

# **EED ENERGY SAVINGS SCHEME – IMPLEMENTATION IN DENMARK**

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# DANISH DISTRICT HEATING ASSOCIATION

An association for 396 members, which deliver 98 % of Danish district heating to 63 % of the Danish house holds.

## 38 public suppliers

- Supplies 49 % of all district heating

## 353 cooperatives/privates

- Supplies 51 % of all district heating

## Other members

- 3 transmission companies
- 11 associate members



# DANISH DISTRICT HEATING ASSOCIATION

- Lobbying organisation towards
  - Governmental bodies
  - Other organisations
  - Internationally
- Organizing co-operation between members
  - Common guidelines
  - Know-how groups
  - Communication
- Service to members
- Promoting district heating

# **DANISH ENERGY SAVINGS OBLIGATION SCHEME**

- **Establish before EED**
  - Introduced in 2006
- **Designed to deliver on the Danish energy objective**
  - Be independent of fossil fuels in 2050
- **Energy efficiency improvements**
  - Reduction of end-use consumption
  - Conversion from fossil fuels to RES and electrification
- **Have been running in 3-4 year cycles**
  - Voluntary agreement
  - Independent evaluation
  - Revisions implement experience

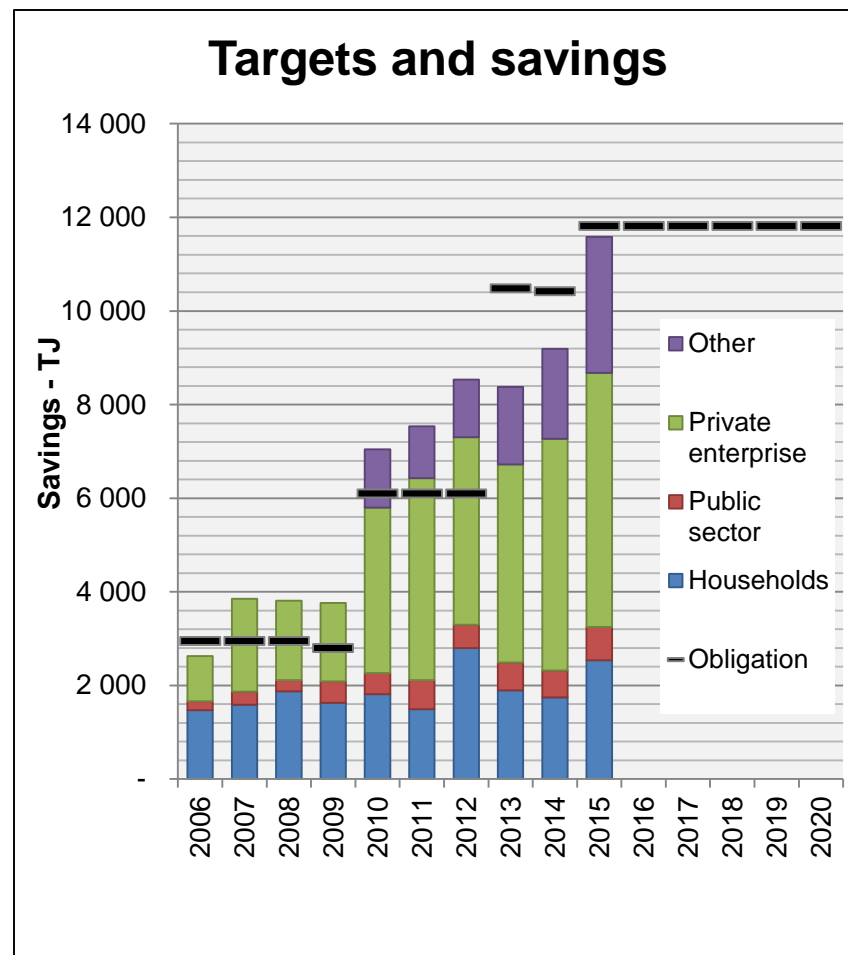
# MAIN PRINCIPLES AND TARGET TRAJECTORY

## Who?

- Distributors,
- All sectors (electricity, N-gas, district heating, oil)

## Annual saving target

- Free choice of methods to deliver savings
- Trade before implementation (not certificates)
- Clear rules for documentation of all projects
- Targets only set at branch level
- Targets have increased
- 60% of savings in industry/private enterprises

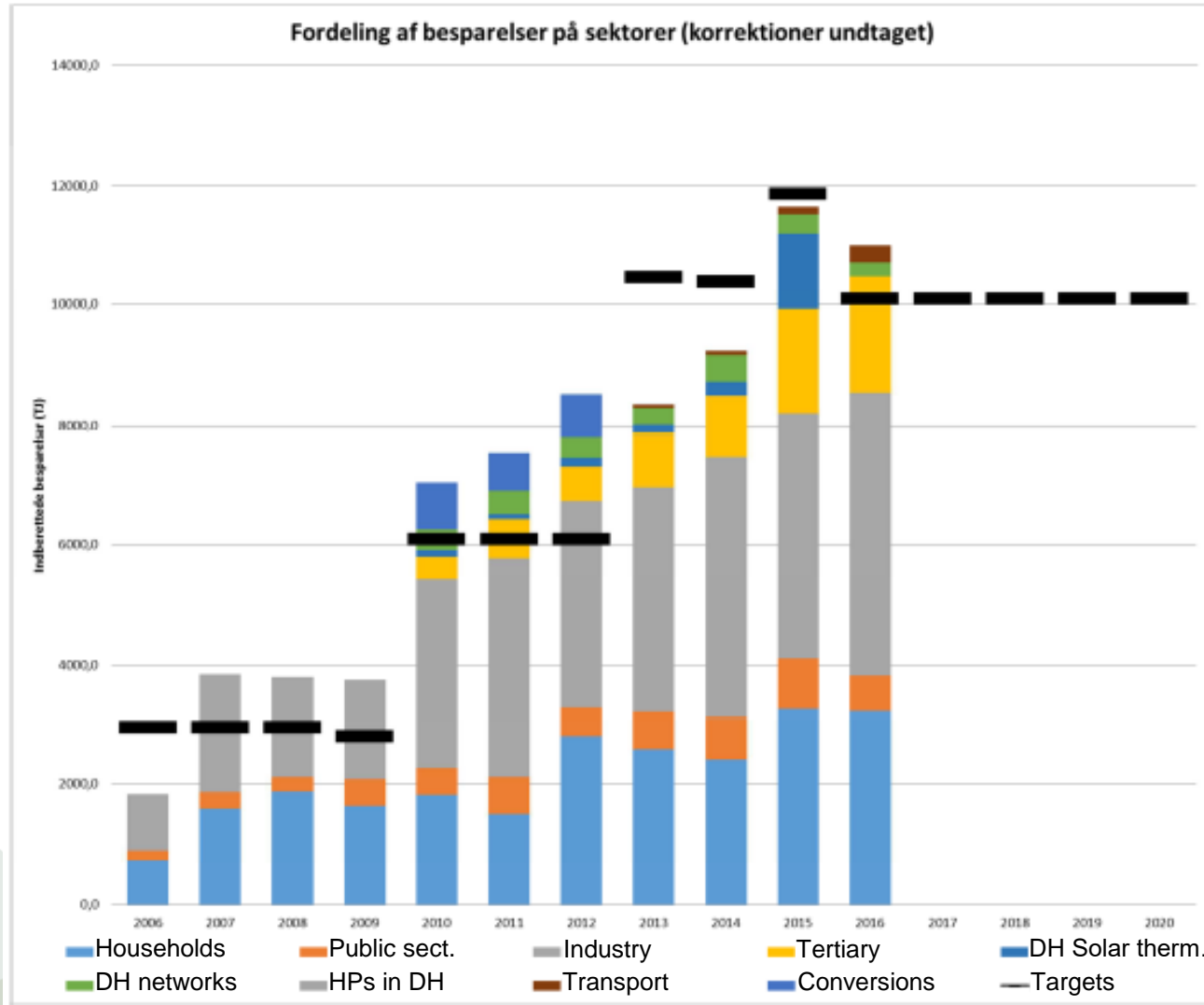


# SAVINGS – WHERE AND WHAT?

## • Final energy consumption in all sectors

- All end-uses and sectors ✓
- Also consumers covered by ETS ✓
- Energy saving lighting and most households appliances are not accepted ÷
- Local boilers & heat pumps count ✓
- Not biomass, not PV, ÷
- Some savings in transport included from 2013 (✓)
- Some savings are reduced (additionality) ✓ - ✓
- Savings in (district heating) grids ✓
- Solar thermal plants for district heating counts (until June 2018) and local solar collectors ✓
- Not all savings count towards EED target ✓ / ÷

# SAVINGS BY SECTORS



# CALCULATING SAVINGS

## The main principle

- First year savings – not cumulative
- Difference between consumption before and after
- Simple weighting factor was introduced from 2011

## Methods:

- **Standard value savings (Mainly households)**
  - Average saving for standard activities
  - Developed by experts. Approved by DEA
- **Specific calculation/scaled savings (Most savings, industry etc.)**
  - Used for all big project, Especially industries, public sector etc.
  - Utilities are responsible for specific calculations
- **Market transformation (Discontinued)**



# STANDARD VALUES AND SOLUTIONS

**STANDARDVÆRDIKATALOG FOR ENERGIBESPARELSER**

Få opdaterede udtræk af databasen med gældende standardværdier via [Webservice](#)

Standardværdi-beregning Om standardværdikataloget Brugervejledning Nyheder Logbog Arkiv Standardværdikatalog, Energistyrelsen

Søg: Ref. ID  eller fritekstsøgning

For at se standardværdikataloget i PDF format klik [her](#)

| Version: 6.2 fra den 22.03.2017                    | Energibesparelse | Pr. faktor |
|--|------------------|------------|
| ⊖ Belysning  |                  |            |
| ⊖ Biomasse   |                  |            |
| ⊖ Cirkulationspumper                               |                  |            |
| ⊖ EL-besparelser diverse                           |                  |            |
| ⊖ Elvand   |                  |            |
| ⊖ Feedback om elforbrug                            |                  |            |
| ⊖ Fjernvarmeanlæg, afkølings- og energibesparelser |                  |            |
| ⊖ Gaskedler  |                  |            |
| ⊖ Intelligent energistyring                        |                  |            |
| ⊖ Klimaskærm - isolering                           |                  |            |
| ⊖ Klimaskærm - vinduer, ovenlys og døre            |                  |            |
| ⊖ Kontroludstyr                                    |                  |            |
| ⊖ Køl-frys   |                  |            |
| ⊖ Madlavning                                       |                  |            |
| ⊖ Olekedler  |                  |            |
| ⊖ Solceller  |                  |            |
| ⊖ Solvarme   |                  |            |
| ⊖ Varmepumper                                      |                  |            |
| ⊖ Vaskeapparater                                   |                  |            |
| ⊖ Ventilation                                      |                  |            |

Standardløsninger er en betegnelse for bestemte anvendelsesmetoder og fremgangsmåder, som bruges ved specifikke opgørelser i Energispørefaften. Standardløsninger er udarbejdet af Teknisk Arbejdsgruppe.

Nedenstående er en oversigt over nuværende standardløsninger, der alle **skal** anvendes i forhold til den aktuelle teknologi.

## Standardløsninger for udskiftning af traktorer

- [Excel-beregner - traktorer](#)

## Standardløsninger for udskiftning af biomasse- og anden fastbrændselskedel

- [Vejledning - biomasse- og anden fastbrændselskedel](#)
- [Excel-beregner - biomasse- og anden fastbrændselskedel](#)

## Standardløsninger for busser

- [Notat om medregning af besparelser ved energieffektive busser \(PDF\)](#)

## Standardløsninger for forbedret afkøling

- [Opgørelse af energibesparelser ved forbedret afkøling](#)

## Standardløsninger for transporttiltag

- [Opgørelsesmetoder for transporttiltag](#)

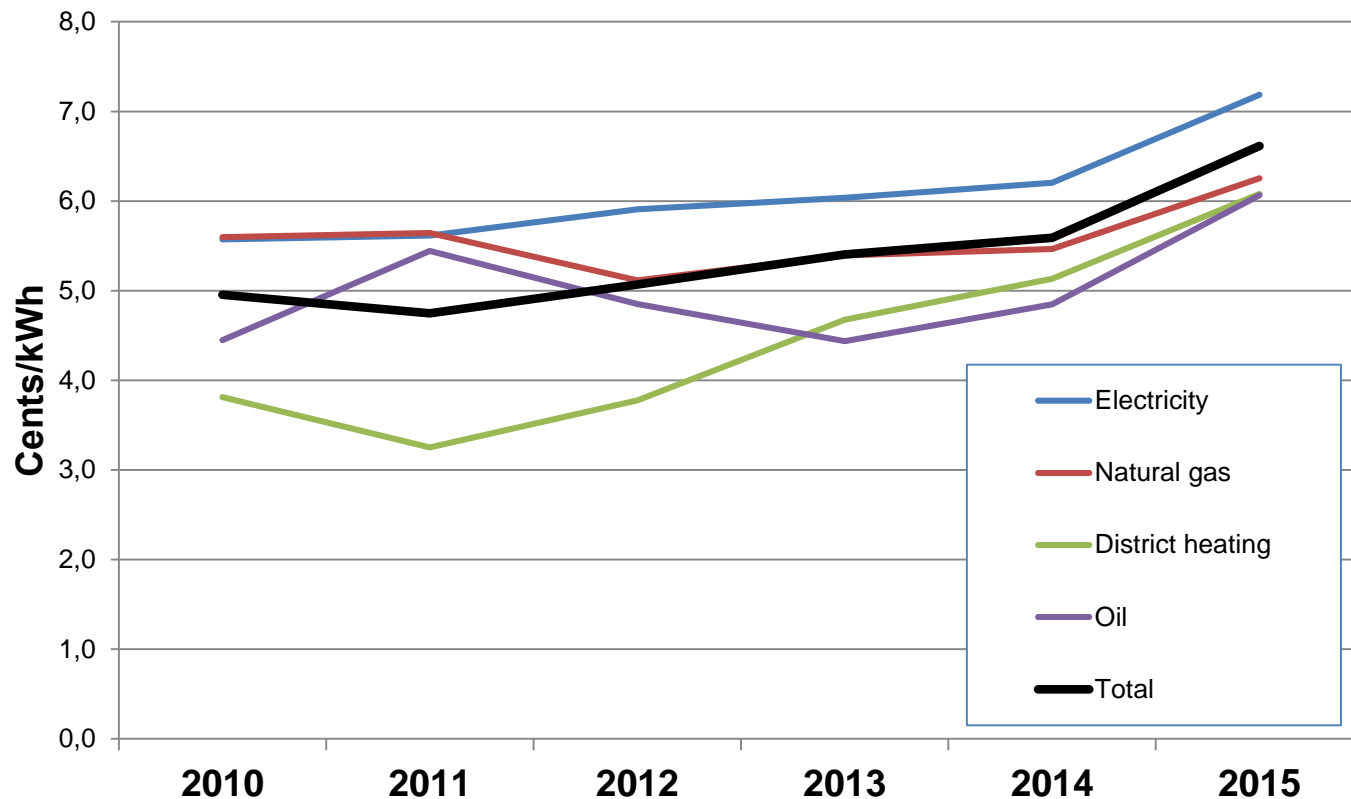
# WHO DO THE JOB?

- **The distribution companies are not allowed execute very much by themselves**
  - Regulated monopoly companies
- **Have to involve an actor**
  - Can be subsidiary
  - 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**
- **Agreement between customer and obligated utility must be in place before implementation start**

# DOCUMENTATION AND VERIFICATION

- **The obligated parties are responsible for**
  - Verification, documentation and reporting
  - Quality control systems and independent annual audits
- **Annual random control by DEA**
  - Quality control systems
  - Documentation of actual cases/projects
  - Small sample – but different every year
  - Only very small correction of savings (3-6%)
- **Independent evaluation every third year**

## SAVINGS COSTS



- 6-7 Eurocents per kWh first year savings
- 0,6-0,7 Eurocent per kWh with an average lifetime on 10 years

FOR FURTHER INFORMATION

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