20 Years of Energy Provider Delivered Energy Efficiency in Europe

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Contents

- Summary of key principles for EU Energy Efficiency Obligations (EEOs) on Energy Providers (White Certificate Schemes)
- Brief history & snapshot of EU EEOs
- Scale of activity
- EU Energy Efficiency Directive and EEOs/WCs
How do EU EE Obligations Work?

- Energy retailer/distributor has obligation to save energy in customers’ premises/homes; target related to “volume” of energy supplied/distributed + financial penalties if fail to meet energy savings target.
- Projects with large energy users can “afford” to have energy saving measures monitored for actual savings achieved.
- For small energy users – need simple approach to keep M&V costs down – use “approved” measures with independently established energy saving values (known as deemed or ex ante savings).
- Monitoring and verification is a “measure count” + random audit of submitted claims for energy savings; N.B. M&V system must be in place prior to the start.
How are they delivered?

- Mainly by bilateral contracts between obligated energy provider and an energy efficiency market actor e.g. insulation company, retailer of appliances, manufacturers, heating installers
- In Italian & French White Certificate schemes, accredited parties (not just the obliged energy providers) can earn WCs and these can be subsequently traded
- Only in Italy has there been significant generation and trading of WCs generated by non obligated parties
- All signal to EE industry a long term commitment
Brief History of EU EEOs

- Started in GB in 1994 on electricity companies with responsibilities for distribution and retail
- Started in natural gas in GB in 2000
- Danish extended to district heating in 2000
- From 2002, increasingly operating in a liberalised market with retail and distribution functions separated
- Around 2006 extended to oil & LPG used for heating
- Evaluations of 4 countries in 2010 showed cost of saving energy <25% of residential retail price (ex taxes)
- France in 2011 pioneering EEOs on the importers of road transport fuel
## EEOs in the EU (2011)

<table>
<thead>
<tr>
<th>Country</th>
<th>Obligated Energy Provider</th>
<th>Eligible Customers</th>
<th>Administrator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium - Flanders</td>
<td>electricity distributors</td>
<td>residential and non energy intensive industry and service</td>
<td>Flemish Government</td>
</tr>
<tr>
<td>France</td>
<td>retailers of non-transport energy + importers of road transport fuel</td>
<td>All (including transport) except EU ETS</td>
<td>Government</td>
</tr>
<tr>
<td>Italy</td>
<td>electricity &amp; gas distributors</td>
<td>All including transport</td>
<td>Regulator (AEEG)</td>
</tr>
<tr>
<td>GB</td>
<td>electricity &amp; gas retailers</td>
<td>Residential only</td>
<td>Regulator (Ofgem)</td>
</tr>
<tr>
<td>Denmark</td>
<td>electricity, gas, fuel oil &amp; heat distributors</td>
<td>All except transport</td>
<td>Danish Energy Authority</td>
</tr>
</tbody>
</table>
## EEOs in the EU (2011)

<table>
<thead>
<tr>
<th>Country</th>
<th>Nature of saving target</th>
<th>Current size of target</th>
<th>Estimated annual spend by energy providers €M {€/person}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium – Flanders</td>
<td>1st year primary energy</td>
<td>0.6 TWh annual</td>
<td>60 {14}</td>
</tr>
<tr>
<td>France</td>
<td>lifetime delivered energy</td>
<td>345 cumac TWh over 3 years to end 2013</td>
<td>340 {5}</td>
</tr>
<tr>
<td>Italy</td>
<td>cumulative 5 year primary energy*</td>
<td>5.3 Mtoe in 2011</td>
<td>530 {9}</td>
</tr>
<tr>
<td>GB</td>
<td>lifetime CO2</td>
<td>293 MtCO2 in 4.75 years to end 2012</td>
<td>1440 {24}</td>
</tr>
<tr>
<td>Denmark</td>
<td>1st year delivered energy*</td>
<td>6.1 PJ annual</td>
<td>100 {18}</td>
</tr>
</tbody>
</table>

* With weighting factors for longer lived measures

1€ = 4.1 Zlotys
### Most EEO Activity in Residential Sector

<table>
<thead>
<tr>
<th>Country</th>
<th>Period</th>
<th>% energy savings from residential sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium - Flanders</td>
<td>2010</td>
<td>58% (mandated)</td>
</tr>
<tr>
<td>Denmark</td>
<td>2008</td>
<td>42%</td>
</tr>
<tr>
<td>France</td>
<td>2006-9</td>
<td>87%</td>
</tr>
<tr>
<td>Italy</td>
<td>2010</td>
<td>76%</td>
</tr>
<tr>
<td>GB</td>
<td>2008-12</td>
<td>100% (mandated)</td>
</tr>
</tbody>
</table>
EU EEOs– where savings come from?

Residential Energy Savings by End-use

- **Ita 2005-7**
- **Fra 2006-9**
- **Dk 2008**
- **GB 2008-11**

Legend:
- Insulation
- Lighting
- Heating
- Appliances
- Other
Observations on EEOs in the EU

- Different targets, different end use sectors covered, different obliged actors - reflect local status of energy market, EE history of the energy providers, climate, energy saving opportunities, culture etc.

- Goals set fairly low, and been achieved at costs below policy makers’ expectations; energy providers now spending >$2.5 billion/year; in over 50 operational years experience of EU EEOs, no energy provider failed to meet it’s overall energy saving target

- Function in both liberalised energy markets and also where they target monopolistic segments; all need continuous updating & quality standards
EU Energy Efficiency Directive (EED)

- Article 7 states “Each Member State shall set up an energy efficiency obligation scheme.... achieving new savings each year from 1 January 2014 to 31 December 2020 of 1.5 % of the annual energy sales to final customers”

- Article 7 paragraph 9 states” As an alternative .... MSs may opt to take other policy measures to achieve energy savings among final customers, provided those policy measures meet the criteria ” i.e. equivalent methods of determining energy savings as with EEOs

- Article 7 paragraph 7(c) “allow obligated parties to count savings obtained in a given year as if they had instead been obtained in … three following years” i.e. count 2021, 2022 and 2023 energy savings but only savings from EEOs
Conclusions on EU EEOs

- Adapting to local conditions is key for EEOs
- MSs with EEOs have evaluated their programmes and expanded them in recent times;
- New EU EED encourages establishment of EEO schemes and may “reward” them (?)
- EEOs avoid Governments having to use public expenditure to stimulate EE – relevant to the current financial problems facing many Governments