

# PIRAMID: Platform to Integrate, Reconcile and Align Model Inputs and Data

PIRAMID is a new methodology to project Multi-Regional Input-Output tables over time which can be used as a baseline for CGE models. This approach has the advantages of integrating external data consistently and being usable by other modelling teams.

## WHY?

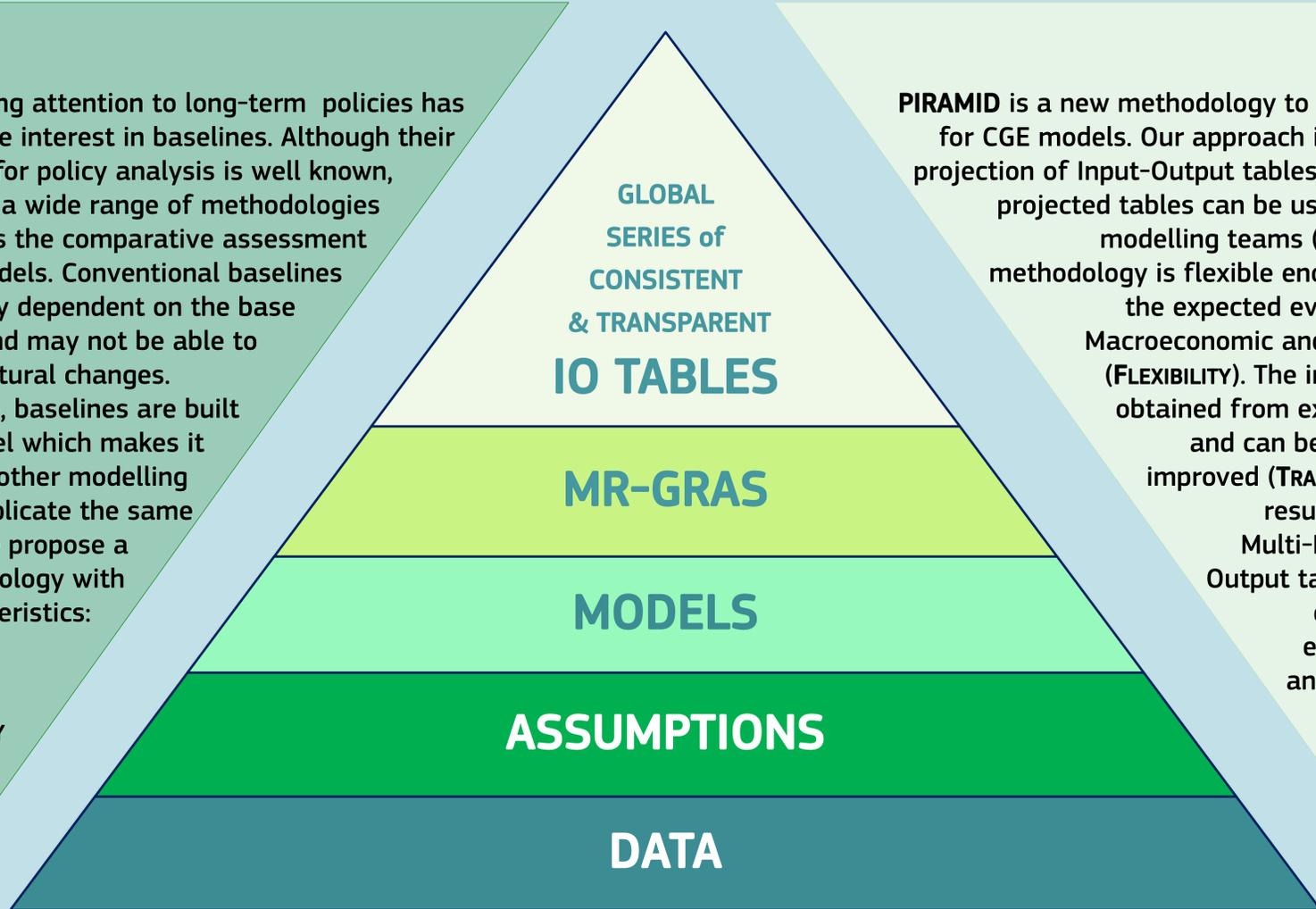
The increasing attention to long-term policies has fomented the interest in baselines. Although their importance for policy analysis is well known, still there is a wide range of methodologies what hinders the comparative assessment between models. Conventional baselines are generally dependent on the base year data and may not be able to reflect structural changes.

Furthermore, baselines are built from a model which makes it difficult for other modelling teams to replicate the same baseline. We propose a new methodology with four characteristics:

- USABILITY
- FLEXIBILITY
- TRANSPARENCY
- CONSISTENCY

## WHAT?

PIRAMID is a new methodology to build baselines for CGE models. Our approach is based on the projection of Input-Output tables over time. The projected tables can be used by different modelling teams (USABILITY). The methodology is flexible enough to impose the expected evolution at both Macroeconomic and sectoral level (FLEXIBILITY). The imposed data is obtained from external sources and can be corrected and improved (TRANSPARENCY). The result is a series of Multi-Regional Input-Output tables which are consistent with external models and/or databases (CONSISTENCY).



### MR-GRAS:

We use the Multi-Regional Generalized RAS (MR-GRAS) method to project the IO tables. This approach allows for projecting positive and negative entries. The MR-GRAS method is characterized by its transparency and simplicity that leads to easier programming requirements.

### MODELS:

The baseline is built gathering data from different sources. Thus, the projected IO tables are consistent with the inputs from external models. Our approach can integrate inputs from Macroeconomic models (e.g. JRC-GEM-E3), energy models (e.g. POLES, PRIMES, POTENCIA, GAINS) and other sector-specific models (e.g. agriculture, transport).

### ASSUMPTIONS:

In addition to the initial data, the projected IO tables are subjected to additional assumptions:

- GDP components: private and public consumption, investment and net trade
- Capital and labour shares in final income
- Intertemporal consistency (e.g. capital-investment link)
- Tax rates

### DATA:

ECONOMY	GDP, demand and sector structure Population and labour force
ENERGY	Energy supply and demand Prices and quantities Energy costs: fuels and electricity
EMISSIONS	GHG (CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFC) Air pollutants

