

Scratching the surface on European legislation and policy development

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Energy markets in transformation

Governing forces

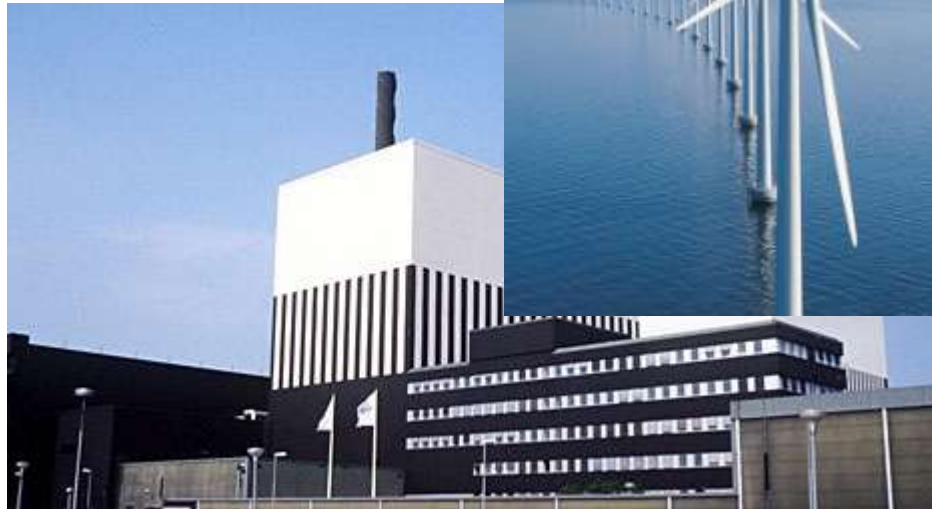
- Energy price development
- Policies
- Technological development



Challenges

Security of supply

- Generation of electricity with low carbon footprint
- Renewable electricity Wind- and hydro power ,PV
- Nuclear and Carbon capture and storage (CCS)



Challenges

Road transport

- Electric cars
-
- Plug-in hybrid cars
- Bio fuels



Third industrial revolution

- Focus on energy efficiency
- Renewable energy
- Low carbon technologies



20-20-20 by 2020

- Energy from renewable energy sources
20 % renewable energy in EU as a whole
- Reduction of emissions
20 % reduction of green house gas emissions
- Energy efficiency
20 % improved efficiency



Political tools available and under development

- Addressing the use of renewable energy
RES-Directive (existing)
- Addressing energy efficiency
 - Energy performance of buildings Directive (existing)
 - Energy labelling Directive (under development)
 - ECO-Design Directive (under development)
 - ECO-labelling Directive (under revision)
 - Energy efficiency Directive (under development)
- Addressing GHG-emissions
 - Kyoto
 - Emissions trading system (under revision)



RES-Directive

- Energy from renewable energy sources

20 % renewable energy in EU as a whole

10 % fixed target for the transport sector

Heat pumps in RES

“Aerothermal, geothermal and hydrothermal heat energy captured by heat pumps shall be taken into account for the purposes of paragraph 1(b) provided that the final energy output significantly exceeds the primary energy input required to drive the heat pumps.”

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Energy performance of buildings Directive

Published recast of the Directive, May 2010

- All new buildings finalised after December 31, 2020 must be of “Nearly Zero Energy Standard”
- Energy performance certificates of buildings are to be available at the point of sale
- National plan on refurbishment of existing buildings to meet “Nearly Zero Energy”

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Overall aim

- Impose more energy efficient products
- Extend energy labelling scheme
- Improve customer information
- **Ban inefficient products from the European market**



Energy related products Directive

Framework Directive for setting of energy efficiency criteria requirements

Examples of prioritised product groups

Boilers

Water heaters

Computers

Imaging equipment

Televisions

Stand-by

Battery charges

Residential room conditioners

Domestic freezers

Dishwashers/washing machines

Laundry dryers

Vacuum cleaners



Energy using products Directive

- Lot 1 boilers
Oil-, gas- and electric boilers, heat pumps, solar thermal and combinations thereof
(<http://www.ecoboiler.org>)
- Lot 2 Water heaters
- Lot 6 Air-conditioners and ventilation systems
- Lot 10
Room air-conditioners (RAC), Local air-conditioners (LAC), Comfort fans
- Lot 21 Central air heating products

http://ec.europa.eu/energy/efficiency/ecodesign/eco_design_en.htm

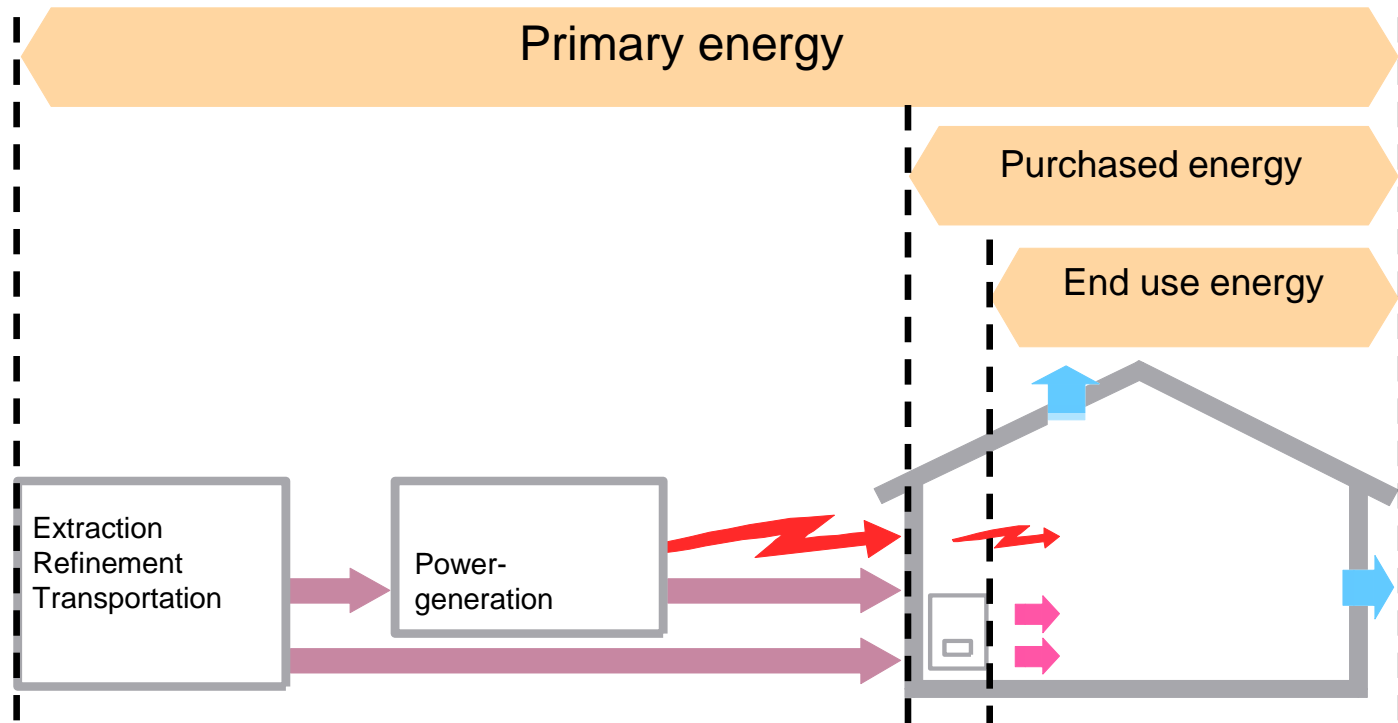


Implications of a cross technology label

- Improved consumer information
Enables straight forward performance comparisons
- Systems approach necessary
Definition of system boundaries
- Primary energy efficiency
- Annual performance rating



Primary energy efficiency – System boundaries

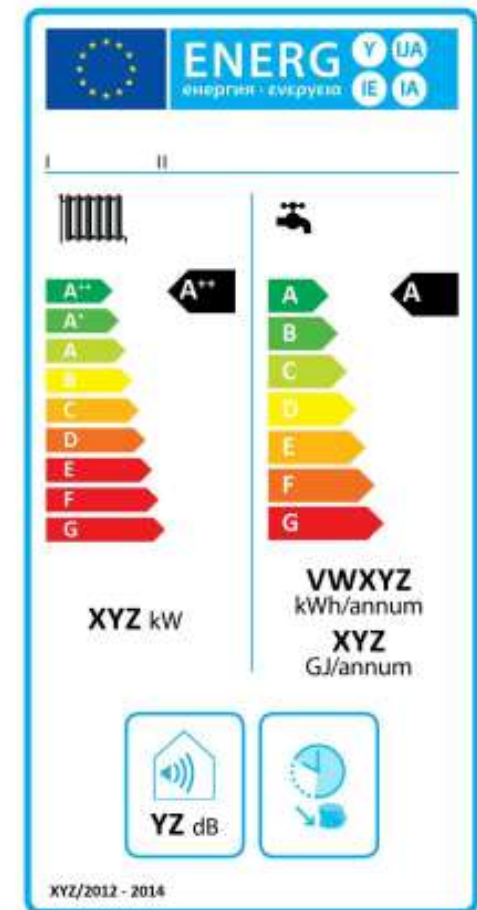


Main parameters considered for performance calculation

- Primary energy factor (electricity)
- Three climate zones
- COP at various operating conditions
- Two heat distribution systems (radiators, underfloor heating)
- Buffer tank losses
- Type of distribution pumps (varying efficiency)
- Control systems
- Does not address green house gas emissions

(<http://www.ecoboiler.org>)

Boiler combination heaters in seasonal space heating energy ef
G and in water heating energy efficiency classes A to G

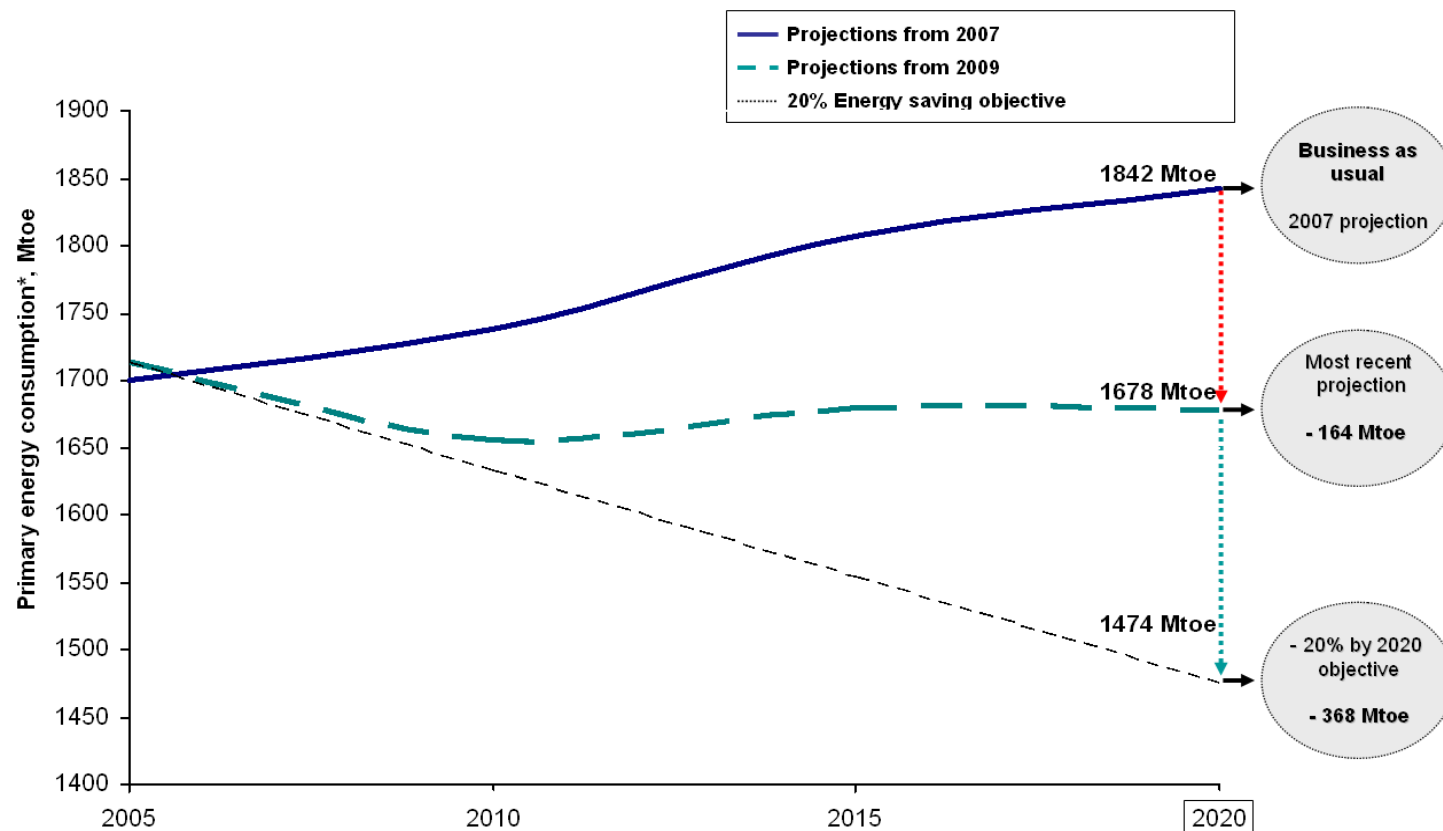


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Energy Efficiency Directive



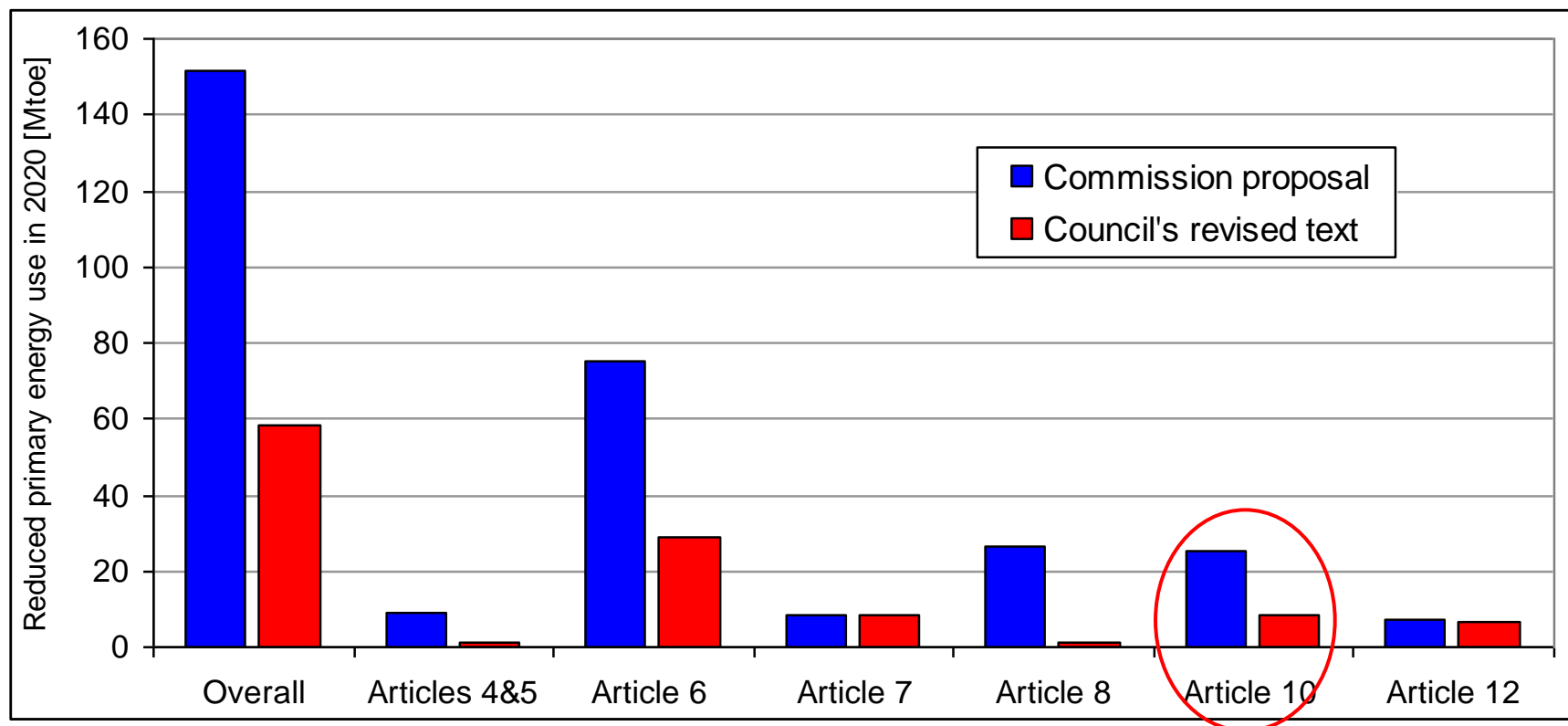
* Gross inland consumption minus non-energy uses

Energy Efficiency Directive

Flagship initiative

- Given priority in the EU strategy plan for 2020
- Replaces the energy service- and the cogen Directive
- District energy the only technology mentioned as energy efficient heating and cooling
- Technology prescriptive

Estimated Primary Energy Savings



New Directive Proposal published June 22 2011

Article 10

Promotion of efficiency in heating and cooling

1. By 1 January 2014, Member States shall establish and notify to the Commission a national heating and cooling plan for developing the potential for the application of high-efficiency cogeneration and efficient district heating and cooling, containing the information set out in Annex VII.

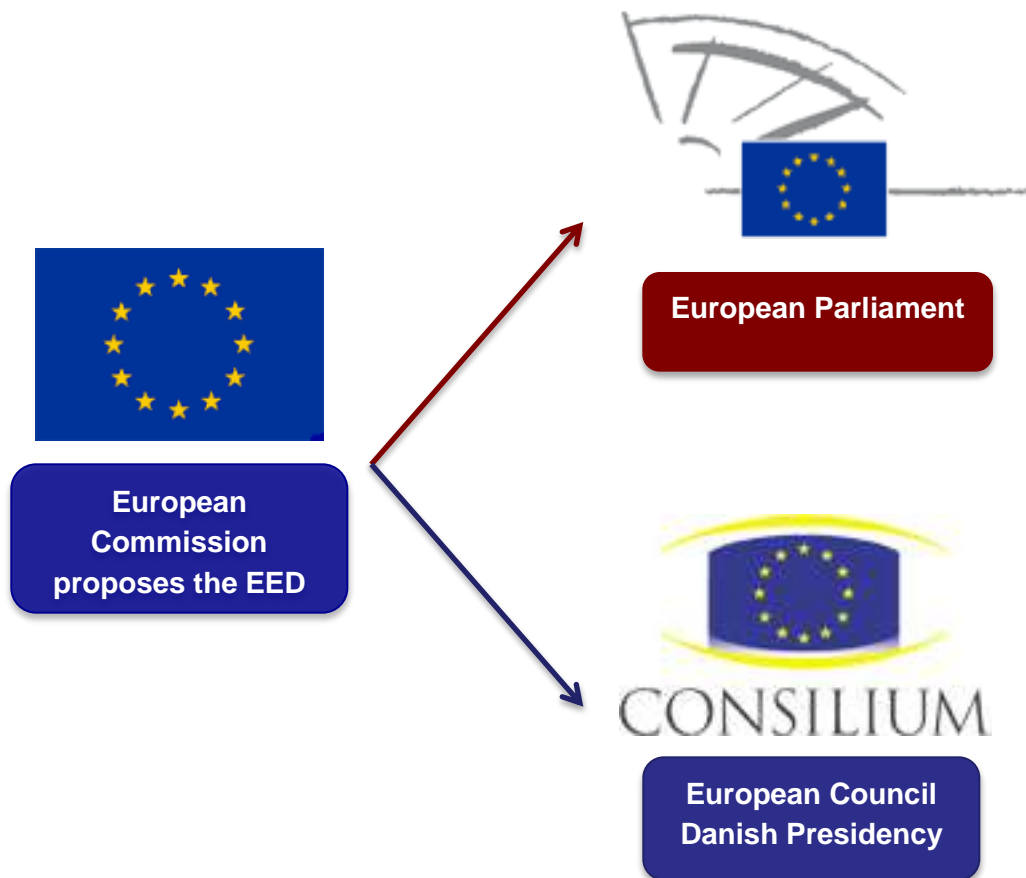
ANNEX VII

Planning for efficiency in heating and cooling

3. Urban spatial plans shall be designed to ensure that:

d) residential zones and industrial plants which consume heat in their production processes are connected to the local district heating or cooling network.

Current Status - Trialogue



22/06/2011

July 2011

Oct. 2011

2011: 1st reading (ordinary legislative procedure)

At The Train Station



Only the one who fights stand the chance of winning

