

## Request for 1.5°C Emissions Scenario Data in support of the IPCC's Special Report on Global Warming of 1.5°C

### Overview

This call is for research institutions and other bodies to submit to a scenario database the results of emission scenarios relevant to the Intergovernmental Panel on Climate Change's (IPCC) 2018 Special Report on Global Warming of 1.5°C (SR1.5). 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). The resulting database will facilitate the assessment of mitigation pathways by the IPCC as requested by the Parties to the UN Framework Convention on Climate Change (UNFCCC).

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 Special Report 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 after the Special Report on Global Warming of 1.5°C 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 Special Report on Global Warming of 1.5°C (SR1.5), an updated assessment of quantitative model-based 1.5°C emissions scenarios is being conducted. To facilitate the assessment, **modelling teams are invited to submit their available 1.5°C and related 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 SR1.5. 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 Appendix).

*As the intention is to make an as broad as possible selection of the 1.5°C scenario literature accessible to a quantitative assessment of the SR1.5, please distribute this note to all parties you are aware of that have been working on model-based 1.5°C and well below 2°C emission scenarios.*

It is important to note that the SR1.5 will take all available literature on 1.5°C emissions scenarios fully into account independently of whether underlying emissions scenarios are submitted to the SR1.5 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 1.5°C scenario properties in the SR1.5 (see Clarke et al., 2014, for an example of such an assessment in AR5<sup>1</sup>). 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 authors and will be based on the needs of the assessment.

### What to submit?

We are actively seeking emissions scenarios that:

- aim at limiting warming to 1.5°C or well below 2°C, or
- allow to contextualize 1.5°C or well below 2°C scenarios, for example, median 2°C, INDC, and baseline scenarios without climate policy. We are particularly encouraging submission of direct pairs of 1.5°C and well below 2°C or higher scenarios that are generated with the same model version and same set of input parameter assumptions.

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 model.

The submission of integrated global scenarios that cover emissions from all sectors and regions until the end of the 21<sup>st</sup> century is particularly encouraged. But submissions of emissions scenarios for individual regions and sectors are welcomed as well. In these cases, scenario authors will be asked to explain how they evaluated their scenario as being consistent with 1.5°C. The same will hold for scenarios with time horizons shorter than 2100.

### 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, and be developed by a formal model (see above).
2. A minimum set of model and scenario meta information as well as mandatory variables needs to be submitted (see below).
3. The scenario needs to be published in a way that makes it eligible for the SR1.5. This means it has to be published in a peer-reviewed journal article which has been accepted by **15 May 2018**. Or alternatively, it has to be published in a report by **15 May 2018** that has been determined by IPCC to be eligible grey literature. Such determination is made on a case-by-case basis.
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 **15 May 2018**.

### Submission of preliminary data

Given that several 1.5°C scenario studies may still be underway, researchers are encouraged to submit preliminary data from these ongoing studies with the expectation that this 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

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<sup>1</sup> 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.

submission has 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 this 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 this data in preliminary drafts of the SR1.5 report, 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 the SR1.5 and will remain confidential unless explicit approval of scenario authors is obtained.

The following dates apply:

- **24 April 2017:** SR1.5 scenario database open for submission of preliminary and published data
- **31 May 2017:** Scenario data submitted by this date will be assessed by SR1.5 authors at their second lead author meeting.
- **30 June 2017:** Scenario data submitted by this date can be considered for inclusion in the SR1.5 first order draft.
- **1 December 2017:** The database closes for submission of new scenario data. Preliminary scenario data must have been updated based on a paper that was submitted to an academic journal by 1 November 2017 or a report that was published by 1 November 2017 and was determined to be eligible grey literature. Preliminary scenario data not fulfilling this requirement will not be included in the SR1.5 second order draft.
- **15 May 2018:** 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.  
The database closes. No further updates are possible, submitted scenario data can no longer be withdrawn.
- **30 September 2018:** Database publication together with the publication of the SR1.5 after approval by the IPCC plenary.

### 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 SR1.5 scenario database.
2. By submitting to the SR1.5 scenario database, scenario authors transfer to selected authors of the SR1.5 the right to use their data for the sole purpose of the SR1.5 assessment. SR1.5 authors remain under the obligation to keep submitted preliminary and unpublished data strictly confidential until the report is published. Use or disclosure of the data outside the SR1.5 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 15 May 2018 when the database will be closed for further changes.
4. Upon closing the database on 15 May 2018, 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 SR1.5 scenario database at the time the SR1.5 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:

- An institutional permanent contact email address of the owner of the submitted scenario data
- Registration of the underlying model version including model meta information at the database
- Submission of scenario data in a common reporting template. The data template includes several tiers of variables. Tier 0 are essential variables that robustly define a scenario.<sup>2</sup> 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. Additional ('other', no tier) variables are included for completeness.
- Researchers are encouraged to carefully consider which variables to submit, because any material in the database could end up being assessed in the SR1.5.

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

<https://db1.ene.iiasa.ac.at/IPCCSR15DB/>

General enquiries related to the database can be sent to [ipccsr15db.coordination@iiasa.ac.at](mailto:ipccsr15db.coordination@iiasa.ac.at).

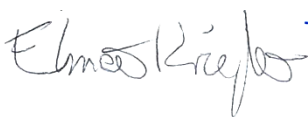
For technical issues, please contact [ipccsr15db.ene.admin@iiasa.ac.at](mailto:ipccsr15db.ene.admin@iiasa.ac.at).

Thank you for your consideration of this request for 1.5°C scenario data. The authors of the SR1.5 will greatly appreciate your willingness to share your 1.5°C and related scenario data with them.

Note again that scenario data can be submitted **from now on until 1 December 2017**. Scenario data submitted by **31 May 2017** can be assessed by SR1.5 authors at their second lead author meeting. Scenario data submitted by **30 June 2017** can be considered for inclusion in the first order draft of SR1.5.

On behalf of the authors of the IPCC SR1.5

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<sup>2</sup> Inability to submit all Tier 0 variables does not automatically exclude a scenario from the database. For example, scenarios with alternative GDP definitions could still be assessed in a scientifically robust way.

Dear Colleagues,

**Scenario Database: Global Warming of 1.5°C**

As Co-chairs of Working Group III (WG III) of the Intergovernmental Panel on Climate Change (IPCC), which addresses the mitigation of climate change, we are writing to offer our support for the call for scenarios issued jointly by the Integrated Assessment Modelling Consortium (IAMC) and the International Institute for Applied Systems Analysis (IIASA).

IPCC's role is to assess literature relevant to climate change and as such does not develop its own scenarios. It is therefore reliant on the modelling communities to make the results of their scenario-building efforts available in a structured and readily accessible form. The IAMC/IIASA initiative fulfils this role admirably and we therefore strongly encourage modelling teams to deposit scenarios relevant to the IPCC Special Report on Global Warming of 1.5°C in the new database.

The preceding AR5 database was used extensively in the IPCC Fifth Assessment Report (AR5), has been widely used in the academic literature, and helped to inform the Paris climate agreement. Bodies such as the United Nations Environment Program (UNEP) have made extensive use of it in assessing progress in the follow-up to Paris. We anticipate that similar outcomes will arise from the new database. The database is not only a critical part of the climate mitigation research infrastructure. It has also had a real and substantial impact in the policy world.

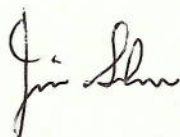
We would particularly encourage modelling teams who have not previously contributed to the AR5 and similar databases to participate. Your contribution will help to build a substantial and authoritative evidence base for the IPCC Special Report and bring a wide range of scenarios to the attention of policymakers.

We appreciate that you may not have scenarios available that meet the 1.5°C/well below 2°C ambition. If so, please be aware that we expect a further call for scenarios later in the IPCC Sixth Assessment cycle (AR6) that will solicit a wider range of inputs.

Please consider contributing if you can. This is an important and scientifically robust initiative.

Jim Skea

PR Shukla



Co-Chairs IPCC WG III