



RAP

Energy solutions
for a changing world

PEPDEE EU Regional Policy Dialogue

Results to Date from Existing EU Obligations on Energy Provider

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Contents

- Summary of key principles for Energy Efficiency Obligations (EEOs) on Energy Providers (White Certificate Schemes)
- Snapshot of EU & recent developments
- Scale of activity
- Do EEOs work?

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 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 well 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

What Costs are Involved & Who Pays?

- Cost of energy efficiency measures (energy provider subsidies, end customers, landlords, charities, manufacturers etc.)
- Cost of energy provider marketing, sales, reporting, planning etc. (in GB estimate ~18% of their direct costs)
- Auditing & verifying of energy saving projects and if target met (in GB carried out by Ofgem (energy regulator) and <1% of energy supplier costs)
- Government sets target every 3 years + research into energy savings (in GB <<Ofgem costs)

How are these Costs Passed Through?

- If obligation on energy retailer in liberalised market, then EEOs are “a cost of business” like other environmental requirements and passed onto end customers
- If obligation on regulated part of energy provider (e.g. distributor or if retail price is still regulated), then costs are in regulated tariff charged to end customers
- In effect, the “polluter pays” principle applies
- However, energy saving benefits alone far exceed the costs to consumers

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
- However, in GB energy providers are establishing heating companies, insulation subsidiaries & microgen (RE); similar developments in Italy
- 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

EEOs in the EU (2011)

| Country | Obligated Company | Eligible Customers | Administrator |
|--------------------|---|---|-------------------------|
| Belgium - Flanders | electricity distributors | Residential & non energy intensive industry and service | Flemish Government |
| France | Energy retailers & importers of transport fuels | All (including transport) except EU ETS | Government |
| Italy | electricity & gas distributors | All including transport | Regulator (AEEG) |
| GB | electricity & gas retailers | Residential only | Regulator (Ofgem) |
| Denmark | electricity, gas & heat distributors | All except transport or covered by EU ETS | Danish Energy Authority |

EEOs in the EU (2008)

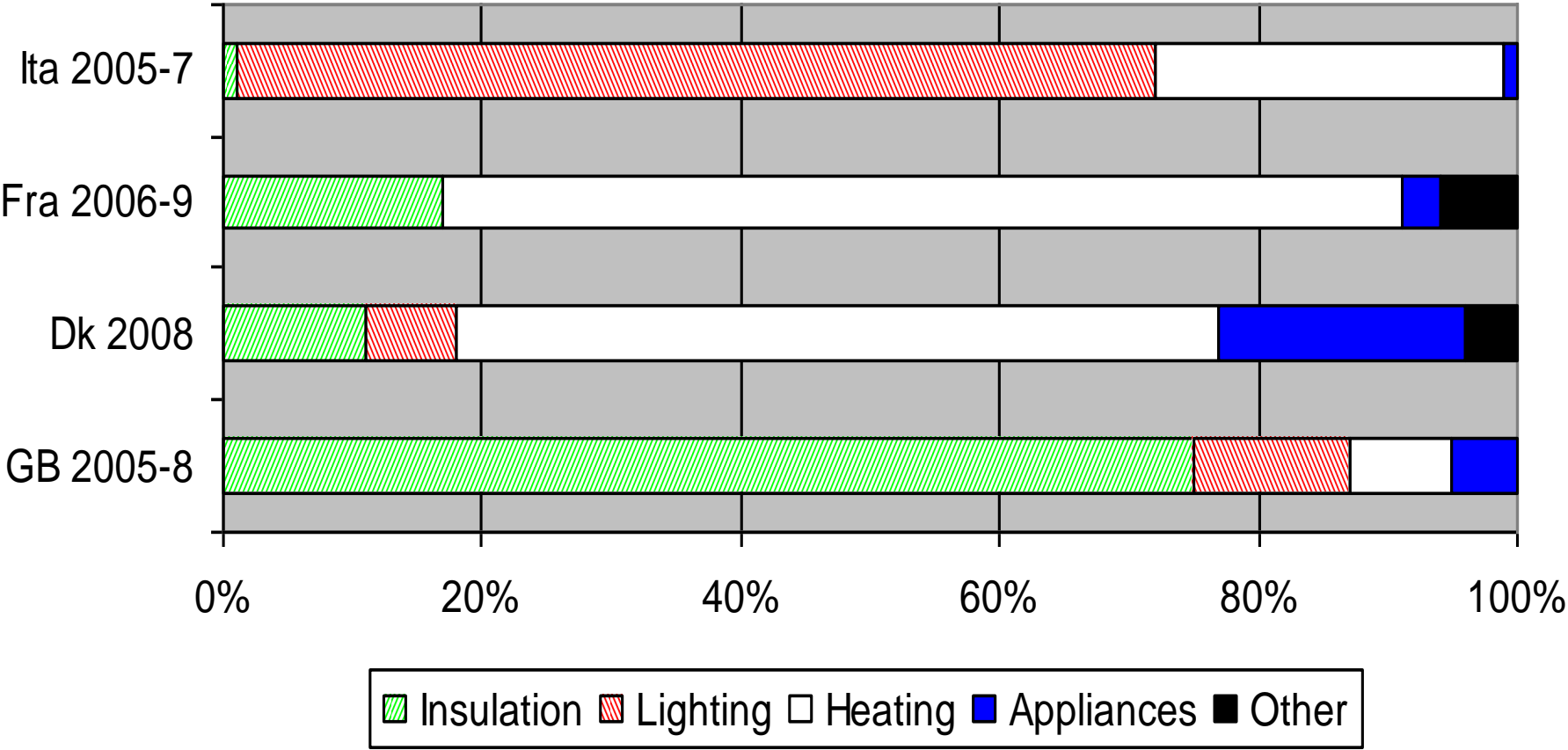
| Country | Nature of saving target | Estimated annual spend by providers €M and {€/head} |
|--------------------|----------------------------------|--|
| Belgium – Flanders | 1st year primary energy | 26 {4} |
| France | lifetime delivered energy | 180 {3} |
| Italy | cumulative 5 year primary energy | 190 {3} |
| UK | lifetime delivered CO2 | 900 {15} |
| Denmark | 1st year delivered energy | 25 {5} |

Most Activity is in Residential Sector

| Country | Period | % energy savings from residential sector |
|--------------------|---------------|---|
| Belgium - Flanders | 2008 | 58% (mandated) |
| Denmark | 2008 | 42% |
| France | 2006-9 | 87% |
| Italy | 2005-8 | 83% |
| UK | 2005-8 | 100% (mandated) |

EU Residential Energy Savings by End-use

Residential Energy Savings by End-use



Typical Annual Installations in EEOs

| Country and period | EE Measure | No of measures/yr |
|--------------------|---------------------------|-------------------|
| France (2006-9) | Roof insulation | 950,000 |
| | Efficient boilers | 110,000 |
| Italy (2005-7) | CFLs | 7,000,000 |
| | Low flow showerheads | 3,150,000 |
| GB (2005-8) | Wall insulation | 500,000 |
| | Efficient cold appliances | 1,250,000 |

Increases in EU EEOs in 2011

| Country | Increase over 2008 energy saving activity |
|--------------------|--|
| Belgium - Flanders | >30% |
| Denmark | >100% |
| France | Approx. 300% for previously obligated energy providers |
| Italy | No change in “new savings” but reduction in primary energy conversion factor \equiv 15% increase |
| GB | 20% increase + extension to end 2012 |

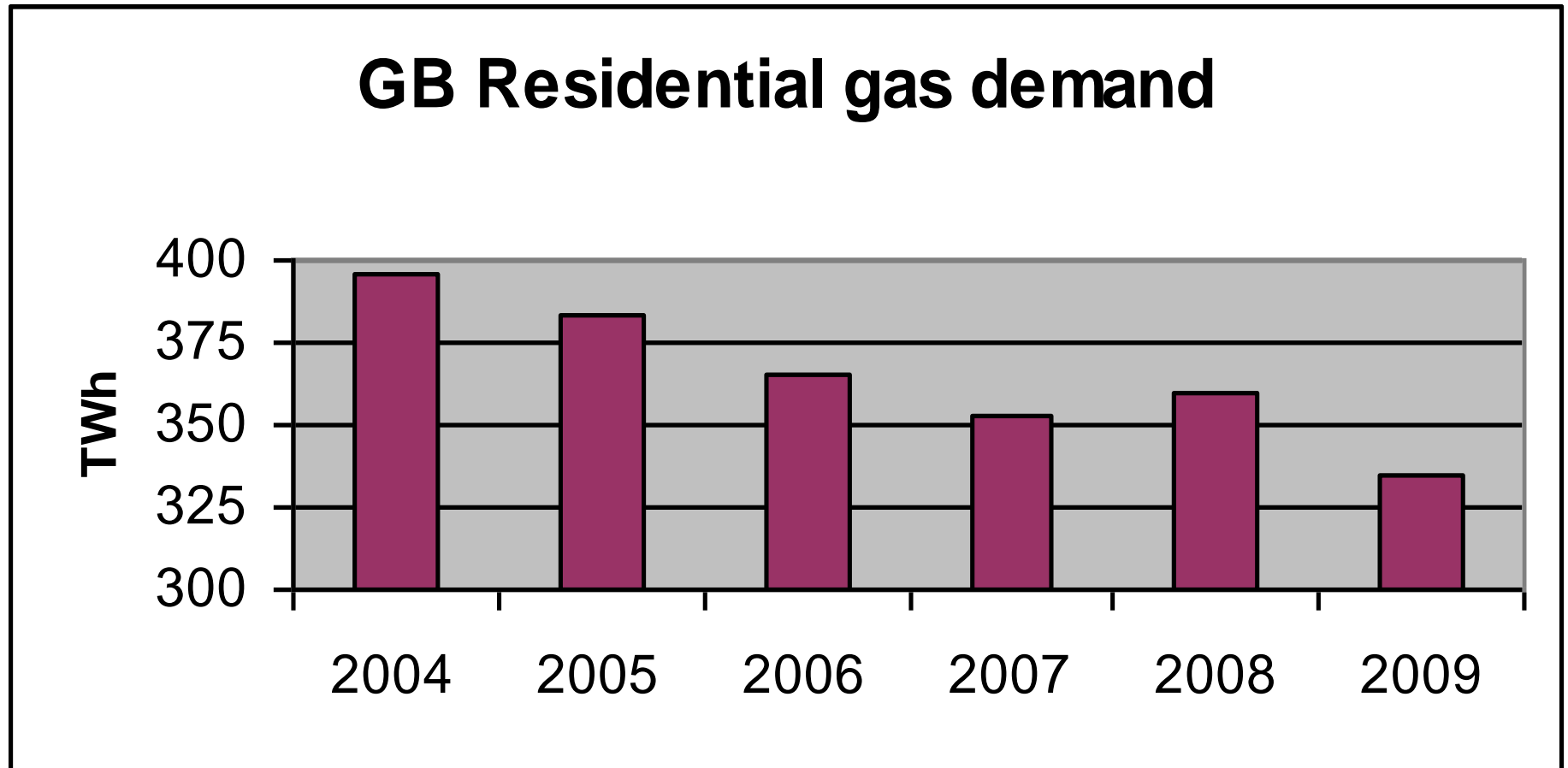
Observations on EEOs in the EU

- 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 billion/year; in ~50 operational years experience of EU ECOs, 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

Is there any evidence that EEOs work – top down analysis? - 1

- Use GB Government data on residential energy consumption between 2004 and 2009 as GB has the largest EEO
- In GB natural gas provides 80% of all heating & hot water
- Prior to 2005 residential gas demand increasing in range 1 to 2% per year
- But in 2005, 3 important developments which would reduce demand: EEO obligation doubled (72% delivered energy savings in EEO come from insulation measures in gas households); new regulations on boiler replacement meant condensing boilers quickly moved from 36% of the replacement market to >97%; gas price rises for residential customers reduced demand

Reduction in GB Residential Gas Demand in Period 2004 to 2009



Is there any evidence that EEOs work – bottom up analysis? - 1

- British Gas individual annual gas consumption data for 4 million customers for the period 2006-10
- Looked at factors affecting demand:
 - > Households, income & tenure of property
 - > External and internal temperatures
 - > Energy efficiency measures installed
 - > Changes in behaviour, lifestyles, increased climate change awareness, energy efficiency advice etc.

Is there any evidence that EEOs work – bottom up analysis? - 2

For this 5 year period, conclusions were:

- Average household consumption fell by 22% over the period!!
- Annual fall was 4.9% compound
- Behaviour & lifestyle changes etc. reduced by ~ 2.7%/year
- Reduction in gas customer demand was 3.3%/year as a direct result of energy efficiency measures (mainly insulation and heating)

Conclusions on EU EEOs

- Despite wide variation in the implementation of EEOs & energy market liberalisation status, they have been successful policy tools
- MSs with EEOs have evaluated their programmes and expanded them in recent times
- In the largest EEO, over the last 5 years they are contributing to a significant reduction in residential gas demand (22% reduction)
- EEOs avoid MS Government having to use public expenditure to stimulate EE – relevant to the current financial problems facing MSs