ENVIRONMENTAL DIMENSION OF THE EEP III.

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KMVES

Energy policy of the EU

Environmental dimension of EEP

- Climate Change
- Renewables
  - Biofuels
- Energy efficiency
- CCS
- Technology and inovation

- Energy and climate package (2007, in force 2009)
  1) A 20% reduction in EU greenhouse gas emissions from 1990 levels by 2020;
  2) Raising the share of EU energy consumption produced from renewable resources to 20% by 2020;
  3) A 20% improvement in the EU's energy efficiency by 2020.

Tento projekt je spolufinancován Evropským sociálním fondem a státním rozpočtem České republiky.
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MINISTERSTVO ŠKOLSTVÍ, MLÁDEŽE A TĚLOVÝCHOVY
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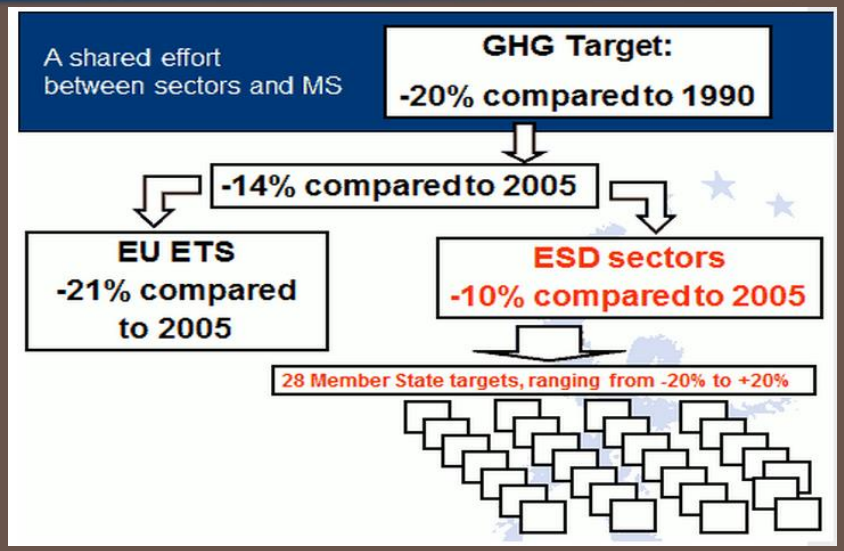
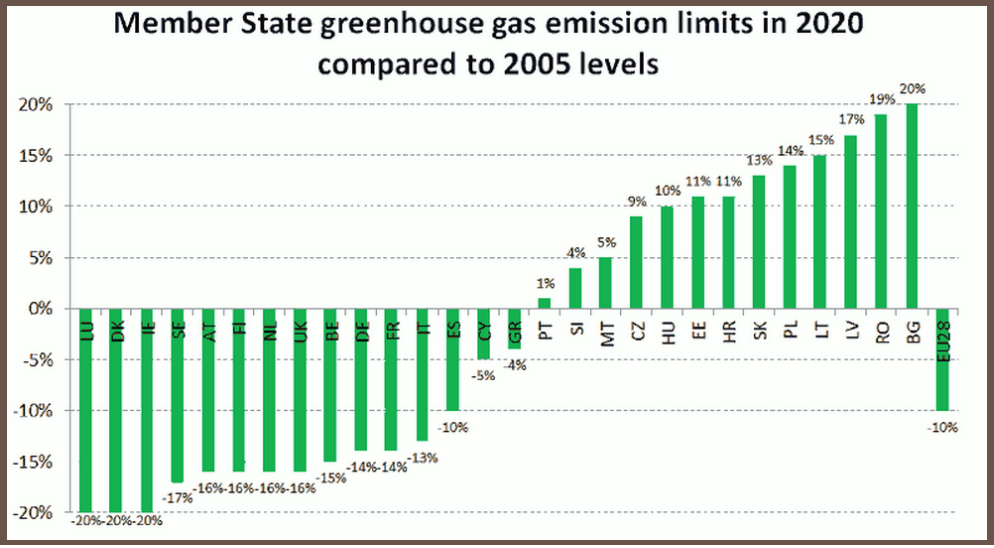
INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

A 20% reduction of GHG

- EU ETS and its reform
- National targets for non-EU ETS emissions
  - Traffic management, low-GHG transport, biofuels, urban planning, improved energy performance standards for public building, labeling systém, eco design……
- To support it some pan-European measures – emission standards for vehicles, CCS (limited interest, public oposition).





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Renewables

- 1997 – indicative target of 12 % RES in gross domestic consumption of the EU by 2010
- 2001 – Directive 2001/77/ES – indicative targets for individual states to 2010
- 2009 – Directive 2009/28/ES – aim 20 % by 2020, 10 % in transport sector (Energy climate package).

- = to save 600 – 900 million tons of CO2/y, 200-300 million tons of oil/y, lowering of import dependency, industry….

Member State	Share of renewables in 2005	Share required by 2020
Austria	23.3%	34%
Belgium	2.2%	13%
Bulgaria	9.4%	16%
Cyprus	2.9%	13%
Czech Republic	6.1%	13%
Denmark	17%	30%
Estonia	18%	25%
Finland	28.5%	38%
France	10.3%	23%
Germany	5.8%	18%
Greece	6.9%	18%
Hungary	4.3%	13%
Ireland	3.1%	16%
Italy	5.2%	17%
Latvia	32.6%	40%
Lithuania	15%	23%
Luxembourg	0.9%	11%
Malta	0%	10%
The Netherlands	2.4%	14%
Poland	7.2%	15%
Portugal	20.5%	31%
Romania	17.8%	24%
Slovak Republic	6.7%	14%
Slovenia	16%	25%
Spain	8.7%	20%
Sweden	39.8%	49%
United Kingdom	1.3%	15%

Source: thinkcarbon.wordpres.com

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2020 Targets in Renewable Energy

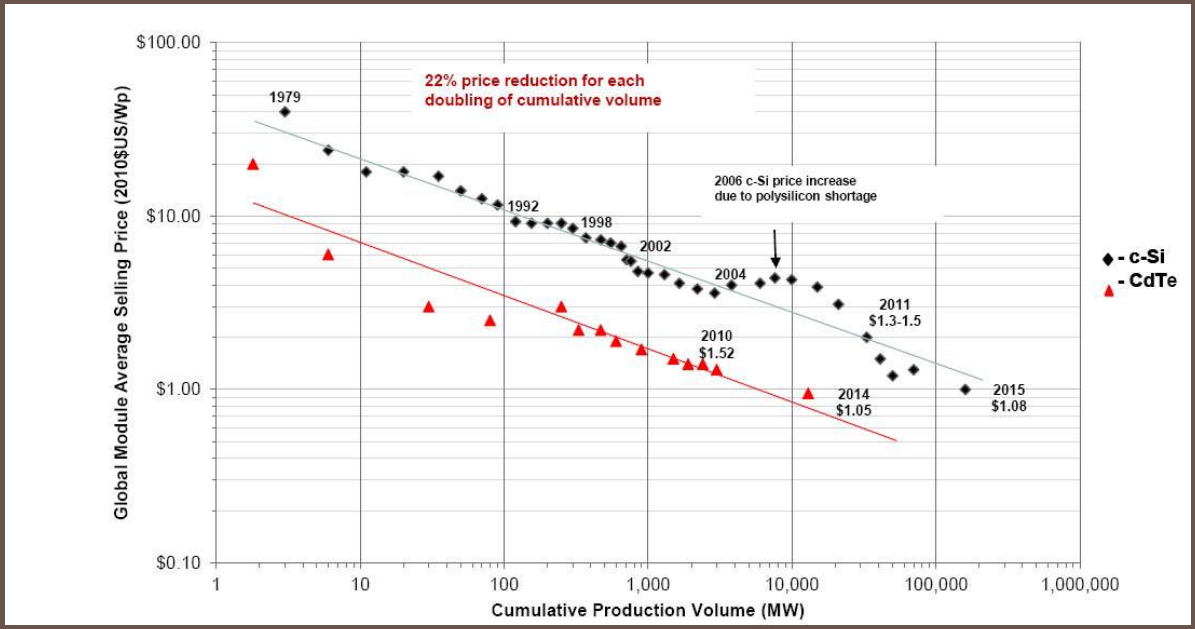
Share of Renewables in Gross Final Energy Consumption (%)

* Belgium 2010 Data: Estimated by Eurostat
Source: Eurostat June 2012 and Directive 2009/28/EC for Targets

Results so far…

In the last decade increase of RES of more than 40 % in the EU.

- Production of electricity from RES + 40 %, heat + 30 %.
- Overal investments in RES around 40 bn. euro annualy.
- Employment in RES related sectors – 1,5 million in 2010.
- Reduction of costs of key PV and wind technology.



Source: Ragwitz

But!

- Costs of RES subsidies – for national budget or/and customers (RES are not competitive – need to be subsidized)
  - RES support is rising rapidly in some countries. 47 % increase in RES surcharge in Germany in 2013 to around EUR 20bn. Total RES support costs could rise by 2020 to annual level of EUR 51 billion for electricity and EUR 78 billion for all renewables (Ecofys projection).
  - Estimated costs in Czech Republic – 1,76 bn. euro in 2013.
- Conflict with conventional sources – capacity market?

Source: D.Buchan, OIES

Types of subsidy – Feed-in-Tariffs

- 21 EU states, provides a fixed rate of subsidy for fixed period. Designed to cover all a producer's costs and profit, they essentially replace the market. Very successful in triggering large deployment of RES, but at a high cost. Instrument of choice for big RES players (Germany, Spain). Basic rule is government sets the price, market (investor response) sets the quantity, but many recent amendments to control costs.
- They are more effective, because they can be tailored to specific technologies. Drawback include a) difficulty of setting the right price – too high and money is wasted, too low and no deployment – and once the price is set, it is hard to make radical changes without breaking contracts, and b) they insulate the RES producer from the market.

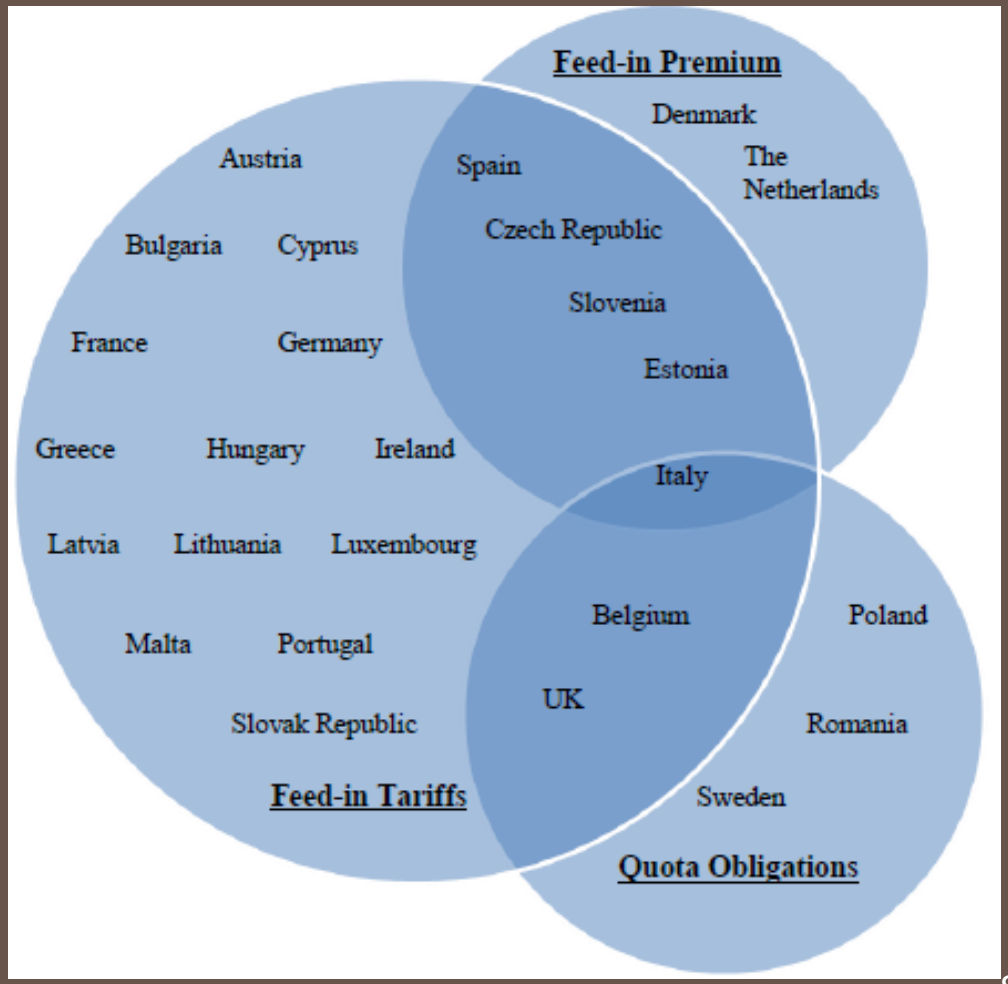
Source: D.Buchan, OIES

Types of subsidy – Quota obligations

- Quota obligations with tradeable certificates. Here government sets the quantity, the market the price. These exist in 6 EU states, have been less successful, but are cheaper and therefore have by no means fallen out of fashion.
- Quota systems with tradable certificates tend to be cheaper, but favour mature technologies like onshore wind and biomass.

Source: D.Buchan, OIES

Support systems in the EU

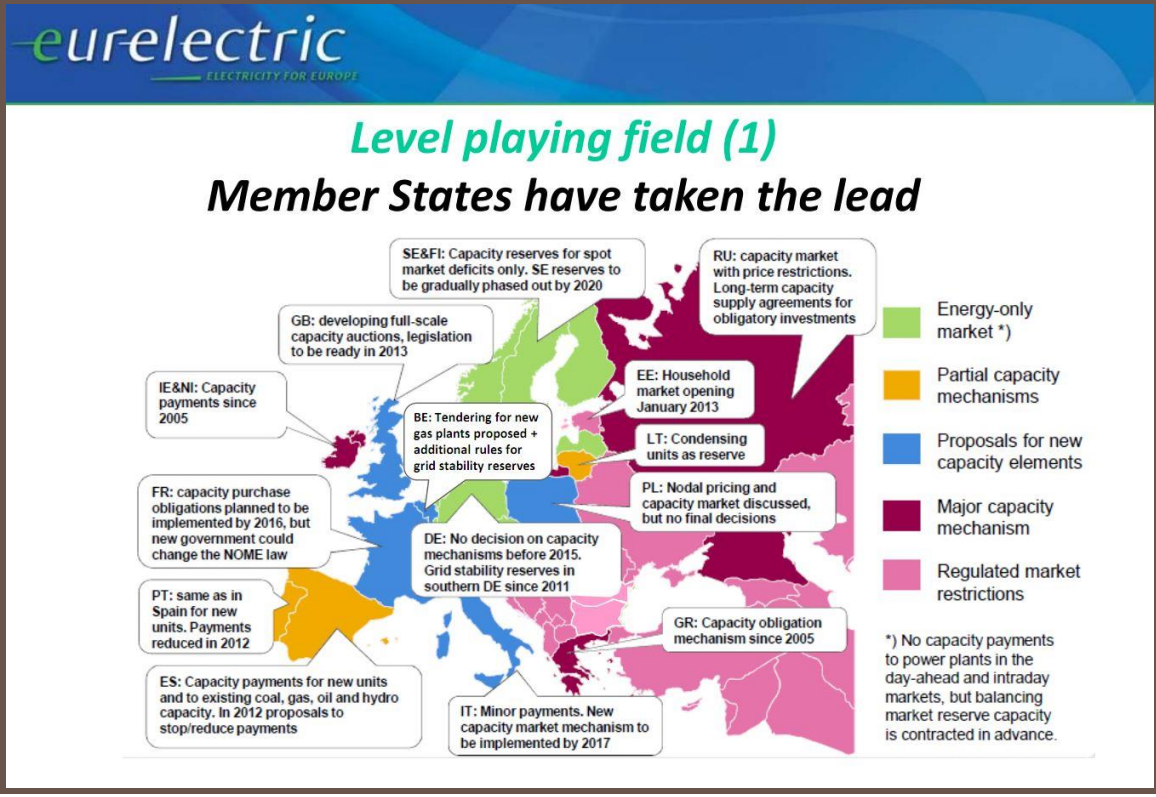


Source: D.Buchan, OIES

But!

Conflict with conventional sources – capacity market?

- E.ON in France is to close a gigawatt of coal-fired capacity
- GDF Suez to mothball three of its gas turbines
- E.ON in Germany looses money in its gas turbine in Irsching
- Norway´s Statkraft is closing its 510 MW gas turbine in Landesbergen
- In Czech Republic a brand new gas power plant in Počerady is mothballed



Energy efficiency

- A 20% improvement in the EU's energy efficiency
- Not in absolute terms, but relative to the BAU scenario.

- Plenty of different instuments.
  - Products (energy labeling)
  - Transport
  - Buildings
  - Public procurement
  - Trade
  - And national action

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[CH]Přesnější odkaz????

Energy efficiency

kg of oil equivalent per 1 000 EUR			
EU (27 zemí)	144,3	Malta	200,7
Belgium	181,9	Hungary	282,1
Bulgaria	712,4	Germany	128,9
Czech Republic	356,2	Netherland	146,7
Denmark	90,7	Norway	111,6
Estonia	503,4	Poland	317,7
France	143,4	Portugese	152,7
Finland	212,0	Austria	126,1
FYROM	530,1	Romania	392,1
Croatia	231,7	Greece	155,1
Italy	121,5	Slovenia	230,2
Ireland	82,1	Slovakia	349,1
Cyprus	173,4	Spain	135,5
Lithuania	301,3	Sweden	147,6
Latvia	324,0	Turkey	232,0
Luxemburg	136,0	United Kingdom	103,6
Source: Eurostat			