EUCALC

Explore sustainable European futures

Transport workshop introduction

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

Overview

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

The Consortium

Potsdam Institute for Climate Impact Research	Germany
Imperial College of Science Technology and Medicine	UK
Climact SA	Belgium
Buildings Performance Institute Europe ASBL	Belgium
Austrian Society for Environment and Technology	Austria
University of Copenhagen	Denmark
Swiss Federal Institute of Technology of Lausanne	Switzerland
University of East Anglia	UK
PANNON Pro Innovations Ltd	Hungary
Climate Media Factory Gmbh	Germany
T6 Ecosystems srl	Italy
SEE Change Net	Bosnia & Herzegovina
Delft University of Technology	The Netherlands

The mission

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.

The key outputs

- 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.

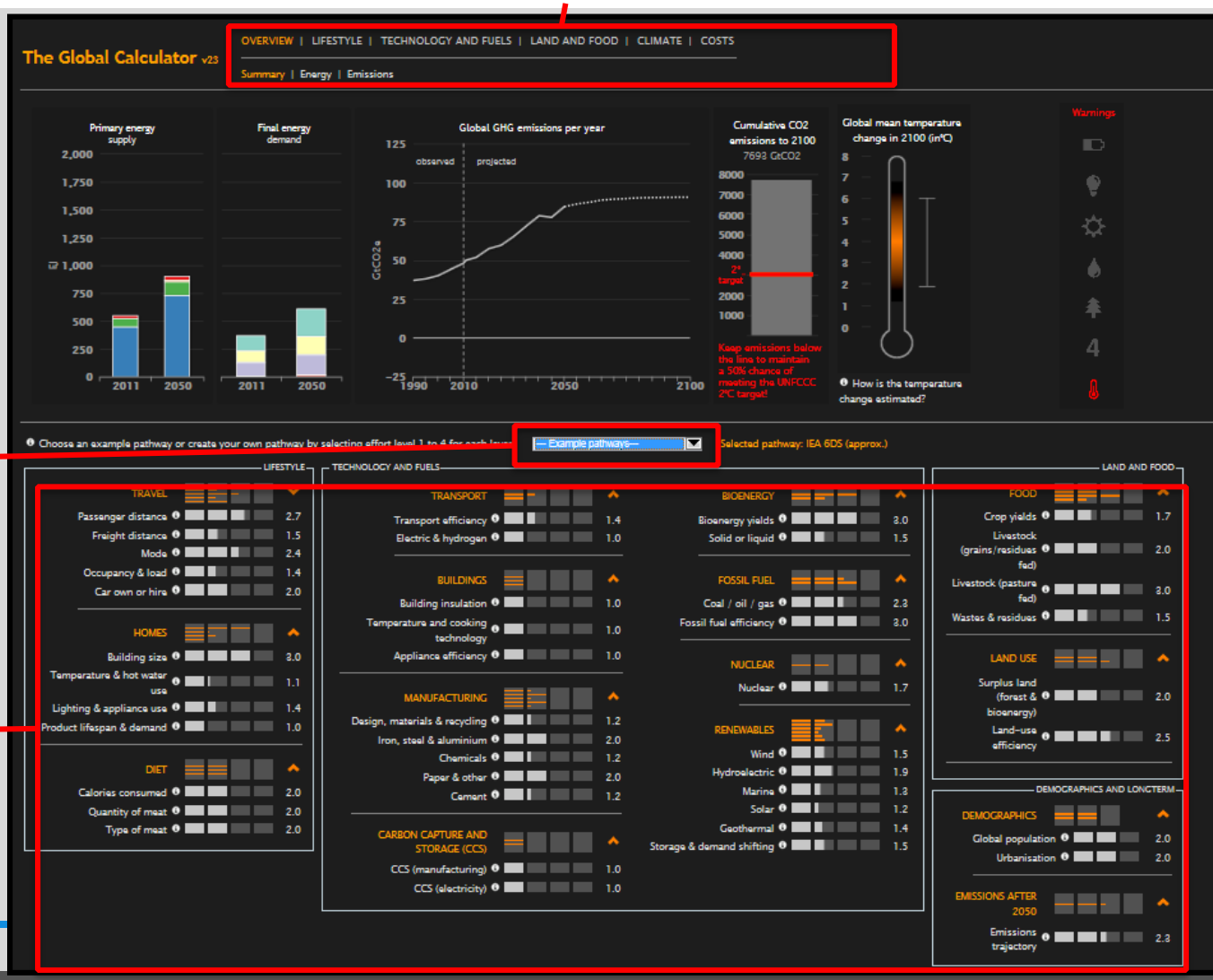
- A web-version of the model that is flexible enough to **accommodate existing policy pathways from other institutions, and allows users to explore the impacts arising from their own pathways.**

The interface from the Global Calcultor

3 Select the impact of pathways

2 View a range of example pathways

1 Create your pathway with the levers



Collaboration and Co-design

User demand workshops

Collect /assess needs, expectations and attitudes of end users (ddecision 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

What makes EUCALC different?

European Calculator Model

- Simulation model: scenarios are based on a range of possible assumptions, expert driven with no optimization
- 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

All "levers" have a common definition

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:

These levels are developed based on existing literature, expert input and workshops

Example: travel mode (switch to public transport)

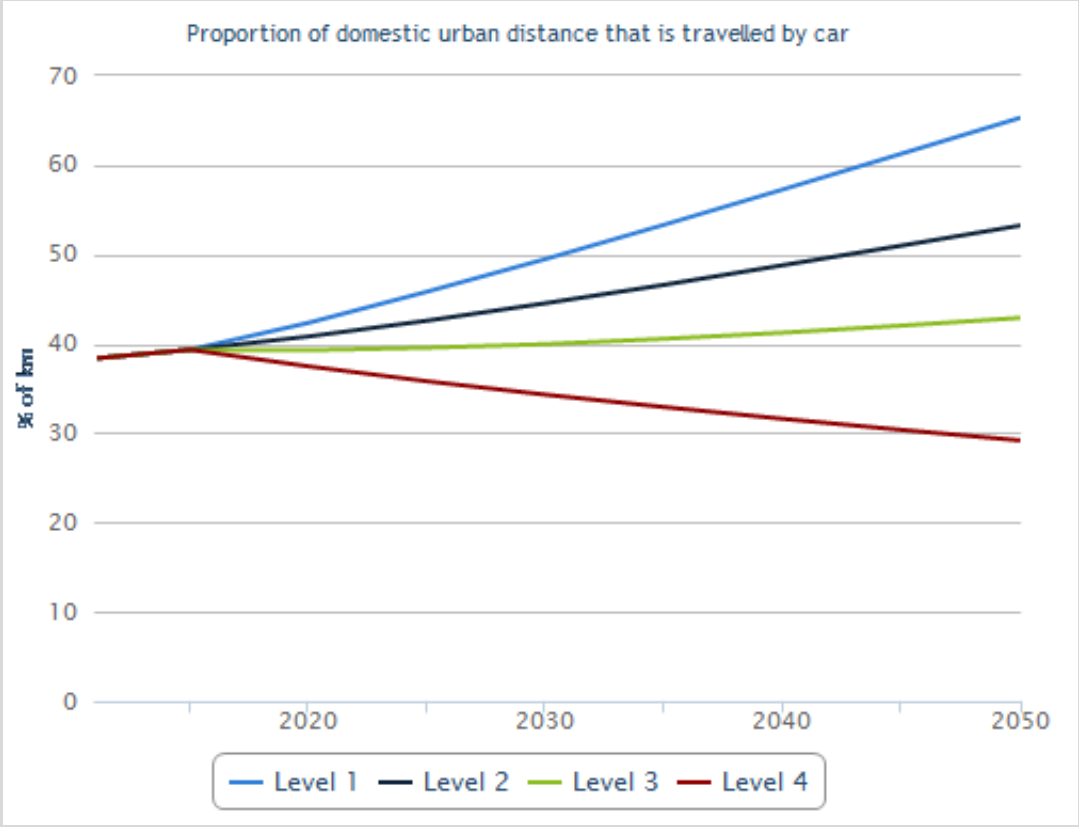
Increasing abatement effort

Level 1:
65% of journeys by car

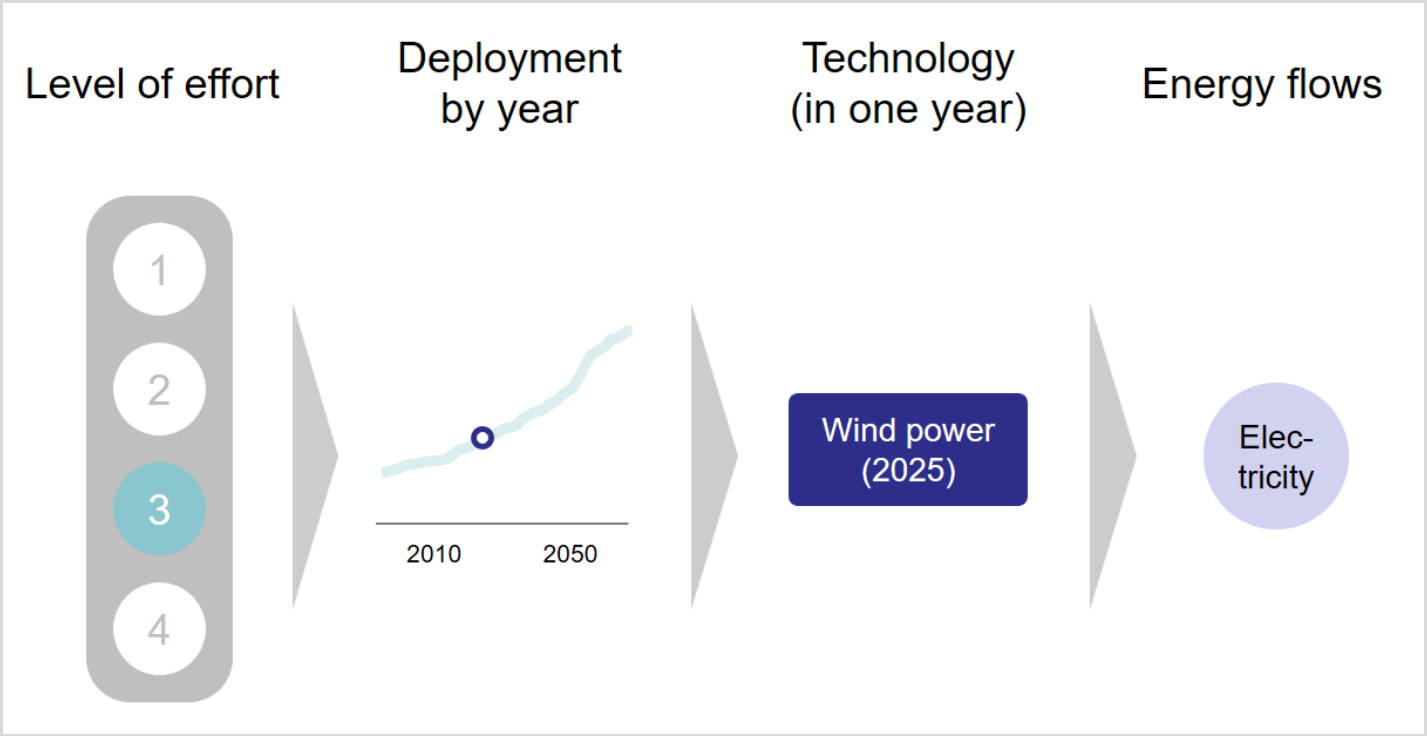
Level 2:
53% of journeys by car

Level 3:
43% of journeys by car

Level 4:
29% of journeys by car

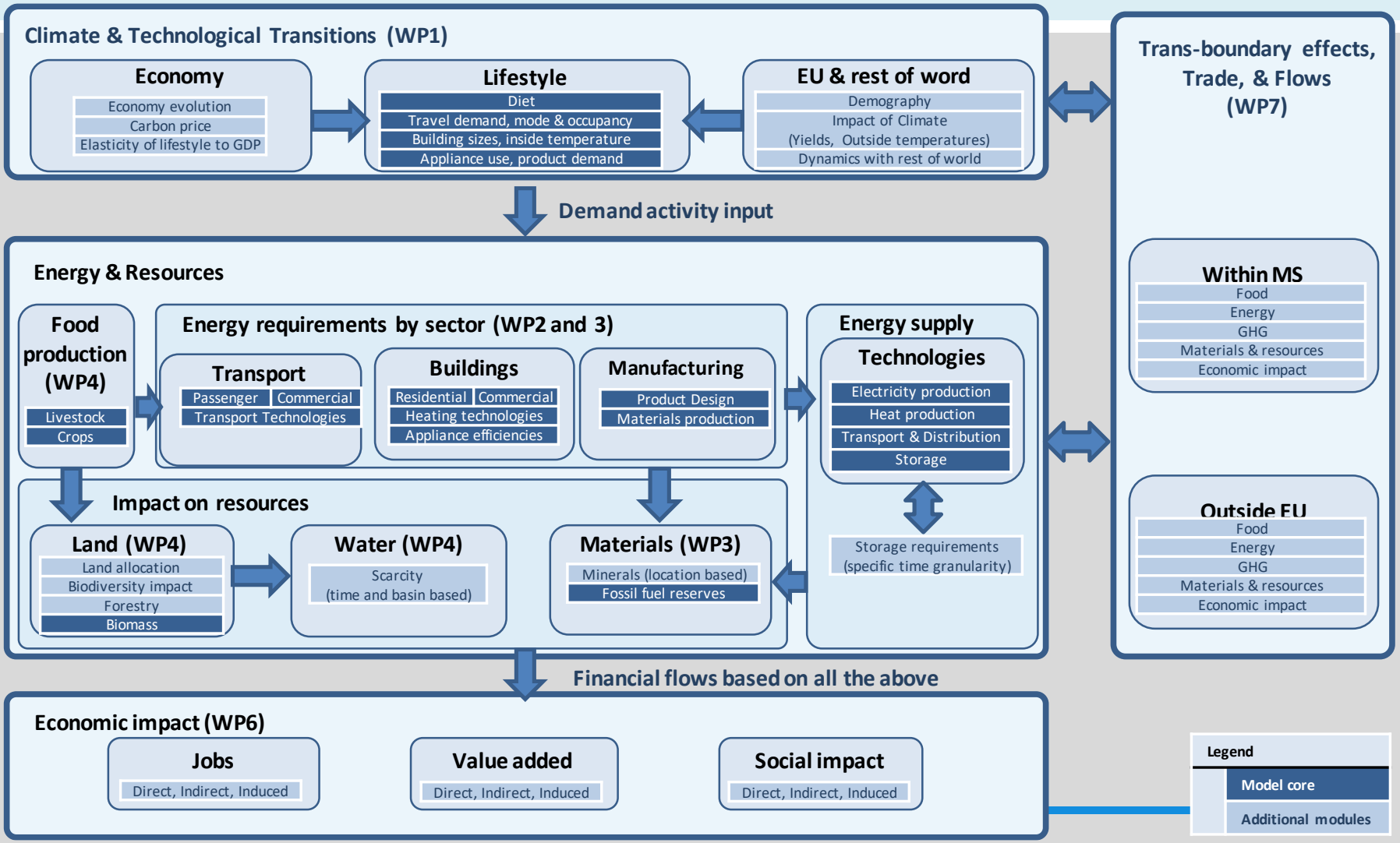


Model structure : Bottom-up



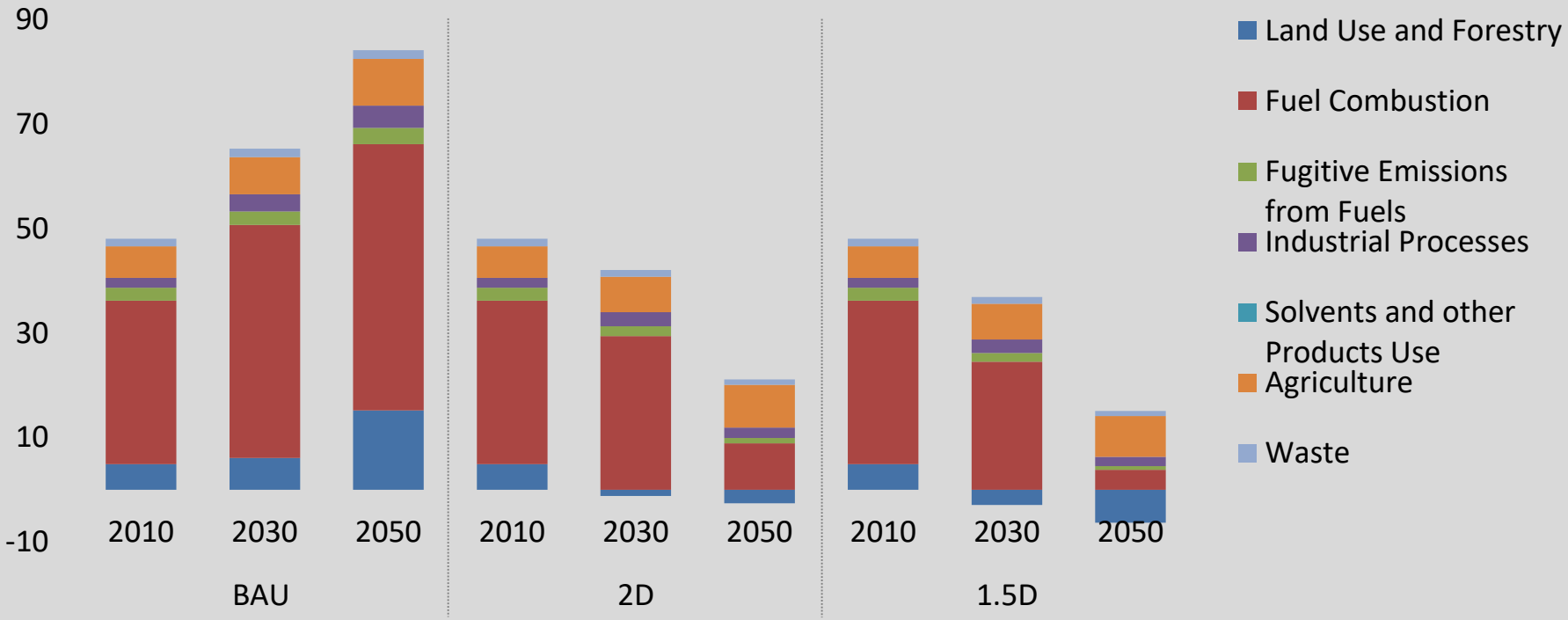
Technologies are then grouped together to model sub-sectors, sectors and finally make up the model

Structure (work flow)



The model illustrates the relative impact of sectors

Global emissions
[$GtCO_2e$ per year]



Source: Strapasson, The Assessment of the Global Calculator, An integrated systems model for climate change mitigation

The model illustrates the relative impact of levers

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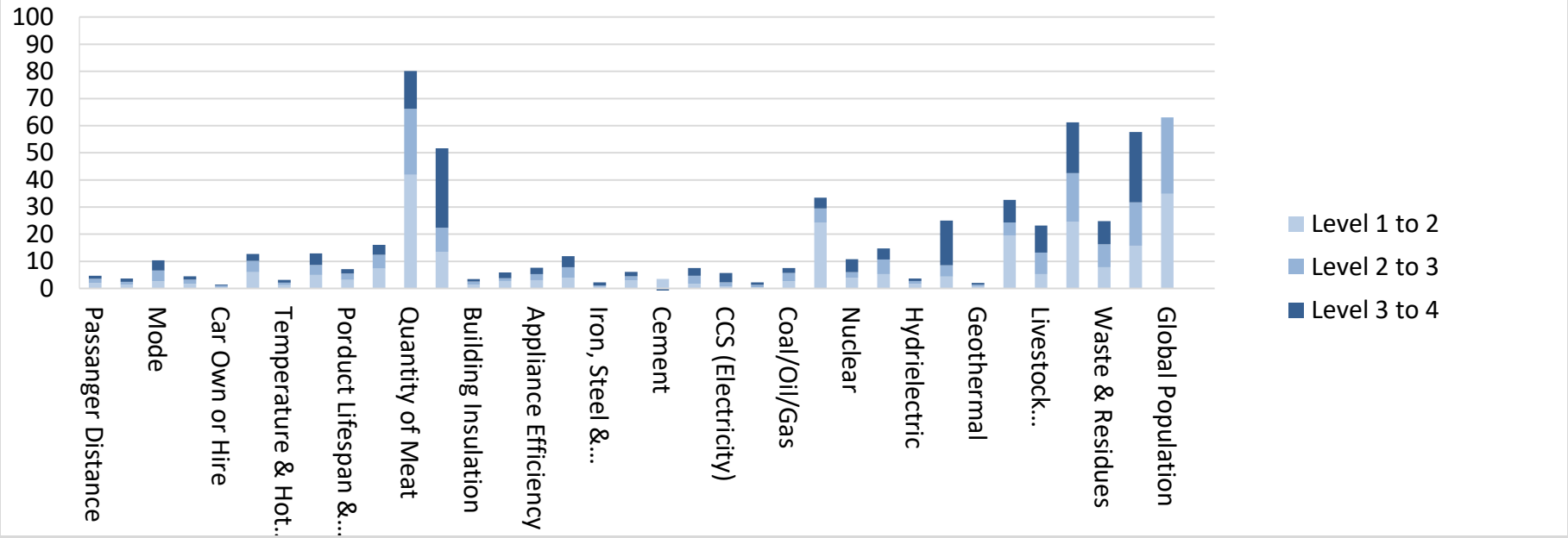

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