

Environmental dimension of the EEP

Filip Černoch
cernoch@mail.muni.cz

Run-up to the EU ETS

- 1988 EC's communication „The Greenhouse Effect and the Community“
- 1998 EC's communication „Climate Change - Towards an EU post-Kyoto strategy“
- 1999 EC's communication „Preparing for Implementation of the Kyoto Protocol“
- 2001 – EU ETS legal preparation launched, approved in 2003
- Designated the first period from 1.1.2005 to 31.12.2007, covering about 11.500 facilities in 25 MS = 45% CO₂ emitted in the EU

EU ETS: The first phase 2005 - 2007

Country	Mil. EUAs	Share of the overall amount of EUA	Number of incl. facilities	The aim of Kyoto
Belgium	188,8	2,9	363	-7,5
Czech Republic	292,8	4,4	435	-8
Denmark	100,5	1,5	378	-21
Estonia	56,85	0,9	43	-8
Finland	136,5	2,1	535	0
France	469,5	7,1	1 172	0
Ireland	67	1	143	+13
Italy	697,5	10,6	1 240	-6,5
Cyprus	16,98	0,3	13	-
Luxembourg	10,07	0,2	19	-28
Lithuania	36,8	0,6	93	-8
Latvia	13,7	0,2	95	-8

EU ETS: The first phase 2005 - 2007

- Problems with the decentralised system of distribution
- Overestimation of emissions – with the exemption of Germany and Slovenia (4 % surplus)
- Drop in the prices of allowances
- Very limited impact on emissions of GHG
- NAP – only Austria, Denmark, Finland, Germany, Ireland and Slovenia in time

Figure 2: EU ETS emissions allowance prices: April 2005 - December 2009



EU ETS: The first phase 2005 - 2007

Difficult calculations due to:

- Proneness to cheating
- Changing level of industrial production
- Changes in energy prices
- Increasing deployment of RES (canibalism of targets)
- Permit stockpiling
- Weather...

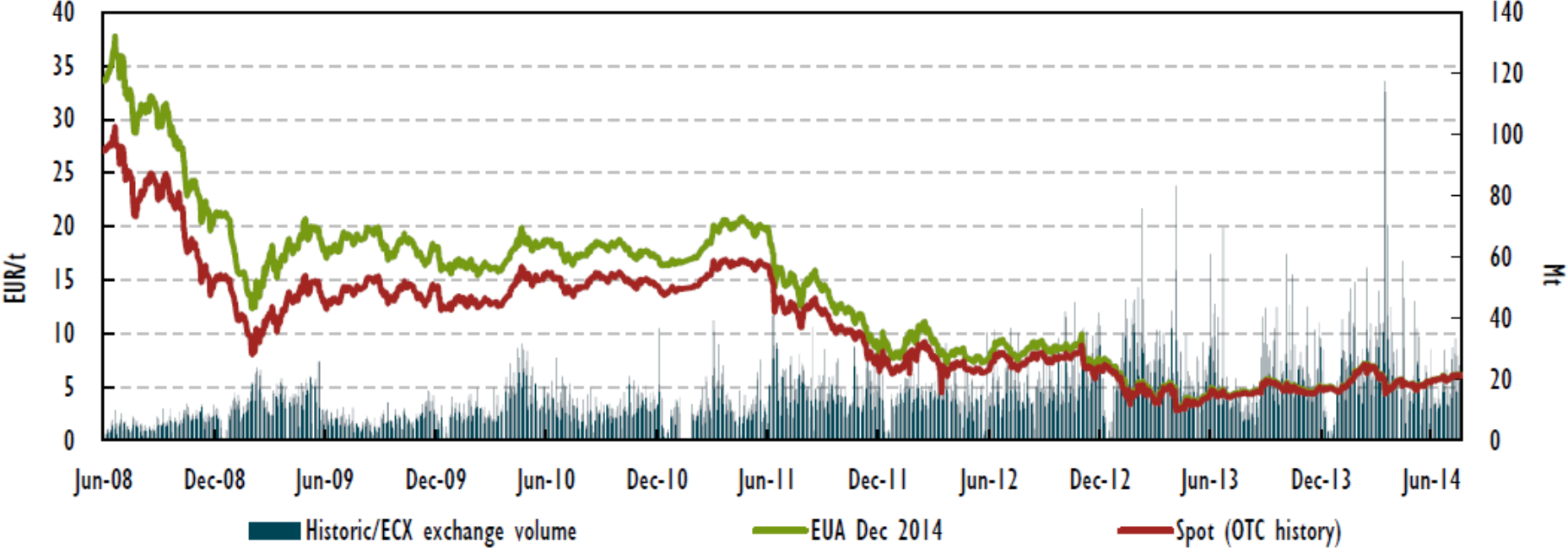
Not only GHGs decrease is desirable, but also the stability of price of EUAs.

EU ETS: The second phase 2008 - 2012

- More stringent approach of EC – cuts of NAP (litigation at ECJ)
- Relatively stable (but low) price of allowances
- Iceland, Liechtenstein and Norway part of ETS
- Pressure to change the whole system

„Nearly all 25 EU MS did not meet the 30 June 2006 deadline for the submission of the second phase NAPs (only Estonia was on time). Preinfringement letters were sent by the EC to 14 MS, namely Austria, Belgium, Cyprus, the Czech Republic, Denmark, Finland, Hungary, Latvia, Malta, the Netherlands, Portugal, Slovenia, Slovakia and Sweden“

Historic evolution of volumes and spot prices for emission allowances under EU ETS

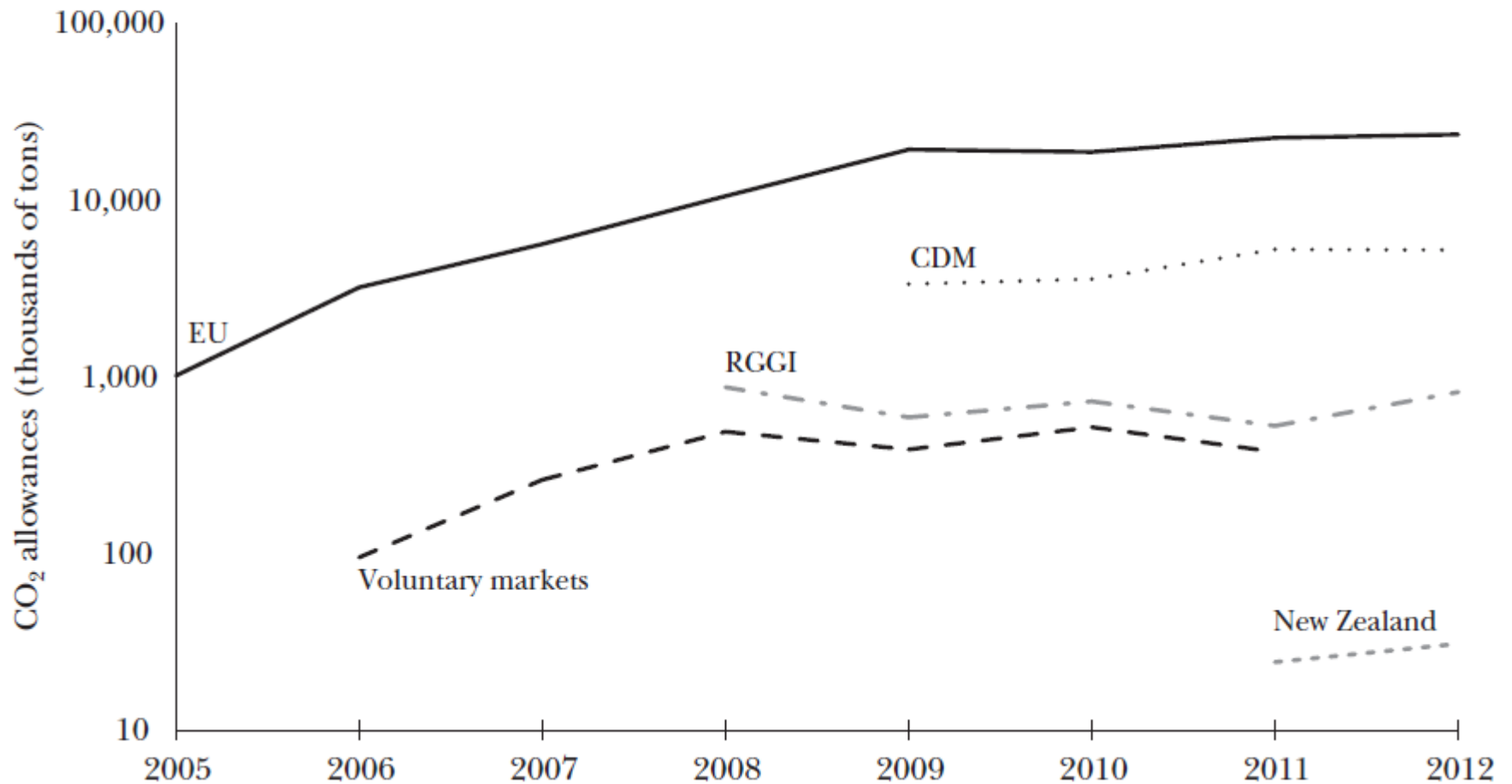


EU ETS: The second phase 2008 - 2012

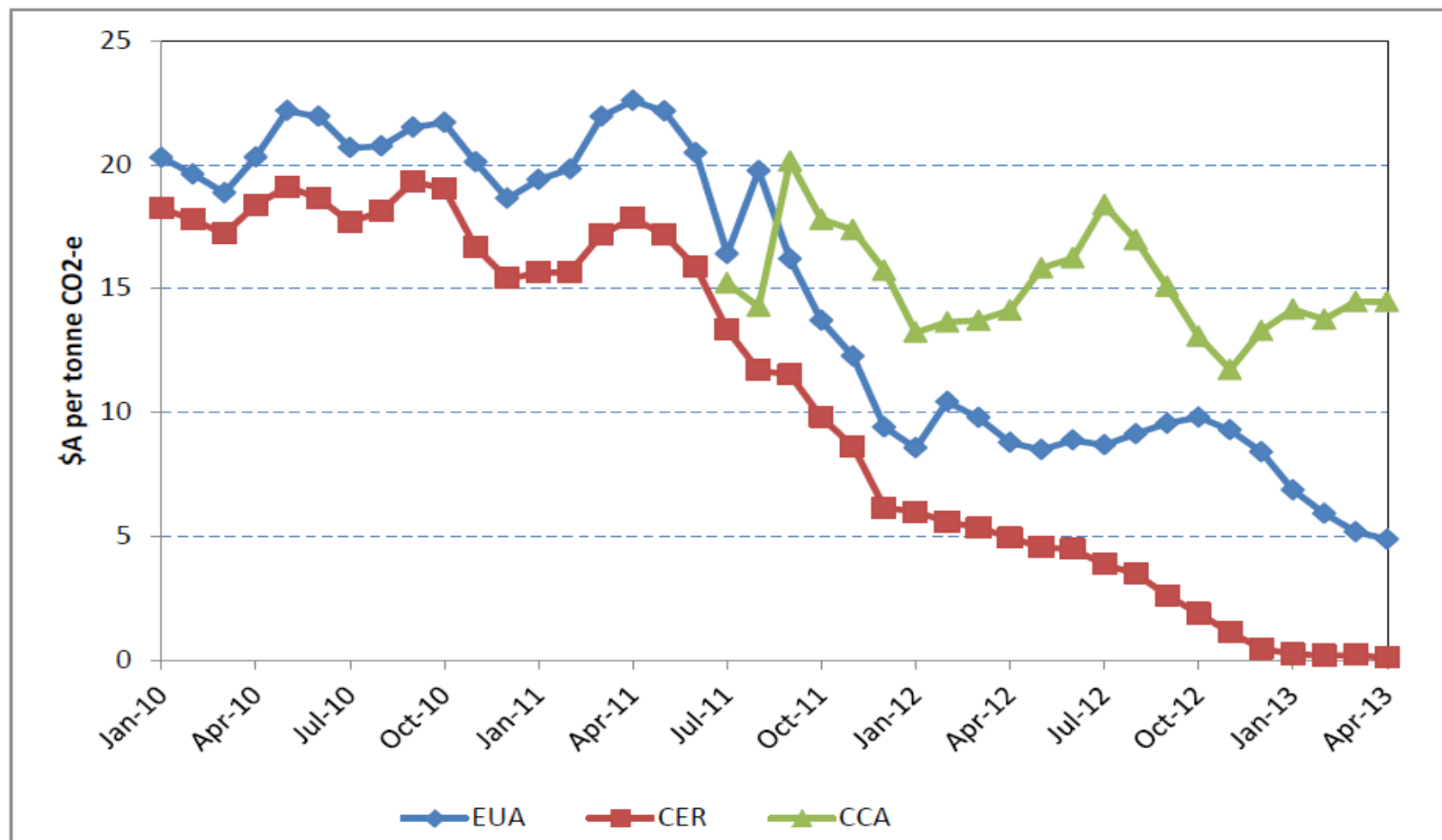
- Between 2008 – 2012 the CO₂ price declined from around €20 MtCO₂ to around €8 MtCO₂
 - The reduction of energy demand due to the financial and economic crisis starting in 2008
 - Inflow of international credits (Certified Emission Reduction CER of CDM and others)
 - Impact of other EU policies such as RES and energy efficiency policy
 - Rising prices of fuels
 - The design of the EU ETS doesn't allow the adjustment of supply of EUA in reaction to the changes in demand
- Since the banking is allowed between the second and third trading period = surplus of 2-2,5 bn EUA

Volume of CO₂ Allowance Trades

(daily average)



Carbon prices for EU ETS and California ETS, selected permit types, January 2010 to April 2013 (\$A)



Note: Prices are spot prices as compiled by Point Carbon based on exchange-traded and OTC transactions. EUA = European Union Allowance, CER = Certified Emissions Reduction, AU = Australian Unit, CCA = California Carbon Allowance.
 Sources: Point Carbon, sCER OTC price assessment, CCA OTC assessment, and EUA OTC assessment, accessed 30 April 2013. Australian dollar value estimated by the Parliamentary Library based on average [exchange rate data](#) for each year as published by the Reserve Bank of Australia.

EU ETS: The third phase 2013 - 2020

- Changes introduced by Energy and climate package 2009
- Increased coverage of GHG (CO₂+nitrous oxide NO₂ and perfluorocarbons PFCs) and activities (airlines)
- Energy intensive industry, such as oil refineries, steel works, production of iron, aluminium, metals, cement, lime, glass, ceramics, pulp, paper, cardboard, acids, bulk of organic chemicals. Energy industry

EU ETS: The third phase 2013 - 2020

- EU-wide emission cap to replace NAPs. A linear reduction factor of -1,74 %/y applied
- Auctioning of permits as a default method. More than 40% of EUA to be auctioned in the first year of 3rd period with progressively rising shares each year
 - End of free permits to the power sector. In other sector the progressive transition to the auctioning
- Common auctioning platform for the sale of permits (except Germany, UK, Poland)
- 300 million EUA in the New Entrants Reserve to fund innovative RES technologies and CCS
- An expanded list of restrictions on the use of credits from the CDM

EU ETS: The third phase 2013 - 2020

- Distribution of auction revenues (88% to MS, 10 to MS with low per capita income and 2% to MS that had achieved a 20% emission reduction in their Kyoto protocol base by 2005)
- At least half of revenues to combat climate change

Exeptions and derogations

- Countries, producing more than 60% of their electricity from coal or poorly interconnected to European grids could provide up to half of the allowances in energy sector freely
 - Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Lithuania, Poland and Romania
- A risk of carbon leakage
 - Process industries may get part or, if subject to carbon leakage, all of their EUA for free at the level of harmonized industry best practice practice
 - Carbon leakage list to be published every 5 years (2009, 2014)

EU ETS: Latest development

- At the end of 2nd period another 900 mil. EUA
 - +the selling of left-over allowances in national phase 2 new entrant reserves
 - + early auctioning to meet sector hedging demand
 - + the forward selling of phase 3 allowances to generate funds for the NER300 program
- About 2 – 2,2bn of EUAs surplus
- Backloading: delaying the auctioning of emission allowances intended to be allocated in 2013-2015 until 2018-2020
- Market Stability Reserve (from 2021) – to address the surplus of EUAs by automatically adjusting the supply of EUAs to be auctioned.
- Change of the linear factor to -2,2% from 2021

Environmental dimension of EEP

- Climate change – EU aim to develop a low-carbon economy
- Measures primarily to reduce GHG emissions
 - EU ETS – covers 40% of EU emissions
 - individual targets of MS for the non-EU ETS sectors (housing, agriculture, transport, waste) – cover 60% of EU emissions
 - CCS
- Measures to transform the energy sectors
 - RES
 - Energy Efficiency
 - Research and development, new technologies

Non-EU ETS emissions

- 20% target is divided between a) a 21% target compared to 2005 for EU ETS emissions and b) a 10% target compared to 2005 for the non-ETS emissions.
- The later goal is split into national sub-targets.
 - Traffic management, low-GHG transport, biofuels, urban planning, improved energy performance standards for public building, labeling system, eco design.....
- To support it some measures at the EU level – emission standards for vehicles, fuel quality directive...

A shared effort
between sectors and MS

GHG Target:
-20% compared to 1990

-14% compared to 2005

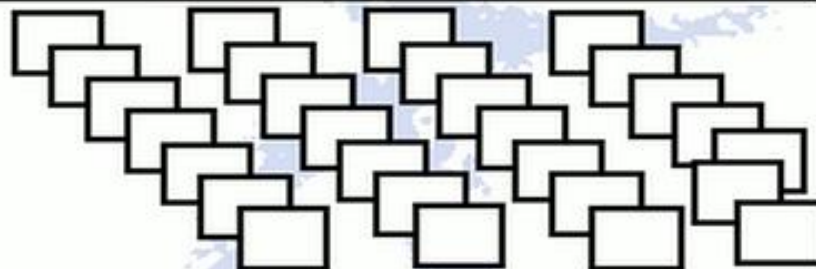
EU ETS

**-21% compared
to 2005**

ESD sectors

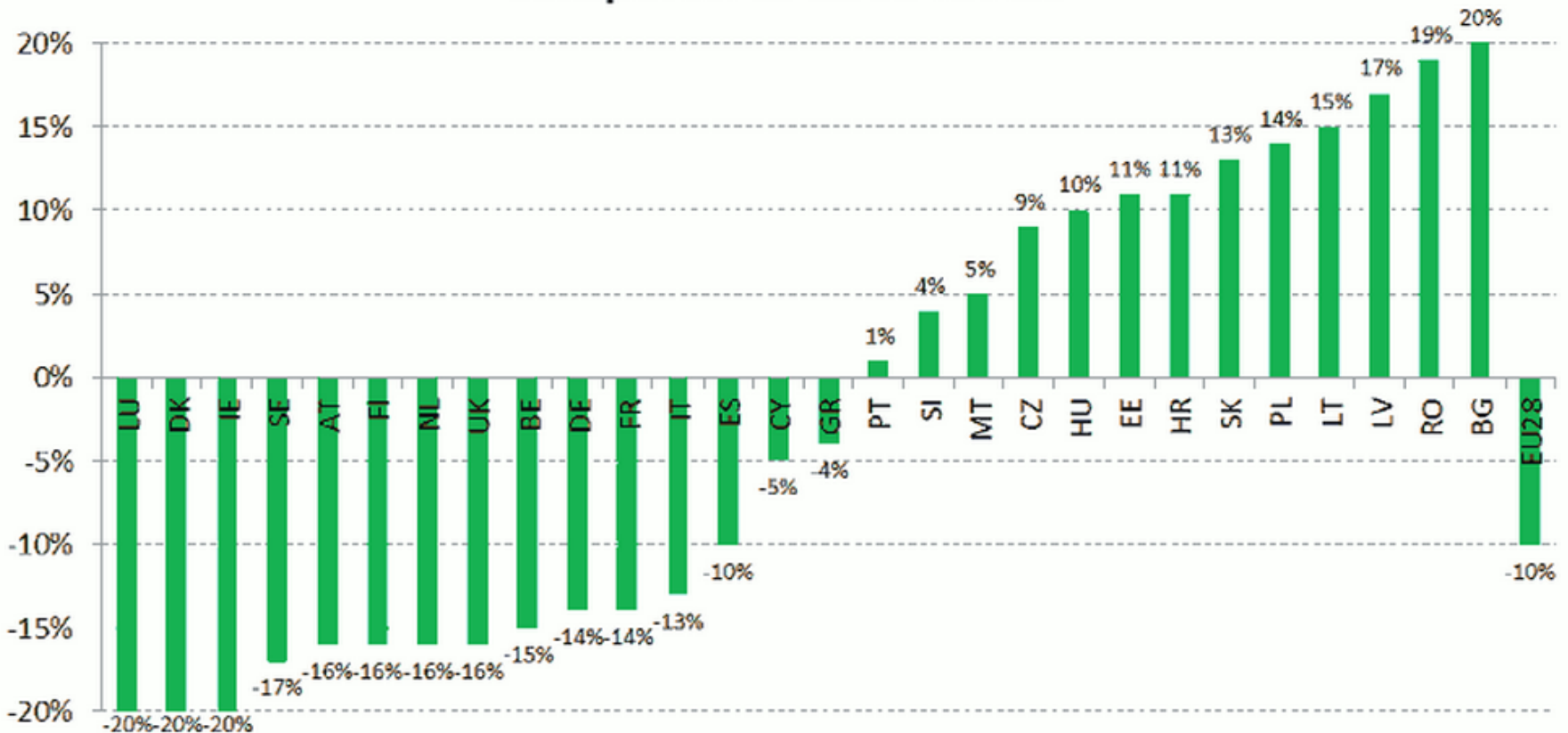
-10% compared to 2005

28 Member State targets, ranging from -20% to +20%



Individual targets of MS

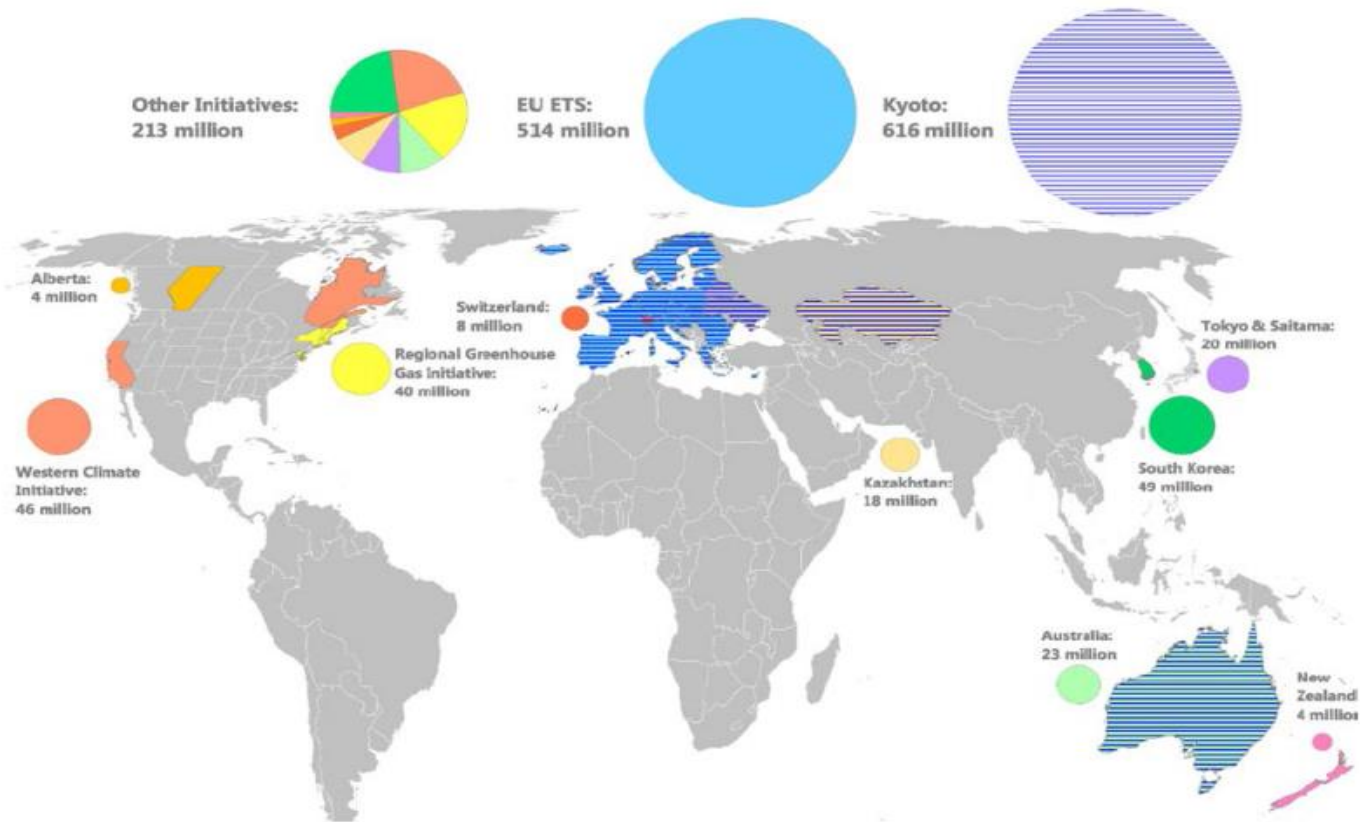
Member State greenhouse gas emission limits in 2020 compared to 2005 levels



Emission obligations of the EU

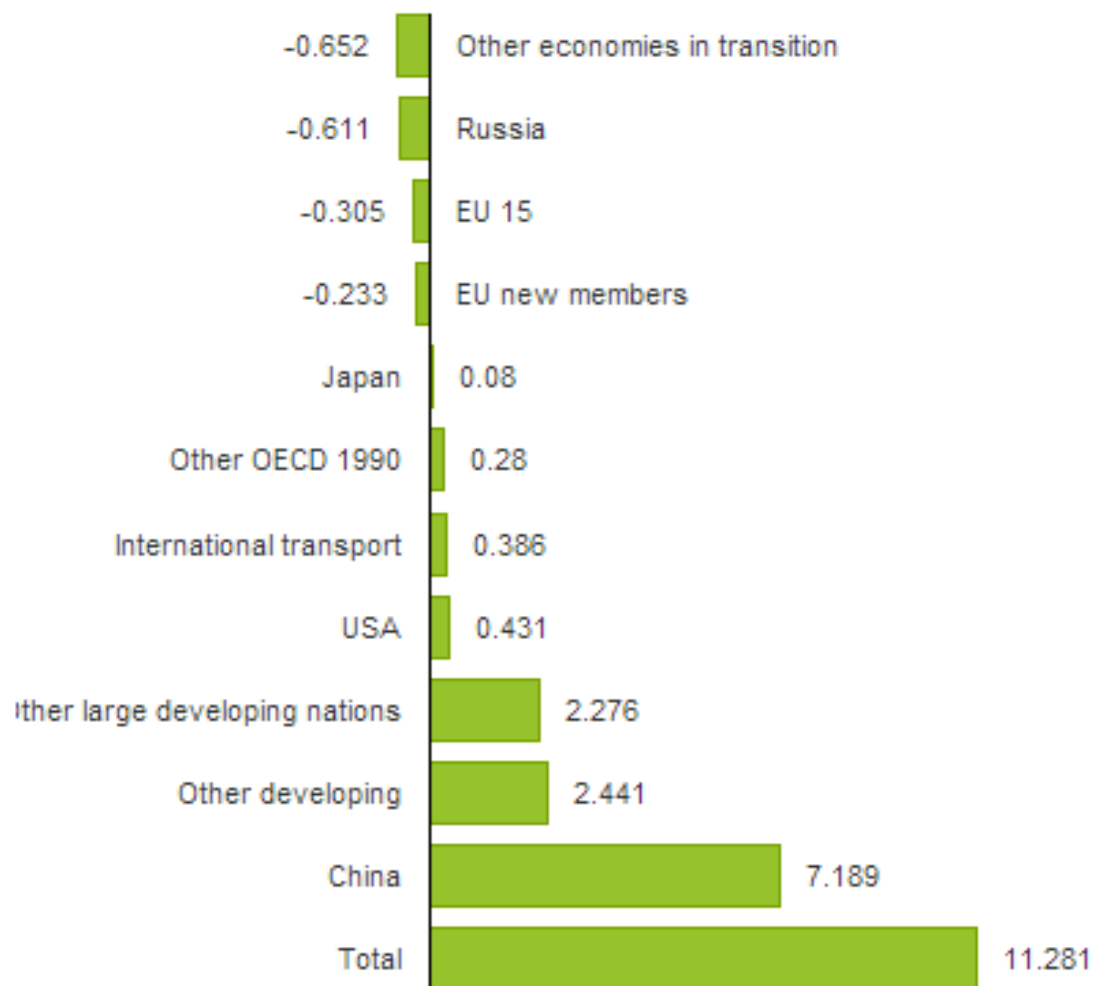
- Kyoto Protocol – EU15 to reduce its GHG emissions by 8% compared to base year (1990, 1995) during the first commitment period 2008 – 2012. Estimates of 16,3% without LULUCF
- EU supports the Doha Amendment extending the KP from 2013 to 2020
- Energy and climate package 2009 - A 20% reduction in EU greenhouse gas emissions from 1990 levels by 2020
- Roadmap for competitive low carbon economy 2011 – up to 80% reduction to 2050 compared to 1990
- 2030 Climate and energy framework – 40% by 2030 compared to 1990

Map showing countries with an ETS and their populations



Source: Map generated by the Parliamentary Library; sources for population data: CIA World Factbook and census data for US, Canada and Japan.

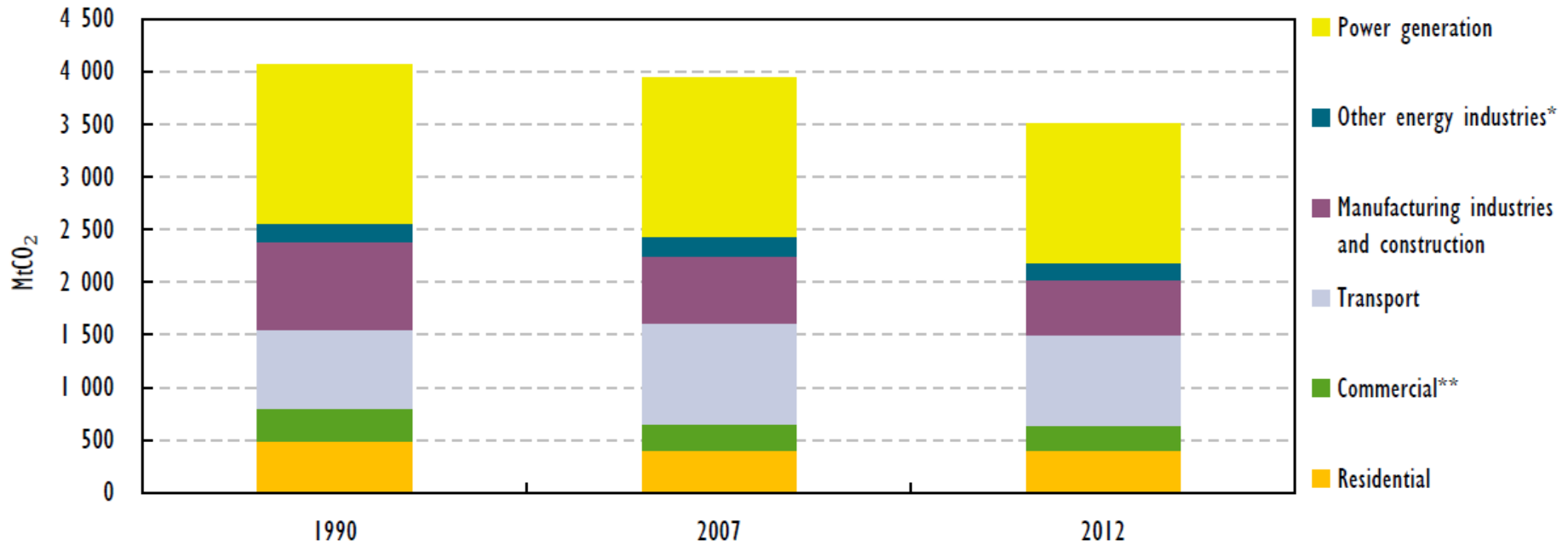
Change in CO2 emissions (GT), 1990 to 2011



Key data

- CO₂ emissions from fuel combustion: 3504 Mt in 2012, -13,8% since 1990
- Emissions by source: oil 40,2%, coal 32,4%, natural gas 25,6%, other 1,8%
- Emission by sectors: power generation 37,5%, transport 24,6% (+14,4% since 1990), industry 15%, residential 11,5%, commercial and other services 6,6%, other energy industries 4,8%
- Carbon intensity: 0,25 tCO₂/USD 1000 PPP (IEA Average 0,31 tCO₂, -40,9% since 1990)
- EU is to overachieve its Kyoto target

CO₂ emissions by sector, 1990-2012

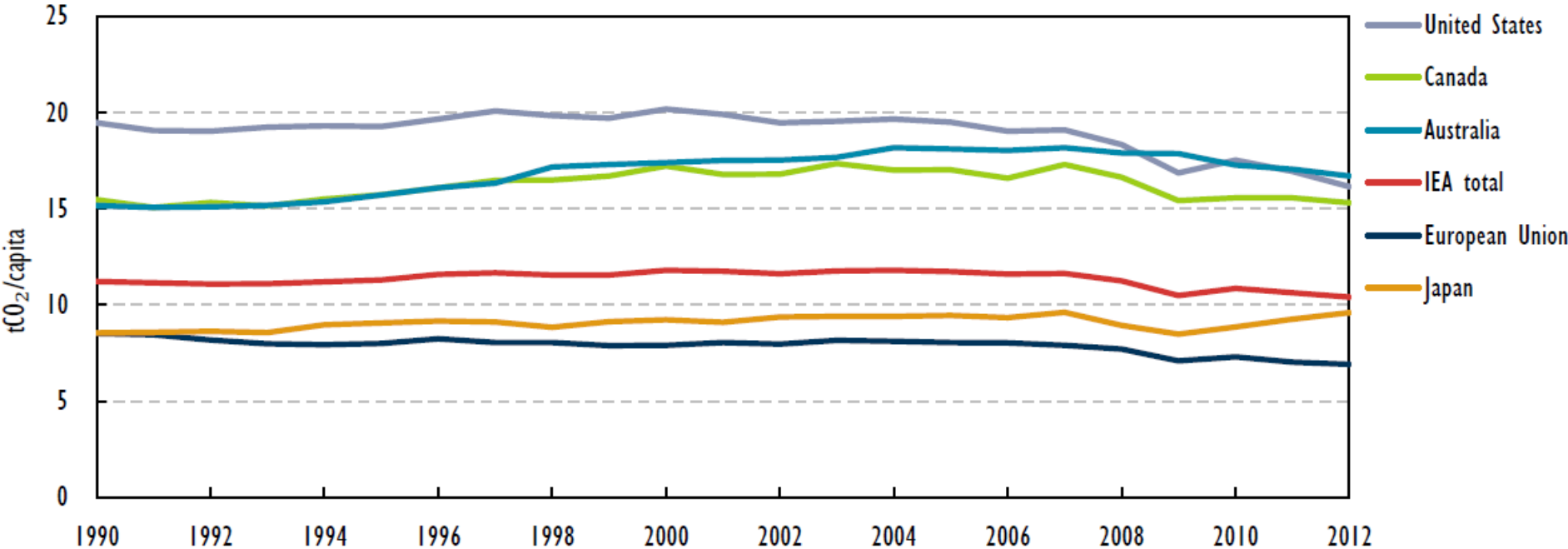


* *Other energy industries* includes refining/other transformations and energy own use.

** *Commercial* includes commercial and public service, agriculture/fishing and forestry.

Source: IEA (2014), *CO₂ Emissions from Fuel Combustion*, OECD/IEA, Paris.

Energy-related CO₂ emissions per capita in the EU and selected IEA member countries, 1990-2012



Source: IEA (2014), CO₂ Emissions from Fuel Combustion, OECD/IEA, Paris.

Final comments

- Strong contribution of RES to the emission reductions (6% in 1990, 14% in 2012).
- Also policy support for energy efficiency plays a role.

Sources

- IEA (2014): Energy Policies of IEA Countries – The European Union.
- Talberg, A.-Swoboda, K.: Emissions trading schemes around the world, 2013.
- And others.