

Background: Why energy modelling matters and how it was done for the CE4ALL-package

- Commission proposals are accompanied by an impact assessment. This involves at minimum a *qualitative* analysis of expected impacts, often also a *quantitative* analysis (e.g. *modelling*).
 - While modelling does not provide a prediction of future developments, it does help empower decision-makers to anticipate the potential impact of specific choices and options as well as trade-offs that may exist.
 - The European Commission underpins its climate and energy policy proposals with extensive energy system modelling, the results of which play a substantial role in determining the outcome of the Commission impact assessment. Assumptions underlying Commission modelling determine to a large extent whether and to which degree certain policy choices will be regarded as beneficial.
 - Since 2003, European Commission services have mostly made use of the PRIMES-model; an energy market engineering-economic model owned and run by the Technical University of Athens. Its results have been a critical reference point for the European energy and climate debate, in the 2050 Roadmap exercise as well as in the 2030 target-setting process. A new Commission internal model – POTENCIA – is being developed, but it is still unclear from when or even if it will be used.
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A combination of 7 models was used to provide a comprehensive picture of various impacts of EE and RE scenarios



Model	Output	Access
<ul style="list-style-type: none">- PRIMES (Price-Induced Market Equilibrium System) <i>Owner: A consortium led by the National Technical University of Athens</i>	Energy Balances	N
	GHG emissions , ETS prices	
	Energy system costs	
	Investment expenditures	
<ul style="list-style-type: none">- E3ME (Energy-Environment-Economy Model for Europe) <i>Owner: A consortium led by Cambridge Econometrics</i>- GEM-E3 (General Equilibrium Model for Energy, Economy and Environment interactions) <i>Owner: A consortium led by the National Technical University of Athens</i>	GDP	N
	Employment	
	Balance of trade	
<ul style="list-style-type: none">- GAINS (Greenhouse gas and Air Pollution Information and Simulation). <i>Owner: IIASA</i>	Pollution impacts on human health	Y
<ul style="list-style-type: none">- POLES (Prospective Outlook on Long-term Energy Systems) <i>Owner: Joint Research Centre (European Commission)</i>	International fossil fuel prices	N
<ul style="list-style-type: none">- IEEM (Industrial Energy Efficiency Model) <i>Owner: ICF International</i>	Bottom-up assessment of savings potential in industry	N
<ul style="list-style-type: none">- BEAM² (Built Environment Analysis Model) <i>Owner: ECOFYS</i>	Bottom-up assessment of savings potential in buildings	N

The Clean Energy for All Europeans Package - Context

- Commission analysis in 2012/13 showed that higher renewables and efficiency scenarios would result in higher investment costs, but lower energy purchases. Overall system costs for a scenario with 30% RES were similar to one with 27% RES, assuming ambitious EE policies. A scenario with 45% GHG emission reductions and 35% RES was found to be only slightly more expensive (0.62%).
- In 10/2014 decision by EUCO : -40% reductions of GHG emissions, at least 27% improvement in EE (indicative), at least 27% RES-share in gross final energy consumption (binding) - partially pre-determined COM outcome and approach to IA.
- In CE4All Package, Commission proposes a 27% binding RES target and a 30% indicative EE target / but no EU-level instrument for reaching the targets / no binding Member State targets, aside from 2020 baseline.
- **Council:** Little appetite for greater ambition – not a single MS has proposed raising RES targets or setting binding national targets – MS outcompeting themselves on trying to add „flexibility“.
- **Parliament:** Rapporteurs on the RED II and Governance calling for a strong increase in ambition and a strengthening of the files. The Rapporteur for the EED is undermining ambition, but isolated while the ENVI committee called for 40% binding Energy efficiency and national binding targets.