RAP Energy solutions for a changing world

Effective Energy Efficiency Obligations

Workshop on Policies for
Energy Provider Delivery of Energy Efficiency
Sydney 12 December 2011

David Crossley and Sam Swanson

The Regulatory Assistance Project

Global
China
European Union
United States

www.raponline.org

Presentation Topics

- Overview of energy efficiency obligations
- Designing energy efficiency obligations
- Additional regulatory mechanisms and actions to achieve long-term energy efficiency goals

Overview of Energy Efficiency Obligations

What is an EEO?

- An energy efficiency obligation (EEO) is a *regulatory mechanism* that requires obligated parties to meet *quantitative energy savings targets* through implementing *cost-effective end-use energy efficiency* (EE)
- Typically, an EEO sets annual energy savings targets for a long-term period, requiring obligated parties to achieve specified percentage reductions in energy use
- EEOs are often placed on providers of grid-bound energy (eg electricity and gas), but can also be placed on providers of other energy forms (eg petrol, diesel, heating oil) and even on end-users
- Various terms are used to describe this regulatory mechanism, including “energy efficiency obligation”(EEO), “energy efficiency resource standard” (EERS), “energy efficiency portfolio standard” (EEPS), and “energy efficiency commitment” (EEC)

EEOs Effectively Mobilise EE Deployment

- Use the force of law to require obligated parties to achieve energy savings through investments in end-use energy efficiency
- Communicate clearly sought for outcomes
- Can tap a wide range of energy efficiency program design models
- Can be enforced by regulation and the threat of financial penalties

Key Features of Effective EEOs (1)

- In implementing an EEO, a government or regulator determines:
  - the *sectoral coverage* of the EEO, ie both the types of energy covered and the end-use sectors in which energy savings measures may be implemented to achieve the EEO target
  - the level of the *energy savings target* to be achieved
  - who the *obligated parties* will be
  - how the overall energy savings target will be *allocated* to individual obligated parties
  - the type and level of any *penalties* applicable for non-compliance with the obligation

Key Features of Effective EEOs (2)

- the *eligible energy efficiency measures* that may be implemented to achieve energy savings that contribute to the EEO target
- which parties may be accredited to carry out *eligible energy efficiency projects* and how this accreditation is carried out
- how energy savings are to be *measured, reported and verified*, including any *deemed energy saving values* for specified energy efficiency measures; and
- where required, how activities undertaken by obligated parties to meet their obligations will be *funded*

Designing
Energy Efficiency Obligations

Overview of EEO Design Issues

- Establishing the obligation
- Defining the obligation
- Assigning responsibility for meeting the obligation
- Setting any penalties applicable for non-compliance
- Deciding who may be accredited to carry out energy efficiency projects to meet the obligation
- Defining what energy efficiency measures will be eligible for meeting the obligation
- Deciding how energy savings will be measured, reported and verified
- Providing sustained funding
- Administering the obligation

Establishing the Obligation (1)

- First, define the policy objective(s) to be achieved by the obligation:
  - acquire cost-effective EE as an energy resource
  - reduce energy bills for all customers
  - assist low income households
  - improve environmental outcomes
  - enhance energy security and reliability
  - some or all of the above
- Second, clearly state the chosen objective(s) because these will strongly influence how the EEO scheme is developed and implemented

Establishing the Obligation (2)

- Option A: Establish the obligation by legislation
  - strong because it communicates the political force of legislative action
  - removes any uncertainty about regulatory authority
  - states clearly that EE is a high value energy resource
- Option B: Establish the obligation by regulation
  - taps existing regulatory authority - may be accomplished quickly
  - will require clear directions to the regulator about the policy objective(s) to be achieved
  - offers opportunity for the regulator to enlist energy provider support with collaborative implementation processes
  - may be modified more easily than legislation in response to experience and changing conditions

Defining the Obligation (1)

- Sectoral coverage
  - determines both types of energy and end-use sectors covered
  - depends on the overall policy objective
  - coverage decision should be based on an assessment of energy efficiency potential in each end-use sector
  - better to start with narrow coverage to gain experience – can be expanded later
- Defining the energy saving target
  - first year or lifetime energy savings?
  - denomination units - MWh or MJ energy savings, or tons of oil equivalent (toe), or tCO2-e?
  - may also address additional objectives, such as reducing GHG emissions or assisting low income households

Defining the Obligation (2)

- Setting the level of the target
  - the target defines the path to achieving long term energy saving goals
  - the aim is to strike a balance between making progress and judging what is possible
  - setting the target level is essentially a political decision that should be based on an assessment of energy efficiency potential

Assigning Responsibility

- Define which entities will be required to meet an obligation:
  - vertically integrated energy utilities
  - in unbundled electricity and gas markets: retailers and/or transmission and distribution system operators
  - road transport and heating fuel suppliers
  - end-users – as in the Indian PAT scheme
- Allocating individual targets to obligated parties
  - typically done on the basis of market share
  - in the electricity industry, may want to exclude any direct sales by generators to large customers from the calculation of market share

Setting Penalties

- Penalties serve three purposes:
  - offer energy providers a financial incentive to meet their obligations
  - present an opportunity to use any revenue from penalty payments to fund EE projects administered by others
  - set a ceiling price in tradable white certificate schemes
- Setting the value of the penalty:
  - a penalty should be set high enough to mobilise energy providers to meet their obligations
  - a high penalty may also give energy providers a real choice between meeting their obligations or funding others to achieve energy savings
- In practice, almost all energy providers have met their EEOs

Deciding Who May Carry Out Eligible EE Projects

- To meet their obligations, obligated parties may:
  - directly implement EE projects, or
  - engage others (eg ESCOs) to implement EE projects, or
  - purchase energy savings credits to acquire energy savings achieved by others, or
  - contribute to a fund that supports the implementation of EE projects across specified types of energy, end-use sectors and groups of customers
- Decide whether non-obligated parties may implement EE projects to produce eligible energy savings
- Establish accreditation processes for all parties who carry out eligible EE projects (both obligated and non-obligated parties)

Defining Eligible EE Measures

- Decide which EE measures will be eligible to achieve energy savings that contribute to the obligation
  - establish a list of pre-approved eligible measures
  - determine deemed energy saving values for selected pre-approved measures
  - decide whether additional, not pre-approved measures will be accepted
- If required, establish procedures for approving additional measures
- Consider imposing limits on certain EE measures, eg the number of CFLs per household

Establishing MR&V Standards for Energy Savings (1)

- Decide whether annual or lifetime energy savings will be used:
  - low cost, short life measures may contribute limited progress toward long-term energy saving goals
  - focussing on low cost measures may lead to “cream skimming”
  - high cost, long life measures may deliver more cost-effective savings in the long run
- Measuring and reporting savings:
  - use ex ante deemed savings values to reduce transaction costs
  - use engineering estimates adjusted for site conditions (e.g., estimated hours of use)
  - consider using white certificates as an energy savings accounting and reporting tool

Establishing MR&V Standards for Energy Savings (2)

- Verifying claimed energy savings:
  - when will post-installation measurement of savings be required?
  - auditing requirements – random audits are most cost-effective
- Use continuing measurement and verification of actual energy savings to:
  - track progress toward long term goals
  - monitor cost effectiveness
  - inform the calculation and revision of deemed energy savings values
  - identify problems requiring program changes or additional regulatory action

Providing Sustained Funding

- Need a plan to provide sustained program funding for several years to meet long term energy saving goals
- For regulated energy providers, regulators may need to establish regulatory mechanisms to recover the cost of meeting the obligation and to provide compensation for reduced sales
- For energy providers in liberalized competitive markets, there are two possible cost recovery paths:
  - Option 1: energy providers pay the cost of meeting the obligation and adjust prices to recover this cost
  - Option 2: the cost of meeting the obligation is funded by the government either through direct budgetary appropriations or by imposing price surcharges on regulated “wires and pipes” businesses

Administering the Obligation

- Key functions for administering an EEO include:
  - accrediting parties who implement eligible EE projects
  - approving additional eligible EE measures
  - conducting measurement and verification of actual energy savings, including auditing results of EE projects
  - enforcing compliance with the obligation, including reviewing compliance and administering any penalties
- Responsibility for these key obligation functions must be assigned to an appropriate organisation or organisations
- In many existing EEO schemes, most of these function have typically been assigned to the relevant industry regulator

Additional Regulatory Mechanisms and Actions to Achieve Long Term Energy Efficiency Goals

Additional Regulatory Mechanisms and Actions

- Additional regulatory mechanisms and actions required to support EEOs may:
  - establish processes to identify the most attractive EE investment strategies and specific investment opportunities
  - enable load reductions to be bid into electricity markets
  - require public disclosure of opportunities for load reductions to meet shortfalls in generation and network capacity
  - align energy price signals with energy saving goals
  - establish white certificate accounting of savings
  - reduce the financial disincentives to implementing EE faced by energy providers whose revenue depends on the volume of energy sales
  - provide incentives to energy providers who exceed EEO targets

About RAP

The Regulatory Assistance Project (RAP) is a global, non-profit team of experts that focuses on the long-term economic and environmental sustainability of the power and natural gas sectors. RAP has deep expertise in regulatory and market policies that:

- promote economic efficiency;
- protect the environment;
- ensure system reliability;
- allocate system benefits fairly among all consumers.

Learn more about RAP at www.raponline.org

Global
US
China
EU

The Regulatory Assistance Project

Home Office (US)
50 State Street, Suite 3
Montpelier, Vermont 05602

phone: 802-223-8199
fax: 802-223-8172

www.raponline.org