

Beginner's guide to EUCalc for NECP assessment

Feedback from EUCalc sectorial
discussions in the PlanUp workshops

LIFE PlanUp

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Further Information

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1. Introduction and context

The [EU Calculator](#) is an initiative financed by Horizon 2020. As illustrated on Fig. 1, EU Calc is a novel and pragmatic modelling approach situated in between three different types of models:

1. simplified, synthetic and user-friendly models aimed at general public
2. sector-specific, detailed models aimed at addressing issues related to a single sector
3. complex energy models accounting for the links and feedbacks between energy and economy

It introduces an intermediate level of complexity (while keeping full scientific robustness) and a multi-sector approach that has been challenged and validated through technical workshops with sectoral experts.

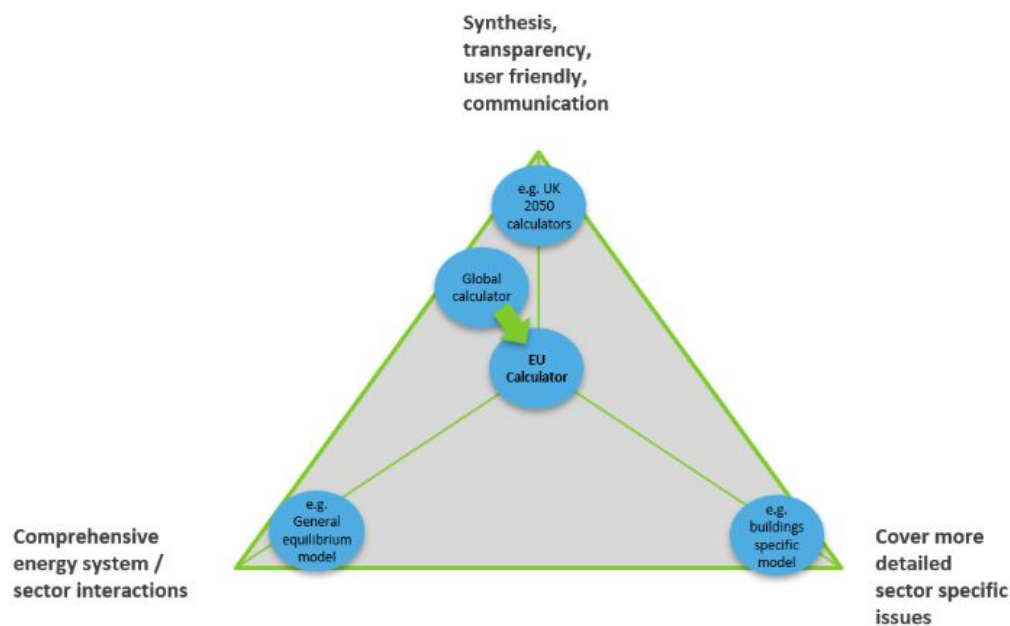


Figure 1 : classification of models

The model makes and shows the relationship between GHG emissions and societal lifestyles, the exploitation and/or conservation of natural resources, job creation, energy production, agriculture, costs, etc. in one highly integrative tool which enables decision makers to get real-time policy support underpinned by comprehensive trade-off analyses, satisfying their practical needs.

The models show all sectors involved in the PlanUp project (transport, agriculture, buildings) which are driving energy consumption and GHG emissions. They are represented by a set of decarbonization levers, e.g. electrification of vehicles or modal shift in the transport sector. These levers can be set on four different levels of decarbonization ambition, from business-as-usual to transformational (most ambitious). It's worth noting that the transformational scenario is based on technologies that are available today, are 'best in class' but should be deployed at large scale.

2. Access to the webtool

EUCalc can be used by accessing the webtool available at <http://tool.european-calculator.eu>. It should be noted that at the time of writing, the tool is undergoing a public call-for-evidence, which implies that:

- Users can send their feedback to the project team
- Only predefined scenarios are available in the tool (user is not yet allowed to choose his own lever settings)
- Results are only available at European level, not for individual countries

The full set of functionalities (including national granularity and the ability to change lever settings from predefined scenarios) should be available by the end of 2019. Nonetheless, the present guide describes all features of the final version of the tool.

3. Inputs of the tool

The **inputs of the tool are the decarbonization lever settings**. Each lever can be set on a level going from 1 to 4. Level 1 represents a business-as-usual case, where current trends and policies are projected in the future. Level 4 corresponds to a transformational scenario, with significant and disruptive evolutions, e.g. a fully electrified car fleet in Europe by 2050. Levels 2 and 3 correspond to intermediate levels of decarbonization ambition between BAU and disruptive.

Levers are grouped in **three categories: behaviour, technology & fuels and use of natural resources**.

The level of decarbonization levers can be adjusted on the left panel of the tool (red frame on the screenshot shown on Fig.2).



Figure 2 Selection of lever settings

The level of levers can be chosen at European level or national level (e.g. Belgium on Fig. 2). The user can **choose the level of detail** he wishes to obtain. In the example shown on Fig.3, the ‘Travel’ lever is decomposed in its sublevers (by clicking on the arrow besides the lever, as shown in the green frame) that can be individually adjusted. Otherwise, the user can choose to simply set a level for the ‘Travel’ lever. In this case, all sublevers (here: Passenger distance, Mode of transport, Occupancy, Car own or hire) are set on the same level.

The implication of a lever setting is indicated when the mouse is put on the corresponding level (see on Fig.3 the dark gray frame with the implication of level 1 for the ‘Passenger distance’ lever). A brief description of the lever and its effect can be found in a similar way by placing the mouse over the lever name.

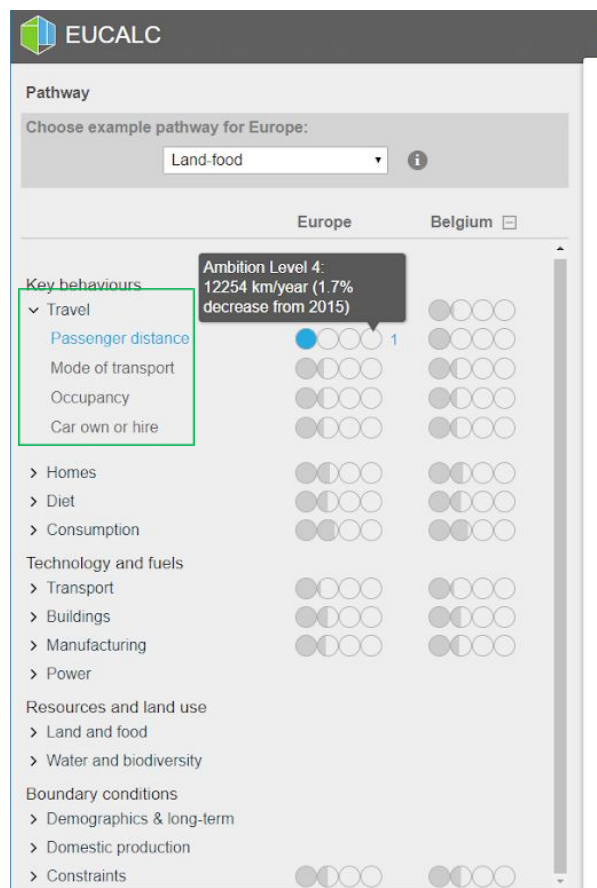


Figure 3 Detailed choice of lever for travel

With a left-click on the lever name, the user gets a more detailed description of the lever (Fig. 4).

Alternatively, the user can choose among a list of **predefined scenarios** (green frame on Fig. 2). These scenarios include the EU REF scenario¹ as well as the LTS COMBO, LTS 1.5LIFE and LTS 1.5TECH scenarios from the European commission². They also include scenarios developed in the framework of the EUCalc project, that represent different situations where decarbonization efforts focus on more specific sectors (e.g. the ‘Homes and buildings scenario’).

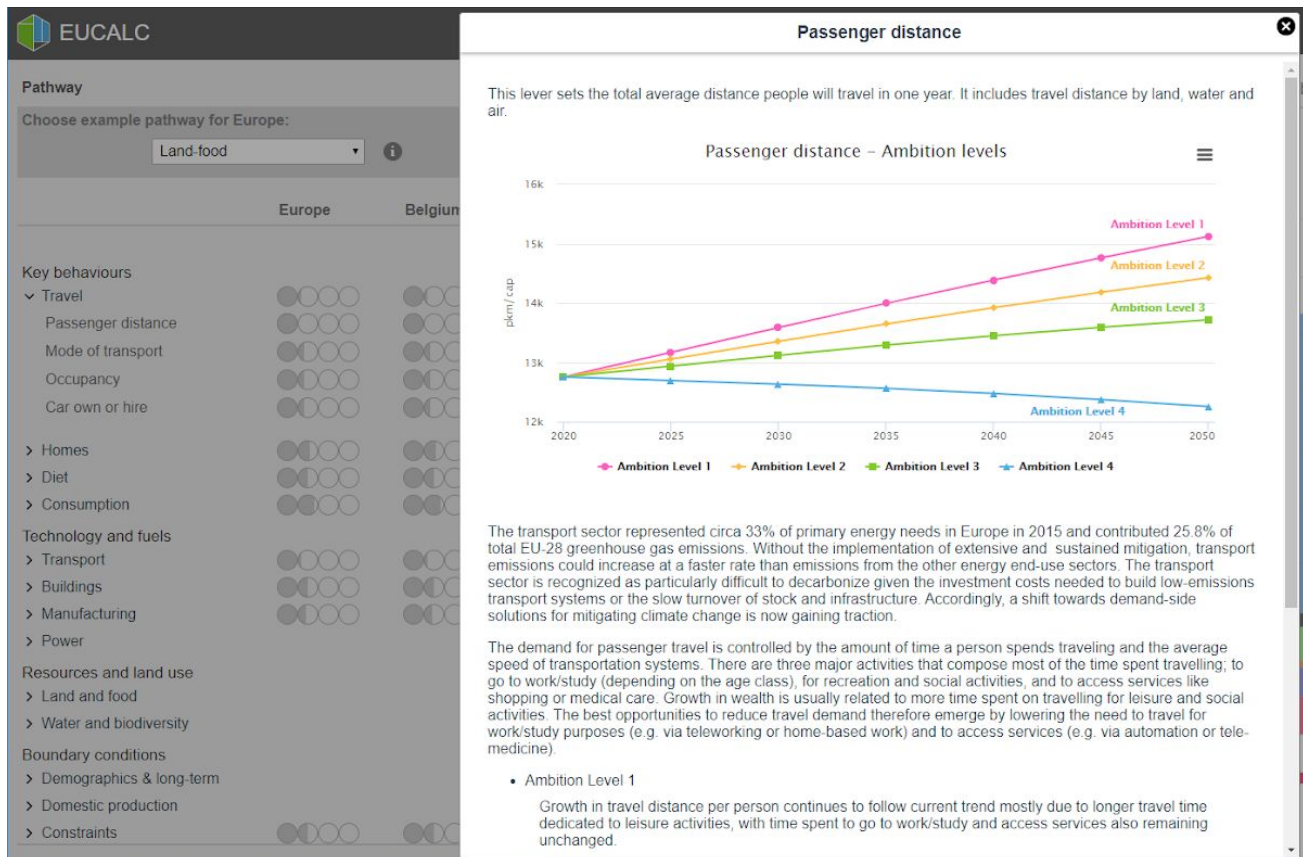


Figure 4 Detailed lever description

4. Outputs of the tool

The **outputs of the tool** can be classified in three categories: **energy use, GHG emissions and sector specific activity indicators** (e.g. size and composition of the car fleet for the transport sector).

The energy and emissions for Europe/a specific member states can be visualized by clicking on the first two tabs in the graph list (red frame on Fig.5). The sector specific

¹ The full description of the EU REF scenario can be found at https://ec.europa.eu/energy/sites/ener/files/documents/20160713%20draft_publication_REF2016_v13.pdf

² The full description of the LTS COMBO, LTS 1.5TECH and LTS 1.5LIFE can be found at https://ec.europa.eu/knowledge4policy/publication/depth-analysis-support-com2018-773-clean-planet-all-european-strategic-long-term-vision_en

indicators can be visualized by clicking on the corresponding tab in the same list. On Fig.5, we illustrate this with the passenger distance travelled each year in Europe, split between the different modes. Other indicators can be visualized by simply clicking on the downward arrow besides the sector name.

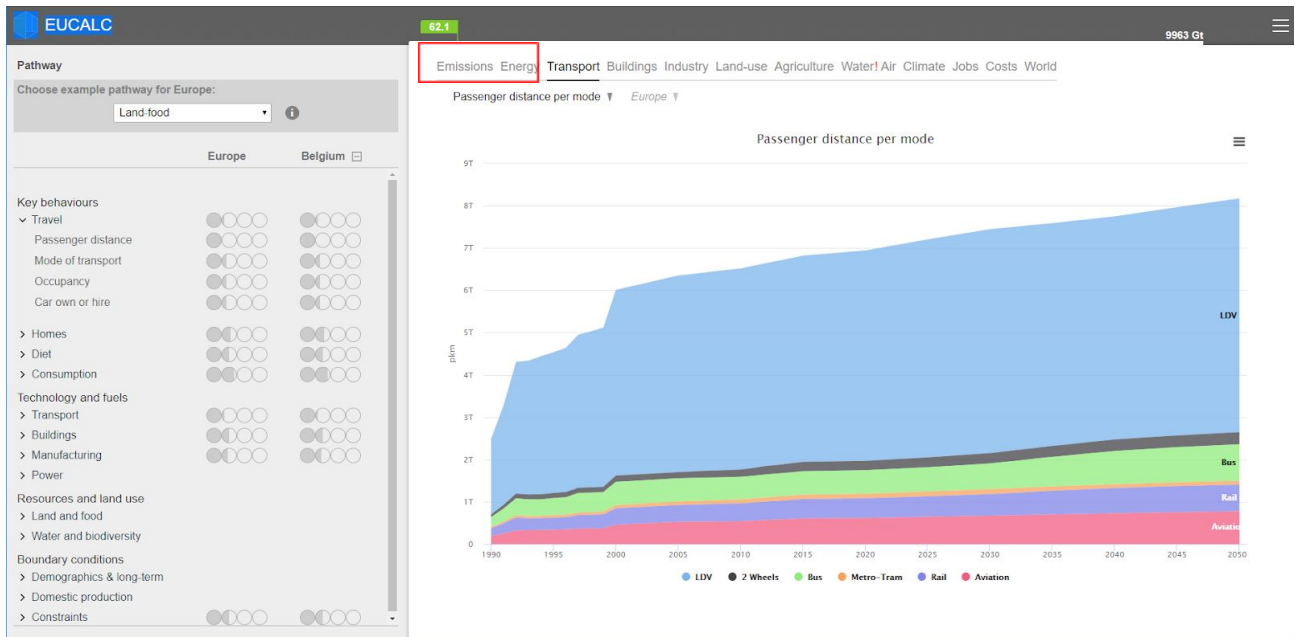


Figure 5: Example of graph visualization for the transport sector



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