

POTEnCIA

A new EU-wide energy sector model

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Joint Research Centre
the European Commission's
in-house science service



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POTEnCIA:

Policy
Oriented
Tool for
Energy and
Climate change
Impact
Assessment

BACKGROUND AND MOTIVATION

Energy is a fundamental sector in modern economies, key as a production factor and crucial as element of welfare within the service consumption portfolio.

Energy policy drivers:

- Environmental sustainability (clean air, sustainable resource use and climate stability)
- Security of supply (diversification of supply, reliability of infrastructures, reliance on domestic resources)
- Affordable prices (competitiveness and accessibility to service)

BACKGROUND AND MOTIVATION

Important changes of the energy sector

The sector (and consequently energy and energy related policies) have been experiencing radical changes and new challenges have to be addressed:

- Challenging targets (climate change, energy efficiency)
- Longer perspectives
- Substantial penetration of variable renewable energy sources
- Market integration
- Competitive markets
- Importance of the demand side

➔ existing tools were mainly developed before the change

BACKGROUND AND MOTIVATION

A model of the European energy sector to assess impacts of strategic EU energy-related policy options

In the light of the need for policy support the policy DGs have requested to the JRC to develop, a new modelling instrument conceived, from the beginning, to take into consideration the new challenges that the sector is facing and carry out policy impact assessment with which to support the policy making process:

- Partially financed by DG ENER and DG CLIMA
- Publicly available for discussion with stakeholders
- Fully documented

HOW TO ADDRESS THIS?

Policy assessment not central planning

- Behavioural model
- No perfect markets, no perfect foresight

Capture the domain for energy policies

- Break-down to agents and installations
- Annual time steps
- Full vintages

Transition to a new system and ambitious (long-term) targets

- Increased detail on the demand side, easing the analysis of energy-efficiency measures
- Sophisticated technology dynamics
- Prepared to represent a larger share of renewables

HOW TO ADDRESS THIS?

Conceived to facilitate its coupling with multi-sectoral models to address the overall impact of energy and climate protection policies