

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	0%	national budget
potential for net negative emissions	-2%	overshoot
scenario type used for the reference values	RM-5-rad	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	-13%	-47%	-73%	12	8	32%	18%	2057	10	0.8%
United States	-22%	-45%	-65%	5	15	14%	4%	2065	3	0.3%
EU27	-32%	-49%	-64%	3	7	8%	6%	2074	1	-1.9%
India	0%	-50%	-81%	3	2	7%	18%	2051	3	4.6%
Russia	-8%	-44%	-73%	2	13	5%	2%	2055	2	3.1%
Japan	-34%	-51%	-65%	1	9	3%	2%	2076	1	-3.0%
sum				25		69%	50%		20	

largest national budgets 2020 - 2100	national budget	weighted key	emissions 2019	scope years
	Gt		Gt	
China	202.5	32.2%	11.81	17
United States	85.2	13.5%	4.97	17
EU27	49.9	7.9%	2.91	17
India	43.7	7.0%	2.55	17
Russia	31.9	5.1%	1.86	17
Japan	19.3	3.1%	1.12	17
Iran	12.2	1.9%	0.71	17
Germany	11.9	1.9%	0.70	17
South Korea	11.2	1.8%	0.65	17
Indonesia	10.9	1.7%	0.64	17
Canada	10.4	1.7%	0.61	17
Saudi Arabia	9.9	1.6%	0.58	17
Mexico	8.5	1.3%	0.49	17
South Africa	8.2	1.3%	0.48	17
Brazil	8.0	1.3%	0.47	17
Türkiye	7.1	1.1%	0.41	17
Australia	7.0	1.1%	0.41	17
United Kingdom	6.2	1.0%	0.36	17
Viet Nam	5.8	0.9%	0.34	17
Italy, San Marino and the Holy See	5.7	0.9%	0.33	17
France and Monaco	5.5	0.9%	0.32	17
Poland	5.3	0.9%	0.31	17
Taiwan	5.0	0.8%	0.29	17
Thailand	4.9	0.8%	0.29	17
Malaysia	4.4	0.7%	0.26	17
Spain and Andorra	4.4	0.7%	0.25	17
Egypt	4.1	0.6%	0.24	17
Kazakhstan	3.8	0.6%	0.22	17
Ukraine	3.6	0.6%	0.21	17
Pakistan	3.4	0.5%	0.20	17
United Arab Emirates	3.4	0.5%	0.20	17
Iraq	3.3	0.5%	0.19	17
Argentina	3.1	0.5%	0.18	17
Algeria	3.1	0.5%	0.18	17
Netherlands	2.7	0.4%	0.16	17
Philippines	2.5	0.4%	0.15	17
Nigeria	2.2	0.3%	0.13	17
Venezuela	2.1	0.3%	0.12	17
Qatar	2.0	0.3%	0.12	17
Uzbekistan	2.0	0.3%	0.12	17
Bangladesh	1.9	0.3%	0.11	17
Czechia	1.8	0.3%	0.10	17
Belgium	1.7	0.3%	0.10	17
Kuwait	1.7	0.3%	0.10	17
sum without EU	583		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>