

more different framework data and corresponding results at: <http://results-esp.msave-the-climate.info>

framework data (input values here: yellow fields)			determination
global CO2 budget 2020 - 2100	Gt	650	global budget
land-use change (LUC) emissions 2020 - 2100		0	
international shipping and aviation (ISA) emissions 2020 - 2100	3%	-20	
global CO2 budget 2020 - 2100 to distribute here		630	
weighting population key in the weighted key		15%	national budget
scenario type used for the reference values		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.

reference values for the countries with the highest emissions					emissions	per capita	share in	share in	year	normalised
target year:	2030		2050		2019	2019	global	global	emissions	change
reference year:	1990	2019	1990	2019	in Gt	in t	emissions	population	neutrality	rate
China	348%	-8%	-100%	-100%	11.8	8	32%	18%	2045	2.4%
United States	-34%	-33%	-94%	-94%	5.0	15	14%	4%	2057	-3.0%
EU27	-54%	-39%	-88%	-85%	2.9	7	8%	6%	2070	-4.7%
India	310%	-4%	-64%	-92%	2.6	2	7%	18%	2056	0.3%
Russia	-27%	-7%	-100%	-100%	1.9	13	5%	2%	2043	3.9%
Japan	-34%	-33%	-92%	-92%	1.1	9	3%	2%	2058	-3.1%
sum							69%	50%		

largest national budgets 2020 - 2100	national budget	weighted key	emissions 2019	scope years
	Gt		Gt	
China	189.2	30.0%	11.77	16
United States	77.2	12.2%	5.01	15
India	54.2	8.6%	2.56	21
EU27	48.1	7.6%	2.92	16
Russia	29.2	4.6%	1.88	16
Japan	18.2	2.9%	1.14	16
Indonesia	12.8	2.0%	0.65	20
Germany	11.3	1.8%	0.70	16
Iran	10.8	1.7%	0.67	16
South Korea	10.1	1.6%	0.65	16
Brazil	9.6	1.5%	0.48	20
Canada	9.3	1.5%	0.61	15
Saudi Arabia	8.8	1.4%	0.58	15
Mexico	8.6	1.4%	0.48	18
South Africa	7.6	1.2%	0.47	16
Turkey	7.1	1.1%	0.42	17
Australia	6.2	1.0%	0.41	15
United Kingdom	6.2	1.0%	0.37	17
Vietnam	6.1	1.0%	0.33	18
Italy, San Marino and the Holy See	5.6	0.9%	0.33	17
France and Monaco	5.5	0.9%	0.32	17
Pakistan	5.4	0.9%	0.20	27
Egypt	5.2	0.8%	0.27	19
Poland	5.0	0.8%	0.31	16
Thailand	5.0	0.8%	0.28	18
Taiwan	4.4	0.7%	0.28	16
Spain and Andorra	4.3	0.7%	0.26	17
Malaysia	4.3	0.7%	0.27	16
Nigeria	4.2	0.7%	0.12	35
Bangladesh	3.6	0.6%	0.10	34
Philippines	3.5	0.6%	0.15	23
Kazakhstan	3.5	0.6%	0.22	16
Ukraine	3.4	0.5%	0.20	17
Argentina	3.2	0.5%	0.18	18
Iraq	3.1	0.5%	0.18	17
Algeria	3.1	0.5%	0.18	18
United Arab Emirates	3.0	0.5%	0.20	15
Netherlands	2.5	0.4%	0.16	16
Uzbekistan	2.2	0.3%	0.12	18
Venezuela	2.1	0.3%	0.12	18
Colombia	1.8	0.3%	0.08	22
Ethiopia	1.6	0.3%	0.02	83
Czechia	1.6	0.3%	0.10	16
Belgium	1.6	0.3%	0.10	16
sum without EU	572		34	
sum across all countries	630		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 Regensburg Model 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 to making **political decisions** about emission **paths**.

Brief description of the ESPM:

[https://www.klima-rettet.info/PDF/ESPM\\_Background.pdf](https://www.klima-rettet.info/PDF/ESPM_Background.pdf)

Brief description of the RM Scenario Types:

[https://www.klima-rettet.info/Downloads/RM-Scenario-Types\\_short.pdf](https://www.klima-rettet.info/Downloads/RM-Scenario-Types_short.pdf)

Published paper for the six largest emitters:

<https://doi.org/10.5281/zenodo.4764408>