Energy Efficiency Obligations – a mechanism to finance energy efficiency?

Energy Efficiency Finance Market Place

Dr Jan Rosenow
Senior Associate

Brussels, January 19, 2017
Agenda

1) Global snapshot of Energy Efficiency Obligations (EEOs)
2) Architecture of EEOs
3) Investment through EEOs
4) ESCO opportunities through EEOs
5) Case studies
6) Conclusions
Global snapshot of EEOs
Global snapshot of EEOs: 48 operational and 6 planned

Source: RAP (forthcoming)
Architecture of EEOs
Architecture of EEOs

Government
- sets target

Regulator
- sets up detailed rules and administer scheme

Energy retailer/distributor
- Trade obligations (optional)
- develop delivery routes for efficiency measures incl. white certificates

Energy retailer/distributor
- Trade obligations (optional)

Energy retailer/distributor
- Trade obligations (optional)

Energy retailer/distributor
- Trade obligations (optional)

Contractors, municipalities, ESCOs, retail outlets etc.
- deliver measures with installers

Beneficiaries
Investment and costs of EEOs

- **Public investment**: cost to the public recovered through energy bills
- **Private investment**: contributions from beneficiaries of the programme
- **Administrative cost**: cost to public authorities for running the programme
Financial architecture of EEOs – common delivery models

All energy consumers pass-through of EEO costs (unregulated or regulated)

Energy company contributes to cost of EE measures

Installer pays for installing EE measures

White Cert market platform (optional)

Energy efficiency provider (incl. ESCOs)

Beneficiaries installs subsidised EE measures
Investment through EEOs
Rise of public investment through EEOs

Source: RAP (forthcoming)
Private investment: typically ~0.5-2 times public investment

• **United States**: 141% of programme costs
• **United Kingdom**: 87% of programme costs in 2002 to 2005 and 44% in 2005 to 2008 (residential sector only, ~50% low-income households)
• **France**: 37% of programme costs (EEOs operate together with tax rebates)
• **Denmark**: 200% of programme costs (industry sector only)

Source: ACEEE (2014); Rohde et al. (2014)
Programme costs: available data indicates that EEOs are highly cost-effective

Source: RAP (forthcoming)
ESCO activity and EEOs
ESCO market activity and EEOs

• best evidence from US
• 55% of energy savings from US ESCO activity in public buildings supported by EEOs (for year 2012, LBNL 2014)
EEOs make important contribution to ESCO project costs

Source: LBNL (2014)
Case studies of EEO intermediaries
Case study: Effy

- Group of 10 companies founded in 2008 in France
- Offices in France, Italy and Poland (UK business closed after EEOs scaled down)
- Annual turnover ~€100m for 225 employees
- Activities:
  - Energy consulting and project management assistance
  - Lead generator (+3000 affiliated installers in France)
  - General contractor (loft, floor & pipe insulation, EMS & Automation)
  - Financing (certificates) and ESCO (industry only)

Source: Effy (2016)
Case study:

- **Project**: Albini Energia supplied heat exchanger and automation system and obtained white certificates.
- **Location**: Prato, Italy
- **Client**: Tintogroup Srl
- **Technology**: heat recovery system for batch dyeing machine’s waste water via heat exchanger
- **Economic benefit** = energy saved + value of gained white certificates
- **Pay-back time**: around 3 years
Conclusions
Conclusions

1) EEOs are in essence a financing mechanism paid for by energy consumers
2) Finance through EEOs now amounts to ~$25-35 billion/year
3) Cost-effectiveness is high
4) ESCO market can benefit but depends on design of EEOs
Further reading


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 sector. 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

Dr Jan Rosenow, email: jrosenow@raponline.org web: eng.janrosenow.com