A REVIEW ON TASK XIV ACTIVITIES
First experiences and open issues

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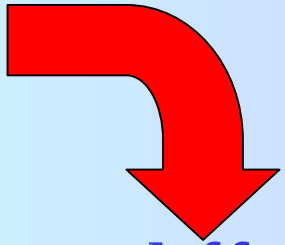
Preliminary results

- Review and background of national schemes on White Certificates (F, GB, I, NL, and NSW)
- Comparisons among different national approaches on:
  - EE targets and apportionment
  - obliged and eligible operators (competition issues)
  - eligible technologies and projects
  - procedures for M&V energy savings (additionality)
  - direct and transaction costs
  - role of trading
  - pros/cons of cross-border trading

Preliminary results

FOCUS ON



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Preliminary results

Information obtained in the IEA-DSM Task 14 open workshops

Preliminary (still subject to change!!!)

Not homogeneous

Not organised yet (flashes)

Obliged operators

Most common choice: energy suppliers

Other less common choices

- Distributors (owners of the grid - I)
- Producers with direct contracts with customers (NSW)
- Large or eligible electricity consumers (NSW)

Involved energy vectors / services

- Electricity - always
- Natural gas - very often (F, GB, I)
- Domestic fuel, cooling, heating - specific of F

Obliged operators

Energy Suppliers - pros and cons

- direct contact with end-users
- practice of the *energy end-uses* world
- competition issues; then cost containment of ES projects:
  - choice of effective versus cheap mix of ES measures (e.g. GB)
  - fostering ESCO involvement (GB, NL)
  - encouragement for consortia of obliged agents (F, UK)
- chance of conflicts between obligation and competition regimes
  - need of long-term contracts BUT
  - highly dynamic market rules: e.g. 28 days' rule in GB

Obliged operators

Electricity and Gas Distributors - pros and cons

- No conflict between obligation and competition:
  - granted 40 years' monopoly to DSO against EE obligations and price cap on distribution tariff
  - cost-recovery exists for certified ES projects: a lump sum in Italy (100 Euro/toe) to partially compensate the project costs
- Set up of *virtuous circles* of joint ventures involving DSO, controlled Companies and ESCOs
- DSO are pure grid managers: they do not have direct contacts with large end-users nor experience in end-uses
- At present, DSO are prevented from *beyond the meter* operations

Evaluation of Energy Savings projects

Strong general inclination towards standardised ex-ante procedures

- based on lumped and conservative evaluations
- very simple and not ambiguous in the use
- generally shared with the stakeholders through preliminary consultation processes
- involving very few measurements (or none)
- considering baseline/deadweight
- easily updatable with changes of baseline

Evaluation of Energy Savings projects

Standardised ex-ante procedures
some approaches:

Illustrative mix (GB)

- very definite set of measures
- clearly evidenced unit energy savings and costs
- result of a many-sided procedure, based on:
  - historical experiences
  - modelling techniques

Evaluation of Energy Savings projects

Standardised ex-ante procedures some approaches:

Illustrative mix (GB)

1		3	Net Energy Improvement (1)	
Illustrative mix of possible EEC measures		Unit cost per measure	Per year	Discounted aggregate (3.5%) over lifetime
		£	MWh/Unit/yr	MWh/unit
Cavity wall insulation - private		314	5.15	110.1
Cavity wall insulation - social		310	5.00	106.7
Loft ins - professional - private	(4)	259	2.71	49.8
Loft ins - professional - social	(4)	261	1.87	34.5
Loft insulation DIY	(4)	132	3.34	61.4
Glazing E to C rated (in m^2)		10	0.03	0.4
B to A-rated boilers		50	1.15	13.3
A/B rated boilers (exceptions)		193	3.10	35.7
Fuel Switching	(5)	1798	7.91	91.1
Heating controls - upgrade with boiler replacement		82	0.68	7.9
Heating controls - extra		134	1.88	21.7
CFLs - retail		3.70	0.01	0.1
CFLs - direct		3.90	0.01	0.1
Fridgesavers-type schemes		120	0.14	1.3
Appliances - Cold		20	0.06	0.6
Appliances - Wet		10	0.02	0.2
Appliances - Set Top Boxes		140	0.01	0.1
Tank insulation - top-up		13	0.45	3.7
Draughtproofing		95	0.74	10.5
Total EEC				

Evaluation of Energy Savings projects

Standardised ex-ante procedures some approaches:

Default methods (I)

- Based on standard evaluation procedures
- No on field measurements
- Give “ex-ante” the energy savings per physical unit of equipment (e.g. per substituted lamp, per kW of installed motor power, etc)
- A simple equation is provided, together with standard values of the parameters included in the equation

Evaluation of Energy Savings projects

Default methods (I) - Wall/roofings insulation

Physical reference unit:	Unit of insulated surface (m^2)					
Gross specific savings of primary energy which can be obtained for a single building	**RTL = RSL x S (toe 10^{-3}/year/building)** **(S = surface of insulated walls/roofings)**					
Gross specific savings of primary energy per unit of insulated surface (RSL):	**Building sector:** **residential**					
Climatic zone A conventional cluster of municipalities sharing a value of degree-day within a given range.	**RSL** **(toe 10^{-3}/year/m^2 of insulated surface)**					
	K of the structure before the EE measure **(W/ m^2/ K)**					
	0.7÷0.9	*0.9÷1.1*	*1.1÷1.3*	*1.3÷1.6*	*1.6÷1.8*	*>1.8*
A, B	0.3	0.4	0.6	0.7	0.9	1.1
C	0.7	0.9	1.2	1.5	1.9	2.4
D	1.3	1.7	2.3	2.8	3.6	4.4
E	2.2	3.1	3.9	4.8	6.2	7.7
F	3.5	4.8	6.2	7.6	9.8	12.0

Evaluation of Energy Savings projects

Standardised ex-ante procedures some approaches:

Standard procedures (F)

At present, about 71 savings actions were preliminarily pointed out, namely :

- About 54 savings actions in residential/tertiary sectors
- About 14 savings actions in industry
- About 3 savings actions in transport

Evaluation of Energy Savings projects

Additionality - Variety of adopted approaches:

- beyond mandatory standards (ES in buildings- I)
- related to average consumes of equipment (I)
- related to average market share (I-NL)
- non-increase of turnover (only non-obliged - F)
- to be demonstrated (GB)
- not required (NSW)

Costs of WhC Policies

Only spot information are available in this phase of the Task

Cost data are classified according to different viewpoints (when available):

- end-user (household or industry)
- obliged agent (e.g. supplier, distributor)
- eligible agent (e.g. ESCO)
- Regulatory Agency

Costs of WhC Policies - FRANCE

Viewpoint of an obliged implementer of EE projects

- evaluated average cost of the EE programmes: 1 c€/kWh
- assumed maximum value for penalty for non-compliance: 2c€/kWh
- payment of the penalty cancels the obligation.

Costs of WhC Policies - FRANCE

Viewpoint of an obliged implementer of EE projects

- A critical field: thermal insulation of existing buildings
- Retrofitting industry nor so well organised: high transaction costs for medium size market:
  - tertiary: public & commercial buildings
  - small industry
- Sources of TC: info/call centres, manpower for audits and WhC issuing, contracting management
- Expected TC between 10 and 15 €/MWh

Costs of WhC Policies - GB

Viewpoint of Regulatory Agency - Ofgem

- costs of operating EEC in GB in 2002-2005

  ~£ 300,000 per year.

- biggest costs connected to the external auditor and to management of the database

- cost of operating the EEC anyway less than 0.5% of the total Regulatory Agency's budget (£ 400 million).

Costs of WhC Policies - GB

Viewpoint of the end-user

- EEC 2002-2005 added ~£4 per year per fuel to energy bills.
- EEC 2005-2008 will add ~£5 on top of this.
- Therefore, between 2005-2008 the total cost of EEC for a customer who uses electricity and gas would be ~£18 per year.

Costs of WhC Policies - ITALY

Viewpoint of a household end-user

- cost of EE policies paid as a component of the distribution tariff (at present, 0.0213 c€/kWh for electricity)
- assumed electricity consume = 3000 kWh/year per customer
- amount of annual electricity bill paid to fund EE policies (not an additional cost) = 0.64 €/year per customer

Costs of WhC Policies - ITALY

Viewpoint of an **obliged** implementer of EE projects

- cost recovery for each certificated saved toe =
  100 €/toe: about 10 M€ from electricity targets in 2005
  against an annual electricity turnover of about 30,000 M€
  annual consume = 300 TWh; average cost = 0.1 €/kWh

- penalty for non-compliance (upper limit for WhC price):
  - still to be defined
  - related to the number of not saved toe's
  - proportional and greater than the investment required to compensate the non-compliance

CAPOZZA Antonio:

can be roughly compared with the maximum WhC in France:

116 (MWh) * 0.02 (c€/kWh)*1000=2.32 k€

ITALY

Viewpoint of an eligible implementer of EE projects

Particular case of substitution with high efficiency electric motors (from *eff3* to *eff1*)

- Total involved electric power: 1,340 kW
- Cost of the project: about 37 k€
- Savings: final=116 MWh/year; primary =25.47 toe/year
- Savings on the electricity bill: about 11 k€/year
- Gain from White Certificates trading: can be referred to the acknowledged cost recovery 2.55 k€/year

Costs of WhC Policies - NSW (AU)

Viewpoint of obliged implementers of EE projects

- penalty for non-compliance: AUD10.50 (6.25 €) per tonne of CO_2 equivalent above the allowance (about 15 € for not saved toe)
- large transaction costs for small energy efficiency projects due to audits: the average cost of an audit is about AUD 10,500 (EUR 6,250)

Thank you

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