

more different framework data and corresponding results at: <http://results-esp.msave-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	global budget
international shipping and aviation (ISA) emissions 2020 - 2100	0	
global CO2 budget 2020 - 2100 to distribute here	3%	
weighting population key in the weighted key	15%	national budget
scenario type used for the reference values	RM-5-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.

reference values for the countries with the highest emissions					emissions 2019 in Gt	per capita 2019 in t	share in global emissions 2019	accumulated share	year emissions neutrality	normalised change rate 2020
target year:	2030		2050							
reference year:	1990	2010	1990	2010						
China	246%	-10%	-50%	-87%	11.5	8	31%	31%	2064	2.2%
United States	-39%	-45%	-85%	-87%	5.0	15	14%	45%	2075	-2.4%
EU27	-56%	-51%	-85%	-84%	2.9	7	8%	53%	2094	-4.5%
India	254%	21%	7%	-63%	2.6	2	7%	60%	2080	1.5%
Russia	-51%	-33%	-90%	-87%	1.8	12	5%	65%	2071	-0.7%
Japan	-40%	-43%	-84%	-84%	1.1	9	3%	68%	2081	-3.0%

largest national budgets 2020 - 2100	national budget	weighted key	emissions 2019	scope years
	Gt		Gt	
China	200.7	29.6%	11.50	17
United States	83.9	12.4%	5.04	17
India	58.6	8.6%	2.56	23
EU27	52.2	7.7%	2.93	18
Russia	30.0	4.4%	1.78	17
Japan	19.7	2.9%	1.14	17
Indonesia	13.8	2.0%	0.65	21
Germany	12.2	1.8%	0.70	17
Iran	11.9	1.8%	0.69	17
South Korea	11.2	1.6%	0.66	17
Brazil	10.3	1.5%	0.48	22
Canada	9.9	1.5%	0.60	17
Saudi Arabia	9.8	1.4%	0.59	17
Mexico	9.4	1.4%	0.49	19
South Africa	8.2	1.2%	0.47	17
Turkey	7.6	1.1%	0.41	18
Australia	6.9	1.0%	0.41	17
United Kingdom	6.6	1.0%	0.36	18
Vietnam	6.5	1.0%	0.33	20
Pakistan	6.3	0.9%	0.22	29
Italy, San Marino and the Holy See	6.1	0.9%	0.33	18
France and Monaco	5.9	0.9%	0.32	18
Egypt	5.8	0.9%	0.28	20
Poland	5.4	0.8%	0.31	17
Thailand	5.2	0.8%	0.27	19
Taiwan	4.8	0.7%	0.28	17
Nigeria	4.8	0.7%	0.13	36
Spain and Andorra	4.7	0.7%	0.26	18
Malaysia	4.6	0.7%	0.26	17
Kazakhstan	4.6	0.7%	0.27	17
Bangladesh	3.9	0.6%	0.11	35
Philippines	3.8	0.6%	0.15	25
Iraq	3.8	0.6%	0.21	18
Ukraine	3.7	0.5%	0.20	19
Argentina	3.6	0.5%	0.19	19
United Arab Emirates	3.5	0.5%	0.21	16
Algeria	3.4	0.5%	0.18	19
Netherlands	2.7	0.4%	0.16	17
Colombia	2.1	0.3%	0.09	23
Venezuela	2.1	0.3%	0.11	19
Uzbekistan	1.9	0.3%	0.09	21
Czechia	1.8	0.3%	0.11	17
Ethiopia	1.8	0.3%	0.02	93
Qatar	1.8	0.3%	0.11	16
sum without EU	615		34	
sum across all countries	679		37	19

**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>