



energy authority

# Energy Efficiency Policies in Finland

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Fair energy



# Cold and Sparsely Populated MS

- Northeast and coldest in EU
  - 80 % of the building stock of Sweden is south from Finland
  - Heating season 250 days in south and over 300 days in north
  - Cooling season... hopefully a few days every summer
  - Temperatures go below -40 C every winter in north, -20...-30 C is not rare in Helsinki
- Large land area and small population
  - 5<sup>th</sup> largest in EU 337 000 km<sup>2</sup> (Germany/Poland/Italy)
  - 9<sup>th</sup> smallest population 5,5 million (Slovakia/Denmark/Ireland)
  - Clearly smallest population density 16 (Sweden 22, Estonia 29... EU 116)
    - In the northeast 1/3 of the country the density is < 1



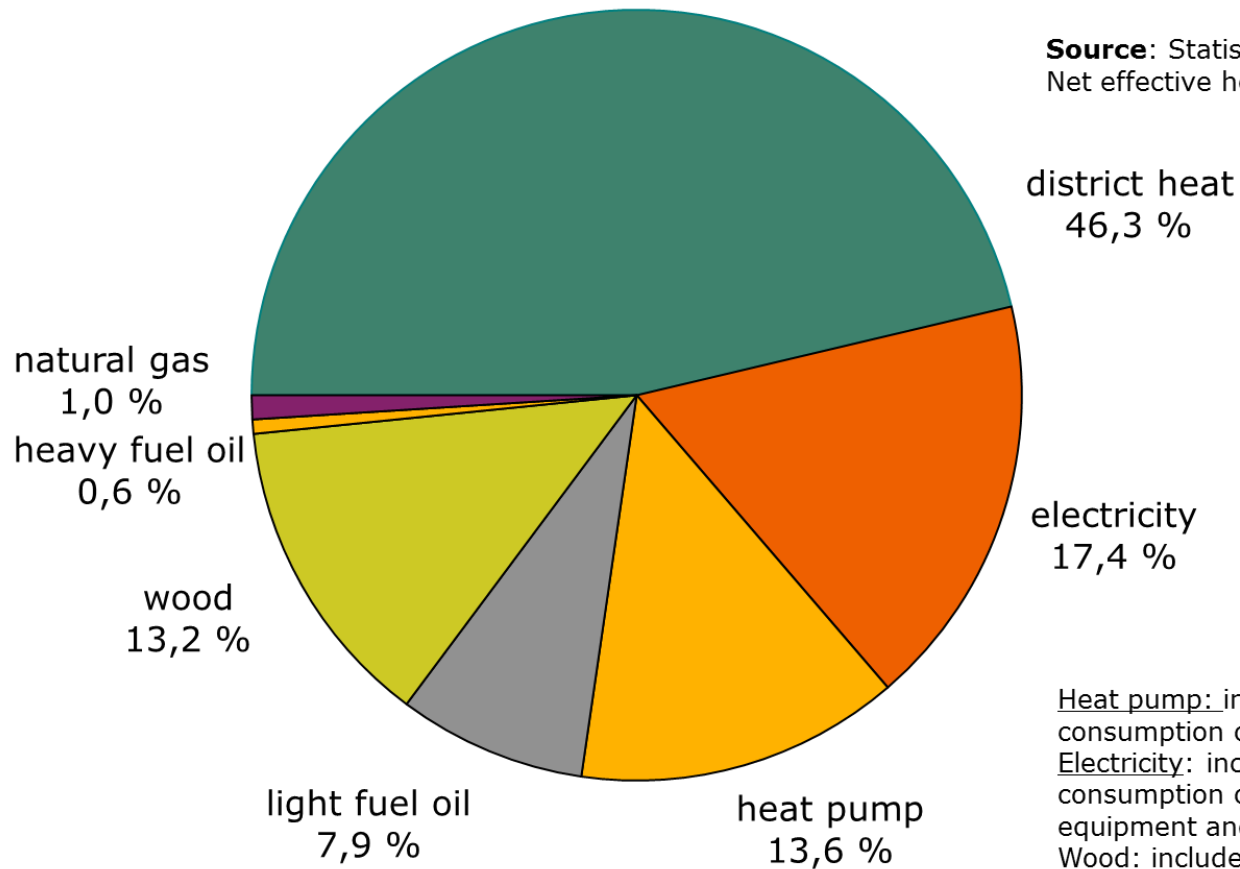
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# Energy, where it comes from and where it goes

# Market shares of space heating

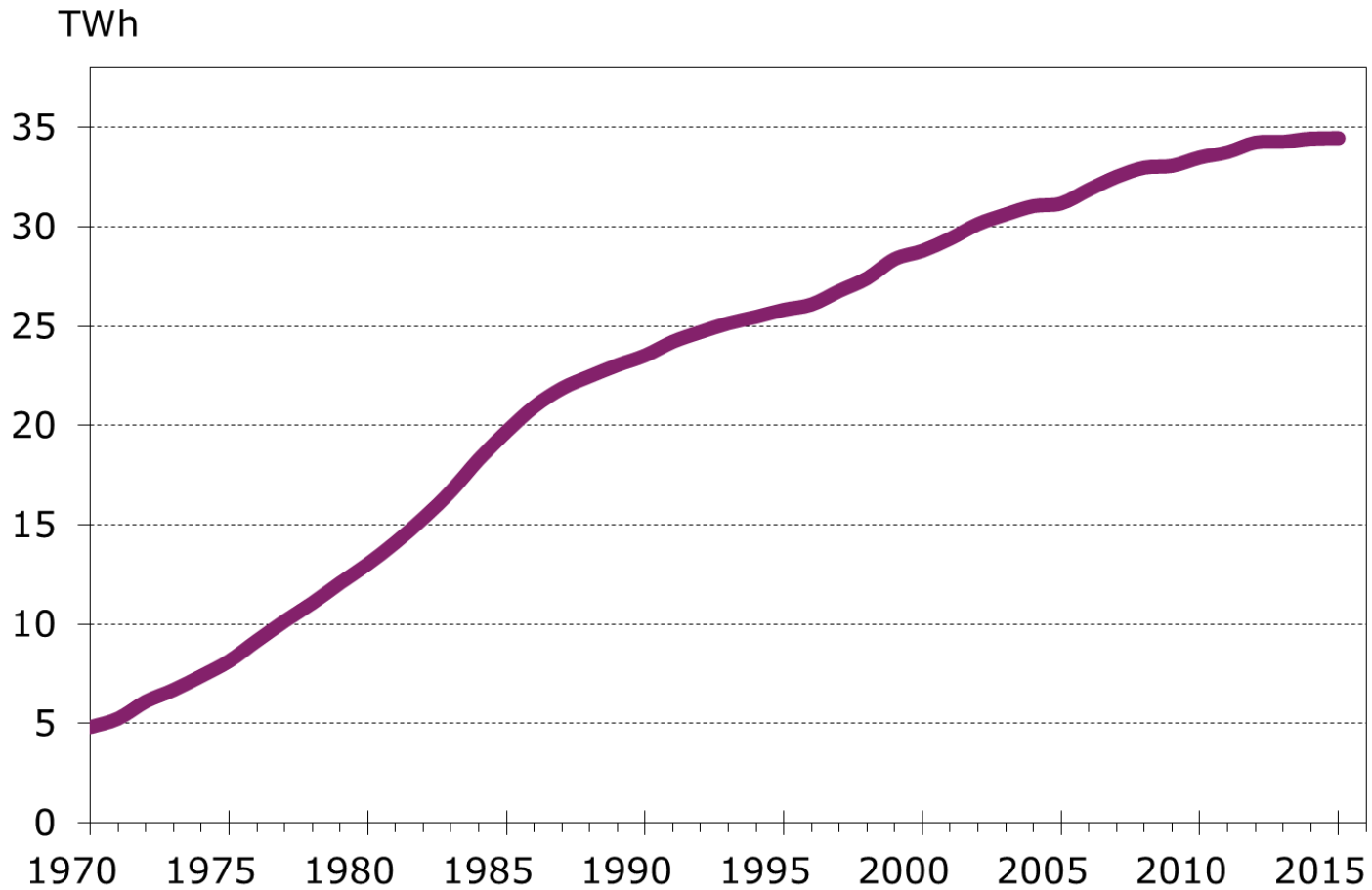
## Residential, commercial and public buildings

**Source:** Statistics Finland  
Net effective heating energy, 2014

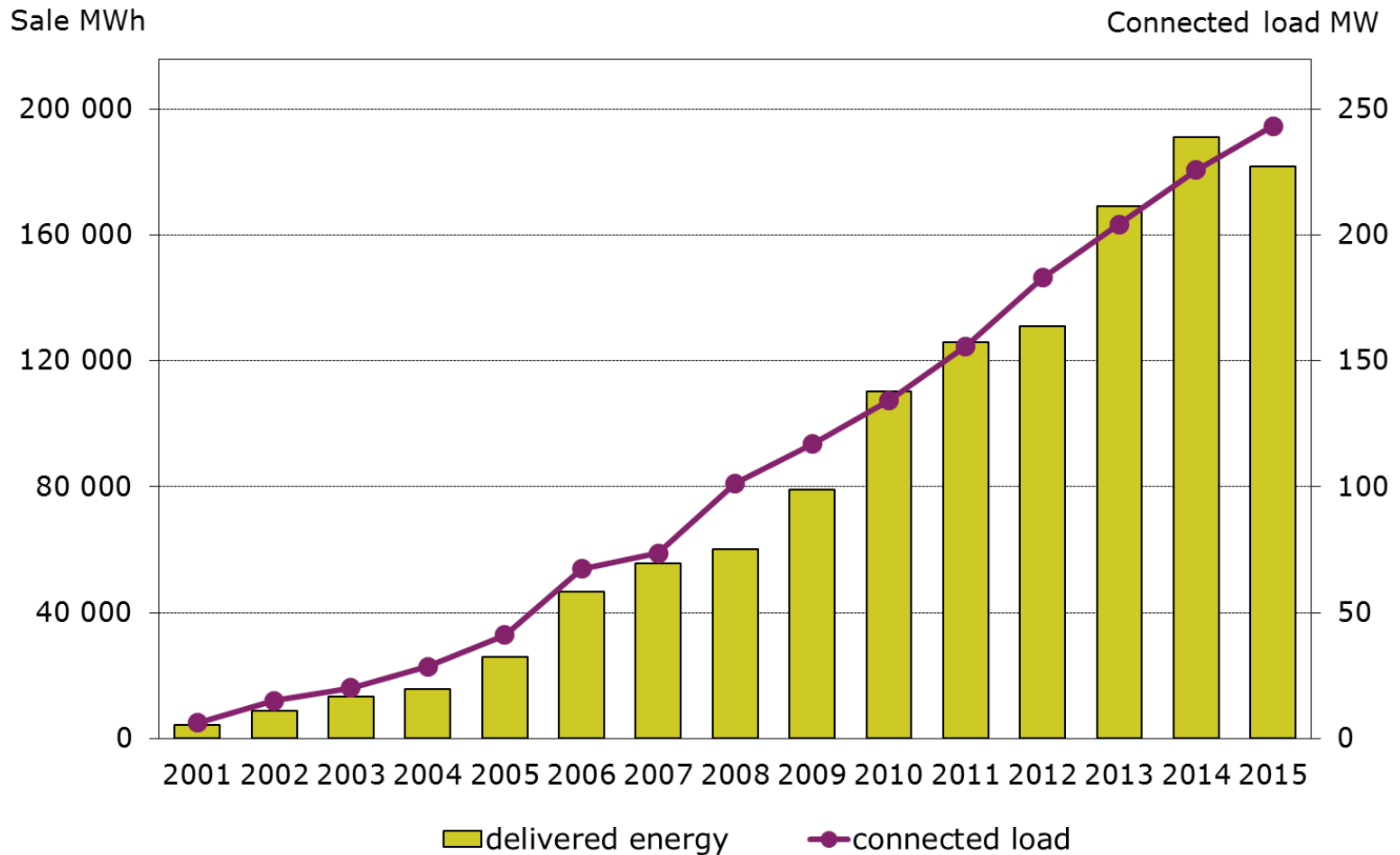


Heat pump: includes the electricity consumption of heat pumps  
Electricity: includes the electricity consumption of heat distribution equipment and electric sauna stoves  
Wood: includes the wood used by sauna stoves

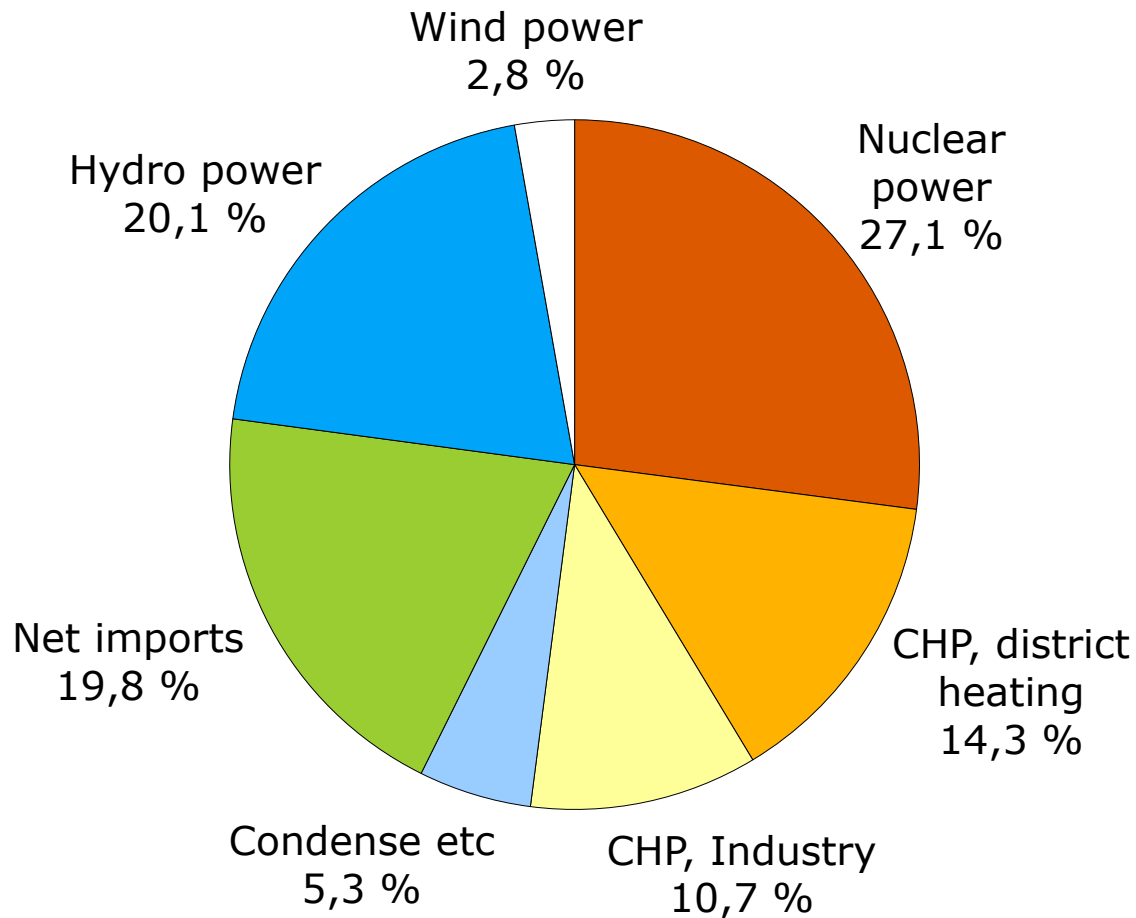
# Temperature corrected district heat demand, TWh



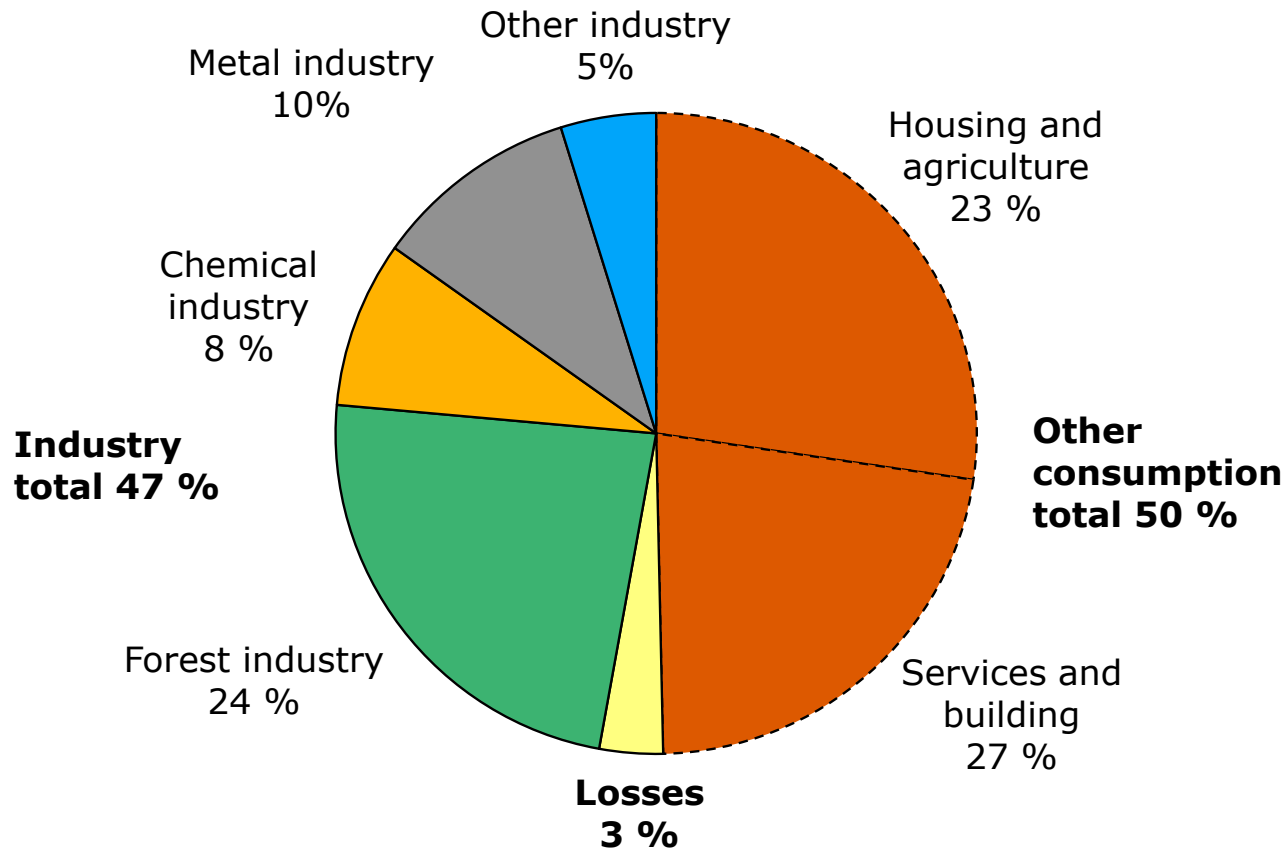
# District cooling – delivered energy and connected heat load



# Net Supplies of Electricity 2015 (82.5 TWh)



# Electricity Consumption 2015 (82.5 TWh)







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## Energy Efficiency Policies, independent and/or integrated

- Pragmatic
- Cost-efficient
- Market oriented



# Energy Efficiency Policies

- **1992** First separate National Energy Conservation Program 1992-1996
  - **1993** National Energy Agency Motiva established
  - **1994** Public Sector Energy Saving Program
- **1995** Government's Principle Resolution on Energy Savings
  - To strengthen the NECP from 1992
  - **1997** Update of the GPR on Energy Savings
- **2000** National Energy Saving Program
- **2002** Update of the NESP
- **2005** National Energy and Climate Strategy – including EE
- **2008** Long Term Climate and Energy Strategy – including EE
  - Working Group to define measures to realize the 37 TWh energy savings target
- **2013** Energy and Climate Strategy
- **2016** New Energy and Climate Strategy being prepared

EPBD 2002

ESD 2006

RES 2009

EPBD 2010

EED 2012

EPBD 2016

EED 2016



## NEEAP-3 (2014)

	2010 GWh/a	2016 GWh/a	2020 GWh/a
<b>ESD (number of PMs)</b>			
Buildings (8)	6 614	15 081	21 009
Public sector (6)	393	674	842
Services (3)	189	433	506
Industry (3)	1 962	2 145	2 396
Transportation (9)	1 478	3 461	5 669
Agriculture (5)	1 222	2 318	2 896
Horizontal (1)	0	1 278	4 259
<b>Non-ESD</b>			
Industry (2)	8 844	9 693	10 807
Energy branch (2)	611	2 336	3 460
Savings ESD Total	11 858	25 388*	37 577
Savings Non-ESD Total	9 455	12 029	14 267
Savings Total	21 313	37 417	51 844



## EED Art. 7 figures

	2014 GWh/a	2014 2016 TWhcum	2017 2020 TWhcum	2014 2020 TWhcum
Voluntary agreements	1 273	19,72	9,71	29,43
Energy tax/transport fuels	2 667	8,12	10,91	19,03
Energy Audits	52	0,91	0,52	1,43
Energy companies/advise	1 166	3,51	4,66	8,16
Heat pumps/residential	599	8,15	2,23	10,38
Boiler replacem. (oil/bio)	173	2,03	0,97	2,99
Building Code/refurbis.	210	3,65	1,91	5,57
Building Code/new constr.	380	6,98	3,61	10,59
Total	6 520	53,07	34,52	87,58 48,99



# ENERGY EFFICIENCY AGREEMENTS 2017–2025

# Energy Efficiency Agreements 2017-2025

INDUSTRIES | MUNICIPAL SECTOR | PROPERTY SECTOR | OIL-HEATED REAL ESTATES

ENERGY  
CONSERVATION  
AGREEMENTS  
1997–2007

ENERGY  
EFFICIENCY  
AGREEMENTS  
2008–2016

ENERGY  
EFFICIENCY  
AGREEMENTS  
2017–2025

- Comprehensive voluntary energy efficiency agreement scheme was initiated in Finland as early as in 1997
- The agreement scheme has produced desired results
- **The new agreement period 2017–2025 is about to begin**

# Energy Efficiency Agreements 2017-2025

## INDUSTRIES

### ENERGY EFFICIENCY AGREEMENT

#### INDUSTRY

Energy Intensive Industry | Food and Drink Industry | Chemical Industry  
Technology Industry | Wood Product Industry | Industry - General

#### ENERGY SECTOR

Energy Production | Energy Services

#### SERVICE SECTOR

Commerce Sector | Hotel and Restaurant Sector | Motor Trades & Repairs | Services – General

## PROPERTY SECTOR

### ENERGY EFFICIENCY AGREEMENT

COMMERCIAL PROPERTIES  
HOUSING PROPERTIES

## MUNICIPAL SECTOR

### ENERGY EFFICIENCY AGREEMENT

CITIES & MUNICIPALITIES &  
JOINT MUNICIPALITIES

## HÖYLÄ IV – OIL SECTOR

### ENERGY EFFICIENCY AGREEMENT

DISTRIBUTION OF LIQUID  
HEATING FUELS  
Oil-heated real estates



# Energy Efficiency Agreements 2017–2025

AGREEMENT PERIOD | AGREEMENT TERMS | JOINING

ENERGY EFFICIENCY AGREEMENT PERIOD 2017–2025

1<sup>ST</sup> TERM 2017–2020 (4 YEARS)

2<sup>ND</sup> TERM 2021–2025 (5 YEARS)

Implementation period 2014–2020 of  
the Energy Efficiency Directive (EED)

- As the main rule, joining the agreement applies to the energy use of the entire company/association
- Joining the agreement spans the entire agreement period 2017–2025
  - If joining takes place before the end of 2018, withdrawal from the agreement is possible at the end of 2020, without possible sanctions relating to energy subsidies