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Effective Energy Efficiency Obligations

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Overview of Energy Efficiency Obligations

What is an EEO (1)?

- 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)
- All EEOs share three key features:
  - a target for energy efficiency improvement;
  - obligated parties that must meet the target;
  - a measurement and verification system defining the energy savings activities that can be used to meet the target, their value, and how it is confirmed that these activities took place

What is an EEO (2)?

- 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)

Designing
Energy Efficiency Obligations

EEO Design Stages (1)

- Define and clearly state the policy objectives
- Establish the legal authority for the obligation
- Decide which fuels will be covered
- Determine the sectoral coverage
- Define and set the energy savings target
- Identify obligated parties
- Set the level of penalties for non-compliance

EEO Design Stages (2)

- Decide who may be accredited to carry out energy efficiency projects to meet the obligation
- Define the energy efficiency measures that will be eligible for meeting the obligation
- Decide how energy savings will be measured, reported and verified
- Decide whether trading of energy saving will be included
- Provide sustained funding (if required)

Policy Objectives

- 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

Legal Authority

- 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
  - uses 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

Fuel Coverage

- Depends on the overall policy objective
- Choice of fuels should be made on the basis of estimates of EE potentials for different fuels
- Better to start with narrow coverage to gain experience – can be expanded later

Sectoral Coverage

- Depends on the overall policy objective
- Sectoral coverage decision should be based on an assessment of EE potential in each end-use sector
- Better to start with narrow coverage to gain experience – can be expanded later

Energy Savings Target

- Define the energy savings 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
- Set 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 EE potential

Obligated Parties

- Define which entities will be required to meet the 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

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

Accreditation

- 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)

Eligible Energy Efficiency 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
- Consider providing performance incentives for certain measures or groups of measures, eg whole house retrofits

MR&V of 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

MR&V of 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

Trading of Energy Savings

- EEOs can be implemented without trading of energy savings
- Trading may achieve lower cost energy savings but comes with additional overheads
- Questions if trading is included:
  - who will be allowed to trade (only obligated parties, or obligated parties and third party EE project implementors)?
  - will trading be undertaken through tradable white certificates or by another method?
  - how will trading be carried out and who will be the market maker and/or market operator?

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

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

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