



Explore sustainable European futures

The EUCalc project at a glance

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 730459.



Official title:

EU Calculator: trade-offs and pathways towards sustainable and low-carbon European Societies

Acronym: EUCALC

Funding: European Union's Horizon 2020 research and innovation programme (contract no. 730459)

Instrument: Research and Innovation Action (RIA)

Total EU contribution: 5,283k€

Duration: 3 years

Start Date: 1st November 2016

URL: www.european-calculator.eu

Potsdam Institute for Climate Impact Research
Imperial College of Science Technology and Medicine
Climact SA
Buildings Performance Institute Europe ASBL
Austrian Society for Environment and Technology
University of Copenhagen
Swiss Federal Institute of Technology of Lausanne
University of East Anglia
PANNON Pro Innovations Ltd
Climate Media Factory GmbH
T6 Ecosystems srl
SEE Change Net
Delft University of Technology

Germany
UK
Belgium
Belgium
Austria
Denmark
Switzerland
UK
Hungary
Germany
Italy
Bosnia & Herzegovina
The Netherlands



To provide **decision makers** with a

- highly accessible, user-friendly, dynamic modelling solution
- to quantify the GHG trajectories on EU MS level (+CH), associated with
 - sectoral energy demands,
 - land use, land use change,
 - social implications of lifestyle
 - and energy technology choices.

- A model of **intermediate complexity to facilitate the evaluation of trade-offs and synergies from interventions** at sectoral, country or incremental levels of emissions and warming.
- A trusted modelling **approach based on a strong co-creation process** between academia, public and business sectors.
- A web-version of the model that is flexible enough to **accommodate existing policy pathways from other institutions, and allows users to explore the impacts arising from their own pathways.**



User demand workshops

Collect /assess needs, expectations and attitudes of end users (decision makers from public, private and civil society sector).



Sectoral expert workshops

Elicit expert feedback on methodology, data, assumptions, levers and levels in a specific sector/module of the EUCalc.



Public Call for Evidence

Final refinement of EUCalc. Online consultations, wide outreach



Advisory Board

Advise on strategic issues. Meetings twice a year



Coordination with sister projects

Exchange information on the outcomes of stakeholder interaction

European Calculator Model

- Simulation model: scenarios are based on a range of possible assumptions, expert driven with no optimization
- Limited feedbacks
Large model, but some reduced complexity
- Use and interpretation: the focus is on the decision makers
→ Limited use of computational time
- Semi-opaque for non-experts : a lot focus on transparent assumptions and the user interfaces

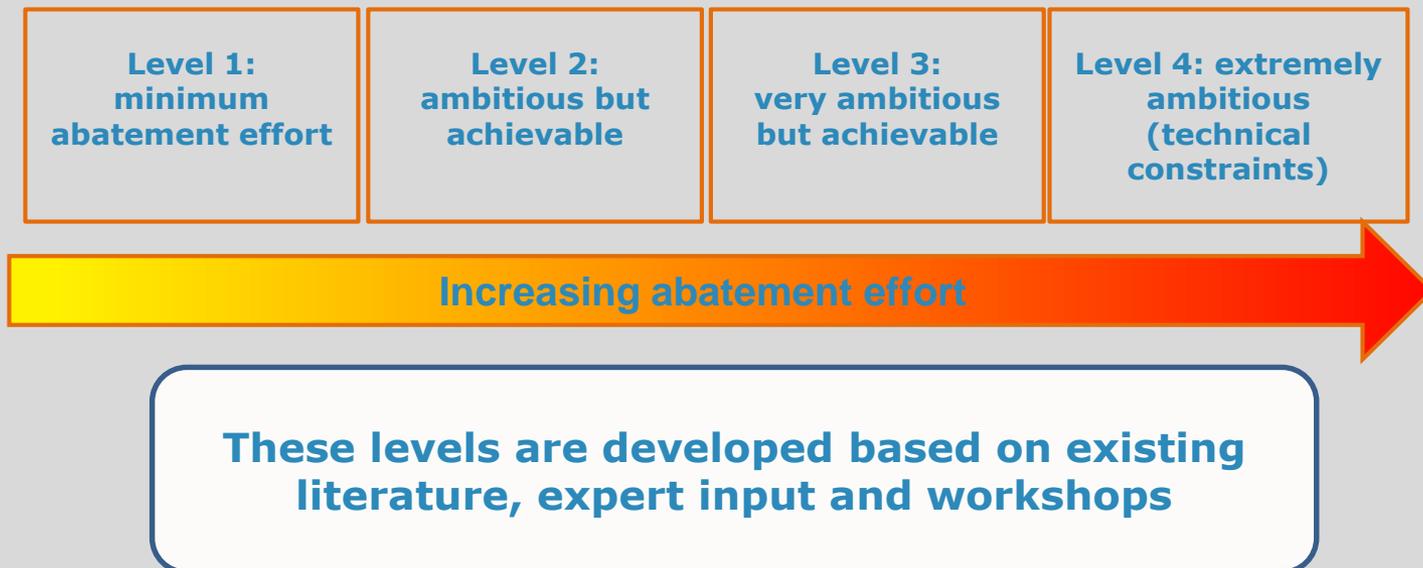
Classical Models

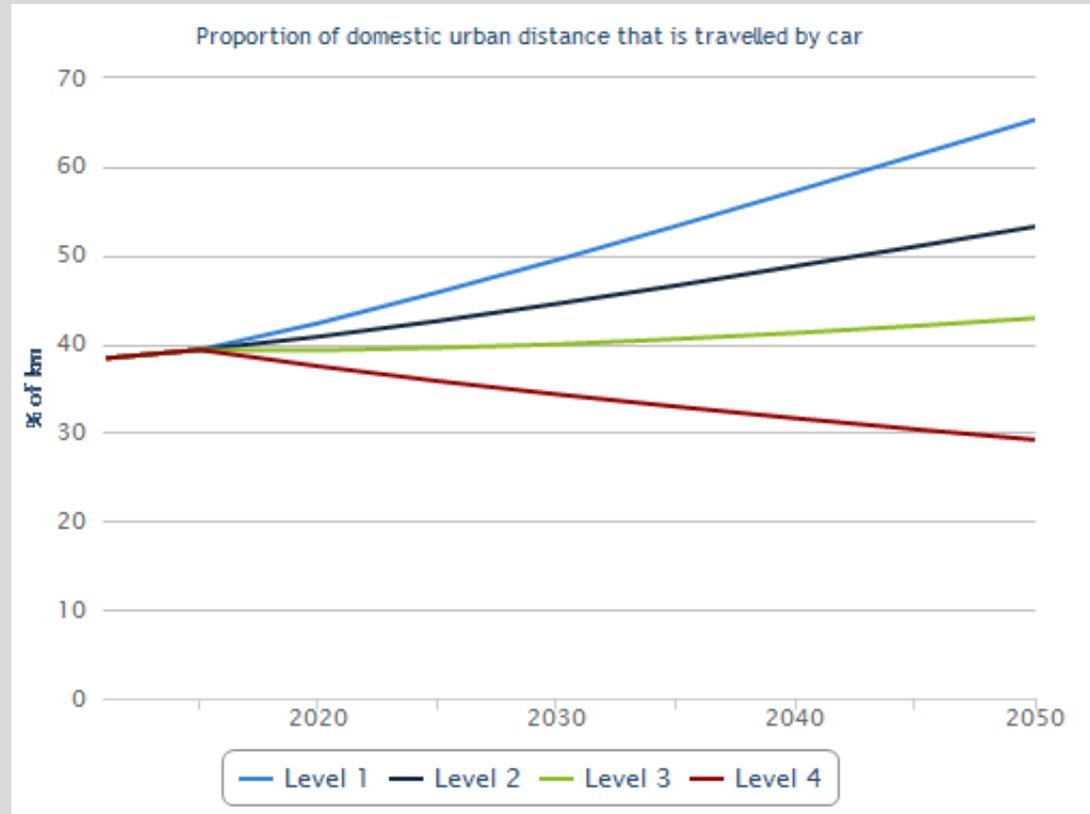
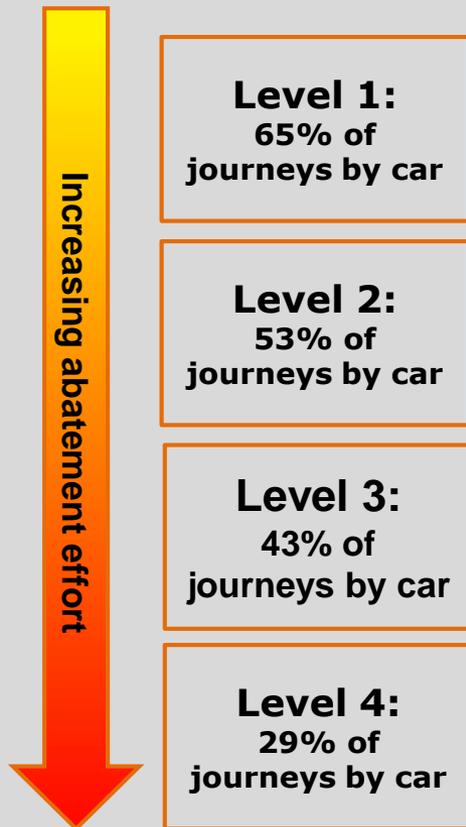
- Some sort of optimization mechanism
- Endogenous dynamics / Multiple feedbacks
Large (complex)
- Use and interpretation: strong need for experts to interpret results
→ Needs much computational time
- Usually more opaque for non-experts, at least in terms of running the model

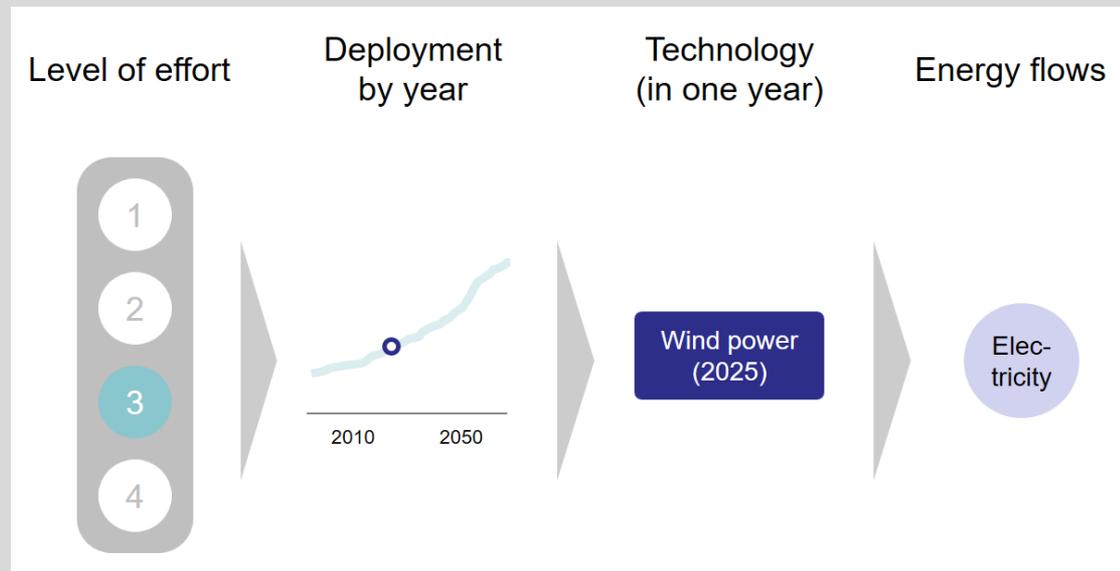


Each lever relates to a type of action to reduce emissions, e.g. building wind turbines or using more public transport

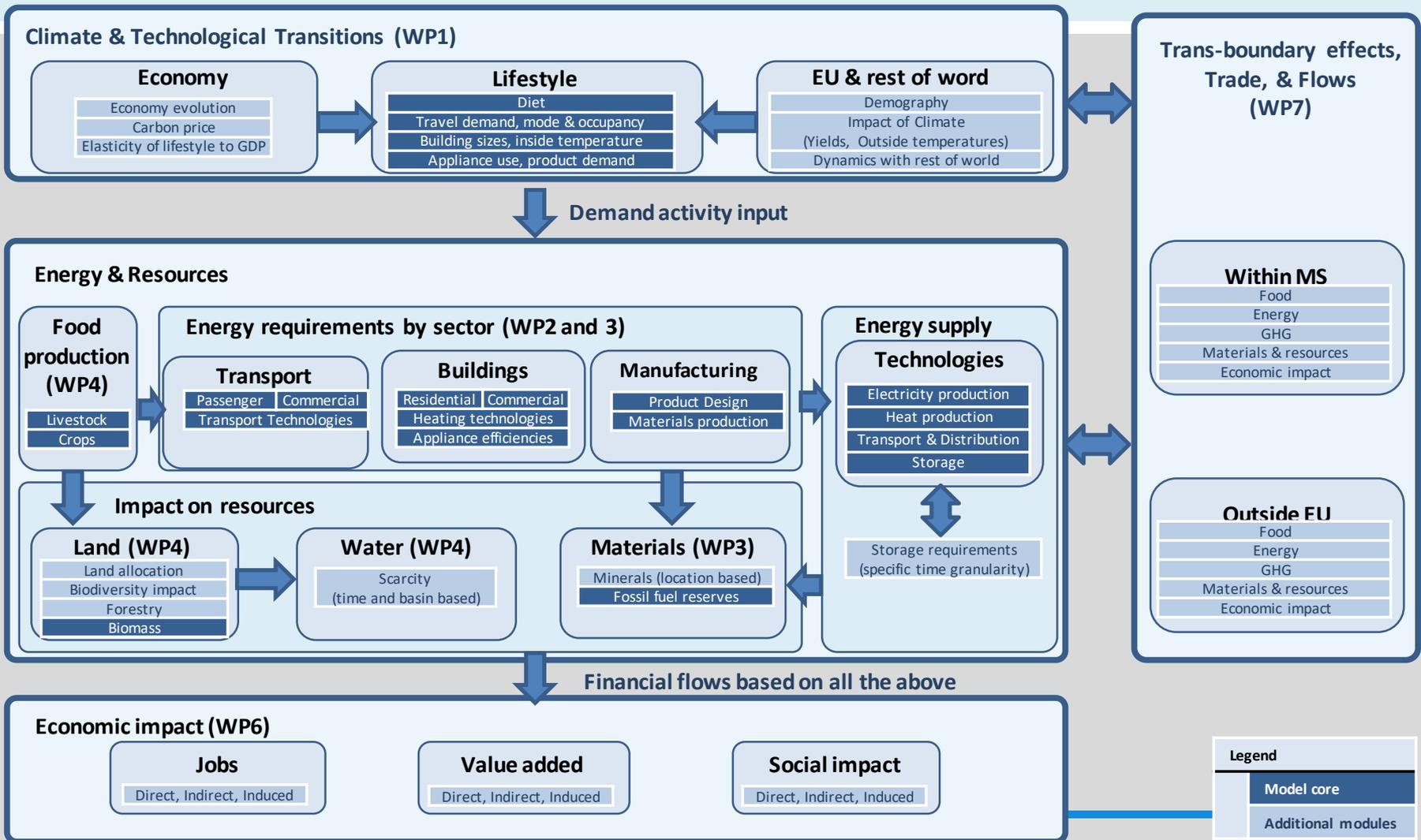
Each lever has four options – levels 1 to level 4 – which the user selects. This represents the full range of what is possible for this action up to 2050:







Technologies are then grouped together to model sub-sectors, sectors and finally make up the model





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We are developing a similar model for ECF but at the EU level (no MS granularity)

Typical questions being explored

- What are possible **scenarios to reach net zero emissions** in 2050?
How do these pathways compare in terms of **costs**?
- How do existing **EC scenarios** (REF16, EUCOs) compare to these potential alternative scenarios?
- How do **current EU 2030 targets** (GHG, RES, EE) compare to feasible ambition levels?
- What are the **key additional levers to reach (or go beyond) these targets**?