

# RCP Representative Concentration Pathways Database

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## Summary

The RCP Database is hosted at the International Institute for Applied Systems Analysis (IIASA), and documents the emissions, concentrations, and land-cover change projections based on four RCPs that are intended to provide input to climate models. The database, which was first released in May 2009, includes data starting from an identical base year (2000) to 2100. Wherever available, historical information is provided back to the year 1850.

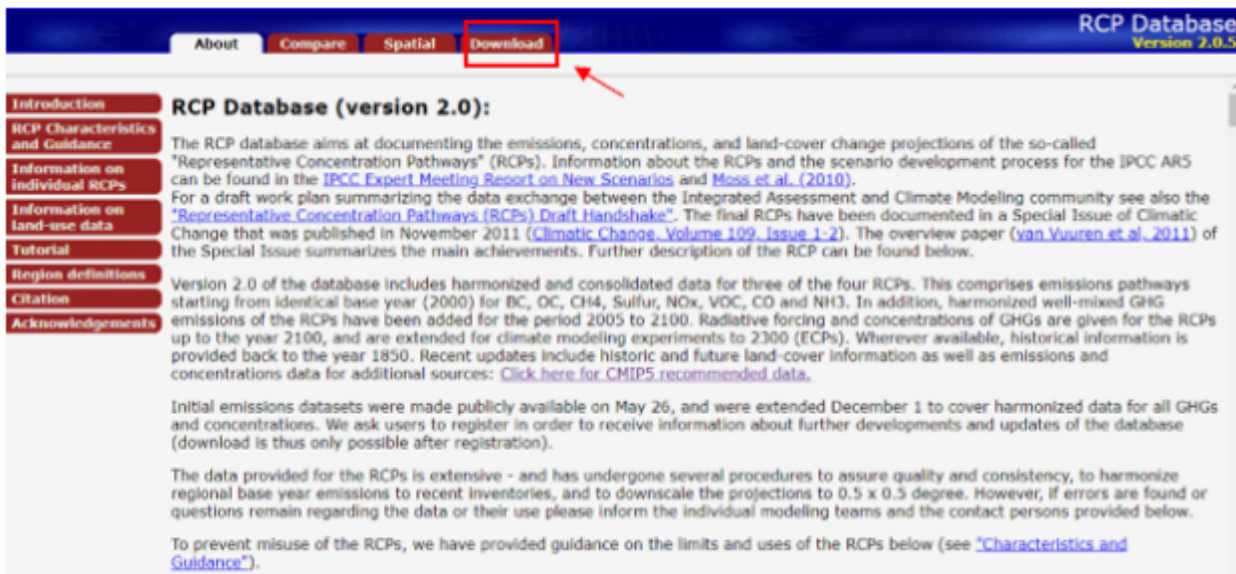
## Tables In IFs

Variable	Definition	Years	UsedInPreprocessor
ForecastCO2IIASARCP26	World CO2 emission under RCP2.6 scenario, historical and forecast, IMAGE model	2000-2100	0
ForecastCO2IIASARCP45	World CO2 emission under RCP4.5 scenario, historical and forecast, MiniCAM model	2000-2100	0
ForecastCO2IIASARCP60	World CO2 emission under RCP6.0 scenario, historical and forecast, AIM model	2000-2100	0
ForecastCO2IIASARCP85	World CO2 emission under RCP8.5 scenario, historical and forecast, MESSAGE model	2000-2100	0

## Data Pulling Instructions

STEP 1.) Navigate to the home page of the RCP Database

STEP 2.) At the top of the page, click on the tab labeled "**Download**".



RCP's Homepage

STEP 3.) Before downloading from the RCP database, you have to register by providing your email address. Therefore, enter your email address in the text box beside "**Email**". Then click on "**Register**".

RCP's Register to Download Page

STEP 4.) We use data from all the RCP's, so depending on what RCP you want data from, say for example, "**RCP 2.6**", you will **right click** on "**Download**", which is located beside it, under "**Regional data**".

**RCP Database Version 2.0.5**

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### Data Downloads

Please register in order to download data. Files include spreadsheets for harmonized global concentrations and radiative forcings, and harmonized regional emissions. Spatial emissions are provided as separate files in net-cdf format.

**CHIPS recommended data** is provided in a separate download section further below (available upon registration). The CHIPS data includes:

- 1) historical atmospheric concentrations as well as concentrations for the RCPs (2005-2100) and their extension to 2100 (ECRs). In total, atmospheric concentration of the following gases are provided: CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, all fluorinated gases controlled under the Kyoto Protocol (HFCs, PFCs, and SF<sub>6</sub>), and ozone depleting substances controlled under the Montreal Protocol (CFCs, HCFCs, Halons, CCl<sub>4</sub>, CH<sub>3</sub>Br, CH<sub>3</sub>Cl).
- 2) historical emissions data (1850 - 2000) as well as emissions for the RCPs (2000-2100). In total emissions of the following gases are provided: CH<sub>4</sub>, SO<sub>2</sub>, NO<sub>x</sub>, CO, NH<sub>3</sub>, as well as of BC, OC and VOC. Other additional species such as C<sub>2</sub>H<sub>4</sub>O (acetaldehyde), C<sub>2</sub>H<sub>5</sub>OH (ethanol), C<sub>2</sub>H<sub>6</sub>S (dimethyl sulphide), C<sub>3</sub>H<sub>8</sub>O (acetone), etc. are available only for historical biomass burning emissions (see below).
- 3) historical aerosols data (1850 - 2000) on the following species: sulfate (SO<sub>4</sub>), ammonium nitrate (NH<sub>4</sub>NO<sub>3</sub>), hydrophobic black carbon (CB1), hydrophilic black carbon (CB2), hydrophobic organic carbon (CB1), hydrophilic organic carbon (CB2), secondary organic aerosols (SOA), dust (DST01-04, small to large sizes) and sea-salt SSUT01-04). In addition, temperature (T) and surface pressure (PS) is provided to enable unit conversion (all aerosol are in kg/kg, dry mass).
- 4) historical and RCP land-use projections and associated land-use transitions.

**Bulk Data Downloads (per RCP):**

(These files do not include CHIPS recommended data. Please look further below for CHIPS data.)

Model	RCP	Regional data	Spatial data
IMAGE	RCP 2.6	<a href="#">download</a> (220.2 KB)	<a href="#">download</a> (166909.2 KB)
MiniCAM	RCP 4.5	<a href="#">download</a> (220.2 KB)	<a href="#">download</a> (153580.6 KB)
AIM	RCP 6.0	<a href="#">download</a> (219.6 KB)	<a href="#">download</a> (144534.6 KB)
MESSAGE	RCP 8.5	<a href="#">download</a> (220.2 KB)	<a href="#">download</a> (165848.9 KB)

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 RCP 2.6 (IMAGE): Detlef van Vuuren ([detlef.vanvuuren@ecf.nl](mailto:detlef.vanvuuren@ecf.nl))  
 RCP 4.5 (MiniCAM): Allison Thomson ([Allison.Thomson@ecf.org](mailto:Allison.Thomson@ecf.org))  
 RCP 6.0 (AIM): Toshihiko Masui ([masui@nies.go.jp](mailto:masui@nies.go.jp))  
 RCP 8.5 (MESSAGE): Keywan Riahi ([kriahi@iiasa.ac.at](mailto:kriahi@iiasa.ac.at))

RCP's Download Page

STEP 5.) From the pop-up menu, select "**Open link in new tab**"

**RCP Database Version 2.0.5**

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Pop-Up Menu for Download

STEP 6.) **Note: You may get a warning, if you do, proceed with the download by keeping the file.** If an Excel sheet opens in a new tab, download the file.

Now you will be able to format the downloaded data to upload it into IFs.

#	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Region	Scenario	Variable	Unit	2000	2005	2010	2020	2030	2040	2050	2060	2070	2080	2090	2100
2	World	IMAGE - RCP3-PD (2	Concentration - CO2	ppm	368.865	378.813	389.285	412.068	430.783	440.222	442.700	441.673	437.481	431.617	426.005	420.895 t) N
3	World	IMAGE - RCP3-PD (2	Concentration - CH4	ppb	1751.023	1753.735	1773.128	1730.518	1600.215	1527.098	1451.540	1365.106	1310.651	1285.405	1268.282	1253.628 t) N
4	World	IMAGE - RCP3-PD (2	Concentration - N2O	ppb	315.850	319.440	322.957	329.208	334.297	338.758	341.896	343.192	343.744	344.161	344.261	344.016 t) N
5	World	IMAGE - RCP3-PD (2	Concentration - CO2 e	ppm	415.858	428.653	442.761	470.821	490.699	501.433	503.321	499.944	494.224	487.717	481.394	475.193 t) N
6	World	IMAGE - RCP3-PD (2	Concentration - CO2 e	ppm	364.367	375.107	390.125	423.464	445.154	455.980	456.441	447.834	441.343	436.475	431.473	426.963 t) N
7	World	IMAGE - RCP3-PD (2	Forcing - Total	Wim2	1.723	1.904	2.129	2.584	2.862	2.999	2.998	2.918	2.854	2.808	2.759	2.714 t) N
8	World	IMAGE - RCP3-PD (2	Forcing - CO2	Wim2	1.543	1.690	1.840	2.154	2.395	2.513	2.548	2.541	2.495	2.429	2.365	2.307 t) N
9	World	IMAGE - RCP3-PD (2	Forcing - CH4	Wim2	0.486	0.486	0.495	0.474	0.424	0.396	0.363	0.327	0.304	0.293	0.285	0.278 t) N
10	World	IMAGE - RCP3-PD (2	Forcing - N2O	Wim2	0.145	0.156	0.167	0.187	0.203	0.216	0.226	0.229	0.231	0.232	0.233	0.232 t) N
11	World	IMAGE - RCP3-PD (2	Forcing - Halocarbons	Wim2	0.332	0.340	0.344	0.346	0.329	0.301	0.273	0.253	0.243	0.236	0.229	0.220 t) N
12	World	IMAGE - RCP3-PD (2	Forcing - Other (aerosols)	Wim2	-0.781	-0.769	-0.717	-0.577	-0.489	-0.427	-0.413	-0.432	-0.418	-0.382	-0.353	-0.323 t) N
13	RSASIA	IMAGE - RCP3-PD (2	CO2 emissions - Total	PgC/yr	2.124	3.054	3.705	4.345	3.473	2.256	1.511	0.543	0.005	-0.206	-0.357	-0.174 t) N
14	RSLAM	IMAGE - RCP3-PD (2	CO2 emissions - Total	PgC/yr	0.736	0.753	0.805	0.691	0.547	0.466	0.382	0.316	0.204	0.131	0.122	0.035 t) N
15	RSLAM	IMAGE - RCP3-PD (2	CO2 emissions - Total	PgC/yr	0.827	0.938	0.968	1.139	1.046	0.762	0.579	0.728	0.579	0.417	0.252	0.086 t) N
16	RSOEC	IMAGE - RCP3-PD (2	CO2 emissions - Total	PgC/yr	3.317	3.474	3.588	3.259	2.312	1.180	0.619	0.264	-0.193	-0.239	-0.266	-0.326 t) N
17	RSREF	IMAGE - RCP3-PD (2	CO2 emissions - Total	PgC/yr	0.880	0.949	0.913	0.826	0.567	0.360	0.295	0.183	0.059	0.014	-0.018	-0.040 t) N
18	World	IMAGE - RCP3-PD (2	CO2 emissions - Total	PgC/yr	7.884	9.167	9.878	10.260	7.946	5.024	3.387	2.035	0.654	0.117	-0.268	-0.420 t) N
19	RSASIA	IMAGE - RCP3-PD (2	CO2 emissions - Total	PgC/yr	1.768	2.608	3.285	4.016	3.289	2.174	1.404	0.409	-0.110	-0.333	-0.501	-0.303 t) N
20	RSLAM	IMAGE - RCP3-PD (2	CO2 emissions - Total	PgC/yr	0.371	0.412	0.460	0.493	0.393	0.343	0.334	0.233	0.128	0.057	-0.082	-0.061 t) N
21	RSLAM	IMAGE - RCP3-PD (2	CO2 emissions - Total	PgC/yr	0.581	0.710	0.758	0.802	0.691	0.618	0.592	0.549	0.434	0.292	0.162	0.045 t) N
22	RSOEC	IMAGE - RCP3-PD (2	CO2 emissions - Total	PgC/yr	3.191	3.348	3.451	3.178	2.245	1.085	0.618	0.111	-0.312	-0.369	-0.404	-0.453 t) N
23	RSREF	IMAGE - RCP3-PD (2	CO2 emissions - Total	PgC/yr	0.824	0.892	0.867	0.799	0.540	0.315	0.238	0.117	-0.025	-0.081	-0.126	-0.158 t) N
24	World	IMAGE - RCP3-PD (2	CO2 emissions - Total	PgC/yr	6.735	7.971	8.821	9.288	7.157	4.535	3.186	1.419	0.116	-0.433	-0.870	-0.931 t) N
25	RSASIA	IMAGE - RCP3-PD (2	CO2 emissions - Total	PgC/yr	0.356	0.445	0.420	0.329	0.184	0.082	0.107	0.134	0.115	0.127	0.145	0.129 t) N
26	RSLAM	IMAGE - RCP3-PD (2	CO2 emissions - Total	PgC/yr	0.365	0.341	0.345	0.198	0.155	0.123	0.048	0.083	0.076	0.074	0.123	0.097 t) N
27	RSLAM	IMAGE - RCP3-PD (2	CO2 emissions - Total	PgC/yr	0.246	0.227	0.110	0.337	0.355	0.144	-0.013	0.179	0.145	0.126	0.089	0.041 t) N
28	RSOEC	IMAGE - RCP3-PD (2	CO2 emissions - Total	PgC/yr	0.126	0.126	0.136	0.081	0.068	0.095	0.001	0.153	0.119	0.129	0.138	0.127 t) N
29	RSREF	IMAGE - RCP3-PD (2	CO2 emissions - Total	PgC/yr	0.056	0.056	0.046	0.028	0.045	0.058	0.058	0.066	0.083	0.094	0.107	0.118 t) N
30	World	IMAGE - RCP3-PD (2	CO2 emissions - Total	PgC/yr	1.149	1.196	1.057	0.973	0.789	0.489	0.201	0.615	0.538	0.550	0.602	0.511 t) N

RCP Excel File Example

# Data Notes

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