05	1.04	0.83	0.15	5	0.04	0.01	0.07	408.00	1.63	1.38	3.29	1.72
704	BMS	Metal Products	8%	3%	0.07	1.04	0.96	0.18	10	0.01	0.00	0.14	2,461.70	0.71	0.61	11.61	1.45
705	Prog. Thermostat	Metal Products	4%	1%	0.02	1.04	1.00	0.18	10	0.01	0.00	0.10	1,682.17	1.03	0.89	7.93	1.45
706	Efficient Transformers	Metal Products	20%	20%	0.11	1.18	0.94	0.17	25	0.01	0.00	0.04	222.92	2.72	1.58	5.89	1.72
800	Base Lighting	Metal Products	0%	0%	0.00	1.04	1.04	0.18	10	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
801	RET T12 to Next Gen T8, 1EB	Metal Products	28%	28%	0.18	1.04	0.75	0.13	14	0.14	0.02	0.07	410.39	1.62	1.07	7.99	1.72
802	RET T8 to Next Gen T8, 1EB	Metal Products	15%	15%	0.12	1.12	0.95	0.17	14	0.34	0.06	0.08	450.35	1.48	0.98	8.76	1.72
803	RET - Hardwired 18W CFL	Metal Products	76%	76%	0.27	1.04	0.25	0.04	4	0.17	0.03	0.12	663.31	1.00	0.87	4.37	1.72
804	RET - Screw-in 18W CFL	Metal Products	76%	76%	0.01	1.04	0.25	0.04	2	0.17	0.03	0.01	54.87	12.14	11.30	0.19	1.72
805	400W MV to 250W HPS	Metal Products	35%	35%	0.02	1.04	0.67	0.12	5	1.97	0.35	0.02	99.34	6.71	5.66	0.80	1.72
806	Lighting Controls	Metal Products	16%	20%	0.06	1.05	0.88	0.15	8	0.65	0.14	0.07	310.42	1.80	1.31	4.80	1.82
807	Efficient Transformers	Metal Products	20%	20%	0.11	1.18	0.94	0.17	25	0.04	0.01	0.04	222.92	2.72	1.58	5.89	1.72
900	Base Other	Metal Products	0%	0%	0.00	1.04	1.04	0.18	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
901	Replace V-belts	Metal Products	0%	0%	0.00	1.04	1.03	0.18	5	0.00	0.00	0.05	256.89	2.59	2.19	2.07	1.72
903	Efficient Transformers	Metal Products	20%	20%	0.12	1.18	0.94	0.17	25	0.01	0.00	0.04	245.25	2.47	1.44	6.48	1.72
100	Base Compressed Air	Elec/Ind Equip	0%	0%	0.00	1.04	1.04	0.18	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Compressed Air-O&M	Elec/Ind Equip	17%	17%	0.02	1.08	0.90	0.16	10	2.26	0.40	0.01	83.21	8.01	5.84	1.21	1.72
102	Compressed Air - Controls	Elec/Ind Equip	12%	12%	0.03	1.14	1.00	0.18	10	0.57	0.10	0.03	187.67	3.55	2.59	2.73	1.72
103	Compressed Air - System Optimization	Elec/Ind Equip	20%	20%	0.03	1.15	0.92	0.16	10	1.91	0.34	0.02	104.07	6.40	4.67	1.52	1.72
104	Compressed Air- Sizing	Elec/Ind Equip	9%	9%	0.01	1.09	1.00	0.18	10	0.65	0.12	0.01	68.17	9.77	7.13	0.99	1.72
105	Comp Air - Replace motor	Elec/Ind Equip	10%	10%	0.02	1.09	0.98	0.17	8	0.89	0.16	0.04	208.71	3.19	2.46	2.56	1.72
106	Comp Air - ASD	Elec/Ind Equip	6%	6%	0.01	1.04	0.97	0.17	8	1.10	0.19	0.04	213.33	3.12	2.41	2.61	1.72
107	Comp Air - Motor practices-1	Elec/Ind Equip	2%	2%	0.01	1.04	1.01	0.18	8	0.34	0.06	0.06	363.34	1.83	1.41	4.45	1.72
110	Efficient Transformers	Elec/Ind Equip	20%	20%	0.12	1.18	0.94	0.17	25	0.03	0.01	0.04	245.25	2.47	1.44	6.48	1.72
200	Base Fans	Elec/Ind Equip	0%	0%	0.00	1.04	1.04	0.18	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
201	Fans - O&M	Elec/Ind Equip	2%	2%	0.00	1.05	1.02	0.18	10	0.02	0.00	0.01	71.81	9.28	6.77	1.05	1.72
202	Fans - Controls	Elec/Ind Equip	30%	30%	0.16	1.34	0.94	0.16	10	0.19	0.03	0.06	344.80	1.93	1.41	5.02	1.72
203	Fans - System Optimization	Elec/Ind Equip	21%	21%	0.10	1.26	1.00	0.18	10	0.07	0.01	0.06	335.74	1.98	1.45	4.89	1.72
204	Fans- Improve components	Elec/Ind Equip	5%	5%	0.01	1.08	1.02	0.18	10	0.02	0.00	0.02	139.27	4.78	3.49	2.03	1.72
205	Fans - Replace motor	Elec/Ind Equip	10%	10%	0.02	1.09	0.98	0.17	8	0.10	0.02	0.04	208.71	3.19	2.46	2.56	1.72
206	Fans - ASD	Elec/Ind Equip	6%	6%	0.01	1.04	0.97	0.17	8	0.12	0.02	0.04	213.33	3.12	2.41	2.61	1.72
207	Fans - Motor practices-1	Elec/Ind Equip	2%	2%	0.01	1.04	1.01	0.18	8	0.04	0.01	0.06	363.34	1.83	1.41	4.45	1.72
211	Efficient Transformers	Elec/Ind Equip	20%	20%	0.12	1.18	0.94	0.17	25	0.00	0.00	0.04	245.25	2.47	1.44	6.48	1.72
300	Base Pumps	Elec/Ind Equip	0%	0%	0.00	1.04	1.04	0.18	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
301	Pumps - O&M	Elec/Ind Equip	10%	10%	0.01	1.10	0.99	0.17	10	1.88	0.33	0.01	68.19	9.77	7.13	0.99	1.72
302	Pumps - Controls	Elec/Ind Equip	30%	30%	0.05	1.29	0.90	0.16	10	5.76	1.02	0.02	104.65	6.37	4.64	1.52	1.72
303	Pumps - System Optimization	Elec/Ind Equip	33%	33%	0.11	1.35	0.90	0.16	10	5.68	1.00	0.04	222.33	3.00	2.19	3.24	1.72
304	Pumps - Sizing	Elec/Ind Equip	20%	20%	0.03	1.23	0.99	0.17	10	2.10	0.37	0.02	121.51	5.48	4.00	1.77	1.72
305	Pumps - Replace motor	Elec/Ind Equip	10%	10%	0.02	1.09	0.98	0.17	8	2.28	0.40	0.04	208.71	3.19	2.46	2.56	1.72
306	Pumps - ASD	Elec/Ind Equip	6%	6%	0.01	1.04	0.97	0.17	8	2.83	0.50	0.04	213.33	3.12	2.41	2.61	1.72
307	Pumps - Motor practices-1	Elec/Ind Equip	2%	2%	0.01	1.04	1.01	0.18	8	0.87	0.15	0.06	363.34	1.83	1.41	4.45	1.72
310	Efficient Transformers	Elec/Ind Equip	20%	20%	0.12	1.18	0.94	0.17	25	0.08	0.01	0.04	245.25	2.47	1.44	6.48	1.72
400	Base Drives	Elec/Ind Equip	0%	0%	0.00	1.04	1.04	0.18	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
405	Drives - Replace motor	Elec/Ind Equip	10%	10%	0.02	1.04	0.93	0.16	8	0.62	0.11	0.04	219.94	3.03	2.34	2.70	1.72
413	Clean Room - Controls	Elec/Ind Equip	10%	10%	0.05	1.09	0.98	0.17	10	0.39	0.07	0.07	376.98	1.77	1.29	5.49	1.72
426	Drives - Scheduling	Elec/Ind Equip	5%	5%	0.02	1.07	1.02	0.18	10	0.08	0.01	0.05	278.35	2.39	1.75	4.05	1.72
427	Machinery	Elec/Ind Equip	3%	4%	0.01	1.06	1.03	0.18	10	0.06	0.01	0.04	252.86	2.63	1.92	3.68	1.72
429	Efficient Transformers	Elec/Ind Equip	20%	20%	0.12	1.18	0.94	0.17	25	0.02	0.00	0.04	245.25	2.47	1.44	6.48	1.72
500	Base Heating	Elec/Ind Equip	0%	0%	0.00	1.04	1.04	0.18	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
509	Efficient Curing ovens	Elec/Ind Equip	20%	20%	0.14	1.22	0.97	0.17	15	1.10	0.19	0.06	349.81	1.90	1.23	7.15	1.72
512	Efficient Transformers	Elec/Ind Equip	20%	20%	0.12	1.18	0.94	0.17	25	0.07	0.01	0.04	245.25	2.47	1.44	6.48	1.72

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DSM ASSYST SUMMARY

Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Base kWh	Base EUI	EUI	Peak Watts/ Base kWh	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
600	Base Other Process	Elec/Ind Equip	0%	0%	0.00	1.04	1.04	0.18	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
604	Efficient processes (welding, etc.)	Elec/Ind Equip	25%	25%	0.08	1.18	0.89	0.16	15	1.69	0.30	0.03	180.07	3.70	2.39	3.68	1.72
608	Efficient Transformers	Elec/Ind Equip	20%	20%	0.12	1.18	0.94	0.17	25	0.02	0.00	0.04	245.25	2.47	1.44	6.48	1.72
700	Base DX Packaged System, EER=2.65, 10 tons	Elec/Ind Equip	0%	0%	0.00	1.04	1.04	0.18	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
701	DX Packaged System, EER=3.5, 10 tons	Elec/Ind Equip	24%	24%	0.03	1.06	0.80	0.14	15	0.10	0.02	0.01	79.00	8.43	5.44	1.62	1.72
702	DX Tune Up/ Advanced Diagnostics	Elec/Ind Equip	5%	5%	0.17	1.05	0.99	0.18	10	0.02	0.00	0.49	2,794.62	0.24	0.17	40.68	1.72
703	Optimize HVAC Controls	Elec/Ind Equip	20%	20%	0.05	1.04	0.83	0.15	5	0.09	0.02	0.07	408.00	1.63	1.38	3.29	1.72
704	BMS	Elec/Ind Equip	8%	3%	0.07	1.04	0.96	0.18	10	0.02	0.00	0.14	2,461.70	0.71	0.61	11.61	1.45
705	Prog. Thermostat	Elec/Ind Equip	4%	1%	0.02	1.04	1.00	0.18	10	0.02	0.00	0.10	1,682.17	1.03	0.89	7.93	1.45
706	Efficient Transformers	Elec/Ind Equip	20%	20%	0.11	1.18	0.94	0.17	25	0.02	0.00	0.04	222.92	2.72	1.58	5.89	1.72
800	Base Lighting	Elec/Ind Equip	0%	0%	0.00	1.04	1.04	0.18	10	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
801	RET T12 to Next Gen T8, 1EB	Elec/Ind Equip	28%	28%	0.18	1.04	0.75	0.13	14	0.21	0.04	0.07	410.39	1.62	1.07	7.99	1.72
802	RET T8 to Next Gen T8, 1EB	Elec/Ind Equip	15%	15%	0.12	1.12	0.95	0.17	14	0.53	0.09	0.08	450.35	1.48	0.98	8.76	1.72
803	RET - Hardwired 18W CFL	Elec/Ind Equip	76%	76%	0.27	1.04	0.25	0.04	4	0.25	0.04	0.12	663.31	1.00	0.87	4.37	1.72
804	RET - Screw-in 18W CFL	Elec/Ind Equip	76%	76%	0.01	1.04	0.25	0.04	2	0.25	0.04	0.01	54.87	12.14	11.30	0.19	1.72
805	400W MV to 250W HPS	Elec/Ind Equip	35%	35%	0.02	1.04	0.67	0.12	5	3.02	0.53	0.02	99.34	6.71	5.66	0.80	1.72
806	Lighting Controls	Elec/Ind Equip	16%	20%	0.06	1.05	0.88	0.15	8	0.99	0.22	0.07	310.42	1.80	1.31	4.80	1.82
807	Efficient Transformers	Elec/Ind Equip	20%	20%	0.11	1.18	0.94	0.17	25	0.06	0.01	0.04	222.92	2.72	1.58	5.89	1.72
900	Base Other	Elec/Ind Equip	0%	0%	0.00	1.04	1.04	0.18	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
901	Replace V-belts	Elec/Ind Equip	0%	0%	0.00	1.04	1.03	0.18	5	0.00	0.00	0.05	256.89	2.59	2.19	2.07	1.72
903	Efficient Transformers	Elec/Ind Equip	20%	20%	0.12	1.18	0.94	0.17	25	0.03	0.00	0.04	245.25	2.47	1.44	6.48	1.72
100	Base Compressed Air	Transp Equip	0%	0%	0.00	1.04	1.04	0.18	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Compressed Air-O&M	Transp Equip	17%	17%	0.02	1.08	0.90	0.16	10	0.89	0.16	0.01	83.21	8.01	5.84	1.21	1.72
102	Compressed Air - Controls	Transp Equip	12%	12%	0.03	1.14	1.00	0.18	10	0.22	0.04	0.03	187.67	3.55	2.59	2.73	1.72
103	Compressed Air - System Optimization	Transp Equip	20%	20%	0.03	1.15	0.92	0.16	10	0.75	0.13	0.02	104.07	6.40	4.67	1.52	1.72
104	Compressed Air- Sizing	Transp Equip	9%	9%	0.01	1.09	1.00	0.18	10	0.26	0.05	0.01	68.17	9.77	7.13	0.99	1.72
105	Comp Air - Replace motor	Transp Equip	10%	10%	0.02	1.09	0.98	0.17	8	0.35	0.06	0.04	208.71	3.19	2.46	2.56	1.72
106	Comp Air - ASD	Transp Equip	6%	6%	0.01	1.04	0.97	0.17	8	0.43	0.08	0.04	213.33	3.12	2.41	2.61	1.72
107	Comp Air - Motor practices-1	Transp Equip	2%	2%	0.01	1.04	1.01	0.18	8	0.13	0.02	0.06	363.34	1.83	1.41	4.45	1.72
110	Efficient Transformers	Transp Equip	20%	20%	0.12	1.18	0.94	0.17	25	0.01	0.00	0.04	245.25	2.47	1.44	6.48	1.72
200	Base Fans	Transp Equip	0%	0%	0.00	1.04	1.04	0.18	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
201	Fans - O&M	Transp Equip	2%	2%	0.00	1.05	1.02	0.18	10	0.08	0.01	0.01	71.81	9.28	6.77	1.05	1.72
202	Fans - Controls	Transp Equip	30%	30%	0.16	1.34	0.94	0.16	10	0.76	0.13	0.06	344.80	1.93	1.41	5.02	1.72
203	Fans - System Optimization	Transp Equip	21%	21%	0.10	1.26	1.00	0.18	10	0.30	0.05	0.06	335.74	1.98	1.45	4.89	1.72
204	Fans- Improve components	Transp Equip	5%	5%	0.01	1.08	1.02	0.18	10	0.08	0.01	0.02	139.27	4.78	3.49	2.03	1.72
205	Fans - Replace motor	Transp Equip	10%	10%	0.02	1.09	0.98	0.17	8	0.40	0.07	0.04	208.71	3.19	2.46	2.56	1.72
206	Fans - ASD	Transp Equip	6%	6%	0.01	1.04	0.97	0.17	8	0.50	0.09	0.04	213.33	3.12	2.41	2.61	1.72
207	Fans - Motor practices-1	Transp Equip	2%	2%	0.01	1.04	1.01	0.18	8	0.16	0.03	0.06	363.34	1.83	1.41	4.45	1.72
211	Efficient Transformers	Transp Equip	20%	20%	0.12	1.18	0.94	0.17	25	0.01	0.00	0.04	245.25	2.47	1.44	6.48	1.72
300	Base Pumps	Transp Equip	0%	0%	0.00	1.04	1.04	0.18	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
301	Pumps - O&M	Transp Equip	10%	10%	0.01	1.10	0.99	0.17	10	0.29	0.05	0.01	68.19	9.77	7.13	0.99	1.72
302	Pumps - Controls	Transp Equip	30%	30%	0.05	1.29	0.90	0.16	10	0.88	0.15	0.02	104.65	6.37	4.64	1.52	1.72
303	Pumps - System Optimization	Transp Equip	33%	33%	0.11	1.35	0.90	0.16	10	0.87	0.15	0.04	222.33	3.00	2.19	3.24	1.72
304	Pumps - Sizing	Transp Equip	20%	20%	0.03	1.23	0.99	0.17	10	0.32	0.06	0.02	121.51	5.48	4.00	1.77	1.72
305	Pumps - Replace motor	Transp Equip	10%	10%	0.02	1.09	0.98	0.17	8	0.35	0.06	0.04	208.71	3.19	2.46	2.56	1.72
306	Pumps - ASD	Transp Equip	6%	6%	0.01	1.04	0.97	0.17	8	0.43	0.08	0.04	213.33	3.12	2.41	2.61	1.72
307	Pumps - Motor practices-1	Transp Equip	2%	2%	0.01	1.04	1.01	0.18	8	0.13	0.02	0.06	363.34	1.83	1.41	4.45	1.72
310	Efficient Transformers	Transp Equip	20%	20%	0.12	1.18	0.94	0.17	25	0.01	0.00	0.04	245.25	2.47	1.44	6.48	1.72
400	Base Drives	Transp Equip	0%	0%	0.00	1.04	1.04	0.18	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
405	Drives - Replace motor	Transp Equip	10%	10%	0.02	1.04	0.93	0.16	8	0.74	0.13	0.04	219.94	3.03	2.34	2.70	1.72
425	Drives - Optimization process (M&T)	Transp Equip	10%	10%	0.01	1.10	0.99	0.17	10	0.20	0.04	0.02	109.10	6.11	4.45	1.59	1.72
426	Drives - Scheduling	Transp Equip	5%	5%	0.02	1.08	1.02	0.18	10	0.08	0.01	0.04	253.54	2.63	1.92	3.69	1.72
427	Machinery	Transp Equip	11%	11%	0.03	1.13	1.01	0.18	10	0.14	0.02	0.04	237.26	2.81	2.05	3.45	1.72
429	Efficient Transformers	Transp Equip	20%	20%	0.12	1.18	0.94	0.17	25	0.02	0.00	0.04	245.25	2.47	1.44	6.48	1.72
500	Base Heating	Transp Equip	0%	0%	0.00	1.04	1.04	0.18	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
509	Efficient Curing ovens	Transp Equip	20%	20%	0.14	1.22	0.97	0.17	15	0.25	0.04	0.06	349.81	1.90	1.23	7.15	1.72
510	Heating - Optimization process (M&T)	Transp Equip	10%	10%	0.01	1.10	0.99	0.17	10	0.15	0.03	0.02	109.10	6.11	4.45	1.59	1.72
512	Efficient Transformers	Transp Equip	20%	20%	0.12	1.18	0.94	0.17	25	0.02	0.00	0.04	245.25	2.47	1.44	6.48	1.72
600	Base Other Process	Transp Equip	0%	0%	0.00	1.04	1.04	0.18	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
603	New transformers welding	Transp Equip	25%	25%	0.08	1.18	0.89	0.16	15	0.53	0.09	0.03	180.07	3.70	2.39	3.68	1.72
608	Efficient Transformers	Transp Equip	20%	20%	0.12	1.18	0.94	0.17	25	0.01	0.00	0.04	245.25	2.47	1.44	6.48	1.72
700	Base DX Packaged System, EER=2.65, 10 tons	Transp Equip	0%	0%	0.00	1.04	1.04	0.18	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A

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DSM ASSYST SUMMARY

Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Base kWh	Base EUI	EUI	Peak Watts/ Base kWh	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
701	DX Packaged System, EER=3.5, 10 tons	Transp Equip	24%	24%	0.03	1.06	0.80	0.14	15	0.05	0.01	0.01	79.00	8.43	5.44	1.62	1.72
702	DX Tune Up/ Advanced Diagnostics	Transp Equip	5%	5%	0.17	1.05	0.99	0.18	10	0.01	0.00	0.49	2,794.62	0.24	0.17	40.68	1.72
703	Optimize HVAC Controls	Transp Equip	20%	20%	0.05	1.04	0.83	0.15	5	0.05	0.01	0.07	408.00	1.63	1.38	3.29	1.72
704	BMS	Transp Equip	8%	3%	0.07	1.04	0.96	0.18	10	0.01	0.00	0.14	2,461.70	0.71	0.61	11.61	1.45
705	Prog. Thermostat	Transp Equip	4%	1%	0.02	1.04	1.00	0.18	10	0.01	0.00	0.10	1,682.17	1.03	0.89	7.93	1.45
706	Efficient Transformers	Transp Equip	20%	20%	0.11	1.18	0.94	0.17	25	0.01	0.00	0.04	222.92	2.72	1.58	5.89	1.72
800	Base Lighting	Transp Equip	0%	0%	0.00	1.04	1.04	0.18	10	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
801	RET T12 to Next Gen T8, 1EB	Transp Equip	28%	28%	0.18	1.04	0.75	0.13	14	0.09	0.02	0.07	410.39	1.62	1.07	7.99	1.72
802	RET T8 to Next Gen T8, 1EB	Transp Equip	15%	15%	0.12	1.12	0.95	0.17	14	0.22	0.04	0.08	450.35	1.48	0.98	8.76	1.72
803	RET - Hardwired 18W CFL	Transp Equip	76%	76%	0.27	1.04	0.25	0.04	4	0.11	0.02	0.12	663.31	1.00	0.87	4.37	1.72
804	RET - Screw-in 18W CFL	Transp Equip	76%	76%	0.01	1.04	0.25	0.04	2	0.11	0.02	0.01	54.87	12.14	11.30	0.19	1.72
805	400W MV to 250W HPS	Transp Equip	35%	35%	0.02	1.04	0.67	0.12	5	1.27	0.22	0.02	99.34	6.71	5.66	0.80	1.72
806	Lighting Controls	Transp Equip	16%	20%	0.06	1.05	0.88	0.15	8	0.42	0.09	0.07	310.42	1.80	1.31	4.80	1.82
807	Efficient Transformers	Transp Equip	20%	20%	0.11	1.18	0.94	0.17	25	0.03	0.00	0.04	222.92	2.72	1.58	5.89	1.72
900	Base Other	Transp Equip	0%	0%	0.00	1.04	1.04	0.18	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
901	Replace V-belts	Transp Equip	0%	0%	0.00	1.04	1.03	0.18	5	0.00	0.00	0.05	256.89	2.59	2.19	2.07	1.72
903	Efficient Transformers	Transp Equip	20%	20%	0.12	1.18	0.94	0.17	25	0.01	0.00	0.04	245.25	2.47	1.44	6.48	1.72
100	Base Compressed Air	Photo/Sci Equip	0%	0%	0.00	1.04	1.04	0.18	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Compressed Air-O&M	Photo/Sci Equip	17%	17%	0.02	1.08	0.90	0.16	10	0.07	0.01	0.01	83.21	8.01	5.84	1.21	1.72
102	Compressed Air - Controls	Photo/Sci Equip	12%	12%	0.03	1.14	1.00	0.18	10	0.02	0.00	0.03	187.67	3.55	2.59	2.73	1.72
103	Compressed Air - System Optimization	Photo/Sci Equip	20%	20%	0.03	1.15	0.92	0.16	10	0.06	0.01	0.02	104.07	6.40	4.67	1.52	1.72
104	Compressed Air- Sizing	Photo/Sci Equip	9%	9%	0.01	1.09	1.00	0.18	10	0.02	0.00	0.01	68.17	9.77	7.13	0.99	1.72
105	Comp Air - Replace motor	Photo/Sci Equip	10%	10%	0.02	1.09	0.98	0.17	8	0.03	0.00	0.04	208.71	3.19	2.46	2.56	1.72
106	Comp Air - ASD	Photo/Sci Equip	6%	6%	0.01	1.04	0.97	0.17	8	0.03	0.01	0.04	213.33	3.12	2.41	2.61	1.72
107	Comp Air - Motor practices-1	Photo/Sci Equip	2%	2%	0.01	1.04	1.01	0.18	8	0.01	0.00	0.06	363.34	1.83	1.41	4.45	1.72
110	Efficient Transformers	Photo/Sci Equip	20%	20%	0.12	1.18	0.94	0.17	25	0.00	0.00	0.04	245.25	2.47	1.44	6.48	1.72
200	Base Fans	Photo/Sci Equip	0%	0%	0.00	1.04	1.04	0.18	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
201	Fans - O&M	Photo/Sci Equip	2%	2%	0.00	1.05	1.02	0.18	10	0.01	0.00	0.01	71.81	9.28	6.77	1.05	1.72
202	Fans - Controls	Photo/Sci Equip	30%	30%	0.16	1.34	0.94	0.16	10	0.09	0.02	0.06	344.80	1.93	1.41	5.02	1.72
203	Fans - System Optimization	Photo/Sci Equip	21%	21%	0.10	1.26	1.00	0.18	10	0.04	0.01	0.06	335.74	1.98	1.45	4.89	1.72
204	Fans- Improve components	Photo/Sci Equip	5%	5%	0.01	1.08	1.02	0.18	10	0.01	0.00	0.02	139.27	4.78	3.49	2.03	1.72
205	Fans - Replace motor	Photo/Sci Equip	10%	10%	0.02	1.09	0.98	0.17	8	0.05	0.01	0.04	208.71	3.19	2.46	2.56	1.72
206	Fans - ASD	Photo/Sci Equip	6%	6%	0.01	1.04	0.97	0.17	8	0.06	0.01	0.04	213.33	3.12	2.41	2.61	1.72
207	Fans - Motor practices-1	Photo/Sci Equip	2%	2%	0.01	1.04	1.01	0.18	8	0.02	0.00	0.06	363.34	1.83	1.41	4.45	1.72
211	Efficient Transformers	Photo/Sci Equip	20%	20%	0.12	1.18	0.94	0.17	25	0.00	0.00	0.04	245.25	2.47	1.44	6.48	1.72
300	Base Pumps	Photo/Sci Equip	0%	0%	0.00	1.04	1.04	0.18	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
301	Pumps - O&M	Photo/Sci Equip	10%	10%	0.01	1.10	0.99	0.17	10	0.02	0.00	0.01	68.19	9.77	7.13	0.99	1.72
302	Pumps - Controls	Photo/Sci Equip	30%	30%	0.05	1.29	0.90	0.16	10	0.06	0.01	0.02	104.65	6.37	4.64	1.52	1.72
303	Pumps - System Optimization	Photo/Sci Equip	33%	33%	0.11	1.35	0.90	0.16	10	0.06	0.01	0.04	222.33	3.00	2.19	3.24	1.72
304	Pumps - Sizing	Photo/Sci Equip	20%	20%	0.03	1.23	0.99	0.17	10	0.02	0.00	0.02	121.51	5.48	4.00	1.77	1.72
305	Pumps - Replace motor	Photo/Sci Equip	10%	10%	0.02	1.09	0.98	0.17	8	0.02	0.00	0.04	208.71	3.19	2.46	2.56	1.72
306	Pumps - ASD	Photo/Sci Equip	6%	6%	0.01	1.04	0.97	0.17	8	0.03	0.01	0.04	213.33	3.12	2.41	2.61	1.72
307	Pumps - Motor practices-1	Photo/Sci Equip	2%	2%	0.01	1.04	1.01	0.18	8	0.01	0.00	0.06	363.34	1.83	1.41	4.45	1.72
310	Efficient Transformers	Photo/Sci Equip	20%	20%	0.12	1.18	0.94	0.17	25	0.00	0.00	0.04	245.25	2.47	1.44	6.48	1.72
400	Base Drives	Photo/Sci Equip	0%	0%	0.00	1.04	1.04	0.18	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
405	Drives - Replace motor	Photo/Sci Equip	10%	10%	0.02	1.04	0.93	0.16	8	0.15	0.03	0.04	219.94	3.03	2.34	2.70	1.72
425	Drives - Optimization process (M&T)	Photo/Sci Equip	10%	10%	0.01	1.09	0.98	0.17	10	0.04	0.01	0.02	110.26	6.04	4.41	1.61	1.72
426	Drives - Scheduling	Photo/Sci Equip	5%	5%	0.02	1.08	1.02	0.18	10	0.01	0.00	0.04	253.54	2.63	1.92	3.69	1.72
427	Machinery	Photo/Sci Equip	7%	7%	0.02	1.09	1.02	0.18	10	0.02	0.00	0.04	246.04	2.71	1.97	3.58	1.72
429	Efficient Transformers	Photo/Sci Equip	20%	20%	0.12	1.18	0.94	0.17	25	0.00	0.00	0.04	245.25	2.47	1.44	6.48	1.72
500	Base Heating	Photo/Sci Equip	0%	0%	0.00	1.04	1.04	0.18	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
509	Efficient Curing ovens	Photo/Sci Equip	20%	20%	0.14	1.22	0.97	0.17	15	0.05	0.01	0.06	349.81	1.90	1.23	7.15	1.72
512	Efficient Transformers	Photo/Sci Equip	20%	20%	0.12	1.18	0.94	0.17	25	0.00	0.00	0.04	245.25	2.47	1.44	6.48	1.72
600	Base Other Process	Photo/Sci Equip	0%	0%	0.00	1.04	1.04	0.18	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
603	New transformers welding	Photo/Sci Equip	25%	25%	0.08	1.18	0.89	0.16	15	0.02	0.00	0.03	180.07	3.70	2.39	3.68	1.72
608	Efficient Transformers	Photo/Sci Equip	20%	20%	0.12	1.18	0.94	0.17	25	0.00	0.00	0.04	245.25	2.47	1.44	6.48	1.72
700	Base DX Packaged System, EER=2.65, 10 tons	Photo/Sci Equip	0%	0%	0.00	1.04	1.04	0.18	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
701	DX Packaged System, EER=3.5, 10 tons	Photo/Sci Equip	24%	24%	0.03	1.06	0.80	0.14	15	0.00	0.00	0.01	79.00	8.43	5.44	1.62	1.72
702	DX Tune Up/ Advanced Diagnostics	Photo/Sci Equip	5%	5%	0.17	1.05	0.99	0.18	10	0.00	0.00	0.49	2,794.62	0.24	0.17	40.68	1.72
703	Optimize HVAC Controls	Photo/Sci Equip	20%	20%	0.05	1.04	0.83	0.15	5	0.00	0.00	0.07	408.00	1.63	1.38	3.29	1.72
704	BMS	Photo/Sci Equip	8%	3%	0.07	1.04	0.96	0.18	10	0.00	0.00	0.14	2,461.70	0.71	0.61	11.61	1.45
705	Prog. Thermostat	Photo/Sci Equip	4%	1%	0.02	1.04	1.00	0.18	10	0.00	0.00	0.10	1,682.17	1.03	0.89	7.93	1.45

INDUSTRIAL

DSM ASSYST SUMMARY																		
Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Base kWh	Base EUI	EUI	Peak Watts/ Base kWh	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
706	Efficient Transformers	Photo/Sci Equip	20%	20%	0.11	1.18	0.94	0.17	25	0.00	0.00	0.04	222.92	2.72	1.58	5.89	1.72
800	Base Lighting	Photo/Sci Equip	0%	0%	0.00	1.04	1.04	0.18	10	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
801	RET T12 to Next Gen T8, 1EB	Photo/Sci Equip	28%	28%	0.18	1.04	0.75	0.13	14	0.02	0.00	0.07	410.39	1.62	1.07	7.99	1.72
802	RET T8 to Next Gen T8, 1EB	Photo/Sci Equip	15%	15%	0.12	1.12	0.95	0.17	14	0.04	0.01	0.08	450.35	1.48	0.98	8.76	1.72
803	RET - Hardwired 18W CFL	Photo/Sci Equip	76%	76%	0.27	1.04	0.25	0.04	4	0.02	0.00	0.12	663.31	1.00	0.87	4.37	1.72
804	RET - Screw-in 18W CFL	Photo/Sci Equip	76%	76%	0.01	1.04	0.25	0.04	2	0.02	0.00	0.01	54.87	12.14	11.30	0.19	1.72
805	400W MV to 250W HPS	Photo/Sci Equip	35%	35%	0.02	1.04	0.67	0.12	5	0.25	0.04	0.02	99.34	6.71	5.66	0.80	1.72
806	Lighting Controls	Photo/Sci Equip	16%	20%	0.06	1.05	0.88	0.15	8	0.08	0.02	0.07	310.42	1.80	1.31	4.80	1.82
807	Efficient Transformers	Photo/Sci Equip	20%	20%	0.11	1.18	0.94	0.17	25	0.01	0.00	0.04	222.92	2.72	1.58	5.89	1.72
900	Base Other	Photo/Sci Equip	0%	0%	0.00	1.04	1.04	0.18	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
901	Replace V-belts	Photo/Sci Equip	0%	0%	0.00	1.04	1.03	0.18	5	0.00	0.00	0.05	256.89	2.59	2.19	2.07	1.72
903	Efficient Transformers	Photo/Sci Equip	20%	20%	0.12	1.18	0.94	0.17	25	0.00	0.00	0.04	245.25	2.47	1.44	6.48	1.72
100	Base Compressed Air	Other Mfg	0%	0%	0.00	1.04	1.04	0.18	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Compressed Air-O&M	Other Mfg	17%	17%	0.02	1.08	0.90	0.16	10	2.66	0.47	0.01	83.21	8.01	5.84	1.21	1.72
102	Compressed Air - Controls	Other Mfg	12%	12%	0.03	1.14	1.00	0.18	10	0.67	0.12	0.03	187.67	3.55	2.59	2.73	1.72
103	Compressed Air - System Optimization	Other Mfg	20%	20%	0.03	1.15	0.92	0.16	10	2.25	0.40	0.02	104.07	6.40	4.67	1.52	1.72
104	Compressed Air- Sizing	Other Mfg	9%	9%	0.01	1.09	1.00	0.18	10	0.77	0.14	0.01	68.17	9.77	7.13	0.99	1.72
105	Comp Air - Replace motor	Other Mfg	10%	10%	0.02	1.09	0.98	0.17	8	1.04	0.18	0.04	208.71	3.19	2.46	2.56	1.72
106	Comp Air - ASD	Other Mfg	6%	6%	0.01	1.04	0.97	0.17	8	1.30	0.23	0.04	213.33	3.12	2.41	2.61	1.72
107	Comp Air - Motor practices-1	Other Mfg	2%	2%	0.01	1.04	1.01	0.18	8	0.40	0.07	0.06	363.34	1.83	1.41	4.45	1.72
110	Efficient Transformers	Other Mfg	20%	20%	0.12	1.18	0.94	0.17	25	0.04	0.01	0.04	245.25	2.47	1.44	6.48	1.72
200	Base Fans	Other Mfg	0%	0%	0.00	1.04	1.04	0.18	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
201	Fans - O&M	Other Mfg	2%	2%	0.00	1.05	1.02	0.18	10	0.08	0.01	0.01	71.81	9.28	6.77	1.05	1.72
202	Fans - Controls	Other Mfg	30%	30%	0.16	1.34	0.94	0.16	10	0.72	0.13	0.06	344.80	1.93	1.41	5.02	1.72
203	Fans - System Optimization	Other Mfg	21%	21%	0.10	1.26	1.00	0.18	10	0.29	0.05	0.06	335.74	1.98	1.45	4.89	1.72
204	Fans- Improve components	Other Mfg	5%	5%	0.01	1.08	1.02	0.18	10	0.08	0.01	0.02	139.27	4.78	3.49	2.03	1.72
205	Fans - Replace motor	Other Mfg	10%	10%	0.02	1.09	0.98	0.17	8	0.38	0.07	0.04	208.71	3.19	2.46	2.56	1.72
206	Fans - ASD	Other Mfg	6%	6%	0.01	1.04	0.97	0.17	8	0.48	0.08	0.04	213.33	3.12	2.41	2.61	1.72
207	Fans - Motor practices-1	Other Mfg	2%	2%	0.01	1.04	1.01	0.18	8	0.15	0.03	0.06	363.34	1.83	1.41	4.45	1.72
211	Efficient Transformers	Other Mfg	20%	20%	0.12	1.18	0.94	0.17	25	0.01	0.00	0.04	245.25	2.47	1.44	6.48	1.72
300	Base Pumps	Other Mfg	0%	0%	0.00	1.04	1.04	0.18	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
301	Pumps - O&M	Other Mfg	10%	10%	0.01	1.10	0.99	0.17	10	0.42	0.07	0.01	68.19	9.77	7.13	0.99	1.72
302	Pumps - Controls	Other Mfg	30%	30%	0.05	1.29	0.90	0.16	10	1.30	0.23	0.02	104.65	6.37	4.64	1.52	1.72
303	Pumps - System Optimization	Other Mfg	33%	33%	0.11	1.35	0.90	0.16	10	1.28	0.23	0.04	222.33	3.00	2.19	3.24	1.72
304	Pumps - Sizing	Other Mfg	20%	20%	0.03	1.23	0.99	0.17	10	0.47	0.08	0.02	121.51	5.48	4.00	1.77	1.72
305	Pumps - Replace motor	Other Mfg	10%	10%	0.02	1.09	0.98	0.17	8	0.51	0.09	0.04	208.71	3.19	2.46	2.56	1.72
306	Pumps - ASD	Other Mfg	6%	6%	0.01	1.04	0.97	0.17	8	0.64	0.11	0.04	213.33	3.12	2.41	2.61	1.72
307	Pumps - Motor practices-1	Other Mfg	2%	2%	0.01	1.04	1.01	0.18	8	0.20	0.03	0.06	363.34	1.83	1.41	4.45	1.72
310	Efficient Transformers	Other Mfg	20%	20%	0.12	1.18	0.94	0.17	25	0.02	0.00	0.04	245.25	2.47	1.44	6.48	1.72
400	Base Drives	Other Mfg	0%	0%	0.00	1.04	1.04	0.18	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
405	Drives - Replace motor	Other Mfg	10%	10%	0.02	1.04	0.93	0.16	8	1.84	0.33	0.04	219.94	3.03	2.34	2.70	1.72
416	Process Drives - ASD	Other Mfg	1%	1%	0.00	1.04	1.03	0.18	10	0.04	0.01	0.08	454.21	1.47	1.07	6.61	1.72
426	Drives - Scheduling	Other Mfg	5%	5%	0.02	1.07	1.02	0.18	10	0.22	0.04	0.05	278.35	2.39	1.75	4.05	1.72
428	Efficient Machinery	Other Mfg	3%	4%	0.01	1.06	1.03	0.18	10	0.16	0.03	0.04	254.04	2.62	1.91	3.70	1.72
429	Efficient Transformers	Other Mfg	20%	20%	0.12	1.18	0.94	0.17	25	0.06	0.01	0.04	245.25	2.47	1.44	6.48	1.72
500	Base Heating	Other Mfg	0%	0%	0.00	1.04	1.04	0.18	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
509	Efficient Curing ovens	Other Mfg	20%	20%	0.14	1.22	0.97	0.17	15	0.54	0.09	0.06	349.81	1.90	1.23	7.15	1.72
512	Efficient Transformers	Other Mfg	20%	20%	0.12	1.18	0.94	0.17	25	0.03	0.01	0.04	245.25	2.47	1.44	6.48	1.72
600	Base Other Process	Other Mfg	0%	0%	0.00	1.04	1.04	0.18	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
605	Process control	Other Mfg	4%	4%	0.03	1.07	1.02	0.18	15	0.02	0.00	0.07	399.19	1.67	1.08	8.16	1.72
608	Efficient Transformers	Other Mfg	20%	20%	0.12	1.18	0.94	0.17	25	0.00	0.00	0.04	245.25	2.47	1.44	6.48	1.72
700	Base DX Packaged System, EER=2.65, 10 tons	Other Mfg	0%	0%	0.00	1.04	1.04	0.18	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
701	DX Packaged System, EER=3.5, 10 tons	Other Mfg	24%	24%	0.03	1.06	0.80	0.14	15	0.09	0.02	0.01	79.00	8.43	5.44	1.62	1.72
702	DX Tune Up/ Advanced Diagnostics	Other Mfg	5%	5%	0.17	1.05	0.99	0.18	10	0.02	0.00	0.49	2,794.62	0.24	0.17	40.68	1.72
703	Optimize HVAC Controls	Other Mfg	20%	20%	0.05	1.04	0.83	0.15	5	0.08	0.01	0.07	408.00	1.63	1.38	3.29	1.72
704	BMS	Other Mfg	8%	3%	0.07	1.04	0.96	0.18	10	0.02	0.00	0.14	2,461.70	0.71	0.61	11.61	1.45
705	Prog. Thermostat	Other Mfg	4%	1%	0.02	1.04	1.00	0.18	10	0.02	0.00	0.10	1,682.17	1.03	0.89	7.93	1.45
706	Efficient Transformers	Other Mfg	20%	20%	0.11	1.18	0.94	0.17	25	0.02	0.00	0.04	222.92	2.72	1.58	5.89	1.72
800	Base Lighting	Other Mfg	0%	0%	0.00	1.04	1.04	0.18	10	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
801	RET T12 to Next Gen T8, 1EB	Other Mfg	28%	28%	0.18	1.04	0.75	0.13	14	0.18	0.03	0.07	410.39	1.62	1.07	7.99	1.72
802	RET T8 to Next Gen T8, 1EB	Other Mfg	15%	15%	0.12	1.12	0.95	0.17	14	0.45	0.08	0.08	450.35	1.48	0.98	8.76	1.72
803	RET - Hardwired 18W CFL	Other Mfg	76%	76%	0.27	1.04	0.25	0.04	4	0.21	0.04	0.12	663.31	1.00	0.87	4.37	1.72

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DSM ASSYST SUMMARY

Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Base kWh	Base EUI	EUI	Peak Watts/ Base kWh	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
804	RET - Screw-in 18W CFL	Other Mfg	76%	76%	0.01	1.04	0.25	0.04	2	0.21	0.04	0.01	54.87	12.14	11.30	0.19	1.72
805	400W MV to 250W HPS	Other Mfg	35%	35%	0.02	1.04	0.67	0.12	5	2.57	0.45	0.02	99.34	6.71	5.66	0.80	1.72
806	Lighting Controls	Other Mfg	16%	20%	0.06	1.05	0.88	0.15	8	0.84	0.19	0.07	310.42	1.80	1.31	4.80	1.82
807	Efficient Transformers	Other Mfg	20%	20%	0.11	1.18	0.94	0.17	25	0.05	0.01	0.04	222.92	2.72	1.58	5.89	1.72
900	Base Other	Other Mfg	0%	0%	0.00	1.04	1.04	0.18	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
901	Replace V-belts	Other Mfg	0%	0%	0.00	1.04	1.03	0.18	5	0.00	0.00	0.05	256.89	2.59	2.19	2.07	1.72
903	Efficient Transformers	Other Mfg	20%	20%	0.12	1.18	0.94	0.17	25	0.03	0.00	0.04	245.25	2.47	1.44	6.48	1.72
100	Base Compressed Air	Ag	0%	0%	0.00	1.04	1.04	0.10	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
200	Base Fans	Ag	0%	0%	0.00	1.04	1.04	0.10	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
300	Base Pumps	Ag	0%	0%	0.00	1.04	1.04	0.10	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
311	Low Pressure Nozzle	Ag	22%	22%	0.03	1.06	0.83	0.08	8	130.16	12.66	0.03	257.35	4.21	3.62	1.74	1.54
312	Micro Watering System	Ag	13%	13%	0.09	1.05	0.91	0.09	20	76.21	7.41	0.06	649.07	1.67	1.08	8.60	1.54
313	Pump Retrofit - Irrigation	Ag	16%	16%	0.01	1.19	1.00	0.10	9	33.03	3.21	0.01	91.03	11.91	9.94	0.68	1.54
400	Base Drives	Ag	0%	0%	0.00	1.04	1.04	0.10	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
500	Base Heating	Ag	0%	0%	0.00	1.04	1.04	0.10	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
600	Base Other Process	Ag	0%	0%	0.00	1.04	1.04	0.10	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
700	Base DX Packaged System, EER=2.65, 10 tons	Ag	0%	0%	0.00	1.04	1.04	0.10	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
800	Base Lighting	Ag	0%	0%	0.00	1.04	1.04	0.10	10	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
900	Base Other	Ag	0%	0%	0.00	1.04	1.04	0.10	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
100	Base Compressed Air	Water/WW	0%	0%	0.00	1.04	1.04	0.16	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Compressed Air-O&M	Water/WW	17%	17%	0.02	1.08	0.90	0.14	10	4.77	0.76	0.01	92.44	7.82	5.84	1.21	1.68
102	Compressed Air - Controls	Water/WW	12%	12%	0.03	1.14	1.00	0.16	10	1.20	0.19	0.03	208.49	3.47	2.59	2.73	1.68
103	Compressed Air - System Optimization	Water/WW	20%	20%	0.03	1.15	0.92	0.15	10	4.03	0.64	0.02	115.61	6.26	4.67	1.52	1.68
104	Compressed Air- Sizing	Water/WW	9%	9%	0.01	1.09	1.00	0.16	10	1.38	0.22	0.01	75.73	9.55	7.13	0.99	1.68
105	Comp Air - Replace motor	Water/WW	10%	10%	0.02	1.09	0.98	0.16	8	1.87	0.30	0.04	231.86	3.12	2.46	2.56	1.68
106	Comp Air - ASD	Water/WW	6%	6%	0.01	1.04	0.97	0.15	8	2.33	0.37	0.04	236.99	3.05	2.41	2.61	1.68
107	Comp Air - Motor practices-1	Water/WW	2%	2%	0.01	1.04	1.01	0.16	8	0.72	0.11	0.06	403.64	1.79	1.41	4.45	1.68
110	Efficient Transformers	Water/WW	20%	20%	0.12	1.18	0.94	0.15	25	0.07	0.01	0.04	272.45	2.41	1.44	6.48	1.68
200	Base Fans	Water/WW	0%	0%	0.00	1.04	1.04	0.16	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
201	Fans - O&M	Water/WW	2%	2%	0.00	1.05	1.02	0.16	10	0.37	0.06	0.01	79.78	9.07	6.77	1.05	1.68
202	Fans - Controls	Water/WW	30%	30%	0.16	1.34	0.94	0.15	10	3.51	0.56	0.06	383.04	1.89	1.41	5.02	1.68
203	Fans - System Optimization	Water/WW	21%	21%	0.10	1.26	1.00	0.16	10	1.41	0.22	0.06	372.98	1.94	1.45	4.89	1.68
204	Fans- Improve components	Water/WW	5%	5%	0.01	1.08	1.02	0.16	10	0.38	0.06	0.02	154.72	4.67	3.49	2.03	1.68
205	Fans - Replace motor	Water/WW	10%	10%	0.02	1.09	0.98	0.16	8	1.87	0.30	0.04	231.86	3.12	2.46	2.56	1.68
206	Fans - ASD	Water/WW	6%	6%	0.01	1.04	0.97	0.15	8	2.33	0.37	0.04	236.99	3.05	2.41	2.61	1.68
207	Fans - Motor practices-1	Water/WW	2%	2%	0.01	1.04	1.01	0.16	8	0.72	0.11	0.06	403.64	1.79	1.41	4.45	1.68
211	Efficient Transformers	Water/WW	20%	20%	0.12	1.18	0.94	0.15	25	0.07	0.01	0.04	272.45	2.41	1.44	6.48	1.68
300	Base Pumps	Water/WW	0%	0%	0.00	1.04	1.04	0.16	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
301	Pumps - O&M	Water/WW	10%	10%	0.01	1.10	0.99	0.16	10	5.25	0.83	0.01	75.75	9.55	7.13	0.99	1.68
302	Pumps - Controls	Water/WW	30%	30%	0.05	1.29	0.90	0.14	10	16.09	2.55	0.02	116.26	6.22	4.64	1.52	1.68
303	Pumps - System Optimization	Water/WW	33%	33%	0.11	1.35	0.90	0.14	10	15.88	2.52	0.04	246.99	2.93	2.19	3.24	1.68
304	Pumps - Sizing	Water/WW	20%	20%	0.03	1.23	0.99	0.16	10	5.87	0.93	0.02	134.98	5.36	4.00	1.77	1.68
305	Pumps - Replace motor	Water/WW	10%	10%	0.02	1.09	0.98	0.16	8	6.36	1.01	0.04	231.86	3.12	2.46	2.56	1.68
306	Pumps - ASD	Water/WW	6%	6%	0.01	1.04	0.97	0.15	8	7.91	1.26	0.04	236.99	3.05	2.41	2.61	1.68
307	Pumps - Motor practices-1	Water/WW	2%	2%	0.01	1.04	1.01	0.16	8	2.44	0.39	0.06	403.64	1.79	1.41	4.45	1.68
310	Efficient Transformers	Water/WW	20%	20%	0.12	1.18	0.94	0.15	25	0.22	0.04	0.04	272.45	2.41	1.44	6.48	1.68
400	Base Drives	Water/WW	0%	0%	0.00	1.04	1.04	0.16	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
500	Base Heating	Water/WW	0%	0%	0.00	1.04	1.04	0.16	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
600	Base Other Process	Water/WW	0%	0%	0.00	1.04	1.04	0.16	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
700	Base DX Packaged System, EER=2.65, 10 tons	Water/WW	0%	0%	0.00	1.04	1.04	0.16	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
701	DX Packaged System, EER=3.5, 10 tons	Water/WW	24%	24%	0.03	1.06	0.80	0.13	15	0.05	0.01	0.01	87.76	8.24	5.44	1.62	1.68
702	DX Tune Up/ Advanced Diagnostics	Water/WW	5%	5%	0.17	1.05	0.99	0.16	10	0.01	0.00	0.49	3,104.57	0.23	0.17	40.68	1.68
703	Optimize HVAC Controls	Water/WW	20%	20%	0.05	1.04	0.83	0.13	5	0.05	0.01	0.07	453.25	1.60	1.38	3.29	1.68
704	BMS	Water/WW	8%	3%	0.07	1.04	0.95	0.16	10	0.01	0.00	0.14	2,734.72	0.71	0.62	11.47	1.44
705	Prog. Thermostat	Water/WW	4%	1%	0.02	1.04	0.99	0.16	10	0.01	0.00	0.09	1,868.74	1.04	0.90	7.84	1.44
706	Efficient Transformers	Water/WW	20%	20%	0.11	1.18	0.94	0.15	25	0.01	0.00	0.04	247.64	2.65	1.58	5.89	1.68
800	Base Lighting	Water/WW	0%	0%	0.00	1.04	1.04	0.16	10	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
801	RET T12 to Next Gen T8, 1EB	Water/WW	28%	28%	0.18	1.04	0.75	0.12	14	0.03	0.00	0.07	455.91	1.59	1.07	7.99	1.68
802	RET T8 to Next Gen T8, 1EB	Water/WW	15%	15%	0.12	1.12	0.95	0.15	14	0.08	0.01	0.08	500.30	1.45	0.98	8.76	1.68
803	RET - Hardwired 18W CFL	Water/WW	76%	76%	0.27	1.04	0.25	0.04	4	0.04	0.01	0.12	736.87	0.98	0.87	4.37	1.68
804	RET - Screw-in 18W CFL	Water/WW	76%	76%	0.01	1.04	0.25	0.04	2	0.04	0.01	0.01	60.95	11.87	11.30	0.19	1.68
805	400W MV to 250W HPS	Water/WW	35%	35%	0.02	1.04	0.67	0.11	5	0.44	0.07	0.02	110.35	6.55	5.66	0.80	1.68

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DSM ASSYST SUMMARY

Measure Number	Measure	Building Type	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Base kWh	Base EUI	EUI	Peak Watts/ Base kWh	Service Life (yrs)	Technical Potential GWh	System Peak Tech. Potential MW	Levelized Cost of Conserved Energy $/kWh	Levelized Cost of Avoided Peak Capacity $/kW	Total Resource Cost Test (TRC)	Participant Test	Customer Payback (Years)	Revenue Test
806	Lighting Controls	Water/WW	16%	20%	0.06	1.05	0.88	0.13	8	0.15	0.03	0.07	344.83	1.76	1.32	4.78	1.77
807	Efficient Transformers	Water/WW	20%	20%	0.11	1.18	0.94	0.15	25	0.01	0.00	0.04	247.64	2.65	1.58	5.89	1.68
900	Base Other	Water/WW	0%	0%	0.00	1.04	1.04	0.16	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
100	Base Compressed Air	Mining	0%	0%	0.00	1.04	1.04	0.15	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
101	Compressed Air-O&M	Mining	17%	17%	0.02	1.08	0.90	0.13	10	1.56	0.23	0.01	100.20	7.70	5.84	1.21	1.65
102	Compressed Air - Controls	Mining	12%	12%	0.03	1.14	1.00	0.15	10	0.39	0.06	0.03	225.99	3.41	2.59	2.73	1.65
103	Compressed Air - System Optimization	Mining	20%	20%	0.03	1.15	0.92	0.13	10	1.32	0.19	0.02	125.32	6.15	4.67	1.52	1.65
104	Compressed Air- Sizing	Mining	9%	9%	0.01	1.09	1.00	0.15	10	0.45	0.07	0.01	82.09	9.39	7.13	0.99	1.65
105	Comp Air - Replace motor	Mining	10%	10%	0.02	1.09	0.98	0.14	8	0.61	0.09	0.04	251.32	3.07	2.46	2.56	1.65
106	Comp Air - ASD	Mining	6%	6%	0.01	1.04	0.97	0.14	8	0.76	0.11	0.04	256.88	3.00	2.41	2.61	1.65
107	Comp Air - Motor practices-1	Mining	2%	2%	0.01	1.04	1.01	0.15	8	0.23	0.03	0.06	437.51	1.76	1.41	4.45	1.65
110	Efficient Transformers	Mining	20%	20%	0.12	1.18	0.94	0.14	25	0.02	0.00	0.04	295.32	2.37	1.44	6.48	1.65
200	Base Fans	Mining	0%	0%	0.00	1.04	1.04	0.15	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
201	Fans - O&M	Mining	2%	2%	0.00	1.05	1.02	0.15	10	0.16	0.02	0.01	86.47	8.92	6.77	1.05	1.65
202	Fans - Controls	Mining	30%	30%	0.16	1.34	0.94	0.14	10	1.55	0.23	0.06	415.19	1.86	1.41	5.02	1.65
203	Fans - System Optimization	Mining	21%	21%	0.10	1.26	1.00	0.15	10	0.62	0.09	0.06	404.29	1.91	1.45	4.89	1.65
204	Fans- Improve components	Mining	5%	5%	0.01	1.08	1.02	0.15	10	0.17	0.02	0.02	167.71	4.60	3.49	2.03	1.65
205	Fans - Replace motor	Mining	10%	10%	0.02	1.09	0.98	0.14	8	0.83	0.12	0.04	251.32	3.07	2.46	2.56	1.65
206	Fans - ASD	Mining	6%	6%	0.01	1.04	0.97	0.14	8	1.03	0.15	0.04	256.88	3.00	2.41	2.61	1.65
207	Fans - Motor practices-1	Mining	2%	2%	0.01	1.04	1.01	0.15	8	0.32	0.05	0.06	437.51	1.76	1.41	4.45	1.65
211	Efficient Transformers	Mining	20%	20%	0.12	1.18	0.94	0.14	25	0.03	0.00	0.04	295.32	2.37	1.44	6.48	1.65
300	Base Pumps	Mining	0%	0%	0.00	1.04	1.04	0.15	14	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
301	Pumps - O&M	Mining	10%	10%	0.01	1.10	0.99	0.15	10	1.16	0.17	0.01	82.11	9.39	7.13	0.99	1.65
302	Pumps - Controls	Mining	30%	30%	0.05	1.29	0.90	0.13	10	3.55	0.52	0.02	126.01	6.12	4.64	1.52	1.65
303	Pumps - System Optimization	Mining	33%	33%	0.11	1.35	0.90	0.13	10	3.50	0.51	0.04	267.72	2.88	2.19	3.24	1.65
304	Pumps - Sizing	Mining	20%	20%	0.03	1.23	0.99	0.14	10	1.29	0.19	0.02	146.31	5.27	4.00	1.77	1.65
305	Pumps - Replace motor	Mining	10%	10%	0.02	1.09	0.98	0.14	8	1.40	0.21	0.04	251.32	3.07	2.46	2.56	1.65
306	Pumps - ASD	Mining	6%	6%	0.01	1.04	0.97	0.14	8	1.74	0.26	0.04	256.88	3.00	2.41	2.61	1.65
307	Pumps - Motor practices-1	Mining	2%	2%	0.01	1.04	1.01	0.15	8	0.54	0.08	0.06	437.51	1.76	1.41	4.45	1.65
310	Efficient Transformers	Mining	20%	20%	0.12	1.18	0.94	0.14	25	0.05	0.01	0.04	295.32	2.37	1.44	6.48	1.65
400	Base Drives	Mining	0%	0%	0.00	1.04	1.04	0.15	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
405	Drives - Replace motor	Mining	10%	10%	0.02	1.11	1.00	0.15	8	2.56	0.37	0.04	246.30	3.13	2.51	2.51	1.65
415	Drives - Process Control	Mining	2%	2%	0.00	1.05	1.02	0.15	10	0.80	0.12	0.03	172.52	4.47	3.39	2.09	1.65
423	Process optimization	Mining	10%	10%	0.05	1.12	1.01	0.15	10	1.07	0.16	0.07	482.87	1.60	1.21	5.84	1.65
429	Efficient Transformers	Mining	20%	20%	0.12	1.18	0.94	0.14	25	0.29	0.04	0.04	295.32	2.37	1.44	6.48	1.65
500	Base Heating	Mining	0%	0%	0.00	1.04	1.04	0.15	20	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
600	Base Other Process	Mining	0%	0%	0.00	1.04	1.04	0.15	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
700	Base DX Packaged System, EER=2.65, 10 tons	Mining	0%	0%	0.00	1.04	1.04	0.15	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
701	DX Packaged System, EER=3.5, 10 tons	Mining	24%	24%	0.03	1.06	0.80	0.12	15	0.06	0.01	0.01	95.13	8.11	5.44	1.62	1.65
702	DX Tune Up/ Advanced Diagnostics	Mining	5%	5%	0.17	1.05	0.99	0.15	10	0.01	0.00	0.49	3,365.14	0.23	0.17	40.68	1.65
703	Optimize HVAC Controls	Mining	20%	20%	0.05	1.04	0.83	0.12	5	0.06	0.01	0.07	491.29	1.57	1.38	3.29	1.65
704	BMS	Mining	8%	3%	0.07	1.04	0.95	0.15	10	0.01	0.00	0.14	2,964.25	0.72	0.63	11.23	1.43
705	Prog. Thermostat	Mining	4%	1%	0.02	1.04	0.99	0.15	10	0.01	0.00	0.09	2,025.58	1.05	0.92	7.68	1.43
706	Efficient Transformers	Mining	20%	20%	0.11	1.18	0.94	0.14	25	0.01	0.00	0.04	268.43	2.61	1.58	5.89	1.65
800	Base Lighting	Mining	0%	0%	0.00	1.04	1.04	0.15	10	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
801	RET T12 to Next Gen T8, 1EB	Mining	28%	28%	0.18	1.04	0.75	0.11	14	0.04	0.01	0.07	494.17	1.56	1.07	7.99	1.65
802	RET T8 to Next Gen T8, 1EB	Mining	15%	15%	0.12	1.12	0.95	0.14	14	0.09	0.01	0.08	542.29	1.42	0.98	8.76	1.65
803	RET - Hardwired 18W CFL	Mining	76%	76%	0.27	1.04	0.25	0.04	4	0.05	0.01	0.12	798.72	0.97	0.87	4.37	1.65
804	RET - Screw-in 18W CFL	Mining	76%	76%	0.01	1.04	0.25	0.04	2	0.05	0.01	0.01	66.07	11.67	11.30	0.19	1.65
805	400W MV to 250W HPS	Mining	35%	35%	0.02	1.04	0.67	0.10	5	0.54	0.08	0.02	119.62	6.45	5.66	0.80	1.65
806	Lighting Controls	Mining	16%	20%	0.06	1.05	0.88	0.12	8	0.17	0.03	0.07	373.86	1.70	1.29	4.89	1.75
807	Efficient Transformers	Mining	20%	20%	0.11	1.18	0.94	0.14	25	0.01	0.00	0.04	268.43	2.61	1.58	5.89	1.65
900	Base Other	Mining	0%	0%	0.00	1.04	1.04	0.15	15	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A

G. Supply Curve Data

This appendix presents supply curve results for the New Zealand Energy Efficiency Potential Study. Results are shown by sector and vintage: residential existing, residential new construction, commercial existing, commercial new construction, and industrial.

RESIDENTIAL EXISTING

Energy Supply Curve

Measure Number	Measure	Measure GWh Savings	Cumulative Measure GWh Savings	Marginal Energy Cost $/kWh
321	CFL, >2.5 hrs/day	151	151	0.01
311	CFL, 1.5-2.5 hrs/day	204	355	0.01
901	Towel Rail Timer	217	572	0.02
301	CFL, 0-1.5 hrs/day	230	802	0.03
207	Water Heater Blanket	133	935	0.03
176	Ceiling Insulation R-0 to R-1.9 (R-11)	31	966	0.05
204	Low Flow Showerhead	61	1,027	0.05
206	Pipe Wrap	26	1,054	0.06
106	Ceiling Insulation R-0 to R-1.9 (R-11)	39	1,092	0.07
146	Ceiling Insulation R-0 to R-1.9 (R-11)	8	1,101	0.08
331	High-efficiency Halogen (35 W)	33	1,134	0.08
606	Ceiling Insulation R-0 to R-1.9 (R-11)	49	1,182	0.09
646	Ceiling Insulation R-0 to R-1.9 (R-11)	22	1,204	0.10
676	Ceiling Insulation R-0 to R-1.9 (R-11)	25	1,229	0.10
202	HE Water Heater	146	1,374	0.11
702	Switch from electric to LPG cooking equipment	698	2,073	0.12
172	High Efficiency Heat pump	210	2,282	0.14
451	HE Freezer	196	2,479	0.14
108	Wall Insulation R-0 to R-2.3 (R-13)	178	2,657	0.17
205	Faucent Aerators	39	2,696	0.18
148	Wall Insulation R-0 to R-2.3 (R-13)	36	2,733	0.18
178	Wall Insulation R-0 to R-2.3 (R-13)	73	2,806	0.21
421	HE Refrigerator - Energy Star	77	2,883	0.21
402	Remove secondary refrigerator/freezer	42	2,925	0.21
608	Wall Insulation R-0 to R-2.3 (R-13)	224	3,149	0.21
678	Wall Insulation R-0 to R-2.3 (R-13)	116	3,265	0.23
648	Wall Insulation R-0 to R-2.3 (R-13)	97	3,362	0.23
211	Instant-on DHW (LPG)	2,320	5,682	0.26
401	HE Refrigerator/Freezer - Energy Star	133	5,815	0.29
422	Remove secondary refrigerator	15	5,830	0.38
142	High Efficiency Heat pump	31	5,861	0.41
182	6.5 kW Inbuilt Propane Fire	120	5,981	0.48
102	High Efficiency Heat pump	119	6,100	0.50
672	High Efficiency Heat pump	106	6,206	0.52
501	Energy Star Dishwasher	40	6,246	0.56
642	High Efficiency Heat pump	83	6,329	0.56
602	High Efficiency Heat pump	149	6,478	0.63
152	6.5 kW Inbuilt Propane Fire	27	6,506	0.78
652	6.5 kW Inbuilt Propane Fire	29	6,535	0.83
112	6.5 kW Inbuilt Propane Fire	105	6,640	0.98
612	6.5 kW Inbuilt Propane Fire	66	6,707	1.04
682	6.5 kW Inbuilt Propane Fire	24	6,730	1.19
679	Floor Insulation R-0 to R-1.5 (R-11)	2	6,733	3.09
649	Floor Insulation R-0 to R-1.5 (R-11)	2	6,734	3.73
680	Infiltration Reduction	1	6,736	3.91
674	Dual-Pane Windows (1.3 U to 0.5 U)	4	6,740	4.48
677	Ceiling Insulation R-1.9 to R-3.6 (R-20)	3	6,743	4.58
650	Infiltration Reduction	1	6,744	5.15
647	Ceiling Insulation R-1.9 to R-3.6 (R-20)	3	6,747	5.62
644	Dual-Pane Windows (1.3 U to 0.5 U)	3	6,750	5.80
609	Floor Insulation R-0 to R-1.5 (R-11)	2	6,752	6.07
604	Dual-Pane Windows (1.3 U to 0.5 U)	6	6,758	6.53
607	Ceiling Insulation R-1.9 to R-3.6 (R-20)	5	6,762	6.61
610	Infiltration Reduction	1	6,764	7.44
179	Floor Insulation R-0 to R-1.5 (R-11)	0	6,764	10.67
675	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	2	6,766	12.81
180	Infiltration Reduction	0	6,766	13.50
174	Dual-Pane Windows (1.3 U to 0.5 U)	1	6,767	15.45
177	Ceiling Insulation R-1.9 to R-3.6 (R-20)	1	6,768	15.81
645	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	1	6,769	17.22
149	Floor Insulation R-0 to R-1.5 (R-11)	0	6,769	19.09
150	Infiltration Reduction	0	6,769	26.36
109	Floor Insulation R-0 to R-1.5 (R-11)	0	6,769	27.21
147	Ceiling Insulation R-1.9 to R-3.6 (R-20)	0	6,769	28.76
104	Dual-Pane Windows (1.3 U to 0.5 U)	1	6,770	29.28
107	Ceiling Insulation R-1.9 to R-3.6 (R-20)	1	6,771	29.62
144	Dual-Pane Windows (1.3 U to 0.5 U)	0	6,771	29.70
110	Infiltration Reduction	0	6,771	31.19
605	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	2	6,773	34.49
175	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	0	6,774	44.21
145	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	0	6,774	88.13
105	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	0	6,774	107.19
921	Xmisc	0	6,774	N/A

RESIDENTIAL EXISTING

Capacity Supply Curve

Measure Number	Measure	Measure MW Savings	Cumulative Measure MW Savings	Marginal Capacity Cost $/kW
321	CFL, >2.5 hrs/day	77	77	21
311	CFL, 1.5-2.5 hrs/day	104	180	23
301	CFL, 0-1.5 hrs/day	117	297	58
176	Ceiling Insulation R-0 to R-1.9 (R-11)	21	318	69
901	Towel Rail Timer	49	367	83
106	Ceiling Insulation R-0 to R-1.9 (R-11)	25	393	114
146	Ceiling Insulation R-0 to R-1.9 (R-11)	5	398	119
606	Ceiling Insulation R-0 to R-1.9 (R-11)	32	430	139
646	Ceiling Insulation R-0 to R-1.9 (R-11)	14	444	149
676	Ceiling Insulation R-0 to R-1.9 (R-11)	16	460	154
331	High-efficiency Halogen (35 W)	17	477	166
172	High Efficiency Heat pump	138	615	209
207	Water Heater Blanket	21	636	215
108	Wall Insulation R-0 to R-2.3 (R-13)	117	753	264
702	Switch from electric to LPG cooking equipment	326	1,079	265
148	Wall Insulation R-0 to R-2.3 (R-13)	24	1,103	281
204	Low Flow Showerhead	9	1,112	313
178	Wall Insulation R-0 to R-2.3 (R-13)	48	1,160	315
608	Wall Insulation R-0 to R-2.3 (R-13)	147	1,307	324
678	Wall Insulation R-0 to R-2.3 (R-13)	76	1,383	351
648	Wall Insulation R-0 to R-2.3 (R-13)	64	1,447	352
206	Pipe Wrap	4	1,452	384
142	High Efficiency Heat pump	20	1,472	631
202	HE Water Heater	23	1,495	704
182	6.5 kW Inbuilt Propane Fire	79	1,574	738
102	High Efficiency Heat pump	78	1,652	754
672	High Efficiency Heat pump	70	1,722	786
642	High Efficiency Heat pump	54	1,776	853
602	High Efficiency Heat pump	98	1,874	963
451	HE Freezer	25	1,899	1,102
205	Faucent Aerators	6	1,905	1,150
152	6.5 kW Inbuilt Propane Fire	18	1,923	1,193
652	6.5 kW Inbuilt Propane Fire	19	1,942	1,268
112	6.5 kW Inbuilt Propane Fire	69	2,012	1,492
612	6.5 kW Inbuilt Propane Fire	43	2,055	1,582
421	HE Refrigerator - Energy Star	10	2,065	1,643
402	Remove secondary refrigerator/freezer	5	2,070	1,655
211	Instant-on DHW (LPG)	362	2,432	1,683
682	6.5 kW Inbuilt Propane Fire	15	2,448	1,804
401	HE Refrigerator/Freezer - Energy Star	17	2,465	2,308
501	Energy Star Dishwasher	9	2,474	2,443
422	Remove secondary refrigerator	2	2,475	2,998
679	Floor Insulation R-0 to R-1.5 (R-11)	2	2,477	4,703
649	Floor Insulation R-0 to R-1.5 (R-11)	1	2,478	5,676
680	Infiltration Reduction	1	2,479	5,952
674	Dual-Pane Windows (1.3 U to 0.5 U)	3	2,482	6,812
677	Ceiling Insulation R-1.9 to R-3.6 (R-20)	2	2,484	6,972
650	Infiltration Reduction	1	2,485	7,839
647	Ceiling Insulation R-1.9 to R-3.6 (R-20)	2	2,486	8,550
644	Dual-Pane Windows (1.3 U to 0.5 U)	2	2,488	8,831
609	Floor Insulation R-0 to R-1.5 (R-11)	1	2,490	9,238
604	Dual-Pane Windows (1.3 U to 0.5 U)	4	2,494	9,940
607	Ceiling Insulation R-1.9 to R-3.6 (R-20)	3	2,497	10,055
610	Infiltration Reduction	1	2,498	11,330
179	Floor Insulation R-0 to R-1.5 (R-11)	0	2,498	16,235
675	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	1	2,499	19,491
180	Infiltration Reduction	0	2,499	20,547
174	Dual-Pane Windows (1.3 U to 0.5 U)	0	2,500	23,517
177	Ceiling Insulation R-1.9 to R-3.6 (R-20)	0	2,500	24,069
645	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	1	2,501	26,205
149	Floor Insulation R-0 to R-1.5 (R-11)	0	2,501	29,060
150	Infiltration Reduction	0	2,501	40,129
109	Floor Insulation R-0 to R-1.5 (R-11)	0	2,501	41,418
147	Ceiling Insulation R-1.9 to R-3.6 (R-20)	0	2,501	43,771
104	Dual-Pane Windows (1.3 U to 0.5 U)	1	2,502	44,563
107	Ceiling Insulation R-1.9 to R-3.6 (R-20)	0	2,502	45,081
144	Dual-Pane Windows (1.3 U to 0.5 U)	0	2,502	45,210
110	Infiltration Reduction	0	2,503	47,483
605	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	1	2,504	52,502
175	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	0	2,504	67,290
145	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	0	2,504	134,154
105	High Performance Doors (R-0.53 solid door to R-1.23insulated steel or composite door)	0	2,504	163,157
921	Xmisc	0	2,504	N/A

RESIDENTIAL NEW CONSTRUCTION

Energy Supply Curve				
Measure Number	Measure	Measure GWh Savings	Cumulative Measure GWh Savings	Marginal Energy Cost $/kWh
321	CFL, >2.5 hrs/day	1	1	0.01
311	CFL, 1.5-2.5 hrs/day	2	3	0.01
901	Towel Rail Timer	3	6	0.02
301	CFL, 0-1.5 hrs/day	2	8	0.03
184	High Efficiency Heat pump	1	9	0.03
204	Low Flow Showerhead	1	10	0.05
147	Slab Insulation perimeter	1	11	0.06
168	High Efficiency Heat pump	1	12	0.06
206	Pipe Wrap	0	12	0.06
152	High Efficiency Heat pump	1	13	0.06
130	Slab Insulation perimeter	1	14	0.08
331	High-efficiency Halogen (35 W)	2	15	0.08
113	Slab Insulation perimeter	1	16	0.09
136	High Efficiency Heat pump	6	22	0.10
202	HE Water Heater (0.90 to 0.94 EF)	1	23	0.11
195	Slab Insulation perimeter	0	24	0.12
702	Switch from electric to LPG cooking equipment	4	28	0.12
179	Slab Insulation perimeter	0	28	0.17
205	Faucent Aerators	0	28	0.17
119	High Efficiency Heat pump	4	33	0.18
102	High Efficiency Heat pump	5	38	0.18
163	Slab Insulation perimeter	0	38	0.20
211	Instant-on DHW (LPG)	21	59	0.25
150	6.5 kW Inbuilt Propane Fire	4	63	0.31
198	6.5 kW Inbuilt Propane Fire	3	65	0.35
109	Wall insulation upgrade (increase from 1.8 to 2.2)	0	65	0.46
182	6.5 kW Inbuilt Propane Fire	2	67	0.53
126	Wall insulation upgrade (increase from 1.8 to 2.2)	0	67	0.55
129	Slab Insulation (50 mm polystyrene)	1	68	0.56
105	High Performance Windows (Dual-pane AL to dual vinyl)	0	68	0.57
116	6.5 kW Inbuilt Propane Fire	3	71	0.58
166	6.5 kW Inbuilt Propane Fire	2	73	0.59
133	6.5 kW Inbuilt Propane Fire	2	75	0.63
143	Wall insulation upgrade (increase from 1.8 to 2.2)	0	75	0.96
146	Slab Insulation (50 mm polystyrene)	0	76	1.21
139	High Performance Windows (Dual-pane AL to dual vinyl)	0	76	1.56
107	Ceiling Insulation R-3.2 to R-3.6	0	76	2.30
141	Ceiling Insulation R-3.2 to R-3.6	0	76	2.33
112	Slab Insulation (50 mm polystyrene)	0	76	2.33
148	Floor Insulation (foil to polystyrene)	0	76	2.44
122	High Performance Windows (Dual-pane AL to dual vinyl)	0	76	2.53
142	Ceiling Insulation R-2.6 to R-3.6	0	76	2.62
137	High Performance Windows (single-glazed AL to dual AL)	0	76	2.87
108	Ceiling Insulation R-2.6 to R-3.6	0	76	3.22
191	Wall insulation upgrade (increase from 1.8 to 2.2)	0	76	3.42
124	Ceiling Insulation R-3.2 to R-3.6	0	76	3.45
103	High Performance Windows (single-glazed AL to dual AL)	0	77	3.58
125	Ceiling Insulation R-2.6 to R-3.6	0	77	3.91
114	Floor Insulation (foil to polystyrene)	0	77	4.32
194	Slab Insulation (50 mm polystyrene)	0	77	4.34

RESIDENTIAL NEW CONSTRUCTION

Energy Supply Curve				
Measure Number	Measure	Measure GWh Savings	Cumulative Measure GWh Savings	Marginal Energy Cost $/kWh
120	High Performance Windows (single-glazed AL to dual AL)	0	77	4.50
159	Wall insulation upgrade (increase from 1.8 to 2.2)	0	77	4.67
187	High Performance Windows (Dual-pane AL to dual vinyl)	0	77	5.59
145	Wall insulation upgrade (increase from 1.8 to 2.6)	0	77	5.60
175	Wall insulation upgrade (increase from 1.8 to 2.2)	0	77	5.63
178	Slab Insulation (50 mm polystyrene)	0	77	5.77
155	High Performance Windows (Dual-pane AL to dual vinyl)	0	77	5.81
144	Wall insulation upgrade (increase from 2.2 to 2.6)	0	77	5.83
138	High Performance Windows (single-glazed AL to dual vinyl)	0	77	6.74
111	Wall insulation upgrade (increase from 1.8 to 2.6)	0	77	7.26
131	Floor Insulation (foil to polystyrene)	0	77	8.06
157	Ceiling Insulation R-3.2 to R-3.6	0	77	8.22
189	Ceiling Insulation R-3.2 to R-3.6	0	77	8.32
162	Slab Insulation (50 mm polystyrene)	0	77	8.33
128	Wall insulation upgrade (increase from 1.8 to 2.6)	0	77	8.51
110	Wall insulation upgrade (increase from 2.2 to 2.6)	0	77	8.61
196	Floor Insulation (foil to polystyrene)	0	77	8.73
104	High Performance Windows (single-glazed AL to dual vinyl)	0	77	9.02
171	High Performance Windows (Dual-pane AL to dual vinyl)	0	77	9.04
190	Ceiling Insulation R-2.6 to R-3.6	0	77	9.34
127	Wall insulation upgrade (increase from 2.2 to 2.6)	0	77	9.72
185	High Performance Windows (single-glazed AL to dual AL)	0	77	10.25
121	High Performance Windows (single-glazed AL to dual vinyl)	0	77	10.88
158	Ceiling Insulation R-2.6 to R-3.6	0	77	11.52
173	Ceiling Insulation R-3.2 to R-3.6	0	77	12.32
153	High Performance Windows (single-glazed AL to dual AL)	0	77	12.78
174	Ceiling Insulation R-2.6 to R-3.6	0	77	13.98
164	Floor Insulation (foil to polystyrene)	0	77	15.42
169	High Performance Windows (single-glazed AL to dual AL)	0	77	16.08
193	Wall insulation upgrade (increase from 1.8 to 2.6)	0	77	19.99
192	Wall insulation upgrade (increase from 2.2 to 2.6)	0	77	20.84
186	High Performance Windows (single-glazed AL to dual vinyl)	0	77	24.08
161	Wall insulation upgrade (increase from 1.8 to 2.6)	0	77	25.94
180	Floor Insulation (foil to polystyrene)	0	77	28.78
177	Wall insulation upgrade (increase from 1.8 to 2.6)	0	77	30.41
160	Wall insulation upgrade (increase from 2.2 to 2.6)	0	77	30.74
154	High Performance Windows (single-glazed AL to dual vinyl)	0	77	32.22
176	Wall insulation upgrade (increase from 2.2 to 2.6)	0	77	34.73
170	High Performance Windows (single-glazed AL to dual vinyl)	0	77	38.87
921	Xmisc	0	77	N/A

RESIDENTIAL NEW CONSTRUCTION

Capacity Supply Curve

Measure Number	Measure	Measure MW Savings	Cumulative Measure MW Savings	Marginal Capacity Cost $/kW
321	CFL, >2.5 hrs/day	1	1	20
311	CFL, 1.5-2.5 hrs/day	1	2	21
301	CFL, 0-1.5 hrs/day	1	3	51
184	High Efficiency Heat pump	1	4	52
901	Towel Rail Timer	1	4	79
147	Slab Insulation perimeter	0	5	85
168	High Efficiency Heat pump	1	5	87
152	High Efficiency Heat pump	1	6	91
130	Slab Insulation perimeter	0	6	119
113	Slab Insulation perimeter	0	7	142
136	High Efficiency Heat pump	4	11	157
331	High-efficiency Halogen (35 W)	1	12	166
195	Slab Insulation perimeter	0	12	182
179	Slab Insulation perimeter	0	12	254
702	Switch from electric to LPG cooking equipment	2	14	263
119	High Efficiency Heat pump	3	17	267
102	High Efficiency Heat pump	4	20	277
204	Low Flow Showerhead	0	20	298
163	Slab Insulation perimeter	0	20	303
206	Pipe Wrap	0	20	371
150	6.5 kW Inbuilt Propane Fire	2	23	477
198	6.5 kW Inbuilt Propane Fire	2	25	534
109	Wall insulation upgrade (increase from 1.8 to 2.2)	0	25	695
202	HE Water Heater (0.90 to 0.94 EF)	0	25	701
182	6.5 kW Inbuilt Propane Fire	1	26	812
126	Wall insulation upgrade (increase from 1.8 to 2.2)	0	26	838
129	Slab Insulation (50 mm polystyrene)	1	27	859
105	High Performance Windows (Dual-pane AL to dual vinyl)	0	27	865
116	6.5 kW Inbuilt Propane Fire	2	29	877
166	6.5 kW Inbuilt Propane Fire	1	30	897
133	6.5 kW Inbuilt Propane Fire	1	31	958
205	Faucent Aerators	0	32	1,111
143	Wall insulation upgrade (increase from 1.8 to 2.2)	0	32	1,456
211	Instant-on DHW (LPG)	3	35	1,587
146	Slab Insulation (50 mm polystyrene)	0	35	1,849
139	High Performance Windows (Dual-pane AL to dual vinyl)	0	35	2,380
107	Ceiling Insulation R-3.2 to R-3.6	0	35	3,502
141	Ceiling Insulation R-3.2 to R-3.6	0	35	3,543
112	Slab Insulation (50 mm polystyrene)	0	35	3,548
148	Floor Insulation (foil to polystyrene)	0	35	3,721
122	High Performance Windows (Dual-pane AL to dual vinyl)	0	35	3,850
142	Ceiling Insulation R-2.6 to R-3.6	0	35	3,981
137	High Performance Windows (single-glazed AL to dual AL)	0	35	4,368
108	Ceiling Insulation R-2.6 to R-3.6	0	35	4,907
191	Wall insulation upgrade (increase from 1.8 to 2.2)	0	35	5,200
124	Ceiling Insulation R-3.2 to R-3.6	0	35	5,248
103	High Performance Windows (single-glazed AL to dual AL)	0	36	5,446
125	Ceiling Insulation R-2.6 to R-3.6	0	36	5,956
114	Floor Insulation (foil to polystyrene)	0	36	6,572
194	Slab Insulation (50 mm polystyrene)	0	36	6,606

RESIDENTIAL NEW CONSTRUCTION

Capacity Supply Curve				
Measure Number	Measure	Measure MW Savings	Cumulative Measure MW Savings	Marginal Capacity Cost $/kW
120	High Performance Windows (single-glazed AL to dual AL)	0	36	6,851
159	Wall insulation upgrade (increase from 1.8 to 2.2)	0	36	7,101
187	High Performance Windows (Dual-pane AL to dual vinyl)	0	36	8,504
145	Wall insulation upgrade (increase from 1.8 to 2.6)	0	36	8,518
175	Wall insulation upgrade (increase from 1.8 to 2.2)	0	36	8,572
178	Slab Insulation (50 mm polystyrene)	0	36	8,786
155	High Performance Windows (Dual-pane AL to dual vinyl)	0	36	8,844
144	Wall insulation upgrade (increase from 2.2 to 2.6)	0	36	8,878
138	High Performance Windows (single-glazed AL to dual vinyl)	0	36	10,262
111	Wall insulation upgrade (increase from 1.8 to 2.6)	0	36	11,052
131	Floor Insulation (foil to polystyrene)	0	36	12,264
157	Ceiling Insulation R-3.2 to R-3.6	0	36	12,510
189	Ceiling Insulation R-3.2 to R-3.6	0	36	12,657
162	Slab Insulation (50 mm polystyrene)	0	36	12,676
128	Wall insulation upgrade (increase from 1.8 to 2.6)	0	36	12,959
110	Wall insulation upgrade (increase from 2.2 to 2.6)	0	36	13,099
196	Floor Insulation (foil to polystyrene)	0	36	13,294
104	High Performance Windows (single-glazed AL to dual vinyl)	0	36	13,729
171	High Performance Windows (Dual-pane AL to dual vinyl)	0	36	13,755
190	Ceiling Insulation R-2.6 to R-3.6	0	36	14,221
127	Wall insulation upgrade (increase from 2.2 to 2.6)	0	36	14,798
185	High Performance Windows (single-glazed AL to dual AL)	0	36	15,604
121	High Performance Windows (single-glazed AL to dual vinyl)	0	36	16,562
158	Ceiling Insulation R-2.6 to R-3.6	0	36	17,528
173	Ceiling Insulation R-3.2 to R-3.6	0	36	18,746
153	High Performance Windows (single-glazed AL to dual AL)	0	36	19,455
174	Ceiling Insulation R-2.6 to R-3.6	0	36	21,278
164	Floor Insulation (foil to polystyrene)	0	36	23,478
169	High Performance Windows (single-glazed AL to dual AL)	0	36	24,475
193	Wall insulation upgrade (increase from 1.8 to 2.6)	0	36	30,429
192	Wall insulation upgrade (increase from 2.2 to 2.6)	0	36	31,714
186	High Performance Windows (single-glazed AL to dual vinyl)	0	36	36,658
161	Wall insulation upgrade (increase from 1.8 to 2.6)	0	36	39,482
180	Floor Insulation (foil to polystyrene)	0	36	43,811
177	Wall insulation upgrade (increase from 1.8 to 2.6)	0	36	46,293
160	Wall insulation upgrade (increase from 2.2 to 2.6)	0	36	46,795
154	High Performance Windows (single-glazed AL to dual vinyl)	0	36	49,046
176	Wall insulation upgrade (increase from 2.2 to 2.6)	0	36	52,863
170	High Performance Windows (single-glazed AL to dual vinyl)	0	36	59,163
921	Xmisc	0	36	N/A

COMMERCIAL EXISTING

Energy Supply Curve				
Measure Number	Measure	Measure GWh Savings	Cumulative Measure GWh Savings	Marginal Energy Cost $/kWh
621	Energy Star or Better Monitor	0	0	0.00
631	Energy Star or Better Monitor	0	0	0.00
641	Energy Star or Better Copier	5	5	0.00
510	Demand Defrost Electric	80	85	0.00
612	PC Network Power Management Enabling	68	153	0.01
161	CFL Screw-in 18W	608	761	0.01
312	DX Packaged System, EER=3.5, 35 kWt	39	800	0.01
322	Tune Up/Proper Refrigerant Charge	2	802	0.01
712	BMS Optimization	77	879	0.01
505	Efficient compressor motor	49	928	0.01
509	Demand Hot Gas Defrost	7	935	0.02
221	High Pressure Sodium 250W Lamp	40	976	0.02
321	3.5 EER Split-system Air Conditioner	43	1,019	0.02
423	Air Handler Optimization, 54kW	8	1,027	0.02
622	Monitor Power Management Enabling	2	1,029	0.02
507	Floating head pressure controls	12	1,040	0.02
413	Air Handler Optimization, 20kW	13	1,053	0.03
702	Tune Up/ Proper Refrigerant Charge	11	1,064	0.03
422	Variable Speed Drive Control, 54kW	9	1,073	0.03
911	Vending Misers (cooled machines only)	3	1,076	0.03
113	RET Next Gen T8, EEMAG	68	1,144	0.03
411	Fan Motor, 20kW, 1800rpm, 92.4%	2	1,146	0.03
502	Strip curtains for walk-ins	27	1,172	0.03
701	3.5 EER Split-system Heat Pump	51	1,223	0.03
401	Fan Motor, 7kW, 1800rpm, 89.5%	8	1,231	0.04
412	Variable Speed Drive Control, 20kW	12	1,244	0.04
801	Demand controlled circulating systems	18	1,262	0.04
511	Anti-sweat (humidistat) controls	29	1,291	0.04
421	Fan Motor, 54kW, 1800rpm, 94.1%	1	1,292	0.04
803	High Efficiency Water Heater (electric)	14	1,306	0.05
651	Printer Power Management Enabling	32	1,338	0.05
331	3.0 EER Room Air Conditioner	22	1,359	0.05
139	Lighting Control Tuneup	6	1,365	0.05
301	Centrifugal Chiller, 0.15 kW/kWt, 1750 kWt	4	1,369	0.05
157	Lighting Control Tuneup	1	1,370	0.06
805	Tankless Water Heater	42	1,412	0.06
317	Optimize Controls	10	1,423	0.06
114	RET Next Gen T8, 1EB	45	1,468	0.06
133	RET Next Gen T8, 1EB	55	1,523	0.06
120	Lighting Control Tuneup	5	1,527	0.07
307	BMS Optimization	3	1,531	0.07
402	Variable Speed Drive Control, 7kW	15	1,545	0.07
503	Night covers for display cases	17	1,562	0.07
711	BMS - Reheat Coils	28	1,590	0.08
136	Occupancy Sensor	20	1,610	0.08
642	Copier Power Management Enabling	19	1,628	0.08
117	Occupancy Sensor	16	1,644	0.08
501	High-efficiency fan motors	98	1,743	0.09
804	Hot Water Pipe Insulation	8	1,751	0.09
155	Occupancy Sensor	5	1,755	0.09

COMMERCIAL EXISTING

Energy Supply Curve				
Measure Number	Measure	Measure GWh Savings	Cumulative Measure GWh Savings	Marginal Energy Cost $/kWh
306	VSD for Chiller Pumps and Towers	2	1,757	0.10
166	CFL Hardwired, Modular 18W	214	1,971	0.11
506	Compressor VSD retrofit	16	1,987	0.12
315	Prog. Thermostat - DX	2	1,989	0.12
324	Programmable Thermostat	2	1,991	0.13
176	High Bay T5	8	1,999	0.15
508	Refrigeration Commissioning	19	2,018	0.15
172	RET - Efficient Halogen Flood, 35W	124	2,142	0.15
318	Economizer	1	2,143	0.17
721	Programmable Thermostat	25	2,168	0.21
703	Programmable Thermostat	3	2,171	0.21
222	Outdoor Lighting Controls (Photocell/Timeclock)	9	2,180	0.21
303	BMS - Chiller	1	2,181	0.22
308	Economizer	0	2,181	0.30
504	Evaporator fan controller for MT walk-ins	2	2,184	0.34
118	Continuous Dimming	36	2,219	0.35
137	Continuous Dimming	36	2,255	0.37
156	Continuous Dimming	9	2,264	0.38
305	Chiller Tune Up/Diagnostics	1	2,265	0.40
311	DX Tune Up/ Advanced Diagnostics	1	2,266	0.41
333	Programmable Thermostat	2	2,268	0.47
632	Monitor Power Management Enabling	1	2,269	0.60

COMMERCIAL EXISTING

Capacity Supply Curve

Measure Number	Measure	Measure MW Savings	Cumulative Measure MW Savings	Marginal Capacity Cost $/kW
621	Energy Star or Better Monitor	0	0	0
631	Energy Star or Better Monitor	0	0	0
641	Energy Star or Better Copier	1	1	0
510	Demand Defrost Electric	9	10	39
161	CFL Screw-in 18W	82	92	75
221	High Pressure Sodium 250W Lamp	8	100	79
712	BMS Optimization	14	114	80
612	PC Network Power Management Enabling	7	121	87
423	Air Handler Optimization, 54kW	1	123	123
505	Efficient compressor motor	6	128	126
509	Demand Hot Gas Defrost	1	129	134
507	Floating head pressure controls	2	131	140
702	Tune Up/ Proper Refrigerant Charge	2	133	162
413	Air Handler Optimization, 20kW	2	135	166
422	Variable Speed Drive Control, 54kW	1	136	174
622	Monitor Power Management Enabling	0	136	200
113	RET Next Gen T8, EEMAG	10	146	202
701	3.5 EER Split-system Heat Pump	8	154	209
412	Variable Speed Drive Control, 20kW	2	156	263
411	Fan Motor, 20kW, 1800rpm, 92.4%	0	156	267
911	Vending Misers (cooled machines only)	0	156	267
312	DX Packaged System, EER=3.5, 35 kWt	2	158	286
502	Strip curtains for walk-ins	3	161	291
401	Fan Motor, 7kW, 1800rpm, 89.5%	1	162	294
139	Lighting Control Tuneup	1	163	298
511	Anti-sweat (humidistat) controls	4	167	299
322	Tune Up/Proper Refrigerant Charge	0	167	316
421	Fan Motor, 54kW, 1800rpm, 94.1%	0	167	349
157	Lighting Control Tuneup	0	167	349
801	Demand controlled circulating systems	2	169	358
120	Lighting Control Tuneup	1	170	396
651	Printer Power Management Enabling	4	174	402
321	3.5 EER Split-system Air Conditioner	2	176	407
803	High Efficiency Water Heater (electric)	2	177	411
503	Night covers for display cases	3	180	434
711	BMS - Reheat Coils	5	185	435
114	RET Next Gen T8, 1EB	6	191	438
133	RET Next Gen T8, 1EB	8	199	459
402	Variable Speed Drive Control, 7kW	2	201	466
136	Occupancy Sensor	3	204	502
117	Occupancy Sensor	3	207	519
805	Tankless Water Heater	5	212	530
155	Occupancy Sensor	1	212	557
222	Outdoor Lighting Controls (Photocell/Timeclock)	3	215	618
642	Copier Power Management Enabling	2	218	719
501	High-efficiency fan motors	11	229	764
804	Hot Water Pipe Insulation	1	230	798
166	CFL Hardwired, Modular 18W	29	259	840
506	Compressor VSD retrofit	2	261	849
172	RET - Efficient Halogen Flood, 35W	18	279	1,062

COMMERCIAL EXISTING

Capacity Supply Curve				
Measure Number	Measure	Measure MW Savings	Cumulative Measure MW Savings	Marginal Capacity Cost $/kW
317	Optimize Controls	1	279	1,064
176	High Bay T5	1	280	1,122
721	Programmable Thermostat	4	284	1,230
301	Centrifugal Chiller, 0.15 kW/kWt, 1750 kWt	0	285	1,280
703	Programmable Thermostat	0	285	1,305
508	Refrigeration Commissioning	2	287	1,322
307	BMS Optimization	0	287	1,326
331	3.0 EER Room Air Conditioner	1	288	1,330
118	Continuous Dimming	8	296	1,539
137	Continuous Dimming	8	304	1,657
156	Continuous Dimming	2	306	1,687
504	Evaporator fan controller for MT walk-ins	0	307	2,032
315	Prog. Thermostat - DX	0	307	2,135
306	VSD for Chiller Pumps and Towers	0	307	2,458
318	Economizer	0	307	2,465
324	Programmable Thermostat	0	307	2,544
308	Economizer	0	307	3,171
303	BMS - Chiller	0	307	5,167
632	Monitor Power Management Enabling	0	307	5,233
305	Chiller Tune Up/Diagnostics	0	307	8,290
311	DX Tune Up/ Advanced Diagnostics	0	307	8,545
333	Programmable Thermostat	0	307	11,163

COMMERCIAL NEW CONSTRUCTION

Energy Supply Curve				
Measure Number	Measure	Measure GWh Savings	Cumulative Measure GWh Savings	Marginal Energy Cost $/kWh
101	Lighting 15% More Efficient Design	7	7	0.03
1001	HVAC 10% More Efficient Design	6	13	0.04
501	Refrigeration 10% More Efficient Design	2	15	0.05
102	Lighting 25% More Efficient Design	4	19	0.07
502	Refrigeration 20% More Efficient Design	2	21	0.10
1002	HVAC 30% More Efficient Design	5	25	0.16

COMMERCIAL NEW CONSTRUCTION

Capacity Supply Curve

Measure Number	Measure	Measure MW Savings	Cumulative Measure MW Savings	Marginal Capacity Cost $/kW
101	Lighting 15% More Efficient Design	1	1	217
1001	HVAC 10% More Efficient Design	1	1	384
501	Refrigeration 10% More Efficient Design	0	2	441
102	Lighting 25% More Efficient Design	1	2	484
502	Refrigeration 20% More Efficient Design	0	2	852
1002	HVAC 30% More Efficient Design	0	3	1,638

INDUSTRIAL

Energy Supply Curve				
Measure Number	Measure	Measure GWh Savings	Cumulative Measure GWh Savings	Marginal Energy Cost $/kWh
313	Pump Retrofit - Irrigation	33	33	0.01
417	O&M - Extruders/Injection Moulding	4	37	0.01
301	Pumps - O&M	27	64	0.01
104	Compressed Air- Sizing	26	90	0.01
403	Air conveying systems	33	123	0.01
805	400W MV to 250W HPS	72	196	0.01
401	Bakery - Process (Mixing) - O&M	5	201	0.01
804	RET - Screw-in 18W CFL	4	205	0.01
201	Fans - O&M	6	210	0.01
701	DX Packaged System, EER=3.5, 10 tons	9	219	0.01
409	Efficient practices printing press	4	223	0.01
551	Efficient Refrigeration - Operations	4	227	0.01
101	Compressed Air-O&M	61	289	0.01
407	High Consistency forming	16	305	0.01
406	Gap Forming papermachine	21	326	0.02
507	Near Net Shape Casting	0	327	0.02
501	Bakery - Process	9	335	0.02
510	Heating - Optimization process (M&T)	1	336	0.02
425	Drives - Optimization process (M&T)	1	337	0.02
302	Pumps - Controls	233	569	0.02
103	Compressed Air - System Optimization	89	658	0.02
304	Pumps - Sizing	44	702	0.02
204	Fans- Improve components	26	728	0.03
311	Low Pressure Nozzle	127	855	0.03
404	Replace V-Belts	15	871	0.03
504	Top-heating (glass)	0	871	0.03
603	New transformers welding	2	873	0.03
604	Efficient processes (welding, etc.)	2	874	0.03
405	Drives - Replace motor	158	1,033	0.04
109	Refinery Controls	0	1,033	0.04
206	Fans - ASD	31	1,064	0.04
210	Refinery Controls	0	1,064	0.04
205	Fans - Replace motor	78	1,142	0.04
706	Efficient Transformers	0	1,143	0.04
424	Efficient drives - rolling	17	1,160	0.04
102	Compressed Air - Controls	28	1,189	0.04
903	Efficient Transformers	1	1,189	0.04
512	Efficient Transformers	2	1,191	0.04
412	Efficient drives	1	1,192	0.04
901	Replace V-belts	0	1,192	0.05
511	Heating - Scheduling	0	1,192	0.05
807	Efficient Transformers	1	1,193	0.05
427	Machinery	0	1,193	0.05
553	Efficient Transformers	0	1,193	0.05
429	Efficient Transformers	5	1,199	0.05
428	Efficient Machinery	0	1,199	0.05
505	Efficient electric melting	0	1,199	0.05
309	Refinery Controls	1	1,200	0.05
306	Pumps - ASD	30	1,231	0.05
305	Pumps - Replace motor	86	1,316	0.05

INDUSTRIAL

Energy Supply Curve				
Measure Number	Measure	Measure GWh Savings	Cumulative Measure GWh Savings	Marginal Energy Cost $/kWh
402	O&M/drives spinning machines	2	1,318	0.05
211	Efficient Transformers	2	1,320	0.05
608	Efficient Transformers	0	1,320	0.05
105	Comp Air - Replace motor	54	1,374	0.05
426	Drives - Scheduling	1	1,374	0.05
106	Comp Air - ASD	20	1,394	0.05
303	Pumps - System Optimization	146	1,540	0.05
508	Heating - Process Control	0	1,540	0.05
902	Membranes for wastewater	0	1,540	0.06
418	Extruders/injection Moulding-multipump	5	1,545	0.06
509	Efficient Curing ovens	3	1,548	0.06
110	Efficient Transformers	1	1,549	0.06
413	Clean Room - Controls	1	1,550	0.06
310	Efficient Transformers	2	1,552	0.07
208	Optimize drying process	17	1,569	0.07
502	Drying (UV/IR)	1	1,569	0.07
605	Process control	0	1,569	0.07
408	Optimization control PM	19	1,588	0.07
410	Efficient Printing press (fewer cylinders)	3	1,592	0.07
312	Micro Watering System	67	1,658	0.07
423	Process optimization	1	1,660	0.07
420	Injection Moulding - Impulse Cooling	2	1,662	0.07
601	Other Process Controls (batch + site)	0	1,662	0.07
415	Drives - Process Control	15	1,677	0.07
552	Optimization Refrigeration	10	1,687	0.08
202	Fans - Controls	108	1,795	0.08
806	Lighting Controls	13	1,808	0.08
203	Fans - System Optimization	104	1,913	0.08
207	Fans - Motor practices-1	9	1,922	0.08
416	Process Drives - ASD	0	1,922	0.08
801	RET T12 to Next Gen T8, 1EB	3	1,925	0.09
419	Direct drive Extruders	3	1,928	0.09
414	Clean Room - New Designs	1	1,928	0.09
107	Comp Air - Motor practices-1	7	1,935	0.10
802	RET T8 to Next Gen T8, 1EB	8	1,943	0.10
307	Pumps - Motor practices-1	9	1,952	0.10
108	Power recovery	1	1,952	0.11
705	Prog. Thermostat	2	1,954	0.11
209	Power recovery	1	1,955	0.12
421	Injection Moulding - Direct drive	2	1,956	0.12
503	Heat Pumps - Drying	5	1,961	0.12
308	Power recovery	1	1,962	0.12
803	RET - Hardwired 18W CFL	3	1,966	0.17
704	BMS	1	1,967	0.17
422	Efficient grinding	2	1,969	0.17
411	Light cylinders	1	1,971	0.19
506	Intelligent extruder (DOE)	0	1,971	0.21
703	Optimize HVAC Controls	2	1,973	0.30
702	DX Tune Up/ Advanced Diagnostics	1	1,974	0.67

INDUSTRIAL

Capacity Supply Curve				
Measure Number	Measure	Measure MW Savings	Cumulative Measure MW Savings	Marginal Capacity Cost $/kW
417	O&M - Extruders/Injection Moulding	1	1	58
401	Bakery - Process (Mixing) - O&M	1	2	73
804	RET - Screw-in 18W CFL	1	2	80
301	Pumps - O&M	4	6	80
805	400W MV to 250W HPS	11	17	82
409	Efficient practices printing press	1	18	83
104	Compressed Air- Sizing	4	21	85
551	Efficient Refrigeration - Operations	1	22	87
403	Air conveying systems	5	27	89
201	Fans - O&M	1	27	91
313	Pump Retrofit - Irrigation	3	31	91
701	DX Packaged System, EER=3.5, 10 tons	1	32	95
101	Compressed Air-O&M	9	41	101
501	Bakery - Process	1	42	107
510	Heating - Optimization process (M&T)	0	42	110
425	Drives - Optimization process (M&T)	0	43	110
407	High Consistency forming	2	45	123
507	Near Net Shape Casting	0	45	126
406	Gap Forming papermachine	3	47	133
302	Pumps - Controls	32	79	149
103	Compressed Air - System Optimization	12	91	149
304	Pumps - Sizing	6	98	173
603	New transformers welding	0	98	180
604	Efficient processes (welding, etc.)	0	98	180
404	Replace V-Belts	2	100	192
204	Fans- Improve components	3	104	192
504	Top-heating (glass)	0	104	240
412	Efficient drives	0	104	249
511	Heating - Scheduling	0	104	259
427	Machinery	0	104	261
311	Low Pressure Nozzle	12	116	264
428	Efficient Machinery	0	116	267
553	Efficient Transformers	0	116	273
405	Drives - Replace motor	22	139	274
402	O&M/drives spinning machines	0	139	275
206	Fans - ASD	4	143	283
426	Drives - Scheduling	0	143	284
706	Efficient Transformers	0	143	286
608	Efficient Transformers	0	143	288
205	Fans - Replace motor	11	154	288
903	Efficient Transformers	0	154	292
102	Compressed Air - Controls	4	158	295
807	Efficient Transformers	0	158	300
901	Replace V-belts	0	158	304
109	Refinery Controls	0	158	310
210	Refinery Controls	0	159	317
306	Pumps - ASD	4	163	324
305	Pumps - Replace motor	12	175	330
902	Membranes for wastewater	0	175	330
424	Efficient drives - rolling	2	178	331

INDUSTRIAL

Capacity Supply Curve				
Measure Number	Measure	Measure MW Savings	Cumulative Measure MW Savings	Marginal Capacity Cost $/kW
512	Efficient Transformers	0	178	340
418	Extruders/injection Moulding-multipump	1	179	341
105	Comp Air - Replace motor	8	186	348
429	Efficient Transformers	1	187	350
509	Efficient Curing ovens	0	188	354
211	Efficient Transformers	0	188	363
505	Efficient electric melting	0	188	363
106	Comp Air - ASD	3	191	364
309	Refinery Controls	0	191	382
502	Drying (UV/IR)	0	191	390
303	Pumps - System Optimization	20	211	396
605	Process control	0	211	400
410	Efficient Printing press (fewer cylinders)	1	212	407
420	Injection Moulding - Impulse Cooling	0	212	411
806	Lighting Controls	3	215	419
508	Heating - Process Control	0	215	420
413	Clean Room - Controls	0	215	425
110	Efficient Transformers	0	215	443
552	Optimization Refrigeration	2	217	457
310	Efficient Transformers	0	217	470
208	Optimize drying process	2	219	488
423	Process optimization	0	219	513
419	Direct drive Extruders	0	220	517
801	RET T12 to Next Gen T8, 1EB	0	220	575
415	Drives - Process Control	2	222	590
202	Fans - Controls	14	236	597
408	Optimization control PM	2	239	598
207	Fans - Motor practices-1	1	240	600
601	Other Process Controls (batch + site)	0	240	605
416	Process Drives - ASD	0	240	615
802	RET T8 to Next Gen T8, 1EB	1	241	625
203	Fans - System Optimization	13	255	648
421	Injection Moulding - Direct drive	0	255	658
107	Comp Air - Motor practices-1	1	256	672
307	Pumps - Motor practices-1	1	257	682
312	Micro Watering System	6	264	741
414	Clean Room - New Designs	0	264	765
108	Power recovery	0	264	849
503	Heat Pumps - Drying	1	264	884
209	Power recovery	0	264	914
308	Power recovery	0	265	957
803	RET - Hardwired 18W CFL	1	265	1,078
411	Light cylinders	0	265	1,085
422	Efficient grinding	0	266	1,382
506	Intelligent extruder (DOE)	0	266	1,634
703	Optimize HVAC Controls	0	266	1,940
705	Prog. Thermostat	0	266	2,422
704	BMS	0	266	3,764
702	DX Tune Up/ Advanced Diagnostics	0	266	4,486

H. Achievable Program Potential

This appendix presents achievable program results for the New Zealand Energy Efficiency Potential Study. Achievable potential results for three scenarios (33, 50 and 75 percent rebates) for the following sectors and vintages:

- Residential—Total
  - Residential Existing—CFLs
  - Residential Existing—Other
  - Residential New Construction
- Commercial—Total
  - Commercial Existing
  - Commercial New Construction
- Industrial—Total
  - Industrial—Compressed Air
  - Industrial—Motors
  - Industrial--Other

TOTAL - ALL SECTORS

Incentive Levels

33%	Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	Net Energy Savings - kWh	102,004,036	217,712,348	333,874,470	442,184,022	538,233,955	620,497,772	690,412,200	749,246,888	798,471,501	839,977,036
	Net Peak Demand Savings - kW	24,798	52,089	78,647	102,580	123,030	139,849	153,855	165,453	175,033	183,023
	New Net Energy Savings - kWh	102,004,036	115,708,312	116,162,122	108,309,552	96,049,933	82,263,817	69,914,428	58,834,688	49,224,612	41,505,535
	New Net Peak Demand Savings - kW	24,798	27,291	26,557	23,934	20,450	16,819	14,005	11,599	9,580	7,989
	Program Costs - Real										
	Administration	$4,725,000	$5,020,615	$5,148,133	$5,158,160	$5,094,102	$4,988,411	$4,864,441	$4,734,604	$4,597,656	$4,474,414
	Marketing	$2,750,000	$2,775,000	$2,803,125	$2,803,125	$2,803,125	$2,803,125	$2,803,125	$2,803,125	$2,803,125	$2,803,125
	Incentives	$7,265,827	$7,709,363	$7,872,024	$7,838,559	$7,678,447	$7,444,877	$7,177,231	$6,898,339	$6,610,731	$6,345,704
	Total	$14,740,827	$15,504,977	$15,823,283	$15,799,844	$15,575,674	$15,236,413	$14,844,798	$14,436,068	$14,011,512	$13,623,243
	PV Net Avoided Costs	$137,806,334	$148,449,766	$141,504,555	$125,195,138	$105,280,184	$85,449,337	$69,190,116	$55,538,337	$44,358,067	$35,723,650
	PV Annual Marketing and Admin Costs	$7,475,000	$7,467,762	$7,296,524	$6,998,475	$6,650,204	$6,285,264	$5,925,133	$5,579,832	$5,248,054	$4,943,623
	PV Net Measure Costs	$19,644,100	$21,489,360	$21,579,652	$20,680,584	$19,265,583	$17,646,600	$16,086,306	$14,601,921	$13,199,297	$11,965,454
	TRC	5.08	5.13	4.90	4.52	4.06	3.57	3.14	2.75	2.40	2.11

50%	Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	Net Energy Savings - kWh	156,102,693	328,711,885	502,787,775	664,351,206	806,196,631	927,016,612	1,028,472,947	1,112,885,287	1,182,837,168	1,241,796,003
	Net Peak Demand Savings - kW	37,396	77,650	117,240	152,870	183,085	208,131	228,843	245,853	259,816	271,471
	New Net Energy Savings - kWh	156,102,693	172,609,192	174,075,889	161,563,432	141,845,425	120,819,980	101,456,335	84,412,340	69,951,882	58,958,835
	New Net Peak Demand Savings - kW	37,396	40,254	39,590	35,629	30,215	25,046	20,712	17,010	13,963	11,655
	Program Costs - Real										
	Administration	4,725,000	5,037,597	5,220,445	5,244,366	5,167,647	5,034,890	4,875,698	4,707,681	4,525,614	4,364,053
	Marketing	2,750,000	3,093,750	3,480,469	3,480,469	3,480,469	3,480,469	3,480,469	3,480,469	3,480,469	3,480,469
	Incentives	14,372,916	15,487,869	16,158,643	16,258,346	15,978,338	15,469,826	14,841,448	14,164,966	13,439,311	12,778,132
	Total	21,847,916	23,619,216	24,859,556	24,983,181	24,626,454	23,985,185	23,197,615	22,353,115	21,445,394	20,622,655
	PV Net Avoided Costs	209,941,531	220,684,136	211,692,163	186,602,444	155,458,492	125,920,083	100,872,168	80,113,994	63,433,468	51,085,668
	PV Annual Marketing and Admin Costs	7,475,000	7,789,374	7,984,450	7,669,684	7,282,523	6,869,156	6,457,250	6,061,309	5,677,286	5,328,774
	PV Net Measure Costs	33,462,700	35,707,179	36,021,433	34,489,238	31,983,640	29,155,294	26,342,134	23,669,487	21,134,865	18,960,242
	TRC	5.13	5.07	4.81	4.43	3.96	3.50	3.08	2.69	2.37	2.10

75%	Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	Net Energy Savings - kWh	298,683,519	623,945,610	951,633,947	1,251,856,032	1,510,173,784	1,725,643,331	1,901,640,346	2,044,524,321	2,159,913,648	2,255,549,785
	Net Peak Demand Savings - kW	69,943	143,606	215,886	279,806	332,477	374,877	408,159	434,020	453,997	469,785
	New Net Energy Savings - kWh	298,683,519	325,262,091	327,688,337	300,222,085	258,317,752	215,469,547	175,997,015	142,883,975	115,389,327	95,636,136
	New Net Peak Demand Savings - kW	69,943	73,663	72,280	63,920	52,672	42,399	33,282	25,862	19,976	15,788
	Program Costs - Real										
	Administration	4,725,000	5,049,431	5,222,917	5,140,849	4,906,935	4,602,938	4,282,012	3,976,192	3,667,605	3,421,574
	Marketing	2,750,000	3,437,500	4,296,875	4,296,875	4,296,875	4,296,875	4,296,875	4,296,875	4,296,875	4,296,875
	Incentives	42,826,192	47,130,669	49,866,073	49,809,023	47,938,705	45,054,223	41,731,952	38,353,770	34,885,547	31,901,357
	Total	50,301,192	55,617,600	59,385,865	59,246,747	57,142,516	53,954,036	50,310,839	46,626,837	42,850,027	39,619,806
	PV Net Avoided Costs	398,976,094	412,343,459	395,070,133	343,437,071	279,879,822	221,620,802	171,718,122	132,167,276	101,215,258	79,534,507
	PV Annual Marketing and Admin Costs	7,475,000	8,130,004	8,735,899	8,296,359	7,750,470	7,179,287	6,629,358	6,124,169	5,647,784	5,243,133
	PV Net Measure Costs	82,616,653	86,658,722	86,863,243	81,541,721	73,426,419	64,577,267	55,981,678	48,213,482	41,135,814	35,413,224
	TRC	4.43	4.35	4.13	3.82	3.45	3.09	2.74	2.43	2.16	1.96

RESIDENTIAL TOTAL

Incentive Levels

33%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	32,468,294	66,862,843	99,280,701	127,634,923	151,182,664	170,045,531	185,856,724	199,210,595	210,581,749	220,403,224
Net Peak Demand Savings - kW	15,232	31,334	46,363	59,291	69,765	77,867	84,441	89,801	94,197	97,856
New Net Energy Savings - kWh	32,468,294	34,394,549	32,417,858	28,354,222	23,547,741	18,862,867	15,811,193	13,353,871	11,371,154	9,821,475
New Net Peak Demand Savings - kW	15,232	16,102	15,029	12,928	10,474	8,102	6,574	5,360	4,396	3,659
Program Costs - Real										
Administration	1,950,000	1,920,139	1,856,765	1,772,329	1,680,741	1,591,586	1,511,436	1,440,996	1,380,194	1,328,038
Marketing	1,050,000	1,050,000	1,050,000	1,050,000	1,050,000	1,050,000	1,050,000	1,050,000	1,050,000	1,050,000
Incentives	2,243,211	2,184,260	2,095,048	1,980,125	1,855,805	1,734,247	1,624,037	1,526,167	1,440,639	1,366,246
Total	5,243,211	5,154,400	5,001,813	4,802,455	4,586,546	4,375,833	4,185,473	4,017,163	3,870,833	3,744,284
PV Net Avoided Costs	55,798,658	56,570,201	50,858,328	42,303,205	33,297,239	25,174,373	19,942,961	15,904,996	12,781,205	10,423,255
PV Annual Marketing and Admin Costs	3,000,000	2,845,227	2,667,412	2,481,007	2,299,539	2,130,910	1,979,357	1,843,969	1,723,303	1,615,398
PV Net Measure Costs	5,996,912	6,111,198	5,834,537	5,352,264	4,802,884	4,268,976	3,861,159	3,504,626	3,190,852	2,915,830
TRC	6.20	6.32	5.98	5.40	4.69	3.93	3.41	2.97	2.60	2.30

50%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	49,917,908	101,988,012	152,063,252	196,242,307	233,126,897	263,745,857	289,644,170	311,594,625	330,358,336	346,680,914
Net Peak Demand Savings - kW	22,759	46,399	68,898	88,353	104,115	116,754	127,089	135,538	142,504	148,349
New Net Energy Savings - kWh	49,917,908	52,070,104	50,075,240	44,179,055	36,884,590	30,618,960	25,898,313	21,950,455	18,763,711	16,322,578
New Net Peak Demand Savings - kW	22,759	23,640	22,499	19,455	15,762	12,639	10,335	8,449	6,966	5,845
Program Costs - Real										
Administration	1,950,000	1,950,696	1,928,446	1,859,724	1,768,583	1,672,080	1,579,218	1,493,176	1,414,993	1,344,193
Marketing	1,050,000	1,181,250	1,328,906	1,328,906	1,328,906	1,328,906	1,328,906	1,328,906	1,328,906	1,328,906
Incentives	3,886,118	3,875,303	3,855,912	3,736,880	3,565,479	3,375,378	3,185,131	3,002,361	2,830,465	2,669,795
Total	6,886,118	7,007,250	7,113,264	6,925,510	6,662,968	6,376,365	6,093,256	5,824,443	5,574,364	5,342,894
PV Net Avoided Costs	84,719,915	84,501,204	77,496,417	64,934,469	51,278,386	40,195,630	32,124,599	25,710,397	20,759,845	17,063,340
PV Annual Marketing and Admin Costs	3,000,000	3,000,229	2,989,130	2,803,009	2,608,375	2,420,831	2,247,261	2,089,057	1,945,758	1,815,833
PV Net Measure Costs	10,660,476	10,780,001	10,517,786	9,758,951	8,803,099	7,887,193	7,073,139	6,322,195	5,643,256	5,045,163
TRC	6.20	6.13	5.74	5.17	4.49	3.90	3.45	3.06	2.74	2.49

75%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	95,031,710	191,486,917	283,894,492	363,880,442	428,515,289	480,423,970	521,371,210	553,441,103	578,621,194	598,578,764
Net Peak Demand Savings - kW	41,935	84,147	124,117	157,847	184,038	204,153	219,116	230,024	237,904	243,603
New Net Energy Savings - kWh	95,031,710	96,455,207	92,407,575	79,985,950	64,634,847	51,908,681	40,947,240	32,069,893	25,180,091	19,957,569
New Net Peak Demand Savings - kW	41,935	42,212	39,970	33,730	26,191	20,115	14,963	10,908	7,880	5,699
Program Costs - Real										
Administration	1,950,000	1,946,058	1,917,015	1,798,738	1,636,933	1,466,521	1,307,108	1,169,105	1,055,621	965,497
Marketing	1,050,000	1,312,500	1,640,625	1,640,625	1,640,625	1,640,625	1,640,625	1,640,625	1,640,625	1,640,625
Incentives	10,881,019	11,006,738	11,117,587	10,762,060	10,153,326	9,444,409	8,726,248	8,052,248	7,446,346	6,914,351
Total	13,881,019	14,265,296	14,675,228	14,201,423	13,430,884	12,551,555	11,673,981	10,861,978	10,142,592	9,520,473
PV Net Avoided Costs	159,033,567	154,082,951	140,710,400	115,440,602	87,909,987	66,432,515	49,069,395	35,843,486	26,174,671	19,272,692
PV Annual Marketing and Admin Costs	3,000,000	3,121,516	3,264,692	3,023,418	2,760,011	2,506,467	2,277,869	2,079,913	1,911,966	1,770,335
PV Net Measure Costs	26,798,271	26,249,503	25,108,766	22,417,899	19,147,359	16,058,673	13,297,052	10,965,260	9,072,902	7,573,950
TRC	5.34	5.25	4.96	4.54	4.01	3.58	3.15	2.75	2.38	2.06

RESIDENTIAL EXISTING CFLs

Incentive Levels

33%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	27,019,971	55,685,698	82,186,950	104,533,284	122,063,209	134,964,028	144,920,675	152,567,302	158,408,309	162,898,255
Net Peak Demand Savings - kW	13,719	28,274	41,730	53,076	61,977	68,527	73,583	77,465	80,431	82,711
New Net Energy Savings - kWh	27,019,971	28,665,727	26,501,251	22,346,334	17,529,926	12,900,818	9,956,647	7,646,627	5,841,006	4,489,946
New Net Peak Demand Savings - kW	13,719	14,555	13,456	11,346	8,901	6,550	5,055	3,883	2,966	2,280
Program Costs - Real										
Administration	$1,500,000	$1,478,230	$1,415,392	$1,331,655	$1,241,999	$1,156,070	$1,080,274	$1,015,099	$960,266	$914,595
Marketing	$750,000	$750,000	$750,000	$750,000	$750,000	$750,000	$750,000	$750,000	$750,000	$750,000
Incentives	$1,478,766	$1,450,151	$1,367,552	$1,257,484	$1,139,634	$1,026,684	$927,053	$841,384	$769,308	$709,275
Total	$3,728,766	$3,678,381	$3,532,943	$3,339,139	$3,131,632	$2,932,754	$2,757,327	$2,606,483	$2,479,573	$2,373,870
PV Net Avoided Costs	$48,122,865	$48,906,846	$43,312,491	$34,985,908	$26,290,995	$18,534,646	$13,703,145	$10,081,314	$7,376,918	$5,432,110
PV Annual Marketing and Admin Costs	$2,250,000	$2,134,520	$1,987,086	$1,829,907	$1,677,449	$1,537,585	$1,414,349	$1,306,621	$1,212,786	$1,130,757
PV Measure Costs	$4,237,173	$4,433,088	$4,219,538	$3,806,093	$3,331,846	$2,877,262	$2,550,729	$2,275,571	$2,041,827	$1,844,431
TRC	7.42	7.45	6.98	6.21	5.25	4.20	3.46	2.81	2.27	1.83

50%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	39,283,761	80,085,215	118,451,414	150,777,145	175,885,957	194,973,419	209,707,066	220,946,457	229,510,713	236,080,475
Net Peak Demand Savings - kW	19,946	40,663	60,143	76,557	89,305	98,997	106,478	112,185	116,533	119,869
New Net Energy Savings - kWh	39,283,761	40,801,454	38,366,199	32,325,732	25,108,812	19,087,462	14,733,647	11,239,391	8,564,256	6,569,762
New Net Peak Demand Savings - kW	19,946	20,717	19,480	16,413	12,749	9,692	7,481	5,707	4,348	3,336
Program Costs - Real										
Administration	$1,500,000	$1,501,996	$1,473,639	$1,403,304	$1,313,946	$1,221,795	$1,135,187	$1,056,766	$987,143	$925,496
Marketing	$750,000	$843,750	$949,219	$949,219	$949,219	$949,219	$949,219	$949,219	$949,219	$949,219
Incentives	$2,022,519	$2,026,107	$1,975,126	$1,848,680	$1,688,033	$1,522,363	$1,366,660	$1,225,676	$1,100,506	$989,678
Total	$4,272,519	$4,371,852	$4,397,984	$4,201,202	$3,951,198	$3,693,377	$3,451,066	$3,231,661	$3,036,868	$2,864,393
PV Net Avoided Costs	$69,964,810	$69,611,714	$62,704,044	$50,609,871	$37,657,642	$27,423,016	$20,277,639	$14,818,014	$10,816,256	$7,948,350
PV Annual Marketing and Admin Costs	$2,250,000	$2,247,093	$2,223,351	$2,068,017	$1,905,797	$1,751,310	$1,610,730	$1,484,938	$1,373,116	$1,273,491
PV Measure Costs	$7,332,143	$7,529,487	$7,312,883	$6,661,233	$5,848,009	$5,095,004	$4,453,925	$3,878,894	$3,373,821	$2,932,761
TRC	7.30	7.12	6.58	5.80	4.86	4.01	3.34	2.76	2.28	1.89

75%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	68,891,476	137,717,745	201,644,542	253,294,258	290,434,836	316,165,597	332,352,489	341,220,680	344,826,729	344,841,270
Net Peak Demand Savings - kW	34,979	69,926	102,384	128,609	147,467	160,532	168,751	173,253	175,084	175,092
New Net Energy Savings - kWh	68,891,476	68,826,269	63,926,798	51,649,716	37,140,577	25,730,761	16,186,892	8,868,191	3,606,049	14,541
New Net Peak Demand Savings - kW	34,979	34,946	32,459	26,225	18,858	13,065	8,219	4,503	1,831	7
Program Costs - Real										
Administration	$1,500,000	$1,491,190	$1,449,640	$1,328,370	$1,169,406	$1,005,681	$855,466	$728,203	$626,291	$548,054
Marketing	$750,000	$937,500	$1,171,875	$1,171,875	$1,171,875	$1,171,875	$1,171,875	$1,171,875	$1,171,875	$1,171,875
Incentives	$3,847,659	$3,817,527	$3,675,420	$3,260,661	$2,716,981	$2,157,018	$1,643,261	$1,208,004	$859,450	$591,868
Total	$6,097,659	$6,246,217	$6,296,935	$5,760,906	$5,058,262	$4,334,574	$3,670,602	$3,108,082	$2,657,616	$2,311,796
PV Net Avoided Costs	$122,696,476	$117,425,094	$104,479,173	$80,863,922	$55,702,617	$36,967,466	$22,277,713	$11,691,823	$4,554,271	$17,592
PV Annual Marketing and Admin Costs	$2,250,000	$2,326,549	$2,405,650	$2,197,874	$1,971,578	$1,756,587	$1,566,633	$1,406,540	$1,275,118	$1,168,345
PV Measure Costs	$17,318,155	$16,846,426	$15,740,253	$13,360,694	$10,552,322	$8,006,252	$5,796,273	$4,019,335	$2,668,691	$1,686,472
TRC	6.27	6.12	5.76	5.20	4.45	3.79	3.03	2.15	1.15	0.01

RESIDENTIAL EXISTING OTHER

Incentive Levels

33%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	4,388,907	9,135,041	14,111,477	19,213,390	24,355,502	29,469,507	34,501,598	39,410,196	44,163,918	48,739,792
Net Peak Demand Savings - kW	988	2,054	3,168	4,309	5,458	6,598	7,719	8,811	9,867	10,882
New Net Energy Savings - kWh	4,388,907	4,746,134	4,976,437	5,101,912	5,142,112	5,114,005	5,032,091	4,908,598	4,753,722	4,575,875
New Net Peak Demand Savings - kW	988	1,066	1,115	1,141	1,148	1,140	1,121	1,092	1,056	1,015
Program Costs - Real										
Administration	$300,000	$309,975	$316,530	$320,248	$321,640	$321,154	$319,171	$316,012	$311,948	$307,201
Marketing	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000
Incentives	$451,023	$471,019	$484,159	$491,610	$494,402	$493,428	$489,452	$483,120	$474,973	$465,458
Total	$951,023	$980,994	$1,000,689	$1,011,858	$1,016,043	$1,014,583	$1,008,623	$999,132	$986,920	$972,658
PV Net Avoided Costs	$5,810,072	$6,014,207	$6,037,348	$5,926,443	$5,719,559	$5,447,013	$5,132,535	$4,794,384	$4,446,352	$4,098,639
PV Annual Marketing and Admin Costs	$500,000	$488,528	$473,997	$457,331	$439,270	$420,404	$401,191	$381,980	$363,033	$344,541
PV Measure Costs	$953,627	$980,165	$982,372	$966,430	$937,363	$899,186	$855,056	$807,416	$758,123	$708,568
TRC	4.00	4.09	4.15	4.16	4.15	4.13	4.09	4.03	3.97	3.89

50%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	9,211,810	19,105,167	29,417,195	39,881,812	50,288,402	60,474,901	70,320,578	79,739,085	88,672,095	97,183,859
Net Peak Demand Savings - kW	2,078	4,301	6,612	8,953	11,276	13,547	15,739	17,834	19,818	21,707
New Net Energy Savings - kWh	9,211,810	9,893,357	10,312,028	10,464,616	10,406,590	10,186,499	9,845,678	9,418,506	8,933,010	8,511,764
New Net Peak Demand Savings - kW	2,078	2,223	2,311	2,341	2,323	2,271	2,192	2,094	1,984	1,889
Program Costs - Real										
Administration	$300,000	$311,476	$319,184	$322,808	$323,161	$320,957	$316,804	$311,210	$304,593	$297,290
Marketing	$200,000	$225,000	$253,125	$253,125	$253,125	$253,125	$253,125	$253,125	$253,125	$253,125
Incentives	$1,198,481	$1,259,611	$1,300,667	$1,319,969	$1,321,851	$1,310,110	$1,287,987	$1,258,192	$1,222,947	$1,184,048
Total	$1,698,481	$1,796,087	$1,872,976	$1,895,902	$1,898,138	$1,884,192	$1,857,916	$1,822,527	$1,780,666	$1,734,464
PV Net Avoided Costs	$12,201,232	$12,540,091	$12,511,893	$12,156,054	$11,574,722	$10,848,958	$10,041,286	$9,198,592	$8,354,969	$7,624,751
PV Annual Marketing and Admin Costs	$500,000	$513,914	$525,183	$506,282	$485,287	$463,100	$440,414	$417,751	$395,490	$373,897
PV Measure Costs	$2,123,725	$2,170,029	$2,167,307	$2,117,898	$2,035,804	$1,932,183	$1,815,704	$1,692,926	$1,568,684	$1,457,816
TRC	4.65	4.67	4.65	4.63	4.59	4.53	4.45	4.36	4.25	4.16

75%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	23,761,705	49,007,796	74,925,784	100,635,399	125,485,056	149,022,157	171,156,822	191,754,087	210,748,178	228,137,311
Net Peak Demand Savings - kW	5,651	11,629	17,762	23,859	29,776	35,414	40,756	45,772	50,446	54,778
New Net Energy Savings - kWh	23,761,705	25,246,091	25,917,988	25,709,616	24,849,656	23,537,101	22,134,665	20,597,265	18,994,091	17,389,133
New Net Peak Demand Savings - kW	5,651	5,978	6,133	6,096	5,917	5,638	5,342	5,016	4,675	4,332
Program Costs - Real										
Administration	$300,000	$311,530	$318,697	$320,217	$317,430	$311,511	$303,441	$294,009	$283,828	$273,359
Marketing	$200,000	$250,000	$312,500	$312,500	$312,500	$312,500	$312,500	$312,500	$312,500	$312,500
Incentives	$5,181,377	$5,446,897	$5,611,932	$5,646,939	$5,582,772	$5,446,464	$5,260,615	$5,043,405	$4,808,957	$4,567,884
Total	$5,681,377	$6,008,427	$6,243,129	$6,279,656	$6,212,703	$6,070,475	$5,876,556	$5,649,914	$5,405,285	$5,153,743
PV Net Avoided Costs	$31,944,112	$32,471,724	$31,928,699	$30,357,558	$28,141,371	$25,578,224	$23,091,805	$20,637,927	$18,287,741	$16,096,339
PV Annual Marketing and Admin Costs	$500,000	$537,914	$579,222	$556,198	$530,460	$503,376	$475,970	$448,970	$422,869	$397,973
PV Measure Costs	$7,113,676	$7,203,475	$7,130,268	$6,876,344	$6,504,138	$6,062,784	$5,614,847	$5,162,046	$4,718,752	$4,295,874
TRC	4.20	4.19	4.14	4.08	4.00	3.90	3.79	3.68	3.56	3.43

RESIDENTIAL NEW CONSTRUCTION

Incentive Levels

33%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	1,059,417	2,042,104	2,982,274	3,888,249	4,763,953	5,611,997	6,434,451	7,233,097	8,009,522	8,765,177
Net Peak Demand Savings - kW	525	1,006	1,465	1,905	2,330	2,741	3,139	3,525	3,899	4,263
New Net Energy Savings - kWh	1,059,417	982,687	940,170	905,976	875,704	848,044	822,455	798,645	776,426	755,654
New Net Peak Demand Savings - kW	525	481	458	441	425	411	398	386	374	364
Program Costs - Real										
Administration	$150,000	$131,934	$124,844	$120,427	$117,102	$114,362	$111,992	$109,885	$107,981	$106,242
Marketing	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000
Incentives	$313,422	$263,091	$243,337	$231,031	$221,769	$214,135	$207,532	$201,663	$196,359	$191,513
Total	$563,422	$495,025	$468,181	$451,458	$438,871	$428,496	$419,523	$411,548	$404,340	$397,755
PV Net Avoided Costs	$1,865,721	$1,649,148	$1,508,489	$1,390,854	$1,286,685	$1,192,713	$1,107,281	$1,029,298	$957,935	$892,506
PV Annual Marketing and Admin Costs	$250,000	$222,180	$206,329	$193,769	$182,820	$172,921	$163,817	$155,368	$147,484	$140,100
PV Measure Costs	$806,112	$697,945	$632,628	$579,742	$533,675	$492,528	$455,374	$421,638	$390,902	$362,831
TRC	1.77	1.79	1.80	1.80	1.80	1.79	1.79	1.78	1.78	1.77

50%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	1,422,337	2,797,630	4,194,643	5,583,350	6,952,538	8,297,537	9,616,526	10,909,083	12,175,528	13,416,580
Net Peak Demand Savings - kW	735	1,435	2,143	2,844	3,534	4,210	4,872	5,520	6,153	6,773
New Net Energy Savings - kWh	1,422,337	1,375,293	1,397,013	1,388,707	1,369,188	1,344,999	1,318,989	1,292,557	1,266,445	1,241,052
New Net Peak Demand Savings - kW	735	700	707	701	690	676	662	648	634	620
Program Costs - Real										
Administration	$150,000	$137,224	$135,623	$133,612	$131,475	$129,328	$127,228	$125,199	$123,257	$121,406
Marketing	$100,000	$112,500	$126,563	$126,563	$126,563	$126,563	$126,563	$126,563	$126,563	$126,563
Incentives	$665,118	$589,586	$580,118	$568,231	$555,596	$542,905	$530,484	$518,494	$507,011	$496,069
Total	$915,118	$839,310	$842,304	$828,406	$813,633	$798,796	$784,274	$770,256	$756,831	$744,038
PV Net Avoided Costs	$2,553,874	$2,349,399	$2,280,481	$2,168,545	$2,046,022	$1,923,656	$1,805,673	$1,693,792	$1,588,621	$1,490,239
PV Annual Marketing and Admin Costs	$250,000	$239,222	$240,596	$228,710	$217,292	$206,422	$196,117	$186,368	$177,153	$168,445
PV Measure Costs	$1,204,608	$1,080,485	$1,037,596	$979,820	$919,287	$860,005	$803,510	$750,375	$700,751	$654,585
TRC	1.76	1.78	1.78	1.79	1.80	1.80	1.81	1.81	1.81	1.81

75%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	2,378,529	4,761,376	7,324,165	9,950,784	12,595,398	15,236,216	17,861,899	20,466,336	23,046,287	25,600,183
Net Peak Demand Savings - kW	1,305	2,592	3,970	5,379	6,795	8,207	9,609	10,999	12,373	13,733
New Net Energy Savings - kWh	2,378,529	2,382,847	2,562,790	2,626,619	2,644,614	2,640,818	2,625,683	2,604,437	2,579,951	2,553,895
New Net Peak Demand Savings - kW	1,305	1,288	1,378	1,409	1,416	1,412	1,402	1,389	1,375	1,359
Program Costs - Real										
Administration	$150,000	$143,338	$148,679	$150,151	$150,097	$149,328	$148,201	$146,893	$145,502	$144,084
Marketing	$100,000	$125,000	$156,250	$156,250	$156,250	$156,250	$156,250	$156,250	$156,250	$156,250
Incentives	$1,851,982	$1,742,314	$1,830,236	$1,854,460	$1,853,572	$1,840,927	$1,822,371	$1,800,839	$1,777,939	$1,754,599
Total	$2,101,982	$2,010,652	$2,135,165	$2,160,861	$2,159,919	$2,146,506	$2,126,822	$2,103,983	$2,079,691	$2,054,934
PV Net Avoided Costs	$4,392,980	$4,186,132	$4,302,528	$4,219,122	$4,065,999	$3,886,826	$3,699,877	$3,513,736	$3,332,659	$3,158,760
PV Annual Marketing and Admin Costs	$250,000	$257,053	$279,820	$269,346	$257,972	$246,504	$235,266	$224,403	$213,979	$204,017
PV Measure Costs	$2,366,441	$2,199,602	$2,238,244	$2,180,862	$2,090,899	$1,989,638	$1,885,931	$1,783,879	$1,685,459	$1,591,604
TRC	1.68	1.70	1.71	1.72	1.73	1.74	1.74	1.75	1.75	1.76

COMMERCIAL TOTAL

Incentive Levels

33%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	52,330,834	111,252,487	169,992,232	224,101,695	270,975,388	309,502,473	339,690,310	362,225,333	378,178,491	388,761,432
Net Peak Demand Savings - kW	7,120	15,122	23,092	30,421	36,755	41,940	45,976	48,958	51,032	52,364
New Net Energy Savings - kWh	52,330,834	58,921,653	58,739,745	54,109,463	46,873,693	38,527,085	30,187,838	22,535,023	15,953,158	10,582,941
New Net Peak Demand Savings - kW	7,120	8,003	7,969	7,330	6,334	5,185	4,037	2,982	2,074	1,332
Program Costs - Real										
Administration	$1,100,000	$1,147,574	$1,162,749	$1,157,407	$1,138,155	$1,110,056	$1,077,014	$1,041,852	$1,006,527	$972,292
Marketing	$600,000	$625,000	$653,125	$653,125	$653,125	$653,125	$653,125	$653,125	$653,125	$653,125
Incentives	$3,687,969	$3,900,665	$3,968,528	$3,944,640	$3,858,544	$3,732,876	$3,585,106	$3,427,852	$3,269,872	$3,116,766
Total	$5,387,969	$5,673,238	$5,784,402	$5,755,171	$5,649,824	$5,496,056	$5,315,245	$5,122,829	$4,929,525	$4,742,184
PV Avoided Costs	$61,549,478	$66,367,338	$63,357,151	$55,875,428	$46,325,610	$36,425,144	$27,284,173	$19,448,690	$13,121,538	$8,264,749
PV Annual Program Costs	$1,700,000	$1,698,026	$1,666,349	$1,591,572	$1,508,426	$1,422,320	$1,336,970	$1,254,713	$1,176,895	$1,104,144
PV Net Measure Costs	$9,901,968	$10,761,573	$10,728,221	$10,226,212	$9,468,185	$8,597,851	$7,711,926	$6,868,643	$6,099,642	$5,417,485
TRC	5.31	5.33	5.11	4.73	4.22	3.64	3.02	2.39	1.80	1.27

50%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	77,902,226	163,094,015	247,535,364	323,893,726	388,088,171	438,718,442	476,303,047	502,467,256	519,345,863	529,138,479
Net Peak Demand Savings - kW	10,654	22,285	33,797	44,186	52,889	59,715	64,734	68,169	70,314	71,473
New Net Energy Savings - kWh	77,902,226	85,191,789	84,441,349	76,358,362	64,194,445	50,630,272	37,584,605	26,164,209	16,878,607	9,792,616
New Net Peak Demand Savings - kW	10,654	11,631	11,512	10,388	8,704	6,826	5,019	3,435	2,145	1,159
Program Costs - Real										
Administration	$1,100,000	$1,156,422	$1,185,303	$1,184,700	$1,163,788	$1,130,068	$1,089,431	$1,046,141	$1,003,075	$961,982
Marketing	$600,000	$675,000	$759,375	$759,375	$759,375	$759,375	$759,375	$759,375	$759,375	$759,375
Incentives	$7,470,088	$7,987,952	$8,257,644	$8,252,753	$8,057,953	$7,743,249	$7,363,795	$6,959,596	$6,557,625	$6,174,297
Total	$9,170,088	$9,819,373	$10,202,323	$10,196,828	$9,981,116	$9,632,692	$9,212,601	$8,765,112	$8,320,075	$7,895,654
PV Avoided Costs	$91,653,975	$95,986,345	$91,099,045	$78,854,392	$63,428,612	$47,832,583	$33,913,425	$22,503,895	$13,783,744	$7,523,237
PV Annual Program Costs	$1,700,000	$1,754,399	$1,784,547	$1,708,965	$1,619,483	$1,524,173	$1,428,670	$1,336,540	$1,249,792	$1,169,316
PV Net Measure Costs	$16,108,417	$17,040,336	$16,984,437	$16,104,611	$14,773,978	$13,261,327	$11,746,888	$10,335,894	$9,079,438	$7,991,696
TRC	5.15	5.11	4.85	4.43	3.87	3.24	2.57	1.93	1.33	0.82

75%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	128,201,996	264,302,665	397,408,724	514,575,626	609,287,237	680,274,142	729,725,509	761,557,521	780,134,380	789,460,933
Net Peak Demand Savings - kW	17,582	36,212	54,385	70,315	83,101	92,572	99,036	103,038	105,189	106,048
New Net Energy Savings - kWh	128,201,996	136,100,668	133,106,059	117,166,902	94,711,612	70,986,905	49,451,367	31,832,013	18,576,859	9,326,553
New Net Peak Demand Savings - kW	17,582	18,630	18,173	15,929	12,786	9,471	6,464	4,003	2,151	858
Program Costs - Real										
Administration	$1,100,000	$1,163,859	$1,199,660	$1,190,472	$1,150,795	$1,093,301	$1,028,003	$961,965	$899,583	$843,151
Marketing	$600,000	$750,000	$937,500	$937,500	$937,500	$937,500	$937,500	$937,500	$937,500	$937,500
Incentives	$20,115,602	$21,751,779	$22,712,163	$22,467,434	$21,399,766	$19,850,412	$18,090,708	$16,312,401	$14,634,907	$13,120,534
Total	$21,815,602	$23,665,638	$24,849,322	$24,595,406	$23,488,061	$21,881,213	$20,056,212	$18,211,867	$16,471,989	$14,901,186
PV Avoided Costs	$150,723,744	$153,229,130	$143,463,748	$120,836,893	$93,400,500	$66,865,996	$44,409,001	$27,155,028	$14,933,907	$6,908,095
PV Annual Program Costs	$1,700,000	$1,833,370	$1,961,179	$1,870,622	$1,758,540	$1,638,203	$1,518,848	$1,406,086	$1,302,715	$1,209,594
PV Net Measure Costs	$34,946,869	$36,056,600	$35,708,782	$33,354,823	$29,922,549	$26,117,474	$22,407,375	$19,052,103	$16,158,624	$13,736,116
TRC	4.11	4.04	3.81	3.43	2.95	2.41	1.86	1.33	0.86	0.46

COMMERCIAL EXISTING

Incentive Levels

33%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	46,491,259	98,750,321	150,723,152	198,141,051	238,470,399	270,636,293	294,666,626	311,260,665	321,497,917	326,596,018
Net Peak Demand Savings - kW	6,414	13,611	20,763	27,284	32,827	37,243	40,537	42,802	44,187	44,858
New Net Energy Savings - kWh	46,491,259	52,259,062	51,972,831	47,417,899	40,329,348	32,165,894	24,030,333	16,594,040	10,237,252	5,098,101
New Net Peak Demand Savings - kW	6,414	7,197	7,151	6,521	5,543	4,417	3,294	2,265	1,385	671
Program Costs - Real										
Administration	$800,000	$837,661	$851,365	$846,663	$828,896	$802,703	$771,809	$738,945	$706,020	$674,254
Marketing	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000
Incentives	$2,683,730	$2,852,182	$2,913,481	$2,892,450	$2,812,979	$2,695,820	$2,557,635	$2,410,640	$2,263,367	$2,121,281
Total	$3,883,730	$4,089,842	$4,164,847	$4,139,113	$4,041,875	$3,898,523	$3,729,444	$3,549,585	$3,369,386	$3,195,535
PV Net Avoided Costs	$54,804,214	$58,994,364	$56,183,832	$49,080,652	$39,960,208	$30,498,539	$21,789,064	$14,370,252	$8,441,458	$3,963,207
PV Annual Marketing and Admin Costs	$1,200,000	$1,185,610	$1,148,324	$1,095,896	$1,034,846	$970,194	$905,519	$843,109	$784,302	$729,739
PV Net Measure Costs	$7,336,832	$7,977,808	$8,016,264	$7,649,011	$7,043,752	$6,329,651	$5,597,543	$4,903,004	$4,276,437	$3,729,861
TRC	6.42	6.44	6.13	5.61	4.95	4.18	3.35	2.50	1.67	0.89

50%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	70,657,754	147,782,056	224,051,595	292,313,496	348,558,698	391,422,881	421,445,085	440,263,414	450,021,218	452,924,098
Net Peak Demand Savings - kW	9,781	20,439	30,967	40,379	48,125	54,016	58,124	60,675	61,964	62,295
New Net Energy Savings - kWh	70,657,754	77,124,302	76,269,539	68,261,901	56,245,203	42,864,183	30,022,203	18,818,329	9,757,805	2,902,879
New Net Peak Demand Savings - kW	9,781	10,658	10,527	9,413	7,746	5,890	4,108	2,551	1,289	331
Program Costs - Real										
Administration	$800,000	$846,482	$873,865	$873,872	$854,415	$822,572	$784,053	$743,032	$702,336	$663,682
Marketing	$400,000	$450,000	$506,250	$506,250	$506,250	$506,250	$506,250	$506,250	$506,250	$506,250
Incentives	$5,642,615	$6,079,751	$6,337,267	$6,337,337	$6,154,354	$5,854,894	$5,492,643	$5,106,871	$4,724,143	$4,360,630
Total	$6,842,615	$7,376,233	$7,717,382	$7,717,459	$7,515,019	$7,183,717	$6,782,946	$6,356,153	$5,932,729	$5,530,562
PV Net Avoided Costs	$83,290,056	$87,062,789	$82,440,356	$70,636,714	$55,700,151	$40,600,243	$27,167,495	$16,227,241	$7,955,840	$2,122,145
PV Annual Marketing and Admin Costs	$1,200,000	$1,241,957	$1,266,472	$1,213,215	$1,145,807	$1,071,932	$997,085	$924,786	$857,034	$794,733
PV Net Measure Costs	$12,811,306	$13,555,380	$13,600,777	$12,883,957	$11,733,153	$10,402,658	$9,066,870	$7,828,408	$6,737,174	$5,806,842
TRC	5.94	5.88	5.55	5.01	4.32	3.54	2.70	1.85	1.05	0.32

75%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	118,030,612	243,136,882	365,144,218	471,287,748	555,123,206	615,417,110	654,379,163	675,938,384	684,467,528	683,977,432
Net Peak Demand Savings - kW	16,363	33,673	50,514	65,121	76,603	84,792	89,998	92,770	93,718	93,402
New Net Energy Savings - kWh	118,030,612	125,106,269	122,007,337	106,143,529	83,835,458	60,293,904	38,962,054	21,559,221	8,529,144	-490,096
New Net Peak Demand Savings - kW	16,363	17,310	16,841	14,607	11,482	8,189	5,206	2,772	948	-317
Program Costs - Real										
Administration	$800,000	$853,875	$888,128	$879,501	$841,229	$785,562	$722,332	$658,513	$598,449	$544,407
Marketing	$400,000	$500,000	$625,000	$625,000	$625,000	$625,000	$625,000	$625,000	$625,000	$625,000
Incentives	$16,371,732	$17,841,777	$18,776,406	$18,541,018	$17,496,728	$15,977,771	$14,252,475	$12,511,082	$10,872,173	$9,397,556
Total	$17,571,732	$19,195,652	$20,289,534	$20,045,519	$18,962,957	$17,388,333	$15,599,807	$13,794,595	$12,095,622	$10,566,963
PV Net Avoided Costs	$138,990,012	$141,077,483	$131,712,729	$109,656,937	$82,834,341	$56,915,302	$35,059,040	$18,383,858	$6,716,397	-$782,106
PV Annual Marketing and Admin Costs	$1,200,000	$1,296,936	$1,388,532	$1,322,552	$1,234,702	$1,137,870	$1,041,155	$950,125	$867,574	$794,376
PV Net Measure Costs	$30,050,799	$31,039,930	$30,857,828	$28,728,583	$25,535,251	$21,968,960	$18,491,756	$15,360,982	$12,682,504	$10,465,091
TRC	4.45	4.36	4.08	3.65	3.09	2.46	1.79	1.13	0.50	-0.07

COMMERCIAL NEW CONSTRUCTION

Incentive Levels

33%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	5,839,575	12,502,166	19,269,079	25,960,643	32,504,989	38,866,180	45,023,685	50,964,668	56,680,574	62,165,414
Net Peak Demand Savings - kW	706	1,511	2,329	3,138	3,928	4,696	5,439	6,156	6,845	7,506
New Net Energy Savings - kWh	5,839,575	6,662,590	6,766,914	6,691,564	6,544,345	6,361,192	6,157,504	5,940,983	5,715,906	5,484,840
New Net Peak Demand Savings - kW	706	805	818	809	791	768	743	717	689	661
Program Costs - Real										
Administration	$300,000	$309,913	$311,383	$310,743	$309,259	$307,353	$305,205	$302,907	$300,508	$298,039
Marketing	$200,000	$225,000	$253,125	$253,125	$253,125	$253,125	$253,125	$253,125	$253,125	$253,125
Incentives	$1,004,239	$1,048,483	$1,055,046	$1,052,190	$1,045,565	$1,037,056	$1,027,471	$1,017,213	$1,006,506	$995,485
Total	$1,504,239	$1,583,396	$1,619,555	$1,616,058	$1,607,949	$1,597,534	$1,585,801	$1,573,244	$1,560,139	$1,546,649
PV Net Avoided Costs	$6,745,264	$7,372,974	$7,173,319	$6,794,776	$6,365,402	$5,926,605	$5,495,109	$5,078,439	$4,680,080	$4,301,542
PV Annual Marketing and Admin Costs	$500,000	$512,417	$518,025	$495,676	$473,580	$452,125	$431,451	$411,605	$392,593	$374,405
PV Net Measure Costs	$2,565,136	$2,783,765	$2,711,957	$2,577,200	$2,424,433	$2,268,200	$2,114,383	$1,965,638	$1,823,204	$1,687,624
TRC	2.20	2.24	2.22	2.21	2.20	2.18	2.16	2.14	2.11	2.09

50%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	7,244,472	15,311,959	23,483,770	31,580,230	39,529,472	47,295,561	54,857,962	62,203,842	69,324,645	76,214,381
Net Peak Demand Savings - kW	873	1,845	2,831	3,806	4,764	5,699	6,610	7,494	8,350	9,178
New Net Energy Savings - kWh	7,244,472	8,067,487	8,171,810	8,096,461	7,949,242	7,766,089	7,562,401	7,345,880	7,120,803	6,889,737
New Net Peak Demand Savings - kW	873	973	985	976	958	935	910	884	856	828
Program Costs - Real										
Administration	$300,000	$309,939	$311,438	$310,828	$309,373	$307,496	$305,378	$303,109	$300,740	$298,300
Marketing	$200,000	$225,000	$253,125	$253,125	$253,125	$253,125	$253,125	$253,125	$253,125	$253,125
Incentives	$1,827,473	$1,908,201	$1,920,377	$1,915,416	$1,903,599	$1,888,355	$1,871,152	$1,852,725	$1,833,481	$1,813,667
Total	$2,327,473	$2,443,140	$2,484,941	$2,479,368	$2,466,097	$2,448,975	$2,429,654	$2,408,959	$2,387,346	$2,365,092
PV Net Avoided Costs	$8,363,919	$8,923,555	$8,658,689	$8,217,677	$7,728,462	$7,232,340	$6,745,929	$6,276,654	$5,827,904	$5,401,092
PV Annual Marketing and Admin Costs	$500,000	$512,442	$518,075	$495,750	$473,676	$452,241	$431,585	$411,754	$392,757	$374,582
PV Net Measure Costs	$3,297,111	$3,484,956	$3,383,659	$3,220,653	$3,040,825	$2,858,668	$2,680,019	$2,507,486	$2,342,264	$2,184,854
TRC	2.20	2.23	2.22	2.21	2.20	2.18	2.17	2.15	2.13	2.11

75%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	10,171,384	21,165,783	32,264,505	43,287,878	54,164,032	64,857,032	75,346,345	85,619,137	95,666,852	105,483,500
Net Peak Demand Savings - kW	1,220	2,539	3,871	5,194	6,498	7,780	9,038	10,268	11,471	12,646
New Net Energy Savings - kWh	10,171,384	10,994,399	11,098,722	11,023,373	10,876,154	10,693,000	10,489,313	10,272,792	10,047,715	9,816,649
New Net Peak Demand Savings - kW	1,220	1,319	1,332	1,323	1,305	1,282	1,257	1,231	1,203	1,175
Program Costs - Real										
Administration	$300,000	$309,984	$311,532	$310,971	$309,566	$307,739	$305,671	$303,453	$301,134	$298,744
Marketing	$200,000	$250,000	$312,500	$312,500	$312,500	$312,500	$312,500	$312,500	$312,500	$312,500
Incentives	$3,743,870	$3,910,002	$3,935,756	$3,926,416	$3,903,038	$3,872,641	$3,838,233	$3,801,319	$3,762,734	$3,722,978
Total	$4,243,870	$4,469,986	$4,559,788	$4,549,887	$4,525,104	$4,492,880	$4,456,405	$4,417,272	$4,376,367	$4,334,223
PV Net Avoided Costs	$11,733,732	$12,151,646	$11,751,019	$11,179,956	$10,566,159	$9,950,695	$9,349,961	$8,771,171	$8,217,510	$7,690,201
PV Annual Marketing and Admin Costs	$500,000	$536,434	$572,647	$548,070	$523,838	$500,333	$477,693	$455,961	$435,141	$415,218
PV Net Measure Costs	$4,896,070	$5,016,669	$4,850,954	$4,626,240	$4,387,298	$4,148,514	$3,915,618	$3,691,121	$3,476,120	$3,271,025
TRC	2.17	2.19	2.17	2.16	2.15	2.14	2.13	2.12	2.10	2.09

INDUSTRIAL TOTAL

Incentive Levels

33%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	17,204,908	39,597,018	64,601,538	90,447,405	116,075,903	140,949,768	164,865,165	187,810,960	209,711,261	230,812,380
Net Peak Demand Savings - kW	2,446	5,633	9,192	12,868	16,510	20,043	23,438	26,694	29,804	32,803
New Net Energy Savings - kWh	17,204,908	22,392,110	25,004,519	25,845,867	25,628,499	24,873,865	23,915,398	22,945,795	21,900,301	21,101,119
New Net Peak Demand Savings - kW	2,446	3,187	3,559	3,676	3,642	3,533	3,395	3,257	3,110	2,999
Program Costs - Real										
Administration	$1,675,000	$1,952,902	$2,128,619	$2,228,423	$2,275,205	$2,286,769	$2,275,991	$2,251,755	$2,210,934	$2,174,083
Marketing	$1,100,000	$1,100,000	$1,100,000	$1,100,000	$1,100,000	$1,100,000	$1,100,000	$1,100,000	$1,100,000	$1,100,000
Incentives	$1,334,647	$1,624,438	$1,808,449	$1,913,794	$1,964,098	$1,977,754	$1,968,089	$1,944,320	$1,900,220	$1,862,692
Total	$4,109,647	$4,677,340	$5,037,068	$5,242,218	$5,339,303	$5,364,523	$5,344,080	$5,296,075	$5,211,154	$5,136,775
PV Net Avoided Costs	$20,458,198	$25,512,227	$27,289,076	$27,016,505	$25,657,335	$23,849,821	$21,962,982	$20,184,650	$18,455,324	$17,035,646
PV Annual Marketing and Admin Costs	$2,775,000	$2,924,509	$2,962,763	$2,925,896	$2,842,239	$2,732,034	$2,608,806	$2,481,149	$2,347,855	$2,224,081
PV Net Measure Costs	$3,745,221	$4,616,589	$5,016,893	$5,102,109	$4,994,514	$4,779,773	$4,513,222	$4,228,653	$3,908,804	$3,632,140
TRC	3.14	3.38	3.42	3.37	3.27	3.17	3.08	3.01	2.95	2.91

50%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	28,282,559	63,629,858	103,189,158	144,215,173	184,981,564	224,552,312	262,525,730	298,823,406	333,132,969	365,976,610
Net Peak Demand Savings - kW	3,983	8,966	14,545	20,331	26,080	31,662	37,020	42,146	46,998	51,649
New Net Energy Savings - kWh	28,282,559	35,347,299	39,559,300	41,026,015	40,766,391	39,570,748	37,973,417	36,297,676	34,309,563	32,843,641
New Net Peak Demand Savings - kW	3,983	4,983	5,579	5,786	5,749	5,581	5,358	5,126	4,851	4,651
Program Costs - Real										
Administration	$1,675,000	$1,930,479	$2,106,695	$2,199,941	$2,235,277	$2,232,741	$2,207,049	$2,168,364	$2,107,545	$2,057,879
Marketing	$1,100,000	$1,237,500	$1,392,188	$1,392,188	$1,392,188	$1,392,188	$1,392,188	$1,392,188	$1,392,188	$1,392,188
Incentives	$3,016,711	$3,624,614	$4,045,087	$4,268,714	$4,354,906	$4,351,199	$4,292,522	$4,203,009	$4,051,222	$3,934,040
Total	$5,791,711	$6,792,593	$7,543,970	$7,860,843	$7,982,370	$7,976,128	$7,891,759	$7,763,560	$7,550,955	$7,384,107
PV Net Avoided Costs	$33,567,640	$40,196,587	$43,096,702	$42,813,583	$40,751,493	$37,891,871	$34,834,145	$31,899,701	$28,889,879	$26,499,091
PV Annual Marketing and Admin Costs	$2,775,000	$3,034,746	$3,210,773	$3,157,710	$3,054,664	$2,924,152	$2,781,320	$2,635,712	$2,481,736	$2,343,625
PV Net Measure Costs	$6,693,807	$7,886,842	$8,519,211	$8,625,676	$8,406,563	$8,006,774	$7,522,107	$7,011,398	$6,412,171	$5,923,383
TRC	3.55	3.68	3.67	3.63	3.56	3.47	3.38	3.31	3.25	3.21

75%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	75,449,813	168,156,028	270,330,732	373,399,964	472,371,257	564,945,219	650,543,626	729,525,696	801,158,074	867,510,088
Net Peak Demand Savings - kW	10,426	23,247	37,383	51,644	65,338	78,151	90,007	100,958	110,904	120,134
New Net Energy Savings - kWh	75,449,813	92,706,215	102,174,703	103,069,232	98,971,293	92,573,962	85,598,408	78,982,069	71,632,378	66,352,014
New Net Peak Demand Savings - kW	10,426	12,821	14,136	14,260	13,695	12,813	11,856	10,951	9,945	9,231
Program Costs - Real										
Administration	$1,675,000	$1,939,513	$2,106,241	$2,151,640	$2,119,207	$2,043,116	$1,946,901	$1,845,122	$1,712,401	$1,612,926
Marketing	$1,100,000	$1,375,000	$1,718,750	$1,718,750	$1,718,750	$1,718,750	$1,718,750	$1,718,750	$1,718,750	$1,718,750
Incentives	$11,829,572	$14,372,152	$16,036,323	$16,579,529	$16,385,614	$15,759,402	$14,914,996	$13,989,120	$12,804,294	$11,866,471
Total	$14,604,572	$17,686,666	$19,861,314	$20,449,919	$20,223,571	$19,521,268	$18,580,647	$17,552,992	$16,235,445	$15,198,147
PV Net Avoided Costs	$89,218,783	$105,031,378	$110,895,985	$107,159,576	$98,569,335	$88,322,290	$78,239,726	$69,168,761	$60,106,679	$53,353,719
PV Annual Marketing and Admin Costs	$2,775,000	$3,175,118	$3,510,028	$3,402,319	$3,231,919	$3,034,616	$2,832,641	$2,638,170	$2,433,103	$2,263,203
PV Net Measure Costs	$20,871,513	$24,352,619	$26,045,695	$25,768,998	$24,356,511	$22,401,119	$20,277,252	$18,196,119	$15,904,289	$14,103,158
TRC	3.77	3.82	3.75	3.67	3.57	3.47	3.39	3.32	3.28	3.26

INDUSTRIAL COMPRESSED AIR

Incentive Levels

33%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	6,100,318	13,790,162	22,309,277	31,089,251	39,737,835	48,005,927	55,751,671	62,912,046	69,472,061	75,446,966
Net Peak Demand Savings - kW	866	1,959	3,173	4,427	5,666	6,855	7,972	9,010	9,966	10,842
New Net Energy Savings - kWh	6,100,318	7,689,844	8,519,115	8,779,974	8,648,583	8,268,093	7,745,743	7,160,375	6,560,016	5,974,905
New Net Peak Demand Savings - kW	866	1,093	1,214	1,254	1,239	1,189	1,118	1,038	956	875
Program Costs - Real										
Administration	$500,000	$575,591	$618,259	$635,984	$635,920	$623,893	$604,347	$580,528	$554,677	$528,301
Marketing	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000
Incentives	$399,979	$480,605	$526,115	$545,021	$544,953	$532,125	$511,276	$485,871	$458,298	$430,165
Total	$1,199,979	$1,356,196	$1,444,374	$1,481,005	$1,480,873	$1,456,018	$1,415,623	$1,366,399	$1,312,975	$1,258,467
PV Net Avoided Costs	$7,254,821	$8,763,442	$9,303,943	$9,190,019	$8,676,737	$7,951,427	$7,141,234	$6,329,509	$5,560,501	$4,856,953
PV Annual Marketing and Admin Costs	$800,000	$838,767	$842,647	$822,789	$788,132	$745,285	$698,837	$651,814	$606,070	$562,664
PV Net Measure Costs	$1,037,209	$1,238,717	$1,309,657	$1,291,836	$1,218,898	$1,115,654	$999,189	$880,839	$767,069	$661,445
TRC	3.95	4.22	4.32	4.35	4.32	4.27	4.21	4.13	4.05	3.97

50%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	11,085,117	24,809,969	39,843,289	54,923,253	69,233,153	82,320,353	93,990,802	104,215,734	113,066,751	120,667,997
Net Peak Demand Savings - kW	1,574	3,527	5,671	7,827	9,880	11,765	13,455	14,945	16,244	17,368
New Net Energy Savings - kWh	11,085,117	13,724,852	15,033,320	15,079,964	14,309,900	13,087,200	11,670,449	10,224,932	8,851,017	7,601,246
New Net Peak Demand Savings - kW	1,574	1,953	2,144	2,156	2,053	1,885	1,690	1,490	1,299	1,124
Program Costs - Real										
Administration	$500,000	$576,474	$617,239	$623,810	$607,512	$577,563	$540,711	$501,506	$462,818	$426,302
Marketing	$300,000	$337,500	$379,688	$379,688	$379,688	$379,688	$379,688	$379,688	$379,688	$379,688
Incentives	$918,007	$1,105,216	$1,205,011	$1,221,096	$1,181,197	$1,107,883	$1,017,669	$921,693	$826,983	$737,592
Total	$1,718,007	$2,019,190	$2,201,938	$2,224,594	$2,168,396	$2,065,134	$1,938,068	$1,802,886	$1,669,488	$1,543,581
PV Net Avoided Costs	$13,184,528	$15,643,006	$16,420,703	$15,787,352	$14,360,593	$12,591,502	$10,766,906	$9,047,274	$7,512,696	$6,190,633
PV Annual Marketing and Admin Costs	$800,000	$875,536	$914,837	$882,138	$831,314	$772,193	$711,241	$652,307	$597,438	$547,507
PV Net Measure Costs	$1,944,234	$2,283,160	$2,393,052	$2,305,710	$2,104,680	$1,851,187	$1,585,089	$1,329,698	$1,097,339	$893,058
TRC	4.80	4.95	4.96	4.95	4.89	4.80	4.69	4.56	4.43	4.30

75%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	22,526,212	49,490,876	77,562,296	103,510,911	125,706,054	143,681,132	157,670,414	168,237,311	176,035,844	181,683,057
Net Peak Demand Savings - kW	3,202	7,043	11,051	14,768	17,963	20,567	22,611	24,174	25,345	26,212
New Net Energy Savings - kWh	22,526,212	26,964,664	28,071,420	25,948,616	22,195,142	17,975,079	13,989,282	10,566,897	7,798,533	5,647,213
New Net Peak Demand Savings - kW	3,202	3,840	4,008	3,717	3,195	2,604	2,044	1,562	1,172	867
Program Costs - Real										
Administration	$500,000	$568,725	$589,654	$562,311	$508,993	$446,400	$384,940	$329,922	$283,278	$245,030
Marketing	$300,000	$375,000	$468,750	$468,750	$468,750	$468,750	$468,750	$468,750	$468,750	$468,750
Incentives	$2,591,683	$3,066,650	$3,211,296	$3,022,324	$2,653,834	$2,221,248	$1,796,486	$1,416,246	$1,093,886	$829,544
Total	$3,391,683	$4,010,375	$4,269,700	$4,053,385	$3,631,577	$3,136,398	$2,650,176	$2,214,917	$1,845,914	$1,543,324
PV Net Avoided Costs	$26,797,452	$30,739,261	$30,669,517	$27,175,797	$22,287,949	$17,313,058	$12,929,579	$9,377,529	$6,650,842	$4,633,917
PV Annual Marketing and Admin Costs	$800,000	$904,035	$971,251	$906,368	$823,351	$738,232	$659,691	$591,220	$533,279	$484,870
PV Net Measure Costs	$4,295,892	$4,890,452	$4,900,652	$4,386,684	$3,643,574	$2,866,228	$2,160,472	$1,568,936	$1,097,306	$733,426
TRC	5.26	5.30	5.22	5.13	4.99	4.80	4.58	4.34	4.08	3.80

INDUSTRIAL MOTORS

Incentive Levels

33%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	1,412,703	3,119,580	5,075,340	7,244,127	9,597,674	12,113,821	14,775,330	17,568,932	20,328,041	23,174,439
Net Peak Demand Savings - kW	200	441	719	1,027	1,361	1,720	2,100	2,499	2,895	3,304
New Net Energy Savings - kWh	1,412,703	1,706,877	1,955,760	2,168,787	2,353,547	2,516,147	2,661,509	2,793,601	2,759,110	2,846,398
New Net Peak Demand Savings - kW	200	242	277	308	335	358	380	399	396	409
Program Costs - Real										
Administration	$175,000	$190,237	$202,857	$213,389	$222,255	$229,798	$236,290	$241,952	$237,934	$241,094
Marketing	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000
Incentives	$179,772	$200,642	$217,928	$232,353	$244,497	$254,828	$263,720	$271,475	$265,972	$270,301
Total	$654,772	$690,879	$720,785	$745,741	$766,752	$784,626	$800,010	$813,427	$803,906	$811,395
PV Net Avoided Costs	$1,678,847	$1,943,607	$2,133,918	$2,267,477	$2,357,867	$2,415,510	$2,448,402	$2,462,669	$2,331,602	$2,305,114
PV Annual Marketing and Admin Costs	$475,000	$469,619	$461,450	$451,301	$439,788	$427,376	$414,419	$401,182	$381,460	$367,565
PV Net Measure Costs	$473,177	$540,413	$585,949	$615,043	$631,731	$639,104	$639,529	$634,817	$590,155	$574,903
TRC	1.77	1.92	2.04	2.13	2.20	2.26	2.32	2.38	2.40	2.45

50%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	2,555,312	5,638,701	9,222,549	13,233,619	17,614,142	22,318,795	27,312,278	32,567,371	37,649,874	42,879,887
Net Peak Demand Savings - kW	361	798	1,306	1,876	2,499	3,170	3,882	4,634	5,363	6,116
New Net Energy Savings - kWh	2,555,312	3,083,389	3,583,848	4,011,070	4,380,523	4,704,653	4,993,483	5,255,093	5,082,502	5,230,013
New Net Peak Demand Savings - kW	361	437	508	570	623	670	713	751	730	752
Program Costs - Real										
Administration	$175,000	$193,804	$211,316	$225,800	$237,867	$248,008	$256,617	$264,012	$254,588	$257,574
Marketing	$300,000	$337,500	$379,688	$379,688	$379,688	$379,688	$379,688	$379,688	$379,688	$379,688
Incentives	$392,310	$448,517	$500,860	$544,152	$580,221	$610,533	$636,267	$658,370	$630,202	$639,126
Total	$867,310	$979,822	$1,091,864	$1,149,639	$1,197,775	$1,238,228	$1,272,572	$1,302,069	$1,264,477	$1,276,387
PV Net Avoided Costs	$3,036,861	$3,511,225	$3,910,538	$4,193,837	$4,388,827	$4,516,766	$4,593,956	$4,632,891	$4,295,474	$4,235,997
PV Annual Marketing and Admin Costs	$475,000	$508,960	$542,338	$532,262	$520,038	$506,348	$491,706	$476,501	$449,779	$432,891
PV Net Measure Costs	$859,390	$980,178	$1,078,378	$1,142,722	$1,181,480	$1,200,992	$1,206,111	$1,200,552	$1,090,615	$1,059,408
TRC	2.28	2.36	2.41	2.50	2.58	2.65	2.71	2.76	2.79	2.84

75%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	5,191,600	11,558,202	19,111,180	27,673,978	37,107,261	47,301,626	58,171,761	69,651,773	80,182,035	90,897,910
Net Peak Demand Savings - kW	734	1,636	2,708	3,924	5,267	6,720	8,272	9,914	11,427	12,970
New Net Energy Savings - kWh	5,191,600	6,366,602	7,552,978	8,562,798	9,433,283	10,194,364	10,870,135	11,480,012	10,530,263	10,715,875
New Net Peak Demand Savings - kW	734	902	1,071	1,217	1,342	1,453	1,552	1,642	1,513	1,543
Program Costs - Real										
Administration	$175,000	$199,523	$223,931	$244,014	$260,643	$274,517	$286,197	$296,134	$271,167	$271,696
Marketing	$300,000	$375,000	$468,750	$468,750	$468,750	$468,750	$468,750	$468,750	$468,750	$468,750
Incentives	$1,009,298	$1,197,876	$1,385,575	$1,540,010	$1,667,882	$1,774,570	$1,864,389	$1,940,806	$1,748,810	$1,752,876
Total	$1,484,298	$1,772,399	$2,078,256	$2,252,774	$2,397,275	$2,517,836	$2,619,336	$2,705,690	$2,488,727	$2,493,321
PV Net Avoided Costs	$6,170,150	$7,250,298	$8,241,850	$8,953,408	$9,451,670	$9,787,804	$10,001,047	$10,121,472	$8,901,102	$8,681,047
PV Annual Marketing and Admin Costs	$475,000	$550,361	$635,644	$626,565	$614,217	$599,577	$583,387	$566,208	$524,691	$502,984
PV Net Measure Costs	$1,757,839	$2,038,013	$2,289,616	$2,458,592	$2,565,028	$2,624,319	$2,648,255	$2,645,858	$2,266,120	$2,173,750
TRC	2.76	2.80	2.82	2.90	2.97	3.04	3.09	3.15	3.19	3.24

INDUSTRIAL OTHER

Incentive Levels

33%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	9,691,887	22,687,276	37,216,920	52,114,026	66,740,395	80,830,020	94,338,164	107,329,983	119,911,158	132,190,975
Net Peak Demand Savings - kW	1,380	3,232	5,300	7,414	9,483	11,468	13,366	15,185	16,943	18,657
New Net Energy Savings - kWh	9,691,887	12,995,389	14,529,644	14,897,106	14,626,369	14,089,625	13,508,145	12,991,819	12,581,175	12,279,817
New Net Peak Demand Savings - kW	1,380	1,852	2,068	2,114	2,069	1,986	1,897	1,819	1,758	1,714
Program Costs - Real										
Administration	$1,000,000	$1,187,074	$1,307,503	$1,379,051	$1,417,030	$1,433,078	$1,435,354	$1,429,276	$1,418,323	$1,404,688
Marketing	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000
Incentives	$754,896	$943,191	$1,064,406	$1,136,421	$1,174,648	$1,190,802	$1,193,092	$1,186,974	$1,175,950	$1,162,225
Total	$2,254,896	$2,630,265	$2,871,909	$3,015,472	$3,091,678	$3,123,880	$3,128,446	$3,116,250	$3,094,273	$3,066,913
PV Net Avoided Costs	$11,524,530	$14,805,178	$15,851,214	$15,559,009	$14,622,732	$13,482,883	$12,373,346	$11,392,472	$10,563,221	$9,873,579
PV Annual Marketing and Admin Costs	$1,500,000	$1,616,122	$1,658,667	$1,651,805	$1,614,319	$1,559,373	$1,495,550	$1,428,154	$1,360,324	$1,293,852
PV Net Measure Costs	$2,234,835	$2,837,459	$3,121,287	$3,195,230	$3,143,885	$3,025,015	$2,874,503	$2,712,996	$2,551,581	$2,395,792
TRC	3.09	3.32	3.32	3.21	3.07	2.94	2.83	2.75	2.70	2.68

50%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	14,642,130	33,181,188	54,123,320	76,058,301	98,134,269	119,913,164	141,222,650	162,040,301	182,416,345	202,428,726
Net Peak Demand Savings - kW	2,047	4,641	7,568	10,628	13,701	16,727	19,682	22,567	25,391	28,166
New Net Energy Savings - kWh	14,642,130	18,539,058	20,942,132	21,934,981	22,075,968	21,778,895	21,309,485	20,817,651	20,376,044	20,012,382
New Net Peak Demand Savings - kW	2,047	2,594	2,927	3,060	3,073	3,026	2,956	2,885	2,823	2,775
Program Costs - Real										
Administration	$1,000,000	$1,160,201	$1,278,140	$1,350,332	$1,389,899	$1,407,170	$1,409,721	$1,402,846	$1,390,140	$1,374,003
Marketing	$500,000	$562,500	$632,813	$632,813	$632,813	$632,813	$632,813	$632,813	$632,813	$632,813
Incentives	$1,706,394	$2,070,881	$2,339,215	$2,503,465	$2,593,488	$2,632,784	$2,638,586	$2,622,946	$2,594,036	$2,557,323
Total	$3,206,394	$3,793,581	$4,250,168	$4,486,609	$4,616,199	$4,672,766	$4,681,119	$4,658,605	$4,616,989	$4,564,138
PV Net Avoided Costs	$17,346,252	$21,042,357	$22,765,461	$22,832,394	$22,002,073	$20,783,602	$19,473,282	$18,219,536	$17,081,709	$16,072,461
PV Annual Marketing and Admin Costs	$1,500,000	$1,650,250	$1,753,598	$1,743,310	$1,703,312	$1,645,610	$1,578,373	$1,506,904	$1,434,519	$1,363,227
PV Net Measure Costs	$3,890,183	$4,623,504	$5,047,781	$5,177,245	$5,120,403	$4,954,596	$4,730,907	$4,481,149	$4,224,216	$3,970,917
TRC	3.22	3.35	3.35	3.30	3.22	3.15	3.09	3.04	3.02	3.01

75%

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Energy Savings - kWh	47,732,001	107,106,950	173,657,256	242,215,074	309,557,942	373,962,461	434,701,451	491,636,612	544,940,194	594,929,121
Net Peak Demand Savings - kW	6,489	14,568	23,625	32,952	42,109	50,865	59,124	66,871	74,132	80,952
New Net Energy Savings - kWh	47,732,001	59,374,949	66,550,306	68,557,818	67,342,867	64,404,519	60,738,990	56,935,161	53,303,582	49,988,927
New Net Peak Demand Savings - kW	6,489	8,079	9,057	9,327	9,157	8,756	8,259	7,747	7,261	6,821
Program Costs - Real										
Administration	$1,000,000	$1,171,266	$1,292,656	$1,345,315	$1,349,571	$1,322,199	$1,275,764	$1,219,066	$1,157,956	$1,096,201
Marketing	$500,000	$625,000	$781,250	$781,250	$781,250	$781,250	$781,250	$781,250	$781,250	$781,250
Incentives	$8,228,591	$10,107,625	$11,439,452	$12,017,195	$12,063,898	$11,763,584	$11,254,121	$10,632,069	$9,961,598	$9,284,051
Total	$9,728,591	$11,903,891	$13,513,358	$14,143,759	$14,194,719	$13,867,033	$13,311,135	$12,632,385	$11,900,804	$11,161,501
PV Net Avoided Costs	$56,251,180	$67,041,819	$71,984,618	$71,030,371	$66,829,716	$61,221,428	$55,309,101	$49,669,760	$44,554,736	$40,038,755
PV Annual Marketing and Admin Costs	$1,500,000	$1,720,722	$1,903,133	$1,869,385	$1,794,351	$1,696,807	$1,589,563	$1,480,742	$1,375,133	$1,275,350
PV Net Measure Costs	$14,817,782	$17,424,153	$18,855,427	$18,923,723	$18,147,908	$16,910,572	$15,468,525	$13,981,325	$12,540,862	$11,195,982
TRC	3.45	3.50	3.47	3.42	3.35	3.29	3.24	3.21	3.20	3.21