

# Designing Successful Energy Savings Targets

Although successful energy savings targets share common elements, state policymakers and regulators have flexibility in designing targets to take advantage of existing market conditions and institutional capacity related to energy efficiency. In 2009, ACEEE published sample language for an EERS policy. Below is updated language, adapted from Furrey and Black 2009.

## Sample EERS Language

A bill to establish an energy efficiency performance standard; to establish energy efficiency programs in this state for electric and natural gas utilities; to prescribe the powers and duties of the [[*state public utilities commission*]] relating to energy efficiency within the state; and to provide for enforcement.

### SECTION 1. DEFINITIONS

(A) As used in this Act

- (1) *Combined Heat and Power (CHP) System* means a system that
  - (a) uses the same energy source for the simultaneous or sequential generation of electrical power, mechanical power, or both, in combination with the generation of steam or other forms of useful thermal energy (including heating and cooling applications);
  - (b) produces at least 20 percent of its total useful energy in the form of thermal energy, and at least 15 percent of its total useful energy in the form of electrical or mechanical power (or a combination thereof);
  - (c) has a net effective heat rate of no more than 7,500 Btu/kWh, calculated on a higher heating value basis;
  - (d) is designed for continuous operation; and
  - (e) if generating electricity, provides such electricity primarily for use by a facility or group of facilities located near the point where the electricity is generated, and from which net wholesale sales of electricity are not in excess of 50 percent of total annual generation.
- (2) *CHP Savings* means the displaced electricity due to the electric and mechanical output of a new or upgraded combined heat and power system, adjusted to reflect any increase in fuel consumption by the that system compared to the fuel that would have been required to produce the useful thermal energy output in a separate thermal-only system, as determined in accordance with such regulations as the Commission may promulgate.
- (3) *Commission* means the [*state public utilities commission*]

- (4) *Cost Effective* means that the portfolio or program being evaluated meets the utility cost test (See subparagraph 10).<sup>1</sup>
- (5) *Energy Efficiency* means a decrease in customer consumption of electricity or natural gas achieved through measures or programs that target customer behavior, equipment, devices, or materials without reducing the quality of energy services.
- (6) *Energy Efficiency Plan* means an energy efficiency plan under Section 4.
- (7) *Natural Gas Utility* means any of the following:
- (a) an investor-owned business engaged in the sale and distribution of natural gas within this state whose rates are regulated by the Commission;
  - (b) a municipally owned natural gas utility in this state; and/or
  - (c) a cooperative natural gas utility in this state.
- (8) *Peak Demand Reduction Programs* means any of the following:
- (a) programs designed to reduce peak demand through load curtailment or direct load control;
  - (b) programs designed to shift load from on-peak to off-peak periods, including demand response programs; and/or
  - (c) energy efficiency programs specifically designed to achieve savings during peak time periods
- (9) *Retail Electric Distribution Utility* means any of the following:
- (a) any person or entity that is regulated by the Commission for purposes of selling electricity to retail customers in this state;
  - (b) a municipally-owned electric utility in this state; and/or
  - (c) a cooperative electric utility in this state.
- (10) *Utility Cost test (UCT)* means a standard that is met for an investment in energy efficiency programs or portfolios if, on a net present value basis, the total avoided supply-side costs, including representative values for electricity or natural gas supply, transmission, distribution, and other associated costs, are greater than the total costs total cost incurred by the program administrator, including program costs and incentive costs borne by the administrator.
- (11) *Verified Electricity or Natural Gas Savings* means electricity savings or natural gas savings that meet the requirements of Section 5.

## SECTION 2. ENERGY EFFICIENCY PERFORMANCE STANDARD

### (A) Performance Standard

- (1) For each of calendar years 20XX through 20XX, retail electric and natural gas distribution utilities shall implement energy efficiency programs that achieve electric and natural gas energy savings equivalent to the following applicable percentages.<sup>2</sup>

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<sup>1</sup> There are other options for measuring cost effectiveness. The Resource Value Framework best prioritizes a state's policy goals to determine whether efficiency programs are in the public interest. A Total Resource Cost Test that includes spillover and non-energy benefits, or a full societal test, are also acceptable alternatives.

<sup>2</sup> While EERS timeframes are adjustable, it is important that they set long-term targets. Utility commissions often work in three-year planning cycles; the strongest legislation sets targets at least ten years into the future. The

Program year	Electricity incremental savings target %	Electricity cumulative <sup>3</sup> savings target %	Natural gas incremental savings target %	Natural gas cumulative savings target %
PY1	0.25	0.25	0.25	0.25
PY2	0.5	0.75	0.25	0.5
PY3	0.75	1.5	0.5	1.0
PY4	1.0	2.5	0.5	1.5
PY5	1.0	3.5	0.75	2.25
PY6	1.25	4.75	0.75	3.0
PY7	1.25	6.0	1.0	4.0
PY8	1.5	7.5	1.0	5.0
PY9	1.5	9.0	1.0	6.0
PY10	1.5	10.5	1.0	7.0
PY11	1.75	12.25	1.0	8.0
PY12	1.75	14.0	1.0	9.0
PY13	2.0	16.0	1.0	10.0
PY14	2.0	18.0	1.0	11.0
PY15	2.0	20.00	1.0	12.0

- (2) If a utility's incremental energy savings in any year exceed the applicable performance standard established in this section, those extra savings may be carried forward and credited to the next year's standard, subject to the following provisions:
- The amount of those savings carried forward shall not exceed 1/3 of the next year's standard.
  - Any such savings carried forward shall not be used toward claiming any utility incentive under Sections 7 or 8.
  - However any such savings carried forward may be applied in the consideration of any penalties under Section 10.
- (3) Beginning in 20XX, a retail electric distribution utility shall implement additional or expanded peak demand reduction programs that achieve incremental peak demand savings, beyond any peak demand reduction programs existing at the time of this legislation, equivalent to at least seventy-five hundredths of one percent (0.75%) of the baseline for peak demand savings. In 20XX, the

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savings targets laid out here are equivalent to savings targets already cost effectively implemented in many states. A potential study may also help establish reasonable and cost-effective targets for the state.

<sup>3</sup> Cumulative savings are the savings in a given program year from all the measures that have been implemented under the programs in that year and in prior years that are still saving energy. Savings accrue over the lifetime of the measures installed.

Commission shall make recommendations to the general assembly regarding future peak demand reduction targets.

- (B) A utility may promote new combined heat and power (CHP) installations as part of their programs to achieve the savings targets outlined in this section,<sup>4</sup> provided that all of the following apply:
- (1) New CHP installations put into operation after the effective date of this legislation can qualify.
  - (2) Savings from upgrades to existing CHP systems can qualify, counting only those savings above what was achieved with the prior system and that save energy relative to the supply-side alternative.
  - (3) Total claimed savings from such CHP installations can account for no more than twenty percent of the utility's annual savings requirements.
- (C) For the purposes of subsections A1, 2, 3, and 4 of this section,
- (1) The baseline for energy savings under subsections A1 and 3 of this section shall be the total kilowatt-hours the retail electric distribution utility delivered in the preceding calendar year to customers in this state.<sup>5</sup>
  - (2) The baseline for energy savings under subsections A2 and 3 of this section shall be the total cubic feet of natural gas delivered by the natural gas utility in the preceding calendar year to customers in this state.
  - (3) The baseline for peak demand reduction under subsection A4 of this section shall be the annual peak demand of the retail electric distribution utility in the preceding calendar year.

### SECTION 3. COMMISSION RULEMAKING

- (A) Within 90 days after the effective date of this act, the Commission shall promulgate rules specifying the procedure for a retail electric distribution utility or a natural gas utility to develop and submit an energy efficiency plan as described in Section 4 to meet the energy efficiency performance standard set forth in Section 2.<sup>6</sup>

### SECTION 4. ENERGY EFFICIENCY PLAN

- (A) An energy efficiency plan shall do all of the following:
- (1) Propose a set of energy efficiency programs, including peak demand reduction programs, that include offerings for each customer class, including low-income residential. The Commission shall allow providers flexibility to tailor the relative amount of effort devoted to each customer class based on the specific characteristics of their service territory.
  - (2) Specify necessary funding levels for proposed energy efficiency programs
  - (3) Describe how energy efficiency costs will be recovered, as provided in Section 7
  - (4) Seek, to the extent feasible and reasonable, that charges collected from a particular customer rate class are spent on energy efficiency programs for that rate class

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<sup>4</sup> While CHP is an effective efficiency resource, states that include CHP as an eligible measure for achieving savings associated with an EERS should consider increasing targets to account for this potential.

<sup>5</sup> States with variable weather may wish to refer to a weather-normalized multiyear average baseline.

<sup>6</sup> As EERS policies are typically administered at the public utility commission level, legislation that does not include a stipulation directing a rulemaking within a given timeframe risks major regulatory lag.

- (5) Demonstrate that the proposed energy efficiency programs and funding are sufficient to ensure the achievement of applicable energy efficiency performance standards under Section 2
  - (6) Demonstrate that the utility's energy efficiency portfolio will be cost-effective, using the Utility Cost Test provided in Section 1
  - (7) Provide for the practical and effective administration of the proposed energy efficiency programs. The Commission shall allow utilities flexibility in designing their energy efficiency programs and administrative approach. A utility's energy efficiency programs or any part thereof, may be administered, at the utility's option, by the utility, alone or jointly with other utilities, by a state agency, or by an appropriate, experienced organization selected after a competitive bid process.
  - (8) Include a process for measurement and verification of incremental energy savings from each energy efficiency program pursuant to Section 5. All such evaluations shall be subject to public review and Commission oversight.
  - (9) Allow for the coordination of energy efficiency programs with the energy efficiency programs of other utilities under the direction of the Commission pursuant to subsection E.
- (B) An energy efficiency plan may provide for the utility to facilitate third-party loans to customers to finance energy efficiency measures.
- (C) Within 90 days after Commission rules have been promulgated and triennially thereafter, a retail electric distribution or natural gas utility shall file an energy efficiency plan with the Commission.
- (D) Within 90 days of receiving an energy efficiency plan from a utility and after an opportunity for public comment, the Commission shall approve, approve with changes consented to by the utility, or reject the plan.
- (1) If the Commission rejects the plan, the Commission shall state the reasons for its action.
  - (2) Within 30 days after the Commission rejects a plan, the utility shall submit a revised plan that addresses the reasons for rejection cited by the Commission.
  - (3) Within 30 days after receiving a revised plan and after an opportunity for public comment, the Commission shall approve, approve with changes consented to by the utility, or reject the revised plan. If the Commission rejects the revised plan, the Commission shall state the reasons for the rejection.
  - (4) Any delay caused by the failure of a utility to file an acceptable revised plan under subparagraph 2 shall not be used as a reason to avoid penalties under Section 10.
  - (5) The procedure for rejected plans shall be repeated until a revised plan is approved or approved with changes consented to by the utility. The Commission's action under this subsection does not affect the applicability of the requirements of Section 2 or Section 10.
- (E) The Commission may coordinate energy efficiency programs among consenting utilities where feasible, if doing so would help to maximize energy savings on a statewide basis. However, money spent by a utility to comply with this act shall generally be used to fund energy efficiency programs that provide services in that utility's service territory.

**SECTION 5. MEASUREMENT AND VERIFICATION**

- (A) Within 180 days after the effective date of this act, the Commission shall promulgate rules regarding measurement and verification of electricity and natural gas savings under this section, including:
- (1) Procedures and standards for defining and measuring eligible electricity savings and natural gas savings which shall
    - (a) specify the types of eligible energy efficiency and energy conservation measures;
    - (b) require that energy consumption estimates for customer facilities or portions of facilities in the applicable base and post-participation time periods used for estimating savings be adjusted, as appropriate, to account for changes in weather, level of production, and building area;
    - (c) account for the useful life of electricity and natural gas saving measures;
    - (d) allow for the use of deemed savings values, where justified, for specific, commonly-used efficiency measures;
    - (e) allow for savings from a program to be estimated based on a statistical sample of participating customers and extrapolated to all participating customers; and
    - (f) exclude savings that
      - (i) are not properly attributable to measures carried out by the entity seeking the credit for such savings (or a designated agent of the entity); or
      - (ii) have already been credited under this section to another entity or to the same entity.
  - (2) Procedures and standards for third-party verification of reported electricity savings or natural gas savings.

**SECTION 6. REPORTING**

- (A) By a time determined by the Commission, each utility shall submit to the Commission an annual report that provides information relating to the actions taken by the utility to comply with the energy efficiency performance standards under Section 2.7. By that same time, a municipally-owned utility shall submit a copy of the report to the governing body of the municipally-owned utility, and a cooperative utility shall submit a copy of the report to its board of directors.
- (B) An annual report under subsection A shall include all of the following information, both at the aggregate portfolio level and customer class level:
- (1) The estimated annual electricity or natural gas savings achieved by the utility through energy efficiency programs provided during the reporting period
  - (2) An estimate of the annual and life-cycle carbon dioxide emissions avoided by the energy efficiency programs operated during this reporting period
  - (3) The estimated incremental and total peak reduction achieved through peak demand reduction programs during this reporting period

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<sup>7</sup> Commissions should consider referencing specific reporting guidelines to ensure complete and consistent reporting by utilities. See, for example, the Northeast Energy Efficiency Partnerships [Common Statewide Energy Efficiency Reporting Guidelines](#).

- (4) Expenditures made on energy efficiency and peak demand reduction programs during the reporting period and anticipated future expenditures to comply with this subsection
  - (5) The cost effectiveness of implemented programs
  - (6) Any other information that the Commission determines necessary
- (C) Concurrent with the submission of each report under subsection A, a municipally-owned utility shall submit a summary of the report to its customers in their bills with a bill insert and to its governing body.
- (D) Concurrent with the submission of each report under subsection A, a cooperative utility shall submit a summary of the report to its members in a periodical issued by an association of rural electric cooperatives and to its board of directors.
- (E) A municipally-owned utility or cooperative utility shall make a copy of the report available at its office and shall post a copy of the report on its website. A summary under this section shall indicate that a copy of the report is available at the office or website.
- (F) The Commission shall monitor reports submitted under subsection A and ensure that actions taken under this act by utilities serving customers in the same distribution territory do not create an unfair competitive advantage for any of those utilities.
- (G) In accordance with rules it shall adopt, the Commission shall produce and make publicly available an annual report containing the results of its verification of the annual levels of energy efficiency and of peak demand reductions achieved by each utility pursuant to subsection A of this section. A copy of the report shall be provided to the consumers' counsel and be made available on the Commission's website.
- (H) Three years after the effective date of this legislation, and every three years thereafter, the Commission shall produce a report that includes all of the following information:
- (1) A summary of data collected under this section, including the required annual reports
  - (2) The status of energy efficiency in this state
  - (3) For the total portfolio of energy efficiency programs, a comparison of the cost of the energy efficiency and the cost of electricity from a new conventional coal-fired electric generating facility and a new combined-cycle natural gas generating facility
  - (4) A discussion regarding how the Commission is fulfilling the requirements of subsection F.
  - (5) An evaluation of whether this Act has been cost effective
  - (6) A description of the impact of this Act on employment in this state. The Commission shall consult with other appropriate agencies of the department of labor and economic growth in the development of this information.
  - (7) Any recommendations the Commission may have concerning amendments to this subpart, including changes in the performance standard percentage limits under Section 2

**SECTION 7. COST RECOVERY**

- (A) The Commission shall allow a utility that undertakes approved energy efficiency programs to recover the actual costs of implementing the programs. Costs exceeding the overall funding levels specified in the energy efficiency plan may be recovered as long as those costs are prudent and reasonable.
- (1) Costs shall be recovered from all classes of customers by volumetric charges applied to utility bills.
  - (2) Upon petition by a utility and after an opportunity for public comment and hearing, the Commission may authorize the utility to capitalize certain costs of implementing approved energy efficiency programs.
  - (3) To the extent feasible, charges collected from a particular customer rate class shall be devoted to energy efficiency programs and services for that rate class. However, the established funding level for low-income residential programs shall be provided from each customer rate class in proportion to that customer rate class's funding of the utility's total energy efficiency programs.
  - (4) Charges shall be applied to distribution customers regardless of the source of their electricity or natural gas supply.

**SECTION 8. FINANCIAL INCENTIVES**

- (A) Within 90 days after approval of initial plans, the Commission shall promulgate rules regarding the ability of a utility to earn a financial incentive, on an annual basis, for exceeding the energy efficiency performance standard under Section 2.

**SECTION 9. BUYOUT OPTION**

- (A) In lieu of achieving actual savings to comply with the applicable performance standard under Section 2, a retail electric distribution or natural gas utility may pay each year to the [*energy efficiency fund*] created [*in Section 11*] by not later than a time determined by the Commission a buyout fee in an amount equal to, as adjusted for inflation in accordance with such regulations as the Commission may promulgate:
- (1) \$0.20 per kWh<sup>8</sup> otherwise required to be procured that year through energy efficiency measures by the retail electric distribution utility; or
  - (2) \$0.80 per therm otherwise required to be procured that year through energy efficiency measures by the natural gas utility.
- (B) Utility costs under this section shall be recoverable under the method identified in Section 7A1.
- (C) If a utility chooses to exercise its option under paragraph A it shall be ineligible for any financial incentives such as those created under Sections 7 or 8.

**SECTION 10. PENALTIES**

- (A) If the Commission determines, after notice and opportunity for hearing, that a retail electric distribution or natural gas utility has failed to comply with an energy efficiency or peak demand reduction requirement of Section 2, the Commission shall assess against the utility a civil penalty for each such failure in an amount equal to:

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<sup>8</sup> The \$0.20 per kWh figure reflects a first year cost of saved energy and equates to roughly \$0.02 per lifetime kWh saved.



- (1) \$0.10 per kWh of undercompliance or noncompliance by the retail electric distribution utility; or
  - (2) \$1.00 per therm undercompliance or noncompliance by the natural gas utility; or
  - (3) \$100 per kW of undercompliance with the peak reduction requirement.
- (B) The costs of any civil penalty assessed under this subsection shall in no circumstance be recoverable by the utility from utility customers through rates, surcharges, or under any other cost recovery mechanism, including those created pursuant to Section 7.
- (C) Revenue from any civil penalty assessed under this subsection shall be deposited to the credit of the [energy efficiency fund] created [in Section 11] for the sole purpose of reinvestment in energy efficiency programs.

#### SECTION 11. ENERGY EFFICIENCY FUND

- (A) There is hereby established in the state treasury the [state] Energy Efficiency Fund, into which shall be deposited all energy efficiency revenues remitted under division B of this section. Revenues deposited into this fund shall be for the exclusive purposes of funding state energy efficiency programs created under [relevant state code/act] and paying the programs' administrative costs. Money unspent in a year shall be carried forward to be spent in the subsequent year. Interest on the fund shall be credited to the fund.
- (B) Energy efficiency revenues shall include all of the following:
- (1) Revenues from payments, repayments, and collections under the state energy efficiency program and from program income;
  - (2) Revenues from buyout payments under Section 9;
  - (3) Revenue from civil penalties assessed under Section 10; and
  - (4) Interest earnings on the energy efficiency fund.
- (C) Funds committed to the Energy Efficiency Fund shall not be reassigned to the state treasury, and shall be used exclusively for funding state energy efficiency programs.
- (D) The Commission shall select a qualified organization or agency to serve as administrator of the Energy Efficiency Fund.
- (E) The Commission shall arrange for a biennial independent audit of the Energy Efficiency Fund and the administration thereof.

## References

Furrey, L. and Black, S. 2009. Energy Efficiency Resource Standards: A State Model. Washington, DC: ACEEE.