Shell's Net Carbon Footprint is a measure of the emissions intensity of the portfolio of energy products sold by Shell. The intended use of the metric is to track progress in reducing the overall emissions intensity of Shell's energy products portfolio, as described in Shell's Net Carbon Footprint ambition.

The calculation includes greenhouse gas emissions – on an equity basis – from several sources, including emissions directly from Shell operation; those third parties' emissions caused by supplying energy for that production of the products we sell; and our customers' emissions from consumption of the products we sell. Emissions from the extraction, transportation and processing of crude oil or gas or other feedstocks, transport of products to, and our customer' emission from the use of products we sell are included. Also included are emissions from elements of this life-cycle not owned by Shell, such as oil and gas processed by Shell not produced by Shell; or from oil products and electricity marketed by Shell that have not been processed or generated at a Shell facility. Emissions compensated through various measures, such as by working with nature to create carbon sinks – such as forests and wetlands – or mitigated by using carbon capture and storage technology are also taken into account.

A. The following supply chains and steps in the product lifecycles are included in the Net Carbon Footprint:

   - Oil products: (i) crude oil production, (ii) transportation of crude oil (pipeline/shipping), (iii) refining, (iv) distribution of oil products, and (v) end use of oil products;
   - Pipeline gas: (i) gas production, (ii) transportation of gas via pipeline, and (iii) end use of gas;
   - Liquefied Natural Gas (LNG): (i) gas production, (ii) transportation of gas via pipeline, (iii) liquefaction, (iv) shipping of LNG products, (iv) regasification of LNG in recipient terminals, (v) local distribution of gas, and (vi) end use of gas;
   - Gas-to-Liquids (GTL) fuels: (i) gas production, (ii) transportation of gas via pipeline, (iii) gas-to-liquid processing, (iv) shipping of GTL products, (v) local distribution of GTL fuel products, (vi) end use of GTL fuels;
   - Biofuels: (i) production, (ii) transportation (domestic/shipping), (iii) distribution and (iv) end use of biofuels;
   - Electricity from renewable sources, solar and wind, converted to fossil energy equivalent and electricity purchased and re-sold from the national transmission/distribution networks;
   - CO_2 reductions: the impact of CO_2 reductions from carbon capture usage and storage (CCUS) projects, nature-based solutions (NBS) and other carbon offsets.

B. The following greenhouse gas emissions are not included in the Net Carbon Footprint calculation:

   - Emissions from production, processing, use and end-of-life treatment of non-energy products, such as chemicals and lubricants;
   - Emissions associated with construction and decommissioning of production and manufacturing facilities;
   - Emissions associated with the production of fuels purchased to generate energy onsite;
   - Other indirect emissions from waste generated in operations, business travel, employee commuting, transmission and distribution losses associated with imported electricity, franchises and investments;
   - Traded volumes of energy products not destined for use or marketing to end-customers;
   - Emissions from third-party processing of sold intermediate products;

- Emissions from capital goods and other goods and services not related to purchased energy feedstocks sourced from third parties or energy products manufactured by third parties and sold by Shell.

To calculate the Net Carbon Footprint, it is first necessary to establish the emissions intensity for each of the energy product supply chains in Shell's portfolio. This is done using established lifecycle analysis principles and includes both the emissions associated with bringing products to market and the emissions associated with their use. The individual intensities are then aggregated into a single value, with the weighting for each product determined by its sales volume. Emissions captured in sinks are deducted to give the final net value.

While the Net Carbon Footprint is an intensity measure and not an inventory of absolute emissions, a notional estimate of the amount of CO_{2e} emissions covered by the scope of the Net Carbon Footprint calculation can be derived from the final Net Carbon Footprint value for any year. Similarly, a fossil-equivalent estimate of the total amount of energy sold included in the calculation can also be determined. These estimated values for the years 2016, 2017 and 2018 are presented in the table below:

	2016	**2017**	**2018**
Estimated total energy (MJ) delivered by Shell*	2.093E+13	2.144E+13	2.200 E+13
Estimated greenhouse gas emissions covered by the Net Carbon Footprint calculation^ (million tonnes CO_{2e})	1645	1688	1731

*Total volume of energy products sold by Shell, aggregated on an energy basis, with electricity represented as fossil equivalents. This value is derived from energy product sales figures disclosed by Shell in the Annual Report, Form 20-F and the Sustainability Report.

^Total CO_{2e} emissions estimated using Shell's Net Carbon Footprint value and the estimate of total delivered energy. Note that this estimated value is calculated from the portfolio average intensity value which is determined in Shell's Net Carbon Footprint calculation. It is only intended to give an indication of the scope of the emissions included within Shell's Net Carbon Footprint, it does not represent an inventory of emissions.

Important Notes:

1. The Net Carbon Footprint is not a mathematical derivation of total emissions divided by total energy, nor is it an inventory of absolute emissions.
2. It is a weighted average of the lifecycle CO_2 intensities of different energy products normalising them to the same point relative to their final end-use. The use of a consistent functional unit (gCO_2e/MJ) allows like-for-like comparisons and the aggregation of individual lifecycle intensities for a range of energy products including renewables.
3. In order to calculate the energy content of the different products, their lower heating values are used to derive their energy content in megajoules using a fossil-equivalence approach for electricity.
4. Our Net Carbon Footprint is a comprehensive measure of the lifecycle carbon intensity of the energy products we sell. As such the boundary definitions used in calculating the Net Carbon Footprint cover a significantly broader scope than the reporting boundaries for Shell's annual GHG

reporting (Scope 1/2/3) under the Greenhouse Gas Protocol. As a result, the notional CO_{2e} emissions included within the scope of the Net Carbon Footprint calculation will differ from the sum of Shell's reported Scope 1,2 & 3 emissions.

5. For example, our Scope 3 emissions are calculated, in part, based upon our refineries outturn volumes, where our Net Carbon Footprint measure focuses on our sale volumes of energy products. Therefore, the above Net Carbon Footprint notional CO_{2e} estimates includes those volumes sold by us, which were refined by others. Our 2018 refinery outturn volumes were 2,858 thousand barrels per day (b/d), where our oil products sales volumes were 6,783 b/d. This same approach applies to all energy products we sell. While we believe it is more appropriate to focus on our Net Carbon Footprint measure, we are disclosing both measurements so that there is comparability with disclosures by our competitors.