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## Methodology Note

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## 2030 EU Carbon Calculator

The EU 2030 Reduction Effort Calculator prepared for WWF Germany allows the calculation of the greenhouse gas reduction effort by the EU in the period 2021 to 2030. It is based on the Council Conclusions from October 2014, the proposals for the 4<sup>th</sup> Phase of the EU ETS and the Effort Sharing Regulation (ESR) for 2021-2030.

All calculations are based on the following data sources:

- Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC to enhance cost-effective emission reductions and low-carbon investments. COM(2015) 337 final, Brussels ([http://ec.europa.eu/clima/policies/ets/revision/docs/com\\_2015\\_337\\_en.pdf](http://ec.europa.eu/clima/policies/ets/revision/docs/com_2015_337_en.pdf)).
- Proposal for a Regulation of the European Parliament and of the Council on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 for a resilient Energy Union and to meet commitments under the Paris Agreement and amending Regulation No 525/2013 of the European Parliament and the Council on a mechanism for monitoring and reporting greenhouse gas emissions and other information relevant to climate change. COM(2016)482/F1 - EN.
- Trends and projections in Europe 2015, EEA Report No 4/2015, EEA (<http://www.eea.europa.eu/publications/trends-and-projections-in-europe-2015>).
- Trends and projections in the EU ETS in 2015, EEA Technical report 14/2015, European Environment Agency (<http://www.eea.europa.eu/publications/trends-and-projections-eu-ets-2015>).
- 'EEA greenhouse gas data viewer' (<http://www.eea.europa.eu/data-and-maps/data/data-viewers/greenhouse-gases-viewer>).
- 'EU ETS data viewer' (<http://www.eea.europa.eu/data-and-maps/data/data-viewers/emissions-trading-viewer>)
- EU Effort Sharing for the 2021-2030 period, Graichen, J., Graichen, V. and Cook, V., 2016, Öko-Institut, Berlin.

The tool calculates the annual target path, the overall emissions budget 2021-2030 and the reduction effort necessary to achieve that budget. For the purposes of this tool the reduction effort is defined as the aggregated difference between constant 2020 emissions and the annual emission limit for sectors covered by the EU ETS and the Effort Sharing Decision for the years 2021-2030. The reduction effort depends on

- The annual reduction targets as defined by starting and end level;
- The level and treatment of surplus units under the ETS and ESD until 2020;
- The treatment of LULUCF emissions and removals; and
- The implementation of the Market Stability Reserve.

The following assumptions have been made in the development of the tool:

- The linear trajectories are calculated as if emissions and allocation for a given year were identical. This is not necessarily the case: in both the ETS as well as the ESR it is possible to bank and borrow emission certificates. Especially if there is a surplus of units in the system in the early years those certificates will likely be used toward 2030 effectively increasing emissions then.
- In theory both ETS and ESR have linear reduction paths 2021-30. Deviations from this path are due to several factors:
  - The Market Stability Reserve removes ETS allowances from the market in the years up to 2026. It starts issuing additional EUA from 2029 onwards.
  - The EUA surplus entering the market during the 4<sup>th</sup> trading period is calculated as the difference between the surplus at the end of 2020 and the end of 2030. This quantity is distributed evenly across all ten years.
  - The right to offset emissions in the ESR with reductions in the land-use and forestry sector is introduced into the market in a triangular form (no additional emission rights in 2021 and most rights in 2030). The reason for this is, that MS are expected to be long under the commission proposal in the early years and will therefore use those additional emission quantities later in the period. This is consistent with the approach used by the European Commission in the Impact Assessment for the ESR.
- Aviation is included in the “half scope”, i.e. all flights departing from EU airports independently of the destination of the flight. The treatment of aviation in the 2030 climate targets depends on the inclusion of the sector in the EU ETS. The Commission is expected to make a proposal on the scope of the aviation ETS later in 2016.