



IT'S MORE THAN JUST OIL. IT'S LIQUID ENGINEERING.



# PAS 2060 Qualifying Explanatory Statement – Castrol Carbon Neutral Products

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2<sup>nd</sup> Application Period: January – December 2021

This is a PAS2060 Qualifying Explanatory Statement to demonstrate that Castrol has achieved carbon neutrality with a commitment to maintain in accordance with PAS2060:2014 reporting

## Carbon Neutrality Declaration

"Carbon neutrality of the products in scope achieved by Castrol in accordance with PAS 2060 at 31<sup>st</sup> December 2021 with the commitment to maintain to 31<sup>st</sup> December 2022, for the period commencing 1st January 2022, DNV certified"

DocuSigned by:

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11-10-2022

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This Qualifying Explanatory Statement (QES) contains all the required information on the carbon neutrality of the given subject. All information provided within this report has been reviewed by DNV Business Assurance Services UK Limited<sup>1</sup>, a third-party assurer. If provided with any information affecting the validity of the following statements, this document will be updated accordingly. This report will be made publicly available on Castrol's carbon neutral webpage: [www.castrol.com/cneutral](http://www.castrol.com/cneutral). The publicly available version will be redacted to protect commercially sensitive information and any internal milestones that underpin external aims.

This is Castrol's first declaration of achievement of carbon neutrality for this combined portfolio of products. Castrol has re-established its carbon neutral commitment with the launch of its PATH360 Sustainability Strategy in 2021 and subsets of this portfolio have achieved carbon neutrality over the 2014-2020 period. This combined and significantly increased set of products encompasses lead brands in every space Castrol sells to, all products sold in the Australia, New Zealand, and Vietnam markets, all products that have achieved carbon neutral historically and some additional ad hoc product lines having significant sales within key geographies. **Please see Annex D for a complete list of products in scope and their classification within this carbon neutral application.** As context, these products made up ~30% of Castrol's sales volume in 2021.

Castrol's carbon neutrality declaration has been reviewed and verified by an independent third party, DNV. Their Assurance Statement can be found in Annex B of this report.

<sup>1</sup> DNV is one of the world's leading certification and assurance bodies, helping businesses assure the performance of their organisations, products, people, facilities and supply chains through certification, verification, and assurance.

## 1. TERMS & DEFINITIONS

<b>100-year Global Warming Potential</b>	Factor describing the radiative forcing impact of one mass-based unit of a given greenhouse gas relative to an equivalent unit of carbon dioxide over a given period of time. NOTE: Carbon dioxide is assigned a GWP of 1, while the GWP of other gases is expressed relative to the GWP of carbon dioxide from fossil carbon sources. Global warming potentials for a 100-year time period are produced by the Intergovernmental Panel on Climate Change. <sup>2</sup>
<b>Carbon</b>	Carbon is used as shorthand for aggregated greenhouse gas (GHG) emissions, reported as carbon dioxide equivalents (CO <sub>2</sub> e). Throughout the report, the full term (CO <sub>2</sub> e) is employed. A full list of GHG emissions included in the inventory is provided in Annex C of this report
<b>Carbon Credit</b>	A generic term to assign a value to the carbon offset. One carbon credit is usually equivalent to one tonne of carbon dioxide.
<b>Carbon Offsets</b>	Discrete reduction in greenhouse gas emissions not arising from the defined subject, made available in the form of a carbon credit meeting the requirements of 9.1.2 of PAS 2060:2014 and used to counteract emissions from the defined subject. PAS 2060:2014 specifies that carbon offsets are acquired to compensate for residual greenhouse gas emissions arising from a defined subject, after taking emission reduction initiatives into account. Offsets are calculated relative to a baseline that represents a hypothetical scenario for what emissions would have been in the absence of the mitigation project that generates the offsets.
<b>GHG</b>	Greenhouse Gas refers to carbon dioxide (CO <sub>2</sub> ), methane (CH <sub>4</sub> ), nitrous oxide (N <sub>2</sub> O), sulphur hexafluoride (SF <sub>6</sub> ), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs). A full list of GHG emissions included in the inventory is provided in Annex C of this report
<b>GHGP</b>	Greenhouse Gas Protocol sets the standards to measure and report GHG emissions. Annex C of PAS 2060:2014 Table C.1 includes the GHG Protocol, Product lifecycle accounting and reporting standard as an example of a document providing methodologies appropriate for use in the quantification and reduction of GHG emissions. <a href="https://ghgprotocol.org/">Greenhouse Gas Protocol   (ghgprotocol.org)</a>
<b>GHGP Product Standard</b>	Greenhouse Gas Protocol Product Standard: <a href="https://ghgprotocol.org/">Product Standard   Greenhouse Gas Protocol (ghgprotocol.org)</a>

<sup>2</sup> Taken from the Terms and definitions in PAS 2060:2014

IPCC Fifth Assessment Report	The Intergovernmental Panel on Climate Change (IPCC) provides an international statement on the scientific understanding of climate change <a href="#">IPCC — Intergovernmental Panel on Climate Change</a>
I3P-1 (for third party)	The conformity assessment type as outlined in PAS2060, in this case: Independent 3P certification - commitment
I3P-3 (for independent third-party certification – unified)	The conformity assessment type as outlined in PAS2060, in this case: Independent 3P certification - unified (achievement of and future commitment to, carbon neutrality)
PAS 2060	Publicly available Specification for the Demonstration of Carbon Neutrality. PAS 2060:14 (referenced in this document) refers to the latest 2014 version of the document
QES	Collation of evidence in support of the declaration of a commitment to carbon neutrality and/or the declaration of achievement of carbon neutrality, in compliance with PAS 2060 (as per PAS 2060:2014).

## 2. INTRODUCTION

### 2.1 Foreword

This Qualifying Explanatory Statement (QES) demonstrates Castrol's achievement of carbon neutrality for its PATH360 Carbon Neutral Products at 31<sup>st</sup> December 2021 in accordance with PAS 2060, with the commitment to maintain such achievement to 31st December 2022, for the period commencing 1st January 2022. Please see Annex D for a summarized list of the scope of products and product types included in Castrol's Carbon Neutral Portfolio.

This QES provides details on how the carbon emissions of the products in scope were assessed, Castrol's carbon management plan inclusive of emission reduction initiatives and the carbon offset process which are used to demonstrate achievement of carbon neutrality. Castrol has been implementing carbon reduction activities in line with its carbon management plan but has made the decision in this first<sup>3</sup> Declaration of Achievement of carbon neutrality to

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<sup>3</sup> This is Castrol's first Declaration of Achievement of carbon neutrality for this combined group of products. However, in the past, Castrol has demonstrated achievement of carbon neutrality for several of the individual product brands within this scope of products including Professional, Vecton, PCO Europe and Japan and 2 Optigear products

## 5 PAS 2060 Qualifying Explanatory Statement: Carbon Neutral Products

offset the footprint of its products in scope as if they were unabated<sup>4</sup>. Castrol is in the process of reassessing the product carbon intensity of its carbon neutral products, and once this assessment completes, it will inform Castrol's 2nd Declaration of Achievement of carbon neutrality. Castrol's 2nd Declaration will verify the carbon reductions already in progress (examples including the transition to renewable power across 9 of its 23 owned manufacturing sites and the lightweighting of bottles to reduce both carbon emissions and the use of virgin plastic) with any residual emissions offset through the purchase and retirement of carbon credits. A checklist of requirements to demonstrate conformance to PAS 2060 and their respective location within the QES can be found in Annex A.

**Table 2.1 - General Information**

PAS 2060 Information Requirement	Information as it relates to Castrol Ltd
Entity making PAS 2060 declaration	Castrol Limited (hereafter "Castrol")
Individual responsible for the evaluation and provision of data necessary for the substantiation of the declaration including that of preparing, substantiating, communicating, and maintaining the declaration	Carolyn Bongard, Sustainability Accounting Manager
Subject of the declaration	Castrol's PATH360 carbon neutral products. See Annex D for a complete list of products in scope and their classification within this carbon neutral application.
Chosen consolidation approach (equity share, operational control, or financial control)	Operational Control
Characteristics of the subject	Castrol is a global lubricants manufacturing and marketing company offering a wide range of products and services across the automotive, industrial, marine and energy spaces. The subject of this carbon neutral declaration includes all products sold within a lead brand from each of these spaces. Some examples include EDGE in the passenger car motor oil space, VECTON for commercial vehicle engine oils, Industrial XBB and XBC products, Marine BIO

<sup>4</sup> This is done in accordance with the PAS 2060:2014 standard referencing Note 3 of Figure 1: Entities are able to make a Declaration of Achievement of carbon neutrality at the end of the first application period based solely on offsetting.

	RANGE, BRAYCO and TRANSAQUA energy products and OPTIGEAR in the wind space. With the addition of all products sold in Australia, New Zealand and Vietnam, the subject includes 37 unique product types across 6 spaces as can be seen in Annex D, Table D.2.
Rationale for the selection of the subject and boundary	Castrol is making this selection of products carbon neutral in support of its recently launched PATH360 Sustainability Strategy. Subsets of this portfolio have achieved carbon neutrality over the 2014-2020 period, but Castrol is re-establishing its carbon neutral commitment with the launch of this strategy and combining into one QES the historical carbon neutral ranges and several new ones. This results in a significantly increased set of products which includes a lead brand in every space as well as all products sold in the Australia, New Zealand, and Vietnam markets. For ease, this group of products will be referred to herein as 'average Castrol product'. Please see Annex D for more details.
Conformity assessment type	I3P-3 Independent third-party certification – unified
Baseline date (Date of first determined footprint)	1st Jan – 31 <sup>st</sup> Dec 2021
Achievement period for carbon neutrality	1st Jan – 31 <sup>st</sup> Dec 2021
Commitment period for carbon neutrality	1 <sup>st</sup> Jan – 31 <sup>st</sup> Dec 2022

## 2.2 PAS 2060 Carbon Neutrality

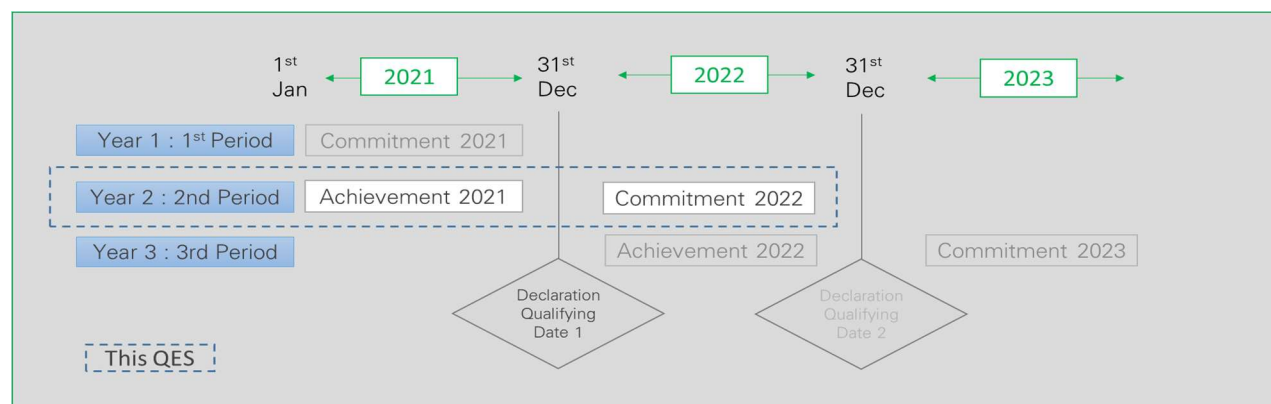
Castrol will demonstrate carbon neutrality as set out in PAS 2060:2014 using an independent 3rd party certification in accordance with 10.3.2 of PAS 2060:2014. For the application period following the baseline date, declaration I3P-1 from Annex A of PAS 2060:2014 has been used. For this second application period and all subsequent application periods with an unchanged subject, declaration I3P-3 modified as per A.2 of PAS 2060:2014 shall be used. In the event that material change to the subject occurs, the sequence shall be re-started on the basis of a newly defined subject.



Castrol is following the timeline for carbon neutrality in accordance to Figure 2.1 - Carbon Neutral Declaration Periods. This is Castrol's second application for carbon neutrality for this selected group of products. In 2021, Castrol demonstrated commitment to carbon neutrality. This aligned well with the launch of Castrol's PATH360 Sustainability Strategy. Now, in 2022, Castrol is submitting its Declaration of Achievement of carbon neutrality with the commitment to maintain ongoing. The baseline period remains 2021 (based on calendar year 2020 data), the subject has been defined (as described in Table 2.1) and its carbon footprint quantified. The QES is officially released to the public after the independent third-party assurance of Castrol's carbon neutral program and will be updated accordingly to reflect any changes and actions that could affect the validity of the declaration of achievement with the commitment to maintain.

A carbon management plan has been developed and implementation initiated to reduce emissions across the lifecycle of Castrol's products, and 100% of the emissions for the first achievement period have been offset through the purchase and retirement of carbon credits. See Table 6.1 for details on the projects associated with these carbon credits and the amounts that have been purchased and retired.

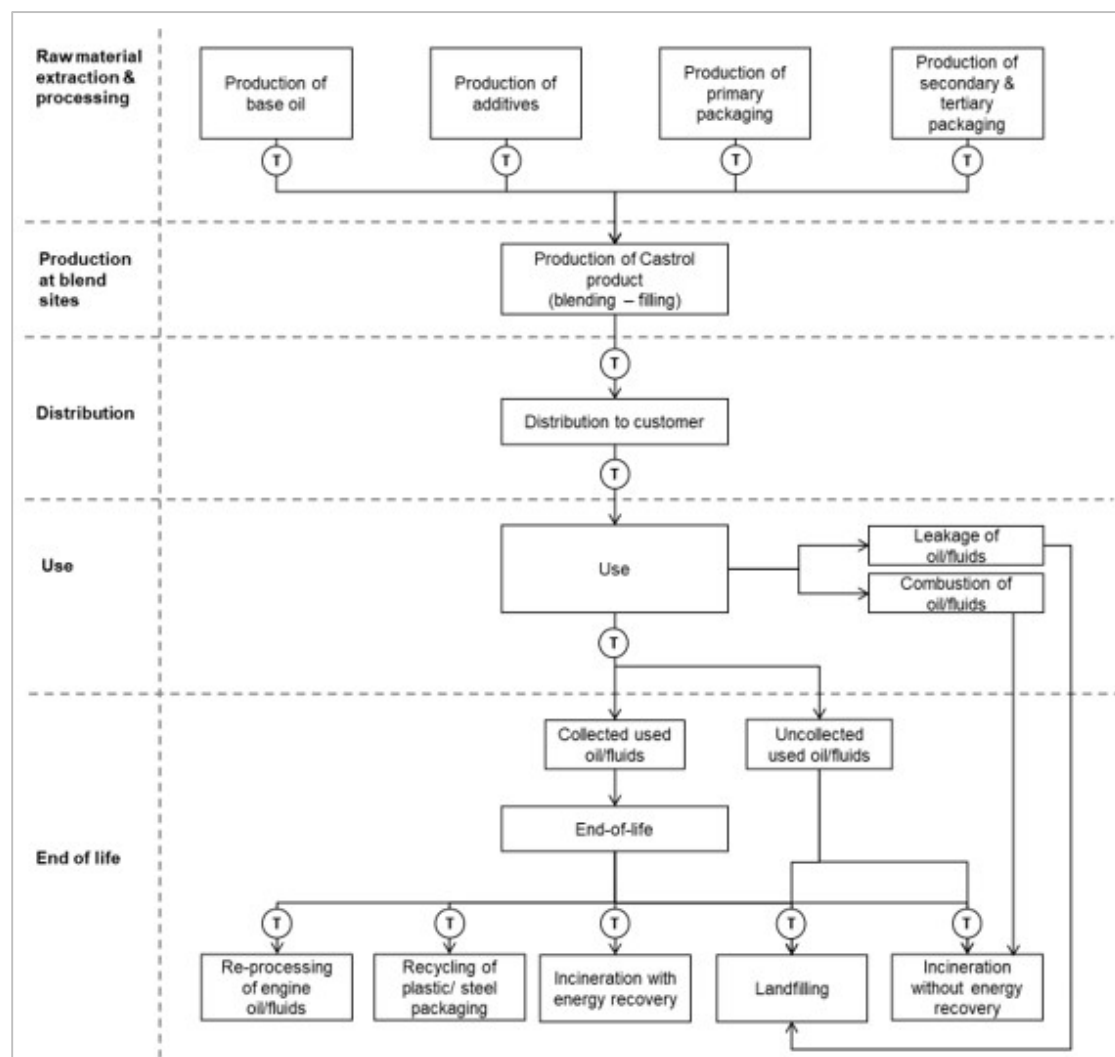
Figure 2.1 – Carbon Neutral Declaration Periods



## 2.3 Boundaries of the Subject

The declaration of carbon neutrality covers GHG emissions relating to all of the activities that are material for the subject. The subject includes over 1000 products variants and 5400 stock keeping units (SKUs) sold in 55 markets across the globe. Having the % system loss for each of the product types associated with these product variants and the country detail for where products are sold allows for losses-in-use and end-of-life treatment assumptions to be applied at the SKU level. Together, this makes it practical to conduct 'cradle-to-grave' lifecycle analysis in accordance with the requirements of the Greenhouse Gas Protocol Product Life Cycle Accounting and Reporting Standard (GHGP Product Standard). The system boundary considered in assessing the carbon footprint of these products is described in Figure 2.2.

Figure 2.2 – Process Map



(T = transport)

### 3. QUANTIFICATION OF CARBON FOOTPRINT

#### 3.1 Standard Chosen and Emissions Sources

The GHGP Product Standard was used to quantify the GHG emissions associated with the subject. This method was chosen as it provides an internationally recognised approach to the calculation of product CO<sub>2</sub>e footprints and meets the requirements of PAS 2060 for the substantiation of GHG emissions (PAS 2060:2014 5.2.2 to 5.2.4). The GHGP Product Standard was applied in accordance with its provisions and the principles set out in PAS 2060. The product CO<sub>2</sub>e footprints have been prepared by a specialist third party (ERM).



GHG emissions that are accounted for in the study are based on the 100-year Global Warming Potential figures published in Table 2.14 of the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (2014) and include those required by the GHGP Product Standard, which specifies emissions to and removals from the atmosphere of: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulphur hexafluoride (SF<sub>6</sub>), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs). A full list of GHG emissions included in the inventory is provided in Annex C of this report.

100% of the Scope 1 and 2 emissions relevant to the product are included in the carbon footprint in Table 3.1 below and the quantified carbon footprint covers at least 95% of the Scope 1,2 and 3 emissions from the subject. Sources of biogenic carbon in the average Castrol product system are limited to the production of selective ingredients, cardboard, and wood packaging materials, which are identified as negligible. Therefore, the carbon footprint results from this study do not provide separate reporting of biogenic carbon emissions. Any exclusions are anticipated to be less than 1% of the total GHG emissions and no weighting factors have been included for delayed emissions. Offsetting has not been included in calculations and no avoided emissions have been included in calculations.

### 3.2 Emissions Profiles of the Subject

Table 3.1 – Cradle-to-grave GHG Emissions per litre of product (Carbon Neutral KPI)

Inventory results: kg CO <sub>2</sub> e per unit of analysis		
Product group description	GHG Emissions per litre of product	
Global (products in scope for the Castrol Carbon Neutral Portfolio)	██████	Kg CO <sub>2</sub> e per litre of average Castrol product from the Castrol Carbon Neutral Portfolio

Using 2020 calendar year data, the average Castrol product from the Castrol Carbon Neutral Portfolio has a per litre carbon intensity of ██████ Kg CO<sub>2</sub>e/L. The total GHG emissions of Castrol's Carbon Neutral Portfolio based on 2020 sales volume and product intensity at the SKU (most granular level) is 1,252,014 tonnes of CO<sub>2</sub>e. Applying the same SKU level intensities to the 2021 sales volume of sales volume of ██████████ liters equates to 1,335,314 tonnes of CO<sub>2</sub>e. This calculation is explained further in Section 6 as part of the Carbon Offset Program.

Figure 3.1 – Value (% of total CO<sub>2</sub>e) by Life Cycle Stage

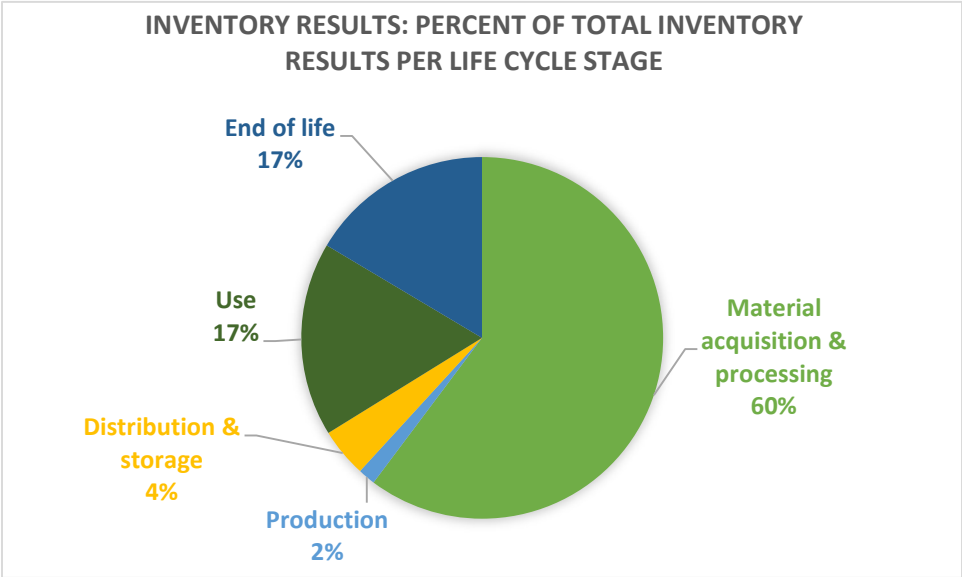


Table 3.2: Description of GHG emissions

Boundary setting	
Life cycle stage definition	
Material acquisition and pre-processing	<p>Raw material extraction and processing to produce base components for use in the average Castrol product production process for all products in scope for the Castrol Carbon Neutral portfolio.</p> <p>The following processes are included within the boundary of this life cycle stage:</p> <ul style="list-style-type: none"><li>• Production of base oils, comprising extraction of crude oil; transportation of crude oil to refining; and refining of crude oil to produce base oil and co-products, with burdens allocated to base oils on a mass basis</li><li>• Production of additives, comprising production of chemicals and processing to make average Castrol product additives and viscosity modifiers, and associated transport; and</li><li>• Production of packaging materials (plastics, steel, wood), comprising extraction and transportation of raw materials; processing to packaging base materials; and fabrication of packaging products.</li></ul>

	<p>The following processes are not included within the boundary of this life cycle stage.</p> <ul style="list-style-type: none"> <li>Capital goods and infrastructure (i.e., manufacture and maintenance of buildings and machinery), which are considered to be negligible in relation to one litre of average Castrol product.</li> </ul>
Production	<p>Blending of base components (base oils and additives) to produce average Castrol product and filling into product packaging (plastic bottles, steel drums, Intermediate Bulk Containers (IBCs), etc.) for all products in scope for the Castrol Carbon Neutral portfolio.</p> <p>The following processes are included within the boundary of this life cycle stage:</p> <ul style="list-style-type: none"> <li>Incoming transport of average Castrol product ingredients and packaging to Castrol sites</li> <li>Blending operations for production of average Castrol products at Castrol sites</li> <li>Filling to packaging (including plastic bottles, steel drums, bulk packaging, etc.) of average Castrol products; and</li> <li>Management of wastes and emissions from Castrol sites producing average Castrol products worldwide.</li> </ul> <p>The following processes are not included within the boundary of this life cycle stage.</p> <ul style="list-style-type: none"> <li>Capital goods and infrastructure (i.e., manufacture and maintenance of buildings and machinery), which are considered to be negligible in relation to one litre of average Castrol product and</li> <li>Personnel activities (e.g., commuting to and from work).</li> </ul>
Distribution and storage	<p>Distribution of packed products in scope for the Castrol Carbon Neutral portfolio from Castrol blending sites to customers (e.g., dealerships and retailers) comprising:</p> <ul style="list-style-type: none"> <li>Transportation by third party fleet to distribution hub in the market country; and</li> </ul>

	<ul style="list-style-type: none"> <li>• Transportation by in-country third party carrier from distribution hub to customer (e.g., car dealerships).</li> </ul> <p>The following processes are not included in the boundary of this life cycle stage.</p> <ul style="list-style-type: none"> <li>• Capital goods and infrastructure (i.e., manufacture and maintenance of buildings and machinery), which are considered to be negligible in relation to one litre of average Castrol product</li> <li>• Storage at distribution warehouse. Average Castrol products are stored at ambient temperature and do not require any additional treatment for storage. The impact from storage, comprising energy for lighting, is considered to be negligible per litre of product.</li> <li>• Personnel activities (i.e., commuting to and from work).</li> </ul>
Use	<p>The Castrol Carbon Neutral portfolio has several use applications (e.g., engine oils, gear oils, greases, coolants and cleaners) across several product categories (e.g., automotive, marine, energy, and industrial).</p> <p>In these application groups, Castrol products are used to facilitate the efficient running of, for example, engines, equipment, and machinery. They are not typically consumed during use, although there is inevitably some average Castrol product loss through leakage or, where combustion is applicable, with the fuel. Leakage and use rate percentages have been applied to these cases and it is assumed that the percentage leaked or combusted degrades to carbon dioxide. In contrast, some applications (e.g., greases, marine lubricants, and cleaners etc) have a high loss rate in use. In these cases, it is assumed that 80% to 100% is lost and eventually degrades into carbon dioxide.</p> <p>Use of average Castrol product includes the following:</p> <ul style="list-style-type: none"> <li>• Filling of product application system (e.g., vehicles, equipment, and machinery) with average Castrol product</li> <li>• Leakage of average Castrol product during use</li> <li>• Where applicable, combustion of average Castrol product with fuel during use</li> </ul>

	<p>The following processes are not included in the boundary of this life cycle stage.</p> <ul style="list-style-type: none"> <li>• Capital goods and infrastructure (i.e., manufacture and maintenance of buildings and machinery), which are considered to be negligible in relation to one litre of average Castrol product.</li> <li>• Draining of used average Castrol product from product application system as this is a manual operation.</li> <li>• Personnel activities (e.g., commuting to and from work).</li> </ul> <p>Also not included within the boundary of this lifecycle stage nor within any life cycle stage within the boundary of the subject is the beneficial impacts of the product in use (e.g., fuel economy, reduced friction and durability/extended drain, etc.).</p>
End-of-life	<p>Depending on the percent loss during the use phase, there will be different end of life considerations. For applications with 100% loss (e.g., greases and marine), there is no further end-of-life treatment as it is assumed the average Castrol product is 100% released into the environment during the use phase.</p> <p>In contrast, for average Castrol products which do not have 100% loss during the use phase, the used average Castrol products can be re-refined, incinerated for energy recovery, incinerated without energy recovery, or landfilled, the packaging must also be treated. It is assumed that no improper disposal (e.g., dumping to land) occurs for products sold via 'dealership' marketing channels. The following processes are included in the boundary of this life cycle stage:</p> <ul style="list-style-type: none"> <li>• Transportation of used average Castrol product to a waste management facility</li> <li>• Used average Castrol product incineration with and without energy recovery, landfill, or re-refining; and</li> <li>• Treatment of waste packaging to recycling, incineration with energy recovery, incineration without energy recovery or landfill.</li> </ul> <p>In line with the recycled content method (Chapter 9 of the GHG Product Protocol), the following processes are not included in the boundary of this life cycle stage:</p>

	<ul style="list-style-type: none"><li>Processes that transform waste to a useful material in another process (e.g., re-refining of used oil and recycling of plastic).</li></ul>
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4. DATA METHODS

4.1 Data Sources

Data used for this footprint study was derived from a mix of primary and secondary sources. Where possible, primary data was used. Secondary data was used only where primary data was not available or where the impact on the carbon footprint result was nominal.

Primary data was sourced for all Castrol activities, comprising product specifications and formulations; operational data at blend sites; production output from blend sites; sales data in market countries; packaging material inputs; incoming material transport distances; and distribution modes of transport. Primary data was also sought and obtained from a number of Castrol’s suppliers for base oil, additives, and primary packaging as part of previous GHG inventories. Where primary data was not made available, secondary data was used to fill gaps based on documented assumptions.

Distribution routes and distances were estimated based on the regional location of the blending site where a product is manufactured and the regional location of Castrol warehouse facilities in the market country.

Secondary data was sourced to define appropriate use and disposal scenarios and for all other activities associated with the life cycle of average Castrol product, comprising: GHG emission factors, which were sourced from reputable published databases; secondary and ancillary packaging materials; and average country specific waste management rates for used oil and packaging materials.

4.2 Data Quality and Uncertainties

Data quality assessments were undertaken for all activity data and emission factor data. Activity data was assessed for the following data quality criteria geography, time period, and reliability. Emission factor data was assessed for the following data quality criteria; technology, geography, time period, completeness and reliability for each data quality criterion, a score was assigned on a scale of 1 to 4 (1 being poor; 4 being good). A single data quality score was calculated as the simple average of all five representativeness categories (equal weighting for each category). The quality of the overall dataset was appraised as a percentage of the total carbon footprint result that relies on data is appraised as ‘poor’ (<1.5), ‘fair’ (1.5 – 2.5), ‘good’ (2.5 – 3.5) and ‘very good’ (>3.5)

The following table provides an overview of the Activity Data Quality Appraisal for all products in scope:

Table 4.1 – Activity Data Quality Appraisal

Data Quality Appraisal - Activity Data	% contribution to total GHG footprint
Poor	0.00%
Fair	10.97%
Good	77.76%
Very good	11.27%

The following provides an overview of the Emission Factor Data Quality Appraisal for all products in scope:

Table 4.2 – Emissions Factor Data Quality Appraisal

Data Quality Appraisal - Activity Data	% contribution to total GHG footprint
Poor	0.00%
Fair	0.64%
Good	81.22%
Very good	18.11%

The following identifies specific areas of uncertainty in the product carbon footprint results:

Raw material inputs – for raw material inputs for which primary data was not received, secondary data was used. The nature of key raw material inputs (base oil and additives) is such that there is potentially a high degree of variability between suppliers and consequently the GHG impact can vary accordingly. Given the contribution to total GHG emissions from the production of raw materials, the assumptions made relating to raw material impacts have the potential to have a significant effect on the overall result. In the absence of supplier-specific data, the average-data method has been applied as recommend by the GHG Protocol Scope 3 Guidance document. In addition, Castrol continues to request supplier-specific data from its key suppliers to reduce the reliance on secondary data and improve the variability of raw material production emissions.

End-of-life management – waste management rates are assumed based on national/ regional averages. Waste management rates can vary significantly between different countries in the same region or between different areas in the same country. Similarly, given the contribution to total GHG emissions from the end-of-life management, the assumptions made relating to waste management rates have the potential to have a significant effect on the overall result.

#### Improvements to data quality

Not applicable as first GHG inventory.

### 4.3 Key uncertainties, assumptions, estimations, and allocations

#### 4.3.1 Scenario Uncertainty

**Blending Locations** - In some cases, data to link the production of a formulation at a specific blend site and its subsequent sale to an end market were not available. Therefore, some assumptions were required to map the formulation through the life cycle. Castrol sales data provide volumes sold to each end market, broken down by product code. Product codes were



then mapped to formulation codes and blend sites. Where formulations were blended at more than one blend site, a blend site was selected based on geographic proximity to the end market. The assumption for blending site location only significantly affects impacts associated with blending and distribution processes. Given the availability of data and the relatively small contribution to the total footprint from blending and distribution, this is considered a reasonable approach.

**Use Profile** – Average Castrol product are used in different product application systems to enhance the intended application system efficiency and are not typically consumed by the application system.

Average Castrol product are not intended to be consumed by the product application system. However, depending on the application there is either 100% direct loss (e.g., greases and marine), leakage of fixed % of the product, as well as unintended combustion (where applicable) with fuel in the product application system. Information relating to the quantity of average Castrol product that is lost, leaked, or is burned with fuel is limited. Therefore, in order to remain conservative, it is assumed the following:

- 100% direct loss: Degrades completely to carbon dioxide.
- Leakage of fixed % of product and/or combustion: Assumed 100% combusted (i.e., incinerated without energy recovery).

Data relating to the proportion of average Castrol product that leaks or is combusted (where applicable) with fuel is taken from both Castrol technology experts and Kline (2010), 'Global Used Oil 2009: Market Analysis and Opportunities.'<sup>5</sup> This report from Kline is the only known industry report to assess % system loss by product application type. Subsequent reports have been issued by Kline in 2016, 2019 and 2020, but these reports do not include a comparable global average system loss% by product type. The data from this report was reviewed by Castrol and adjusted accordingly to reflect Castrol's knowledge on product application systems in the market.

**End of Life** – For products which are not 100% directly lost during the use phase, the average Castrol product can be drained from the product application system for end-of-life treatment.

Following the drainage of used product from the product application system, it is assumed a fixed % of used product is collected by a reputable waste contractor for management. At end-of-life, used oil can be recycled (requiring a re-refining process to remove impurities and produce a re-refined average Castrol product); incinerated with recovery of energy; incinerated without recovery of energy; or landfilled. The proportion of used average Castrol product following each waste management route is estimated, based on country-specific or region-specific average rates.

**Sales Data** – The sales data which is pulled through Power BI at the Country/ Channel/SKU level to calculate the product carbon intensities varies from the financial reporting data by 0.33%.

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<sup>5</sup> Current Kline (2019) is not applied due to ambiguity of information and lack of details on methodology

Castrol's Carbon Neutral product range is ~30% of the sales portfolio and therefore this variance accounts for less than 1 % of total, making it reasonable to rely on this data source.

#### 4.3.2 Parameter Uncertainty

The model contains complete referencing of all GWP factors. The sources are:

- 2020 Guidelines to Defra / DECC's GHG Conversion Factors for Company Reporting for UK grid electricity, liquid and gaseous fuels and freight transport.
- Ecoinvent 3.6.
- Confidential supplier data; and
- 2020 International Energy Agency (IEA) grid factors.

#### 4.3.3 Model Uncertainty

Not applicable. Material issues relating to uncertainty are covered under parameter and scenario uncertainty.

#### 4.3.4 Allocation

**Production of base oils** - Impacts from crude oil refining have been allocated to base oil and co-products on a mass basis. As per Chapter 9 of the GHG Product Protocol, allocation has been based on the underlying relationship between the quantity of the co-products and quantity of emissions generated. Refining of crude oil results in several co-products, none of which can be assumed to be the primary reason for refining. It is therefore considered reasonable to allocate emissions on a mass basis, assigning impacts relative to the quantity (by mass) of each co-product output.

**Incineration with energy recovery (use of used oil as fuel)** - Cut-off approach has been applied for impacts from incineration at end-of-life with energy recovery as per the direction made in Chapter 9 of the GHG Product Protocol. This accounts for the use of used average Castrol product as a fuel for the generation of heat and electricity and is reflected in the applied emission factor (0 kg CO<sub>2</sub>e per kg of used oil). This is equivalent to the recycled content approach where 100% of the emissions are allocated to the generation of electricity and useful heat. Emissions associated with energy recovery processes are already included in electricity grid mix datasets, so these have been omitted to avoid double counting these burdens.

**Incineration without energy recovery** - In this case, the waste is not incinerated for a useful purpose and the associated emissions are allocated to the average Castrol product system (e.g., incineration of used oil without energy recovery).

**Recycling/re-refining at end-of-life** - The recycled content approach has been used to account for recycling of materials at end-of-life. All impacts associated with recycling processes (e.g.,

cleaning, sorting, chipping) are allocated to the system using the recycled material as input (i.e., the next life cycle). This method has been applied to all materials that are recycled at end of life.

In this inventory, recycling relates to the end-of-life stage and refers to used oil and packaging materials. It is reflected in the relevant emission factors for recycling at end of life (all 0 kg CO<sub>2</sub>e per kg of waste):

- Used oil recycling (i.e., re-refining) – 0% of re-refining process allocated to Castrol system and 100% allocated to system that uses re-refined oil; and
- Packaging materials – 0% of recycling processes allocated to Castrol; 100% allocated to system that uses recycled materials.

**Site operational data** - Castrol's blend sites typically produce more than one type of product. However, the process for blending and filling is comparable regardless of product. Therefore, total site operational data have been allocated to products in scope for the Castrol Carbon Neutral portfolio on a mass basis.

**Displaced emissions and removals using the closed loop approximation method** - Not applicable.

#### 4.3.5 Inclusions (External to the boundary)

While Castrol has chosen 'operational control' as its consolidation approach, it has identified and included within this QES, 4 products being manufactured and sold by a non-operated joint venture. Castrol is choosing to include these product variants as they fall under 2 of the lead brands where Castrol is claiming carbon neutrality for 'all products sold'. The 2021 sales, [REDACTED] L, while insignificant in volume when compared to the balance of the portfolio (<0.01%) have been used to estimate GHG emissions of 79 t CO<sub>2</sub>e (as per the 5-step process described in Section 6 of this document) and the required equivalent offsets have been included in Table 6.1.

## 5. CARBON MANAGEMENT PLAN

### 5.1 Commitment

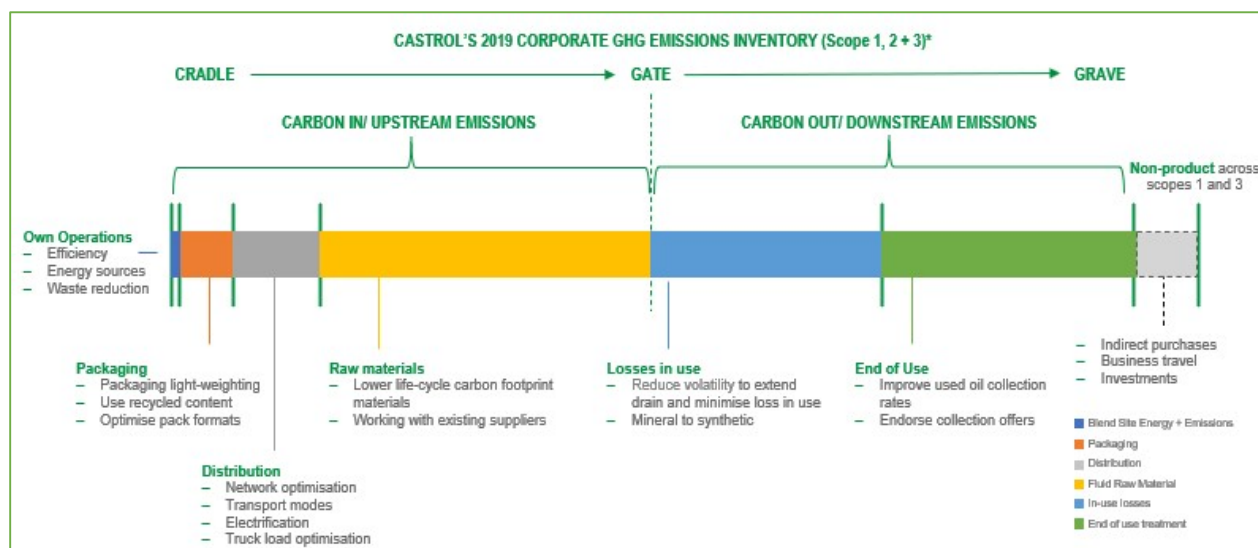
Castrol is committed to achieve carbon neutrality of the subject for the period of 1<sup>st</sup> January 2022 to 31<sup>st</sup> December 2022 in accordance with PAS 2060:2014. This commitment can be broken down as follows:

- Offset GHG emissions for the achievement period based on 2021 actuals sales data; completed in early 2022.
- Continue to implement its carbon reduction plan during the commitment period.
- Commit to an offset program for the remaining GHG emissions in line with PAS 2060:2014

## 5.2 Carbon Reduction Plan

Castrol's carbon reduction plan is a global approach encompassing activities across Scope 1, 2 and 3 emissions in support of its aim to halve the net carbon intensity of its products sold by 2030 or sooner, vs the 2019 baseline (measured in 2020). Castrol's carbon reduction activities are not limited to its carbon neutral portfolio, but the impact of its carbon reduction activities are assessed in relation to both the carbon neutral portfolio and the overall carbon footprint (Scope 1, 2 and 3 emissions). Castrol measured its corporate carbon footprint for the first time in 2020 and it has used the insights from that assessment to inform a key focus area of Castrol's PATH360 sustainability strategy: reducing carbon. In addition to assessing the scale and materiality of Scope 1, 2 and 3 emissions and the opportunities for reductions within them, Castrol has transformed its organisational structure by developing a sustainability squad made up of a series of workstreams focusing on the key categories across the lifecycle of Castrol's products. Leveraging agile ways of working, digital platforms and skills, and the collaboration of sustainability leaders across multiple sectors, Castrol continues to pursue activities that directly reduce and indirectly influence its carbon emissions as well as exploring options to accelerate its progress towards its aims.

Figure 5.1 – Castrol's Corporate GHG Emissions Inventory and Reduction Opportunities



Castrol is in action. After having set the baseline, strategy, ambition, ways of working and people, Castrol is building a roadmap by lifecycle category to measure the progress against its aims and identify interventions as appropriate.

To reduce carbon emissions within the raw materials Castrol purchases, the focus is on three different activities. Firstly, the Castrol Technology team looks for lower carbon footprint materials as a design-in approach to develop new products in select geographies. Secondly, within the current product portfolio, Castrol is working to optimize formulations by choosing

lower carbon options, without compromising their performance. Thirdly, Castrol is working in collaboration with its suppliers to understand their supplier-specific product carbon footprints, what they are doing to reduce their CO<sub>2</sub>e emissions and to support them on their carbon reduction plans where possible. Castrol has also modified its RFQ process to include a sustainability questionnaire in an effort to benchmark its suppliers.

Castrol has already transitioned 9 sites to renewable energy across its owned assets through the use of renewable electricity contracts and 4 sites are utilizing solar-sourced electricity. In addition to furthering progress towards renewable energy, Castrol's roadmap also includes replacing fuel oil and diesel combustion with natural gas, reducing blending temperature and heating of raw materials where possible, and implementing smart energy management systems and equipment upgrades to improve efficiency and conserve energy.

Under the packaging category, Castrol has set a clear strategy to reduce, reuse and recycle plastic within its value chain, all in support of its aim to halve its plastic footprint per litre by 2030, vs the 2019 baseline (measured in 2020). Within the reduce plastic category, Castrol is focusing on light-weighting containers, looking for alternative materials and formats and increasing use of recycled resin. With Project Highlander, Castrol has reduced the amount of plastic per bottle in small packs on average by 20% resulting in an estimated carbon reduction of 7k tonnes per annum since 2019. Highlander has been implemented in 9 markets across Asia and Africa with a European implementation planned in 2023.

Under reuse, Castrol is exploring innovative solutions as refillable bottles (DIY), wash & refill solutions, foldable IBCs, and minibulk/dispense systems.

Managing plastic at end of use is a challenge for Castrol as the oil contaminates the packs, meaning it cannot be recycled in standard plastic waste streams. As well as being messy, contaminated plastic produces a recycled resin that has undesirable color and odor properties for consumer product use and can have variable quality. However, Castrol does participate in collection schemes where segregated recycling exists and, in the US, have joined the National Lubricant Container Recycling Coalition focused on establishing solutions for post-consumer recovery and recycling of plastic lubricant containers for use in industrial products.

Losses in use is one of the more challenging life cycle stages to reduce, particularly when it comes to the use profile or % system loss of lubricant during its functional life. By first understanding the % system loss for the different types and applications of products Castrol makes (oils, lubricants, fluids and greases across the automotive, industrial, marine and energy spaces), Castrol is now evaluating future trends and the impact this may have on product mix and the associated GHG emissions. Castrol products are also formulated to meet challenging industry and Original Equipment Manufacturer (OEM) specifications, ensuring continued research and development to improve volatility (i.e., the evaporation loss of lubricants in high-temperature service.) In addition, Castrol is exploring opportunities to reduce the fossil carbon content of the product, especially where % system loss is high.

At the end-of-life stage, Castrol is conducting market research in targeted geographies to understand industry assumptions and opportunities, as well as evaluating its participation and partnership strategy around end-of-life treatment and used oil collection rates. Since the majority of Castrol's sales are through distributors and workshops and therefore several steps removed from the end user, Castrol seeks to influence in order to drive change in this area. Castrol is starting by working with its OEM partners to re-direct collected oil to re-refining therefore keeping it in use for longer.

Castrol has leveraged its digital platforms and skills to be able to track the carbon intensity for its products, identify future areas for carbon reductions and allocate and action the required resources to mitigate any potential risk to meet the reduction plan. Castrol will assess its performance against its carbon management plan at a minimum of once per annum.

Castrol's carbon management plan is assessed monthly as part of its Sustainability Implementation Programme execution and progress against key activities are reviewed with leadership. These periodic assessments of performance against the plan provide opportunity to implement corrective action aiming at targets being achieved.

## 6. CARBON OFFSET PROGRAM

Since the inception of its carbon neutral programme in 2014, Castrol has been ordering its carbon credits from bp Target Neutral. The purchase of these credits supports and contributes to a portfolio of carbon reduction, avoidance and removal projects around the world. Some of these projects have additional benefits that support the UN Sustainable Development Goals, improving the lives of millions of people through better health, decent work, training and gender equality.

### 6.1 Offset program for the 2<sup>nd</sup> Application Period

In accordance with the guidelines of PAS 2060, Castrol is relying on 100% offsets to compensate for the CO<sub>2</sub>e emissions in its baseline period. While carbon reduction activities are in action with some examples included in Section 5, the exact amount of the carbon reductions in 2021 will be confirmed when Castrol completes the carbon footprinting of its carbon neutral portfolio by the end of 2022. The methodology to assess these reductions will be consistent with the methodology used to determine the baseline product carbon footprints, and a comparison of results between the 2022 model (based on 2021 data) and the baseline model will be used to verify the tonnes and per litre impact of these initiatives.

Credits for the baseline period covering 1st Jan 2021 – 31<sup>st</sup> Dec 2021 were purchased and retired through bp Target Neutral ([www.bptargetneutral.com](http://www.bptargetneutral.com)) based on 2021 Actual tCO<sub>2</sub>e of 1,335,314. These credits have been purchased from sources based on schemes with criteria for:

- The offsets purchased represent genuine, additional GHG emissions reductions; and

- The projects involved in delivering offsets meet the criteria of additionality, permanence, leakage, and double counting.

The purchase of offsets via these schemes also guarantees that the credits have been verified by an independent third party, only issued after the emission reductions had taken place, and were retired within 12 months from the date of the declaration of the achievement. These credits are supported by publicly available project documentation, with references provided and stored and retired in an independent and credible registry.

To determine the amount of offsets required for the 2021 period (calculated to be 1,335,314) Castrol uses a 5-step process to assign the average product carbon intensity (as assessed by ERM and based on 2020 sales data) for 2021 volumes sold. For step 1, where there is a direct match at the Country/Channel/SKU level (most granular level), this average product carbon intensity is multiplied by its respective sales volume. In 2021, there was a direct match for 77% of the sales volume at this level.

In the instances where a new Country/Channel/SKU has been introduced (i.e., sold) within an existing carbon neutral category but after the carbon footprinting period has closed, steps 2-5 have been applied to provide the most accurate estimate of product carbon intensity possible:

step 1: use the average product carbon intensity at the Country/Channel/SKU level, else  
 step 2: use the Product Variant average carbon intensity for that Country and Channel, else  
 step 3: use the SKU global average carbon intensity for that Product Variant, else  
 step 4: use the Product Variant global average carbon intensity, and finally if still no matches  
 step 5: use the global average product carbon intensity for that carbon neutral category

The new Country/Channel/SKU would then be included in the carbon foot printing process from the following application period.

If Castrol can demonstrate evidence where tonnes of CO<sub>2</sub>e relative to this application period have been previously offset, it will include this in the calculation of required offsets. This would include Castrol's Scope 1 and 2 emissions which has its own carbon neutral commitment and application, as well as emissions from purchased raw materials made carbon neutral at the gate-to-gate or cradle-to-gate level.

## 6.2 Offset program for the 3rd Application Period

For the 3rd application period, 1<sup>st</sup> January 2022 – 31<sup>st</sup> December 2022, Castrol will repeat the same process as followed for the 2<sup>nd</sup> application period but using 2022 volumes sold and the average product intensities from the 2022 model (based on 2021 sales data). Castrol will notify bp Target Neutral of the volume of credits required once the emission calculations are complete for this period with retirements completing in 1Q 2023, prior to external assurance for this application period.



Table 6.1 Carbon Offsets to Account for Full Year 2021 Sales Volumes in the 1<sup>st</sup> Achievement Period

Project Name	Account Name	Standard and registry type	Date of retirement	Actual carbon offset (credits/tCO <sub>2</sub> e)	HYPERLINKS	Vintage
BIRUS Indonesia Biogas	BP International Limited	VCS / Markit Env Registry	12/1/2019	21,882	<a href="#">BIRUS Indonesia Biogas</a>	2018
Distribution of ONIL stoves - Mexico	BP International Limited	VCS / Markit Env Registry	12/1/2019	4,678	<a href="#">Distribution of ONIL stoves - Mexico</a>	2018
WIND power CGN Zhaoyuan	BP International Limited	VCS / Markit Env Registry	12/1/2019	81,685	<a href="#">WIND power CGN Zhaoyuan</a>	2018
Lower Zambezi REDD+ Project	BP International Limited	VCS / Markit Env Registry	12/1/2019	6,378	<a href="#">Lower Zambezi REDD+ Project</a>	2018
Orb Energy Solar Program in India	BP Gas Marketing Limited	Gold Standard / Verified Emission Reductions (VERs)	8/5/2021	80,000	<a href="#">Orb Energy Solar Program in India</a>	2019
Titas Gas Distribution Network in Bangladesh	BP Gas Marketing Limited	UN registry for CDM projects	9/22/2021	93,533	<a href="#">Titas Gas Distribution Network in Bangladesh</a>	2018
Zhaoyuan Zhangxing Wind Power Project - China	BP Gas Marketing Limited	UN registry for CDM projects	9/22/2021	52,830	<a href="#">Zhaoyuan Zhangxing Wind Power Project - China</a>	2020
Korat Waste To Energy - Thailand	BP Gas Marketing Limited	UN registry for CDM projects	9/22/2021	100,189	<a href="#">Korat Waste To Energy - Thailand</a>	2013
INOLASA - Costa Rica	BP Gas Marketing Limited	UN registry for CDM projects	9/22/2021	3,754	<a href="#">INOLASA - Costa Rica</a>	2014
Fertinal Project - Mexico	BP Gas Marketing Limited	UN registry for CDM projects	9/22/2021	32,401	<a href="#">Fertinal Project - Mexico</a>	2011
REDD project in Madre de Dios, Peru	BP International Limited	VCS / Markit Env Registry	9/23/2021	55,920	<a href="#">REDD project in Madre de Dios, Peru</a>	2016
REDD project in Madre de Dios, Peru	BP International Limited	VCS / Markit Env Registry	9/22/2021	309,344	<a href="#">REDD project in Madre de Dios, Peru</a>	2016
ONIL Stoves - Guatemala	BP International Limited	VCS / Markit Env Registry	3/9/2022	120,039	<a href="#">ONIL Stoves - Guatemala</a>	2017
Landfill Gas Project BRAZIL	BP Gas Marketing Limited	UN registry for CDM projects	3/9/2022	43,021	<a href="#">Landfill Gas Project - Brazil</a>	2014
San Pedro Wind Farm - CHILE	BP Gas Marketing Limited	UN registry for CDM projects	3/9/2022	219,516	<a href="#">San Pedro Wind Farm - Chile</a>	2019
El Arrayan Wind Farm - CHILE	BP Gas Marketing Limited	UN registry for CDM projects	3/9/2022	110,144	<a href="#">El Arrayan Wind Farm - Chile</a>	2020
TOTAL Full Year 2021				1,335,314		

The offsets highlighted in the first four rows of Table 6.1 are offsets that were purchased and retired as part of the Europe PCO commitment to carbon neutrality in 2019, but never used as volumes were well below forecast. Castrol has demonstrated the evidence of this with the

Independent 3P Assurer to ensure their acceptable use within this application. Scope 1&2 offsets have been removed from this table as they are included in a separate Castrol QES / application for Scope 1 & 2 carbon neutrality.

## Annex A: Qualifying Explanatory Statement (QES) Checklist

Table A.1 Checklist for QES supporting declaration of commitment to carbon neutrality

The following table has been extracted from PAS 2060:2014. It provides a checklist of information that should be included in the commitment to carbon neutrality, as well as identification of where this information is located.

#	Item Description	Status	Section in this QES
1	Identify the individual responsible for the evaluation and provision of data necessary for the substantiation of the declaration including that of preparing, substantiating, communicating, and maintaining the declaration.	✓	Section 2.1, Table 2.1
2	Identify the entity responsible for making the declaration.	✓	Section 2.1, Table 2.1
3	Identify the subject of the declaration.	✓	Section 2.1, Table 2.1, Annex D, Table D.1, Table D.2, Table D.3
4	Explain the rationale for the selection of the subject. <i>(The selection of the subject should ideally be based on a broader understanding of the entire carbon footprint of the entity so that the carbon footprint of the selected subject can be seen in context; entities need to be able to demonstrate that they are not intentionally excluding their most significant GHG emissions (or alternatively can explain why they have done so).)</i>	✓	Page 2, Section 2.1, Table 2.1, Section 2.3, Section 5.2, Figure 5.1, Annex D, Table D.1, Table D.2
5	Define the boundaries of the subject.	✓	Section 2.3, Table 2.1, Figure 2.2
6	Identify all characteristics ( <i>purposes, objectives, or functionality</i> ) inherent to that subject.	✓	Section 2.3, Table 2.1, Figure 2.2, Table D.2
7	Identify and take into consideration all activities material to the fulfilment, achievement or delivery of the purposes, objectives, or functionality of the subject.	✓	Section 2.3
8	Select which of the 3 options within PAS 2060 you intend to follow.	✓	Section 2.2, Table 2.1, Figure 2.1
9	Identify the date by which the entity plans to achieve the status of 'carbon neutrality' of the subject and specify the period for which the entity intends to maintain that status.	✓	Section 2.2, Figure 2.1, Section 5.1
10	Select an appropriate standard and methodology for defining the subject, the GHG emissions associated with that subject and the calculation of the carbon footprint for the defined subject.	✓	Section 2.3, Section 3.1

11	Provide justification for the selection of the methodology chosen. <i>(The methodology employed shall minimize uncertainty and yield accurate, consistent, and reproducible results.)</i>	✓	Section 3.1
12	Confirm that the selected methodology was applied in accordance with its provisions and the principles set out in PAS 2060.	✓	Section 3.1
13	Describe the actual types of GHG emissions, classification of emissions (Scope 1, 2 or 3) and size of carbon footprint of the subject exclusive of any purchases of carbon offsets:	✓	Section 3.1, Section 3.2, Table 3.1, Annex C
	a) All greenhouse gases shall be included and converted to tCO <sub>2</sub> e.	✓	Section 3.1, Section 3.2
	b) 100% Scope 1 (direct) emissions relevant to the subject shall be included when determining the carbon footprint.	✓	Section 3.1, Table 3.1, Figure 3.1
	c) 100% Scope 2 (indirect) emissions relevant to the subject shall be included with determining the carbon footprint.	✓	Section 3.1, Table 3.1, Figure 3.1
	d) Where estimates of GHG emissions are used in the quantification of the subject carbon footprint (particularly when associated with Scope 3 emissions) these shall be determined in a manner that precludes underestimation.	✓	Section 3.1, Table 3.2
	e) Scope 1, 2 or 3 emission sources estimated to be more than 1% of the total carbon footprint shall be taken into consideration unless evidence can be provided to demonstrate that such quantification would not be technically feasible or cost effective. (Emissions sources estimated to constitute less than 1% may be excluded on that basis alone.)	✓	Table 3.1, Table 3.2
	f) The quantified carbon footprint shall cover at least 95% of the emissions from the subject.	✓	Figure 3.1, Table 3.2
	g) Where a single source contributes more than 50% of the total emissions, the 95% threshold applies to the remaining sources of emissions.	✓	Figure 3.1, Table 3.2
	h) Any exclusion and the reason for that exclusion shall be documented.	✓	Section 3.1, Table 3.2
14	Where the subject is an organization/ company or part thereof, ensure that:		
	a) Boundaries are a true and fair representation of the organization's GHG emissions (i.e., shall include GHG emissions relating to core operations including subsidiaries owned and operated by the organization). It will be important to ensure claims are credible – so if an entity chooses a very narrow subject and excludes its carbon intensive activities or it if outsources its carbon intensive activities, then this needs to be documented.	✓	Section 3.1, Table 3.2
	b) Either the equity shares or control approach has been used to define which GHG emissions are included. Under the equity share approach, the entity accounts for GHG emissions from the subject according to its share of equity in the subject. Under the control approach, the entity shall account for 100% of the GHG emissions over which it has financial and/or operational control.	✓	Table 2.1, Section 4.3.5

15	Identify if the subject is part of an organization or a specific site or location and treat as a discrete operation with its own purpose, objectives, and functionality.	N/A	
16	Where the subject is a product of service, include all Scope 3 emissions ( <i>as the life cycle of the product/ service needs to be taken into consideration</i> ).	✓	Section 3.2
17	Describe the actual methods used to quantify GHG emissions ( <i>e.g., use of primary or secondary data</i> ), the measurement unit(s) applied, the period of application and the size of the resulting carbon footprint. ( <i>The carbon footprint shall be based as far as possible on primary activity data.</i> ) Where quantification is based on calculations ( <i>e.g., GHG activity data multiplied by greenhouse gas emission factors or the use of mass balance/ life cycle models</i> ) then GHG emissions shall be calculated using emissions factors from national ( <i>Government</i> ) publications. Where such factors are not available, international or industry guidelines shall be used. In all cases the sources of such data shall be identified.	✓	Page 1, Page 2, Section 2.1, Table 2.1, Figure 2.1, Section 3.1, Section 3.2, Table 3.1, Figure 3.1, Section 4.1, Section 4.3.2, Section 6.1
18	Provide details of, and explanation for, the exclusion of any Scope 3 emissions.	✓	Section 3.1, Table 3.2
19	Document all assumptions and calculations made in quantifying GHG emissions and in the selection or development of greenhouse gas emissions factors. ( <i>Emission factors used shall be appropriate to the activity concerned and current at the time of quantification.</i> )	✓	Section 3.1, Section 3.2, Section 4.1, Section 4.2, Section 4.3
20	Document your assessments of uncertainty and variability associated with defining boundaries and quantifying GHG emissions including the positive tolerances adopted in association with emissions estimates. ( <i>The statement could take the form of a qualitative description regarding the uncertainty of the results, or a quantitative assessment of uncertainty if available (e.g., carbon footprint based on 95% of likely greenhouse gas emissions; primary sources are subject to variation over time; footprint is best estimate based on reasonable costs of evaluation).</i> )	✓	Section 4.2, Section 4.3
21	Document Carbon Footprint Management Plan:		
	a) Make a statement of commitment to carbon neutrality for the defined subject.	✓	Section 5.1
	b) Set timescales for achieving carbon neutrality for the defined subject.	✓	Section 5.1
	c) Specify targets for GHG reduction for the defined subject appropriate to the timescale for achieving carbon neutrality including the baseline date, the first qualification date and the first application period.	✓	Section 5.2
	d) Document the planned means of achieving and maintaining GHG emissions reductions including assumptions made and any justification of the techniques and measures to be employed to reduce GHG emissions.	✓	Section 5.2
	e) Specify the offset strategy including an estimate of the quantity of GHG emissions to be offset, the nature of the offsets and the likely number and type of credits.	✓	Section 6.1, Table 6.1
22	Implement a process for undertaking periodic assessments of performance against the Plan and for implementing	✓	Section 5.2

	corrective action to ensure targets are achieved. The frequency of assessing performance against the Plan should be commensurate with the timescale for achieving carbon neutrality.		
23	Where the subject is a non-recurring event, such as weddings or a concert, identify ways of reducing GHG emissions to the maximum extent commensurate with enabling the event to meet its intended objectives before the event takes place and include 'post event review' to determine whether the expected minimization in emissions has been achieved.	N/A	
24	Any reductions in the GHG emissions from the defined subject delivered in the three years prior to the baseline date and not otherwise considered in any GHG emissions quantification have been made in accordance with this PAS.	N/A	
25	Record the number of times that the declaration of commitment has been renewed without declaration of achievement.	N/A	This is the first declaration of achievement with a commitment to maintain
26	Specify the type of conformity assessment:		
	<i>a) independent third-party certification</i>	✓	Section 2.1, Table 2.1
	<i>b) other party validation</i>	N/A	
	<i>c) self-validation</i>	N/A	
27	Include statements of validation where declarations of commitment to carbon neutrality are validated by a third-party certifier or second party organizations.	✓	Annex B
28	Date the QES and have signed by the senior representative of the entity concerned (e.g., CEO of a corporation; Divisional Director, where the subject is a division of a larger entity; the Chairman of a town council or the head of the household for a family group).	✓	Page 2
29	Make the QES publicly available and provide a reference to any freely accessible information upon which substantiation depends (e.g., via websites).	✓	A redacted version of the QES will be made publicly available.
30	Update the QES to reflect changes and actions that could affect the validity of the declaration of commitment to carbon neutrality.	✓	A commitment has been made by the business to do this; reflected on Page 2

Table A.2 Checklist for QES supporting declaration of achievement of carbon neutrality



The following table has been extracted from PAS 2060:2014. It provides a checklist of information that should be included in the achievement of carbon neutrality, as well as identification of where this information is located.

#	Item Description	Status	Section in this QES
1	Define standard and methodology to use to determine its GHG emissions reduction.	✓	Section 2.3, Section 3.1
2	Confirm that the methodology used was applied in accordance with its provisions and the principles set out in PAS 2060 were met.	✓	Section 3.1
3	Provide justification for the selection of the methodologies chosen to quantify reductions in the carbon footprint, including all assumptions and calculations made and any assessments of uncertainty. <i>(The methodology employed to quantify reductions shall be the same as that used to quantify the original carbon footprint. Should an alternative methodology be available that would reduce uncertainty and yield more accurate, consistent, and reproducible results, then this may be used provided the original carbon footprint is re-qualified to the same methodology, for comparison purposes. Recalculated carbon footprints shall use the most recently available emission factors, ensuring that for purposes of comparison with the original calculation, any change in the factors used is considered.)</i>	✓	Section 3.1
4	Describe how reductions have been achieved and any applicable assumptions or justifications.	✓	Section 5.2
5	Ensure that there has been no change to the definition of the subject. <i>(The entity shall ensure that the definition of the subject remains unchanged through each stage of the methodology. If material change to the subject occurs, the sequence shall be re-started based on a newly defined subject.)</i>	✓	Section 2.3
6	Describe the actual reductions achieved in absolute and intensity terms and as a percentage of the original carbon footprint. <i>(Quantified GHG emissions reductions shall be expressed in absolute terms and shall relate to the application period selected and/or shall be expressed in emission intensity terms (e.g., per specified unit of product or instance of service).)</i>	N/A	
7	State the baseline/ qualification date.	✓	Section 2.2
8	Record the percentage economic growth rate for the given application period used as a threshold for recognising reductions in intensity terms.	N/A	
9	Provide an explanation for circumstances where a GHG reduction in intensity terms is accompanied by an increase in absolute terms for the determined subject.	N/A	
10	Select and document the standard and methodology used to achieve carbon offset.	✓	Section 6.1
11	Confirm that:		

	a) Offsets purchased or allowance credits surrendered represent genuine, additional GHG emission reductions elsewhere	✓	Section 6.1
	b) Projects involved in delivering offsets meet the criteria of <i>additionality</i> , <i>permanence</i> , <i>leakage</i> , and <i>double counting</i> . (See WRI Greenhouse Gas Protocol for definitions of <i>additionality</i> , <i>permanence</i> , <i>leakage</i> , and <i>double counting</i> .)	✓	Section 6.1
	c) Carbon offsets are verified by an independent third-party verifier	✓	Section 6.1
	d) Credits from carbon offset projects are only issued after the emission reduction has taken place	✓	Section 6.1
	e) Credits from carbon offset projects are retired within 12 months from the date of the declaration of achievement	✓	Section 6.1
	f) Credits from carbon offset projects are supported by publicly available project documentation on a registry which shall provide information about the offset project, quantification methodology and validation and verification procedures	✓	Section 6.; Table 6.1
	g) Credits from carbon offset projects are stored and retired in an independent and credible registry	✓	Section 6; Table 6.1
12	Document the quantity of GHG emissions offset and the type and nature of offsets purchased including the number and type of credits used and the time over which credits were generated including:	✓	Section 6; Table 6.1
	a) Which GHG emissions have been offset	✓	Section 6; Table 6.1
	b) The actual amount of carbon offset	✓	Section 6; Table 6.1
	c) The type of offset and projects involved	✓	Section 6; Table 6.1
	d) The number and type of carbon offset credits used and the time over which the credits have been generated	✓	Section 6; Table 6.1
	e) Information regarding the retirement/ cancellation of carbon offset credits to prevent their use by others including a link to the registry where the offset has been retired.	✓	Section 6.1
13	Specify the type of conformity assessment:		
	a) independent third-party certification	✓	Section 2, Table 2.1
	b) other party validation	N/A	
	c) self-validation	N/A	
14	Include statements of validation where declarations of achievement of carbon neutrality are validated by a third-party certifier or second party organisations.	✓	Annex B
15	Date the QES and have it signed by the senior representative of the entity concerned (e.g., CEO of a corporation; Divisional Director, where the subject is a division of a larger entity; the Chairman of a town council or the head of the household for a family group).	✓	Section 1
16	Make the QES publicly available and provide a reference to any freely accessible information upon which substantiation depends (e.g., via websites).	✓	Carbon Neutrality Declaration, page 2



Annex B: Carbon Neutrality Assurance Statement

<div><div><div>WHEN TRUST MATTERS</div></div><div><h2>Independent Limited Assurance Report</h2><h3>to the Management of Lubricants UK Ltd</h3><p>Lubricants UK Ltd ("Castrol") commissioned DNV Business Assurance Services UK Limited ("DNV", "us" or "we") to conduct a limited assurance engagement over the declaration of carbon neutrality in the <b>PAS 2060 Qualifying Explanatory Statement</b> (the "Report") for its PATH360 Carbon Neutral Products for the achievement period commencing 1<sup>st</sup> January 2021 to 31<sup>st</sup> December 2021 and the commitment period commencing 1<sup>st</sup> January 2022 to 31<sup>st</sup> December 2022.</p><div><div></div><div><p><b>Our Conclusion:</b> Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Report is not fairly stated and has not been prepared, in all material respects, in accordance with the Criteria. This conclusion relates only to the Report, and is to be read in the context of this Independent Limited Assurance Report, in particular the inherent limitations explained below.</p></div></div><div><h4>Scope of work</h4><p>The scope and boundary of our work is restricted to assessing that Castrol's preparation of the declaration of carbon neutrality presented in the Report, is in accordance with the Publicly Available Specification (PAS) 2060:2014 Demonstration of Carbon Neutrality (the "Criteria").</p><p>The products included within the PATH360 Carbon Neutral Products are included in Annex D of the Report.</p><p>We have not performed any work, and do not express any conclusion, on any other information that may be published outside of the Report and/or on Castrol's websites for the achievement period, the commitment period or for previous periods. Our work also excluded assessing the reliability of the inputs of the carbon footprint model.</p><h4>Basis of our conclusion</h4><p>We are required to plan and perform our work in order to consider the risk of material misstatement of the Report; our work included, but was not restricted to:</p><ul style="list-style-type: none"><li>• Conducting interviews with Castrol's management to obtain an understanding of the key processes, systems and controls in place to generate and produce the content of the Report;</li><li>• Conducting interviews with Castrol's management and the team in charge of maintaining and updating the carbon footprint model, used in the production of the Report;</li><li>• Assessing whether the standards and methodologies used in the carbon footprint model met the Criteria;</li><li>• Performing limited substantive testing of the carbon footprint model to check that its data and underlying assumptions had been appropriately measured, recorded and reported; and</li><li>• Reviewing that the evidence, calculations and the context provided in the Report is prepared in line with the Criteria.</li></ul></div><div><div><h4>Our competence, independence and quality control</h4><p>DNV's policies and procedures are designed to ensure that DNV, its personnel and others where applicable, are subject to independence requirements (including personnel of other entities of DNV) and maintain independence where necessary by relevant ethical requirements. This engagement was carried out by an independent team of sustainability assurance professionals. DNV holds other contracts with Castrol, none of which conflict with the scope of this work. Our multi-disciplinary team consisted of professionals with a combination of environmental and sustainability assurance experience.</p></div><div><h4>Inherent limitations</h4><p>All assurance engagements are subject to inherent limitations as selective testing (sampling) may not detect errors, fraud or other irregularities. Non-financial data may be subject to greater inherent uncertainty than financial data, given the nature and methods used for calculating, estimating and determining such data. The selection of different, but acceptable, measurement techniques may result in different quantifications between different entities. Our assurance relies on the premise that the data and information provided to us by Castrol have been provided in good faith. DNV expressly disclaims any liability or co-responsibility for any decision a person or an entity may make based on this Independent Limited Assurance Report.</p></div></div></div></div>	
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## WHEN TRUST MATTERS

### Standard and level of assurance

We performed a **limited** assurance engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000 revised – 'Assurance Engagements other than Audits and Reviews of Historical Financial Information' (revised), issued by the International Auditing and Assurance Standards Board. This standard requires that we comply with ethical requirements and plan and perform the assurance engagement to obtain limited assurance.

DNV applies its own management standards and compliance policies for quality control, in accordance with ISO/IEC 17021:2015 - Conformity Assessment Requirements for bodies providing audit and certification of management systems, and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement; and the level of assurance obtained is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. We planned and performed our work to obtain the evidence we considered sufficient to provide a basis for our opinion, so that the risk of this conclusion being in error is reduced but not reduced to very low.

### Responsibilities of Castrol's Management and DNV

The Management of Castrol have sole responsibility for:

- Preparing and presenting the Report in accordance with the Criteria;
- Designing, implementing and maintaining effective internal controls over the information and data, resulting in the preparation of the Report that is free from material misstatements;
- Measuring and reporting the Report's data based on the established Criteria; and
- Contents and statements contained within the Report.

Our responsibility is to plan and perform our work to obtain limited assurance about whether the Report has been prepared in accordance with the Criteria and to report to Castrol in the form of an Independent Limited Assurance Report, based on the work performed and the evidence obtained. We have not been responsible for the preparation of the Report.

### DNV Business Assurance Services UK Limited

London, UK  
7<sup>th</sup> October 2022



### DNV Business Assurance

DNV Business Assurance Services UK Limited is part of DNV – Business Assurance, a global provider of certification, verification, assessment and training services; helping customers to build sustainable business performance.

[www.dnv.co.uk/BetterAssurance](http://www.dnv.co.uk/BetterAssurance)



DNV - Assurance  
Report for Castrol's

## Annex C: Included GHG Emissions

Table C.1 Global warming potential (GWP) values relative to CO<sub>2</sub>

The following table includes the 100-year time horizon global warming potentials (GWP) relative to CO<sub>2</sub>, which have been used for the carbon footprint assessment of the subject. This table is adapted from the IPCC Fifth Assessment Report, 2014 (AR5)<sup>7</sup> For more information, please see the IPCC website <http://www.ipcc.ch/>

Industrial designation or common name	Chemical formula	GWP values for 100-year time horizon from IPCC Fifth Assessment Report (AR5)	
Carbon dioxide	CO <sub>2</sub>	1	kg CO <sub>2</sub> -eq per kg
Methane	CH <sub>4</sub>	28	kg CO <sub>2</sub> -eq per kg
Nitrous oxide	N <sub>2</sub> O	265	kg CO <sub>2</sub> -eq per kg
<b>Substances controlled by the Montreal Protocol</b>			
CFC-11	CCl <sub>3</sub> F	4,660	kg CO <sub>2</sub> -eq per kg
CFC-12	CCl <sub>2</sub> F <sub>2</sub>	10,200	kg CO <sub>2</sub> -eq per kg
CFC-13	CClF <sub>3</sub>	13,900	kg CO <sub>2</sub> -eq per kg
CFC-113	CCl <sub>2</sub> FCClF <sub>2</sub>	5,820	kg CO <sub>2</sub> -eq per kg
CFC-114	CClF <sub>2</sub> CClF <sub>2</sub>	8,590	kg CO <sub>2</sub> -eq per kg
CFC-115	CClF <sub>2</sub> CF <sub>3</sub>	7,670	kg CO <sub>2</sub> -eq per kg
Halon-1301	CBrF <sub>3</sub>	6,290	kg CO <sub>2</sub> -eq per kg
Halon-1211	CBrClF <sub>2</sub>	1,750	kg CO <sub>2</sub> -eq per kg
Halon-2402	CBrF <sub>2</sub> CBrF <sub>2</sub>	1,470	kg CO <sub>2</sub> -eq per kg
Carbon tetrachloride	CCl <sub>4</sub>	1,730	kg CO <sub>2</sub> -eq per kg
Methyl bromide	CH <sub>3</sub> Br	2	kg CO <sub>2</sub> -eq per kg
Methyl chloroform	CH <sub>3</sub> CCl <sub>3</sub>	160	kg CO <sub>2</sub> -eq per kg
HCFC-21	CHCl <sub>2</sub> F	148	kg CO <sub>2</sub> -eq per kg
HCFC-22	CHClF <sub>2</sub>	1,760	kg CO <sub>2</sub> -eq per kg
HCFC-123	CHCl <sub>2</sub> CF <sub>3</sub>	79	kg CO <sub>2</sub> -eq per kg
HCFC-124	CHClFCF <sub>3</sub>	527	kg CO <sub>2</sub> -eq per kg
HCFC-141b	CH <sub>3</sub> CCl <sub>2</sub> F	782	kg CO <sub>2</sub> -eq per kg
HCFC-142b	CH <sub>3</sub> CClF <sub>2</sub>	1,980	kg CO <sub>2</sub> -eq per kg
HCFC-225ca	CHCl <sub>2</sub> CF <sub>2</sub> CF <sub>3</sub>	127	kg CO <sub>2</sub> -eq per kg
HCFC-225cb	CHClFCF <sub>2</sub> CClF <sub>2</sub>	525	kg CO <sub>2</sub> -eq per kg
<b>Hydrofluorocarbons (HFCs)</b>			
HFC-23	CHF <sub>3</sub>	12,400	kg CO <sub>2</sub> -eq per kg
HFC-32	CH <sub>2</sub> F <sub>2</sub>	677	kg CO <sub>2</sub> -eq per kg
HFC-41	CH <sub>3</sub> F <sub>2</sub>	116	kg CO <sub>2</sub> -eq per kg
HFC-125	CHF <sub>2</sub> CF <sub>3</sub>	3,170	kg CO <sub>2</sub> -eq per kg
HFC-134	CHF <sub>2</sub> CHF <sub>2</sub>	1,120	kg CO <sub>2</sub> -eq per kg
HFC-134a	CH <sub>2</sub> FCF <sub>3</sub>	1,300	kg CO <sub>2</sub> -eq per kg
HFC-143	CH <sub>2</sub> FCHF <sub>2</sub>	328	kg CO <sub>2</sub> -eq per kg
HFC-143a	CH <sub>3</sub> CF <sub>3</sub>	4,800	kg CO <sub>2</sub> -eq per kg
HFC-152	CH <sub>2</sub> FCH <sub>2</sub> F	16	kg CO <sub>2</sub> -eq per kg
HFC-152a	CH <sub>3</sub> CHF <sub>2</sub>	138	kg CO <sub>2</sub> -eq per kg
HFC-161	CH <sub>3</sub> CH <sub>2</sub> F	4	kg CO <sub>2</sub> -eq per kg
HFC-227ea	CF <sub>3</sub> CHFCF <sub>3</sub>	3,350	kg CO <sub>2</sub> -eq per kg
HFC-236cb	CH <sub>2</sub> FCF <sub>2</sub> CF <sub>3</sub>	1,210	kg CO <sub>2</sub> -eq per kg

<sup>7</sup>Myhre, G., D. Shindell, F.-M. Bréon, W. Collins, J. Fuglestedt, J. Huang, D. Koch, J.-F. Lamarque, D. Lee, B. Mendoza, T. Nakajima, A. Robock, G. Stephens, T. Takemura and H. Zhang, 2013: Anthropogenic and Natural Radiative Forcing. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

HFC-236ea	CHF <sub>2</sub> CHF <sub>2</sub> CF <sub>3</sub>	1,330	kg CO <sub>2</sub> -eq per kg
HFC-236fa	CF <sub>3</sub> CH <sub>2</sub> CF <sub>3</sub>	8,060	kg CO <sub>2</sub> -eq per kg
HFC-245ca	CH <sub>2</sub> FCF <sub>2</sub> CHF <sub>2</sub>	716	kg CO <sub>2</sub> -eq per kg
HFC-245fa	CHF <sub>2</sub> CH <sub>2</sub> CF <sub>3</sub>	858	kg CO <sub>2</sub> -eq per kg
HFC-365mfc	CH <sub>3</sub> CF <sub>2</sub> CH <sub>2</sub> CF <sub>3</sub>	804	kg CO <sub>2</sub> -eq per kg
HFC-43-10mee	CF <sub>3</sub> CHFCH <sub>2</sub> CF <sub>2</sub> CF <sub>3</sub>	1,650	kg CO <sub>2</sub> -eq per kg
<b>Perfluorinated compounds</b>			
Sulphur hexafluoride	SF <sub>6</sub>	23,500	kg CO <sub>2</sub> -eq per kg
Nitrogen trifluoride	NF <sub>3</sub>	16,100	kg CO <sub>2</sub> -eq per kg
PFC-14	CF <sub>4</sub>	6,630	kg CO <sub>2</sub> -eq per kg
PFC-116	C <sub>2</sub> F <sub>6</sub>	11,100	kg CO <sub>2</sub> -eq per kg
PFC-218	C <sub>3</sub> F <sub>8</sub>	8,900	kg CO <sub>2</sub> -eq per kg
PFC-318	c-C <sub>4</sub> F <sub>8</sub>	9,540	kg CO <sub>2</sub> -eq per kg
PFC-31-10	C <sub>4</sub> F <sub>10</sub>	9,200	kg CO <sub>2</sub> -eq per kg
PFC-41-12	C <sub>5</sub> F <sub>12</sub>	8,550	kg CO <sub>2</sub> -eq per kg
PFC-51-14	C <sub>6</sub> F <sub>14</sub>	7,910	kg CO <sub>2</sub> -eq per kg
PCF-91-18	C <sub>10</sub> F <sub>18</sub>	7,190	kg CO <sub>2</sub> -eq per kg
Trifluoromethyl sulphur pentafluoride	SF <sub>5</sub> CF <sub>3</sub>	17,400	kg CO <sub>2</sub> -eq per kg
Perfluorocyclopropane	c-C <sub>3</sub> F <sub>6</sub>	9,200	kg CO <sub>2</sub> -eq per kg
<b>Fluorinated ethers</b>			
HFE-125	CHF <sub>2</sub> OCF <sub>3</sub>	12,400	kg CO <sub>2</sub> -eq per kg
HFE-134	CHF <sub>2</sub> OCHF <sub>2</sub>	5,560	kg CO <sub>2</sub> -eq per kg
HFE-143a	CH <sub>3</sub> OCF <sub>3</sub>	523	kg CO <sub>2</sub> -eq per kg
HCFE-235da2	CHF <sub>2</sub> OCF <sub>2</sub> CF <sub>3</sub>	491	kg CO <sub>2</sub> -eq per kg
HFE-245cb2	CH <sub>3</sub> OCF <sub>2</sub> CF <sub>3</sub>	645	kg CO <sub>2</sub> -eq per kg
HFE-245fa2	CHF <sub>2</sub> OCH <sub>2</sub> CF <sub>3</sub>	812	kg CO <sub>2</sub> -eq per kg
HFE-347mcc3	CH <sub>3</sub> OCF <sub>2</sub> CF <sub>2</sub> CF <sub>3</sub>	530	kg CO <sub>2</sub> -eq per kg
HFE-347pcf2	CHF <sub>2</sub> CF <sub>2</sub> OCH <sub>2</sub> CF <sub>3</sub>	889	kg CO <sub>2</sub> -eq per kg
HFE-356pcc3	CH <sub>3</sub> OCF <sub>2</sub> CF <sub>2</sub> CHF <sub>2</sub>	413	kg CO <sub>2</sub> -eq per kg
HFE-449sl (HFE-7100)	C <sub>4</sub> F <sub>9</sub> OCH <sub>3</sub>	421	kg CO <sub>2</sub> -eq per kg
HFE-569sf2 (HFE-7200)	C <sub>4</sub> F <sub>9</sub> OC <sub>2</sub> H <sub>5</sub>	57	kg CO <sub>2</sub> -eq per kg
HFE-43-10pccc124 (H-Galden 1040x)	CHF <sub>2</sub> OCF <sub>2</sub> OC <sub>2</sub> F <sub>4</sub> OCHF <sub>2</sub>	2,820	kg CO <sub>2</sub> -eq per kg
HFE-234ca12 (HG-10)	CHF <sub>2</sub> OCF <sub>2</sub> OCHF <sub>2</sub>	5,350	kg CO <sub>2</sub> -eq per kg
HFE-338pcc13 (HG-01)	CHF <sub>2</sub> OCF <sub>2</sub> CF <sub>2</sub> OCHF <sub>2</sub>	2,910	kg CO <sub>2</sub> -eq per kg
HFE-227ea	CF <sub>3</sub> CHFOCF <sub>3</sub>	6,450	kg CO <sub>2</sub> -eq per kg
HFE-236ea2	CHF <sub>2</sub> OCHF <sub>2</sub> CF <sub>3</sub>	1,790	kg CO <sub>2</sub> -eq per kg
HFE-236fa	CF <sub>3</sub> CH <sub>2</sub> OCF <sub>3</sub>	979	kg CO <sub>2</sub> -eq per kg
HFE-245fa1	CHF <sub>2</sub> CH <sub>2</sub> OCF <sub>3</sub>	828	kg CO <sub>2</sub> -eq per kg
HFE-263fb2	CF <sub>3</sub> CH <sub>2</sub> OCH <sub>3</sub>	1	kg CO <sub>2</sub> -eq per kg
HFE-329mcc2	CHF <sub>2</sub> CF <sub>2</sub> OCF <sub>2</sub> CF <sub>3</sub>	3,070	kg CO <sub>2</sub> -eq per kg
HFE-338mcf2	CF <sub>3</sub> CH <sub>2</sub> OCF <sub>2</sub> CF <sub>3</sub>	929	kg CO <sub>2</sub> -eq per kg
HFE-347mcf2	CHF <sub>2</sub> CH <sub>2</sub> OCF <sub>2</sub> CF <sub>3</sub>	854	kg CO <sub>2</sub> -eq per kg
HFE-356mec3	CH <sub>3</sub> OCF <sub>2</sub> CHF <sub>2</sub> CF <sub>3</sub>	387	kg CO <sub>2</sub> -eq per kg
HFE-356pcf2	CHF <sub>2</sub> CH <sub>2</sub> OCF <sub>2</sub> CHF <sub>2</sub>	719	kg CO <sub>2</sub> -eq per kg
HFE-356pcf3	CHF <sub>2</sub> OCH <sub>2</sub> CF <sub>2</sub> CHF <sub>2</sub>	446	kg CO <sub>2</sub> -eq per kg
HFE-365mcf3	CF <sub>3</sub> CF <sub>2</sub> CH <sub>2</sub> OCH <sub>3</sub>	<1	kg CO <sub>2</sub> -eq per kg
HFE-374pc2	CHF <sub>2</sub> CF <sub>2</sub> OCH <sub>2</sub> CH <sub>3</sub>	627	kg CO <sub>2</sub> -eq per kg
<b>Perfluoropolyethers</b>			
PFPME	CF <sub>3</sub> OCF(CF <sub>3</sub> )CF <sub>2</sub> OCF <sub>2</sub> OCF <sub>3</sub>	9,710	kg CO <sub>2</sub> -eq per kg
<b>Hydrocarbons and other compounds – direct effects</b>			
Chloroform	CHCl <sub>3</sub>	16	kg CO <sub>2</sub> -eq per kg
Methylene chloride	CH <sub>2</sub> Cl <sub>2</sub>	9	kg CO <sub>2</sub> -eq per kg
Methyl chloride	CH <sub>3</sub> Cl	12	kg CO <sub>2</sub> -eq per kg
Halon-1201	CHBrF <sub>2</sub>	376	kg CO <sub>2</sub> -eq per kg



## Annex D: Products in Scope

Table D.1 List of Carbon Neutral Categories and Reason for Inclusion (Classification)

Carbon Neutral Category	Products in Scope	Carbon Neutral Classification
AUSTRALIA	All Products Sold	Lead CLT
NEW ZEALAND	All Products Sold	Lead CLT
VIETNAM	All Products Sold	Lead CLT
EDGE	All Products Sold	Lead Brand : Cars
POWER1	All Products Sold	Lead Brand : Motorcycles
VECTON	All Products Sold	Lead Brand : Commercial Vehicles & Existing
OPTIGEAR	All Products Sold	Lead Brand : Industrial / Wind Turbines & Existing (2 variants)
BRAYCO & TRANSAQUA	All Energy-Owned BRAYCO & TRANSAQUA Products Sold	Lead Brands : Energy / Subsea
BIO RANGE	BIO TAC, BIO STAT and BIO BAR	Lead Brand : Marine / improved biodegradation, reduced bioaccumulation or toxicity
XBB & XBC	ALUSOL & HYSOL XBB; TECHNICLEAN XBC	Lead Brand : Industrial Coolants and Cleaners / reduce water use and waste
Castrol ON	All Products Sold	Lead Brand: e-Fluids
EUROPE & RUSSIA PCO	All Products Sold	Existing
JAPAN PCO	All Products	Existing
JAPAN TRANSMAX	All Products Sold	Existing
PROFESSIONAL	All Products Sold	Existing
EUROPE CRB	All Products Sold	Market Specific Request
US TRANSYND & AUTRAN	TRANSYND, TRANSYND RD and AUTRAN SYN 295 sold in the US	Market Specific Request

Lead CLT: One of 3 countries making all the products they sell carbon neutral in year one of the PATH360 Carbon Neutral Program

Lead Brand: Brands of significance for each Product Owner (sales space) due to either scale of volume sold or PATH360 sustainability qualifying criteria

Existing: Introduced as a carbon neutral product prior to the PATH360 launch (2014-2020) and included in discrete previous carbon neutral applications (QES's).

EDGE: Excluding EDGE in the US which will be included from 2022

POWER1: Excluding POWER1 in China which will be included from 2022

Table D.2 List of Product Types by Category Sold

Product Category	Product Type	Product Category	Product Type
<b>Cars</b>	Additives	<b>Industrial</b>	Additives
	Antifreeze/ Coolants (automotive)		Chain Lubricants
	Automatic Transmission Fluid		Circulating Oils
	Brake Fluid		Compressor oils
	Engine oils: Passenger Car (and car derived van)		Coolants (Industrial)
	Gear oils		Corrosion preventives
	Greases		Food grades
	Hydraulic fluids		Forming oils
	Industrial Cleaners		Gear oils
	Manual Transmission Fluids		Greases
	Other		Heat transfer oils
	Specialties		Hydraulic fluids
<b>Commercial Vehicles</b>	Additives		Industrial Cleaners
	Antifreeze/ Coolants (automotive)		Other
	Automatic Transmission Fluid		Process Oils
	Chain Lubricants		Quenching Oils
	Coolants (Industrial)		Refrigerator Compressor Oil
	Engine oils: Commercial Vehicle		Slide Way Oils
	Engine oils: Marine		Specialties
	Engine oils: Off Highway		Specification grades
	Gear oils		Steam Reciprocating Engine Oils
	Greases	<b>Energy</b>	Wire Rope Protectives
	Hydraulic fluids		Compressor oils
	Industrial Cleaners		Engine oils: Gas-Industrial
	Manual Transmission Fluids		Heat transfer oils
	Multifunctional fluids		Hydraulic fluids
	Other		Specification grades
	Specialties		Transformer Oils
<b>Motorcycles</b>	Chain Lubricants		Turbine oils
	Engine oils: Motorcycle	<b>Marine</b>	Engine oils: Marine
	Greases		Gear oils
	Motorcycle Ancillaries		Greases
	Small Engine Oil		Hydraulic fluids
			Other
			Refrigerator Compressor Oil
			Turbine oils

Table D.3 Complete List of Product Variants by Carbon Neutral Category

Australia & New Zealand			
A747	Axle Long Drain 80W-90	Hyspin AWH 68	Magnatec 5W-30 A5
AC Spider Bearing Grease	Bartran 46	Hyspin AWH 68 Superclean	Magnatec 5W-40
Activ 2T	Bartran 68	Hyspin AWH-M 100	Magnatec Diesel 15W-40
Activ 4T 15W-50	Bio RD 100	Hyspin AWH-M 15	Magnatec Diesel DX 5W-40
Adblue	Bio RDC	Hyspin AWH-M 32	Magnatec Fuel Saver 5W-30
Aero J5	Brake Fluid DOT 3	Hyspin AWH-M 46	Magnatec Fuel Saver DX 5W-30
Agri AS Trans Plus 20W-30	Brake Fluid DOT 4	Hyspin AWH-M 68	Magnatec Stop-Start 0W-20
Agri Grease Ultra	Braycote Inertox 2	Hyspin AWS 10	Magnatec Stop-Start 0W-30 D
Agri MP Plus 20W-40	BTX Grease	Hyspin AWS 100	Magnatec Stop-Start 10W-30
Agri Trans Plus 80W	Bulldog Premium Coolant	Hyspin AWS 150	Magnatec Stop-Start 5W-30
Aircol 2294	Calibration Oil 4113	Hyspin AWS 22 Superclean	Magnatec Stop-Start 5W-30 A5
Aircol AMS 68	CareClean Lime	Hyspin AWS 220	Magnatec Stop-Start 5W-30 C3
Aircol CM 46	Chain Spray O-R	Hyspin AWS 32	Magnatec SUV 5W-30 C3
Aircol CM 68	Chainsaw Oil	Hyspin AWS 46	Manual EP 80W
Aircol LPT 68	CRB Mining 15W-40 CK-4	Hyspin AWS 46 Superclean	Manual VMX 80W
Aircol MR 46	CRB Rail 20W-40	Hyspin AWS 68	Manual VMX-M 75W-85
Aircol MR 68	Cutter Bar and Chain Lubricant	Hyspin AWS 68 Superclean	Mazda ATF BTM
Aircol NG 260	Cyltech 70	Hyspin Glow 46	Mazda ATF FZ
Aircol PD 100	Degreaser	Hyspin Glow 68	Mazda Brake Fluid Super
Aircol PD 150	Diesel Coolant HD 50	Hyspin HDH 7000	Mazda Coolant
Aircol PD 32	Duratec A	Hyspin HVI 100	Mazda Diesel Oil Extra DL-1 5W-30
Aircol PD 46	Duratec L	Hyspin HVI 15	Mazda FL 22 Coolant
Aircol PD 68	Duratec M	Hyspin HVI 32	Mazda Premium Engine Oil
Aircol SN 100	Duratec MX	Hyspin HVI 46	Mazda Rotary Oil 5W-30
Aircol SN 68	Dynadrive 80W-90	Hyspin HVI 46 Superclean	MHP 153
Aircol SR 46	Energear Axle 85W-140	Hyspin HVI 68	MHP 154
Aircol SR 68	Energear Axle LS 90	Hyspin HVI 68 Superclean	Mine Grease
Aircol SW 68	Energear Hypo XL 80W-90	Hyspin Spindle Oil E 5	Mine Multi 15W-40
Almaredge BI	Energol LPT 68	Hyspin VSH 3000	Mineclean
Alpha SP 100	Energol RC-R 100	Hyspin ZZ 100	Minegrease LM EP 680
Alpha SP 150	Energol RD-E 320	Hyspin ZZ 150	Mitsubishi Coolant Premix
Alpha SP 220	Energol THN 77	Hyspin ZZ 22	Mitsubishi Diamond Spectrum ATF SP III
Alpha SP 320	Energear LC 2	Hyspin ZZ 32 Superclean	Mitsubishi Diamond Spectrum Diesel Eng Oil 15W-40
Alpha SP 460	Energear LC 2M	Hyspin ZZ 46 Superclean	Mitsubishi Diamond Spectrum Engine Oil 15W-50
Alpha SP 68	Energear LC 2-T	Hyspin ZZ 68 Superclean	Mitsubishi DPF Diesel Engine Oil 5W-30
Alpha SP 680	Energear LS-EP 2	Hy Spray E 2010	Mitsubishi DPF Diesel Engine Oil 5W-40
Alpha TT 1200	Engine Shampoo	Ilocut 154	Mitsubishi Manual Transmission Fluid 75W-80
Alpha VT 32	Foam Air Filter Oil (Aerosol)	Ilocut 170	Mitsubishi MSL 5W-30
Alpha WT 220	Ford Automatic Transmission Fluid 4 Speed R148	Ilocut 482	Mitsubishi MSL-II 5W-30
Alpha WT 320	Ford Brake Fluid R139	Ilocut 534	Mitsubishi Super Longlife Coolant Premix
Alpha WT 460	Ford Formula E 5W-30	Iloform PN 135	Molub-Alloy 1000 HT
Alphasyn EP 150	Ford Oil Super 5W-30 GF-4	Iloform PN 223	Molub-Alloy 6040/150
Alphasyn EP 1500	Ford Power Steering Fluid R1424	Iloform PN 224	Molub-Alloy 6040/460-1 1/2
Alphasyn EP 220	Ford Power Steering Fluid R1425	Iloform PN 400	Molub-Alloy 777-1 ES
Alphasyn EP 320	Ford Turbo/LPG 15W-40	Iloform TDN 81	Molub-Alloy 777-2 ES
Alphasyn EP 460	Fork Oil 10W	Iloquench 1	Molub-Alloy 860/220-2 ES
Alphasyn EP 680	Fork Oil 15W	KIA Brake Fluid DOT 4	Molub-Alloy 860/460-2 ES
Alphasyn HG 220	Fork Oil 5W	Komatsu Axle Oil AXO80	Molub-Alloy 936 SF Heavy
Alphasyn HTX 1000	Fuel Doctor	Komatsu EO15W40-DH	Molub-Alloy 950 85W-140
Alphasyn HTX 320	Garden 2T	Komatsu EO15W40-LA-CJ	Molub-Alloy BH 47/1600-1.5
Alphasyn OG 3200	Garden 4T 10W-30	Komatsu Gear Oil 85W-140	Molub-Alloy BRB 572
Alphasyn PG 150	Garden 4T 30	Komatsu Hydraulic Oil 46	Molub-Alloy CH 22
Alphasyn PG 220	GTX 15W-40 (AZ)	Komatsu Hyper Grease G2-TE	Molub-Alloy Foodproof 823-2 FM
Alphasyn PG 320	GTX 20W-50	Komatsu Lithium EP Grease G2-LI	Molub-Alloy GM 1200
Alphasyn PG 460	GTX 20W-50 (AZ)	Komatsu Powertrain Oil TO-10	Molub-Alloy GM 1500
Alphasyn T 150	GTX Diesel 15W-40	Komatsu Powertrain Oil TO-30	Molub-Alloy GM 300s/1000
Alphasyn T 220	GTX Diesel 15W-40 (NZ)	Komatsu Supercoolant AF-NAC Premix	Molub-Alloy OG 8031/2200-00
Alphasyn T 320	GTX High Mileage 15W-50	Longtime PD 1	Molub-Alloy OG 8031/3000-00
Alphasyn T 460	GTX Modern Engine 10W-30	Magna 460	Molub-Alloy OG 8031/6000-00
Alphasyn T 68	GTX Modern Engine 15W-40	Magna CH 150 EP	Molub-Alloy OG 9000
Anvol AE 5/95	GTX ULTRACLEAN 10W-30	Magna CL 1000	Molub-Alloy OG 9002 Heavy
Anvol PE 46 XC	GTX ULTRACLEAN 15W-40	Magna CL 460	Molub-Alloy OG 936 SF Heavy A
Anvol SWX 68	Hair & Body Wash	Magna CS-ML 370	Molub-Alloy OG 936 SF Super Heavy
Anvol WG 46	High Temperature Grease	Magna CT 320	Molub-Alloy WC 880 LF Heavy
ATF Dex III	Hino Diesel X Plus 15W-40	Magna CT 370	Molub-Alloy WC 880 SF Medium
ATF Heavy Duty	Hino Driveline X 90	Magna CT 680	Molub-Alloy WR 1000
Autran FD 60	Hino Shift X 80W-90	Magna CTX 100 WT	Molub-Alloy WR 921
Autran TO 410	HLX 40	Magna CTX 220 WT	Molub-Alloy WRL 119
Autran TO 430	Holden Limited Slip Diff Oil 75W-85	Magna CTX 320 WT	MOP S
Autran TO 430F	HSA 460	Magna CTX 460 WT	Motorcraft Dual Clutch Transmission Fluid 75W
Autran TO 450	Hydraulic Oil 46	Magna PR 3	Motorcraft Manual Transmission Fluid FE 75W
Autran TO 450F	Hydraulic Oil 68	Magna RD 100	Motorcraft SAE 5W-30 Full Synthetic Engine Oil
Autran TO 460	Hypogear 80W-90	Magna RD 150	Multiclean
Autran TO 460F	Hypogear 85W-140	Magna RD 320	Multipurpose Degreaser
Axle AP 85W-140	Hysol MB 50	Magna SW 32	Olista Longtime 2
Axle EPX 80W-90	Hysol X	Magna SW D 220	OM-33
Axle EPX 85W-140	Hyspin AWH 100	Magna SW D 68	Optileb GT 220
Axle GO-J 90	Hyspin AWH 15	Magna ZN 100	Optileb GT 460
Axle Limited Slip 85W-140	Hyspin AWH 32	Magnatec 10W-40	Optileb WOM 14
Axle Limited Slip 90	Hyspin AWH 46	Magnatec 15W-40	Optileb WOM 65



Australia & New Zealand (continued)		
Optitemp LG 2	Spheerol LMM	Vanellus DD 40
Outboard 2T	Spheerol LYT 1	Vanellus Multi-Fleet 15W-40
Outboard 4T	Spheerol PH Grease	Vanellus Multi-Fleet ECO 15W-40
Perfecto HT 12	Spheerol RCG	Vanellus Multi-Fleet Plus 15W-40
Perfecto HT 5	Spheerol SBX 1	Variocut B 46 TC
Perfecto T 100	Spheerol SBX 2	Variocut G 600 HC
Perfecto T 32	Spheerol SX 2	Viscogen KL 23
Perfecto T 32 Superclean	Spheerol SY 1002	Viscogen KL 23 Spray
Perfecto T 46	Spheerol SY 1501	Viscogen KL 300 Spray
Perfecto T 68	Spheerol SY 2202	Viscogen KLK 28
Perfecto TR IN	Spheerol SY 4601	Wonderclean
Perfecto X 32	Spheerol Ultratak	
Perfecto X 32 Superclean	SRF Racing Brake Fluid	
Perfecto X 46	Subaru Brake Fluid	
Perfecto X 46 Superclean	Subaru Coolant	
Perfecto X 68	Subaru Long-Life coolant	
Perfecto XEP 32 Superclean	Super TOU 15W-40	
Perfecto XEP 46 Superclean	Syntilo 1023	
Performance Bio CH 32	Syntilo 24	
Performance Bio HE 32 TG	Syntilo 9902	
PH Grease	Syntrans 75W-85	
Power Steering Fluid	Syntrans AT 75W-90	
Premium Cool Plus	Syntrans FE 75W	
Premium Cool Plus 50	Syntrans Heavy Duty 75W-90	
Premium Heavy Duty	Syntrans Z Long Life 75W-80	
QB100 Degreaser	Syntrax 80W-140	
Quickbreak Degreaser	Syntrax D 80W-140	
Radicoool	Syntrax E 80W-140	
Radicoool Heavy Duty Premix	Syntrax Limited Slip 75W-140	
Radicoool NF	Syntrax Long Life 75W-140	
Radicoool NF Premix	Syntrax Long Life 75W-90	
Radicoool Non-Glycol Premix	Syntrax Universal Plus 75W-90	
Radicoool PG Premix	Technicool AS 62	
Radicoool Premix	Technicool Galvpack PB	
Radicoool SF	Technicool SC 320	
Radicoool SF Premix	Technicool SF	
Radicoool SF-O	TFC 410	
Radicoool Si-OAT	TFC 430	
Radicoool Si-OAT Premix	TFC 450	
React Performance DOT 4	TFC 450 (Filtered)	
React SRF Racing	TFC 460	
Red Rubber Grease	TGMO 0W-30 C2	
Renault - Castrol GTX RN-SPEC 5W-30 RN 17	TGMO 10W-30 SN/CF	
Renault - Castrol GTX RN-SPEC 5W-30 RN 720	TLX Xtra 304	
Renault - Castrol GTX RN-SPEC 5W-40 RN 710	Tractran TF-10	
Rock Drill 320	Transmax CVT	
Rustilo 630	Transmax DEXRON?-VI MERCON? LV	
Rustilo DWX 21	Transmax DUAL	
Rustilo DWX 22	Transmax FE Multivehicle	
Rustilo DWX 30	Transmax Manual E Long Life 40	
Rustilo DWX 32	Transmax Mercon V	
RX Diesel 15W-40	Transmax Multivehicle	
RX Diesel 15W-40 CI-4 Plus/E7	Transmax Offroad 10W	
RX Diesel 15W-40 CI-4/E7	Transmax Offroad 30	
RX J-Max 15W-40	Transmax Offroad 50	
RX Max 15W-40	Transmax Offroad 60	
RX Mono 30 CF	Transmax TQ 95	
RX Mono 40 CF	Transmax Type F	
RX Mono DD 40	Transmax Z	
RX Mono DD 50	TranSynd	
RX Plus 15W-40	TranSynd RD	
RX Super 15W-40	Tribol GR 100-0 PD	
RX Super 15W-40 CJ-4/E9	Tribol GR 100-00 PD	
SBX Grease 1	Tribol GR 100-1 PD	
SCI Grease 1	Tribol GR 100-2 PD	
Seamax Super Plus 15W-40	Tribol GR 1350-2.5 PD	
Spheerol AP 3	Tribol GR 3020/1000-0 PD	
Spheerol BTX 2	Tribol GR 3020/1000-000 PD	
Spheerol ELG	Tribol GR 3020/1000-1 PD	
Spheerol EPL 0	Tribol GR 4020/220-1 PD	
Spheerol EPL 00	Tribol GR 4020/220-2 PD	
Spheerol EPL 1	Tribol GR 4747/220-2 HT	
Spheerol EPL 2	Tribol GR HT 2	
Spheerol EPLX 200-1	Tribol GR XT 2 HT	
Spheerol EPLX 200-2	Tribol HM 943/68	
Spheerol EPLX-M 2	Tribol WR 4600	
Spheerol FPG	Ultratak	
Spheerol HTB	Universal 80W-90	
Spheerol JBG	Valvemaster	
Spheerol LC 2M	Vanellus C3 Mono 10W	

BIO RANGE	EDGE	OPTIGEAR
BioBar 22	EDGE 0W-20 C5	Concentrate Optigear BM
BioBar 32	EDGE 0W-20 E	Optigear 100
BioBar 46	EDGE 0W-20 LL IV	Optigear 1100/100
BioBar 68	EDGE 0W-20 U.S.	Optigear 1100/1000
BioStat 100	EDGE 0W-20 V	Optigear 1100/150
BioStat 150	EDGE 0W-30	Optigear 1100/1500
BioStat 220	EDGE 0W-30 A3/B4	Optigear 1100/220
BioStat 68	EDGE 0W-30 A5/B5	Optigear 1100/320
BioTac MP	EDGE 0W-30 C2	Optigear 1100/460
BioTac OG	EDGE 0W-40	Optigear 1100/68
Biotrans QB	EDGE 0W-40 (EU)	Optigear 1100/680
BRAYCO	EDGE 0W-40 A3/B4	Optigear 150
Brayco HV 10	EDGE 0W-40 F	Optigear 220
Brayco Micronic 756	EDGE 0W-40 RN 17 RSA	Optigear 320
Brayco Micronic LV/3	EDGE 0W-40 SP	Optigear BM 100
Brayco Micronic SBF	EDGE 10W-30	Optigear BM 1000
Brayco Micronic SBF E	EDGE 10W-30 U.S.	Optigear BM 150
Brayco Micronic SBF ES	EDGE 10W-40	Optigear BM 1500
Brayco Micronic SBF HT	EDGE 10W-60	Optigear BM 220
Brayco Micronic SV/3	EDGE 10W-60 SN	Optigear BM 3000
Brayco Micronic SV/B	EDGE 25W-50	Optigear BM 320
VECTON	EDGE 5W-20	Optigear BM 460
Ford - Castrol Vecton 10W-40 F-Trucks E4/E7	EDGE 5W-20 U.S.	Optigear BM 68
Vecton 10W-30 CH-4	EDGE 5W-30	Optigear BM 680
Vecton 10W-30 DH-1	EDGE 5W-30 A3/B4	Optigear EP 100
Vecton 10W-30 FA-4	EDGE 5W-30 A5/B5	Optigear EP 150
Vecton 10W-40	EDGE 5W-30 C1	Optigear EP 220
Vecton 10W-40 CK-4/E9	EDGE 5W-30 C3	Optigear EP 32
Vecton 10W-40 E4/E7	EDGE 5W-30 FE	Optigear EP 320
Vecton 10W-40 F-Trucks E4/E7	EDGE 5W-30 LL	Optigear EP 46
Vecton 10W-40 LS	EDGE 5W-30 M	Optigear EP 460
Vecton 15W-40	EDGE 5W-30 SN	Optigear EP 68
Vecton 15W-40 CH-4	EDGE 5W-30 U.S.	Optigear MX 150
Vecton 15W-40 CH-4 - ITWS CN	EDGE 5W-40	Optigear MX 320
Vecton 15W-40 CI-4 - ITWS CN	EDGE 5W-40 (EU)	Optigear MX 460
Vecton 15W-40 CI-4 Plus	EDGE 5W-40 A3/B4	Optigear OG 4
Vecton 15W-40 CI-4 Plus/E7	EDGE 5W-40 C3	Optigear OG 4 EP
Vecton 15W-40 CI-4 Plus/SL	EDGE 5W-40 SN	Optigear RMO
Vecton 15W-40 CI-4 Plus/SL/E7	EDGE 5W-40 U.S.	Optigear Synthetic 1300/220
Vecton 15W-40 CI-4/E7	EDGE 5W-50	Optigear Synthetic 1300/460
Vecton 15W-40 CI-4/E7 Foton	EDGE 5W-50 U.S.	Optigear Synthetic 1390/220
Vecton 15W-40 CJ-4	EDGE Bio-Synthetic 5W-30	Optigear Synthetic 1510/320
Vecton 15W-40 CJ-4/E9	EDGE Extended Performance 0W-20	Optigear Synthetic 1710/100
Vecton 15W-40 CK-4	EDGE Pick Up 5W-30	Optigear Synthetic 1710/220
Vecton 15W-40 CK-4/E9	EDGE Supercar 0W-20	Optigear Synthetic 1710/320
Vecton 20W-50 CH-4	EDGE Supercar 0W-30 A3/B4	Optigear Synthetic 1710/460
Vecton 20W-50 CH-4 - ITWS CN	EDGE Supercar 0W-40 A3/B4	Optigear Synthetic 800/100
Vecton 20W-50 CI-4	EDGE Supercar 5W-50	Optigear Synthetic 800/1000
Vecton 20W-50 CI-4 - ITWS CN	EDGE SUPERCAR A 0W-20	Optigear Synthetic 800/150
Vecton 20W-50 CI-4 Foton	EDGE Supercar Race Oil 15W-40	Optigear Synthetic 800/1500
Vecton 5W-30 F-Trucks E6/E9	EDGE Turbo Diesel 5W-40	Optigear Synthetic 800/220
Vecton Fuel Saver 10W-40	Mixed Carton EDGE 5W-30 C3 and Engine Shampoo	Optigear Synthetic 800/2200
Vecton Fuel Saver 5W-30 E6/E9	Mixed Carton EDGE 5W-40 A3/B4 and Engine Shampoo	Optigear Synthetic 800/320
Vecton Fuel Saver 5W-30 E7	Mixed Carton EDGE Pick-Up 5W-30 and Engine Shampoo Diesel	Optigear Synthetic 800/460
Vecton Long Drain 10W-30 CK-4	XBB & XBC	Optigear Synthetic 800/680
Vecton Long Drain 10W-30 E6/E9	Alusol SL 51 XBB	Optigear Synthetic A 320
Vecton Long Drain 10W-40	Alusol SL 61 XBB	Optigear Synthetic ALR 150
Vecton Long Drain 10W-40 E4/E7	Alusol SL 78 XBB	Optigear Synthetic CT 320
Vecton Long Drain 10W-40 E6/E9	Hysol SL 30 XBB	Optigear Synthetic DS 100
Vecton Long Drain 10W-40 E7	Hysol SL 35 XBB	Optigear Synthetic PD 100 ES
Vecton Long Drain 10W-40 LS	Hysol SL 36 XBB	Optigear Synthetic PD 150
Vecton Long Drain 10W-40 SLD3	Hysol SL 37 XBB	Optigear Synthetic PD 150 ES
Vecton Long Drain 15W-40	Hysol SL 45 XBB	Optigear Synthetic PD 220
Vecton Long Drain 15W-40 CK-4/E9	Hysol SL 50 XBB	Optigear Synthetic PD 220 ES
Vecton Long Drain 15W-40 NG	Techniclean 45 XBC	Optigear Synthetic PD 320
Vecton Long Drain 5W-30 E6/E9	Techniclean 80 XBC	Optigear Synthetic PD 320 ES
Vecton Long Drain 5W-30 FA-4/F8	Techniclean 90 XBC	Optigear Synthetic PD 460
Vecton NG 15W-40		Optigear Synthetic PD 460 ES
Vecton RX Fuel Saver 10W-40		Optigear Synthetic PD 68 ES
TRANSAQUA		Optigear Synthetic PD 680
Transaqua HC 10		Optigear Synthetic PD 680 ES
Transaqua HT		Optigear Synthetic RO 150
Transaqua HT2		Optigear Synthetic RO 220
Transaqua HT2-N		Optigear Synthetic X 150
Transaqua SP		Optigear Synthetic X 220
US AUTRAN		Optigear Synthetic X 320
Autran Syn 295		Optigear Synthetic X 320 AD
US TRANSYND		Optigear Synthetic X 320 WTO
TranSynd		Optigear Synthetic X 460
TranSynd RD		

## PAS 2060 Qualifying Explanatory Statement: Carbon Neutral Products

POWER 1	VIETNAM (continued)	PROFESSIONAL
Bundle Pack POWER1 Scooter 10W-40 and Scooter Gear Oil 80W-90	Alpha SMR Heavy X	EDGE Professional 0W-20
Mixed Carton POWER1 Automatic 10W-40 and Scooter Gear Oil 80W-90	Alpha SP 100	EDGE Professional 505 01 5W-40
Power 1 2T	Alpha SP 150	EDGE Professional 5W-20
Power 1 2T (MY)	Alpha SP 220	EDGE Professional 5W-30
Power 1 4T 10W-50	Alpha SP 320	EDGE Professional 5W-40
Power 1 4T 15W-40	Alpha SP 460	EDGE Professional A1 5W-20
Power 1 4T 5W-40	Alpha SP 68	EDGE Professional A3 0W-30
Power 1 Grand Prix 4T 10W-40	Alpha SP 680	EDGE Professional A3 0W-30 (EU)
Power 1 Racing 2T	Alphasyn EP 220	EDGE Professional A3 0W-40
Power 1 Racing 4T 10W-40	Alphasyn EP 320	EDGE Professional A3 0W-40 (EU)
Power 1 Scooter 2T	Alphasyn EP 460	EDGE Professional A3 5W-30
Power 1 Scooter 4T 10W-30	Alphasyn GS 220	EDGE Professional A3 5W-40
Power 1 Scooter 4T 10W-40	Alphasyn GS 320	EDGE Professional A5 0W-30
Power 1 TTS Racing 2T	Alphasyn GS 460	EDGE Professional A5 5W-30
Power 1 V-Twin 4T 20W-50	Alphasyn GS 680	EDGE Professional C1 5W-30
Power RS 2T	Anvol WG 46	EDGE Professional C2 5W-30
POWER RS 4T 10W-30	BOT 130M	EDGE Professional C3 0W-30
POWER RS 4T 10W-40	BOT 352 B1	EDGE Professional C4 5W-30
POWER RS 4T 15W-50	BOT 979 0W-30	EDGE Professional C5 0W-20
POWER RS 4T 20W-50	Brake Fluid DOT 3	EDGE Professional CHN 5W-30
POWER RS Racing 4T 10W-50	Brake Fluid DOT 4	EDGE Professional Diesel 5W-30
POWER RS Racing 4T 10W-60	CRB 15W-40 CF-4	EDGE Professional DX 5W-30
POWER RS Racing 4T 5W-40	CRB 20W-50 CF-4	EDGE Professional E 0W-20
Power RS Scooter 2T	CRB Multi 15W-40 CH-4	EDGE Professional E 0W-30
Power RS Scooter 4T 5W-40	CRB Multi 20W-50 CH-4	EDGE Professional E C5 0W-20
Power RS TTS 2T	CRB Turbomax 15W-40 CH-4	EDGE Professional EC 0W-20
POWER1 4T 10W-30	CRB Turbomax 15W-40 CI-4	EDGE Professional Fuel Saver 0W-20
POWER1 4T 10W-30 (AS)	CRB Turbomax 15W-40 CI-4/E7	EDGE Professional H 0W-20
POWER1 4T 10W-40	CRB Turbomax 20W-50 CH-4	EDGE Professional H 5W-30
POWER1 4T 15W-40	CRB Turbomax 20W-50 CI-4	EDGE Professional H C2 0W-30
POWER1 4T 15W-50	Engine Shampoo	EDGE Professional LL IV FE 0W-20
POWER1 4T 20W-50	Engine Shampoo - Two Wheelers	EDGE Professional LL01 0W-30
POWER1 A747	Fork Oil 32	EDGE Professional LL01 5W-30
POWER1 Automatic 10W-40	GTX 15W-40	EDGE Professional LL03 5W-30
POWER1 Cruise 4T 15W-50	GTX 20W-50	EDGE Professional LL04 5W-30
POWER1 CRUISE 4T 20W-50	High Temperature Grease	EDGE Professional LL14 FE+ 0W-20
POWER1 Matic 10W-40	HLX 40	EDGE Professional LongLife III 0W-30
POWER1 Matic 5W-40	Honilo 981	EDGE Professional LongLife III 5W-30
POWER1 R 40	Hyspin AWH-M 32	EDGE Professional M 5W-30
POWER1 Racing 4T 10W-30	Hyspin AWH-M 46	EDGE Professional OE 0W-20
POWER1 Racing 4T 10W-40	Hyspin AWH-M 68	EDGE Professional OE 5W-20
POWER1 Racing 4T 10W-50	Hyspin AWS 10	EDGE Professional OE 5W-30
POWER1 Racing 4T 10W-50 (AS)	Hyspin AWS 100	EDGE Professional OE 5W-40
POWER1 Racing 4T 10W-60	Hyspin AWS 22	EDGE Professional OE-X 5W-30
POWER1 Racing 4T 5W-30	Hyspin AWS 32	EDGE Professional TWS 10W-60
POWER1 Racing 4T 5W-40	Hyspin AWS 46	EDGE Professional V 0W-20
POWER1 Scooter 4T 0W-30	Hyspin AWS 68	Ford - Castrol Magnatec Professional A5 5W-30
POWER1 Scooter 4T 10W-40	Hyspin HLP-Z 32	Ford - Castrol Magnatec Professional D 0W-30
POWER1 Scooter 4T 5W-40	Hyspin HLP-Z 46	Ford - Castrol Magnatec Professional Diesel 0W-20
POWER1 Ultimate 10W-30 4T	Hyspin HLP-Z 68	Ford - Castrol Magnatec Professional E 5W-20
POWER1 Ultimate 10W-40 4T	Hyspin HVI 32	Ford - Castrol Magnatec Professional OE 5W-40
POWER1 Ultimate 10W-50 4T	Hyspin HVI 46	GTX Professional 10W-30
POWER1 Ultimate Scooter 10W-30	Hyspin HVI 68	GTX Professional 10W-40
POWER1 Ultimate Scooter 5W-40	Hyspin VG 100	GTX Professional 10W-40 (BYD SL)
POWER1 Ultimate Sports Bike 15W-50	Ilocut 480 A	GTX Professional 10W-40 (BYD SM)
POWER1 Ultimate Sports bike 20W-50	Ilocut 603	GTX Professional 15W-40
POWER1 XR 77	Ilocut EDM 180	GTX Professional 15W-40 (NZ)
	LEXUS Genuine Motor Oil 5W-30	GTX Professional 20W-50
Activ 2T	Magna CTX 220	GTX Professional 25W-60
Activ 4T 20W-40	Magna CTX 88	GTX Professional 5W-30
Activ 4T 20W-50	Magna RD 100	GTX Professional 5W-40
Activ Scooter 10W-40 4-AT	Magna SW 68	GTX Professional 5W-40 C3
Activ Vistra 20W-50	Magnatec 10W-40	GTX Professional A1 5W-30
Aircol 299	Magnatec MZ 0W-20	GTX Professional A3 10W-40
Aircol AMS 68	Magnatec Stop-Start 5W-30	GTX Professional A3 15W-40
Aircol CM 100	Magnatec SUV 5W-30	GTX Professional A3 5W-30
Aircol CM 150	Molub-Alloy 777-2 ES	GTX Professional A3 5W-40
Aircol CM 32	Molub-Alloy 860/460-2 ES	GTX Professional C4 5W-30
Aircol CM 46	Molub-Alloy OG 8031/6000-00	GTX Professional CI-4+ 15W-40
Aircol CM 68	Moly Grease	GTX Professional COMPACT 15W-40
Aircol LPT 46	Motorcraft 15W-40	GTX Professional Diesel 10W-30
Aircol MR 32	Motorcraft SAE 5W-30 Full Synthetic Engine Oil	GTX Professional Diesel 15W-40
Aircol MR 46	Perfecto HT 5	GTX Professional Diesel 5W-30
Aircol MR 68	Perfecto T 32	GTX Professional Diesel MGDO 5W-30
Aircol PD 100	Perfecto T 46	GTX Professional SN 0W-20
Aircol PD 150	Perfecto T 68	GTX Professional SN 5W-30
Aircol SR 32	Perfecto X 32	Magnatec Professional 0W-16
Aircol SR 46	Perfecto X 46	Magnatec Professional 0W-20
Aircol SR 68		Magnatec Professional 10W-30
Almaredge BI		Magnatec Professional 10W-40
		Magnatec Professional 15W-40