Energy Union

Energy for Europe – serving society, supporting the economy, protecting the environment
Europe’s 2030 targets

European Council targets

40 reduction Greenhouse Gas Emission
43% ETS  30% non-ETS

27 % energy savings target by 2030

At least 27% energy from renewables at EU level
Costs and investment

Average annual additional investments €38 billion for the EU - 2011-30
Fuel savings will to a large extent compensate for these
Total cost up 0.15% if managed cost-effectively
Not substantially different from renewing ageing energy
More than half of the investments in the residential/tertiary sectors
A shift from operational costs (fuel) to capital costs (investments) system
The Energy Union

solidarity and trust; speaking with one voice in global affairs

An integrated, continent-wide energy system

Sustainable, low-carbon and climate-friendly economy

Strong, innovative and competitive European economy

Citizens taking ownership of the energy transition
Our vision of an Energy Union

True **solidarity and trust**; speaking with **one voice** in global affairs

An **integrated**, continent-wide energy system

Sustainable, **low-carbon** and climate-friendly economy

Strong, innovative and **competitive** European economy

**Citizens** taking ownership of the energy transition
A fully-integrated internal energy market
Concrete actions

- Major infrastructure projects (PCIs)
- New deal for energy consumers
- Energy prices and costs
- Regional cooperation
- Energy Infrastructure Forum
- European electricity market design
Energy efficiency
Concrete actions

Energy Efficiency Directive

Heating and Cooling

Strengthened financial instruments

European Performance of Building Directive

Energy Labelling & Ecodesign Directives
Decarbonisation of the Economy
Concrete actions

- Non-ETS sectors
- Alternative fuels and clean vehicles
- Renewable Energy Package
- Reform of ETS
Energy Union Research Innovation and Competitiveness

Integrated SET Plan

- EU global technology and innovation leadership
- Strategic transport research and innovation R&I agenda
Energy Union
Update 29 February 2016

→ Consultative Communication on the electricity market design
→ Communication on a new deal for energy consumers
→ Revision of the Energy Labelling Directive
→ Revision of the Emissions Trading Directive

→ 1st State of the Energy Union
→ 2nd list of Projects of Common Interest
→ Regulation on European statistics on natural gas and electricity prices

→ Revision of the Effort Sharing Decision
→ Land Use, Land Use change and Forestry (LULUCF) proposal
→ Strategy on the decarbonisation of transport
→ Energy prices and costs report 2016

→ 2nd State of the Energy Union
→ Governance legislative proposal
→ Legislative proposals on the Electricity Market Design and the regulatory framework
→ Revision of the security of electricity supply directive
→ Renewables package (including the revision of the Renewables Directive and a Bioenergy Sustainability Policy)
→ Integrated and focussed Energy Union research, innovation and competitiveness strategy
→ 15% electricity interconnection target
→ Waste-to-Energy Communication

→ Updated SET-Plan
→ Revision of the security of gas supply regulation
→ Revision of the IGA Decision
→ LNG and storage strategy
→ Heating & Cooling Strategy

→ Assessment of the COP21 Paris Agreement

→ Revision of the Energy Efficiency Directive
→ Revision of the Buildings Directive
→ Smart financing of smart buildings initiative

→ Q1/2017 (tbc)
→ CO2 emissions & cars / heavy duty vehicles
Renewables need flexible backup, not baseload

Estimated power demand over a week in 2012 and 2020, Germany

Source: Volker Quaschning, HTW Berlin
LINKING RETAIL AND WHOLESALE

Consumers

Supplier

Aggregator

DSO

Generator

Commercial domain

SUPPLY and FLEXIBILITY

INFORMATION EXCHANGE

FLEXIBILITY PURCHASE CONTRACT

DISTRIBUTION NETWORK CONSTRAINT MANAGEMENT

GRID ACCESS & GENERATION MANAGEMENT

MUTUAL EXCHANGE OF OPERATIONAL AND CONTRACTUAL DATA

POLICY ACTION: REDEFINE RIGHTS AND OBLIGATIONS OF SUPPLIERS /AGGREGATORS

POLICY ACTIONS: REFORM REGULATORY FRAMEWORK - TARIFF SETTING AND BALANCING MARKETS

DEFINE DATA MANAGEMENT STANDARDS AND PROTOCOLS

Regulated domain

POWER EXCHANGE MARKET

BALANCING EXCHANGE MARKET

and ANCYILLARY SERVICES

Commercial domain

POWER EXCHANGE MARKET

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and ANCYILLARY SERVICES
Thank you for your attention!
Use and profitability of conventional generation

**Graph:**
- **X-axis:** Proportion of year (0% to 80%)
- **Y-axis:** Load factor (0% to 100%)
- **Legend:**
  - Blue line: Load factor over time (2012 to 2030)

**Graph:**
- **X-axis:** Profit per MW (2009 €, thousands)
- **Y-axis:** Profit per MW (2009 €, thousands)
- **Legend:**
  - Green line: Profit per MW (2009 €, thousands)
  - Orange line: Profit per MW (2009 €, thousands)

**Source:** Pöyry
Monthly average wholesale

Source: Pöyry

Weather years:
- 2003
- 2004
- 2005
- 2006
- 2007
- 2008
- 2009

France

Germany