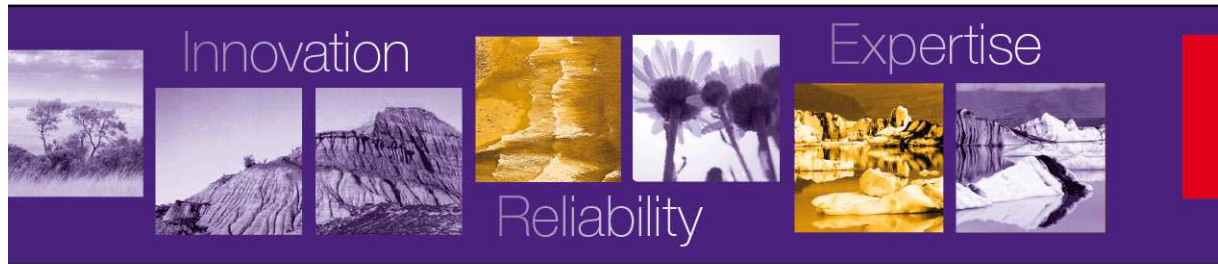


Reliability

Innovation



Expertise

Assessing the EU Commission's proposals for the new EU ETS directive by 2030: French public-private initiative “COPEC” – first results

Partnership Market Readiness Assembly

12th March, 2015

Agenda

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1. EU context: a need to (re)assess the EU ETS design by 2030
2. The objective of our research program: To prepare economic policy makers for the EU ETS directive revision
3. First results:
 1. Interaction between the EU ETS and energy targets by 2030
 2. The extension of the EU ETS scope with the inclusion of road transport

A new assessment of the EU ETS by 2030: preparation for its phase 4

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- ▶ In October 2014, the EU Council stated new design settings for the EU ETS which included :
 - A new target for the EU ETS: - **43% by 2030** compared to 2005
 - The review of the annual linear reduction factor : -2.2% by year
 - The introduction of a “**market stability reserve**”
 - “Carbon leakage”:
 - **Free allowances** for sectors exposed to the risk of “carbon leakage” after 2020
 - Measures to compensate CO₂ indirect costs by improved and harmonized State aids
 - Low-carbon technologies financing:
 - “NER 400” - an innovation fund program based on sales of 400 millions EUA
 - A new reserve of 2% of the EU ETS allowances - modernization fund to high additional investment needs in low income EU Member States
 - **2 new EU energy targets : a binding 27% of RES and an indicative 27% of EE by 2030**
- ▶ **Next policy steps :**
 - Public consultation on the EU ETS revised directive until 15th March 2015
 - Proposal of a new EU ETS directive before the 2015 summer

Preparing economic policy makers to the EU ETS directive revision

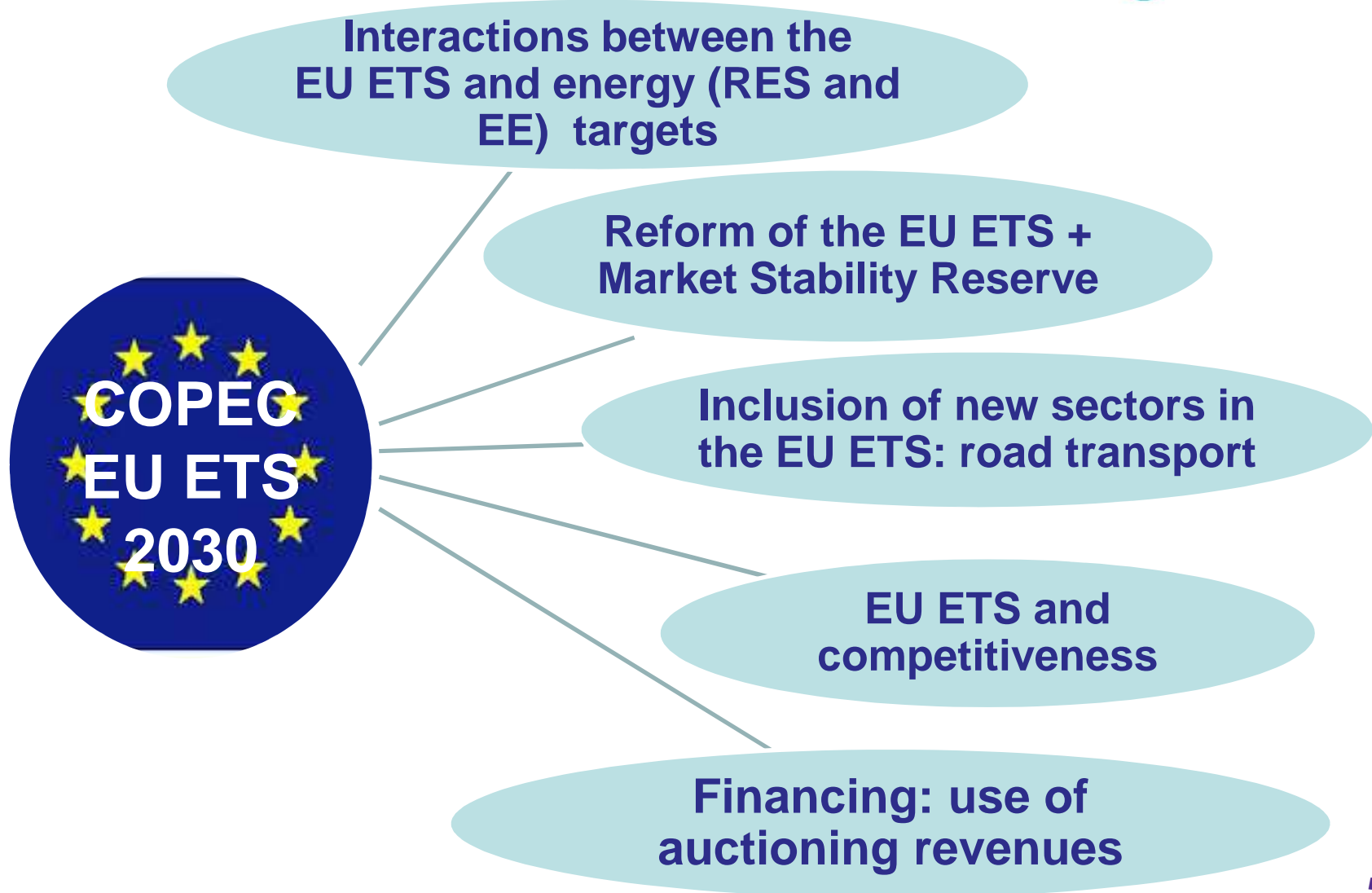
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- ▶ What will be these new design settings' impacts on the development of the EU ETS in phase 4 (2021-2028)?
- ▶ Our research program - “**CO**ordination of EU **P**olicies on **E**nergy and **CO**₂ by 2030” (COPEC) aims at providing factual, independent and quantified analyses of the functioning of the EU ETS in terms of economic impacts to examine the conditions for improving its environmental and economic effectiveness.
- ▶ Our analyses are based on:
 - An overview of academic work to an audience of decision makers
 - The production of new economic and environmental analyses
 - The modeling of different 2030 scenarios

5 main EU ETS issues to examine

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The need of economic analysis and modelling results

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- ▶ A partnership between economics, climate and energy skills

CDC Climat Research



The research team of the French public long term investor Caisse des Dépôts Group which provides an independent expertise when assessing economic issues relating to climate & energy policies . Its aim is to help public and private decision-makers to improve the way in which they understand, anticipate, and encourage the use of economic and financial resources aimed at promoting the transition to a low-carbon economy.

Enerdata



- Enerdata is an **independent** Research & Consulting firm on the global oil, gas, coal, power, renewable and carbon markets established in 1991. Leveraging **extensive quantitative databases, proven methodologies and advanced forecasting models**, our experts have more than 25 years' experience in economic, policy and technology issues shaping the energy industry. Enerdata is composed of experienced teams of energy industry experts, analysts, engineers, data & IT specialists. Enerdata provides data, research, solutions, consulting and training to **hundreds of clients worldwide**: major oil & gas companies, electric utilities, equipment companies, consulting firms, banks and public organizations.

- ▶ An expertise in partnership with IFPEN on transport issues



- IFP Energies nouvelles is a public-sector research and training center. It has an international scope, covering the fields of energy, transport and the environment. From research to industry, technological innovation is central to all its activities. As part of the public interest mission IFPEN focuses on: providing solutions to take up the challenges facing society in terms of energy and the climate, promoting the emergence of a sustainable energy mix; creating wealth and jobs by supporting French and European economic activity, and the competitiveness of related industrial sectors.

The COPEC program sponsors

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- ▶ The coalition of French Public and Private decision makers involved in the EU ETS

French energy and industry companies



French ministries



The COPEC program time-line

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1

September 2014 –
April 2015
5 workshops

3

March – December 2015
Stakeholders dialogue
with events/conferences



April – June 2015
Production of the
intermediary report

December 2015
Publication
of the final report


2

4

First assessment results

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1. Interactions between CO₂ and energy (RES and EE) targets in the EU ETS :
 - Lessons from phases 1, 2 and 3 (2005-2020)
 - Modelling results of new EU ETS design settings by 2030
2. The extension of the EU ETS scope with the inclusion of road transport - in partnership with 
 - Why include road transport in the EU ETS?
 - Modeling results of this new scenario

2005-2012 : overlapping of CO₂, energy (RES and EE) targets

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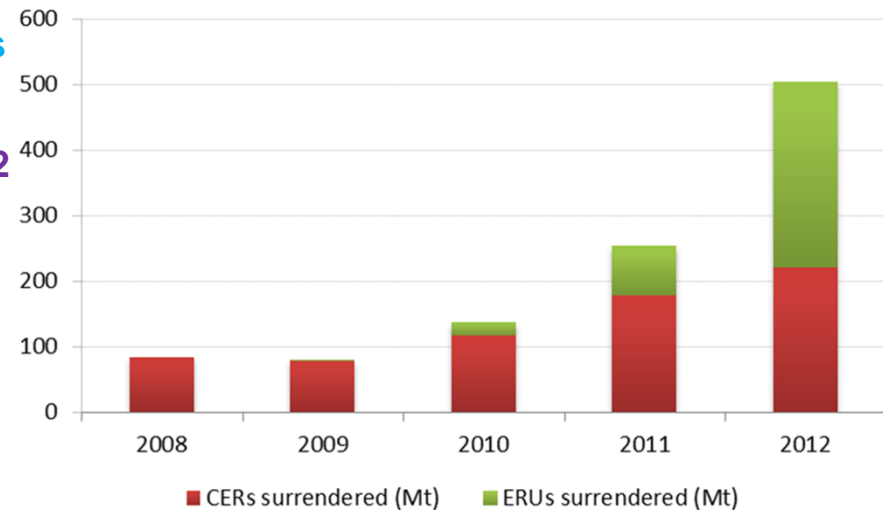
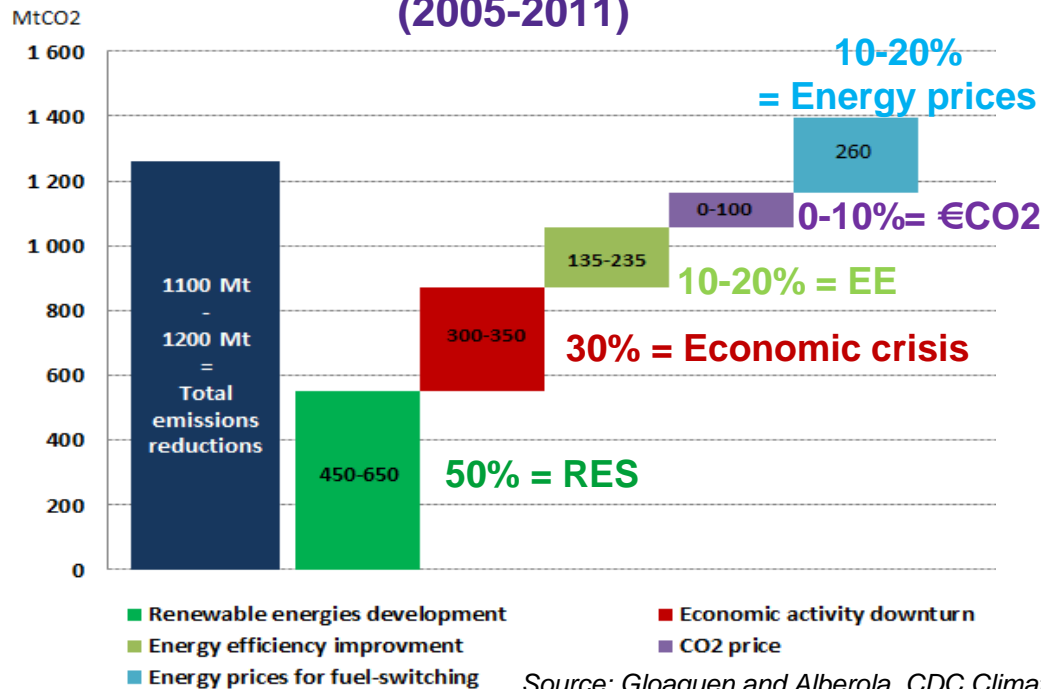


- ▶ We estimated more than 2 Gt of CO₂ emission abatements in the EU ETS from 2005 -2012 : 50% ETS reductions + 50% outside ETS (through CDM & JI projects)
- ▶ The EU carbon price: weaker driver of CO₂ abatements in the EU ETS and stronger driver of CO₂ abatements in Kyoto projects

**Domestic EU ETS reductions
= 1.1 to 1.2 GtCO₂
(2005-2011)**



**International EU ETS reductions =
1.1 GtCO₂ from CDM and JI
(2005-2012)**



Source: Gloaguen and Alberola, CDC Climat Research, 2013.

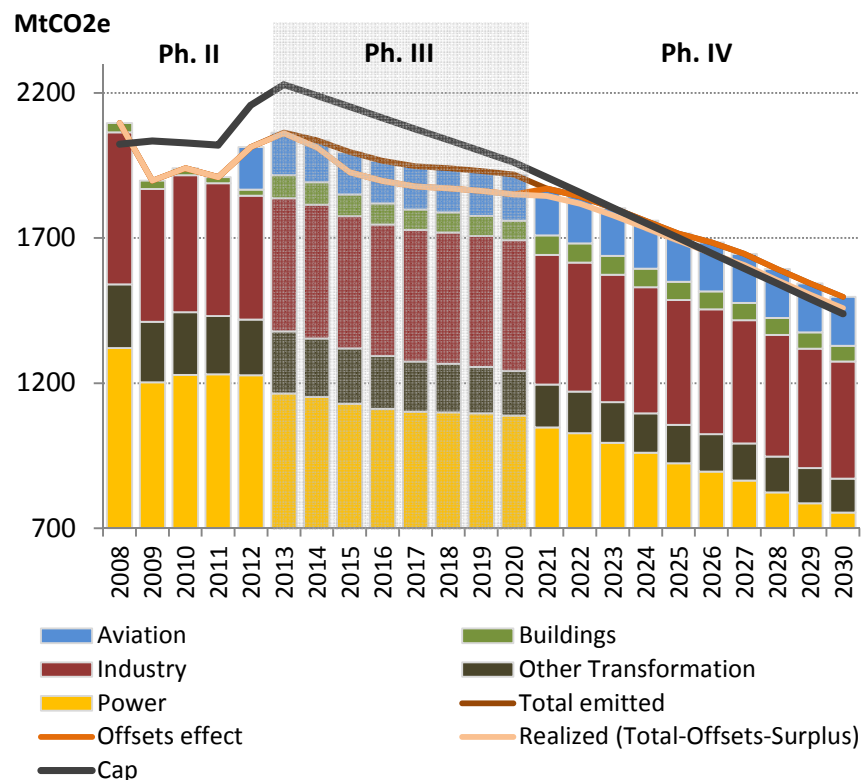
Source: CDC Climat Research based on CITL data, 2013

Interactions between CO2, RES and EE targets by 2030

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2030 objectives	GHG40	GHG40 RES30	GHG40 RES30 EE30
GHG emission reductions (vs 1990)	-40%	-40%	-40%
Share of renewables (in gross final cons.)	(28,6%)	30%	30%
Reduction of primary cons. (vs baseline 2007)	(-23,0%)	(-22,7%)	-30%



€/tCO ₂	GHG40	GHG40 RES30	GHG40 RES30 EE30
2030 CO ₂ price ETS	71	69	10

€bn/yr, 2011-2030, Δ counterfactual			
Inv. final demand	17.0	11.8	1.6
Inv. power supply	3.8	8.1	5.9
RES support	0.0	10.2	12.7
En. eff. costs	0.0	0.0	58.6
Total costs indicator	20.8	30.0	78.9

The inclusion of the EU road transport in the EU ETS by 2030 ?

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- ▶ Since 2005, there have been **several extensions of the EU ETS**: new states, sector (domestic aviation) and gases.
- ▶ The 'EU 2030 Energy and Climate Framework' considers **extending the EU ETS's scope to include** transport and buildings sectors as an option.
- ▶ In September 2014, Denmark requested the EU Commission 'opt-in' road transport GHG emissions in the EU ETS.
- ▶ **Some useful ETS experiences**: California/Québec and New-Zealand:
 - The ETS can be used as a complementary measure to supplement other sectoral policies
 - Compliance costs can be reduced with the optimal use of credit offsets

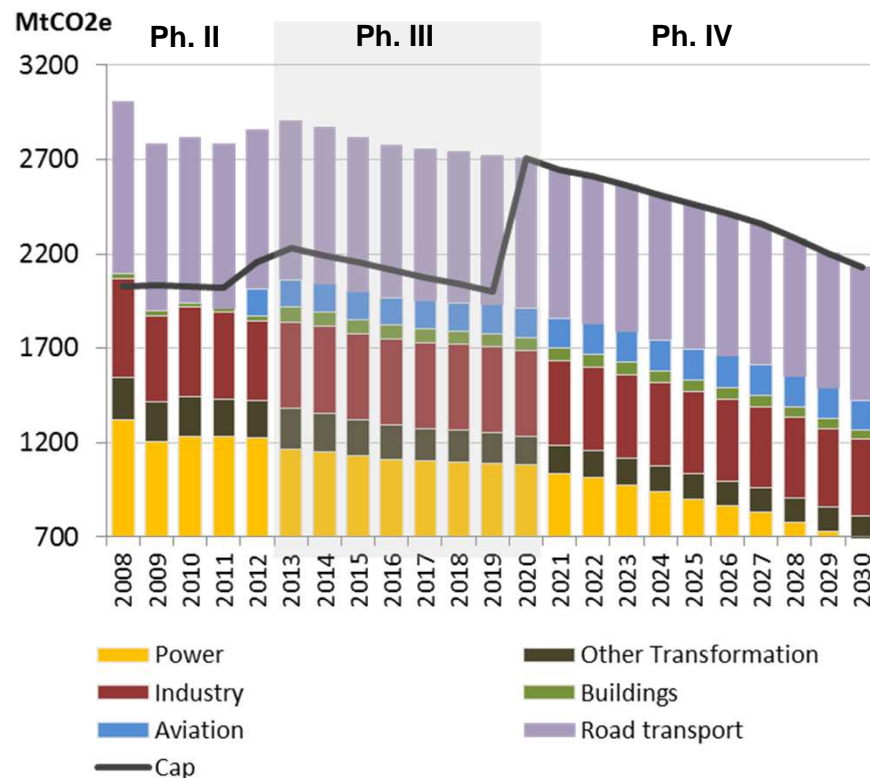
Inclusion of the road transport in the EU-ETS by 2030

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► Two scenarios:

- GHG40: previously reference scenario presented
- ETS+: road transport 100% included in the EU-ETS
 - a new cap based on road transport emissions observed in GHG40
 - same overall target of -40% in 2030



► Results: a new burden sharing between EU ETS sectors

	2030	GHG40	ETS+
CO ₂ price (€/tCO ₂)		71	126
Reduction vs. 2005			
Power		-40.4%	-47.7%
Industry		-17.8%	-18.3%
Road transport		(-32.7%)	-22.2%

- New effort would be mainly supported by the power sector
- 2030: road transport less constrained (CO₂ emissions 16% higher in 2030)

Conclusion : What are lessons from/to the EU ETS by 2030?

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- ▶ Interactions between EU ETS, RES and EE targets:
 - In 2005-2012, 2020 RES and EE targets played an important role on EU ETS emissions abatements and therefore on the price of CO₂ in the EU ETS .
 - By 2030, the GHG target alone is enough to achieve GHG emission reductions and RES integration, economic viability of an energy efficiency objective is not given.

- ▶ Inclusion of the road transport in the EU ETS
 - Lessons from other ETS designs: the ETS can be used as a complementary measure adding to other sectorial policies + entities can reduce compliance costs through optimal use of offset credits.
 - The EU road transport is not likely to be included in the EU ETS by 2030 : the power sector would support almost all the new effort, the price of CO₂ would increase sharply and the road transport sector would emit much inside ETS than outside ETS. .

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Thank you for your attention Questions?

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ANNEXES

Methodology

Overview of the POLES model

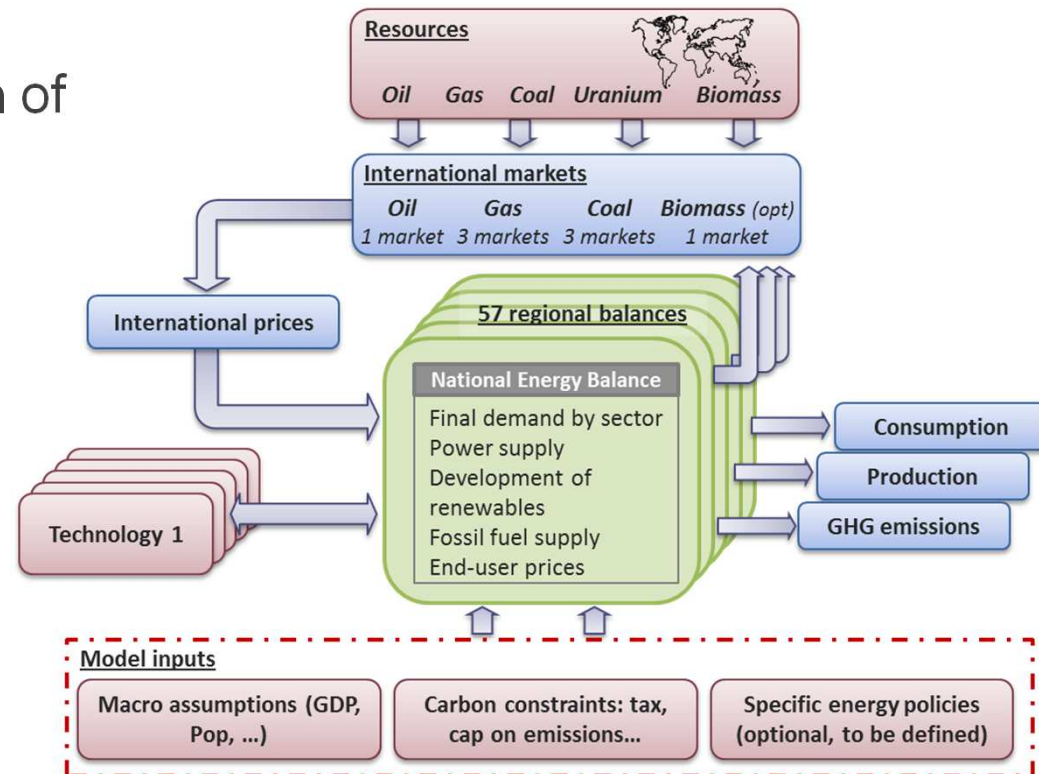
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► POLES : Prospective Outlook on Long-term Energy Systems

- Co-developed by Enerdata, EDDEN-CNRS and JRC-IPTS of the European Commission

- Multi-energy simulation of supply and demand equilibrium until 2050
- Energy balances
 - 57 countries/regions
 - 15 demand sectors
 - 50 technologies
- Yearly temporal basis



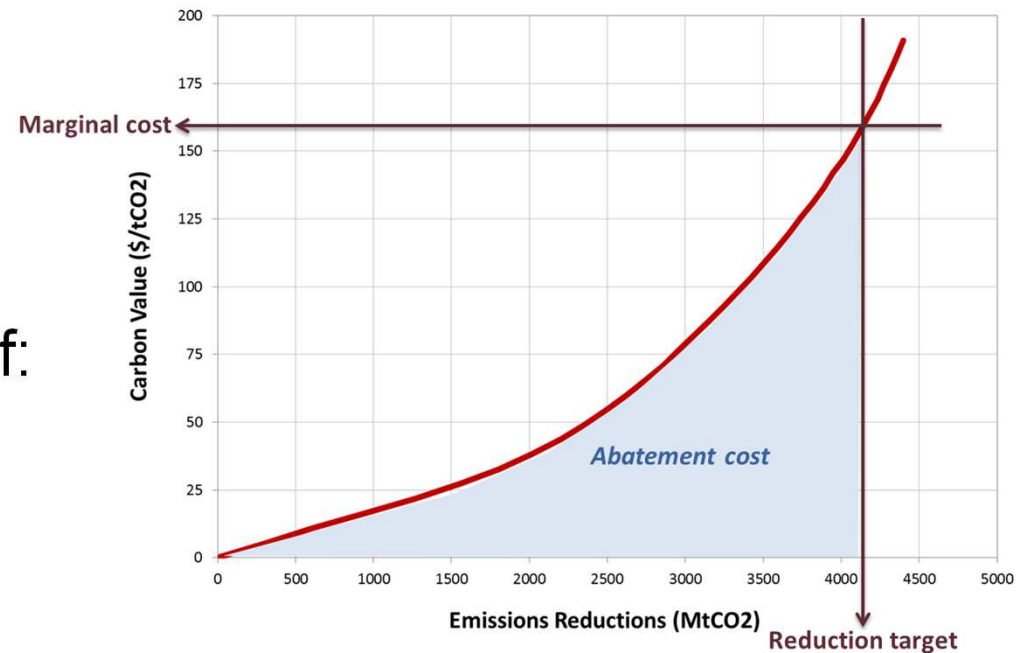
Methodology

Marginal Abatement Cost Curves (MACCs)

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- ▶ Sensitivity analysis of GHG emissions to carbon price
 - Generation of MACCs for
 - each year (step),
 - each country,
 - each sector.
- ▶ For a given reduction target, determination of:
 - marginal cost,
 - total abatement cost.



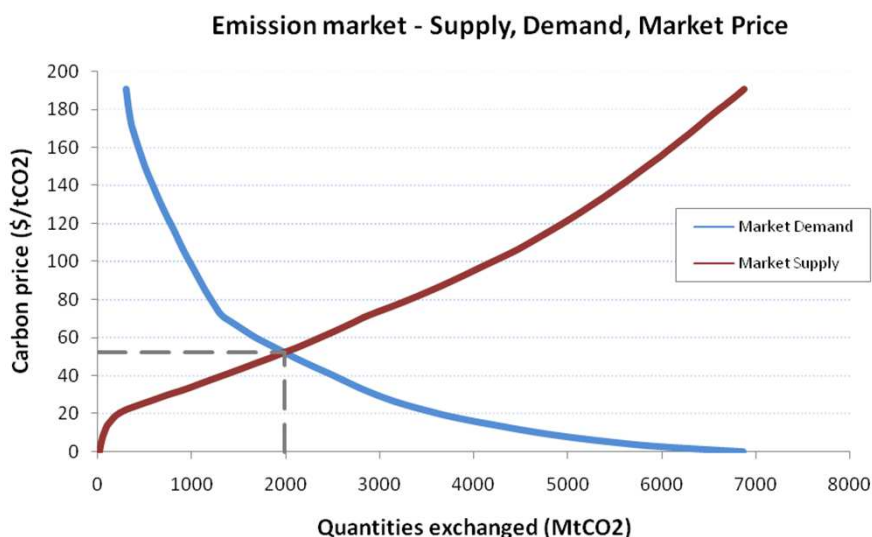
Methodology

Analysis of the carbon market (Carbon Market Tool)

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- ▶ Optimisation tool for carbon markets
 - Uses MACCs as input
 - Minimises total costs of reduction for a given year
 - Equalises marginal costs through credit trading among sectors
 - Determines CO₂ price



- Analysis options
 - International credits
 - Floor/ceiling price
 - Trade limitation/taxation
 - Purchase ceilings
- Levels of analysis
 - International, ETS, non ETS
 - CO₂, all GHG

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