



Appendix 7.1

Legislation, Policy and Guidance

Appendices: Chapter 7 Climate Change and Greenhouse Gases

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Experts in air quality
management & assessment

Document Control

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7.1 Legislation, Policy and Guidance

7.1.1 This Appendix provides additional detail on the legislation, policy and guidance relevant to the assessment of the likely significant effects of the Development on Climate Change through consideration of the Greenhouse Gases (GHG)¹ associated with the Development.

Legislation

7.1.2 The following legislation is relevant to the assessment of the Development.

Table 7.1.1: Relevant Legislation

Legislation	Relevance to the Development
Well-being of Future Generations (Wales) Act 2015 ²	<p>The act sets out a number of goals to ensure wellbeing of future generations including;</p> <p>A prosperous Wales. This requires an innovative, productive and low carbon society which recognizes the limits of the global environment and therefore uses resources efficiently and proportionately (including acting on climate change); and which develops a skilled and well-educated population in an economy which generates wealth and provides employment opportunities, allowing people to take advantage of the wealth generated through securing decent work, and</p> <p>A resilient Wales. This requires a nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change (for example climate change).</p> <p>The assessment has considered the Development's effect on climate change and its resilience to future climate change</p>
Climate Change Act (2008) ³ and Climate Change Act 2008 (2050 Target Amendment) Order 2019 ⁴	<p>The Climate Change Act (CCA) as amended in 2019 commits the UK to reduce its net GHG emissions by 100% by 2050. In meeting this target it requires the Government to establish 5-year Carbon Budgets.</p> <p>The 2050 target and carbon budgets are considered in the assessment.</p>
The Environment (Wales) Act 2016 (Amendment of 2050 Emissions Target) Regulations 2021 ⁵	<p>The Environment (Wales) Act 2016 (Amendment of 2050 Emissions Target) Regulations 2021 increase the current 2050 target of 80% lower than the baseline to at least 100% ('net zero').</p> <p>The 2050 Welsh target is considered in the assessment.</p>
The Climate Change (Interim Emissions Targets) (Wales)	<p>This Regulation gives effect to changes to interim emissions targets as follows:</p> <p>A 2020 target for an emissions reduction of 27% against the baseline;</p> <p>A 2030 target for an emissions reduction of 63% (increased from 45%) against the baseline; and</p>

¹ GHG are atmospheric emissions defined as having an effect on global climate and include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF₆)

² Future Generations Commissioner for Wales, (2015). *Well-being of Future Generations (Wales) Act 2015*. Available at: <https://www.futuregenerations.wales/about-us/future-generations-act/>

³ Her Majesty's Stationery Office, 2008. Climate Change Act 2008.

⁴ Her Majesty's Stationery Office, 2019. The Climate Change Act 2008 (2050 Target Amendment) Order 2019

⁵ Welsh Statutory Instruments 2021 No. 333 (W. 88) Climate Change, Wales, The Environment (Wales) Act 2016 (Amendment of 2050 Emissions Target) Regulations 2021. <https://www.legislation.gov.uk/wsi/2021/333/made>

(Amendment) Regulations 2021 ⁶	<p>A 2040 target for an emissions reduction of 89% (increased from 67%) against the baseline.</p> <p>The interim targets are considered in the assessment.</p>
The Climate Change (Carbon Budgets) (Wales) (Amendment) Regulations 2021 ⁷	<p>A carbon budget sets a maximum limit on the total amount of Welsh emissions permitted over a 5-year budget period. Each carbon budget must be set at a level consistent with meeting the 2050 emissions target and the interim emissions target for any interim target year that falls within or after that budgetary period.</p> <p>The effects of the regulation is to adopt recommendations from the CCC on carbon budgets for Wales consistent with the net zero target.</p> <p>According to the CCC, Carbon Budget 2 should be “tightened to a 37% reduction compared to 1990 levels as an absolute minimum to account for the early closure of Aberthaw power station.” It also recommends Carbon Budget 3 (2026-2030) should be set at an average 58% reduction compared to 1990 levels.</p> <p>The Climate Change (Carbon Budgets) (Wales) (Amendment) Regulations 2021 amends Carbon Budget 2 and sets Carbon 3, in line with the CCC’s recommendations.</p> <p>The Welsh carbon budgets are considered by the assessment</p>
The Climate Change (Net Welsh Emissions Account Credit Limit) (Wales) Regulations 2021 ⁸	<p>The Act provides that the net Welsh emissions account for a period is the amount of net Welsh emissions of greenhouse gases plus any carbon units debited from the account, and minus any carbon units credited to the account during the period.</p> <p>The Act requires the Welsh Ministers to set a limit on the amount of carbon units that may be credited for a budgetary period. This is known as the offset limit.</p> <p>In providing advice on the offset limit, the CCC states:</p> <p>“As our recommendation is to amend the level of the Second Carbon Budget to a level that will likely need to be outperformed in order to get on track to meeting the Third Carbon Budget and the 2030 target, it is not appropriate to meet the Second Carbon Budget with any use of carbon units. We recommend there is no allowance of carbon units to contribute to meeting this carbon budget.”</p> <p>The Climate Change (Net Welsh Emissions Account Credit Limit) (Wales) Regulations 2021 set an offset limit for the budgetary period 2021-2025 of 0% of the carbon budget. This is in line with the CCC’s recommendation.</p> <p>The use of offsets is considered by the assessment.</p>
Environmental Impact Assessment (EIA) Directive 2014 ⁹	<p>The EIA Directive 2014 sets out the rationale for incorporating climate change into the EIA process. Paragraph 13 reads:</p> <p><i>“Climate change will continue to cause damage to the environment and compromise economic development. In this regard, it is appropriate to assess the impact of projects on climate (for example greenhouse gas emissions) and their vulnerability to climate change.”</i></p> <p>The assessment has considered both the potential impact of the project through changes in GHG emissions on climate and the Project’s vulnerability to climate change.</p>
The Town and Country Planning (Environmental	<p>This is the transposition of the EIA Directive 2014 into UK law. Schedule 4, Regulation 18(3) (Information for Inclusion in Environmental Statements) refers to ‘climate’ in the following way:</p>

⁶ Welsh Statutory Instruments 2021 No. 338 (W. 92) Climate Change, Wales, The Climate Change (Interim Emissions Targets) (Wales) (Amendment) Regulations 2021. <https://www.legislation.gov.uk/wsi/2021/338/made>

⁷ Welsh Statutory Instruments 2021 No. 332 (W. 87) Climate Change, Wales, The Climate Change (Carbon Budgets) (Wales) (Amendment) Regulations 2021. <https://www.legislation.gov.uk/wsi/2021/332/made>

⁸ Welsh Statutory Instruments 2021 No. 334 (W. 89) Climate Change, Wales, The Climate Change (Net Welsh Emissions Account Credit Limit) (Wales) Regulations 2021. <https://www.legislation.gov.uk/wsi/2021/334/introduction/made>

⁹ European Parliament and the Council of the European Union (2014). Environmental Impact Assessment (EIA) Directive 85/337/EEC, [online]. Available at: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32014L0052>

Impact Assessment) Regulations 2017 ¹⁰	<p><i>“A description of the factors specified in regulation 4(2) likely to be significantly affected by the development... climate (for example greenhouse gas emissions, impacts relevant to adaptation)”</i>,</p> <p>and:</p> <p><i>“A description of the likely significant effects of the development on the environment resulting from, inter alia... the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change”</i>;</p> <p>therefore, signaling that both the impact of climate change on the development (including environmental receptors) and the impact of the development on climate change, are to be considered. The Regulations set out the emissions sources to be considered in a GHG assessment.</p> <p>The assessment has considered both the potential impact of the project through changes in GHG emissions on climate and the project’s vulnerability to climate change.</p>
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7.1.3 The following international agreements are relevant to the Development.

Table 7.1.2: International Agreements

Legislation	Relevance to the Development
The United Nations Framework Convention on Climate Change (UNFCCC) Paris Agreement ¹¹	<p>The UNFCCC is the major international body responsible for managing climate change and carbon emissions. In 2015, it adopted the Paris Agreement, the aims of which are stated as:</p> <p><i>“This Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by: (a) Holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change; and (b) Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production”</i>.</p> <p>The assessment has considered GHG emissions from the Development in the context of UK legislation (Climate Change Act) and Welsh legislation (The Environment (Wales) Act 2016 and subsequent amendments) that has been developed in response to the Paris agreement.</p>

¹⁰ The UK Government (2017). The Town and Country Planning (Environmental Impact Assessment) Regulations (2017), [online]. Available at: https://www.legislation.gov.uk/uksi/2017/571/pdfs/uksi_20170571_en.pdf

¹¹ UNFCCC (2015). The Paris Agreement, [online]. Available at: <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>.

Planning Policy

National Planning Policy

7.1.4 The following national planning policy is relevant to the Development.

Table 7.1.3: National Planning Policy

Policy	Relevance to the Development
<p>Welsh Government (2021). Planning Policy Wales. Edition 11¹²</p>	<p>Planning Policy Wales Edition 11 sets out policy on energy. It confirms that:</p> <p>Para 5.7.1: <i>Low carbon electricity must become the main source of energy in Wales. Renewable electricity will be used to provide both heating and transport in addition to power. The future energy supply mix will depend on a range of established and emerging low carbon technologies, including biomethane and green hydrogen.</i></p> <p>Para 5.7.2: <i>...Collectively we will need to concentrate on reducing emissions from fossil fuel sources, whilst driving further renewable generation which delivers value to Wales.</i></p> <p>Para 5.7.6: <i>The planning system should secure an appropriate mix of energy provision, which maximises benefits to our economy and communities whilst minimising potential environmental and social impacts. This forms part of the Welsh Government's aim to secure the strongest economic development policies, to underpin growth and prosperity in Wales, recognising the importance of decarbonisation and the sustainable use of natural resources, both as an economic driver and a commitment to sustainable development.</i></p> <p>Para 5.7.7 <i>The benefits of renewable and low carbon energy, as part of the overall commitment to tackle the climate emergency and increase energy security, is of paramount importance. The continued extraction of fossil fuels will hinder progress towards achieving overall commitments to tackling climate change. The planning system should:</i></p> <ul style="list-style-type: none"> • <i>integrate development with the provision of additional electricity grid network infrastructure;</i> • <i>optimise energy storage;</i> • <i>facilitate the integration of sustainable building design principles in new development;</i> • <i>optimise the location of new developments to allow for efficient use of resources;</i> • <i>maximise renewable and low carbon energy generation;</i> • <i>maximise the use of local energy sources, such as heat networks;</i> • <i>minimise the carbon impact of other energy generation; and</i> • <i>move away from the extraction of energy minerals, the burning of which is carbon intensive.</i> <p>This policy therefore supports developments that will generate renewable and low carbon energy developments, as they will be of paramount importance in meeting Welsh climate change policy and targets.</p> <p>The assessment has considered consistency of the Development with these policies.</p>
<p>Future Wales, The National Plan 2040, February 2021¹³</p>	<p>Future Wales – the National Plan 2040 provides a national development framework, setting the direction for development in Wales to 2040. It is a development plan with a strategy for addressing key national priorities through the planning system, including</p>

¹² Planning Policy Wales, Edition 11, February 2021. https://gov.wales/sites/default/files/publications/2021-02/planning-policy-wales-edition-11_0.pdf

¹³ Future Wales the national plan 2040, February 2021. <https://gov.wales/sites/default/files/publications/2021-02/future-wales-the-national-plan-2040.pdf>

	<p>sustaining and developing a vibrant economy, achieving decarbonisation and climate-resilience, developing strong ecosystems and improving the health and well-being of communities.</p> <p>On renewable energy the document states that:</p> <p><i>...our support for both large and community scaled projects and our commitment to ensuring the planning system provides a strong lead for renewable energy development, mean we are well placed to support the renewable sector, attract new investment and reduce carbon emissions.</i></p> <p>It sets out 11 outcomes that form part of an overall vision for Wales that includes an objective on climate change, as follows:</p> <p><i>A Wales where people live in places which are decarbonised and climate-resilient: The challenges of the climate emergency demand urgent action on carbon emissions and the planning system must help Wales lead the way in promoting and delivering a competitive, sustainable decarbonised society. Decarbonisation commitments and renewable energy targets will be treated as opportunities to build a more resilient and equitable low-carbon economy, develop clean and efficient transport infrastructure, improve public health and generate skilled jobs in new sectors. New homes will be energy efficient and will help communities adapt to the changing climate.</i></p> <p>Policy 17 Renewable and Low Carbon Energy and Associated Infrastructure sets out specific policy on renewable energy as follows:</p> <p><i>The Welsh Government strongly supports the principle of developing renewable and low carbon energy from all technologies and at all scales to meet our future energy needs. In determining planning applications for renewable and low carbon energy development, decision-makers must give significant weight to the need to meet Wales' international commitments and our target to generate 70% of consumed electricity by renewable means by 2030 in order to combat the climate emergency.</i></p> <p>The document confirm that the Welsh Government is committed to maximising the potential from renewable energy in Wales confirming that generating renewable energy is a key part of its commitment to decarbonisation and tackling the climate emergency.</p> <p>It confirms the following targets for the generation of renewable energy:</p> <ul style="list-style-type: none"> • For 70% of electricity consumption to be generated from renewable energy by 2030. • For one gigawatt of renewable energy capacity to be locally owned by 2030. • For new renewable energy projects to have at least an element of local ownership from 2020. <p>The document also confirm that the Welsh Government wishes to see as much renewable electricity generated and consumed as locally as possible.</p> <p>The assessment has considered the projects consistency with these policies and targets.</p>
<p>Welsh Government. (2019). Prosperity for All: A Low Carbon Wales¹⁴</p>	<p>This document predates the Future Wales 2040 and Planning Policy Wales 11 Edition.</p> <p>The document states that: <i>"We will accelerate the deployment of renewable generation through: Policy 31 – Delivery of our Renewable Energy Targets. The reduction of electricity generation from fossil fuels must be accompanied by increases in low carbon generation."</i></p>

¹⁴ Welsh Government. (2019). Prosperity for All: A Low Carbon Wales. [Online] https://gov.wales/sites/default/files/publications/2019-06/low-carbon-delivery-plan_1.pdf

Local Planning Policy

7.1.5 The following local planning policy is relevant to the Development.

Table 7.1.4: Local Planning Policy

Policy	Relevance to the Development
Vale of Glamorgan Local Development Plan (LDP) 2011 – 2026 (Policy MD19 and Strategic Objective 2) ¹⁵	<p>The LDP's sets a series of objectives, with Objective 2 set as:</p> <p><i>To ensure that development within the Vale of Glamorgan makes a positive contribution towards reducing the impact of and mitigating the adverse effects of climate change.</i></p> <p>With respect to this objective the LDP seeks to ensure that new development makes a positive contribution towards reducing the impact of and mitigating against the adverse effects of climate change.</p> <p>Policy MD19 relates to low carbon and renewable energy generation and stated that:</p> <p><i>Proposals for the generation of low carbon and renewable energy will be permitted where it can be demonstrated that there is no unacceptable impact on the interests of:</i></p> <ul style="list-style-type: none"> • <i>Best and most versatile agricultural land;</i> • <i>Aviation safeguarding;</i> • <i>Electrical, radio or other communication systems;</i> • <i>Landscape importance;</i> • <i>Natural and cultural heritage;</i> • <i>Nature conservation;</i> • <i>Residential amenity; and</i> • <i>Soil conservation.</i> <p><i>In assessing such proposals, the cumulative impacts of renewable energy schemes will be an important consideration. Where necessary, proposals should be informed by a landscape and visual impact assessment. Favourable consideration will be given to proposals that provide opportunities for renewable and low carbon energy and / or heat generation to be utilised within the local community.</i></p>
Vale of Glamorgan Renewable Energy Supplementary Planning Guidance ¹⁶	<p>This guidance relates to planning applications for renewable forms of energy up to 10MW.</p> <p>For developments over this threshold different consenting regimes apply outside of the Council's scope, depending on the type of renewable technology. From the 1st</p>

¹⁵ Vale of Glamorgan Council (2017). *Local Development Plan 2011-2026*. Available at: https://www.valeofglamorgan.gov.uk/en/living/planning_and_building_control/Planning/planning_policy/Planning-Policy.aspx

¹⁶ Vale of Glamorgan, (2019). *Renewable Energy Supplementary Planning Guidance*

	<p>April 2019 renewable technologies between 10-350MW the Welsh Government are the deciding authority under the Development of National Significance (DNS) consenting regime with the exception of onshore wind projects which currently have no upper limit.</p> <p>This SPG is therefore not directly relevant to the development, but does provide helpful context. It examines biomass developments and confirms that:</p> <p><i>“The main types of Biomass used in the UK are sourced from wood-fuel, energy crops, wood waste, agricultural residues and the biodegradable matter contained within municipal solid waste (MSW). Unlike the previous forms of energy production, Biomass does produce carbon emissions which are released when the energy is generated. However, it is still considered a sustainable fuel due to carbon balancing where the CO₂ released when energy is generated from biomass is balanced by the CO₂ absorbed during the biological matters growth”.</i></p> <p>The SPG therefore provides confirmation of the role of biomass (such as waste wood) as a carbon neutral fuel for energy generation.</p>
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Guidance

7.1.6 The following guidance is relevant to the Development.

Table 7.1.5: Relevant Guidance

Guidance	Relevance to the Development
Institute of Environmental Management and Assessment (IEMA) guidance on Assessing Greenhouse Gas Emissions and Evaluating their Significance, 2 nd edition (2022) ¹⁷	Provides guidance on assessment and mitigation of GHG emissions within an EIA context. Includes a focus on proportionate and robust assessment. The IEMA guidance has informed the assessment including the assessment of significance for the Development.
IEMA EIA Guide To: Climate Change Resilience and Adaptation 2020 ¹⁸	Provides guidance on assessing the resilience of Development to future climate change within an EIA context. The IEMA guidance has informed the assessment including the assessment of significance for the Development.
The Greenhouse Gas Protocol Corporate Accounting and Reporting Standard (GHG Protocol) ¹⁹	Provides standards and guidance for preparing a GHG emissions inventory including the definition of scope 1, 2 and 3 emissions.
Publicly Available Standard (PAS) 2080: 2016 – Carbon Management in Infrastructure ²⁰	Provides an approach to management of reduction of GHG emissions from infrastructure projects, working with stakeholders throughout the project lifecycle. The guidance has informed the assessment approach.
Committee on Climate Change, Net Zero. The UK's contribution to stopping global warming, 2019 ²¹	The CCC Net Zero report responds to a request from the Governments of the UK, Scotland and Wales to provide updated advice on the UK's long-term emissions targets, including the possibility of setting a new 'net-zero' target. The report recommends that the UK should legislate as soon as possible to reach net-zero greenhouse gas emissions by 2050. It advises that this target can be legislated as a 100% reduction in greenhouse gases from 1990 and

¹⁷ IEMA (2022) Assessing Greenhouse Gas Emissions and Evaluating their Significance.

¹⁸ IEMA, (2020). IEMA EIA Guide to: Climate Change Resilience and Adaptation.

¹⁹ The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (no date).

²⁰ Publicly Available Standard (PAS) 2080 Carbon Management in Infrastructure.

²¹ CCC (2019 Net Zero. The UK's contribution to stopping global warming, 2019. Found at <https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/>

	<p>should cover all sectors of the economy, including international aviation and shipping.</p> <p>The assessment has considered the consistency of GHG emissions from the Development with CCC's net zero target.</p>
Royal Institution of Chartered Surveyors (RICS): Methodology to calculate embodied carbon 1st edition ²²	<p>The RICS guidance note represents best practice on how to estimate carbon emissions associated with product and construction process stages. The aim of the guidance is to provide a framework of practical guidance on how to calculate embodied carbon emissions associated with projects.</p> <p>The assessment has taken the guidance into account in scoping emissions and calculating embodied carbon emissions.</p>
Energy Generation in Wales 2018, (2019) ²³	<p>The Energy Generation in Wales 2018 report sets out the current energy generation capacity of Wales and analyses how it has changed over time.</p> <p>The aim of the report is to support the Welsh Government with the development of energy policy, helping to evidence the economic, community and environmental benefits from the development of Welsh energy projects</p> <p>It identifies a range of technologies including Biomass electricity and CHP which includes waste wood.</p>
Project Zero – The Vale of Glamorgan Council Climate Change Challenge Plan 2021 – 2030 ²⁴	<p>Project Zero is the Vale of Glamorgan Council's response to the climate change emergency.</p> <p>Project Zero brings together the wide range of work and opportunities available to tackle the climate emergency, reduce the Council's carbon emissions to net zero by 2030 and encourage others to make positive changes.</p>

²² RICS (2014) Methodology to Calculate Embodied Carbon, 1st Edition.

²³ Energy Generation in Wales 2018, (2019). <https://gov.wales/energy-generation-wales-2019>

²⁴ Vale of Glamorgan, (2021). Project Zero – Vale of Glamorgan Council Climate Change Challenge Plan 2021 – 2030.



Appendix 7.2

GHG Calculation Input Data

7.2 GHG Calculation Input Data

7.2.1 This Appendix provides additional technical data and used in the calculation of GHG emissions and energy outputs related to the operation of the Development.

Electricity Factors

7.2.2 Grid electricity factors for 2022 to 2046 (assuming a 25-year lifetime) are presented in Table 7.2.1. Data have been taken from the Department for Business, Energy and Industrial Strategy's (BEIS) Green Book²⁵.

Table 7.2.1: Electricity Factors for 2022 - 2046²⁵

Year	Long-run Marginal Generation-based Factor for Grid Electricity
2022	0.246
2023	0.233
2024	0.219
2025	0.205
2026	0.189
2027	0.173
2028	0.156
2029	0.138
2030	0.118
2031	0.105
2032	0.094
2033	0.084
2034	0.075
2035	0.066
2036	0.059
2037	0.053
2038	0.047
2039	0.042
2040	0.037
2041	0.036

²⁵ BEIS (2021), *Green Book Supplementary Guidance: Valuation of Energy Use and Greenhouse Gas Emissions for Appraisal*

Year	Long-run Marginal Generation-based Factor for Grid Electricity
2042	0.035
2043	0.034
2044	0.032
2045	0.031
2046	0.030

Electrical Export

7.2.3 Table 7.2.2 presents information relating to the electricity generated by the facility.

Table 7.2.2: Calculation of Electrical Energy Outputs

Parameter	Value	Metric	Comment
Energy Input	1,008,000	GJ	NCV (Error! Reference source not found.) x Throughput (Error! Reference source not found.)
	280,002	MWh	Energy input in GJ x 0.27778
Gross Electrical Output	11.8	MWe	Provided by the Operator
Parasitic Electrical Consumption ^a	1.8	MWe	
Total Electricity Export	10	MWe	
Operational Hours per Year	8,000	hours	Provided by the Operator
Gross Annual Electrical Output	94,400	MWh	Calculated by combining the data in the rows above with the expected annual operating hours (8,000).
Annual Parasitic Electrical Consumption	14,400	MWh	
Total Annual Exported Electricity	80,000	MWh	

^a Parasitic load is the electricity used by the plant in order to operate. This energy has been discounted from the exported electricity values.

Transport Decarbonisation Factors

7.2.4 GHG emission factors for transport in 2021 (the latest data available) have been obtained from the BEIS publication on GHG Conversion Factors for Company Reporting²⁶ which sets out GHG emission factors for a range of modes of transport valid for 2021.

²⁶ BEIS (2021) UK Government GHG Conversion Factors for Company Reporting

7.2.5 Emissions factors for cars for 2022 and each year up to 2046 (assuming a 25-year lifetime) were determined by applying engine and fuel efficiency factors (sourced from the WebTAG data book²⁷) to the 2021 BEIS factors, depending on type of fuel and vehicle size/type. For HGVs, the Government is targeting a ban on sales of non zero-emission HGVs by 2035 to 2040 (depending on size), but the technology pathways for this are only just emerging and have some uncertainty. Therefore, to provide a worst-case assessment, the GHG emissions factors for HGVs have been fixed throughout the Development's lifetime and so do not account for decarbonisation. The transport emission factors for 2022 to 2046 used in Chapter 7: Greenhouse Gases and Climate Change are provided in Table 7.2.3.

Table 7.2.3: Operational Transport GHG Factors ^{26,27}

Year	GHG Factor (kgCO _{2e} /km)	
	Cars (Staff Travel)	Artic HGVs (Imports / Exports)
2022	0.168	0.858
2023	0.164	0.858
2024	0.160	0.858
2025	0.155	0.858
2026	0.150	0.858
2027	0.145	0.858
2028	0.141	0.858
2029	0.136	0.858
2030	0.129	0.858
2031	0.123	0.858
2032	0.118	0.858
2033	0.113	0.858
2034	0.108	0.858
2035	0.103	0.858
2036	0.099	0.858
2037	0.096	0.858
2038	0.092	0.858
2039	0.089	0.858
2040	0.086	0.858

²⁷ Department for Transport (2020) TAG data book July 2020 v1.13.1, Available: <https://www.gov.uk/government/publications/tag-data-book>.

Year	GHG Factor (kgCO _{2e} /km)	
	Cars (Staff Travel)	Artic HGVs (Imports / Exports)
2041	0.083	0.858
2042	0.081	0.858
2043	0.079	0.858
2044	0.077	0.858
2045	0.075	0.858
2046	0.074	0.858

- ^a Data on the future decarbonisation of road freight is currently uncertain, so to provide a worst-case assessment, emissions from HGVs have been fixed to account for use of diesel HGVs.



Appendix 7.3

Glossary

7.3 Glossary

AOD	Above Ordnance Datum
APCR	Air Pollution Control Residues
AQC	Air Quality Consultants
BECCS	Bioenergy with Carbon Capture and Storage
BEIS	Department for Business, Energy and Industrial Strategy
CCC	Committee on Climate Change
CH₄	Methane
CO₂	Carbon Dioxide
CPP	Construction Phase Plan
CTMP	Construction Traffic Management Plan
DDOC	Decomposable Degradable Organic Carbon
DfT	Department for Transport
EIA	Environmental Impact Assessment
ES	Environmental Statement
EV	Electric Vehicle
GHG	Greenhouse Gas
GIA	Gross Internal Area
GJ	Gigajoules (10 ⁹ Joules)
GTP	Green Travel Plan
GWP	Global Warming Potential
HFC	Hydrofluorocarbon
HGV	Heavy Goods Vehicle
IBA	Incinerator Bottom Ash
IEMA	Institute of Environmental Management and Assessment
IPCC	Intergovernmental Panel on Climate Change
LDP	Local Development Plan
MW	Megawatts (10 ⁶ Watts)
N₂O	Nitrous Oxide

PEP	Project Environmental Plan
PFC	Perfluorocarbons
RCP	Representative Concentration Pathway
RICS	Royal Institution of Chartered Surveyors
SF₆	Sulphur Hexafluoride
TPC	Travel Plan Co-ordinator
VES	Voluntary Environmental Statement