**LIFE CYCLE INVENTORY DATA AND ENVIRONMENTAL METRICS FOR THE PRIMARY ALUMINIUM INDUSTRY**

**Appendix F**

**2019 DATA**

***DRAFT***

Nov 2022

**Appendix F: Recalculation of 2015 LCIs**

Due to changes of the primary aluminium cradle-to-gate model, as well as the update Gabi software, 2015 LCIA are recalculated via the same platform as used for 2019 data analysis, taking 2015 LCIs as data input.

**Changes to the model**

* Electricity supply: inclusion of net losses as a parameter
* Update of the petroleum coke dataset to calcined petroleum coke
* Anode consumption net values is replaced by gross consumption, with butt values
* Low voltage PFC emissions is added by following the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories

Split the refining module into digestion and calcination

**Recalculated 2015 LCIA**

|  |  |
| --- | --- |
|  | Global |
| *Bauxite → Alumina → Aluminium* | ***GLO*** |
| Acidification Potential (AP) [kg SO2-Equiv.] | 86 |
| Depletion of fossil energy resources (DFE) [MJ] | 164,000 |
| Eutrophication Potential (EP) [kg Phosphate-Equiv.] | 6 |
| Global Warming Potential (GWP 100 years) [tonne CO2-Equiv.] | 17 |
| Ozone Layer Depletion Potential [kg R11-Equiv.] | 2.5E-9 |
| Photochemical Ozone Creation Potential (POCP) [kg Ethene-Equiv.] | 6 |

**Breakdown of recalculated 2015 GHG emissions at global level**

Calendar

Description automatically generated