

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	629	national budget
potential for net negative emissions	30%	overshoot
scenario type used for the reference values	-2%	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	-22%	-49%	-77%	12	8	32%	18%	2045	13	-
United States	-32%	-52%	-73%	5	15	14%	4%	2047	5	-
EU27	-32%	-47%	-61%	3	7	8%	6%	2054	3	-
India	2%	-16%	-34%	3	2	7%	18%	2059	2	-
Russia	-26%	-54%	-82%	2	13	5%	2%	2044	2	-
Japan	-33%	-49%	-65%	1	9	3%	2%	2051	1	-
sum				25		69%	50%		27	

largest national budgets 2020 - 2100	national budget	weighted key	emissions 2019	scope years
	Gt		Gt	
China	176.5	28.1%	11.81	15
United States	67.7	10.8%	4.97	14
India	64.1	10.2%	2.55	25
EU27	45.8	7.3%	2.91	16
Russia	25.8	4.1%	1.86	14
Japan	16.6	2.6%	1.12	15
Indonesia	14.2	2.3%	0.64	22
Brazil	10.8	1.7%	0.47	23
Iran	10.6	1.7%	0.71	15
Germany	10.4	1.6%	0.70	15
Mexico	9.2	1.5%	0.49	19
South Korea	9.1	1.4%	0.65	14
Canada	8.2	1.3%	0.61	13
Saudi Arabia	7.8	1.2%	0.58	13
Pakistan	7.4	1.2%	0.20	37
South Africa	7.2	1.1%	0.48	15
Türkiye	7.0	1.1%	0.41	17
Nigeria	6.4	1.0%	0.13	51
Viet Nam	6.4	1.0%	0.34	19
United Kingdom	5.9	0.9%	0.36	17
Australia	5.5	0.9%	0.41	14
France and Monaco	5.5	0.9%	0.32	17
Italy, San Marino and the Holy See	5.4	0.9%	0.33	16
Bangladesh	5.4	0.9%	0.11	50
Egypt	5.3	0.8%	0.24	22
Thailand	5.1	0.8%	0.29	18
Poland	4.7	0.7%	0.31	15
Philippines	4.4	0.7%	0.15	30
Spain and Andorra	4.2	0.7%	0.25	16
Taiwan	4.1	0.6%	0.29	14
Malaysia	3.9	0.6%	0.26	15
Ukraine	3.6	0.6%	0.21	17
Iraq	3.3	0.5%	0.19	17
Argentina	3.3	0.5%	0.18	18
Algeria	3.2	0.5%	0.18	18
Kazakhstan	3.1	0.5%	0.22	14
Ethiopia	2.9	0.5%	0.02	158
United Arab Emirates	2.6	0.4%	0.20	13
Netherlands	2.3	0.4%	0.16	15
Colombia	2.3	0.4%	0.09	26
Venezuela	2.2	0.4%	0.12	19
Uzbekistan	2.2	0.3%	0.12	19
Democratic Republic of the Congo	2.2	0.3%	0.00	489
Morocco	1.8	0.3%	0.07	24
sum without EU	560		34	
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>