more different framework data and corresponding results at: http://results-espm.save-the-climate.info

framework data (input values here: yellow fields)		Gt	determination
global CO2 budget 2018 - 2100		**680**	global budget
land-use change (LUC) emissions 2018 - 2100		0	
international shipping and aviation (ISA) emissions 2018 - 2100	3%	-20	
global CO2 emissions 2018 - 2019 without LUC and ISA		-73	
global CO2 budget 2020 - 2100 to distribute here		587	
weighting population key in the weighted key	**30%**		national budget
scenario type used for the reference values	**RM-4-quadr**		reference values
minimum annual **emissions** as a percentage of the country's current emissions	**0%**		

Calculation **global budget** to distribute here:

LUC and ISA emissions are not considered here. LUC and ISA budgets are therefore offset against the global budget. The emissions for countries used and the country budgets determined here also do not include LUC and ISA emissions.

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	accu-mulated share	temporary overshoot in Gt	reduction rate used 2020
target year:	2030		2050							
reference year:	1990	2010	1990	2010						
China	233%	-13%	-100%	-100%	11.5	8	31%	31%	0	-1.7%
United States	-37%	-43%	-100%	-100%	5.1	16	14%	45%	0	-2.4%
EU27	-45%	-39%	-100%	-100%	2.9	7	8%	53%	0	-1.7%
India	271%	26%	17%	-60%	2.6	2	7%	61%	0	-1.1%
Russia	-51%	-32%	-100%	-100%	1.8	12	5%	65%	0	-1.8%
Japan	-31%	-34%	-100%	-100%	1.2	9	3%	69%	0	-1.8%

largest national budgets 2020 - 2100	national budget	weighted key	emissions 2019	scope years
	Gt		Gt	
China	161.9	27.6%	11.5	14.0
United States	64.7	11.0%	5.1	12.7
India	60.3	10.3%	2.6	23.2
EU28	48.7	8.3%	3.3	14.7
EU27	43.1	7.3%	2.9	14.7
Russia	23.4	4.0%	1.8	13.1
Japan	15.8	2.7%	1.2	13.7
Indonesia	13.2	2.2%	0.6	21.1
Brazil	10.2	1.7%	0.5	21.3
Germany	9.8	1.7%	0.7	13.9
Iran	9.8	1.7%	0.7	13.9
South Korea	8.5	1.4%	0.7	13.0
Mexico	8.3	1.4%	0.5	17.2
Saudi Arabia	7.7	1.3%	0.6	12.5
Pakistan	7.4	1.3%	0.2	33.3
Canada	7.4	1.3%	0.6	12.7
South Africa	6.9	1.2%	0.5	13.9
Turkey	6.6	1.1%	0.4	15.8
Nigeria	5.7	1.0%	0.1	56.9
United Kingdom	5.6	1.0%	0.4	15.4
Vietnam	5.6	1.0%	0.3	18.4
Australia	5.4	0.9%	0.4	12.5
Egypt	5.2	0.9%	0.3	20.2
Italy, San Marino and the Holy See	5.1	0.9%	0.3	15.4
France and Monaco	5.0	0.9%	0.3	15.9
Bangladesh	5.0	0.8%	0.1	45.0
Thailand	4.7	0.8%	0.3	17.0
Poland	4.4	0.8%	0.3	13.9
Philippines	4.2	0.7%	0.2	27.6
Spain and Andorra	4.0	0.7%	0.3	15.3
Taiwan	3.6	0.6%	0.3	13.2
Kazakhstan	3.5	0.6%	0.3	12.7
Malaysia	3.5	0.6%	0.2	14.1
Argentina	3.3	0.6%	0.2	16.3
Ukraine	3.2	0.5%	0.2	16.3
Iraq	3.1	0.5%	0.2	15.7
Algeria	3.0	0.5%	0.2	16.6
Ethiopia	2.8	0.5%	0.0	151.3
United Arab Emirates	2.7	0.5%	0.2	12.2
Netherlands	2.1	0.4%	0.2	13.7
Colombia	2.1	0.4%	0.1	24.5
Democratic Republic of the Congo	2.0	0.3%	0.0	674.8
Venezuela	1.9	0.3%	0.1	17.1
Uzbekistan	1.8	0.3%	0.1	19.1
sum without EU	520		34	
sum across all countries	587		37	16.0

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.

Important parameters

The **weighting of the population distribution key** is an important parameter when determining **national budgets**.

An important parameter for determining the **national paths** is the potential for **net negative emissions** that is assumed. If net negative emissions are taken into account (percentage for the minimum value of emissions is negative), the budget is temporarily exceeded (overshoot). Please note: The actual potential of negative emissions is very uncertain. In addition, a resulting **overshoot** can be problematic with regard to the **tipping points** in the climate system. Negative emissions are only taken into account in this tool from the non-LUC sector, as a separate budget is set for LUC emissions (see above).

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**.

Brief description of the RM Scenario Types:
https://www.klima-retten.info/Downloads/RM-Scenario-Types_short.pdf