



Request for Emissions Scenario Data in Support of the IPCC's Sixth Assessment Report [Updated 16 January 2020]

Overview

This call is for research institutions and modelling teams to make data of global emission scenarios available for the assessment of the Intergovernmental Panel on Climate Change's (IPCC) Sixth Assessment Report (AR6). The request is made by the Integrated Assessment Modeling Consortium (IAMC) and the International Institute for Applied Systems Analysis (IIASA) through a co-operation agreement with the Co-chairs of IPCC Working Group III (Mitigation) (WGIII). The submitted scenarios are collated into an online emissions scenario database, facilitating the assessment of mitigation pathways by the IPCC.

Note that this call requesting the submission of global emission scenarios will be followed by a second call for the submission of national low-carbon development scenarios around September. The second call and its associated database is coordinated by the Chapter 4 team of the AR6 WGIII.

Those who submit scenarios retain full rights on their own use and sharing of their scenario data. In addition, they give selected authors of the AR6 the right to use their data for the sole purpose of the assessment. The data will remain strictly confidential until the report is published. Those who submit scenarios transfer a non-exclusive right to the IAMC and IIASA to publish their submitted scenario data in the AR6 of IPCC Working Group III (Mitigation), once it is approved. The publication of the database will allow free use of all scenario data contained in the database, but not its reproduction in whole or in part by third parties.

The remainder of this note describes the background to the call, the scope of the data requested, eligibility for submission, mechanisms for submission and terms of agreement.

Background

As part of the IPCC's upcoming AR6, an updated assessment of quantitative model-based emissions scenarios is being conducted. To facilitate the assessment, **modelling teams are invited to submit their available emissions scenarios to a database** hosted by the Integrated Assessment Modeling Consortium (IAMC) and the International Institute for Applied Systems Analysis (IIASA). The database is being established for the sole purpose of informing the AR6. The collection of scenario data is conducted by the IAMC and IIASA on the basis of a cooperation agreement with Working Group III of the IPCC (see attached support letter).

As the intention is to make the widest possible selection of the emissions scenario literature accessible to a quantitative assessment of the AR6, please distribute this note to all parties you are aware of that have been working on model-based emissions scenarios.

It is important to note that the AR6 will take all available literature on emissions scenarios fully into account independently of whether underlying emissions scenarios are submitted to the AR6 scenario database. However, submitting scenarios will provide added value to the assessment as these scenarios

can then be considered for a quantitative comparative analysis of emissions scenario properties in the AR6 (see Clarke et al., 2014, for an example of such an assessment in AR5¹). At the same time, submission to the database does not guarantee that a particular scenario will be included in the comparison. This decision rests with the AR6 authors and will be based on the needs of the assessment.

What to submit?

We are actively seeking emissions scenarios that:

- explore the outcome of policy and socio-economic developments, including baseline scenarios without climate policy, as well as scenarios extrapolating current policy or NDC developments, or
- aim at limiting warming, including to 1.5°C, well below 2°C, median 2°C or higher warming levels, or
- hybrid scenarios that follow policy trends until a certain future year and aim for a climate limit in the long run.

We are particularly encouraging submission of direct pairs of limiting scenarios and baselines / policy trend extrapolations that are generated with the same model version and same set of input parameter assumptions. Scenarios may introduce different policy packages and/or limit relevant target indicators, such as cumulative emissions, peak emissions, (net zero) emissions at some point in time in the 21st century, GHG concentrations, or radiative forcing.

Scenarios should constitute an emissions trajectory over time with underlying socio-economic development until at least the year 2050 generated by a formal model such as a dynamic systems, energy-economy, partial or general equilibrium or integrated assessment models.

The submission of integrated global scenarios that cover emissions from all sectors and regions with a time horizon between 2050 to 2100 is particularly encouraged, but submissions of emissions scenarios for individual regions and sectors are also welcomed.

Another separate call for scenarios, relating to near- to mid-term mitigation scenarios and with more focus on national actions, including NDCs, coordinated by the Chapter 4 team, will follow this call in September 2019.

Eligibility for submission

There are several criteria for inclusion of scenarios in the database:

1. The scenario needs to run at least until the year 2050 (ideally 2100), and be developed by a formal model (see above).
2. A minimum set of model and scenario meta information needs to be submitted (see below).
3. The scenario needs to be part of a publication in a way that makes it eligible for the AR6. This means it has to be published in a peer-reviewed journal article which has been accepted by **5th April 2021** . Or alternatively, it has to be published in a report by **5th April 2021** that has been determined by IPCC to be eligible grey literature. Such determination is made on a case-by-case basis. Literature submission cut-off deadline (19 September 2020) also applies.
4. Scenario authors have accepted the terms of use of the database and have not withdrawn their scenario prior to the date of the finalization of the database on **5th April 2021** .

Submission of preliminary data

Given that new emissions scenario studies may still be underway, researchers are encouraged to register their models and submit preliminary data from these ongoing studies with the expectation that these

¹ Clarke L., K. Jiang, K. Akimoto, M. Babiker, G. Blanford, K. Fisher-Vanden, J.-C. Hourcade, V. Krey, E. Kriegler, A. Löschel, D. McCollum, S. Paltsev, S. Rose, P.R. Shukla, M. Tavoni, B.C.C. van der Zwaan, and D.P. van Vuuren, 2014: Assessing Transformation Pathways. In: *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Edenhofer, O., R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwicker and J.C. Minx (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

data will be updated when the studies are complete and the associated journal articles have been submitted (and a second time when they are accepted). It is important though that preliminary data considered for submission have already reached a high level of maturity after substantial analysis. Researchers are asked to refrain from submitting preliminary scenarios, if they believe there will be substantial future changes to these data that would fundamentally alter the nature of the results.

By submitting preliminary data to this database, researchers are giving their explicit approval to use these data in preliminary drafts of AR6 of Working Group III of the IPCC, which will be subject to confidential outside peer review. By marking the data as preliminary when submitting it, researchers are also explicitly asserting that the preliminary data will be updated or replaced with final data when the studies are complete and published. Preliminary data submitted to the database will only be directly accessed by selected authors and review editors of AR6 of Working Group III of the IPCC and will remain confidential unless explicit approval of scenario authors is obtained. Only scenarios that fulfill the eligibility criteria above, are published in time and are submitted in their final published form will be considered for the assessment of the scenario database for the final draft of AR6.

Timeline for scenario submission, updating, and database publication

The following dates apply:

- **30 August 2019:** The AR6 scenario database opens for submission of preliminary and published data.
- **15 September 2019:** Scenario data submitted by this date can be considered by AR6 Working Group III authors at their second lead author meeting.
- **31 October 2019:** Scenario data submitted by this date can be considered for inclusion in the AR6 first order draft of Working Group III.
- **19 September 2020: Literature submission deadline.** To be included in the AR6 second order draft of IPCC Working Group III, preliminary scenario data must have been updated based on a paper that was submitted to an academic journal by 19 September 2020 or a report that was published by 19 September 2020 and was determined to be eligible grey literature. This corresponds to the same literature cut-off deadline used by WGIII of the IPCC.
- **10 January 2021: The database closes for submission of new scenario data.** Teams who hope to have additional scenarios published by 5th April 2021 have to submit the associated preliminary scenario data by this January deadline to allow the author teams to have an overview of available scenarios for the preparation of the final order draft. Teams are also encouraged to update any preliminary scenario information, since the scenario set available by this time will be used in the writing of the Final Order Draft of the Chapters and the Second Order Draft of the Summary for Policy Makers in early 2021.
- **5 April 2021: Literature acceptance deadline.** By this date any preliminary scenario data must have been finalized and updated based on an accepted paper or a published eligible report. Scenario data not fulfilling this requirement will be removed. No further updates are possible, submitted scenario data can no longer be withdrawn.
- **11 September 2021:** Database publication following the publication of the AR6 of IPCC Working Group III when approved by the IPCC plenary.

All people who have registered models will be notified of any changes in the timeline.

Terms of submission

1. Scenario authors retain full rights on their own sharing and use of their scenario data. Those rights will not be affected by submission, use and publication of their data in the AR6 scenario database.

2. By submitting to the AR6 scenario database, scenario authors transfer to selected authors of the AR6 the right to use their data for the sole purpose of the AR6 assessment. AR6 authors remain under the obligation to keep submitted preliminary and unpublished data strictly confidential. Use or disclosure of the data outside the AR6 assessment will require separate and explicit approval from scenario authors.
3. Scenario authors retain the right to withdraw their scenario data after submission at any time before 5th April 2021, when the database will be closed for further changes.
4. Upon closing the database on 5th April 2021, scenario authors automatically transfer a non-exclusive right to the IAMC and IIASA as cooperation partners of the IPCC to publish their submitted scenario data as part of the AR6 scenario database at the time the AR6 of IPCC Working Group III is published. The publication of the database will allow free use of scenario data contained in the database, but not its reproduction in whole or in part by third parties.

How to submit?

Scenario submission requires:

- A contact email address of the owner of the submitted scenario data
- Registration of the underlying model version including model meta information at the database and registration of authorized users for scenario submission.
- Submission of scenario data in the common scenario reporting template. Different sectors (Chapters in WG3) have assigned different Tiers to the variables, depending on the focus of their analysis; e.g. Transport sector (Ch. 10) has a different set of Tier 1 variables to the AFOLU sector (Ch. 7). Tier 1 variables define a core set of information that would enable assessing the scenario in a meaningful way. Tier 2 variables are important for enabling more specific analyses.
- Teams focused primarily on either Buildings (Ch. 9) or Transport (Ch. 10) data, should additionally read the corresponding call texts and note the timelines.
- Researchers are encouraged to carefully consider which variables to submit, because any material in the database could end up being assessed in the AR6.

More information on the submission process, model registration and the scenario reporting template, including a detailed explanation of reporting variables, can be found on the about page at:

<https://data.ene.iiasa.ac.at/ar6-scenario-submission>

Thank you for your consideration of this request for emissions scenario data. The authors of the AR6 will greatly appreciate your willingness to share your emissions pathway scenario data with them.

Note again that scenario data can be submitted **from 30th August 2019 until 31st October 2020**, providing that model registration has been successfully completed. Scenario data submitted by **15 September 2019** can be assessed by AR6 WGIII authors at their second lead author meeting. Scenario data submitted by **31st October 2019** can be considered for inclusion in the first order draft of AR6 of Working Group III, and scenarios submitted by 19th September 2020 can be considered for inclusion in the second order draft of AR6 of Working Group III. All scenarios need to be in their final published form by 5th April 2021 to be eligible for AR6.

Contact details

ipccAR6db.ene.admin@iiasa.ac.at

On behalf of the authors of chapter 3 of the AR6 of Working Group III of the IPCC, the IAMC and IIASA

Keywan Riahi, Roberto Schaeffer, Elmar Kriegler and Edward Byers