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

| **framework data** (input values here: yellow fields) | | | |
|---|---|---|---|
| | | Gt | |
| **global CO2 budget 2018 - 2100** | | **570** | global budget |
| land-use change **(LUC)** emissions from 2018 on | **16%** | -91 | |
| international shipping and aviation (ISA) emissions from 2018 on | 3% | -17 | |
| global CO2 emissions 2018 - 2019 without LUC and ISA | | -73 | |
| global CO2 budget 2020 - 2100 to distribute here | | 389 | |
| **weighting population** key in the weighted key | **70%** | | national budget |
| | | | |
| scenario type used for the reference values | **RM-6-abs** | | reference values |
| **minimum** annual **emissions** as a percentage of the country's current emissions | **-10%** | | |

**global budget** to distribute here:

**LUC** and ISA emissions are subtracted from the global budget because no reliable data are available at the country level. The emissions for countries used and the country budgets determined here also do not include LUC and ISA 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 | 183% | -26% | -148% | -73% | 11.5 | 8 | 31% | 31% | 62 | -3.7% |
| United States | -47% | -52% | -110% | -91% | 5.1 | 16 | 14% | 45% | 29 | -4.3% |
| EU27 | -53% | -47% | -107% | -78% | 2.9 | 7 | 8% | 53% | 15 | -3.5% |
| India | 238% | 15% | 66% | -14% | 2.6 | 2 | 7% | 61% | 7 | -2.0% |
| Russia | -59% | -43% | -107% | -86% | 1.8 | 12 | 5% | 65% | 10 | -4.1% |
| Japan | -42% | -44% | -110% | -82% | 1.2 | 9 | 3% | 69% | 6 | -3.9% |

| **largest national budgets 2020 - 2100** | national budget | weighted key | emissions 2019 | scope years |
|---|---|---|---|---|
| | Gt | | Gt | |
| China | 87.3 | 22.5% | 11.5 | 7.6 |
| India | 56.5 | 14.5% | 2.6 | 21.7 |
| EU28 | 28.6 | 7.4% | 3.3 | 8.7 |
| United States | 27.9 | 7.2% | 5.1 | 5.5 |
| EU27 | 25.0 | 6.4% | 2.9 | 8.5 |
| Indonesia | 11.5 | 3.0% | 0.6 | 18.4 |
| Russia | 10.8 | 2.8% | 1.8 | 6.1 |
| Brazil | 9.0 | 2.3% | 0.5 | 18.8 |
| Pakistan | 8.4 | 2.1% | 0.2 | 37.3 |
| Japan | 8.1 | 2.1% | 1.2 | 7.1 |
| Nigeria | 7.4 | 1.9% | 0.1 | 73.9 |
| Bangladesh | 6.1 | 1.6% | 0.1 | 55.4 |
| Mexico | 6.0 | 1.6% | 0.5 | 12.5 |
| Germany | 5.2 | 1.3% | 0.7 | 7.4 |
| Iran | 5.2 | 1.3% | 0.7 | 7.3 |
| Vietnam | 4.4 | 1.1% | 0.3 | 14.3 |
| Egypt | 4.4 | 1.1% | 0.3 | 17.0 |
| Philippines | 4.3 | 1.1% | 0.2 | 28.5 |
| Turkey | 4.3 | 1.1% | 0.4 | 10.3 |
| Ethiopia | 4.0 | 1.0% | 0.0 | 219.8 |
| South Korea | 3.9 | 1.0% | 0.7 | 6.0 |
| South Africa | 3.6 | 0.9% | 0.5 | 7.4 |
| United Kingdom | 3.5 | 0.9% | 0.4 | 9.7 |
| Thailand | 3.3 | 0.9% | 0.3 | 12.1 |
| France and Monaco | 3.3 | 0.8% | 0.3 | 10.5 |
| Italy, San Marino and the Holy See | 3.2 | 0.8% | 0.3 | 9.6 |
| sum without EU | 291 | | 29 | |
| | | | | |
| sum across all countries | 389 | | 37 | 10.6 |

**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 scenario types **RM 1 - 6** to derive plausible national paths that adhere to a national budget.

The **weighting of the population distribution key** is therefore 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. This is given here by the minimum value of annual emissions up to 2100 as a percentage of the country's current emissions. A negative percentage stands for net negative emissions. If net negative emissions are taken into account, the budget is temporarily exceeded (overshoot). Please note: The potential of negative emissions is controversial. In addition, a resulting **overshoot** can be problematic with regard to the **tipping points** in the climate system.

**Basic idea behind the RM Scenario Types 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**.

Here is a brief description of the RM Scenario Types:
https://www.klima-retten.info/Downloads/RM-Scenario-Types_short.pdf