

Open Science Practices in Integrated Assessment Models Protocol Checklist

Clàudia Rodés-Bachs¹, Jon Sampedro¹, Natasha Frilingou²,
Francesco Gardumi³, and Camilla Lo Giudice³

¹Basque Center for Climate Change, Leioa, Spain

²Energy Policy Unit, School of Electrical and Computer Engineering, National Technical
University of Athens, Iroon Politechniou 9, 157 80 Athens, Greece

³ KTH Royal Institute of Technology, Brinellvägen 68, 114 28 Stockholm, Sweden

October 18, 2024

S1 Open Science Protocol Checklist

1. Model and Data Harmonization Process.

a) Model Documentation.

- ★ A dedicated platform for model documentation, including:
 - ★ Details of inputs.
 - ★ Details of outputs.
 - ★ Details of assumptions.
 - ★ Details of equations.
 - ★ Details of model versions.
- ★ Assignment of a DOI to model release versions.

b) Model Interconnections (if applicable).

- ★ A dedicated section in the paper detailing:
 - ★ Interaction mechanisms between models.
 - ★ Inputs and outputs of the interconnections.
 - ★ Assumptions specific to the interconnections.
 - ★ Model versions used.

c) Input Harmonization (if applicable).

- ★ A dedicated section in the paper detailing:
 - ★ Specific modifications to the inputs and the rationale behind them.
 - ★ Assumptions related to the harmonization process.
 - ★ Model versions used.
- ★ Pointer or citation to the specific modified model version, if applicable.

2. Open Management of Project Outcomes.

a) Output Standardization.

- ★ Standardization of model outputs according to the time-series data template.

b) Output Validation.

- ★ Validation of the first model period against observed data.
- ★ Alignment checks of key outputs, such as demand and supply.

c) Output Files Storage.

- ★ Storage of raw output in an accessible location.

- ★ Storage of study-specific results in an accessible location.
- ★ Availability of analysis code and figures creation code.
- ★ Availability of metadata detailing data origin and handling process.
- ★ Assignment of a DOI to the model outputs and analysis code.

d) Visualization Tools.

- ★ Provision of comprehensive figures to illustrate the results.
- ★ Development of user-friendly visualization tools for easy exploration of outcomes.