Oban Distillery

PAS 2060 Qualifying Explanatory Statement

December 2021

Diageo

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Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
DRAFT	7/26/2021	Draft for client input	Erin Laude	✓	Duncan Wall	✓
Final Draft	9/20/2021	Final draft for final client input	Erin Laude	✓	Duncan Wall	✓
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Issue 1	12/21/2021	Final version for issue	Duncan Wall	✓	Heather Kilpatrick	✓

Contents

Diageo Oban Distillery Qualifying Explanatory Statement

This Qualifying Explanatory Statement (QES) demonstrates that the Diageo Oban Distillery achieved carbon neutrality in line with PAS 2060:2014 specifications for the demonstration of carbon neutrality for fiscal year (FY) 2021 (1st July 2020 – 30th June 2021) with a commitment to maintaining carbon neutrality through FY 2030 and beyond.

Diageo is a global leader in beverage alcohol with a vast collection of brands across spirits and beer, whose products are sold in more than 180 countries around the world. Diageo's brands include Johnnie Walker, Crown Royal, J&B, Buchanan's and Windsor whiskies, Smirnoff, Cîroc and Ketel One vodkas, Captain Morgan, Baileys, Don Julio, Tanqueray, and Guinness. The company is listed on both the New York Stock Exchange (DEO) and the London Stock Exchange (DGE). Thanks to its wide range of innovative technical services, Diageo can proudly serve its customers high-quality, lower emissions products.

Carbon Neutrality Declaration

"Carbon neutrality of Diageo's Oban Distillery for all Scope 1 and 2 emissions from site operations achieved by Diageo in accordance with PAS 2060 for FY 2021 with commitment to maintain to FY 2030, certified by Jacobs Engineering, Inc."

Signed and Dated:

Adam Mair, Scotch Manufacturing Director
15th December 2021

This QES contains all the required information on the carbon neutrality of the given subject. All information provided within this report has been reviewed by an independent third party, Jacobs Engineering., Inc, for accuracy. If provided with any new information affecting the validity of the following statements, this document will be updated accordingly to reflect Diageo's status of carbon neutrality. This QES document will be made publicly available on Diageo's website. This is the first declaration of commitment and achievement from Diageo Oban Distillery.

The commitment to and achievement of carbon neutrality statement has been verified by an independent third party, Jacobs Engineering, Inc., who confirms that the Commitment to and Achievement of Carbon Neutrality Declaration set out in this QES is appropriately reported in accordance with the requirement of PAS 2060. The assurance letter from Jacobs can be found in Appendix D of this report.

1. Introduction

This document forms the QES to state the commitment to and achievement of the Diageo Oban Distillery to carbon neutrality for Scope 1 and Scope 2 emissions arising from direct operations at the site, beginning with FY 2021 through to FY 2030 and beyond. Diageo has quantified their Scope 1 and Scope 2 carbon footprint in accordance with PAS 2060:2014. Scope 3 emissions are not included in this site-specific commitment to and achievement of carbon neutrality because Scope 3 emissions are being addressed at the corporate level. Scope 3 emission targets are covered by a corporate commitment to a 50 percent reduction in Scope 3 emissions across the total supply chain by 2030 from 2020. Diageo aims to partner with its suppliers on renewable energy solutions, circular designed products and regenerative agriculture to halve the supply chain carbon emissions by 2030, helping them move towards Net Zero carbon emissions.

This documentation of achievement of carbon neutrality for Diageo Oban Distillery's Scope 1 and Scope 2 carbon footprint is for the period FY 2021. The Diageo Oban Distillery has a carbon management plan in place to reduce their carbon intensity footprint and demonstrate commitment to carbon neutrality for Scope 1 and Scope 2 emissions in accordance with PAS 2060:2014. Table 1 documents the information required by PAS 2060 for a QES supporting a declaration of achievement of carbon neutrality.

Table 1. PAS 2060 Qualifying Explanatory Statement Information Summary

Entity making PAS 2060 declaration	Diageo Oban Distillery
Individual(s) 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)	Duncan Wall, Head of Carbon Sustainability Heather Kilpatrick, Global Carbon Project Coordinator
Subject of PAS 2060	Scope 1 and 2 operational emissions of Diageo Oban Distillery. Refer to "Scope of Achievement."
Function of subject	The function of the Diageo Oban Distillery is to produce single malt Scotch whisky and support a variety of whisky blends under the Diageo company.
Activities required for subject to fulfil its function	Activities include malted barley storage and preparation, mashing, fermentation, distillation, spirit handling, duty free warehouse, visitor centre and office.
Rationale for selection of the subject	The subject reflects Diageo Oban Distillery owned emissions that the business has direct control over. This enables the business to have direct influence over the reduction of emissions and take necessary steps to achieving carbon neutrality.
Methodology for Footprint Calculation	Carbon dioxide equivalent (CO_2e) emissions are calculated based on the direct measurement of energy use (e.g., meter reads/invoices/purchasing records). Scope 1 emissions (i.e., direct CO_2e emissions) cover on-site energy consumption of fossil fuel sources, as well as fugitive gas (refrigerants). Scope 2 emissions (i.e., indirect CO_2e emissions) are from purchased electricity and report both Market and Location based emissions.

Type of conformity assessment undertaken	I3P-3 – Independent third-party certification unified
Baseline date for PAS 2060	FY 2020 (July 1, 2019 – June 30, 2020)
Commitment declaration renewals prior to declaration of achievement	Zero. This is the first declaration of both commitment and achievement
Achievement period	FY 2021 (July 1, 2020 – June 30, 2021)
Commitment period	FY 2030 and beyond

2. Scope of Achievement

The achievement of carbon neutrality covers all Scope 1 and Scope 2 emissions that arise from the operations of the Diageo Oban Distillery in Scotland. These are emissions the Diageo Oban Distillery has direct control over and can impact through design and operations at this facility.

Diageo currently reports and accounts for those activities that are relevant to the business and goals, and for which there is reliable information. Scope 3 emissions are not included in this site-specific commitment to carbon neutrality because Scope 3 emissions are being addressed at the corporate level. Scope 3 emission targets are covered by a corporate commitment to a 50 percent reduction in Scope 3 emissions across the total supply chain by 2030 from 2020. Diageo will partner with its suppliers on renewable energy solutions, circular designed products, and regenerative agriculture to halve the supply chain carbon emissions by 2030, helping them move towards Net Zero carbon emissions.

3. Carbon Footprint

3.1 Baseline

The baseline FY 2020 emissions from the Diageo Oban Distillery are estimated and provided in Appendix B.

3.2 Achievement Period

The FY 2021 emissions from the Diageo Oban Distillery are estimated and provided in Appendix B.

3.3 Methodology

Greenhouse gas (GHG) emissions are calculated in accordance with the World Business Council for Sustainable Development and World Resources Institute's GHG Protocol Corporate Standard, Scope 2 Guidance (amendment to the GHG Protocol Corporate Standard, 2015), Scope 3 Calculation Guidance (Corporate Value Chain [Scope 3]) and the Intergovernmental Panel on Climate Change (IPCC) methodology in relation to ozone-depleting substances and fluorinated gases. Diageo includes all facilities where they have operational control for the full financial year.

Carbon emissions data is externally reported in carbon dioxide equivalent (CO_2e) metric tons; this measure is used to compare the emissions from the six main greenhouse gases based on their global warming potential. Emissions data are calculated based on the direct measurement of energy use (e.g., meter reads/invoices). Fuel consumption is reported by fuel type and then converted to energy consumption (in kilowatt-hours) by fuel type and multiplied by the relevant CO_2e emission factor to derive the total CO_2e emissions.

Scope 1 emission factors for fuels are typically the latest available (at the start of the reporting year), United Kingdom's Department for Environment, Food and Rural Affairs (DEFRA) average fuel CO_2e emissions factors, and calorific values; however, where product-specific factors are available, these are applied.

Carbon emissions from electricity (Scope 2) are reported as both Market emissions and Location emissions in line with the GHG Protocol Scope 2 Guidance. Diageo's CO_2e reduction targets and reporting protocols since 2007 are based on Market emissions applying emissions factors specified in energy attribute certificates, contracts, power purchase agreements and supplier utility emissions as detailed in GHG Protocol Scope 2 guidance[1]. Where renewable electricity is used at a site, evidence supporting the contractual instrument or energy attribute certificate is maintained and updated annually. All contractual instruments or energy attribute certificates should meet the quality criteria detailed in the GHG Protocol Scope 2 guidance.

The reporting of Location (gross) emissions has been added to Diageo's protocols since Fiscal Year 2014. For Location-based reporting of grid electricity consumption, regional or subnational factors are used where available for example the Commission for Regulation of Utilities (Ireland), DEFRA (United Kingdom), National Inventory Report (Canada), Emissions & Generation Resource Integrated Database (USA), Indian power sector report (India), in all other cases country or sub-region factors are provided by the International Energy Agency.

Diageo's carbon accounting methodology was chosen to follow the most widely accepted, science based and publicly available protocols and guidance currently available. The methodology will be reviewed annually, and the Carbon Management Plan will be revised annually to ensure targets are achieved. Avoided emissions have not been calculated or quantified and are not being claimed.

[1] https://ghgprotocol.org/scope_2_guidance

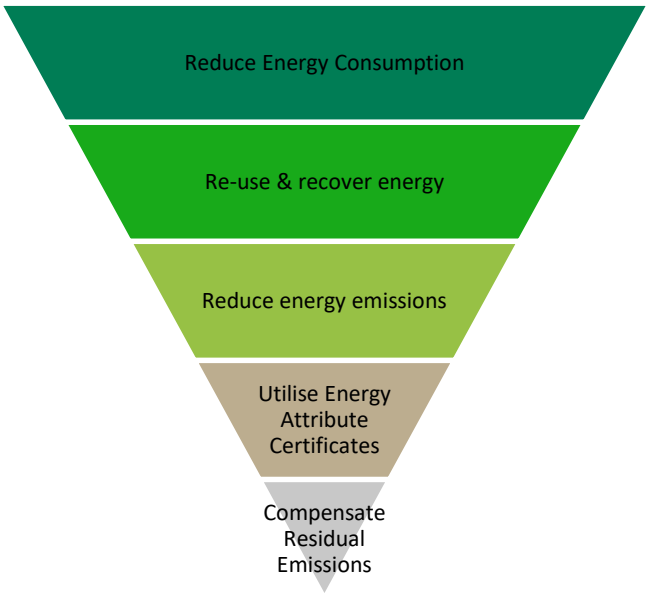
To reduce the level of uncertainty in the measurement and reporting phase of the carbon inventory, Diageo mandates that materially significant energy & emission sources (<1% of emissions) are prepared from metered and invoice data [see details page 94 in Diageo ESG Reporting Index 2021]. De minimis energy & emission sources (<1% of inventory boundary) are estimated via calculation and assumptions based on invoices or number of units (i.e. gas cylinders) as they are less materially significant to the overall energy & emissions totals. Diageo also has Global Data Assurance standard that ensures there is <5% data variance between reported energy & emissions and an independent data source like supplier invoices or supporting meter data. In addition to internal standards & practices, Diageo undertakes a limited assurance programme for annually reported environment and H&S data with external, independent third party auditors.

It is acknowledged that metering & measurement equipment, whether maintained by Diageo or a third-party meter asset manager, also has an accuracy range. When the different energy & emission source metering & measurement accuracy ranges are considered, a quantitative assessment of overall accuracy put the emissions inventory data in the greater than 1% but less than 5% uncertainty range.

3.4 Emission Reduction & Offsetting Strategy

Diageo Oban's approach to achieving carbon neutrality is to significantly reduce emissions then to compensate the small, residual number of emissions through the purchase of high quality carbon credits. By targeting 90% or greater decarbonization for sites aiming to achieve carbon neutrality, Diageo ensures that these sites follow the principles of an aligned science based, net zero pathway to reach full net zero emissions by 2050[2] or before.

Diageo's emission reduction hierarchy (see Figure 1) supports a framework of decarbonization activities and helps to prioritise the most impactful and credible outcomes. The carbon neutral solutions at a site (direct operations – Scope 1+2 emissions) are regularly reviewed to ensure the best outcomes can be achieved and there is demonstration of continuous improvement.



Example of emission reductions

- Replace electrical motors with more efficient model
- Increase insultation to reduce heat loss
- Optimise production process to decrease running time

- Recover heat from pot still discharges to pre-heat next batch
- Use hot water from stillhouse condensers for cleaning

- Use a renewable fuel source to generate steam for use in distillery
- Generate renewable electricity on site to reduce electricity supplied through grid

- Purchase green eletricity through a renewable supply tariff
- Use green gas certificates to balance natural gas purchased through grid

- [Repeat steps above to target over 90% emissions reduction before compensating residual emissions]
- Source high quality carbon credits to offset residual emissions

Figure 1 – Diageo Emission Reduction Hierarchy

[2] https://www.gov.scot/policies/climate-change/ Scotland Net Zero Target

At Oban, the focus is to drive a reduction in Scope 1 and market-based Scope 2 carbon emissions but opportunities to reduce Scope 3 supply chain emissions by leveraging improvements across the Scotch whisky network will also be identified.

Through monthly measurement, and annual verification, of Scope 1 and market-based Scope 2 carbon emissions at the site the required amount of residual emissions can be determined. High quality carbon credits[3] procured at the corporate level will then be used to offset the required amount of carbon for residual Scope 1 emissions.

3.4.1 Scope 1 Emissions

Diageo prioritises optimisation of energy performance at all sites to reduce the overall energy demand in the first instance. The primary carbon reduction strategy for Scope 1 emissions is then achieved through the use of renewable energy, with a strong focus on direct carbon abatement options in preference to the use of energy attribute certificates.

Biogenic CO2 emissions from biofuels are not compensated by carbon offsets. As there are non-biogenic methane and nitrous oxide emissions from bioenergy sources, and potentially minor emissions from refrigerants and other small energy sources, Diageo Oban Distillery has purchased carbon credits to offset those emissions and achieve carbon neutrality. Under PAS 2060, these carbon credits must be from specified and audited sources, such as Gold Standard and Verified Carbon Standard (VCS), to ensure no double counting occurs and that the projects are actively removing carbon emissions.

Although not a requirement, Diageo has a bioenergy strategy that prioritises the use of bioenergy feedstock from wastes, residues and coproducts. This approach builds on RED II (renewable energy directive 2018/2001/EU) considering the biogenic CO_2 cycle, indirect land use changes (ILUC) and aspects like forgone sequestration that would be relevant to first use bioenergy feedstocks like energy crops and non-waste or residue biomass.

3.4.2 Scope 2 Electricity Emissions

Diageo's carbon reduction strategy for Scope 2 emissions is through the generation and sourcing of renewable electricity. Similar to the overall emissions hierarchy, Diageo prioritises on site and near site generation opportunities that provide renewable electricity capacity additionality, then virtual power purchase agreements and green electricity tariffs before the use of renewable electricity energy attribute certificates. These opportunities are continually being assessed as a mix of options are most likely to be part of the eventual solution at a site level.

Diageo will continue to report market based and location-based emissions but will utilise the market-based accounting methodology to demonstrate Scope 2 emissions reduction through the use of renewable electricity.

3.4.3 Scope 3 Emissions

Diageo currently reports and accounts for activities that are relevant to the business and goals, and for which there is reliable information. Scope 3 emissions are not included in this site-specific commitment to carbon neutrality because Scope 3 emissions are being addressed at the corporate level. Scope 3 emission targets are covered by a corporate commitment to a 50 percent reduction in Scope 3 emissions across the total supply chain by 2030 from 2020. Diageo will partner with its suppliers on a number of opportunities that will include renewable energy solutions, circular designed products, and regenerative agriculture to halve the supply chain carbon emissions by 2030, helping them move towards Net Zero carbon emissions.

[3] Diageo has developed principles and guidelines relating to sourcing and managing carbon offsets, focusing on high quality nature based solutions with co-benefits.

Diageo operates a number of whisky distilleries, malting plants, maturation sites and packaging sites in Scotland, enabling scope 3 emission reduction opportunities across the large operational network. Raw materials, packaging materials and logistics services for scotch whisky are all procured by group level in-market specialists that support strategic discussions around decarbonisation with Diageo's suppliers.

Appendix A. Additional Information

Table A-1. Tick-list of Commitment to Carbon Neutrality Compliance from PAS 2060 Specification

Items	
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.
2	Identify the entity responsible for making the declaration.
3	Identify the subject of the declaration.
4	Explain the rationale for the selection of the subject. (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 greenhouse gas [GHG] emissions [or alternatively can explain why they have done so]).
5	Define the boundaries of the subject.
6	Identify all characteristics (purposes, objectives, or functionality) inherent to that subject.
7	Identify and take into consideration all activities material to the fulfilment, achievement or delivery of the purposes, objectives, or functionality of the subject.
8	Select which of the 3 options within PAS 2060 you intend to follow.
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.
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.
11	Provide justification for the selection of the methodology chosen. (The methodology employed shall minimize uncertainly and yield accurate, consistent, and reproducible results.)
12	Confirm that the selected methodology was applied in accordance with its provisions and the principles set out in PAS 2060.
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.
	a) All greenhouse gases shall be included and converted into tCO_2e.
	b) 100% Scope 1 (direct) emissions relevant to the subject shall be included when determining the carbon footprint.
	c) 100% Scope 2 (indirect) emissions relevant to the subject shall be included when determining the carbon footprint.
	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.
	e) Scope 1, 2 or 3 emission sources estimated to be more that 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. (Emission sources estimated to constitute less than 1% may be excluded on that basis alone.)
	f) The quantified carbon footprint shall cover at least 95% of the emissions from the subject.
	g) Where a single source contributes more than 50% of the total emissions, the 95% threshold applies to the remaining sources of emissions.
	h) Any exclusion and the reason for that exclusion shall be documented.
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 all GHG emissions relating to core operations including subsidiaries owned and operated by the organization). It will be important to ensure claims are credible – if an entity chooses a very narrow subject and excludes its carbon intensive activities or if it outsources its carbon intensive activities, then this needs to be documented.

Table A-1. Tick-list of Commitment to Carbon Neutrality Compliance from PAS 2060 Specification

Items	
	b) Either the equity share 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.
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.
16	Where the subject is a product or service, include all Scope 3 emissions (as the lifecycle of the product/service needs to be taken into consideration).
17	Describe the actual methods used to quantify GHG emissions (e.g., use of primary or secondary data), the measurement unit(s) applied, the period of application and the size of the resulting carbon footprint. (The carbon footprint shall be based as far as possible on primary activity data.) Where quantification is based on calculations (e.g., GHG activity data multiplied by greenhouse gas emission factors or the use of mass balance/lifecycle models) then GHG emissions shall be calculated using emission factors from national (Government) 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.
18	Provide details of, and explanation for, the exclusion of any Scope 3 emissions.
19	Document all assumptions and calculations made in quantifying GHG emissions and in the selection or development of greenhouse gas emission factors. (Emission factors used shall be appropriate to the activity concerned and current at the time of quantification.)
20	Document your assessments of uncertainty and variability associated with defining boundaries and quantifying GHG emissions including the positive tolerances adopted in association with emission estimates. (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]).
21	Document Carbon Footprint management plan:
	a) Make a statement of commitment to carbon neutrality for the defined subject.
	b) Set timescales for achieving carbon neutrality for the defined subject.
	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.
	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.
	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.
22	Implement a process for undertaking periodic assessments of performance against the Plan and for implementing 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 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 minimisation in emissions has been achieved.
24	For any reductions in the GHG emissions from the defined subject delivered in the period immediately prior to the baseline date and not otherwise taken into account in any GHG emissions quantification (historical reductions), confirm: (a) the period from which these reductions are to be included; (b) that the required data are available and that calculations have been undertaken using the same methodology throughout; and (c) that assessment of historical reduction has been made in accordance with this PAS, reporting the quantity of historical reductions claimed in parallel with the report of total reduction.
25	Record the number of times that the declaration of commitment has been renewed without declaration of achievement.
26	Specify the type of conformity assessment: a) independent third-party certification

Table A-1. Tick-list of Commitment to Carbon Neutrality Compliance from PAS 2060 Specification

Items	
	b) other party validation c) self-validation
27	Include statements of validation where declarations of commitment to carbon neutrality are validated by a third-party certifier or second party organizations.
28	Date the Qualifying Explanatory Statement (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).
29	Make QES publicly available and provide a reference to any freely accessible information upon which substantiation depends (e.g., via websites).
30	Update the QES to reflect changes and actions that could affect the validity of the declaration of commitment to carbon neutrality.

Table A-2. Tick-list of Achievement of Carbon Neutrality Compliance from PAS 2060 Specification

Items	
1	Define standard and methodology use to determine its GHG emissions reduction.
2	Confirm that the methodology used was applied in accordance with its provisions and the principles set out in PAS 2060 were met.
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. (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-quantified 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).
4	Describe how reductions have been achieved and any applicable assumptions or justifications.
5	Ensure that there has been no change to the definition of the subject. (The entity shall ensure that the definition of the subject remains unchanged through every stage of the methodology. If material change to the subject occurs, the sequence shall be re-started based on a newly defined subject.)
6	Describe the actual reductions achieved in absolute and intensity terms and as a percentage of the original carbon footprint. (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)).
7	State the baseline/qualification date.
8	Record the percentage economic growth rate for the given application period used as a threshold for recognising reductions in intensity terms.
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.
10	Select and document the standard and methodology used to achieve carbon offset.
11	Confirm that:
	a) Offsets generated or allowance credits surrendered represent genuine, additional GHG emission reductions elsewhere.
	b) Projects involved in delivering offsets meet the criteria of additionality, permanence, leakage, and double counting. (See the WRI Greenhouse Gas Protocol for definitions of additionality, permanence, leakage, and double counting).
	c) Carbon offsets are verified by an independent third-party verifier.

Table A-2. Tick-list of Achievement of Carbon Neutrality Compliance from PAS 2060 Specification

Items	
	d) Credits from Carbon offset projects are only issued after the emission reduction has taken place.
	e) Credits from Carbon offset projects are retired within 12 months from the date of the declaration of achievement.
	f) Provision for event related option of 36 months to be added here. (Not applicable to this statement)
	g) 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.
	h) Credits from Carbon offset projects are stored and retired in an independent and credible registry.
12	Document the quantity of GHG emissions credits and the type and nature of credits purchased including the number and type of credits used and the period over which credits were generated including:
	a) Which GHG emissions have been offset.
	b) The actual amount of carbon offset.
	c) The type of credits and projects involved.
	d) The number and type of carbon credits used and the period over which the credits have been generated.
	e) For events, a rationale to support any retirement of credits more than 12 months including details of any legacy emission savings, considered (Not applicable to this statement)
	f) Information regarding the retirement/cancellation of carbon credits to prevent their use by others including a link to the registry or equivalent publicly available record, where the credit has been retired.
13	Specify the type of conformity assessment: a) independent third-party certification. b) other party validation. c) self-validation.
14	Include statements of validation where declarations of achievement of carbon neutrality are validated by a third-party certifier or second party organizations.
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)
16	Make QES publicly available and provide a reference to any freely accessible information upon which substantiation depends (e.g., via websites).

Appendix B. Carbon Footprint

B.1 Methodology

Greenhouse gas (GHG) emissions are calculated in accordance with the World Business Council for Sustainable Development and World Resources Institute's GHG Protocol Corporate Standard, Scope 2 Guidance (amendment to the GHG Protocol Corporate Standard, 2015), Scope 3 Calculation Guidance (Corporate Value Chain [Scope 3]) and the Intergovernmental Panel on Climate Change (IPCC) methodology in relation to ozone-depleting substances and fluorinated gases. Diageo includes all facilities where they have operational control for the full financial year.

Carbon emissions data are externally reported in carbon dioxide equivalent (CO_2e) metric tons; this measure is used to compare the emissions from the six main greenhouse gases based on their global warming potential. Emissions data are calculated based on the direct measurement of energy use (e.g., meter reads/invoices). Fuel consumption is reported by fuel type and then converted to energy consumption (in kilowatt-hours) by fuel type and multiplied by the relevant CO_2e emission factor to derive the total CO_2e emissions.

Scope 1 emission factors for fuels are typically the latest available (at the start of the reporting year), United Kingdom's Department for Environment, Food and Rural Affairs (DEFRA) average fuel CO_2e emissions factors, and calorific values; however, where product-specific factors are available, these are applied.

Carbon emissions from electricity (Scope 2) are reported as both Market emissions and Location emissions in line with the GHG Protocol Scope 2 Guidance. Diageo's CO_2e reduction targets and reporting protocols since 2007 are based on Market emissions applying emissions factors specified in energy attribute certificates, contracts, power purchase agreements and supplier utility emissions as detailed in GHG Protocol Scope 2 guidance[4]. Where renewable electricity is used at a site, evidence supporting the contractual instrument or energy attribute certificate is maintained and updated annually. All contractual instruments or energy attribute certificates should meet the quality criteria detailed in the GHG Protocol Scope 2 guidance.

The reporting of Location (gross) emissions has been added to Diageo's protocols since Fiscal Year 2014. For Location-based reporting of grid electricity consumption, regional or subnational factors are used where available for example the Commission for Regulation of Utilities (Ireland), DEFRA (United Kingdom), National Inventory Report (Canada), Emissions & Generation Resource Integrated Database (USA), Indian power sector report (India), in all other cases country or sub-region factors are provided by the International Energy Agency.

Diageo's carbon accounting methodology was chosen to follow the most widely accepted, science based and publicly available protocols and guidance currently available. The methodology will be reviewed annually, and the Carbon Management Plan will be revised annually to ensure targets are achieved. Avoided emissions have not been calculated or quantified and are not being claimed.

B.2 Baseline and Achievement Period

The baseline FY 2020 and carbon neutrality achievement year FY 2021 carbon emissions from the Diageo Oban Distillery site are shown in Table B-1.

[4] https://ghgprotocol.org/scope_2_guidance

Table B-1. Baseline (FY20) and Achievement Year (FY21) Estimated GHG emissions (t CO_{2e})

Emissions	FY20 (estimated)	FY21 (estimated)	% Change
Scope 1	113.2	158.7	40%
Scope 2 – Location-Based	76.7	77.1	1%
Scope 2 – Market-Based	0	0	
Total Location-Based	189.9	235.8	24%
Total Market-Based	113.2	158.7	40%
Offsets Purchased	0	158.7	
Total Net Offsets	113.2	0	

Scope 1 absolute emissions increased by 40% from FY20 to FY21. This is primarily due to a 10% increase in distillery production and the temporary switch from biofuel to gas oil during a maintenance period. The site used a temporary boiler running on gas oil in March while work was carried out on site main boiler as a hired in, temporary boiler running on biodiesel was not available. Colder weather also meant increase in building heating energy over the same period. Scope 2 absolute emissions (location-based) increased by 1% from FY20 to FY21. This is linked to the increase in distillery production, which had an impact that was partially reduced by an improvement in distillery energy efficiency and distillery visitor centre closures in Covid-19 lockdowns.

B.3 Scope 1 Emissions

The Scope 1 emission sources from operations are from stationary combustion of biofuel for the process boiler, renewable natural gas for comfort heating and fugitive refrigerant emissions from refrigeration and air conditioning units. Emissions have also been estimated for de minimis sources that include small amounts of LPG used for the boiler start-ups, and any temporary use of gas oil/diesel (i.e. for hired in, temporary boiler). These areas have however been included in the carbon neutral assessment of the site.

In FY 2021 Oban Distillery reached over 97% renewable energy consumption as a proportion of total energy. This has been achieved through the supply of renewable biofuel and renewable natural gas for their primary stationary combustion systems (site process boilers & building heating respectively) and grid supplied renewable electricity for the site.

In addition to energy reduction and the use of renewable energy, emissions are minimized from the site by cooling with a closed loop cooling tower as opposed to refrigerants with high global warming potentials for most of the site's cooling needs.

B.3.1 Stationary and Mobile Combustion Emissions

Diageo's primary carbon reduction strategy for Scope 1 emissions has been achieved through their purchase of 100% renewable biofuel through MBP Solutions Ltd and natural gas backed with Green Gas Certificates (Renewable Natural Gas/biomethane) accredited under UK Green Gas Certificate Scheme. The biofuel is described by the provider as mixed fatty acids from bio-based residual fractions from different origins (predominantly rapeseed distillation residue). Diageo purchase UK Green Gas Certificates generated from wastes & residues only, a proportion of them are generated from Diageo scotch whisky distillery coproducts. The Green Gas Certificates (Renewable Gas Guarantee of Origin – RGGO) are Energy Attribute Certificates that are bundled by Diageo to match equivalent natural gas consumption and the process is verified by Diageo's assurance auditors. In keeping with WRI/WBCSD Protocol guidance relating to biofuels, Diageo publicly reports CO_{2e} emissions attributable to CH_4 and

N_2O only, and excludes direct CO_2 emissions for biomass, biogas and the biogenic element of biofuels. However, for purposes of this report biogenic emissions have been calculated and are included in Table B-2.

Stationary combustion emissions are based on fuel use and stationary combustion emission factors. Fuel use and estimated carbon emissions from stationary combustion are provided in Table B-2.

Table B-2. Estimated FY 2021 Annual Carbon Emissions from Stationary Combustion

Fuel	Fuel used	Fuel energy used (kWh)	Biogenic CO_2 Emission Factor (kg CO_2/L)[1]	Non-Biogenic CO_{2e} Emission Factor (kg CO_{2e}/kWh) [1]	Biogenic Emissions[5] (tCO_{2e}/yr)	Non-Biogenic Emissions (tCO_{2e}/yr)	% total fuel energy
Biodiesel	647,967 L	6,199,748	2.36	0.0180	1,529.20	111.60	95.4%
Gas oil / Diesel	17,450 L	185,546		0.2528		46.91	2.9%
LPG	50 kg	685		0.2145		0.15	0.01%
Renewable Natural Gas	113,643 kWh	113,643		0.0002	22.62	0.02	1.7%
Total					**1,551.82**	**158.67**	

1 Emission factors from DEFRA, DEFRA uses GWP for CH_4 and N_2O of 25 and 298, respectively from IPCC fourth Assessment Report (AR4) to calculate CO_{2e}.

B.3.2 Refrigerant Emissions

In addition to biofuels, emissions are minimized from the site by cooling via a closed loop cooling tower loop as opposed to refrigerants with high global warming potentials for most of the site's cooling needs. Actual annual refrigerant use is based on amount of refrigerant added each year according to maintenance records. Refrigerant is then converted to equivalent tons of CO_2 by multiplying the amount lost by the corresponding GWP factor. Refrigerant use and estimated carbon emissions from refrigerants are provided in Table B-3.

Table B-3: FY 2021 Estimated Annual Carbon Emissions from Refrigerants

Equipment	Type of Refrigerant	GWP of Refrigerant	Actual Emitted (kg)	Emissions (tCO_{2e}/yr)
Process Chiller External	410A	2088	0	0
Yeast House	407A	2107	0	0
Total				**0**
1 GWP from IPCC Fourth Assessment Report (AR4).				

[5] Biogenic emissions from use of bioenergy are out of scope but important to note the bioenergy feedstock is from a waste & residue source - improving the biogenic carbon balance outcome over a virgin, first use bioenergy feedstock

B.4 Scope 2 Electricity Emissions

The Oban Distillery consumed 328.9 MWh of electricity in FY 2020 and 330.8 MWh of electricity in FY 2021. Diageo's carbon reduction strategy for Scope 2 emissions has been primarily been achieved through their purchase of 100% renewable energy through their renewable energy contract with Orsted Power Sales Ltd - 100% UK wind electricity fixed-term contract running from 01/04/2020 until 31/03/2023. Under market-based Scope 2 accounting, the emission factor for renewable electricity is 0 tCO_2e/kWh, as they are zero-carbon energy sources. Estimated market-based and location-based carbon emissions from electricity consumption for FY 2021 are provided in Table B-4.

Table B-4. FY 2021 Annual Carbon Emissions from Electricity Consumption

	Region/Emission Factor Source	Amount (MWh)	CO_{2e} Emission Factor (kg CO_{2e}/kWh)	Emissions (tCO_{2e}/yr) [1]
Location Based Emission Factors	UK electricity grid	330.8	0.2331	77.1
Market-Based Emission Factors	Renewable Energy	330.8	0	0

1 GWP for CH_4 and N_2O are 25 and 298, respectively from IPCC Fifth Assessment Report (AR4).

B.5 Carbon Offsets

Diageo Oban Distillery has purchased carbon credits to compensate for scope 1 residual emissions and achieve carbon neutrality. Scope 1 emissions include: non-biogenic methane and nitrous oxide emissions from the biofuel and renewable natural gas, minor emissions from refrigerants, and minor emissions from LPG for boiler start-up. Under PAS 2060, these carbon credits must be from specified and audited sources, such as the Gold Standard and Verified Carbon Standard (VCS), to ensure no double counting occurs and that the projects are actively removing carbon emissions. In FY21, carbon offsets were purchased to cover 100% of residual Scope 1 carbon emissions as shown in Table B-5.

Table B-5. FY21 Carbon Offset Purchases

Project Name	Project Type	Project Location	Vintage	Applicable Standard[a]	Quantity ($tCO2e$)[6]
TIST Program in Uganda, VCS 005	Agriculture Forestry and Other Land Use	Bushenyi, Uganda (UG)	From: 08/07/2017 To: 17/04/2019	Verra (VCS)	159
https://registry.verra.org/myModule/rpt/myrpt.asp?r=206&h=139476					
Total Carbon Offsets					

[6] Diageo made a single carbon offset purchase after the close of FY21 for 340 t CO2e referenced in the transaction above. This single Verra (VCS) carbon credit purchase of covered the total number of offsets required for FY21 carbon neutral distilleries.

Table B-5. FY21 Carbon Offset Purchases

Project Name	Project Type	Project Location	Vintage	Applicable Standard[a]	Quantity (tCO_2e)[6]
[a]Verified Carbon Standard (VCS), Climate, Community and Biodiversity Standard (CCBS), American Carbon Registry (ACR), Social Carbon (SC)					

See Appendix E - Carbon Offset Certificate Evidence for more information.

B.6 Scope 3 Emissions

Although Scope 3 emissions are not included in the site-specific carbon neutrality commitment at this time, efforts to minimize Scope 3 emissions relevant to this site have been incorporated into the carbon management plan. The specific Scope 3 value chain emissions have not been quantified for Oban alone, however, an indication of a Diageo Scotch whisky emission footprint can be viewed for Johnnie Walker here. A number of group level initiatives that have supported a reduction in resource use or improvements across the supply chain have been identified in section C.6 Scope 3 Emissions.

Appendix C. Carbon Management Plan

C.1 Introduction

The purpose of this Carbon Management Plan (CMP) is to clearly define the carbon neutrality achievement for the Diageo Oban Distillery and document how the carbon emissions will be monitored and managed to reduce Scope 1 and 2 GHG emissions and obtain certification of carbon neutrality.

The achievement statement follows: "Carbon neutrality of Diageo's Oban Distillery for all Scope 1 and 2 emissions from site operations has been achieved by Diageo in accordance with PAS 2060 for the period FY 2021"

Oban Distillery is committed to reducing operational GHG emissions by making continual energy efficiency improvements to the site, utilizing renewable energy and biofuel as opposed to fossil fuels and by offsetting any residual Scope 1 emissions with high quality offsets in conformance with PAS 2060. Oban has attained carbon neutrality and undergone certification through PAS 2060 for FY 2021.

This CMP and any related supporting documentation will be reviewed and updated at least annually by the Environment Manager with input from the site based operations team, Technical Manager and Global Sustainability Team where appropriate. The review and updates made will reflect changes in legislation and industry good practice guidance issued. Amendments to this CMP will be made by the Environment Manager and a revised version of the CMP will be provided to the relevant Operations Director & Global Sustainability contacts for formal approval.

C.2 Targets

Diageo 2030 Spirit of Progress Targets

"We are committed to promoting a positive role for alcohol; to championing inclusion and diversity; to preserving the natural resources on which our long-term success depends; and making a positive contribution to the communities in which we live, work, source and sell".

Diageo has committed to working towards a low-carbon future:

- By 2030 Diageo will harness 100% renewable energy to achieve net zero carbon emissions across direct operations [Scope 1+2] and work with suppliers to reduce indirect carbon emissions [Scope 3] by 50%
    - Reduce FY20 absolute scope1 and 2 GHG emissions by 100% by FY30 - Science based approved target aligned to 1.5°C trajectory [Science Based Targets initiative (SBTi)]
    - Reduce FY20 absolute scope 3 GHG emissions by 50% by FY30 - Science based approved target aligned to 1.5°C trajectory [Science Based Targets initiative (SBTi)]
    - Increase renewable energy use to reach 100% by FY30 including increase sourcing of renewable electricity from 66% (FY20) to 100% by FY30 (Signatory to RE100)
- By 2030 Diageo will ensure that every drink it produces will take 30% less water to make than it does today and will achieve a net positive water impact in our key water stressed basins and communities; and
- It will also deliver over 150 community water projects across the world, including providing access to clean water, sanitation and hygiene; and

- Diageo will support over 150,000 smallholder farmers with farming techniques to regenerate the land and build biodiversity; and
- By 2030 ensure that the business is using 100% recycled content in plastic packaging and that 100% of Diageo's packaging will be widely recyclable

C.3 Production Efficiency Benchmarking

Diageo have supported two external energy and carbon benchmarking studies and carried out extensive internal performance analysis to ensure that Oban Distillery meets the required decarbonization threshold to achieve carbon neutrality.

Oban is a traditional, two still, malt whisky distillery so ensuring that energy demand has been optimized without compromising on spirit character is a primary objective. Energy intensity performance data obtained from two external studies[7] [8] demonstrate that Oban overall site energy efficiency [energy consumed per litre of alcohol produced] meets or exceeds expected performance when compared to industry data (see Figure 2). Oban has a good track record of continuous improvement of energy performance over several years to achieve overall site energy efficiency of 7.87 kWh energy per litre of alcohol distilled.

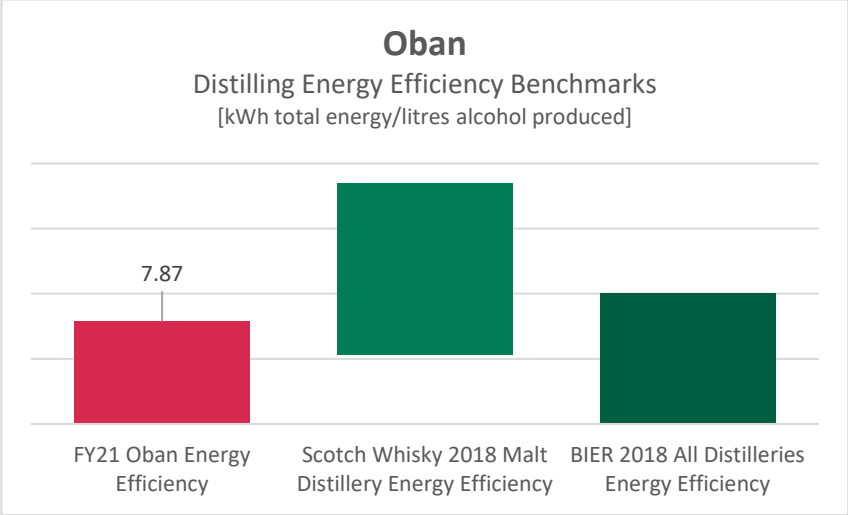


Figure 2 – Energy Efficiency Industry Benchmarking

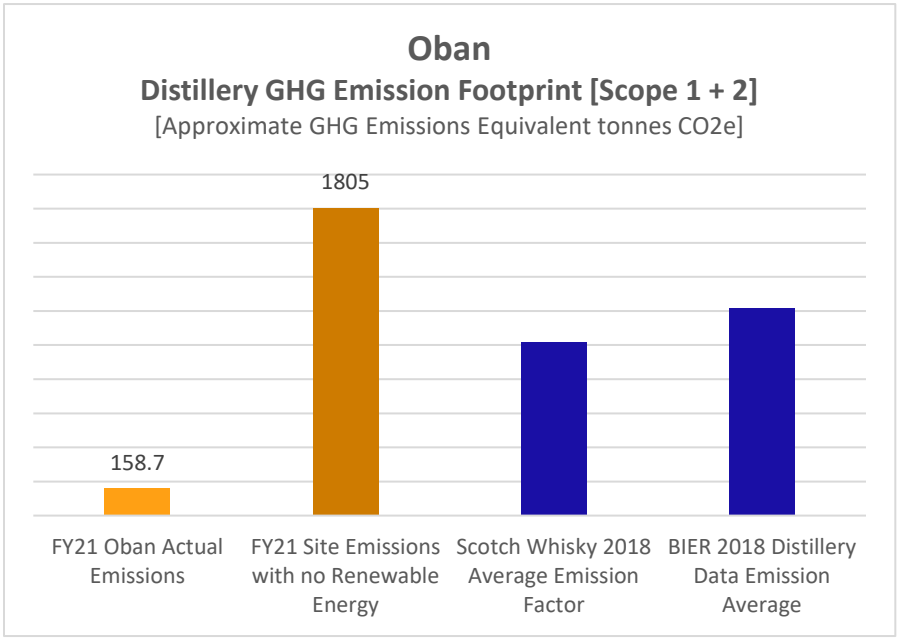
Equivalent energy efficiency data from Scotch malt whisky distilleries only (most relevant comparison) indicate Oban's energy performance is in the 20% of malt whisky distilleries in Scotland.

Energy efficiency data from all distilleries responding to BIER benchmarking study (all types of distilled products) indicate Oban's energy performance is comfortably within the upper half of sites but comparisons to much larger, more efficient continuous distillation sites may not be relevant.

[7] Beverage Industry Environmental Roundtable Water & Energy Use Benchmarking Study (2018 report – most recent data). Participants include Diageo and other distilleries such Bacardi, Beam Suntory, Brown-Forman, Constellation brands and Pernod Ricard covering all distilled products and not just scotch whisky. Data from the members only internal report has been anonymized but does represent the data as published. The benchmarking study scope includes all process steps except for upstream agricultural growth and distribution of the finished product. A distillery is defined as a "facility which produces bulk alcohol by means of cooking, fermenting, distilling, and storage/maturing". https://www.bieroundtable.com/publication/2018-water-and-energy-use-benchmarking-study/

[8] Scotch Whisky Association Environment Strategy Report (2018 report – most recent data). Data from the members only internal report for malt distillery energy intensity and industry carbon emission intensity has been anonymized but accurately reproduced. The Scotch Whisky Association is the trade body for the Scotch Whisky industry representing over 70 member companies, from global spirits producers to family-owned firms, established to new distillers, accounting for the majority of Scotch Whisky production. https://www.scotch-whisky.org.uk/insights/sustainability/our-achievements/

From a decarbonization perspective, Oban's use of renewable energy has enabled a significant GHG emission reduction compared to an equivalent scenario with a site using fossil fuels and grid electricity with an average emission factor. Results from the two external studies (2018 data) have been pro-rated from a carbon emission efficiency (g CO_{2e}/litre alcohol produced) to an absolute GHG emission total using the FY21 Oban annual production to make a meaningful and representative comparison. The two external benchmark studies (SWA and BIER from 2018) both have industry data for facilities that have already undergone a level of decarbonization and increased renewable energy use so they represent average emissions that are understandably lower than the base case comparison with no renewable energy use.



The emission benchmarking demonstrates that Oban has a significantly lower emissions than an equivalent base case comparison using FY21 data – a reduction of 1646.3 tonnes CO_{2e} (equivalent to 91%), meeting the target for a net zero aligned pathway. The base case is a meaningful comparison as it uses actual energy data from same period and reverts back to previous non-renewable energy sources (i.e. fuel oil instead of biofuel) effectively reversing recent decarbonisation actions.

Figure 3 - Oban Scaled GHG Emission Benchmarks

The straight comparison to the equivalent external benchmark totals also shows Oban has much lower emissions than a site of similar size based on the industry average. This comparison was obtained using industry benchmark carbon intensity data from the studies (CO_{2e} emitted per litre of alcohol produced) and multiplying that by Oban's FY21 production volume to infer an absolute emissions benchmark specific to Oban, and therefore directly comparable to other data.

Biogenic CO_2 from fermentation or bioenergy use are both out of scope and not included in the industry benchmark emission data (outside of scopes 1, 2 and 3) and have not been included in the above data.

C.4 Scope 1 and 2 GHG Emissions

At Oban the Scope 1 and Scope 2 emission sources are from energy used to heat and power distillery operations, refrigerants used for chilling and fuels used for building comfort heating.

The main site energy source (90% total energy) is a renewable liquid biofuel fuel used in a boiler to produce steam for the distillery. This switch to a renewable biofuel significantly reduces overall emissions. The office & visitor centre use natural gas to provide building heating and hot water with this small energy use being backed with Green Gas Certificates. Diageo have purchased enough renewable natural gas certificates (aka Green gas Certificates, biomethane, RGGO etc) to match the volume of natural gas supplied to the site and making the supply indirectly renewable.

LPG cylinders are used on site as a pilot light for main boiler with a very small annual consumption. During a maintenance period, a temporary, hired-in boiler was used while work was carried out on main process boiler. Unfortunately, it was not possible to source a temporary boiler that was fueled with biofuel so gas oil was used for a few weeks but this is not a frequent or typical occurrence.

A small yeast chiller is operated on site to preserve the viability of the yeast ingredient, and this chiller uses a small volume of refrigerant to maintain necessary temperatures. In addition to the yeast chiller, a small process chiller is used to trim cool post mashing process due to variability of incoming mains water temperature throughout the year. All other areas of site are naturally ventilated to maintain ambient temperature.

Electricity on site is used for lighting and power and is sourced from renewable electricity supplied by Orsted Power Sales Ltd – 100% wind supply as a green tariff through grid. Under market-based Scope 2 accounting the emission factor for renewable electricity is 0 tCO_{2e}/kWh.

Biogenic CO_2 emissions from the fermentation process are excluded from Diageo's reported environmental data as these emissions are from a biological short cycle carbon source and are thus outside scopes 1, 2 and 3. Fermentation is a (biogenic) short carbon cycle as CO_2 emitted will be re-absorbed in next year's growing cycle for barley used to make scotch whisky. The carbon dioxide emissions from scotch whisky production are assumed to not increase the atmospheric CO_2 emissions as the biogenic carbon emitted during production are reabsorbed by the carbon uptake of new growth biomass.

Direct, biogenic CO_2 from bioenergy use (i.e., combustion of liquid biofuel as a renewable energy source) are also excluded from Diageo's reported environmental data as they are outside scopes 1, 2 and 3. The specific liquid biofuel used is a bio-based residue derived from a rapeseed distillation process, classified as a waste or residue under Renewable Energy Directive. As the primary emissions have already been attributed to the main rapeseed process, using the bio-based residue as a fuel source is assumed not to increase atmospheric CO_2 emissions as the biogenic carbon emitted during use phase are reabsorbed by the carbon uptake of new growth biomass (short cycle biogenic CO_2). Any GHG emissions arising from the production and transport of the bio-based residue are accounted for in Scope 3.

Total GHG emissions are estimated to be approximately X tCO_{2e} by doing the following calculation:

$$\frac{(fuel\ consumption * emission\ factor) + (refrigerant\ consumption * emission\ factor)}{1000} = tCO2e$$

The baseline is FY 2020.

C.5 Emission Reduction Strategy

Diageo's emission reduction strategy is a combination of energy efficiency improvements, replacing fuel with bioenergy sources, electrification of other sources traditionally run on fossil fuels, 100% renewable electricity purchases and offsetting residual Scope 1 emissions with carbon offsets.

C.5.1 Energy Reductions

Oban has been on an energy reduction journey for a number of years in order to manage utility costs, reduce emissions and to optimize site operations. The site benefits from being part of a bigger group of Diageo distilleries in Scotland with a central team of specialists, energy experts and engineers that can support issue resolution, performance escalations and best practice sharing to identify continuous improvement & capital investment opportunities. There are a number of specific energy reduction activities identified below that range from behavioural or management controls to operational improvements to fully engineered solutions.

Fuel & Heat Reductions

- Waste heat from still remnants (pot ale and spent lees) is recovered as these byproducts are discharged and the heat is used pre-heat the next still charge, reducing the energy required to boil up the still contents.
- Mash tun uses heat recovery from hot wort en route to washbacks to heat incoming cold water for the next mash
- Distillery process cleaning regime has been optimized to reduce water, energy & cleaning chemical consumption. This has been done through reviewing & reducing aspects like cleaning frequency, cleaning duration, use of combination of hot water or steam and responding to still run time changes.
- Several stretches of insulation have been upgraded on distillery pipework to reduce heat loss and improve heat recovery.
- Using liquid biofuel (less heavily refined than gas oil) the site has increased the frequency of burner combustion optimization checks and service visits to ensure clean and efficient fuel use.

Energy Management Practices

- Distillery team regularly measure, monitor & report energy consumption and energy efficiency (energy use per unit production) to track progress against agreed improvement targets
- Energy performance is reported daily, weekly and monthly in tiered meeting process where actions to address out of specification performance are taken or escalated up tier system for support

C.5.2 Emissions Reductions

Oban has made a significant impact in emission reduction (91% decrease compared to base case comparison – see **Error! Reference source not found. Error! Reference source not found.** above) through the use of renewable energy. The site has actively considered the reduction of fossil fuel use. Actions taken are identified below:

- Several trials of different liquid biofuels have resulted in selecting a biofuel made from rapeseed distillation residue to use as the main site energy supply to generate steam in the package boiler. This direct emission reduction replaces a fossil fuel with a renewable fuel source.
- A renewable, zero emission electricity supply is being used by the site for all grid-supplied power. This indirect emission reduction, using 100% UK wind generated electricity, decarbonizes on site electricity used for motive power, lighting and electrical equipment.

C.5.3 Future Reduction Plans

Diageo will continue to identify new opportunities to reduce energy consumption and further reduce the residual emissions at Oban Distillery. Several future opportunities will look to improve processes that use renewable energy already, as it is still important to improve resource efficiency and use renewable energy sources responsibly.

Renewable Energy Reduction Opportunities

- Distillery & visitor centre lighting review and upgrade – move to energy efficiency lighting with new fitments being LEDs.
- Upgrade closed loop cooling process via cooling tower. Project aim to improve overall efficiency, reduce utilities (i.e. energy & water) and consumables.
- Review pot still replacement/maintenance programme to build in additional insulation requirement for still bases to reduce heat loss and wasted energy.
- Support clean in place (CIP) upgrade to enable utility and consumable savings as part of the project. The aim of the investment is to recover and re-use as many of the cleaning cycles as possible to reduce energy & water consumption and to reduce cleaning chemical use.
- Review renewable electricity sourcing options to identify potential for any on site renewable electricity generation and with remaining electricity demand potentially moving to a power purchase agreement supply.

- Continue to identify and implement continuous improvement opportunities and capital investments that improve site energy performance, conversion efficiency and productivity. These could be directly linked to distillery operations/production or identifying conversion improvements in the distillery production processes.

Residual Emission Reduction Opportunities

- Site team will review options to replace office and visitor centre heating with a low emission alternative as part of ongoing improvement and upgrade works.
- In the event of requiring a hired-in, temporary boiler again (unlikely in near term), a model that can run on a liquid biofuel (i.e. similar to one being used at site or a biodiesel) would be sought so there is no disruption to renewable energy supply for main energy use on site.

C.6 Scope 3 Emissions

Although Scope 3 emissions are not included in the site-specific carbon neutrality commitment at this time, efforts to minimize Scope 3 emissions have been incorporated as follows:





Raw ingredients	Packaging	Production	Transport	Retail and consumer
• All malt whisky barley sourced from Scotland • Malted barley for Oban is supplied from Diageo's own maltings. These maltings use 100% renewable electricity and also benefit from Diageo distillery waste heat, supplied to maltings as hot water, that reduces maltings fuel consumption	• Oban whisky bottle includes recycled content (cullet) which reduces glass furnace emissions • Whisky pack is widely recyclable and the components have been improved to reduce carbon footprint	• Oban has sent no general, non-hazardous waste to landfill in over five years • Distillery has improved water efficiency by over 20% in last 3 years – reducing both incoming mains water & wastewater discharged	• New make spirit outgoing tankers have routes optimized in Scotland network to minimize distances between loads and maximise backhaul opportunities	• Oban Distillery has been awarded Green Tourism Gold award from the UK's top eco-tourism body • The distillery is also working with Johnnie Walker to plant 189,000 trees in Ballygowan, across 85.5 hectares, to restore woodland and promote wildlife diversity in Argyll

Although not directly falling under scope 3 emissions, wider sustainability aspects of landscape restoration & biodiversity have been included in the last column of the table above.

As Diageo has scope 3 value chain emission reduction targets, further savings and more granular data will become available to be identified in future reports.

C.7 Emission Compensation Strategy

Diageo's strategy for achieving and maintaining carbon neutrality will be to validate the Scope 1 and market-based Scope 2 carbon emissions from the site, and then procure the required amount of carbon offset credits for residual

Scope 1 emissions. Oban will continue to use renewable fuel and renewable electricity to minimize the remaining emissions from other sources.

A number of opportunities have been detailed above to further reduce renewable energy consumed and to reduce residual emissions to as low as practical (see section C.5.3 Future Reduction Plans). Future opportunities will also consider improving the outcomes from indirect emission reductions to direct emission reductions where possible.

C.7.1 Carbon Offsets for Scope 1 Emissions

Diageo Oban Distillery will annually purchase carbon credits to achieve and maintain carbon neutrality for residual non-biogenic Scope 1 emissions. A high quality, nature based carbon credit with co-benefits will always be default position for required number of carbon credits.

Under PAS 2060, these carbon credits must be from specified and audited sources, such as Gold Standard and Verified Carbon Standard (VCS), to ensure no double counting occurs and that the projects are actively removing carbon emissions. Diageo will evaluate a mixed portfolio for their carbon credits to spread the positive benefits as well as minimize potential risk (e.g., investing wholly in one forestry project which may later burn or may be found non-compliant).

C.7.2 Renewable Energy for Scope 2 Emissions

Diageo's carbon reduction strategy for Scope 2 emissions will be achieved through their purchase of 100 percent renewable energy through Orsted Power Sales Ltd. The Orsted Power Sales Ltd Agreement is structured to provide validated renewable energy certificates and/or renewable energy for 100 percent of site electricity annually beginning with 2020. Further opportunities to identify potential on-site renewable electricity generation, near site or virtually through the grid as a power purchase agreement, will maintain the zero emission rating but will upgrade and enhance the renewable electricity (Scope 2 emission) outcome.

Appendix D. 3rd Party Assurance Letter

Jacobs

1610 N 2nd Street, Suite 201
Milwaukee WI 53212
Tel 414-272-2426
Fax 414-272-4408

December 20, 2021

Mr. Duncan Wall
Head of Carbon Sustainability
Diageo plc
International Supply Technical
Menstrie
Clackmannanshire
Scotland
FK11 7ES

Project Name: Diageo Oban, Scotland

Subject: Verification of Carbon Neutrality Commitment Statement for Oban, Scotland

Dear Mr. Wall:

CH2M HILL Engineers, Inc.[1] (Jacobs) was hired by Diageo, Inc. (Diageo) to assess their carbon neutrality commitment for their distillery in Oban, Scotland.

This letter certifies that the Quality Explanatory Statement (QES) entitled:

Oban Distillery PAS 2060 Qualifying Explanatory Statement

Issued by Diageo on December 3, 2021 has been verified by Jacobs and complies with the requirements of the British Institute Standard PAS 2060:2014 "Specification for the demonstration of carbon neutrality".

Yours sincerely

Rossana Bosi

Rossana Bosi
Project Manager
Milan, IT

rossana.bosi@jacobs.com

[1] On December 15, 2017, CH2M HILL Companies Ltd. became part of Jacobs Engineering Group Inc. (Jacobs) and is now a wholly owned direct subsidiary of Jacobs. CH2M HILL Engineers, Inc. presently remains a separate legal entity and will continue to operate and conduct business.

Appendix E. Carbon Offset Certificate Evidence

VERRA

Verified Carbon Standard

Certificate of Verified Carbon Unit (VCU) Retirement

Verra, in its capacity as administrator of the Verra Registry, does hereby certify that on 06 Oct 2021, 340 Verified Carbon Units (VCUs) were retired on behalf of:

retired on behalf of Diageo plc

Project Name

TIST Program in Uganda, VCS 005

VCU Serial Number

8669-38262000-38262339-VCS-VCU-279-VER-UG-14-993-08072017-17042019-1

Additional Certifications

CCB-Community Gold

Powered by APX

Appendix F. Definition of Key Terms

Biogenic Emissions: biogenic carbon dioxide (CO_2) emissions are defined as CO_2 emissions related to the natural carbon cycle, as well as those resulting from the combustion, harvest, combustion, digestion, fermentation, decomposition, or processing of biologically based materials.

Business as Usual (BAU): a future scenario where there have been no significant changes to policies, regulations, or attitude towards climate change, with climate change projected at over 4°C globally

Carbon Dioxide Equivalent (CO_2e): the universal unit of measurement used to indicate the global warming potential of greenhouse gases (GHGs) expressed in the terms of the 100-year global warming potential of one metric ton of CO_2

Carbon Management Plan (CMP): plan for Diageo's carbon reporting and management strategy

Carbon Neutrality: condition in which during a specified period the carbon emissions caused by a company are balanced out by an equivalent amount of carbon removed from the atmosphere

Clean-in-place (CIP): method of cleaning the interior of equipment without disassembly

Energy Attribute Certificates (EACs): an audited kilowatt hour (kWh) credit from renewable electricity sources which proves the source of the electricity purchased

Greenhouse Gas (GHG) Emissions: emissions arising from business activities, which includes CO_2, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF) and nitrogen trifluoride (NF)

- **Scope 1:** direct emissions from combustion of fuels at the site for business operations (i.e., natural gas heating, vehicle fuel)
- **Scope 2:** indirect emissions caused by a company's energy consumption that occur offsite (i.e., purchased electricity)
- **Scope 3:** indirect emissions from the value chain

PAS 2060: certification for achieving carbon neutrality

Power Purchase Agreement (PPA): a contract for the purchase of power and associated Renewable Energy Certificates (RECs) from a specific renewable energy generator (the seller) to a purchaser of renewable electricity (the buyer). Physical PPAs, which are usually 10 -20 year agreements, define all of the commercial terms for the sale of renewable electricity between the two parties, including when the project will begin commercial operation, schedule for delivery of electricity, penalties for under delivery, payment terms and termination. The project may be located onsite at the user's location or be offsite with the electricity being grid-delivered to the user.

Science Based Targets (SBTs): carbon emission reduction goals that are considered "science-based" if they show, through different emissions scenarios, that the goals are in line with the reduction pathways necessary to meet the goals of the Paris Agreement – to limit global warming to well-below 2°C above pre-industrial levels and pursue efforts to limit warming to 1.5°C

Start of Operations: the first day grain enters the silo

Zero Waste to Landfill (ZWL): Eliminating waste through recycling and reusing with the prevention of waste ending up in landfill