Marketization in the Danish EEO

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Development of the Danish EEO

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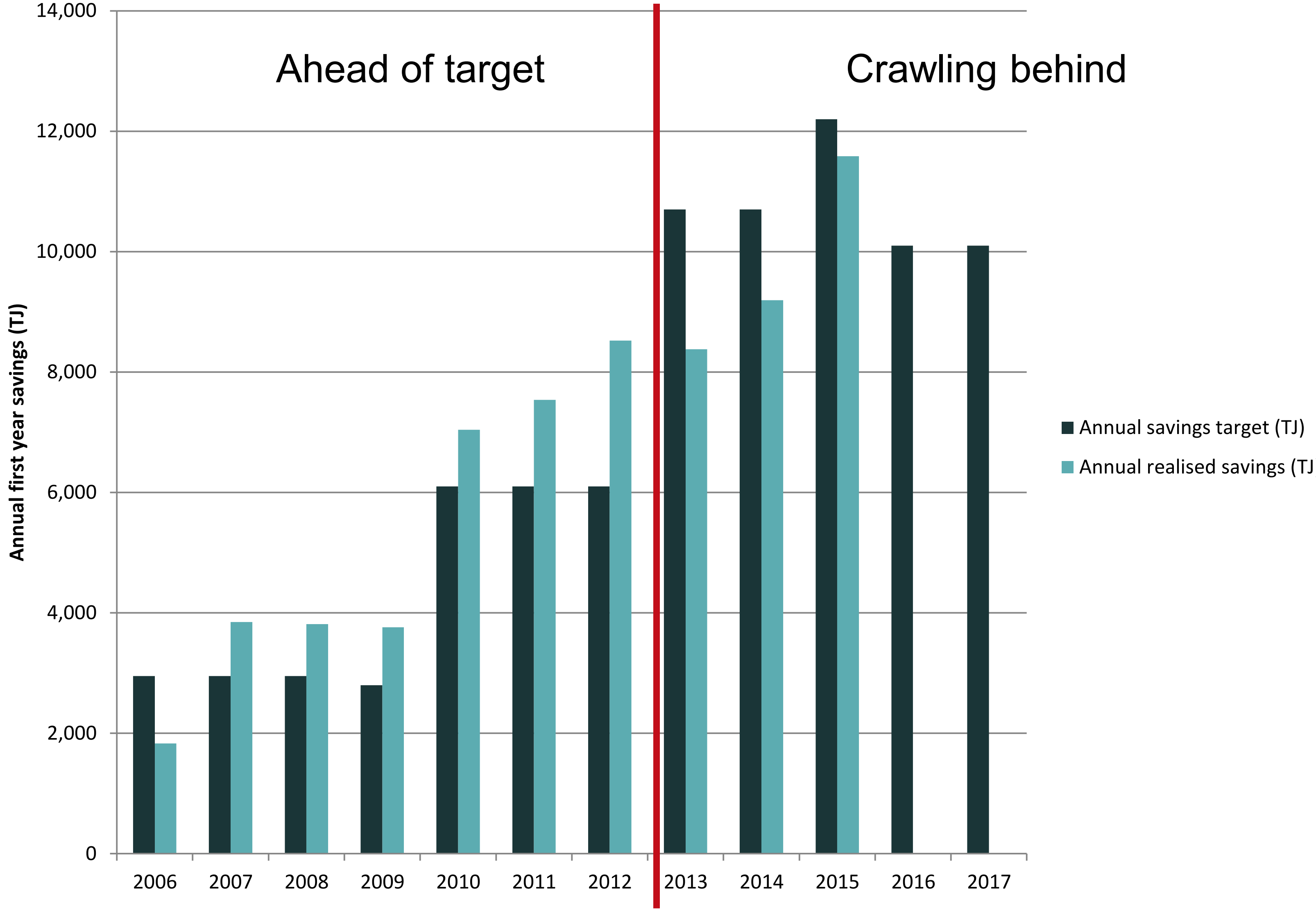
- 1990 – Electricity companies are being involved in EE initiatives through DSM
- 2006 – Voluntary agreement between the energy sector (district heat by law) and authorities to implement EEO schemes
- 2010 – EEO agreement involving all four sectors: electricity, district heating, gas and oil
- 2012 – Review of the agreement based on the political agreement of 2012 – Increase in EE target (75 % in 2013-14, 100 % in 2015-20 (12,2 PJ)
- 2015 – End of agreement period.
- **2017** – **New voluntary agreement signed 16th of December 2016 for the period of 2016-20**
- 2020 – End of policy period for the energy agreement of 2012. New policy measures are evaluated

Increasing political target puts preassure on DSO



The new agreement for 2016-2020 – a result of marketization

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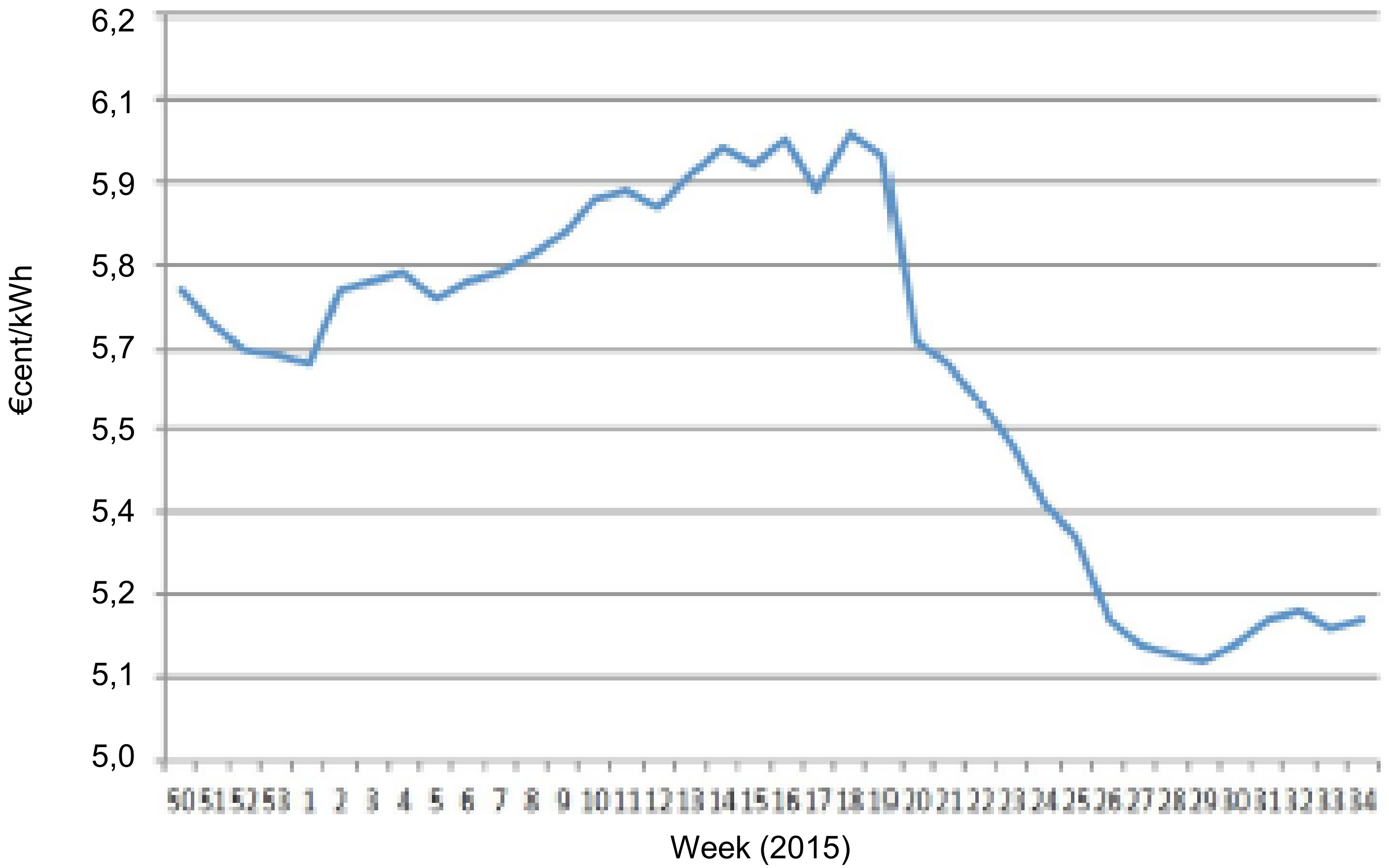
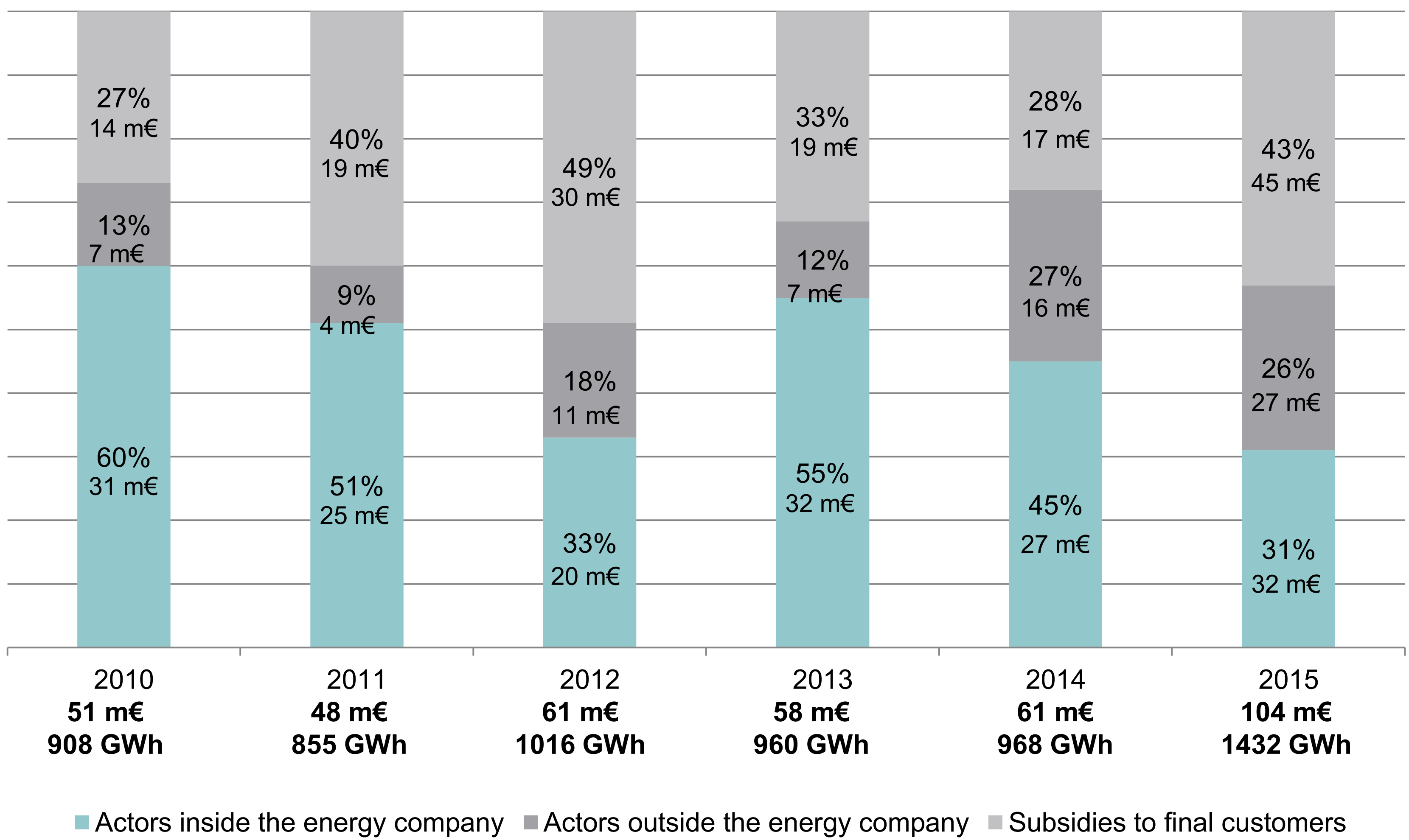
- **Long negotiation process** reveals the down sides of a voluntary agreement – instability in the market
- The new framework is a result of **compromises from all parties** of the voluntary agreement
- Framework still based on implementation of **technological neutral energy efficiency** projects – driver of innovation and market based activities
- Voluntary agreement with a continues focus on **freedom of methods**
- **General savings target** on obligated parties support cost effectiveness and increases the market based activities.
- Paradigm shift in the Danish EEO – **from trust based to increased focus on verification and standardization of documentation** - a result of increased 'marketization'
- Continues focus on **supporting the Danish agenda** on transition of the energy system.
- **Objective burden sharing** of the target distribution based on delivered end use energy
- **Savings in the transportation** sector is included in the base
- **Standardization on demand for quality assurance** – in a market based system external parties must be meet with similar demand for documentation, quality etc.

Market reacts on instability – prices from auction site



Allocation of funds in the Danish EEO handled by electricity DSO



Experience from members working with EEO

Company A

- In 2016 the company had 130 external partners delivering 85 % of the total amount of realised savings.

Company B

- Before 2013 the company had less than 5 external partners. Numbers of partners have been increasing towards 2016.
- Due to instability in the market the company faces a reduction in numbers of external partners.
- Working with external partners has resulted in being resourse intensive in administration, control, information etc.)

Company C

- Increasing share of realised savings from external partners from 2.6 GWh in 2013 to 38.5 GWh in 2016
- Stable around 45 % of total realised savings from external partners
- Expecting to shift from external partners to subsidies directly to the end consumer in 2017 – diversification of risk (savings from external are less secure)

Market based activities

- **Trade organizations** not directly linked to the EEO are engaging in the marked.
- **Local agriculture associations** are acting as small scale ESCO (consultants)
- **Auctions sites** are matching supply and demandof energy savings
- **Specialized consulting** companies are working as ESCO's in specific areas (e.g. IT)
- **Small scale markets actors** working as connection between energy companies and end users or technicians. E.g. through web based portals
- **Craftsmen** (e.g. insulation companies)
- **Product supliers** (e.g. boiler, furnace etc).

Marketization leads to focus on large scale savings – industry as the main sector

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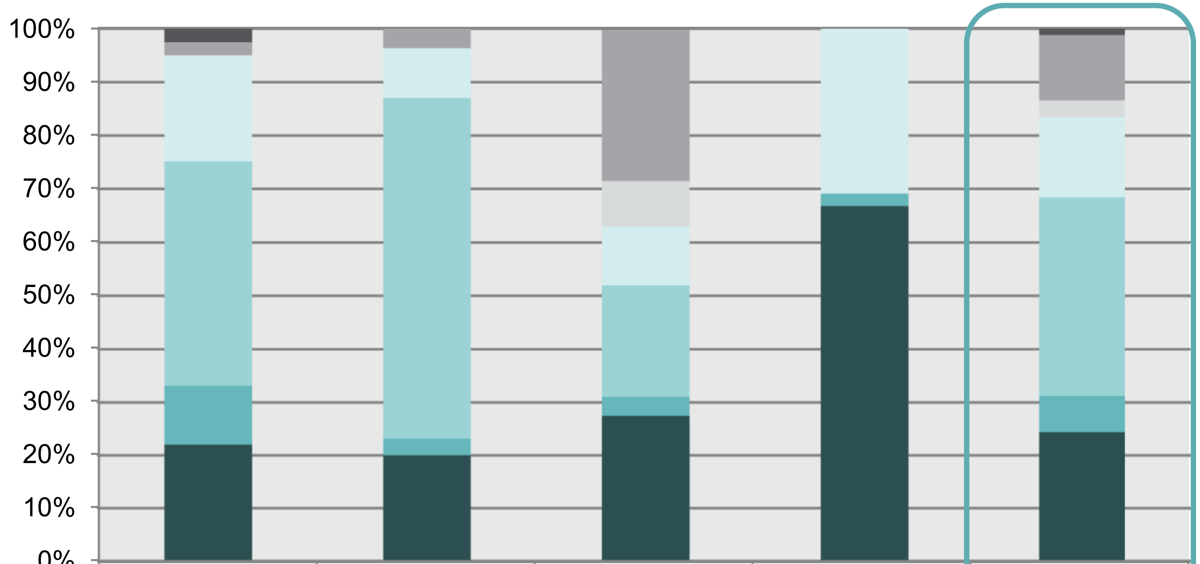

	Electricity	Natural gas	District heating	Oil	All companies
Transportation	3%	0%	0%	0%	1%
Solar for DH	2%	4%	28%	0%	12%
Savings in grid	0%	0%	8%	0%	3%
Commercial sector	20%	9%	11%	31%	15%
Indstry	42%	64%	21%	0%	37%
Public sector	11%	3%	4%	2%	7%
Households	22%	20%	27%	67%	24%

Costs are converging between sectors – but increasing

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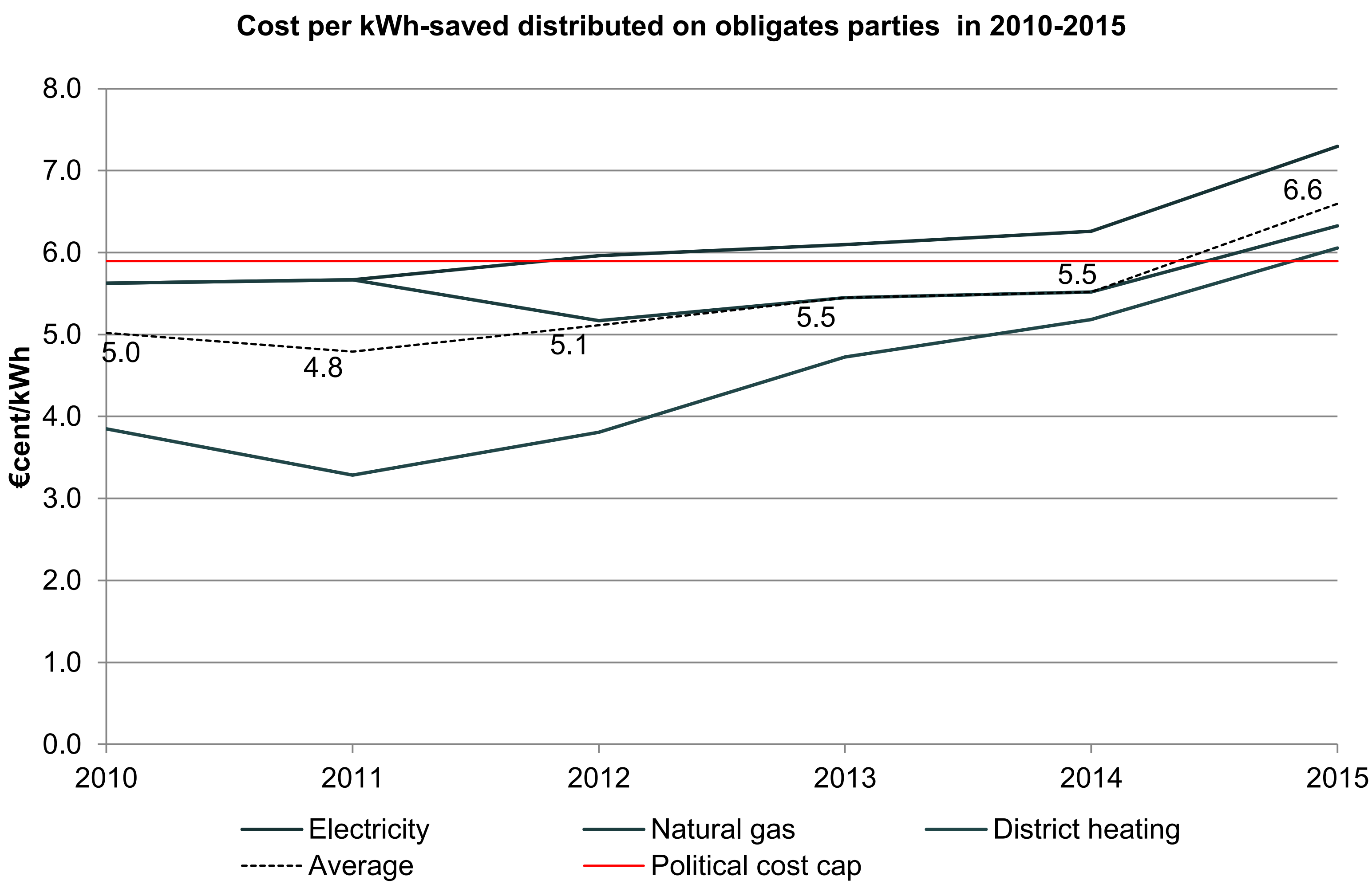

Benchmark of cost effectiveness 2014 – stable distribution of cost

Summary of marketization in the Danish EEO

‘Freedom of Methods’ and technological neutrality supports high degree of marketization and ensuring cost effectiveness and sound competition in the marked

Rapid development in scale of the EEO have impact in the marketization. Increasing target and realized savings with equal (or less) internal resources within the energy companies.

External markets partners have become more important in the scope of the Danish EEO. Some external partners with important market shares (16 % in 2015)

High degree of marketization demands for new approach for regulation – from trust-based to regulation and standardization which might increase the administrative burden. Risk of undermining potential benefits from increased competition

With unstable market conditions obligates companies seek to secure market partners e.g. internal in the energy company and large external partners

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Thanks!