

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	100%	national budget
potential for net negative emissions	-2%	overshoot
scenario type used for the reference values	RM-3-lin	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	-54%	-97%	-102%	12	8	32%	18%	2036	15	0.8%
United States	-102%	-102%	-102%	5	15	14%	4%	2030	7	0.3%
EU27	-36%	-61%	-82%	3	7	8%	6%	2052	3	-2.4%
India	50%	53%	37%	3	2	7%	18%	2075	1	4.6%
Russia	-102%	-102%	-102%	2	13	5%	2%	2030	3	3.1%
Japan	-51%	-84%	-98%	1	9	3%	2%	2042	1	-3.5%
sum				25		69%	50%		30	

largest national budgets 2020 - 2100	national budget	weighted key	emissions 2019	scope years
	Gt	Gt		
China	115.8	18.4%	11.81	10
India	111.6	17.7%	2.55	44
EU27	36.2	5.7%	2.91	12
United States	26.8	4.3%	4.97	5
Indonesia	22.0	3.5%	0.64	34
Brazil	17.3	2.8%	0.47	37
Pakistan	16.7	2.7%	0.20	84
Nigeria	16.4	2.6%	0.13	130
Bangladesh	13.7	2.2%	0.11	125
Russia	11.7	1.9%	1.86	6
Mexico	10.8	1.7%	0.49	22
Japan	10.3	1.6%	1.12	9
Ethiopia	9.0	1.4%	0.02	486
Philippines	8.8	1.4%	0.15	60
Egypt	8.3	1.3%	0.24	35
Viet Nam	7.9	1.3%	0.34	24
Democratic Republic of the Congo	7.1	1.1%	0.00	1,591
Türkiye	6.8	1.1%	0.41	16
Iran	6.8	1.1%	0.71	9
Germany	6.7	1.1%	0.70	10
Thailand	5.7	0.9%	0.29	20
United Kingdom	5.5	0.9%	0.36	15
France and Monaco	5.3	0.8%	0.32	17
Tanzania	5.0	0.8%	0.02	292
Italy, San Marino and the Holy See	4.8	0.8%	0.33	15
South Africa	4.7	0.8%	0.48	10
Myanmar/Burma	4.4	0.7%	0.03	129
Sudan and South Sudan	4.4	0.7%	0.02	189
Kenya	4.3	0.7%	0.02	219
South Korea	4.2	0.7%	0.65	6
Colombia	4.1	0.6%	0.09	47
Spain and Andorra	3.8	0.6%	0.25	15
Uganda	3.7	0.6%	0.01	528
Argentina	3.7	0.6%	0.18	20
Ukraine	3.6	0.6%	0.21	17
Algeria	3.5	0.6%	0.18	19
Iraq	3.3	0.5%	0.19	17
Poland	3.1	0.5%	0.31	10
Canada	3.0	0.5%	0.61	5
Afghanistan	3.0	0.5%	0.01	251
Morocco	3.0	0.5%	0.07	42
Saudi Arabia	2.8	0.4%	0.58	5
Peru	2.7	0.4%	0.06	46
Uzbekistan	2.7	0.4%	0.12	23
sum without EU	529		32	
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>