



CEEP

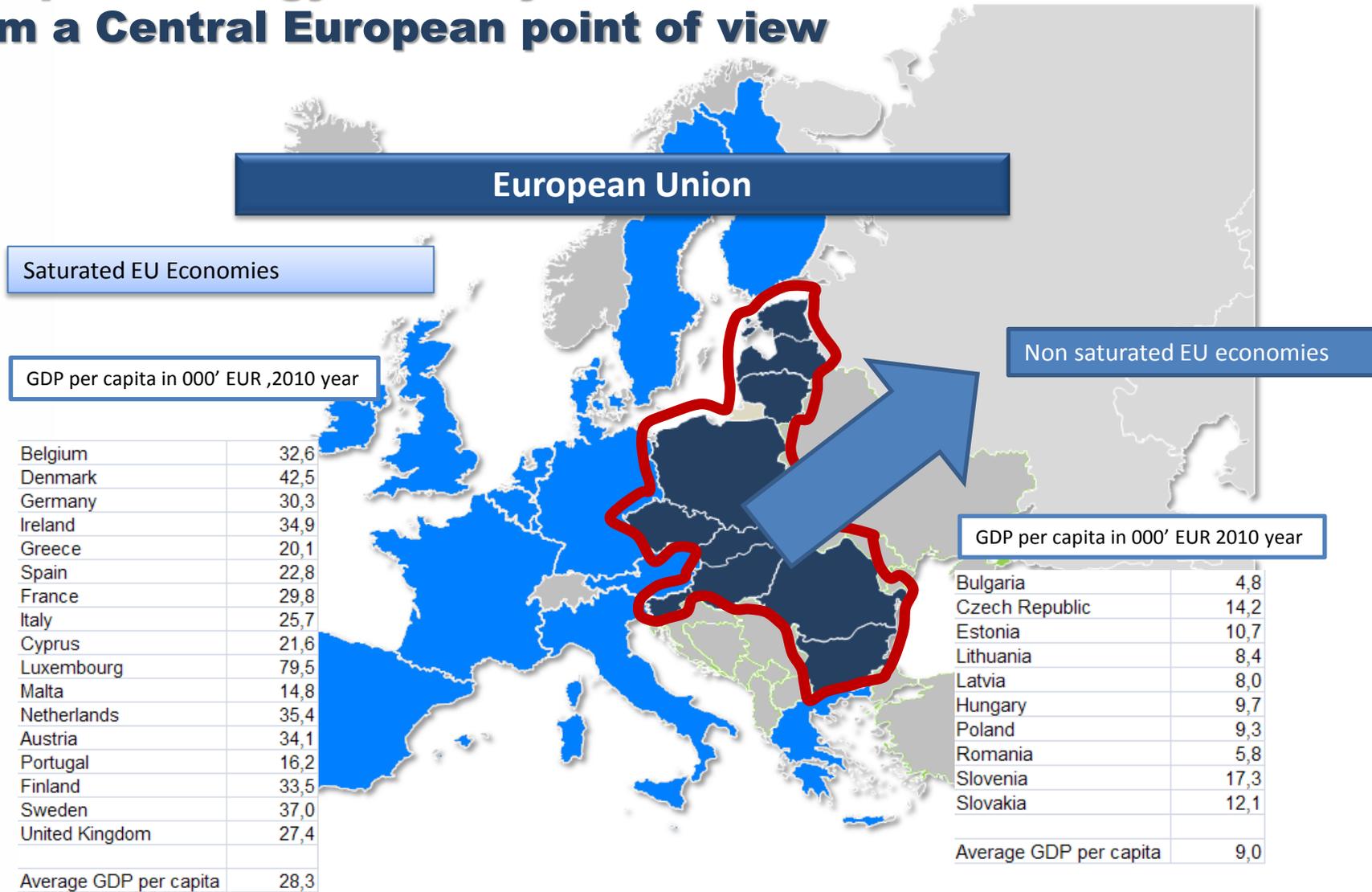
Central Europe Energy Partners

Saving CO₂ - a proposal to renew coal-fired power plants

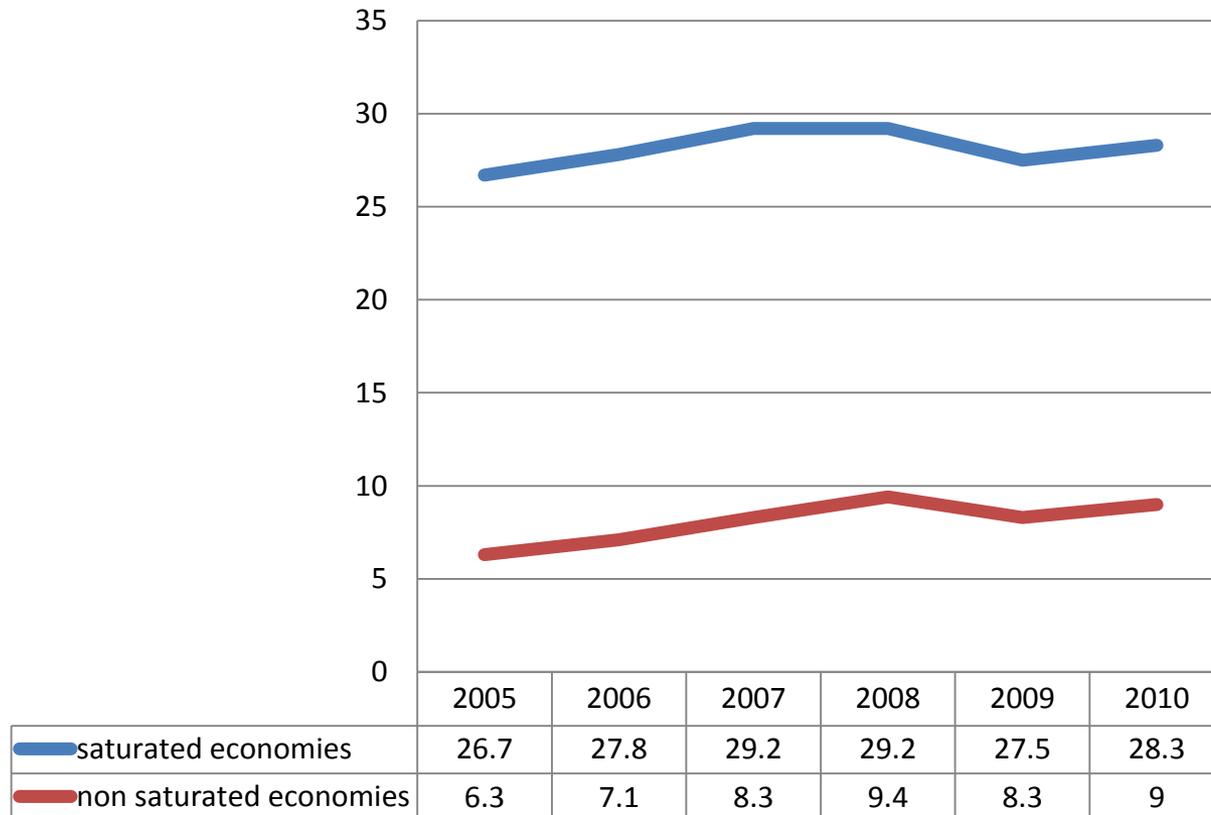
Bogdan Janicki, Senior Advisor, CEEP

**16th European Round Table on Coal
European Parliament, Brussels
21st March, 2012**

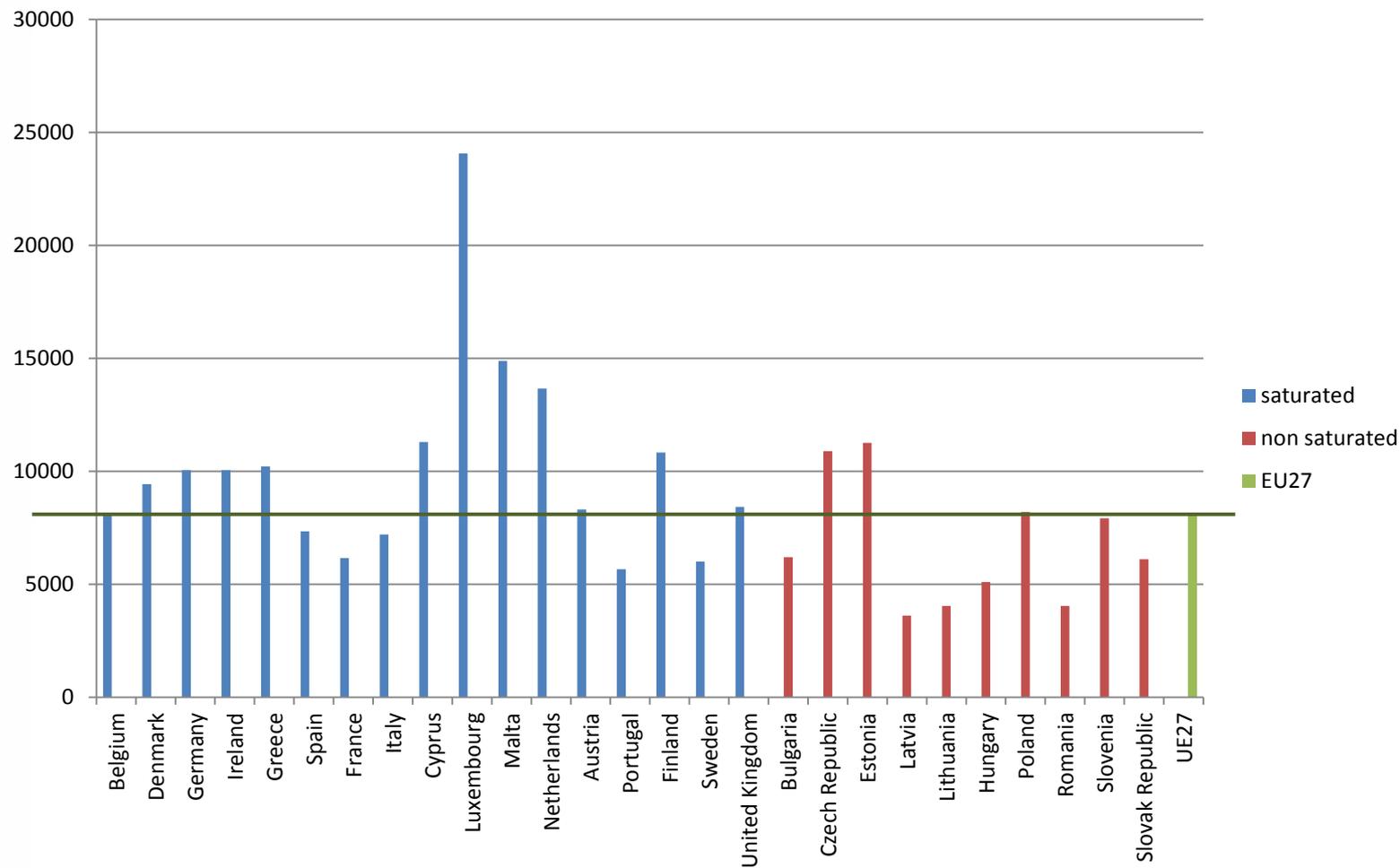
European Energy Security from a Central European point of view



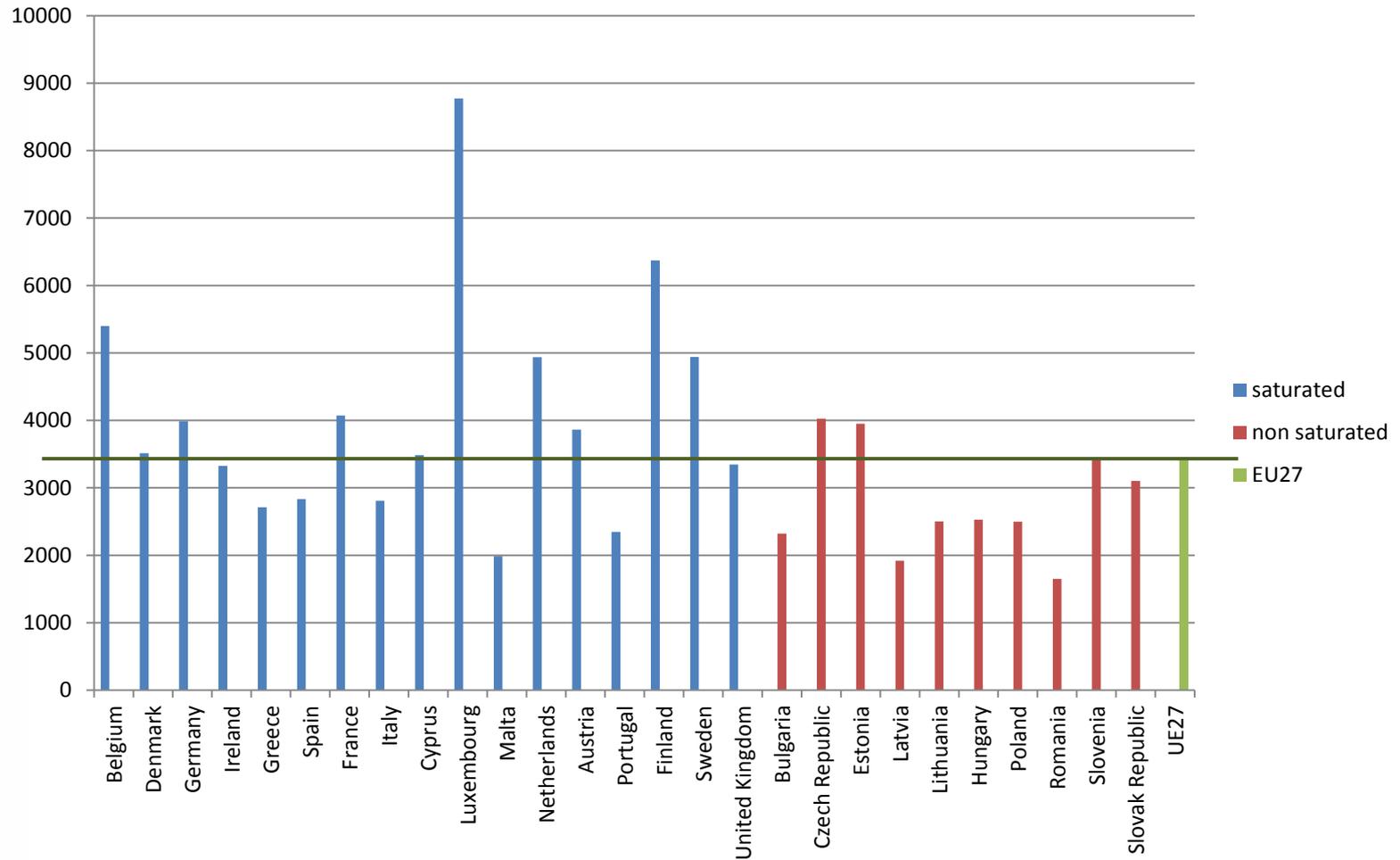
GDP per capita (000'EUR) UE27



CO₂ emissions per capita (kg/cap) 2009

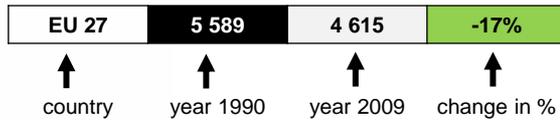


Energy consumption per capita 2009 - kgoe / cap

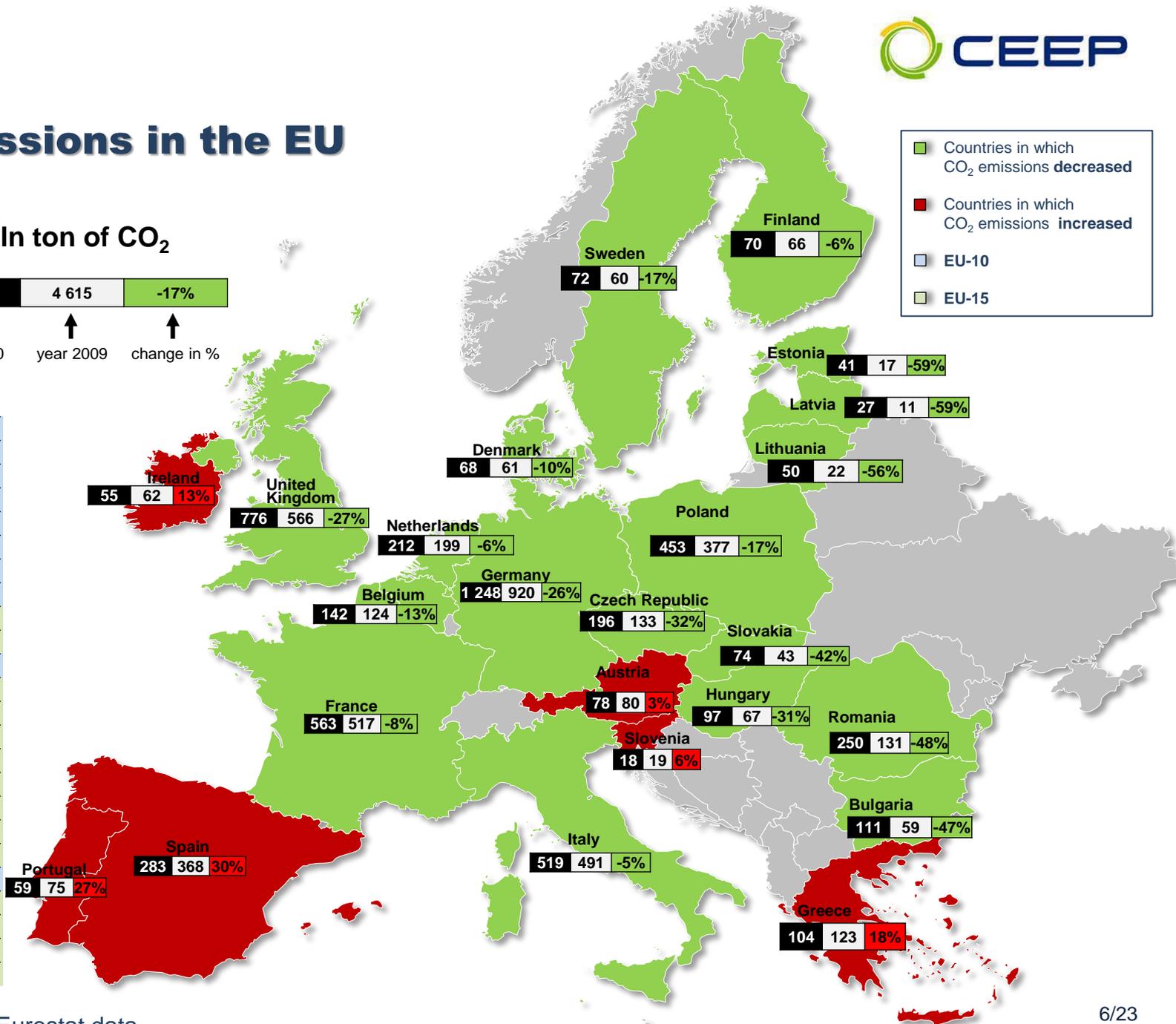


CO₂ emissions in the EU

Data in mln ton of CO₂

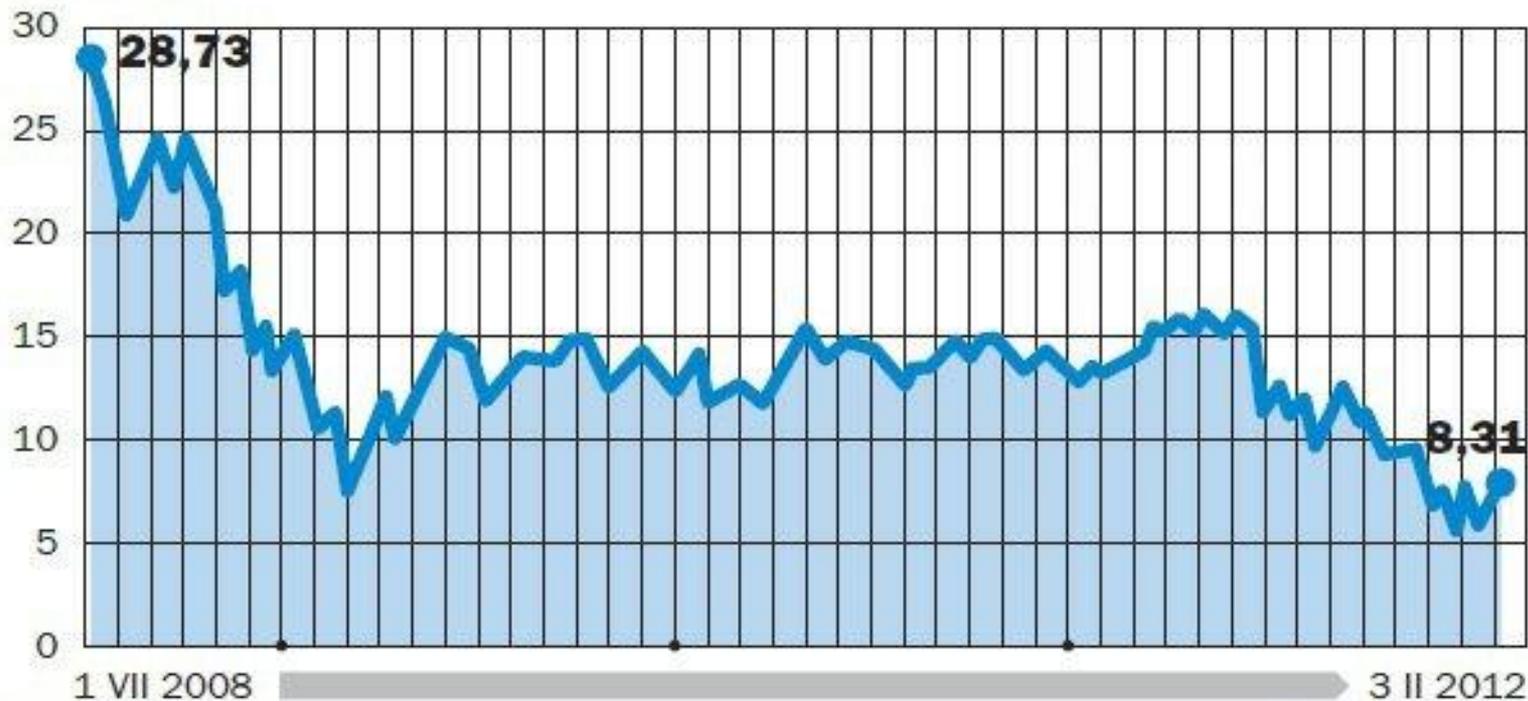


country	change in %
Estonia	-59%
Latvia	-59%
Lithuania	-56%
Romania	-48%
Bulgaria	-47%
Slovakia	-42%
Czech Republic	-32%
Hungary	-31%
United Kingdom	-27%
Germany	-26%
Poland	-17%
Sweden	-17%
Belgium	-13%
Denmark	-10%
France	-8%
Finland	-6%
Netherlands	-6%
Italy	-5%
Austria	3%
Slovenia	6%
Ireland	13%
Greece	18%
Portugal	27%
Spain	30%



Average prices of CO₂ emissions' allowances

€/t

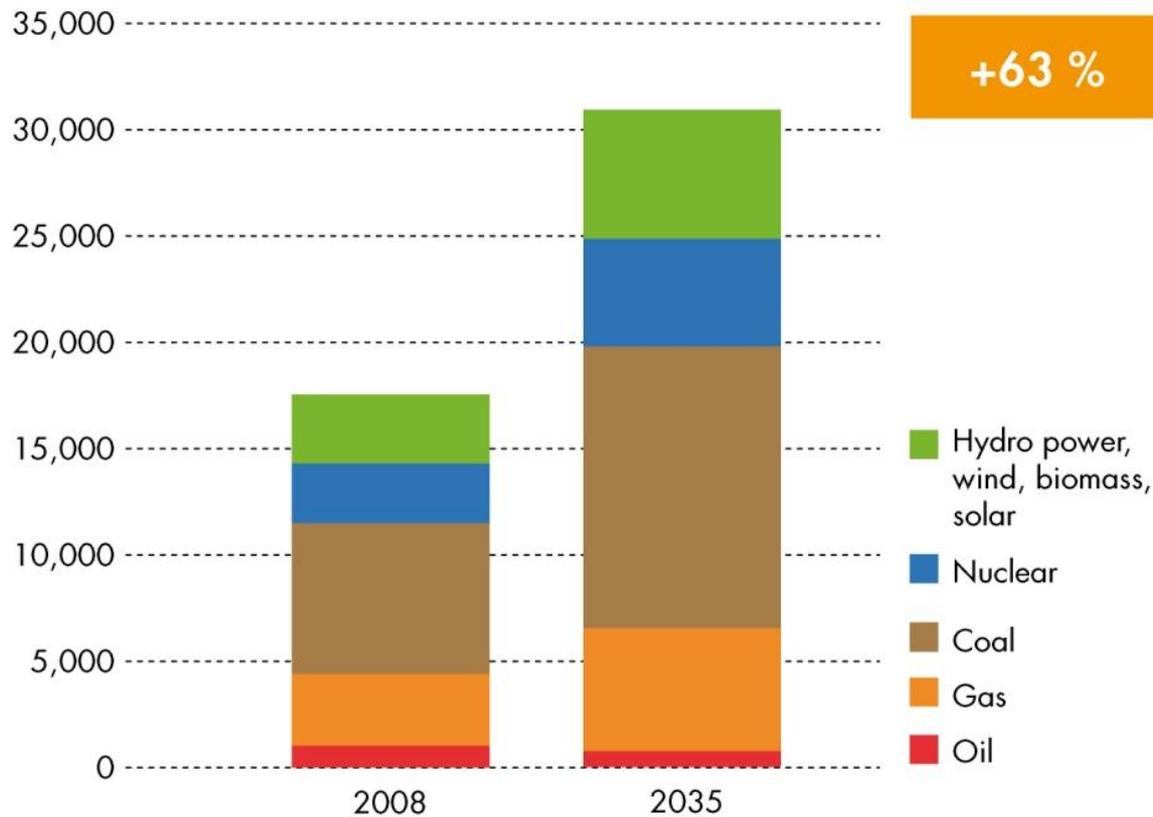


© GAZETA WYBORCZA

ŹRÓDŁO: CONSENSUS

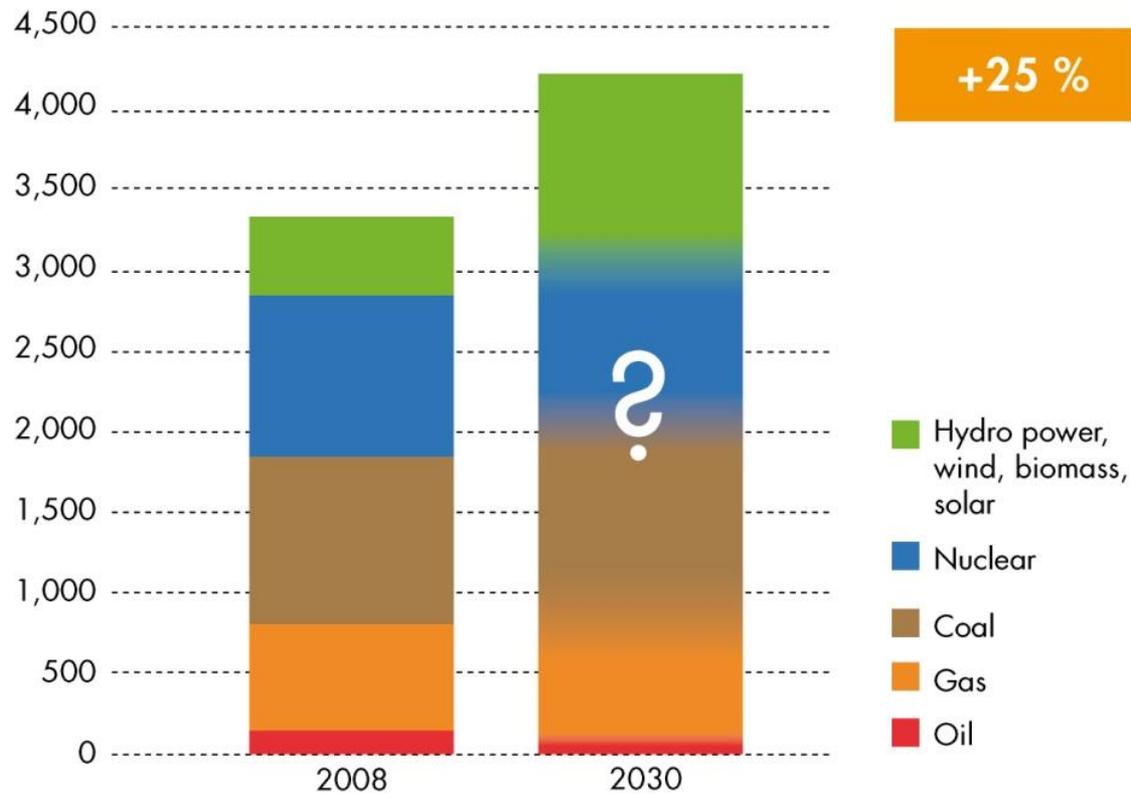
Worldwide growth in electricity generation

Expected growth in electricity generation
in billion (10^9) kWh worldwide



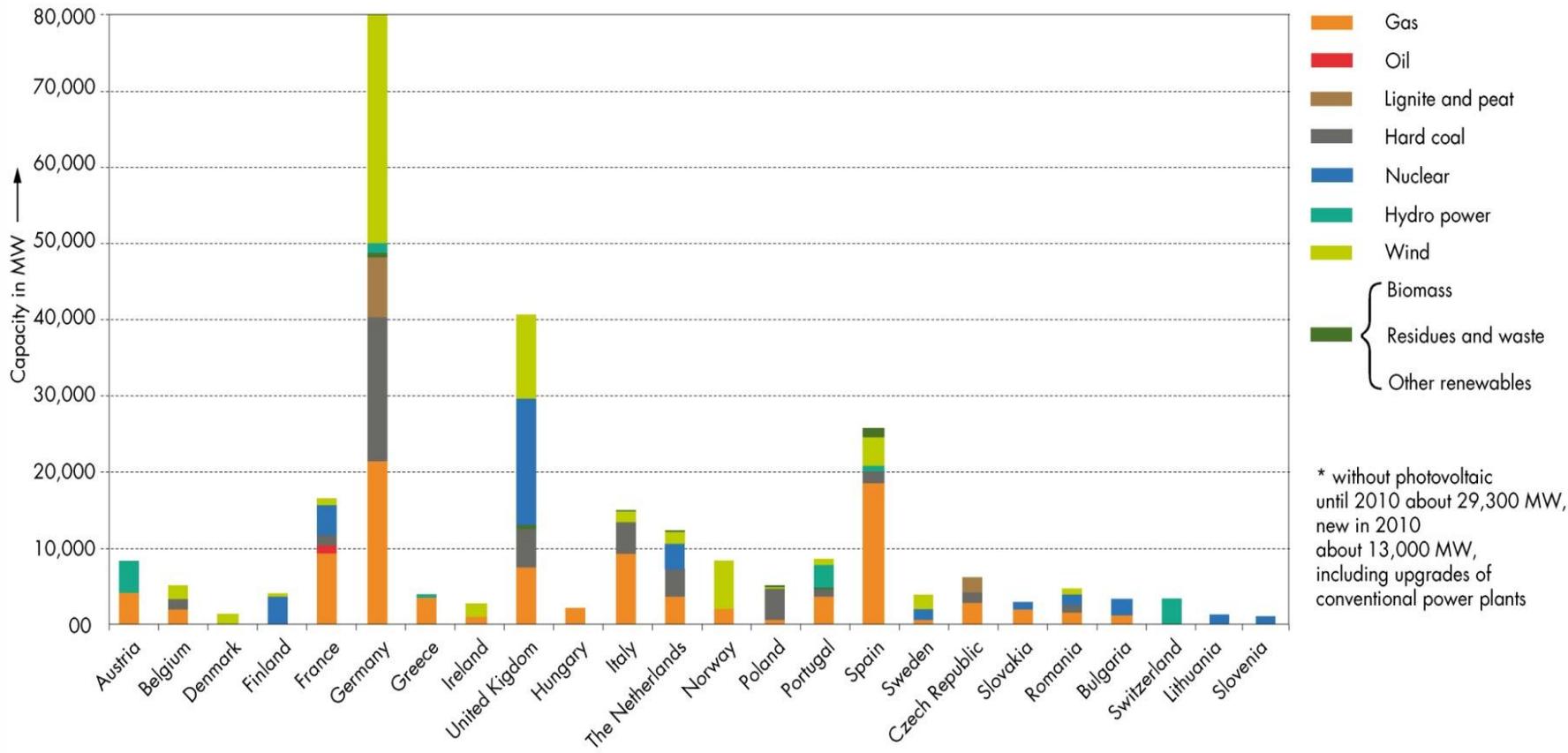
EU growth in electricity generation

Expected growth in electricity generation in billion (10⁹) kWh in the EU

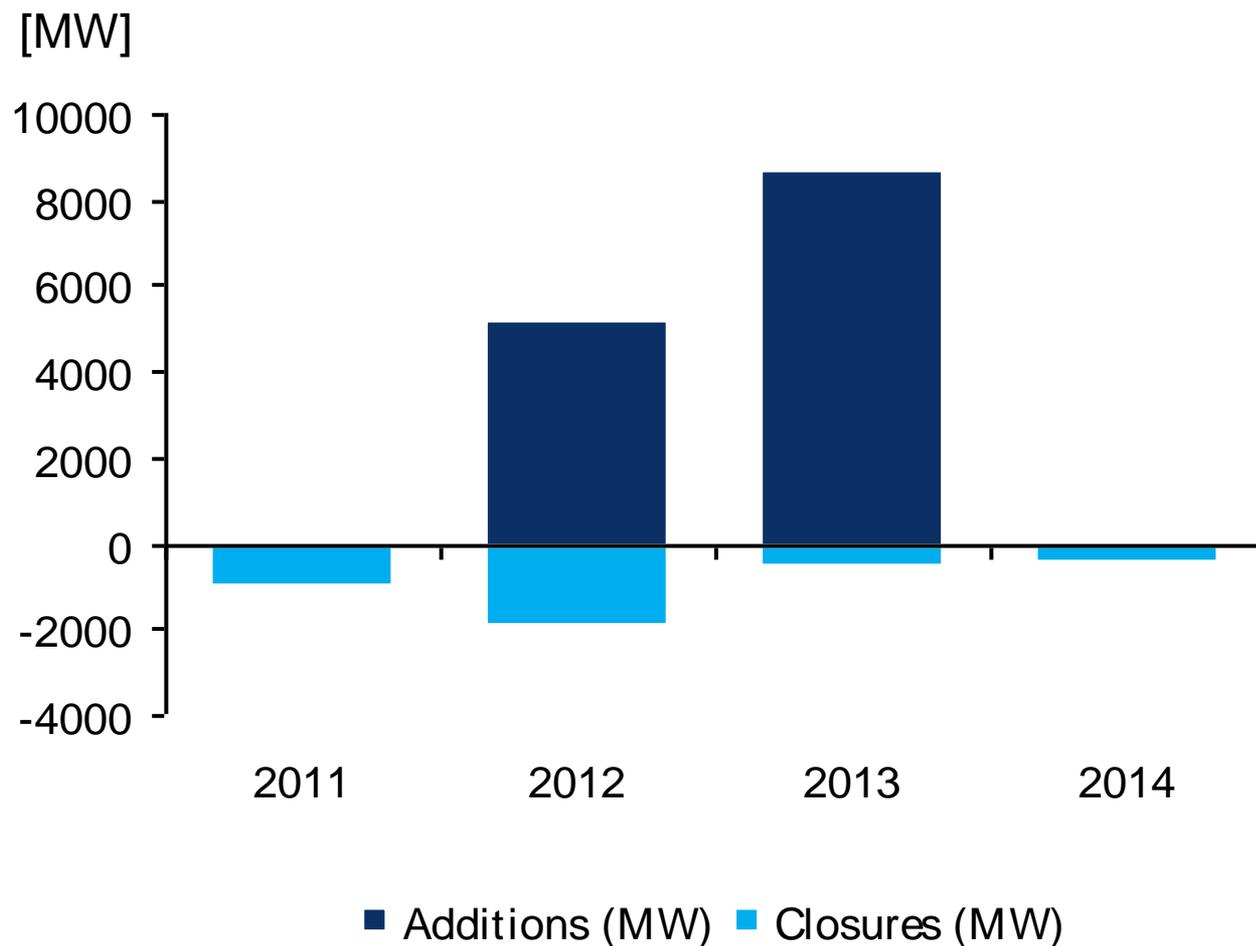


Total capacity of new power plants in Europe

Total capacity of projected and announced* new power plant projects in Europe (since 2007 and future)



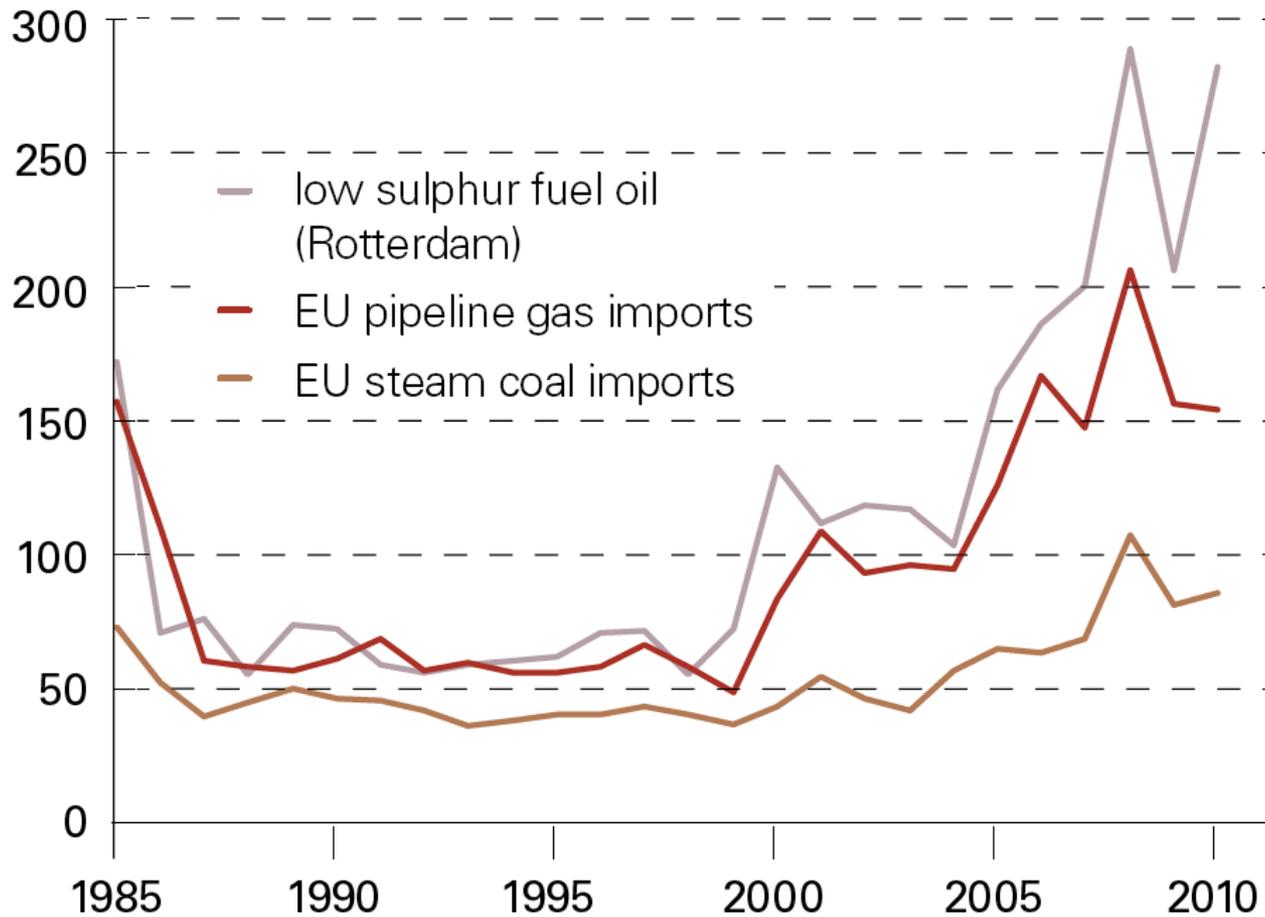
German and Dutch steam coal plant additions and closures



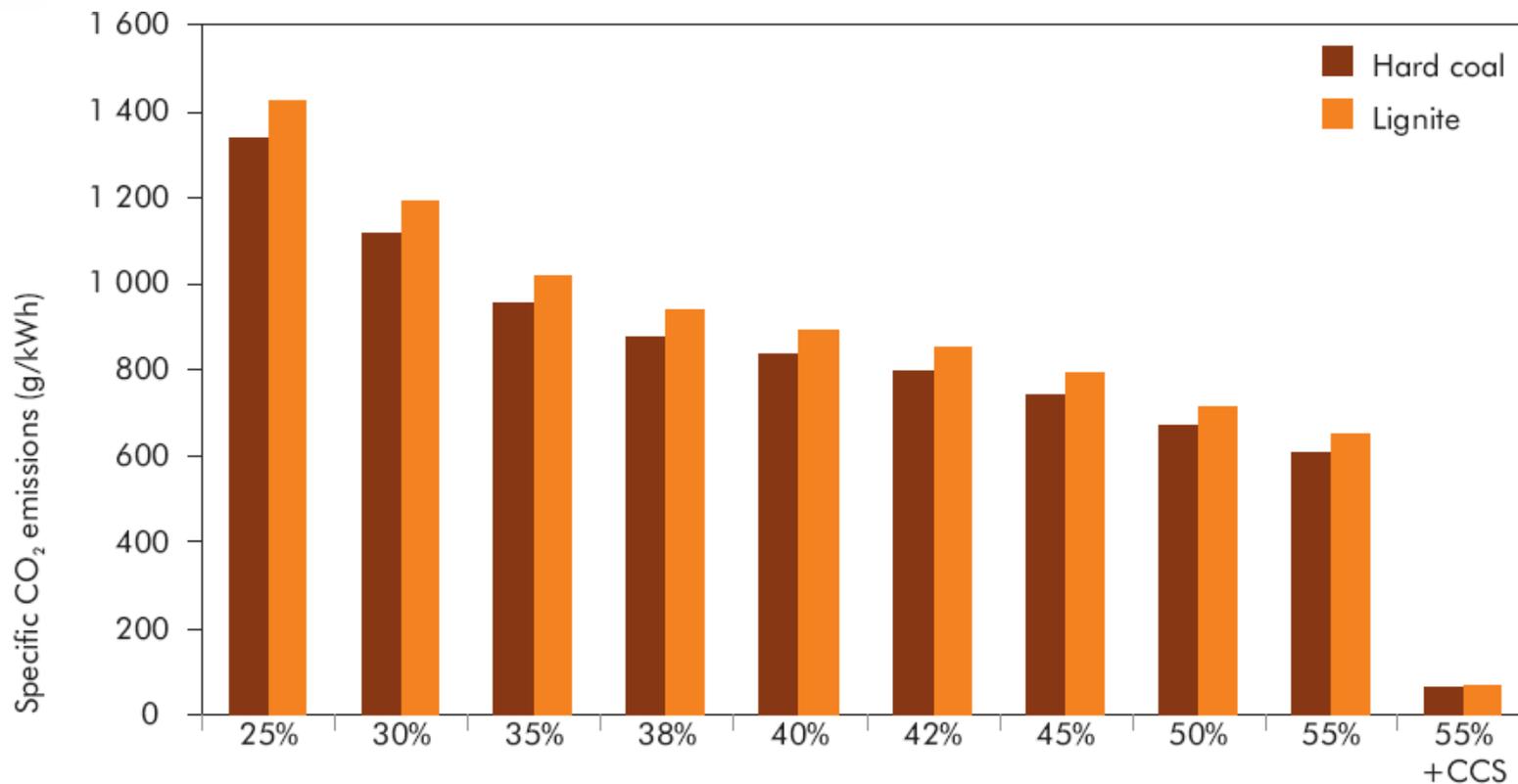
Prices of energy

EU import prices for coal, oil and natural gas, 1985 to 2010

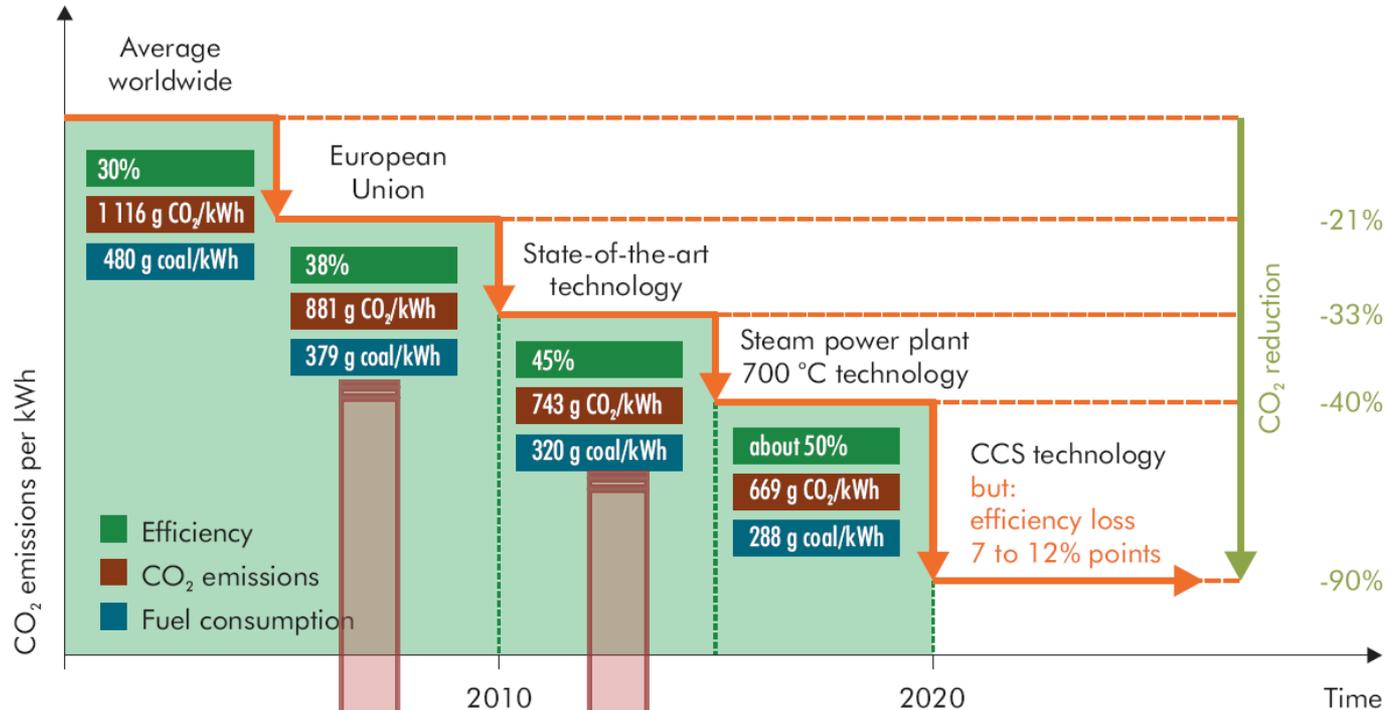
€/tonne of coal equivalent



Relationship between CO₂ emissions and net plant efficiency



Efficiency improvement potential at hard coal-fired power plants



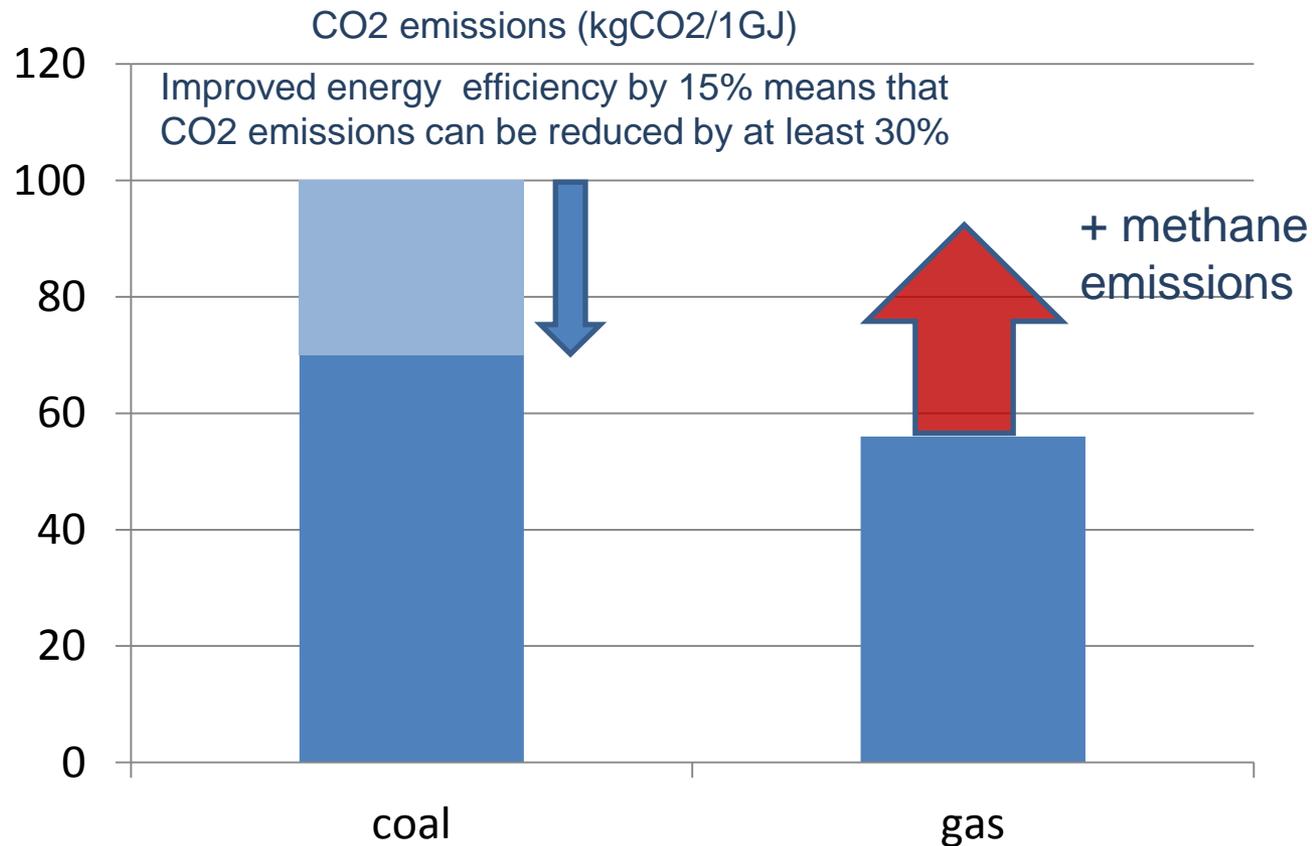
EU gross electricity generation (solid fuels as a feedstock) 824 TWh (2009)

726 mln t CO₂ 612 mln t CO₂

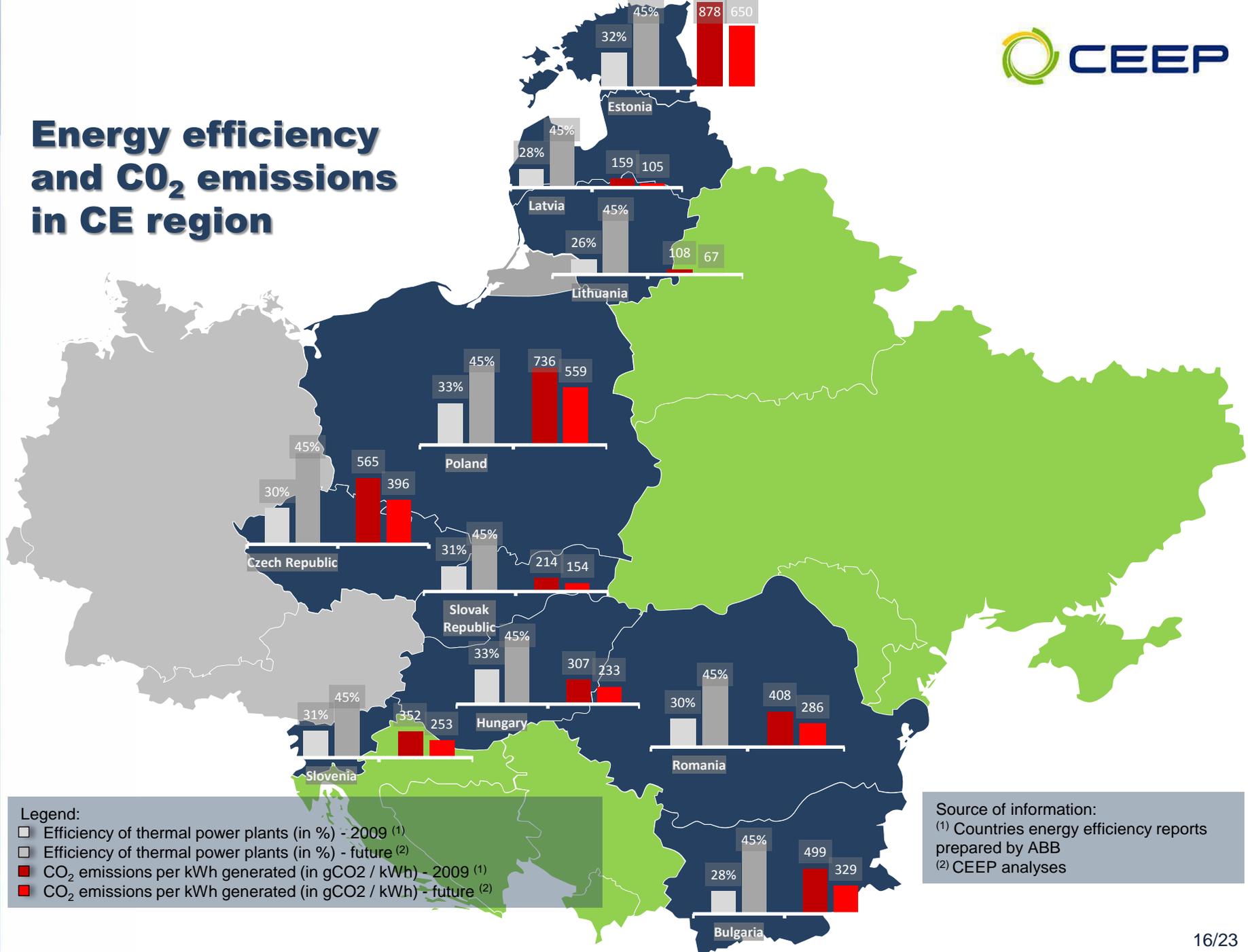
EU can save 114 mln t CO₂ (16%)

European energy efficiency from a Central European point of view

Many coal power plants in Central Europe have an energy efficiency of 30%,
New power units can have an efficiency of 45%-46% .



Energy efficiency and CO₂ emissions in CE region



Legend:

- Efficiency of thermal power plants (in %) - 2009⁽¹⁾
- ▒ Efficiency of thermal power plants (in %) - future⁽²⁾
- CO₂ emissions per kWh generated (in gCO₂ / kWh) - 2009⁽¹⁾
- CO₂ emissions per kWh generated (in gCO₂ / kWh) - future⁽²⁾

Source of information:

- ⁽¹⁾ Countries energy efficiency reports prepared by ABB
- ⁽²⁾ CEEP analyses

Calculation of CO₂ emissions for an energy efficiency of 45%

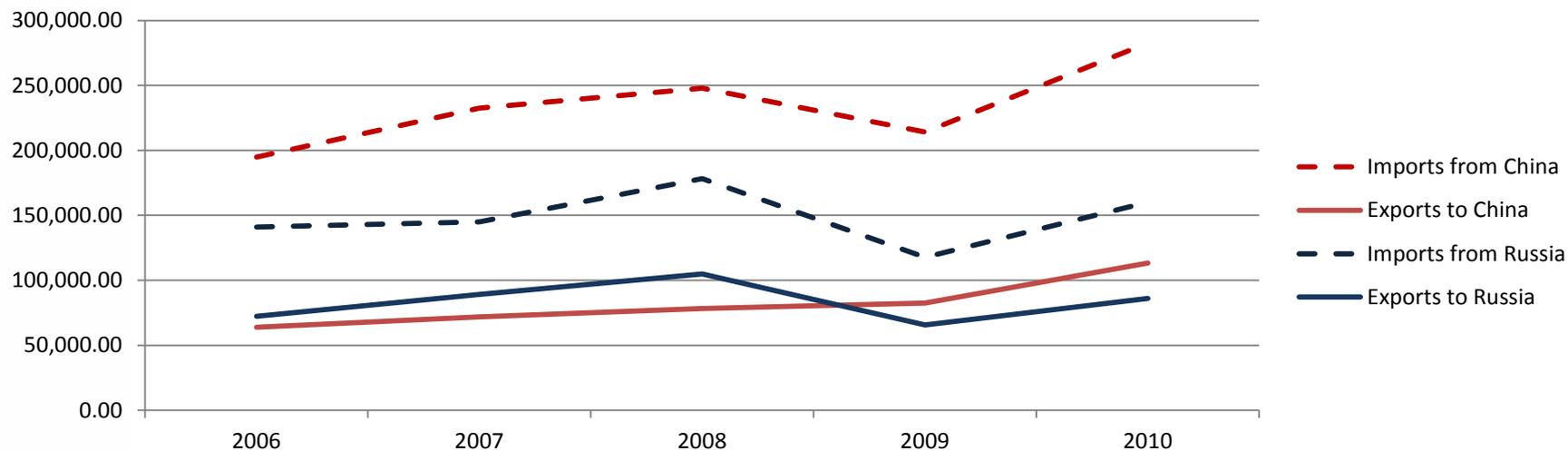
According to information provided by the World Coal Association:

'Improving efficiency levels increases the amount of energy that can be extracted from a single unit of coal. Increases in the efficiency of electricity generation are essential in tackling climate change. A one percentage point improvement in the efficiency of a conventional pulverised coal combustion plant results in a 2-3% reduction in CO₂ emissions. Highly efficient modern coal plants emit almost 40% less CO₂ than the average coal plant currently installed.'

Country	2009 Efficiency [%]	Future efficiency [%]	2009 CO2 emissions [kg/KWH]	Increase in efficiency = future efficiency - 2009 efficiency [%]	(z) Decrease in CO2 emission [%] = 1% increase in efficiency * 2%	Decrease in CO 2 emission [kg/KWH]=2009 CO2 emissions [kg/KWH] * decrease in CO2 emission [%]	Future emission [kg/KWH]=2009 CO2 emissions [kg/KWH] - Decrease in CO 2 emission [kg/KWH]
Bulgaria	28%	45%	499	17%	34%	170	329
Croatia	36%	45%	279	9%	18%	50	229
Czech Republic	30%	45%	565	15%	30%	170	396
Estonia	32%	45%	878	13%	26%	228	650
Hungary	33%	45%	307	12%	24%	74	233
Latvia	28%	45%	159	17%	34%	54	105
Lithuania	26%	45%	108	19%	38%	41	67
Poland	33%	45%	736	12%	24%	177	559
Romania	30%	45%	408	15%	30%	122	286
Slovak Republic	31%	45%	214	14%	28%	60	154
Slovenia	31%	45%	352	14%	28%	99	253

(Z) – Assumption: 1% of improvement in the efficiency of a power plant, results in a 2% reduction in CO₂ emissions.

EU'S trade balance with China and Russia (millions of EUR)



Trade balance

	2006	2007	2008	2009	2010
China	-131 149	-160 840	-169 621	-131 710	-169 259
Russia	-68 580	-55 899	-73 313	-52 126	-73 931

Directive 2009/31/EC

of the European Parliament and of the Council **of the 23rd April, 2009**
on the geological storage of carbon dioxide (...)

Article 33

In Directive 2001/80/EC, the following Article shall be inserted:

"Article 9a

1. Member States shall ensure **that operators of all combustion plants** with a rated electrical output of 300 megawatts or more for which the original construction licence or, in the absence of such a procedure, the original operating licence is granted after the entry into force of Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 on the geological storage of carbon dioxide, **have assessed whether the following conditions are met:**

- suitable storage sites are available,
- transport facilities are technically and economically feasible,
- it is technically and economically feasible to retrofit for CO₂ capture.

2. If the conditions in paragraph 1 are met, the competent authority shall ensure that **suitable space on the installation site for the equipment necessary to capture and compress CO₂ is set aside. (...)**

EU carbon tax plan rebuffed by non EU countries

**JOINT DECLARATION
OF THE MOSCOW MEETING
ON INCLUSION OF INTERNATIONAL CIVIL AVIATION IN THE EU-ETS**

Representatives of Armenia, Argentina, Republic of Belarus, Brazil, Cameroon, Chile, China, Cuba, Guatemala, India, Japan, Republic of Korea, Mexico, Nigeria, Paraguay, Russian Federation, Saudi Arabia, Seychelles, Singapore, South Africa, Thailand, Uganda and United States of America, gathered in Moscow, on the 21st and 22nd February 2012,

Recalling the Delhi Joint Declaration, adopted by the Council of ICAO on November 2nd, 2011 according to C-DEC 194/2;

Recalling the relevant provisions of the United Nations Framework Convention on Climate Change (UNFCCC);

Stressing the importance of the Kyoto Protocol to its Parties;

Reiterating the importance of the Chicago Convention and the need to ensure full compliance with its provisions;

Keeping in mind their national laws and regulations;

Affirming the importance of the role of the International Civil Aviation Organization (ICAO) in addressing international civil aviation emissions, including pursuant to the request from the Parties to the UNFCCC;

Stressing that the unilateral inclusion of international civil aviation in the EU-ETS has constituted an obstacle to the progress of ICAO's work underway to address international civil aviation emissions;

Underlining the lack of an adequate response from EU Member States to the ICAO Council's Decision C-DEC 194/2, including the lack of a constructive dialogue to address the concerns of the non-EU States expressed in that decision and elsewhere;

Considering that the inclusion of international civil aviation in the EU-ETS leads to serious market distortions and unfair competition;

Decided to:

- a) **Adopt** this Joint Declaration as a clear manifestation of their unanimous position that the EU and its Member States must cease application of the Directive 2008/101/EC to airlines/ aircraft operators registered in third States;
- b) **Strongly urge** the EU Member States to work constructively forthwith in ICAO on a multilateral approach to address international civil aviation emissions;
- c) **Consider** taking actions/ measures set forth in Attachment A to this Joint Declaration including, for example, a proceeding under Article 84 of the Chicago Convention and barring participation by their respective airlines/aircraft operators in the EU ETS;
- d) **Exchange** information on the measures adopted and to be adopted, particularly to ensure better coordination, by each non-EU Member State after this Meeting in future;
- e) **Continue** their intensified common efforts to make progress at ICAO to address international civil aviation emissions;
- f) **Request** the Russian Federation, on their behalf, to communicate this Joint Declaration to the EU and its Member States; and
- g) **Invite** any other State to associate itself with this Joint Declaration and, in this connection, request the Russian Federation to extend this invitation.

On the 22nd of February, 2012, 29 non-European Union countries signed a joint declaration in Moscow opposing the carbon tax imposed by the European Union. The declaration was issued, after an international conference on cutting greenhouse gas emissions, with 33 participating countries.

The declaration envisages a basket of retaliatory measures to the EU Emissions Trading Scheme (ETS), including allowing any country to introduce any measures in line with its national laws, to either completely scrap the EU ETS, or to postpone it. The Moscow declaration is aimed at forcing the EU to stop its plan of carbon charges.

Chinese threaten to cancel Airbus orders in ETS row

China, together with Russia, the US, and other countries, rejects the inclusion of its airlines in the ETS, by which they have to pay a carbon tax for every plane that enters or leaves an EU airport.

‘Chinese airlines will not buy European airplanes as long as the EU insists on including foreign airlines in its emissions trading system (ETS).

Chinese orders of around 35 Airbus A330 jets have been cancelled and another 10 orders of A380s are in danger of being cancelled because of the ETS.’

Wu Hailong, China's Ambassador to the European Union, 9th March, 2012.

CEEP Proposal concerning new article 10d to the Directive 2009/29/EC

- To allow immediate investment in coal power plants, we ask DG Energy, DG Research, DG Clima, to both consider all aspects of coal usage and extend the derogation period for new power plants based on coal with the efficiency of a minimum 45%, whilst a minimum 20 years from their operational date be granted. This derogation period should be shortened when the complete CCS technological chain is available, economically and commercially.
- If such solutions are adopted immediately, it will allow investors to start their investments and to contribute towards solving efficiently in-coming energy problems in EU countries, fulfilling EU energy objectives.



Thank-you for your attention