

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
weighting population in the weighted key	677	national budget
potential for net negative emissions	85%	overshoot
scenario type used for the reference values	-2%	RM-4-quadr
		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%	-95%	-102%	12	8	32%	18%	2037	15	0.8%
United States	-69%	-102%	-102%	5	15	14%	4%	2033	7	0.3%
EU27	-29%	-48%	-71%	3	7	8%	6%	2052	3	-2.4%
India	59%	78%	65%	3	2	7%	18%	2061	2	4.6%
Russia	-79%	-102%	-102%	2	13	5%	2%	2032	3	3.1%
Japan	-35%	-66%	-93%	1	9	3%	2%	2044	1	-3.5%
sum				25		69%	50%		31	

largest national budgets 2020 - 2100	national budget	weighted key	emissions 2019	scope years
	Gt	Gt		
China	138.7	20.5%	11.81	12
India	109.2	16.1%	2.55	43
EU27	41.1	6.1%	2.91	14
United States	38.3	5.7%	4.97	8
Indonesia	21.9	3.2%	0.64	34
Brazil	17.1	2.5%	0.47	37
Russia	15.9	2.3%	1.86	9
Pakistan	15.8	2.3%	0.20	80
Nigeria	15.3	2.3%	0.13	122
Bangladesh	12.8	1.9%	0.11	117
Japan	12.6	1.9%	1.12	11
Mexico	11.2	1.7%	0.49	23
Philippines	8.5	1.3%	0.15	57
Ethiopia	8.3	1.2%	0.02	447
Egypt	8.2	1.2%	0.24	35
Viet Nam	8.2	1.2%	0.34	24
Iran	8.2	1.2%	0.71	11
Germany	8.1	1.2%	0.70	12
Türkiye	7.3	1.1%	0.41	18
Democratic Republic of the Congo	6.5	1.0%	0.00	1,458
United Kingdom	6.0	0.9%	0.36	17
Thailand	6.0	0.9%	0.29	21
France and Monaco	5.8	0.9%	0.32	18
South Africa	5.7	0.8%	0.48	12
South Korea	5.6	0.8%	0.65	9
Italy, San Marino and the Holy See	5.3	0.8%	0.33	16
Tanzania	4.6	0.7%	0.02	270
Canada	4.5	0.7%	0.61	7
Spain and Andorra	4.2	0.6%	0.25	16
Saudi Arabia	4.2	0.6%	0.58	7
Myanmar/Burma	4.1	0.6%	0.03	121
Sudan and South Sudan	4.1	0.6%	0.02	175
Colombia	4.0	0.6%	0.09	46
Kenya	4.0	0.6%	0.02	203
Argentina	3.9	0.6%	0.18	21
Ukraine	3.8	0.6%	0.21	18
Poland	3.7	0.5%	0.31	12
Algeria	3.7	0.5%	0.18	20
Iraq	3.6	0.5%	0.19	18
Uganda	3.4	0.5%	0.01	486
Malaysia	3.1	0.5%	0.26	12
Australia	3.0	0.4%	0.41	7
Morocco	2.9	0.4%	0.07	41
Afghanistan	2.8	0.4%	0.01	232
sum without EU	574		33	
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>