

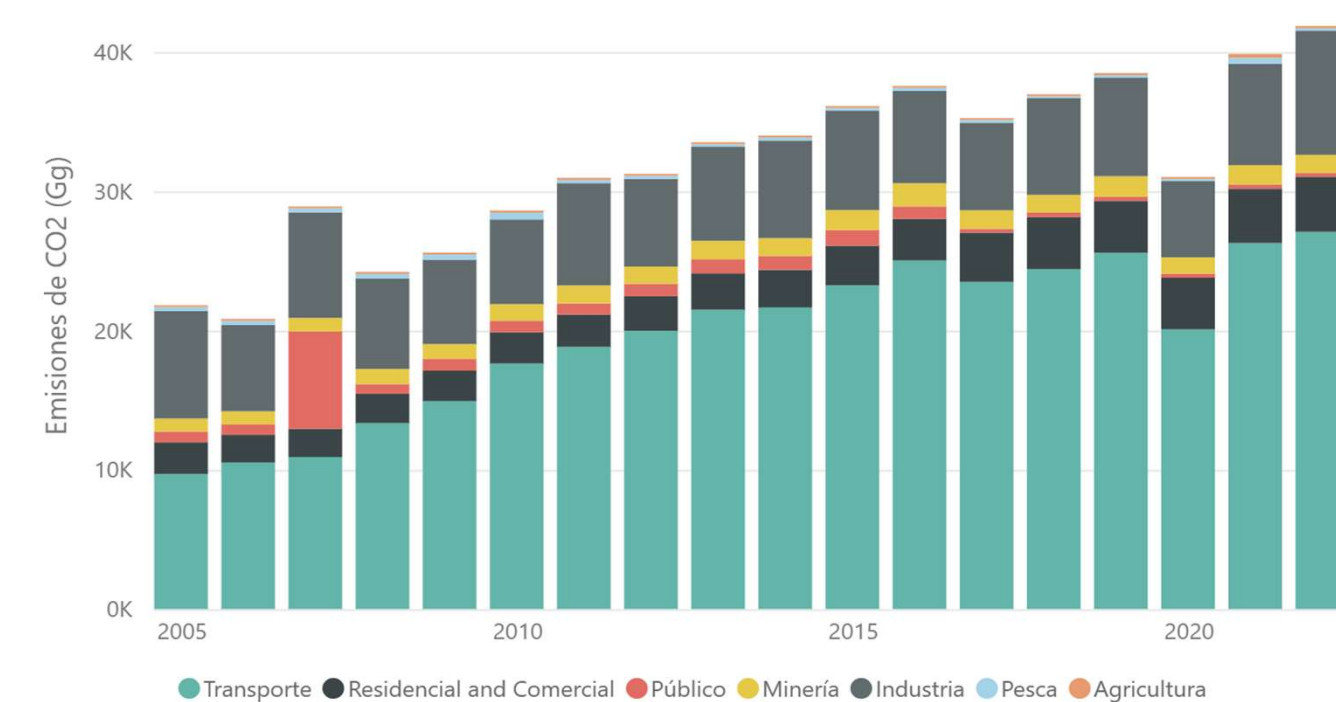
INTRODUCTION

Context: Energy is vital for civilisation, even for developing countries.

High dependence on LULUCF, agriculture, and fossil-fuel energy.

Climate commitments have been updated (40% reduction in GHG by 2030 and net-zero by 2050).

Challenge Statement: The absence of an open, user-friendly modelling tool hinders policy-makers, academics, and civil society from exploring low-carbon scenarios.



Relevance: An open-source energy and emission model that can be used to identify a range of physically possible scenarios by 2050 and beyond.

OBJECTIVES

To design the Peruvian Calculator 2050 (PeCAL2050), a transparent and participatory decarbonisation tool, to identify a range of physically possible scenarios for the future.



Objective public: Policy-makers, researchers, students and civil society.



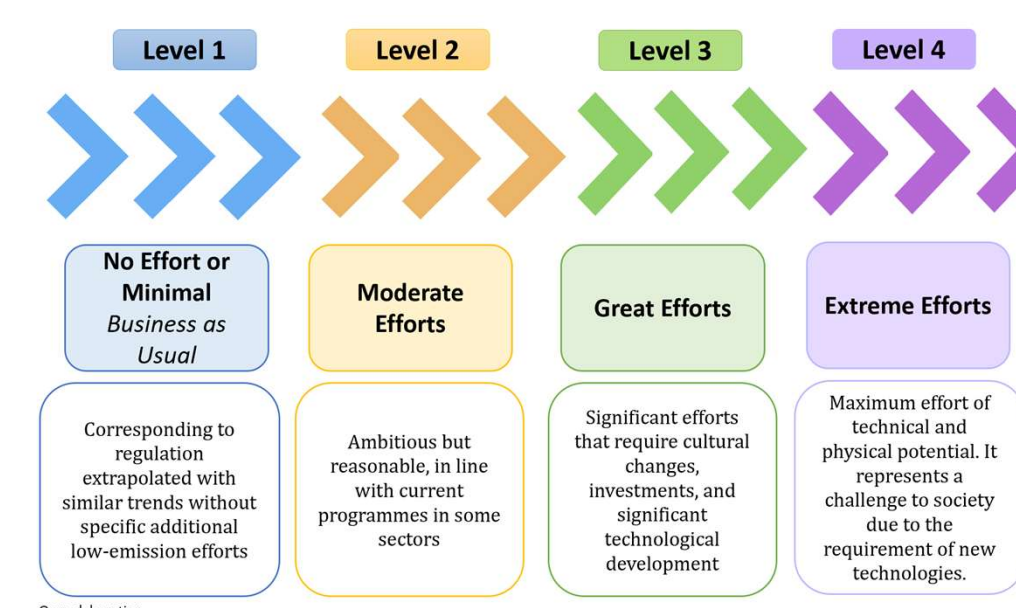
METHODOLOGY

PeCAL2050 follows the UK 2050 Pathways model philosophy. It is structured around modular sector models with four ambition levels (L1-L4). User-defined trajectories are processed every 5 years between 2020 and 2050, producing dynamic outputs for energy use and emissions.

The tool encompasses all primary sources of GHG emissions and energy demand in Peru.



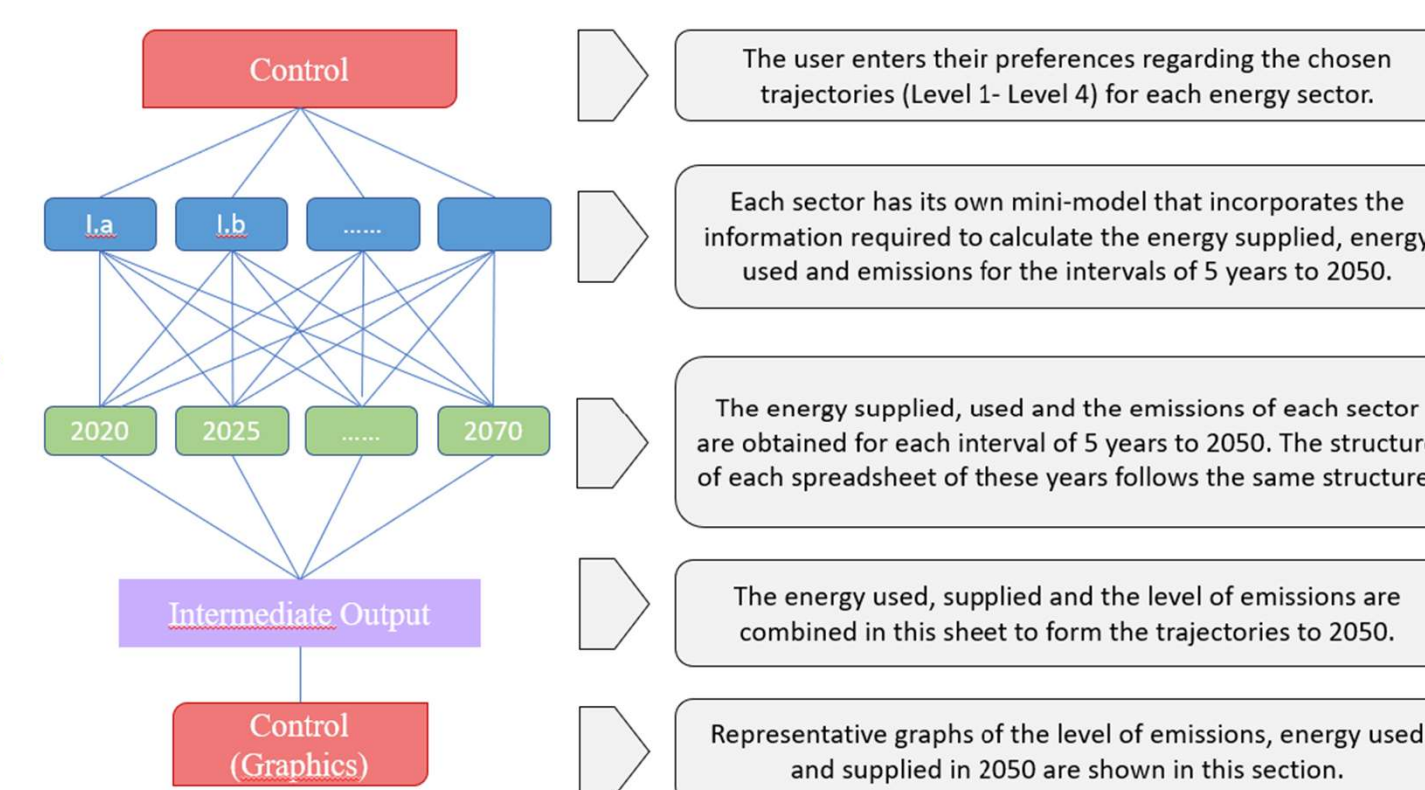
Each sector is represented by levers with four levels of ambition (L1-L4)



Data consolidation with national and international datasets

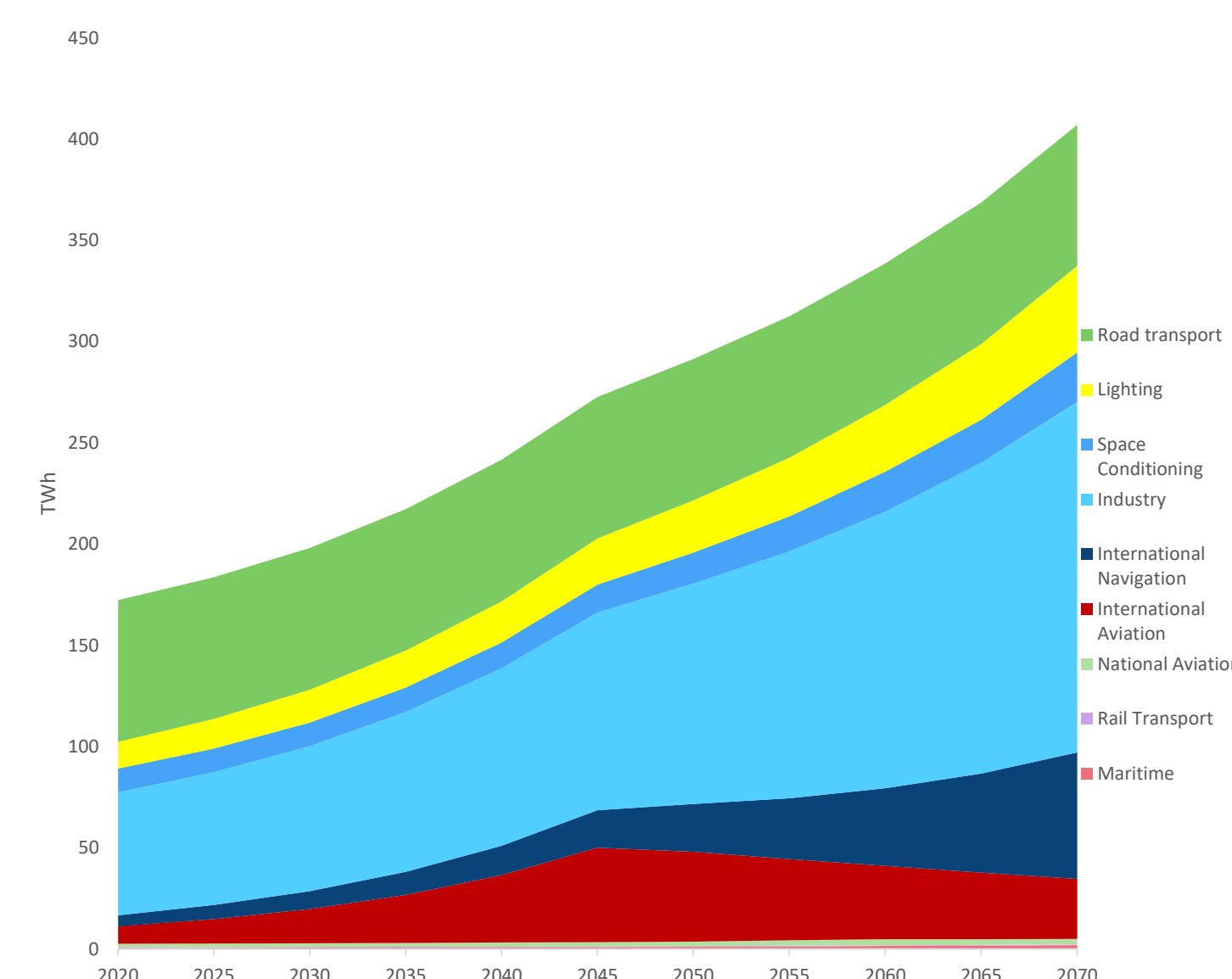


Structure of the Calculator's Internal Logic:

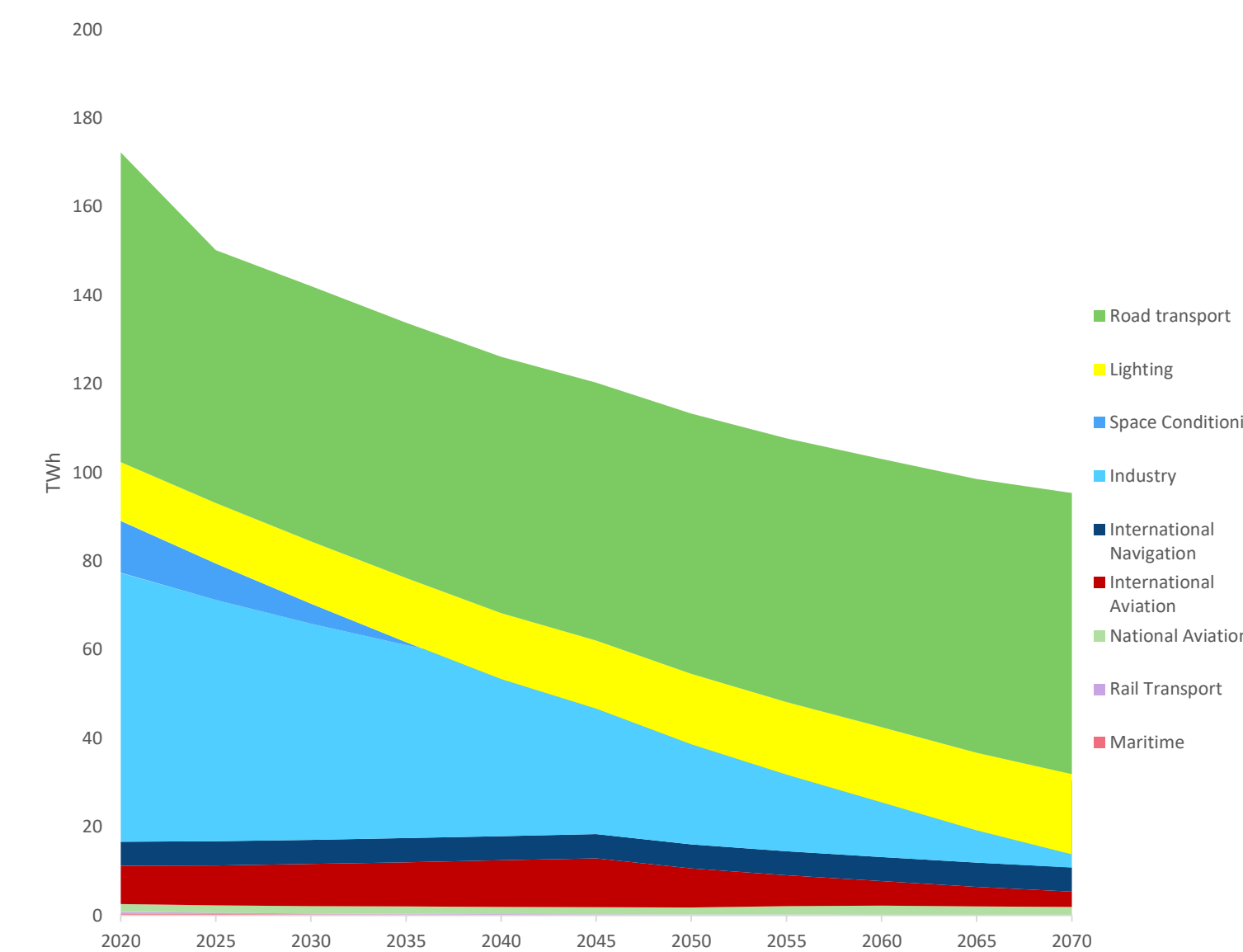


RESULTS

Two potential futures for Peru: Which one do we choose?



Current policies-2020
LEVEL 1



Maximum efforts-2050
LEVEL 4

CONCLUSIONS

- The tool allows us to explore multiple future scenarios for Peru.
- Offers a quantitative, visual and interactive base.
- Facilitates debate, promotes transparency and strengthens local capacities.

NEXT STEPS

- Amplify geographic coverage.
- Add economic modules.
- Publish online to make the benefits of the tool accessible to the masses.
- Integrate/Complement the tool/analysis with more complex models such as OSeMOSYS or TIMES-MARKAL.

REFERENCES

- UK Government et al. (2024). How to build a 2050 Calculator: A Guide. Retrieved from <https://imperial.ac.uk/2050-calculator/resources/>
- Ministry of Energy and Petroleum of Kenya& Strathmore University (2022). KCERT 2050@ Operating Manual. Nairobi: Data Science Unit@iLabAfrica, SU. Retrieved from <https://drive.google.com/file/d/1Dtl6ZmTwtuS0xSy61huP7IK7b60MDgjt/view>

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