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European Commission and eceee joint seminar on Energy Efficiency Obligations - Summary

Brussels, 30 September 2011

Introduction

To support the discussions on the draft Energy Efficiency Directive (EED), the Commission and eceee organised a joint seminar/workshop on 30th September 2011, held in the Commission's Charlemagne Building in Brussels within the context of the Bucharest Forum.

The aim of this technical seminar was in particular to provide participants with an overview of key design features, functioning and results of existing (and planned) energy efficiency obligation schemes in Europe and globally. It was expected that the seminar would contribute to the discussions of the proposal for a new Energy Efficiency Directive by establishing a common understanding of this policy instrument.

More than 100 delegates, including EU Member State representatives, Members of the European Parliament, and other stakeholders such as trade associations, consumer organisations and NGOs, attended to hear presentations from experts with Energy Efficiency Obligations (EEO) either in operation or planned in six EU Member States – Belgium (Flanders region), Denmark, France, Italy, Poland and the UK, together with experience of similar initiatives from the US.

Morning Session – National Experiences of EEO Schemes

Opening proceedings, **Philip Lowe, Director General, DG Energy**, welcomed everyone, arguing that EEOs are increasingly relevant to putting EU and MS policy on the right path. He told delegates that the day before he had been involved in a large meeting on completing the internal market in energy by 2014, where the issue of demand management, including the market for energy services, was a big part of the discussion. Stating that "energy efficiency is top of all our agendas", Lowe explained that he had created a new unit in DG Energy looking specifically at retail aspects of the energy industry– smart grids, smart meters and also creating the right regulatory framework for energy services. While much had been achieved since the Energy Services Directive had come into force, he felt that the market for EE services is still not mature enough and obligations on energy distributors/retailers would be a good market based instrument (but not the only possible route) to drive the market forward, which is why plans for EEOs have been included in the draft EED.

Mr Lowe also emphasised that:

- The public sector is an important driver and should be leading by example – hence the 3% p.a. renovation target in the draft EED. That said, there can be greater barriers in the public than in the private sector.
- Awareness is another challenge to be addressed. Improved and accurate metering, together with regular billing based on real consumption, will build awareness among final consumers of how they use energy and how much they pay for it. Despite efforts to provide smart & intelligent information on energy use, sometimes it was too smart so consumers could not understand it. Energy use, and how to reduce it, needs to be explained in simple terms. There are many ICT solutions out there but they need to be user-friendly.

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- Energy efficiency opportunities - including from cogeneration - exist in ALL sectors of the economy – that is why the draft Directive does not exclude ETS sectors. **Particular emphasis is placed on the role of cogeneration**. This technology has proved its environmental merits and is mature. There is economic potential for its contribution to the electricity mix to be doubled by 2020 and therefore more decisive measures for its promotion as proposed in the Directive are to be adopted.
- Lowe observed that politicians of all hues and across all EU Member States like to talk in very positive terms about the scope for energy efficiency, though these high ambitions are not always translated into policies and action on the ground, as illustrated by the almost unanimous resistance to binding targets. Hence the proposed approach in the draft EED is for binding EEO measures, though these are also resisted by MS.
- Finally, Lowe pointed out that, without a concerted effort on demand reduction, the EU would need hundreds more power stations, so there is a very significant opportunity cost of NOT investing in EE. In view of this, the Commission felt that the level of ambition in the draft EED is about right, given that whatever supply side scenarios are considered in the forthcoming Energy Roadmap 2050 (including whether there will be high or low deployment of nuclear, renewables, and/or carbon capture & storage), the one "no regrets" policy is AT LEAST a 30% improvement in EE. Improving the EU's energy performance was not just a matter of CO_2 and cost savings – it's also about improving energy security and is essential for the competitiveness of business across the EU.

In closing, Lowe welcomed the forthcoming discussion as a helpful contribution not only for the Commission, but also for delegates in developing and improving ideas for EEOs. He handed over to **Paul Hodson, Head of the Energy Efficiency Unit at DG Energy**, to chair the morning session.

Eoin Lees, eceee vice-President, gave an overview of experience with EEOs across the EU. To date, five EEO schemes were in operation within MS, while a further two (Poland and Ireland) have committed to introducing schemes shortly. Each MS had taken a different approach to EEOs, reflecting national/regional priorities and market conditions, yet each approach has been shown to work successfully when the results are examined. Challenging the view that EEOs need to be based on trading of White Certificates, Lees pointed out that such certificates only exist in the full sense in the Italian scheme. In short, the experience of EEOs within the EU was described as "diverse but delivering".

Lees argued that the need for EEOs is that energy efficiency does not happen to the extent that "the rational economist" would predict, due to market barriers. As such, they were not dissimilar in the reasoning behind other environmental interventions into energy markets such as EU ETS or green certificates for renewables.

Having described the broad principles of operation of EEOs, Lees then talked about costs and cost recovery mechanisms. Whether obligated companies absorb EEOs as a cost of doing business (as is typical in competitive markets) or as a regulated cost pass through (in monopoly/regulated markets), it is end consumers who ultimately pay – i.e. the polluter pays principle. For most existing schemes, costs are equivalent to an additional 1-2% on energy bills; only in the case of Britain's Carbon Emissions Reduction Target (CERT), with the largest and longest running EEO, do the costs reach 3-5%. By far the biggest proportion of costs go to fund the measures themselves. Management and administration costs of obligated utilities amount to 18% in CERT, while the regulator's costs are only 0.1% of the total. But for all schemes, consumers' energy bill reductions far exceed the total direct and indirect costs. Furthermore, CERT

had achieved a 3.3% p.a. reduction in residential gas consumption over the last five years.

In terms of monitoring & verification, the vast majority of savings in EEO schemes have been on an ex-ante or deemed basis for proven energy saving measures. Experience has shown that ex-ante savings are preferable to measured ex-post savings due to the certainty of saving and the low costs of verification – essentially a measure count. With the exception of Denmark, most savings have been achieved in the residential sector, where there is scope for large numbers of similar measures.

Summing up the aggregate EU experience on EEOs, Lees concluded that:

- Despite wide variation in implementation of EEOs & market liberalisation status, they have been successful policy tools;
- By reducing the number of units required for household energy services, EEOs help energy affordability for low income households in the transition to a low carbon world;
- At scale, EEOs achieve significant reductions in energy demand;
- EEOs avoid MS Governments having to use public expenditure to stimulate EE – relevant to the current financial problems facing MSs.

There then followed four presentations covering various topics of the design, operation and results of existing EEO schemes, plus an outline of the scheme to be introduced in Poland in 2013. These are briefly summarised below.

Richard Schalburg of the Danish Energy Association described Denmark's multi-sector and distributor-based approach to EEOs. Unlike the other schemes described later, the Danish scheme has been voluntarily entered into by 550 energy distributors, as it is considered necessary to achieve the country's 20% energy saving target by 2020, given that normal market forces are not expected to deliver the required level of savings.

Key points on the Danish scheme are:

- The target covers all end uses including grid networks and sectors within the EU ETS, with the exception of transport;
- The target is to deliver end use energy savings of 1.5% of total consumption p.a.;
- Distributors are not permitted to deliver measures themselves, but do so through third party actors;
- Distributors are permitted to recover their costs through an order of law;
- Banking (up to 3 yrs) and borrowing of up to 35% is allowed;
- Only distributors can trade savings between themselves;
- Over the period 2006-09, the average cost to save a unit of energy is 0.45 Eurocents/kWh;
- There is no formal penalty for failing to meet the target, though the ultimate sanction could be loss of licence;
- Key recommendations for future schemes are:
  - Obligation should be transparent
  - Cost recovery must be permitted
  - Transport should be included
  - Obligated parties should have freedom to reach targets as cost efficiently as possible
  - The interaction between EEOs and the EU ETS needs to be considered, e.g. through set aside of CO2 allowances

Francois Greaume, ADEME, explained that the French Energy Saving Certificate (ESC) scheme was introduced in 2006 in order to reach the diffuse energy saving opportunities among end consumers, and that energy companies were in a good position to achieve this.

Some of the key aspects of the French ESC are:

- During the first period (2006-09), some 2500 energy suppliers were obligated, though EDF and GDF together account for 80% of the obligation;
- This phase was seen very much as a learning phase, so the target was set deliberately low;
- After a transition phase with no obligation, a second period covering 2011-13 is now in operation, with a target over six times higher than the first period;
- A penalty is in force for failing to meet the target, set at 2 Eurocents/kWh. This compares with the cost of achieving savings of 0.39 Eurocents/kWh during the first period;
- Eligible actions are summarised in an official list of standardised measures, publicly available, accounting for 98% of savings;
- Local authorities, the National Agency for Housing (ANAH) and social housing landlords are parties that are eligible to deliver savings but have no obligation to do so. They can sell their certificates on the market (at www.emmy.fr), though to date only 3% of certificates are traded;
- All end-use sectors are included, including transport, though 84% of savings have been in buildings (of which 73% have been heating measures), equating to around 1% of the sector's energy use;
- Tax credits are available for many EE measures – these are complementary to the ESC and have proven to be a real driver of measure uptake;
- The ESC scheme has helped stimulate the market for product such as high efficiency boilers, as well as improving professionalism and training within the delivery supply chain.

Ryszard Wnuk, KAPE, in his talk entitled "How to optimise benefits when designing a new EEO scheme", set out plans to introduce a tradable White Certificate Scheme (WCS) in Poland. The WCS is seen as critical to achieving Poland's energy saving target, in that it is set to deliver around half the required energy savings to 2016. White certificates build on existing Polish experience of green, yellow and red certificates for renewables and CHP.

- Certificates will be provided for:
  - reduction of energy consumption by end users (at least 80% of the target)
  - reduction of energy used by energy producers for their own purposes, and
  - reduction of energy transmission and distribution losses
- The obligation will be imposed on entities engaged in selling electricity, heat and gas to final customers;
- It is envisaged that implementing the WCS will result in an increase of the energy price around 1.5-2%;
- A penalty of PLN 900-2700 per toe (tonne of oil equivalent) will be payable for any shortfall in target;
- A tender system will operate that seeks to maximise third party leverage;
- The scheme will be introduced in 2013.

Marcella Pavan, of the Italian Regulatory Authority for Electricity and Gas (AEEG), described the White Certificate Scheme, which has been in operation in Italy since 2005:

- Targets are expressed in units of primary energy savings (toe);
- Targets are set annually, and have been rising steeply year on year since 2005;
- Obliged parties are the electricity and natural gas distribution companies with at least 50,000 customers;
- Eligible savings cover all end-use sectors;

- Only "hard" measures are permitted ("soft" measures such as advice are not permitted);
- Cost recovery is through electricity and natural gas tariffs;
- Certificate trading is seen as a central element of the scheme. Trades can be executed either on the spot market or "Over The Counter". An electronic certificate registry, directly linked with the AEEG information system for administering projects evaluation is in operation. There is full transparency on volumes and prices.

Results and lessons learnt from the Italian scheme are as follows:

- The scheme has worked to deliver energy savings, in a cost effective way, mainly via "mass market" measures and technologies that are already cost-effective, and via energy service providers;
- It has given visibility and concreteness to energy savings making them measurable and eligible for support;
- Careful target definition is crucial, as are the rules for monitoring and verification;
- Deemed savings and engineering algorithms need to be updated regularly to guarantee additionality and take into account market and legislative developments;
- Design of the cost-recovery mechanism is crucial since the distributors operate in a regulated market;
- The wide scope of eligible end use sectors contributes to the cost- effectiveness of the scheme, particularly when the EEO is coupled with a certificates trading; but trade-offs may exist (e.g. higher complexity and administration costs).

Gareth Jenkins, Department of Energy & Climate Change, briefly described the Carbon Emissions Reduction Target (CERT) that is currently in operation in Britain over the period 2008-2012, before focussing on the new Energy Company Obligation (ECO) to be introduced in 2013, along with the complementary Green Deal.

Green Deal is the UK Government's new flagship energy saving policy that tackles the issue of upfront capital costs of energy efficiency investments by allowing them to be amortised as a charge on the property and recouped through the energy bill. A "Golden Rule" applies in that the annual savings must exceed the annual repayment costs, including capital costs and interest.

In recognition of the fact that CERT and its predecessor schemes will have addressed a significant proportion of the more cost effective measures, the new ECO will support a very restricted list of higher cost technologies such as solid wall insulation, while also being focused on disadvantaged customers. It is being designed to fill the gaps in the market that will not be addressed by Green Deal. To give appropriate long term market signals, ECO will operate over an extended period of 10 years, with interim targets.

Afternoon Session – Workshop on Specific Aspects of EEO Schemes

The session, chaired by **Eoin Lees, eceee vice-President,** focused on two main aspects of EEO schemes:

- Sectors, social issues and measurement;
- Costs.

In addition to feedback from the presenters of the five schemes in the morning session, presentations were made by:

- **Ann Collys, Flemish Energy Agency,** on the scheme operating in Flanders, Belgium;
- **Edith Pike-Biegunska, Regulatory Assistance Project,** speaking about the experience from EEO schemes operating in the US.

Collys explained why the Flemish scheme is focused on the electricity distributors – the distribution system operators (DSOs):

- Everyone is connected to the electricity grid;
- They have a monopoly in their geographical area;
- They have the legal obligation to exploit the grid;
- They have no competitive disadvantage;
- They can recoup their costs in the tariffs.

As only measures that have been approved by the Flemish Government are permitted, no saving calculations is needed.

Explaining how social equity is ensured, Collys stated that the DSOs have an obligation to organise specific information sessions for protected clients. Also, there are special measures for such clients, including higher financial support (+20%), vouchers for efficient appliances, additional premiums for roof insulation and condensing boilers and (from 2012) exclusively available energy surveys.

Providing an overview of cost issues in the US, **Pike-Biegunska** reported that 26 states had EEOs on electric and/or gas utilities, to a total value of $6.6 billion in 2010. Costs are mainly recovered through regulated "wires charges", though other cost recovery mechanisms also exist, including carbon auctions and funds from the Federal Recovery Act.

In overall cost effectiveness terms, EEOs have been demonstrated to save energy at a cost of 1.6-3.3 ¢/kWh (far less than the price of energy), of which the cost to customers is 0.25-0.6¢/kWh. Most of the funding (70-75%) is from private sources (end consumers, businesses), with the balance (25-30%) from public sources. An important complementary measure driven through regulatory processes is decoupling of revenues from sales, reducing/removing the incentive to sell more units.

Member State Scheme Summary

A summary of the obligated sectors, eligible consumers, cost recovery mechanisms, and social equity issues for the five existing schemes operating within the EU is provided in the table overleaf. All schemes predominantly use deemed savings of independently validated measures.

Q&A

A lively Q&A session followed each batch of presentations. Topics covered included:

- Issues of price volatility (not welcome by investors).
- Competition between EEOs and other mechanisms such as regulation. Should you leave less room for obligations by pushing tougher regulations?
- How can additionality be assured?
- Are business to business transactions permitted, and how do they operate?
- Whether the existing schemes comply with Article 6 of the draft EED.
- Equity and distributional safeguards.
- The wisdom of having energy companies deciding on what measures to go into housing, as there are other experts (not least social housing providers).
- How can you have confidence that EEOs will deliver the savings compared to other ways of achieving savings?
- What are the negative consequences of EEOs?
- The need for more transparency on costs. Different schemes use different metrics. Can we establish a standard metric?
- Deemed savings depend strongly on assumption. There can be large variations. Issues over uncertainty of actual savings achieved.

- Why choose EEOs over other mechanisms?
- Are there any upfront sources of funding for utilities?
- Would EEOs work in Sweden, where there are lots of small energy companies, which would increase administrative costs?
- What about rebound/comfort taking?
- How to achieve transparency on costs.
- How to avoid cream skimming of the lowest hanging fruit
- Whether EEOs can be designed to encourage deep retrofit.

Within the scope of this summary, it is not possible to give answers to these questions, which vary to some extent depending on the approach taken by a particular EEO scheme design.

Country (Region)	Belgium (Flanders only)	Denmark	France	Italy	UK (Britain only)
OBLIGATED PARTIES	electricity distributors	electricity, gas and heat distributors, district htg companies, oil companies	all energy suppliers	electricity and gas distributors	gas and electricity suppliers
SECTORS COVERED					
Residential	YES	YES	YES	YES	YES
Tertiary	YES	YES	YES	YES	
Industry (small)	YES	YES	YES	YES	
Industry (large)		YES		YES	
Public sector	YES	YES	YES	YES	
Transport			YES	YES	
Grids		YES	YES		
COST RECOVERY	Regulated	Regulated	Competitive	Regulated	Competitive
SOCIAL EQUITY ISSUES	Preferential measures	No specific target	No specific target, but inclusion of social hsg providers in 2nd period will encourage measures in that sector	No specific target	CERT – 40% of target for disadvantaged customers; ECO – will contain Affordable Warmth obligation

Concluding Remarks

Mrs Thomsen Danish MEP and rapporteur, thanked the Commission and eceee for organising the seminar. She stated that the day had been extremely important in explaining what is going on with EEOs in different MS, and hoped to set up a meeting within the European Parliament where the various EEO models are presented.

In drawing the seminar to a close, Gerghana Miladinova, DG Energy, put the day's discussion into the context of the Commission's deliberations on EEOs. The overriding observation is that the cost effective potential for energy efficiency investment is not being achieved by the markets, so needs some intervention instruments. The 'soft-approach' of the current Energy Services and Cogeneration Directives has not delivered sufficiently. Energy efficiency required a mix of policy instruments and hence the draft EED is proposing a package of instruments, not just EEOs.

The Commission has undertaken detailed modelling, and concluded that introducing mandatory obligations would provide benefits in excess of the costs, and overall result in a small increase in the EU's GDP. The decision to propose mandatory energy saving obligations was also based on the existence of significant experience with different schemes, including those presented during the seminar.

Stressing that, even with a mandatory obligation, Member States would have a lot of flexibility in scheme design and operation, Miladinova noted that the experience with EEOs that already exists within the EU would be of real benefit for MS that have yet to introduce EEOs.

Based on the discussion she clarified that:

- The draft EED says measures within the EEO are to be realised by final consumers (e.g. measures in the transport sector can be included).
- No more than 10% of savings could come from short life measures.

Further she highlighted that from the various interventions during the day it is clear that:

- There is a need to have penalties and enforceability of targets;
- Trading is useful but not essential (up to MS);
- Need to limit price volatility (up to MS);
- Measuring and verifying savings is very important, but difficult to provide great detail within the draft EED itself. The approaches taken to date, with a strong preference for deemed savings of independently validated measures, has been shown to work well.

Finally, Miladinova thanked all for attending the joint Commission-eceee seminar and for contributing to the EEO knowledge sharing exercise.