

GCAM - Europe

(A European extension of the Global Change Analysis Model)

► MODEL OVERVIEW

GCAM-Europe allows for a regional deep-dive in the representation of energy-land-water-climate-economy linkages within Europe. It is based on GCAM, a dynamic-recursive model with technology-rich representations of the economy, energy sector, land use, and water linked to a climate model that can be used to explore climate change mitigation policies including carbon taxes, carbon trading, regulations and accelerated deployment of energy technology. Country-specific population and GDP assumptions drive the energy, land-use, and water systems employing numerous technology options to produce, transform and provide energy services, as well as to produce agriculture and forest products, and to determine land use and land use cover.

► ACCESS

GCAM-Europe:

<https://gcam-europe.readthedocs.io/en/latest/index.html>

GitHub:

<https://github.com/bc3LC-GCAMEurope>

Zenodo:

<https://doi.org/10.5281/zenodo.15655567>

► LICENSE

Educational Community License, Version 2.0 (ECL-2.0)

► OTHER INFORMATION

Time horizon: 1990 to 2100 in five-year increments

Default scenarios provided

► CONTACT DETAILS

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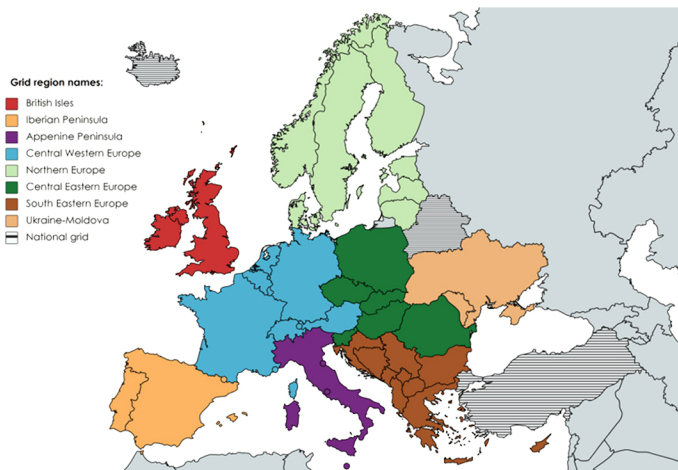
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Electricity grid regions for inter-country electricity trade in GCAM-Europe

► SUPPORTED ANALYSES

- Disaggregation of EU member states and other European countries at the national level.
- High detail analysis of European and member state-specific mitigation strategies.
- Evaluation of system-wide implications.
- Intra- and inter-country assessment of social implications.
- Detailed European representation within a global modelling framework for inter-regional feedbacks.

► WHAT'S NEW

- Alignment with harmonised European databases (e.g., use of Eurostat data, etc.).
- Integrated European Electricity grid structure.
- Additional residential energy service sectors and technologies.
- Refinement of the trade structure considering the European Single Market.

SDG COVERAGE



REGION MAP

Regional disaggregation in GCAM-Europe.

Yellow-to-red colors represent the regional groups that are explicitly disaggregated for this model. White-to-blue regions represent model regional groups that were part of the original model.



SECTORS



Energy



Land Use &
Agriculture



Buildings



Water



Industry



Transport