

more different framework data and corresponding results at: <http://results-espm.save-the-climate.info>

**framework data (input values here: yellow fields)**

global CO2 budget 2020 - 2100	Gt	determination
land-use change (LUC) emissions 2020 - 2100	700	
international shipping and aviation (ISA) emissions 2020 - 2100	0	
global CO2 budget 2020 - 2100 to distribute here	3.3%	-23
<b>weighting population</b> in the weighted key	<b>30%</b>	national budget
potential for net negative emissions	<b>-2%</b>	overshoot
scenario type used for the reference values	<b>RM-6-abs</b>	paths

**Calculation global budget to distribute here:**

LUC and ISA emissions are not considered here. Global LUC and ISA budgets are therefore offset against the global budget.

A value of zero for LUC means that by 2100, in total, net positive LUC emissions are offset by net negative LUC emissions.

**Overshoot:** The percentage stated is applied to the 2019 emissions and represents the minimum of the emissions pathway.

**reference values for the countries with the highest emissions**

target year:	2030	2035	2040	emissions 2019 in Gt	per capita 2019 in t	share in global emissions 2019	share in global population 2019	year emissions neutrality	temporary overshoot in Gt	normalised start change rate 2025
	reference year:	2019	2019							
China	-19%	-44%	-69%	12	8	32%	18%	2047	13	-
United States	-29%	-48%	-67%	5	15	14%	4%	2049	5	-
EU27	-31%	-44%	-57%	3	7	8%	6%	2057	3	-
India	4%	-13%	-30%	3	2	7%	18%	2062	2	-
Russia	-23%	-48%	-74%	2	13	5%	2%	2046	2	-
Japan	-31%	-46%	-61%	1	9	3%	2%	2054	1	-
sum				25		69%	50%		26	

largest national budgets 2020 - 2100	national budget	weighted key	emissions 2019	scope years
	Gt		Gt	
China	190.0	28.1%	11.81	16
United States	72.8	10.8%	4.97	15
India	69.0	10.2%	2.55	27
EU27	49.2	7.3%	2.91	17
Russia	27.8	4.1%	1.86	15
Japan	17.9	2.6%	1.12	16
Indonesia	15.3	2.3%	0.64	24
Brazil	11.6	1.7%	0.47	25
Iran	11.4	1.7%	0.71	16
Germany	11.2	1.6%	0.70	16
Mexico	9.9	1.5%	0.49	20
South Korea	9.8	1.4%	0.65	15
Canada	8.8	1.3%	0.61	15
Saudi Arabia	8.4	1.2%	0.58	14
Pakistan	8.0	1.2%	0.20	40
South Africa	7.7	1.1%	0.48	16
Türkiye	7.5	1.1%	0.41	18
Nigeria	6.9	1.0%	0.13	55
Viet Nam	6.9	1.0%	0.34	21
United Kingdom	6.4	0.9%	0.36	18
Australia	5.9	0.9%	0.41	15
France and Monaco	5.9	0.9%	0.32	18
Italy, San Marino and the Holy See	5.9	0.9%	0.33	18
Bangladesh	5.8	0.9%	0.11	53
Egypt	5.7	0.8%	0.24	24
Thailand	5.5	0.8%	0.29	19
Poland	5.0	0.7%	0.31	16
Philippines	4.8	0.7%	0.15	32
Spain and Andorra	4.5	0.7%	0.25	18
Taiwan	4.4	0.6%	0.29	15
Malaysia	4.2	0.6%	0.26	16
Ukraine	3.8	0.6%	0.21	18
Iraq	3.6	0.5%	0.19	18
Argentina	3.6	0.5%	0.18	19
Algeria	3.5	0.5%	0.18	19
Kazakhstan	3.3	0.5%	0.22	15
Ethiopia	3.1	0.5%	0.02	170
United Arab Emirates	2.8	0.4%	0.20	14
Netherlands	2.5	0.4%	0.16	16
Colombia	2.4	0.4%	0.09	28
Venezuela	2.4	0.4%	0.12	20
Uzbekistan	2.4	0.3%	0.12	20
Democratic Republic of the Congo	2.3	0.3%	0.00	527
Morocco	1.9	0.3%	0.07	26
sum without EU	603		34	
sum across all countries	677		37	18

**Basic idea behind the ESPM**

The ESPM consists of two steps:

(1) **National budgets:** A predefined global CO2 budget is distributed to countries. The ESPM tool offers the use of a **weighted distribution key** that includes the '**population**' and the '**emissions**' in a base year (here: 2019).

(2) **National paths:** The ESPM tool offers the Regensburg Model Scenario Types to derive plausible national paths that adhere to a national budget.

**Basic idea behind the scenario types RM 1 - 6**

With the help of the RM Scenario Types, emission paths can be determined that meet a given budget. The scenario types differ in the **assumption** about the **property** of the **annual reductions**. This approach is particularly useful when it comes

Brief description of the ESPM:

<http://espm-short.climate-calculator.info>

Brief description of the RM Scenario Types:

<http://rm-scenario-types.climate-calculator.info>

Published paper for the six largest emitters:

<https://doi.org/10.5281/zenodo.4764408>

Overview of web apps for ESPM:

<https://climate-calculator.info>