European Experiences with Energy Saving Obligations

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About eceee

- European membership-based organisation
- More than 70 member organisations
  - Energy agencies, research institutes, consultants, trade associations, energy sector, NGOs…
- 300 individual members
- Secretariat based in Stockholm
- European expert efficiency NGO: evidence-based knowledge, information and analysis
- eceee Summer Study every odd year in Southern France – 450 people meet for five days (1–6 June 2015)
- Industrial Summer Study since 2012

The 2012 EU Energy Efficiency Directive – EED (2012/27/EU)

- First EU directive truly recognising Energy efficiency (Energy Services Directive → 2006 End-use Efficiency and energy services → 2012 Energy Efficiency Directive)
- Part of a portfolio of EE directives
  - Energy Efficiency Directive (Bringing co-generation and End-use & Services Directives together)
  - Energy Labelling Directive
  - Eco-design of energy-Related Products (ErP) Directive
  - Energy Performance of Buildings Directive (EPBD)

Energy Efficiency Obligations are important part of the Directive

- Obligations cornerstone in Directive (Article 7) …
- … Coupled with indicative savings targets of 1,5%/yr (10,5% 2014–2020) (Article 7)
- EU Member States can opt out from obligations but must achieve savings target
- EED also puts requirements on:
  - Building sector, complements EPBD
  - Public procurement and public sector
  - Billing and metering, consumer info
  - Cogeneration
  - Industrial audits… etc

Energy Efficiency Obligations (EEOs) not a new feature in the EU

- **Denmark:** DSM/IRP since 1995, EEOs since 2006
- **UK:** Supplier Obligations since 1994. Replaced by CERT (Carbon Emissions Reductions targets) and since 2012 ECO (Energy Company Obligation).
- **France:** White certificates 2005
- **Italy:** White certificates 2005
- **Flanders:** Established EEO system, (but may be moving from savings target to measures target. Not clear.)

EU will have ~20 countries with EEO systems shortly

Since before

- Denmark**,** France, Italy, GB, Belgium/Flanders

Relatively new countries (recent years)

- Austria, Ireland, Poland, Portugal, Slovenia, (Bulgaria?)

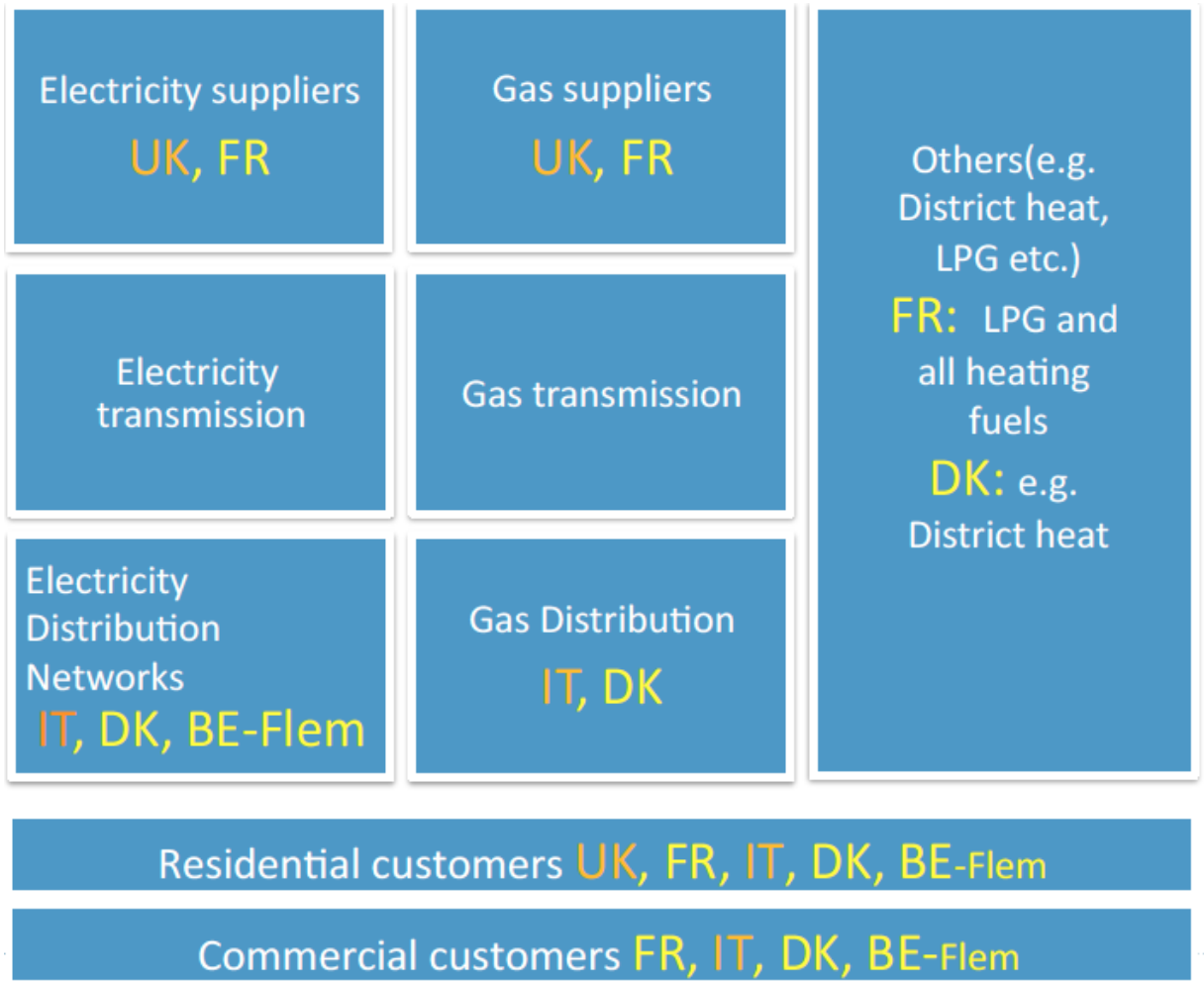
Planning to launch or decided

- 3 Baltic States, Luxembourg, Slovakia, Spain

Considering to introduce

- Czech Republic, Croatia, Hungary

Many ways to organise EEO schemes



Source:
Demet Suna & Reinhard Haas
TU Wien
(eceee 2013 Summer Study Proceedings)

Many ways to calculate savings

Belgium – Flanders	1st year primary energy
France	lifetime delivered energy
Italy	Cumulative 5 year primary energy
GB	lifetime CO_2
Denmark	1st year delivered energy

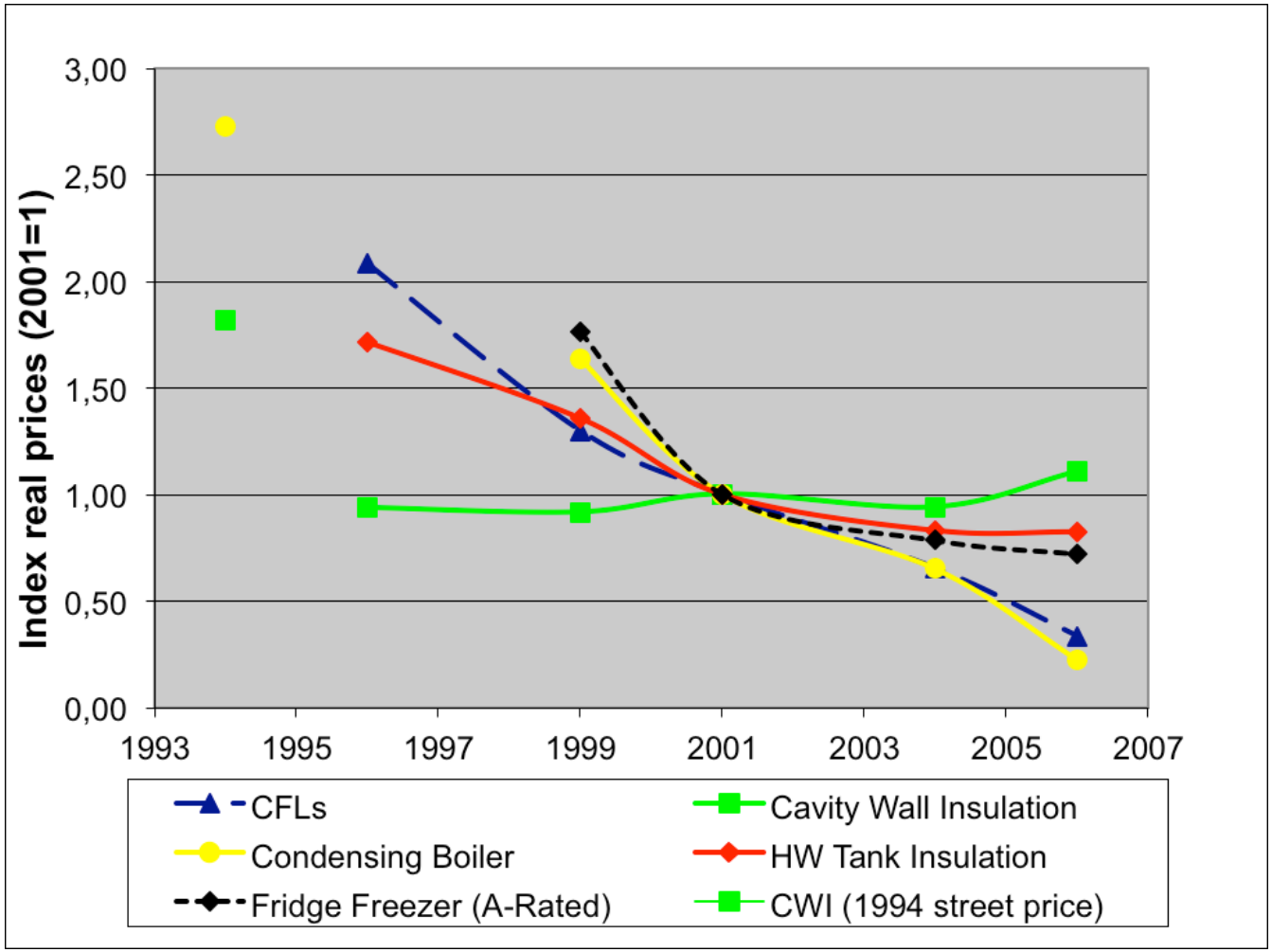
Savings must be reported in coherent fashion in the EED

- EED Article 7 sets a framework that allows much freedom → (remember – MS can even opt out if they do other measures but declare result)
- Guidelines and interpretation documents communicated to all MS
- The national savings targets are thus converted into a common format to be comparable among Member States

But are EEOs a good idea?

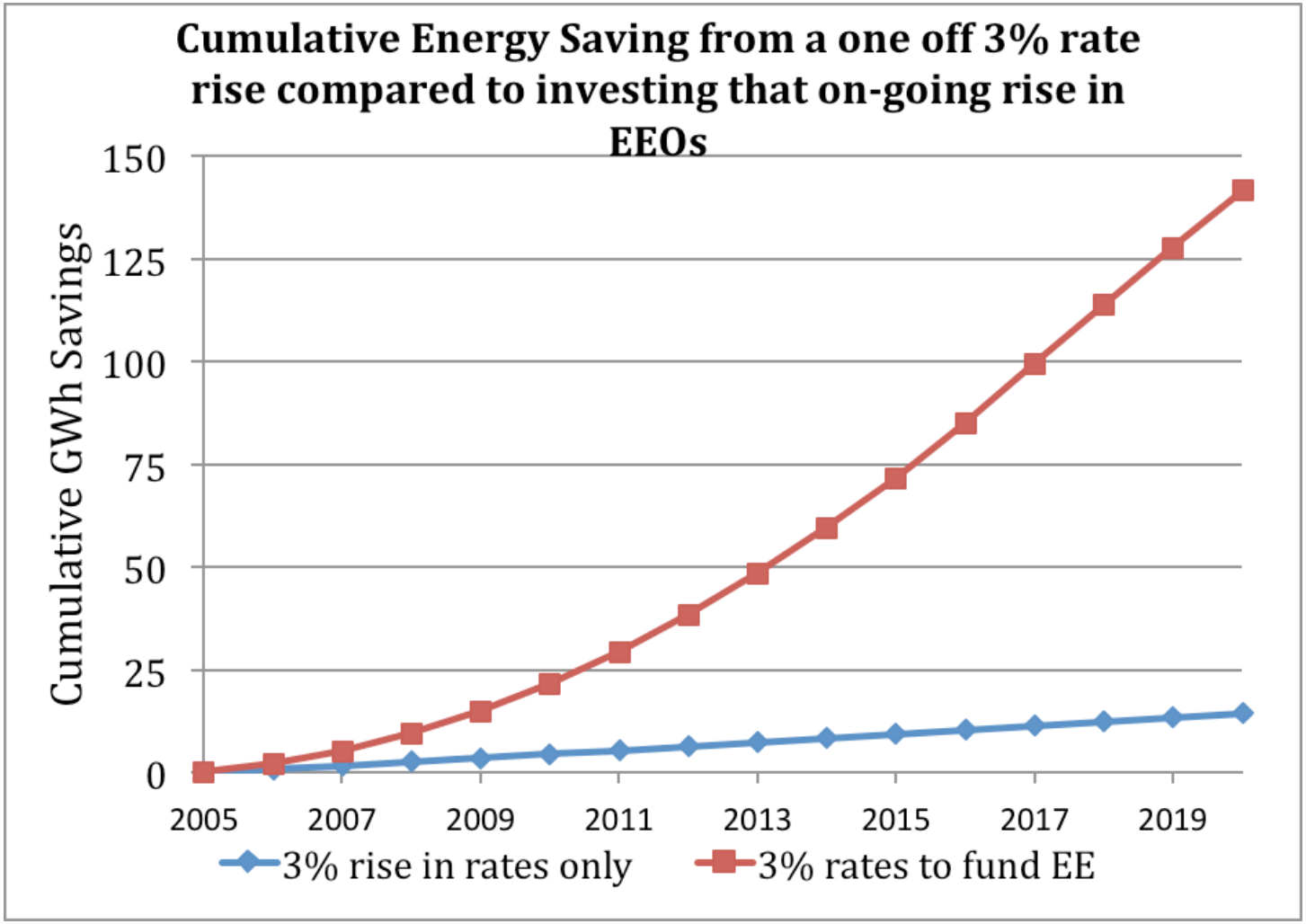
- Low costs, for example:
  - UK: 2 €Cent/kWh in saved electricity, 2008
  - 0,5 €Cent/KWh with average savings life of 10 years
- Lower costs over time through learning and increased volumes
- Not relying on public expenditure
- Energy companies can reach out to customers
- EEOs complement other measures
- EEOs interact with other measures
- EEOs can be tailored to fit specific country situations

Costs are falling over time (UK)



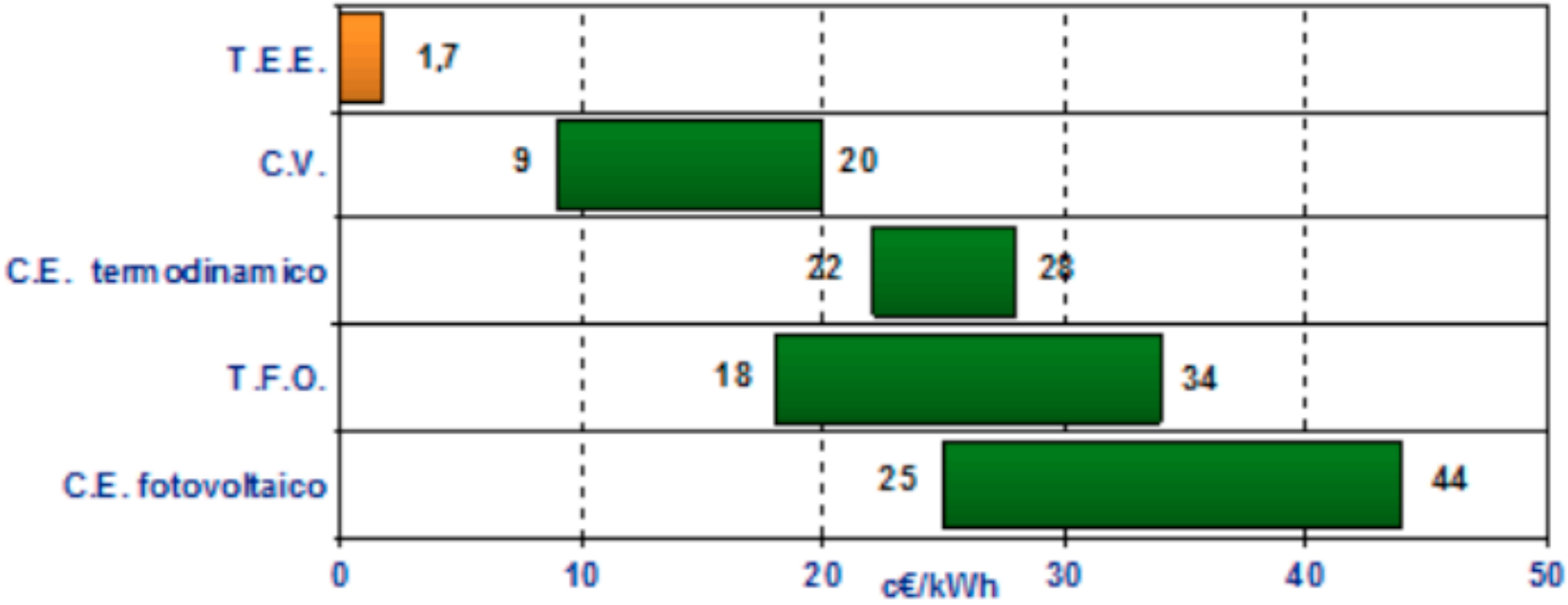
Source:
Lees (eceee March 2012)

3% prices increase or 3% to EEOs?



Source: Lees (eceee March 2012)

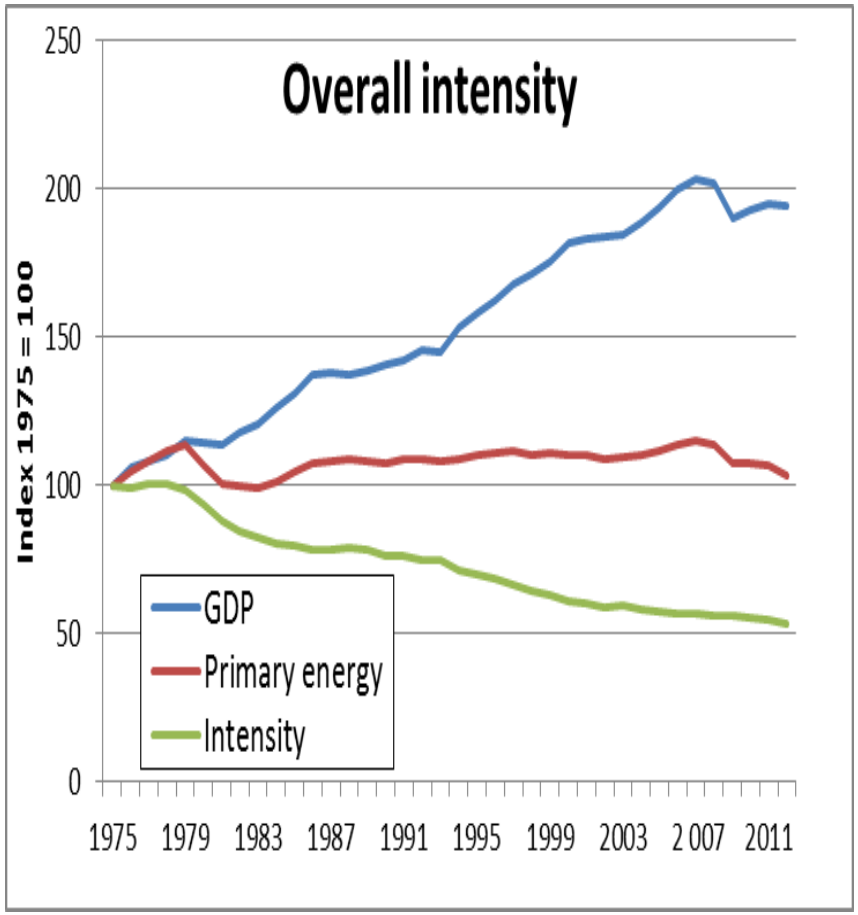
Italian white cert comparison with renewables (TEE scheme 2005–09)



Source:
Lees (eceee March 2012)

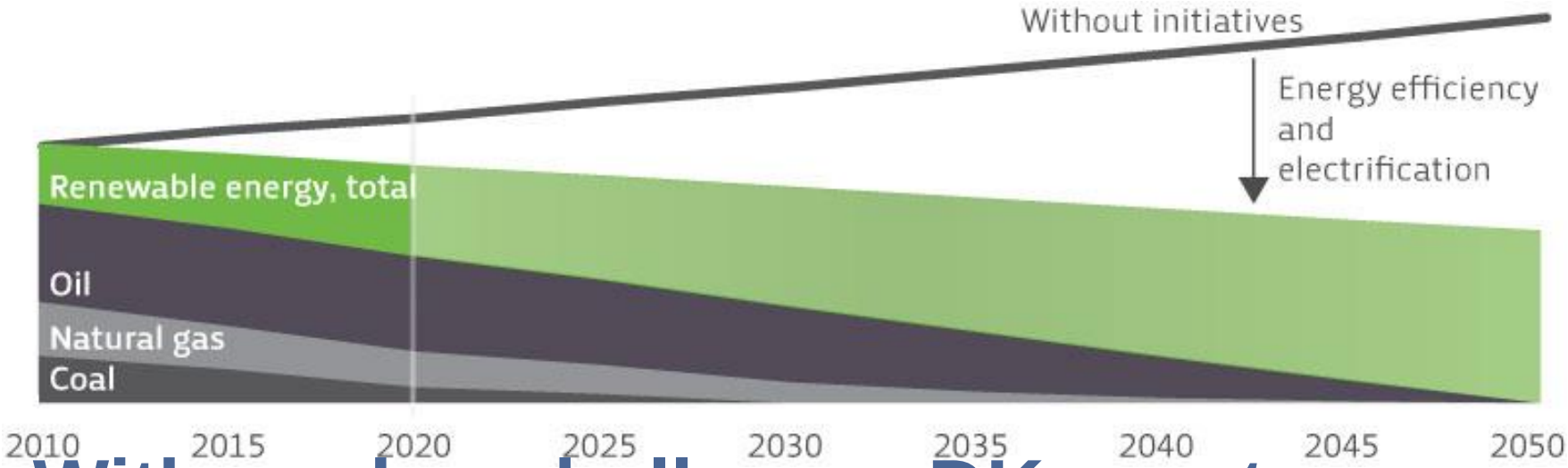
Denmark: Strong long-term policy give big improvements

- Decoupling energy consumption and economic growth
- Also during the current economic crises
- Many policies and measures have been implemented since 1979
  - Energy taxes
  - Regulation
  - Information and change of behaviour



Source: Bach, Danish Energy Agency

100% renewable energy in 2050: Efficiency is needed to get there!



Source: Bach, Danish Energy Agency

With such a challenge, DK *must* look at all measures that can do the job

So what has Denmark done?

- Incentives to reduce consumption
  - Taxes on energy and CO2, subsidies, etc.
- Regulation, standards, norms, etc.
  - Both at international and national level
  - Especially buildings, products and cars, but also industry
- Campaigns, market transformation, voluntary agreements, etc.
- Help to implementation of savings
  - Subsidies, obligations, etc.
  - Especially existing buildings and private enterprises

Why DK has chosen EEOs

- Need to do more on EE
- Voluntary agreements since 2006
- Help to implementation is important
  - Savings in existing buildings and industry are complicated
  - Close to the consumers and cover all part of a country
- A secure and stable way to **finance** energy savings activities
  - Difficult to get money over the state budget
- Transformation of the utilities to energy service providers
  - Deliver energy services in the cheapest way to consumers

Savings – where?

- Final energy consumption in all sectors
  - In principle all end-uses and sectors
  - But CFLs and most households appliances are not accepted
  - Not biomass, not PV, but local solar collectors
  - Some savings in transport is included from 2013
  - Also consumers covered by ETS
  - Some savings are reduced (additionality)
- Also reduced losses in grids – especially district heating
- Not efficiency improvement in district heating plants and power plants → Only thermal solar plants can count

Utility costs in 2011

Companies	Savings Mio. kWh	Total costs Mio. Euro	Cost Cents/kWh
Gas	385	22	5,6
Electricity	855	48	5,6
District heating	728	24	3,3
Oil	72	2	4,5
Total	2.040	97	4,7

Source: Bach, Danish Energy Agency

- Less than 5 €Cent/KWh first year savings
- 0,5 €Cent/kWh with an average life of 10 years

How to measure savings

- The main principle
  - First year savings – not cumulative.
  - Simple weighting factor was introduced in 2011
  - Reflect lifetime, primary energy, non-ETS
- Standard values – deemed savings
  - Average saving are calculated for standard activities
  - Primarily used in households
- Specific calculation – scaled savings
  - Used for all big projects
  - Especially industries, public sector etc.
- Market transformation – surveyed savings

Who does the job?

- The distribution companies are not allowed to do very much by themselves
  - Regulated monopoly companies
- Have to involve an actor
  - Can be another company in the same group
  - But is very often a private engineering company or a plumber, construction company, etc.
- There can be several links from the utility to the consumer

A market-based system

- Important to make the system market oriented and transparent
  - Involvement of external actors
  - Easy to use for consumers
- Subsidies or financial incentives more important
  - There is a kind market price on savings
- Strong promotion of all kind of energy service providers
- Keep the rules simple!

Challenges

- Additionality (additional net savings)
  - Avoiding free riders
  - Difficult to measure
  - Especially in the building sector
- Market and other actors
  - Some actors argue that the energy companies have advantages
  - Use of companies in the same group
  - Tendering procedures, etc.
- Keep the rules simple
  - Low cost for administration is very important

Summary – why go for EEOs?

- Low costs
- Not relying on public expenditure
- EEOs can be tailored to fit specific country situations – or cantonal situations!
- EEOS help drive the market transformation
- EEOs complement other measures
- EEOs are more successful if they exist in a context with other measures

Thank you!

And thanks to:

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