

# The Danish Curve Breaker Agreement

Voluntary agreement model to break the electricity consumption curve

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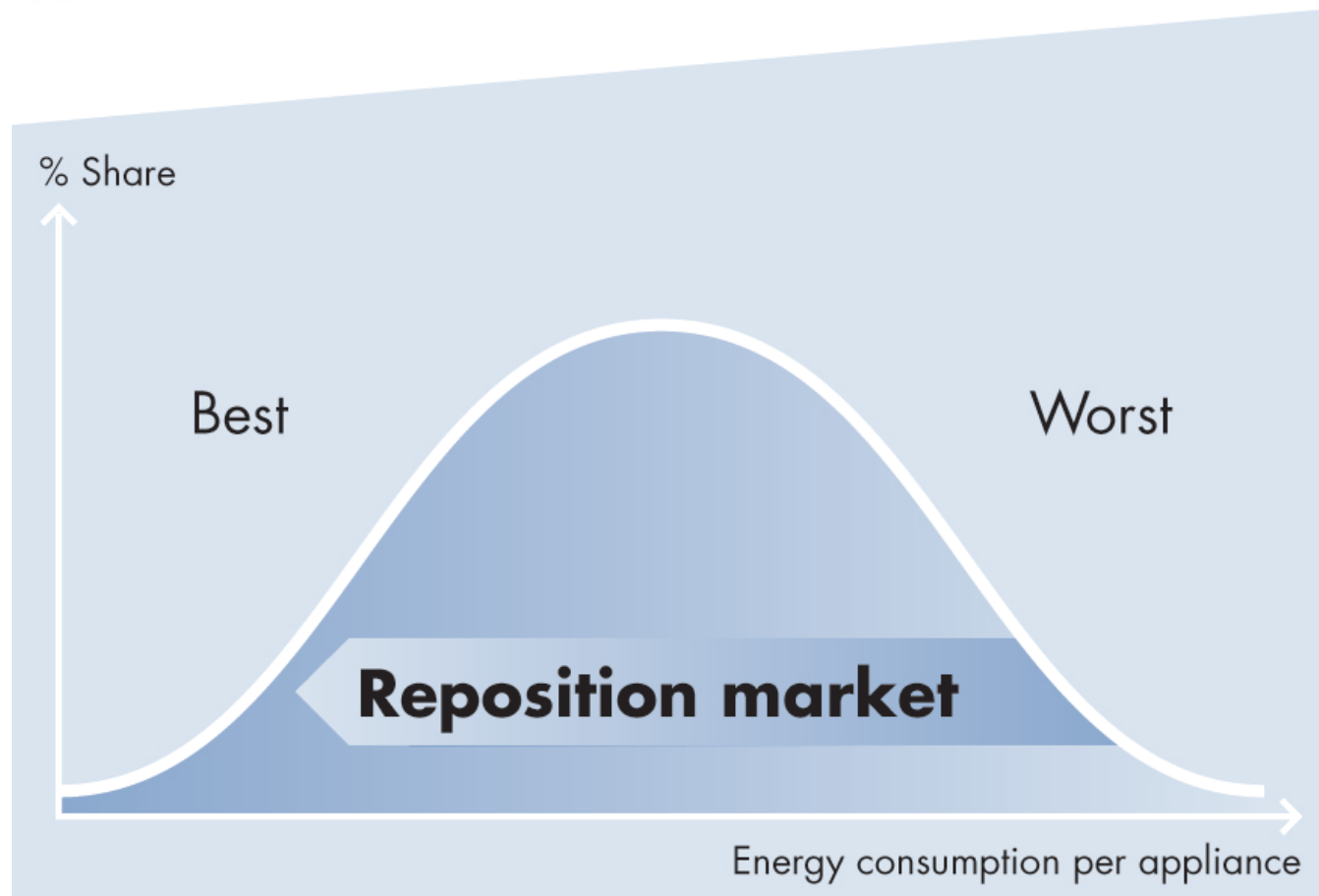
# Danish Electricity Saving Trust

- Danish Electricity Saving Trust
  - Independent government institution with its own Board of Directors
  - Danish Ministry of Climate and Energy
  - Must promote electricity savings



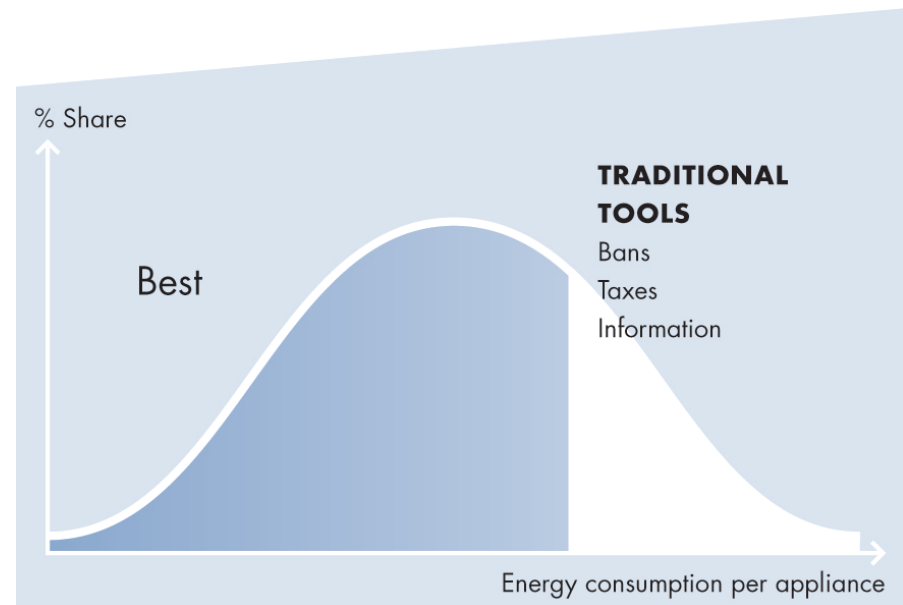
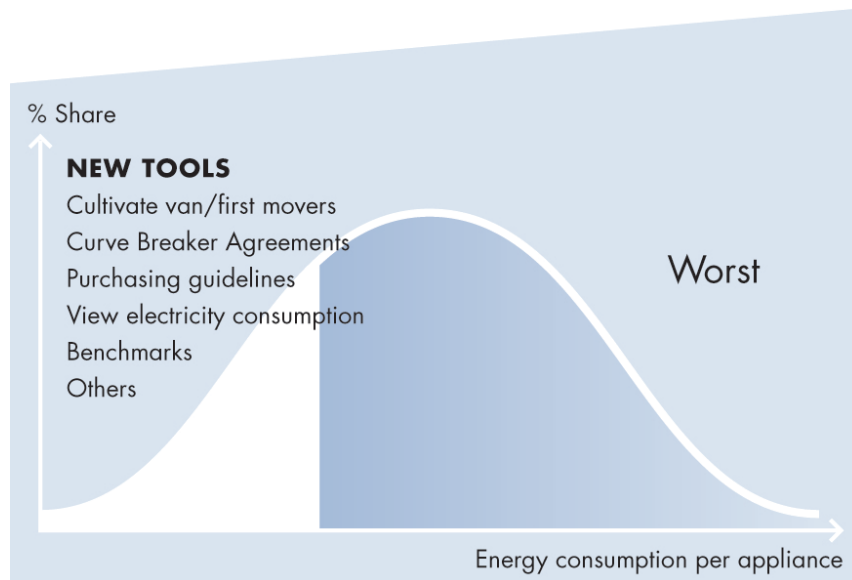
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# Market transformation



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# “New” and “traditional” tools



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# Tools

- **Supplier side:**

Producers and retailers

- Collaboration
- Approved lists
- Voluntary agreements
- Price pressure
- PR
- Marketing
- Monitoring and analysis

- **Demand side:**

Consumers

- Subsidies (kick-start)
- Marketing
- PR
- Websites
- *Curve Breaker Agreements*
- Customer advice

The Trust's  
Push-pull-strategi



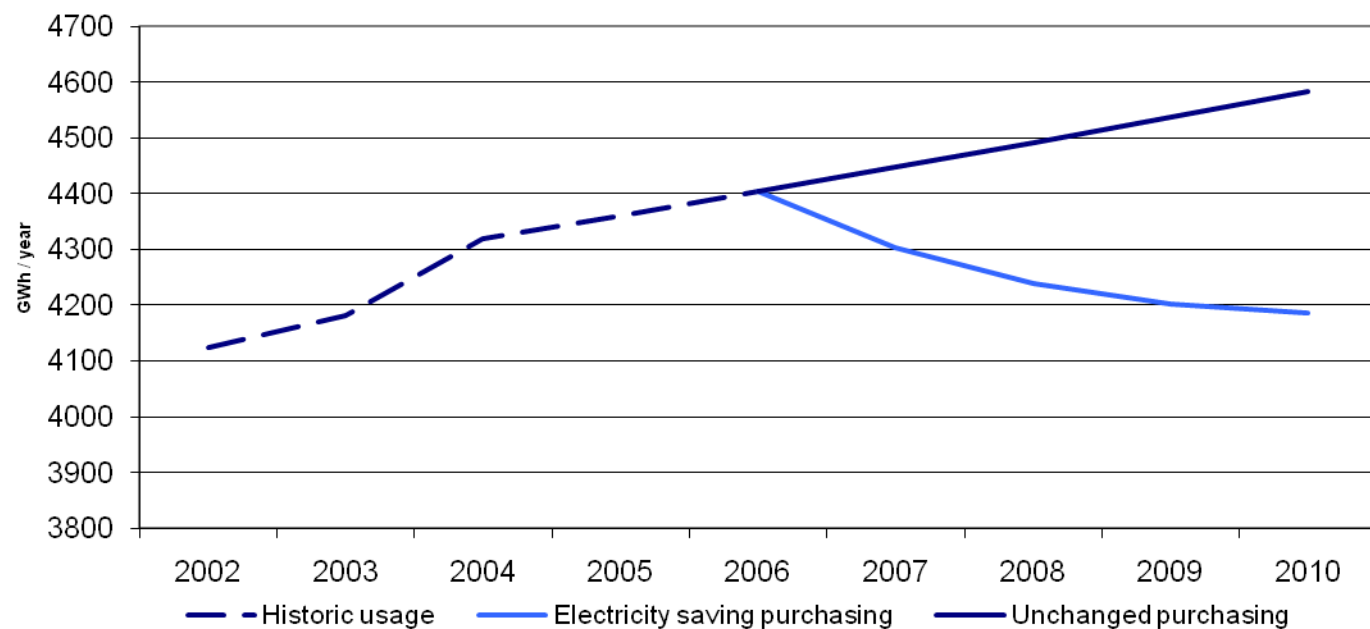
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# The public sector's electricity bill?

- Total of DKK 7 billion per year (ca 0.9 billion Euro)
- Potential savings: ca DKK 2 billion per year (ca 0.25 billion Euro)
  - Energy efficient purchasing 500 GWh/year
  - Operation/replacement/renovation of technical plant and equipment 750 GWh/year
- Good business: payback time  $\leq 4$  year.



# Trend in public sector electricity consumption



## Trend in public sector electricity consumption

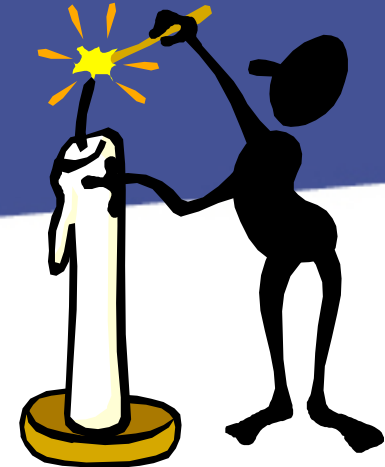
Forecast electricity consumption in the public sector in relation to electricity saving and unchanged purchasing patterns.

Source: Dansk Energi & IT Energy



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# Public sector decision makers

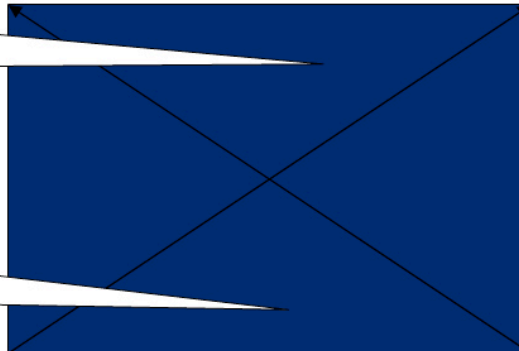


Administrative leaders

Politicians

PR (campaigns) and  
public debate

Campaigns, suppliers,  
Web and direct contact



Purchasing staff

Operations/those responsible  
for energy/environment



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# “Break the electricity consumption curve”

New concept

## **Vision 2009**

“Electricity consumption curve must be broken” (real reduction!)

## **Philosophy**

Individual municipalities, regions, ministries and agencies commit to reducing the amount of electricity consumed

Good for the environment and finances, and an important signal to consumers (i.e. the public sector practices what it preaches)

## **The simple approach**

If a large number of municipalities and institutions break the curve, total electricity consumption will fall!



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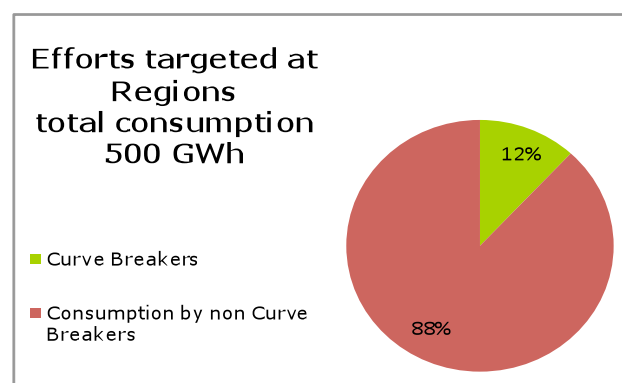
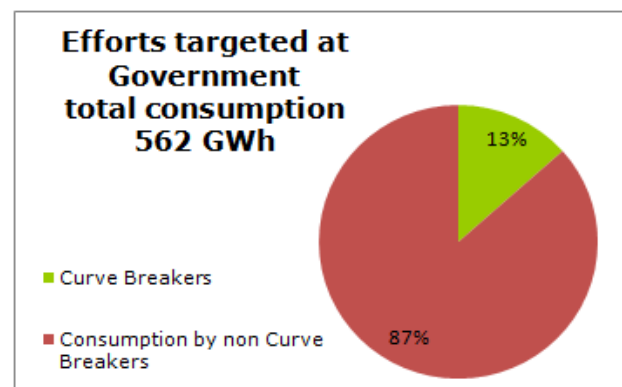
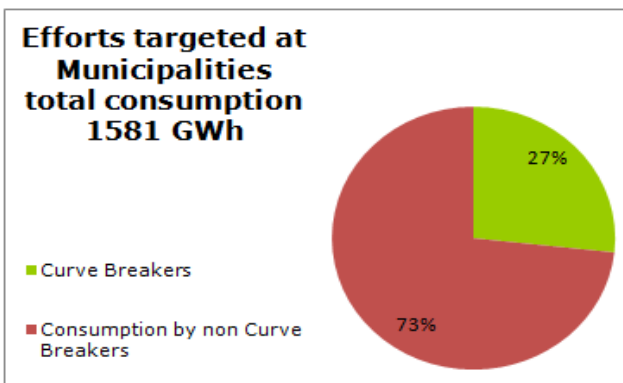
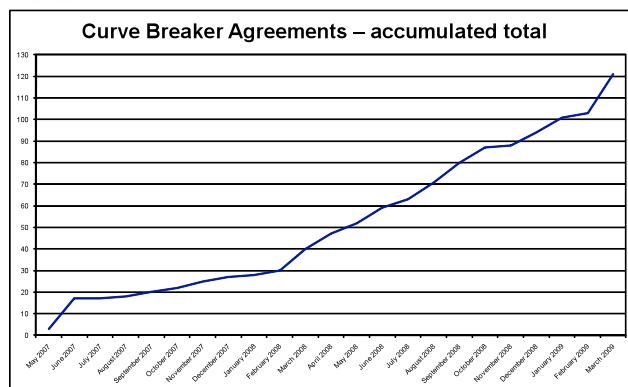
# Concept

## **Binding agreement (Curve Breaker Agreement)**

*Concluded with the Trust*

- Binding target to reduce electricity consumption within a given timeframe (e.g. 3 years)
- Making the consumption trend visible on '[www.savingtrust.dk/view-electricity-consumption](http://www.savingtrust.dk/view-electricity-consumption)' in order to follow and disclose that the target is being reached
- Openness on how the reduction is achieved – including the offer that the Trust will organise PR and other publicity
- Freedom to choose – offer of coaching, campaign materials, etc.

# Status of current Curve Breaker Agreements



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# The Trust's tools and other offers

- Coaching
- Guidelines
- 'View Electricity Consumption'
- Self-check tools
- Staff campaigns and behavioural material
- Courses and training
- News by e-mail and newsletter



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# Making electricity consumption visible

[www.savingtrust.dk/view-electricity-consumption](http://www.savingtrust.dk/view-electricity-consumption)

2

Zoomlevel

Type of authority/companies (8)

Type of workplaces (25)

Type of consumption areas (5)

Type of meters (9)

Select Type of authority/compa

Select Type of workplace

Select Type of consumption are

Select Type of meter

Show readings for the following types of locations and end uses

Average

Individual

Search words:

Search




Reset

2

Type of workplaces - average per workplace

Info	Count	Type of workplace	Floor area	Annual consumption			Share
			m <sup>2</sup>	kWh	kWh/person	kWh/m <sup>2</sup>	
	40	24-hour care centres	5,511	279,617	1,927	51	
	9	Adult education centres	5,067	221,181	282	44	
	30	Boarding schools/training centres	5,645	209,529	1,531	37	
	53	Day care institutions	1,505	111,720	1,217	72	
	61	Higher education locations	23,327	2,281,331	774	79	
	26	Hospitals	39,757	3,789,984	4,079	95	
	1	Hotels	7,650	300,995		39	
	16	IT Services	15,479	2,911,291	8,055	188	
	12	Laboratories	8,996	949,888	6,180	104	
	33	Libraries	4,800	323,971	868	58	
	14	Manufacturers	10,162	2,025,880	11,420	198	

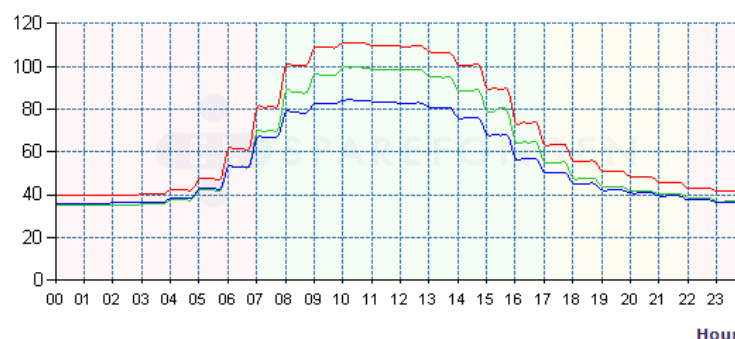
# Averages for offices/administration








List (remove all charts)	Chart	Report	Denmark  					Send to a friend
Authority/company	Workplace	Consumption area	Meter	Floor area m <sup>2</sup>	Annual consumption kWh	Annual consumption kWh/person	Annual consumption kWh/m <sup>2</sup>	Report
	Average for 239 Offices/administration			8,030	488,870	2,428	58	

## Daily report

Consumption for most recently registered **day** and **4** and **13** weeks ago.

### Consumption (kW)

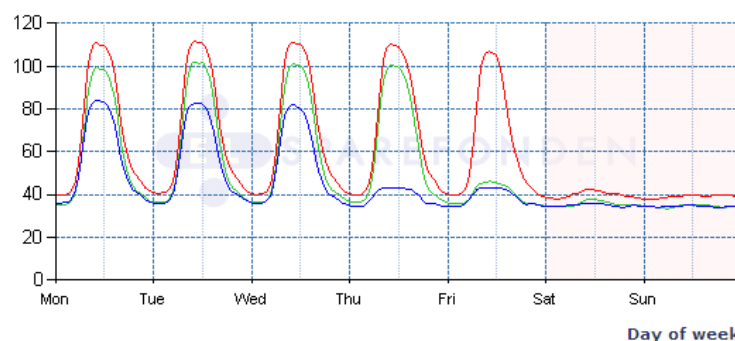









Consumption data for three days					
	Total kWh	Min kW	Max kW	Base %	mo-fr sa-so
	1,456	34.94	99.65	57 %	X
	1,332	35.66	84.38	64 %	X
	1,651	39.42	111.31	57 %	X
					
	Monday, May 04, 2009				
	Monday, April 06, 2009				
	Monday, February 02, 2009				

## Weekly report

Consumption for most recently registered **week** and **4** and **13** weeks ago

### Consumption (kW)



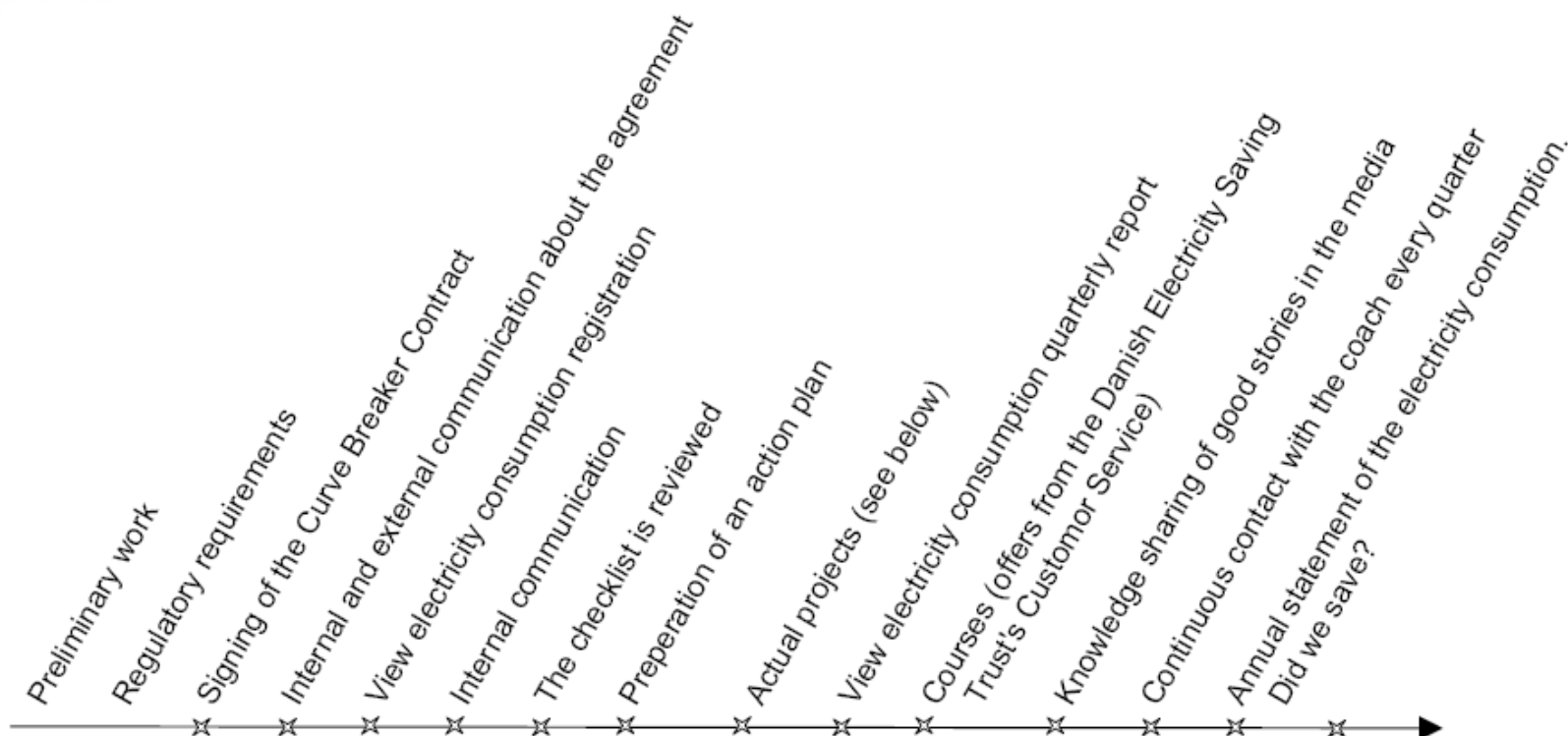
Consumption data for three weeks					
	Total kWh	Min kW	Max kW	Base %	mo-fr sa-so
	8,567	33.37	102.33	65 %	80 % 19 %
	7,456	33.74	84.38	76 %	77 % 22 %
	10,090	37.78	111.63	62 %	81 % 18 %
					
	week 19 of 2009				
	week 15 of 2009				
	week 6 of 2009				



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# Curve Breakers

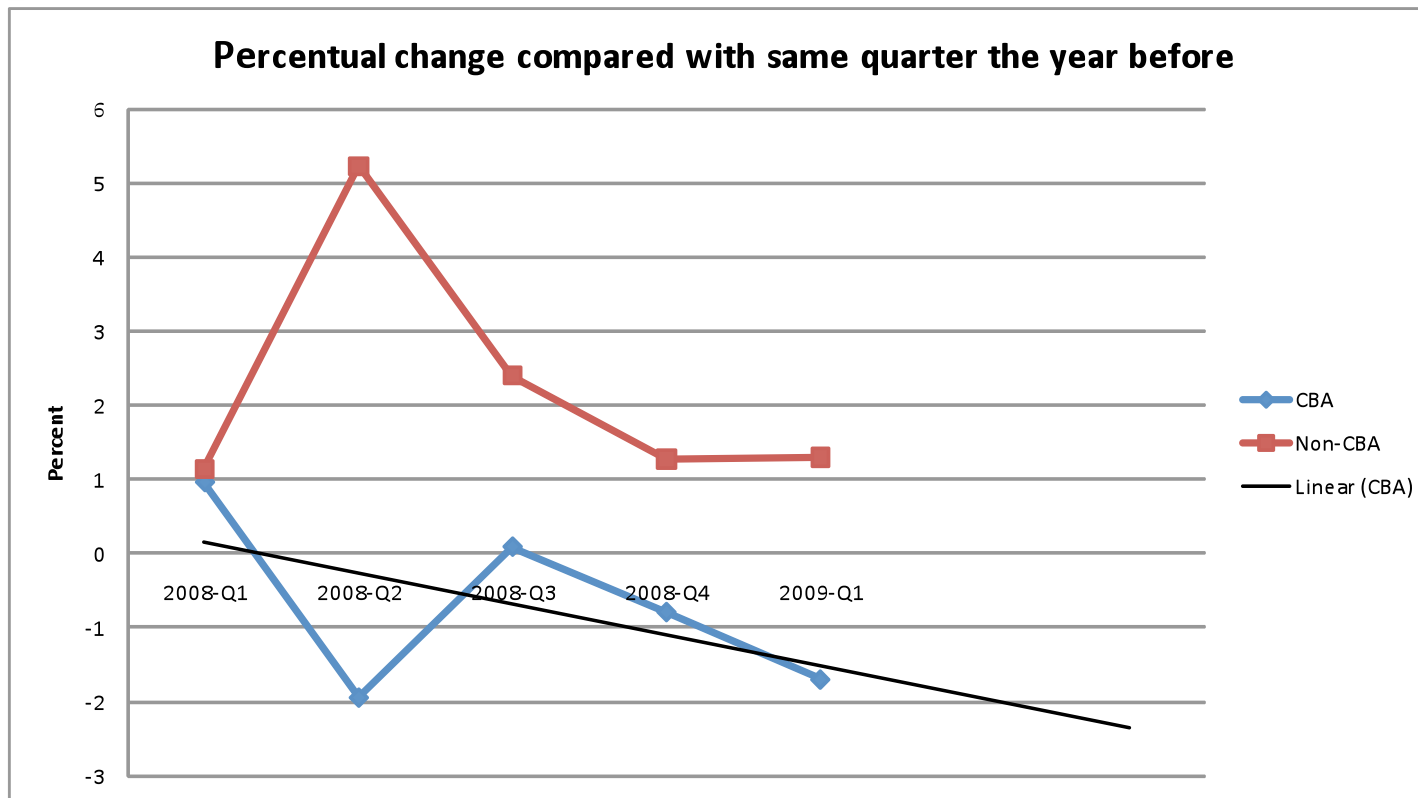
## Progress and inspiration arrow



- Lighting
- Behaviour
- and awareness
- Purchase
- Ventilation
- IT
- Schools
- Curve Breaker intro
- IT and office
- Server room
- Action plans
- Night-check of energy consumption
- Behaviour and awareness
-

# Has the curve been broken?

- Public Sector (approx. 800 workplaces)





# Conclusions and lessons learnt

- The Curve breaker agreement is a very useful tool in the public sector (and private sector)
- Agreements should be concluded at macro level (e.g. the mayor of a municipality)
- It is important that the agreement parties can track the electricity consumption trend
- Curve Breaker organisations require coaching and support in the form of tools and other solutions (e.g. the Purchasing Guidelines, self-check tools and campaign material)
- Following up the agreements should take place throughout the agreement period.



# Further information

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[cja@elparefonden.dk](mailto:cja@elparefonden.dk)

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