Investing in the Polish energy mix – how can the Polish mix minimise the costs of climate policy?

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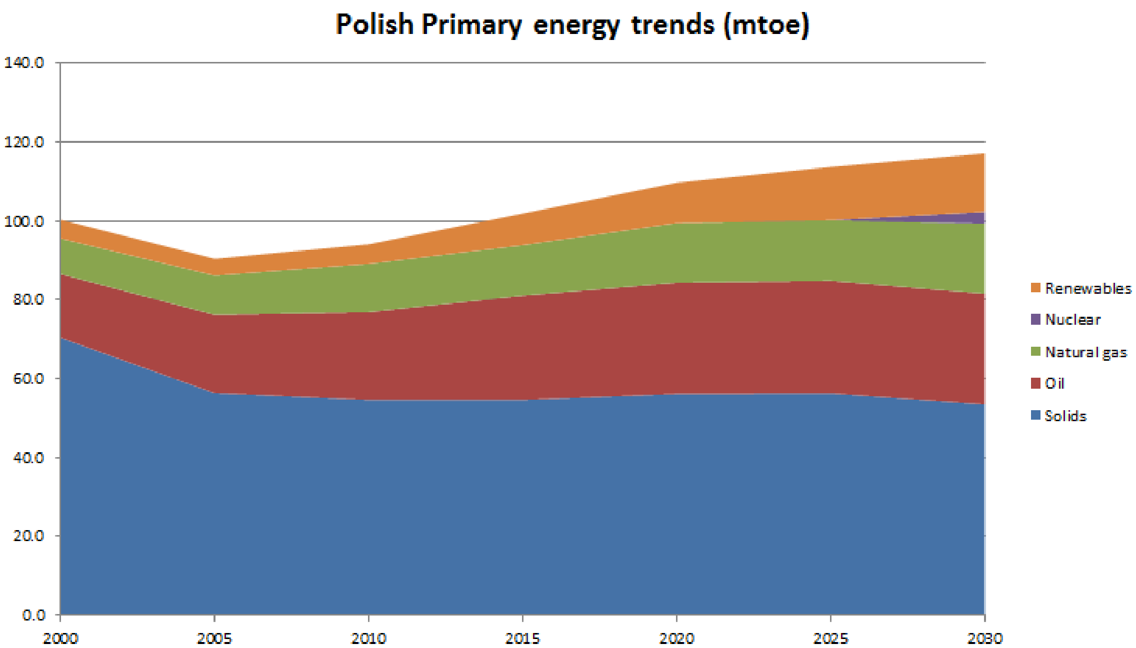
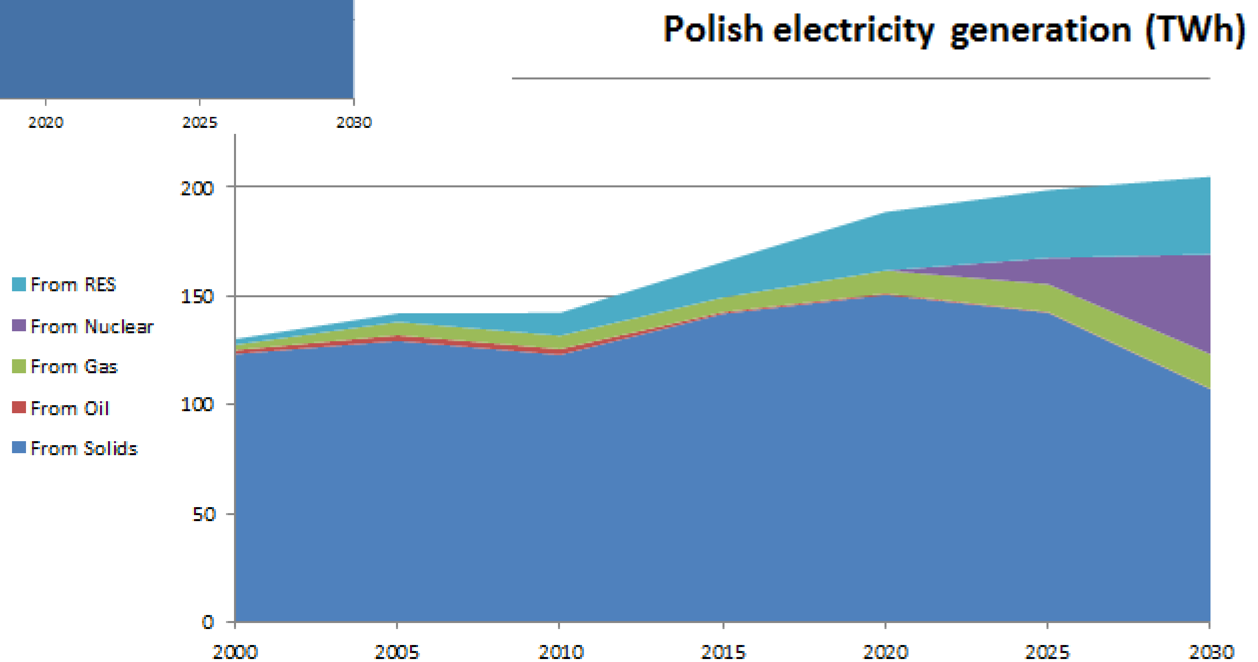
European Commission

26 June 2014

Trends in Polish energy and electricity (reference case)



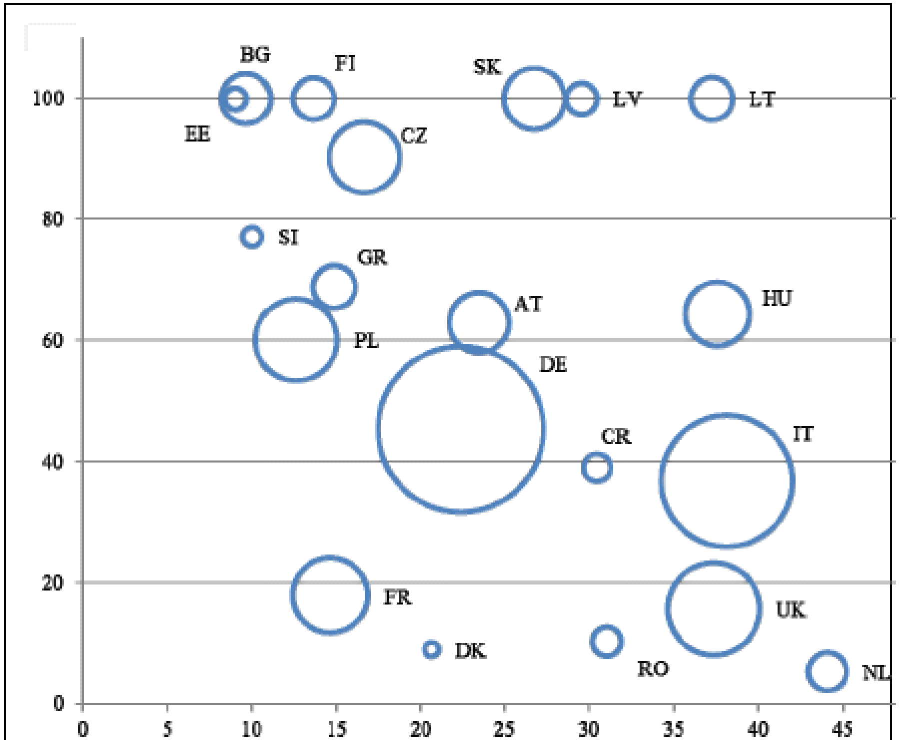


3. Main elements of the framework – targets and indicators

2020	**-20 %** **Greenhouse Gas Emissions**	**20%** **Renewable Energy**	**20 %** **Energy Efficiency**	
2030	**-40 %** Greenhouse Gas Emissions	**≥27 %** Renewable Energy	**Review 2014**	**New Key Indicators**

New governance system

Energy security: natural gas in the spotlight



Horizontal axis: % of natural gas in the energy mix – Vertical axis: % of Russian natural gas in national natural gas consumption - Size of the circles: volume of imported Russian natural gas.

Estimates based on preliminary industry data for 2013 and including natural gas volumes traded by Russian companies not necessarily produced in Russia.

High import dependency (66%) and import bill (approx. 87 billion Euro in 2013), limited number of suppliers

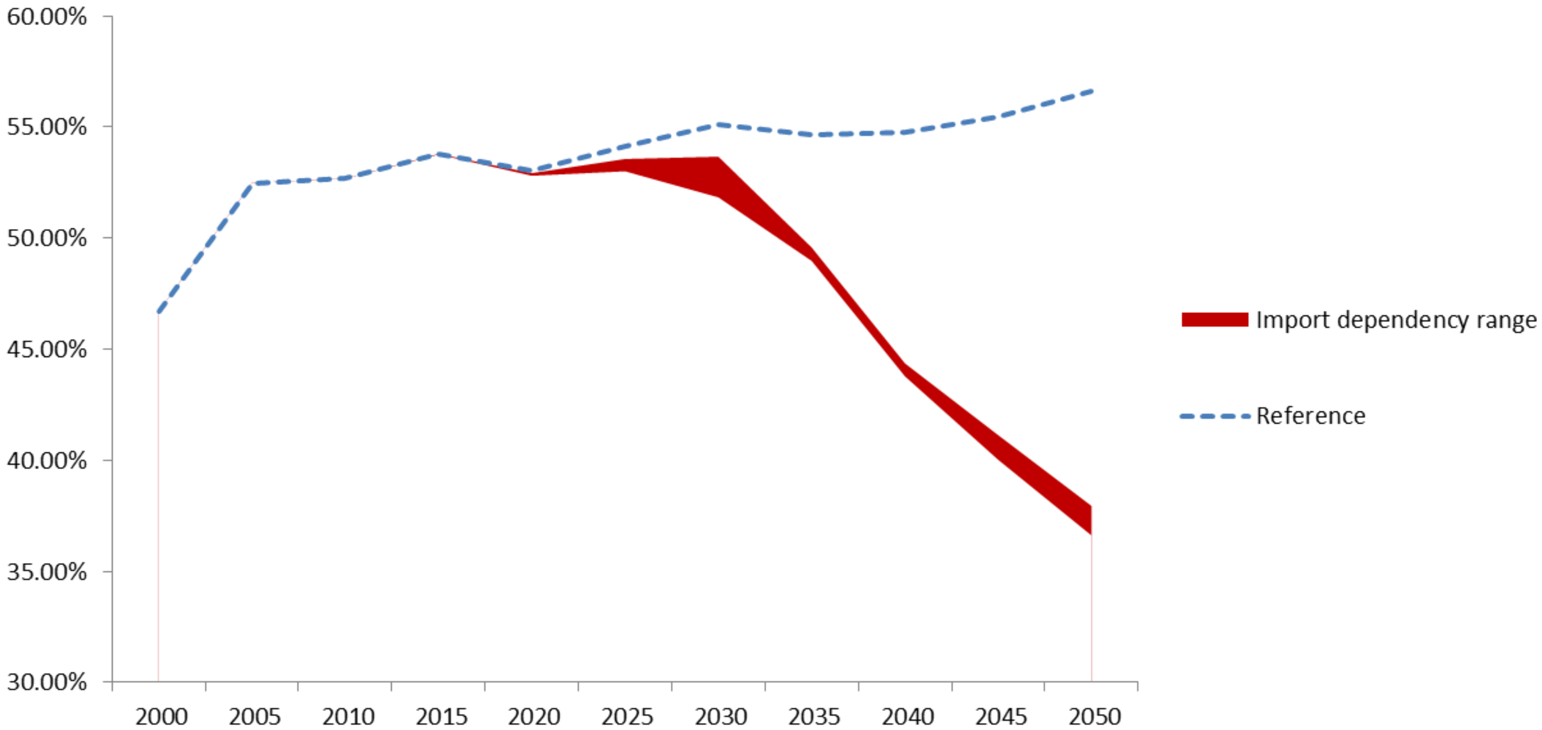
Six Member States depend on Russia as single external supplier for their entire gas imports. Three of them use natural gas for more than a quarter of their total energy needs

In 2013 energy supplies from Russia accounted for 39% of EU natural gas imports or 27% of EU gas consumption

Russia exported 71 % of its gas to Europe with the largest volumes to Germany and Italy

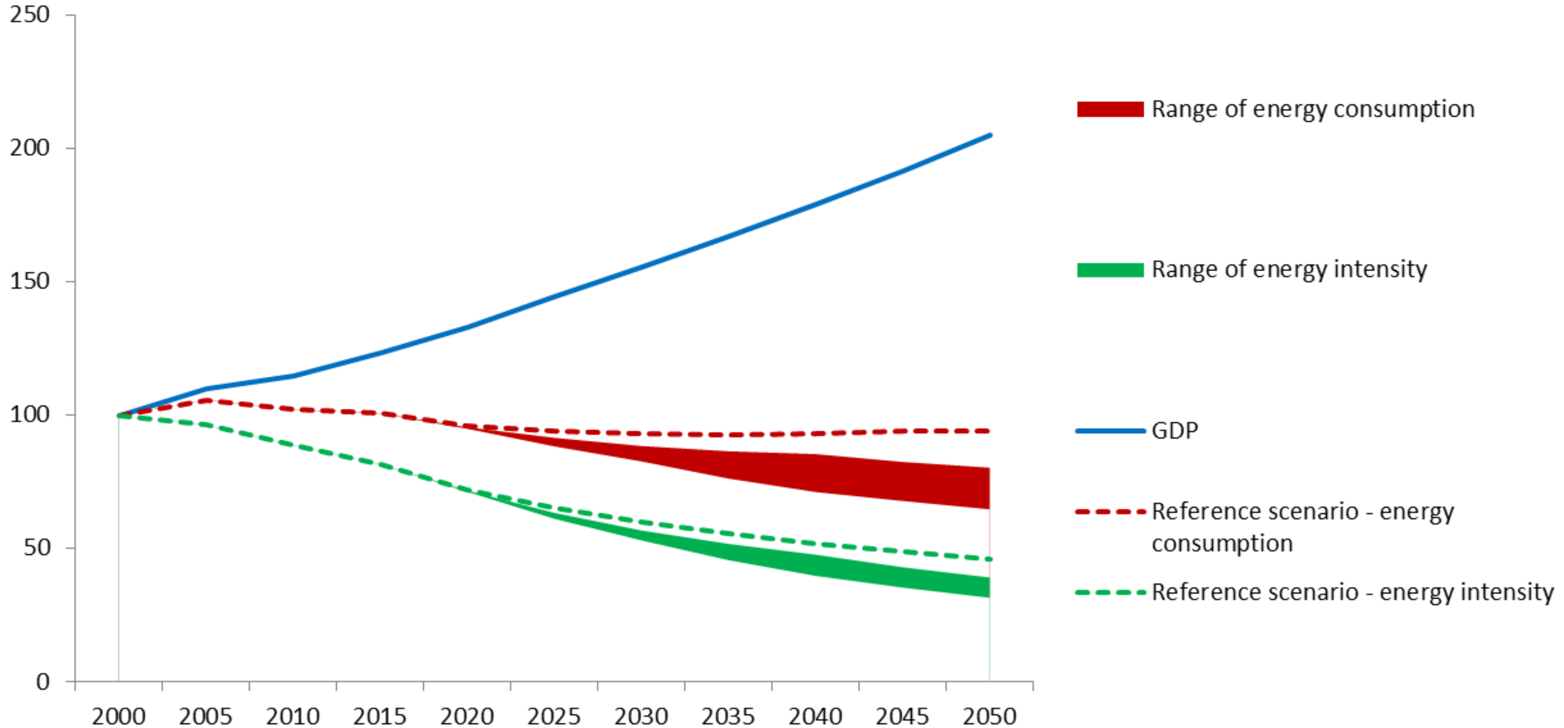
Impacts of scenarios with 40% GHG reduction

Import dependency



Impacts of scenarios with 40% GHG reduction

Energy consumption and energy intensity (2000=100)



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2.1 Overview EU Financial Instruments

	Centrally managed by COM (Financial Regulation)		Shared Management with MS (Common Provisions Regulation)
Research, Development Innovation	Horizon 2020 Equity and Risk Sharing Instruments *EUR 3.5bn*		Instruments under European Structural and Investment Funds ➲ EU level (central management) ➲ National/regional instruments (shared management) ▪ Off-the shelf FIs ▪ Tailor made FIs *2014-2020: Increase use of financial instruments*
Growth, Jobs and Social Cohesion	Competitiveness & SME (COSME) Equity & guarantees *EUR 1.4bn*	Creative Europe Guarantee Facility *EUR 210m*	
	Social Change & Innovation Micro-finance *EUR 192m*	Erasmus for all Guarantee Facility *EUR 881m*	
Infrastructure	Connecting Europe Facility (CEF) Risk sharing (e.g. project bonds) and equity instruments; Overall budget *EUR 33.2bn* Share of financial instruments: up to 10%		
Climate and environment actions	LIFE : Overall budget *EUR 3.5bn (2014-2020)* Share of financial instruments: EUR 210m (2014-2017)		

Principles for efficient public intervention

1. Let markets work
2. Identifying a specific problem and its cause:
   - Assessing potential interplay with other policy objectives
   - Evaluating alternative instruments, including European options
3. Encourage changes in consumer behaviour
4. Minimising impacts on operating of electricity systems
5. Keeping costs low for sake of consumers and taxpayers (competition of technologies and of suppliers, potential of other Member States)
6. Support monitoring, evaluation and phasing out

A common approach to government interventions?

RES support schemes guidance

State aid guidelines

Capacity mechanisms guidance

Cooperation mechanisms

Demand response

Guidelines: areas of change

1. *Operational aid to Renewable energy sources*
2. *New categories of aid*
   - Reductions on RES charges for energy-intensive users
   - Infrastructure
   - Generation adequacy
3. *Higher notification thresholds*
4. *Common assessment principles*
5. *Some simplification*
   (e.g. more measures under GBER)

Common assessment principles

(more specific for certain aid categories)

Contribution to common objective

Need for State intervention

Appropriateness (of the aid and the instrument)

Incentive effect

Proportionality

Avoidance of undue negative effects

Transparency

Text of the Guidelines:
http://ec.europa.eu/competition/sectors/energy/eeag_en.pdf

Details…

Context

2008 Environmental Guidelines

Important measures not covered :

- **Exemptions from renewables costs; Support for capacity mechanisms; Infrastructure support; Exemptions from energy taxes; update on rules for renewables**

2012 State Aid Modernisation

2013 ENER Public Interventions Package

ENER Guidance vs. COMP Guidelines

Scope: all public interventions, also regulation

Aim: to advocate efficient interventions achieving energy policy objectives

Character: non-binding advice, dialog with the Member States towards better regulation

Scope: only measures that qualify as state aid (evolution of notion of state aid!)

Aim: to limit market distortions necessary to achieve an Common objective

Character: legally binding Commission's decisions

2008 Guidelines Environmental aid	2014 Guidelines Environmental and <u>energy</u> aid
• Cogeneration & district heating	• and cooling
• Waste management	• and resource efficiency
• Energy saving	
• Reductions/exemptions from environmental taxes	
• Environmental studies	**<u>New categories</u>**
• Early adaptation to/going beyond EU standards, or for higher environmental protection in their absence (incl. new transport vehicles).	• Reductions in funding support for electricity from renewable sources
• Relocation of undertakings	• Energy infrastructure
• Remediation of contaminated sites	• Generation adequacy
• Renewable energy sources	
• Tradable permit schemes	

Aid to RES

General principle of **openness of support schemes**, Member States however may want to have a cooperation mechanism in place before allowing cross border support – positive attitude to such schemes

Investment aid for electricity from RES
(common assessment principles apply)

Eligible costs: extra investment costs established by comparing the investment with the counterfactual situation in the absence of State aid.

For RES: conventional power plant with the same capacity in terms of the effective production of energy

But: The Commission may accept alternative counterfactual situations if duly justified by the Member State.

Operating aid for electricity from RES (I)

Integrating RES into the market:

Only new installations (no changes for existing ones)

From 2016:

- **Sell electricity** directly on the market
  (aid as premium on top of the market price)
- **Balancing** responsibilities
  (if liquid intra-day market)
- No incentives to generate with **negative prices**.

European Commission

Operating aid for electricity from RES (II)

Introduction of competitive bidding processes:

Transitional phase 2015-2016	**From 2017**
Competitive bidding for at least **5%** of the planned RES capacity.	Competitive bidding for **100%** of the planned RES capacity Open to all RES generators and technologies Flexible criteria

Operating aid for <u>electricity</u> from RES (III)

Flexible rules for small installations:

- **Feed-in tariffs** still possible for installations below:

  500kW (e.g. solar and biomass)
  3MW or 3 generation units (only wind)

- **No competitive bidding process** required for installations below:

  1MW (e.g. solar and biomass)
  6MW or 6 generation Units (only wind)

European Commission

Biofuels

Specific conditions:

- No investment aid to food-based biofuels, except to convert plant to advanced biofuels.

- New operating aid is limited to:
  - Sustainable biofuels only, food-based biofuels until 2020.
  - Plants that are in operation before 2014 and not depreciated.
  - Biofuels under a supply/blending obligation only if more expensive

Energy efficiency

Scope:

Energy-efficient district heating and cooling, high-efficient CHP (also re-furbishing). Extensive scope under GBER

Rules:

EED does not impose energy-efficient targets on undertakings ➔ *state aid possible in absence of EU standards and to achieve future EU standards, but not for buying products where EU standards apply*

Financial instrument for energy-efficient renovation of buildings ➔ *more details under GBER*

Investment aid: Counterfactual cannot credibly be established ➔ total costs of a project as an alternative (100% aid intensity in case of tenders)

Operating aid: compensating for net extra production

Operating aid for CHP: rules for RES apply. Aid granted when electricity and heat exceed market price

European Commission

CCS

Scope

fossil fuel and, or biomass power plants (including co-fired power plants with fossil fuels and biomass)

other industrial installations equipped with CO2 capture, transport and storage facilities, or individual elements of the CCS chain.

Eligible costs and aid intensity

The aid is limited to the additional costs for capture, transport and store the CO2 emitted. The eligible costs are defined as the funding gap with 100% aid intensity

Reductions in funding support for RES

Aim:
Targeted reductions to secure sufficient financing base for RES support, help reaching RES targets, competitiveness.

Eligible beneficiaries:

- 68 sectors based on their high trade intensity & electro-intensity.
- Member States can add other beneficiaries with similar criteria.

Partial compensation:

Beneficiaries pay at least 15% of the RES costs (caps possible).

Rules are fully applicable from 2019

Transition for existing schemes: adjustment plan

Energy Infrastructure

Current **regulatory framework applies** (TSO invests and recoups through access tariffs)

BUT: Some types infrastructure **more difficult to deploy**

- Positive externalities, Coordination problems

Need for State aid assumed for

- **Projects of Common Interest** (including in particular cross-border projects)
- **smart grids** and
- **assisted regions** (receiving EU structural funds)

Limited competitive distortions when regulatory obligations apply

Case by case assessment for infrastructure exempted from internal market regulation and not falling under above categories

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Generation Adequacy

Capacity mechanisms come under several forms

- State aid possible
- **So far security of supply measures not assessed in details**

When they entail State aid, need to limit distortions and preserve internal market

- Clear assessment of **causes of problem** of generation adequacy
- Support only for **availability**
- Include **demand-side response** / **storage** / **interconnection** measures
- Open to **new and existing** generation
- Allow for **sufficient lead time**
- Open to **other Member States** when possible

Higher thresholds

Category (individual aid)	Notification threshold:
Investment aid	€15 million
Operating aid for RES	250 MW
Operating aid for cogeneration	300 MW
Operating aid for biofuels	150 000 t/year
New - Energy infrastructure	€50 million
New - Carbon capture and storage	€50 million
New - Generation adequacy	€15 m/project/undertaking

No individual notification for competitive bidding processes

	Small enterprise	Medium-sized enterprise	Large enterprise
Aid for undertakings going beyond Union standards or increasing the level of environmental protection in the absence of Union standards (incl. transport vehicles)	60% 70 % if eco- innovation 100 % if bidding process	50% 60 % if eco-innovation, 100 % if bidding process	40 % 50 % if eco-innovation 100 % if bidding process
Aid for environmental studies	70 %	60 %	50 %
Aid for early adaptation to future Union standards more than 3 years between 1 and 3 years before the entry into force	 20 % 15 %	 15 % 10 %	 10 % 5 %
Aid for waste management	55 %	45 %	35 %
Aid for renewable energies Aid for cogeneration installations	65 %, 100 % if bidding process	55 %, 100 % if bidding process	45 %, 100 % if bidding process
Aid for energy-efficiency	50 %, 100 % if bidding process	40 %, 100 % if bidding process	30 %, 100 % if bidding process
Aid for district heating and cooling using conventional energy	65 %, 100 % if bidding process	55 %, 100 % if bidding process	45 % 100 % if bidding process
Aid the remediation of contaminated sites	100 %	100 %	100 %
Aid for relocation of undertakings	70%	60%	50%
Aid in the form of tradable permits	100 %	100 %	100 %
Aid for energy infrastructure District heating infrastructure	100 %	100 %	100 %
Aid for CCS	100 %	100 %	100 %

To the aid intensities mentioned above may be increased by a bonus of 5 % point in regions covered by Article 107(3)c or by a bonus of 15 % in regions covered by Article 107(3)a Treaty up to a maximum of 100% aid intensity.

EEAG: aid to be notified if not covered by GBER and de-minimis

- Aid above €15 million if no competitive bidding process
- RES: cases subject to exemptions invoked by Member States
- Generation Adequacy cases
- Major infrastructure cases in combination with exemptions from 3rd Package rules, cases in non-assisted regions

GBER: no notification because negligible distortions

- Aid below €15 million unless competitive bidding process
- RES: least distortive, no exemptions from market principles possible
- EE and DH detailed rules regarding standards, use of financial instruments
- Network infrastructure below €50million in assisted regions, full application of TPA, tariffs

De minimis: no aid

- Measures below € 200 000 over three years

Next steps

- **21 May 2014:** Planned adoption of GBER
- **1 July 2014:** Guidelines and GBER start to apply.
- **1 January 2015:** competitive bidding for 5% of new RES capacity
- **1 July 2015:** Deadline for notification of adjustment plans for reductions from RES costs.
- **1 January 2016:**
  - New RES installations sell electricity in the market
  - Existing schemes must comply with new Guidelines. Exceptions:
    - schemes operating aid for RES and CHP: can continue until expiry, unless modified
    - Aid committed to existing RES installations
- **1 January 2017:** competitive bidding for all new RES capacity
- **1 January 2019:** Adjustment plan in place for reductions from RES costs

Summary – ENER perspective

- Detailed rules in areas where COMP has experience: RES, EE and network infrastructure, exemptions for energy intensive industries. Principles in-line with energy policy!
- Less detailed rules where new approach taken: generation adequacy
  - So far security of supply not questioned/assessed in details e.g. Spanish coal case
  - Often measures subject to SGEI or not notified (26 bn of fossil fuel subsidies?)
  - Upcoming cases will set the benchmarks how the new rules will be applied
  - Critical areas: generaition adequacy assessment, competition of technologies (inlc. demand side participation), cross-border aspects,

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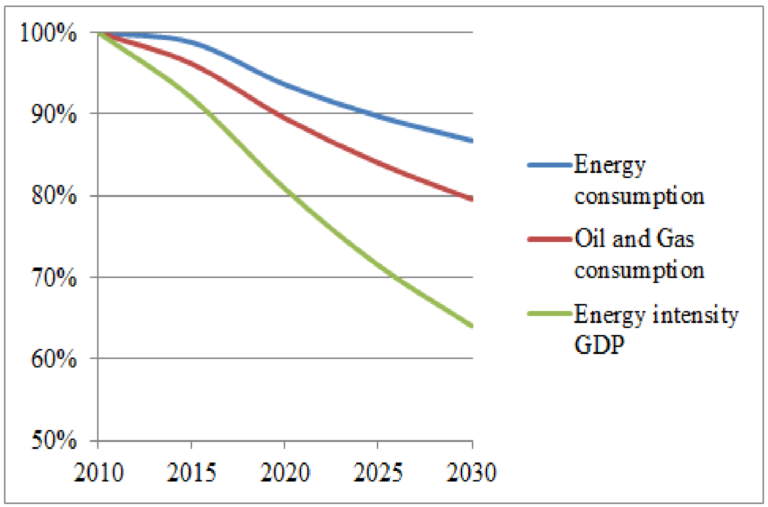
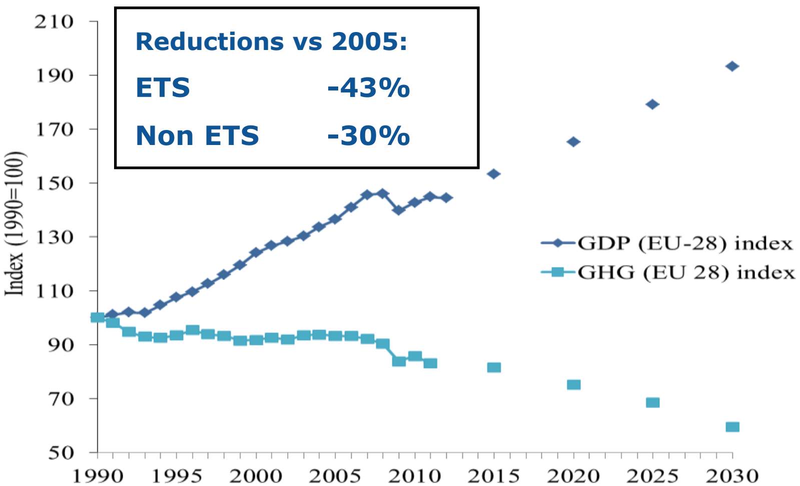
4. Challenges and benefits

- Decoupling of Gross Domestic Product growth from Greenhouse Gas Emissions will continue





- **Energy system costs:** 14% of GDP in 2030
- **Investments**: additional € 38 billion per year next 2 decades
- **Fuel savings:** additional € 18 billion fuel per year next 2 decades
- **Energy security:** additional 11% cut in energy imports in 2030
- **Innovation:** jobs & growth
- **Health and air pollution benefits:** €7-13.5 billion in 2030