

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	650	
international shipping and aviation (ISA) emissions 2020 - 2100	0	
global CO2 budget 2020 - 2100 to distribute here	3.3%	-21
weighting population in the weighted key	70%	national budget
potential for net negative emissions	-2%	overshoot
scenario type used for the reference values	RM-6-abs	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	-33%	-69%	-102%	12	8	32%	18%	2040	14	-
United States	-50%	-87%	-102%	5	15	14%	4%	2037	6	-
EU27	-35%	-52%	-69%	3	7	8%	6%	2050	3	-
India	9%	-3%	-15%	3	2	7%	18%	2075	1	-
Russia	-48%	-95%	-102%	2	13	5%	2%	2036	2	-
Japan	-40%	-62%	-84%	1	9	3%	2%	2044	1	-
sum				25		69%	50%		29	

largest national budgets 2020 - 2100	national budget	weighted key	emissions 2019	scope years
	Gt	Gt		
China	141.8	22.5%	11.81	12
India	91.3	14.5%	2.55	36
United States	44.3	7.0%	4.97	9
EU27	40.3	6.4%	2.91	14
Indonesia	18.7	3.0%	0.64	29
Russia	17.8	2.8%	1.86	10
Brazil	14.5	2.3%	0.47	31
Japan	13.0	2.1%	1.12	12
Pakistan	12.7	2.0%	0.20	64
Nigeria	12.1	1.9%	0.13	96
Bangladesh	10.2	1.6%	0.11	93
Mexico	10.1	1.6%	0.49	20
Iran	8.4	1.3%	0.71	12
Germany	8.3	1.3%	0.70	12
Viet Nam	7.3	1.2%	0.34	22
Egypt	7.0	1.1%	0.24	30
Philippines	6.9	1.1%	0.15	47
Türkiye	6.9	1.1%	0.41	17
Ethiopia	6.4	1.0%	0.02	345
South Korea	6.3	1.0%	0.65	10
South Africa	5.8	0.9%	0.48	12
United Kingdom	5.7	0.9%	0.36	16
Thailand	5.4	0.9%	0.29	19
France and Monaco	5.4	0.9%	0.32	17
Canada	5.3	0.8%	0.61	9
Italy, San Marino and the Holy See	5.1	0.8%	0.33	15
Democratic Republic of the Congo	5.0	0.8%	0.00	1,119
Saudi Arabia	4.9	0.8%	0.58	9
Spain and Andorra	4.0	0.6%	0.25	16
Poland	3.8	0.6%	0.31	12
Ukraine	3.6	0.6%	0.21	17
Tanzania	3.6	0.6%	0.02	210
Australia	3.5	0.6%	0.41	9
Argentina	3.5	0.6%	0.18	19
Algeria	3.4	0.5%	0.18	19
Iraq	3.3	0.5%	0.19	17
Colombia	3.3	0.5%	0.09	38
Myanmar/Burma	3.3	0.5%	0.03	95
Sudan and South Sudan	3.2	0.5%	0.02	137
Malaysia	3.2	0.5%	0.26	12
Kenya	3.1	0.5%	0.02	158
Taiwan	2.9	0.5%	0.29	10
Uganda	2.6	0.4%	0.01	375
Venezuela	2.5	0.4%	0.12	21
sum without EU	539		33	
sum across all countries	629		37	17

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>