

PPN 06/21

Carbon Reduction Plan

Supplier Name: Alexander Dennis Limited

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Zero emission.
by Alexander Dennis

Commitment to achieving Net Zero

Alexander Dennis Limited (ADL) United Kingdom, is committed to **reaching a target of Net Zero emissions by 2050**, as set out in the standard Carbon Reduction Plan (CRP) requirements.

ADL is at the forefront of providing a range of pioneering technology solutions to deliver significant fuel efficiencies and emission reductions within the public and private transport sector, supporting our customers in achieving their own climate reduction goals with the market's widest range of low and zero emissions products.

ADL is part of NFI Group Inc. (NFI), a leading independent global provider of sustainable bus and motor coach solutions. Currently, NFI is working through a systematic and thoughtful approach in its sustainability journey, beginning with an Environmental, Social and Governance (ESG) stakeholder engagement process to prioritize the Company's most important ESG issues to enable specific operational target setting measures as we move towards identifying risks and opportunities in preparation for the net-zero economy.



Emissions Footprint

ADL's greenhouse gas (GHG) emissions footprint calculations throughout this CRP align with the methodologies set out within the GHG Protocol Corporate Standard, and follows best practices and technical guidance throughout. Emissions are categorised into *Direct* (Scope 1), *Indirect* (Scope 2) and *Other Indirect* (Scope 3) GHG emissions.

In alignment with the requirements of the PPN 06/21 Carbon Reduction Plan, ADL is reporting Scope 1 and 2 emissions along with five categories of Scope 3 emissions. The following Scope 3 categories reported in this CDP include the sources of emissions as per the Technical Standard guidance:

- Category 4: Upstream transportation and distribution
- Category 5: Waste generated in operations
- Category 6: Business travel
- Category 7: Employees commuting
- Category 9: Downstream transportation and distribution

The 2019 baseline, 2020 and 2021 GHG footprint relates to ADL United Kingdom activities only, and are a subset of the total GHG footprint of NFI Group's global activities.

Baseline Year: 2019

Details relating to the baseline emissions calculations

Baseline emissions are a record of the greenhouse gases (GHGs) that have been produced in the past and were produced prior to the introduction of any strategies to reduce emissions. Baseline emissions are the reference point against which emissions reduction can be measured.

Baseline year was calculated for the one-year period beginning 01st January 2019 and ending December 31st 2019.

Baseline emissions totals

Baseline year emissions ¹	
Emissions Category	Total Emissions (tCO ₂ e)
Scope 1	6,266.7
Scope 2	3,223.1
Scope 3 (See breakdown below)	4,180.1
<i>Cat 4: Upstream transportation and dist.</i>	2,047.1
<i>Cat 5: Waste generated in operations</i>	49.6
<i>Cat 6: Business travel</i>	129.3
<i>Cat 7: Employee commuting</i>	1,954.1
<i>Cat 9: Downstream transportation and dist.</i>	NA ²
Total Emissions	13,669.9

¹ In 2022, ADL's Baseline emissions footprint was updated to align with the latest guidance from BEIS on gross/net CV emission factors. The adoption of net CV emission factors for all liquid fuels has resulted in a slight reduction in scope 1 baseline emissions. The same approach has been followed for both subsequent years to retain consistency.

² Vehicles are driven direct to customer. As fuel is used throughout the manufacturing process, the fuel used in this activity is accounted for in Scope 1 emissions. Therefore, there are no downstream distribution activities..Emissions from aftermarket freight deliveries are included upstream, this aligns with the GHG Protocol Scope 3 Guidance which states that distribution services paid for by the reporting company should be included in category 4.

Comparison years (2020 & 2021)

Emissions totals

Aligning with PPN 06/21, ADL will continue to update this Carbon Reduction Plan at least annually, and therefore emissions from the current reporting year (2021) are reported below.

Emissions Reporting (Baseline to current reporting year)			
Emissions Category	Total Emissions (tCO ₂ e)		
	2019 (Baseline)	2020	2021 (Current reporting year)
Scope 1	6,266.7	4,646.3	4,971.9
Scope 2	3,223.1	1,860.5	1,697.8
Scope 3 (See breakdown below)	4,180.1	3,906.0	4,120.7
<i>Cat 4: Upstream transportation and dist.</i>	<i>2,047.1</i>	<i>2,255.4</i>	<i>2,364.4</i>
<i>Cat 5: Waste generated in operations</i>	<i>49.6</i>	<i>44.1</i>	<i>53.2</i>
<i>Cat 6: Business travel</i>	<i>129.3</i>	<i>99.0</i>	<i>106.9</i>
<i>Cat 7: Employee commuting</i>	<i>1,954.1</i>	<i>1,507.6</i>	<i>1,596.2</i>
<i>Cat 9: Downstream transportation and dist.</i>	<i>NA</i>	<i>NA</i>	<i>NA³</i>
Total Emissions	13,669.9	10,412.8	10,790.4

³ Vehicles are driven direct to customer. As fuel is used throughout the manufacturing process, the fuel used in this activity is accounted for in Scope 1 emissions. Therefore, there are no downstream distribution activities. Emissions from aftermarket freight deliveries are included upstream, this aligns with the GHG Protocol Scope 3 Guidance which states that distribution services paid for by the reporting company should be included in category 4.

Emissions Reduction Targets

In order to progress towards achieving net zero prior to the UK government's 2050 target, ADL United Kingdom, is committed to making progress towards achieving net zero by 2050 from a 2019 base year.

Carbon reduction modelling

ADL United Kingdom net zero targets are aligned to the Paris Agreement objective to limit global temperature increase to 1.5°C above pre-industrial levels. This means ADL will achieve at least an average annual 4.2% reduction of total operational and value chain emissions year-on-year up to 2050.

In order to predict the Company's GHG footprint in upcoming years, emissions modelling has been undertaken to project emissions from the 2019 baseline up to 2050. This helps to visualise what ADL's emissions are now and where they need to be in the future to meet the Company's reduction commitments.

A business-as-usual (BAU) was modelled by applying a typical UK economic growth rate of 1.83% (2010-2019 average) to the Scope 1, 2 and 3 calculations. Forecasted Emission Factors for UK grid electricity from the Department for Business, Energy & Industrial Strategy (BEIS) were also applied in order to factor in grid decarbonisation⁴ to the modelling. This BAU scenario was then compared to a reduction pathway aligned with 1.5°C warming. This allowed ADL to approximate the emissions reductions needed.

By aligning with a 1.5°C pathway, ADL's total GHG emissions will decrease approximately 46% by 2030 compared to baseline, providing a Near-term objective to ADL's net zero targets.

The graph in figure 1 shows the carbon reduction projected for Scopes 1, 2 and 3 (five mandatory categories only) when aligned with a 1.5°C pathway. Overlying the modelling results, the bars represent the 2019 (baseline), 2020 and 2021 footprint totals to show emissions progress to date.

ADL acknowledges efforts to reduce gross emissions down to zero may have limitations. Once ADL have reached the point where they have achieved maximum possible abatement of their emissions, it may be necessary to offset the residual emissions using high-quality approved carbon removal offsets in order to reach net zero.

⁴ <https://www.gov.uk/government/publications/valuation-of-energy-use-and-greenhouse-gas-emissions-for-appraisal>

Actual Versus Projected Emissions

ADL had seen a significant emissions reduction against the 2019 baseline for years 2020 and 2021. This is consequence of the global Covid-19 pandemic and the reduction in some operational activities during those periods, particularly in 2020. There was an increase in emissions in 2021 compared to 2020 as ADL, and the UK economy, began its recovery from the pandemic.

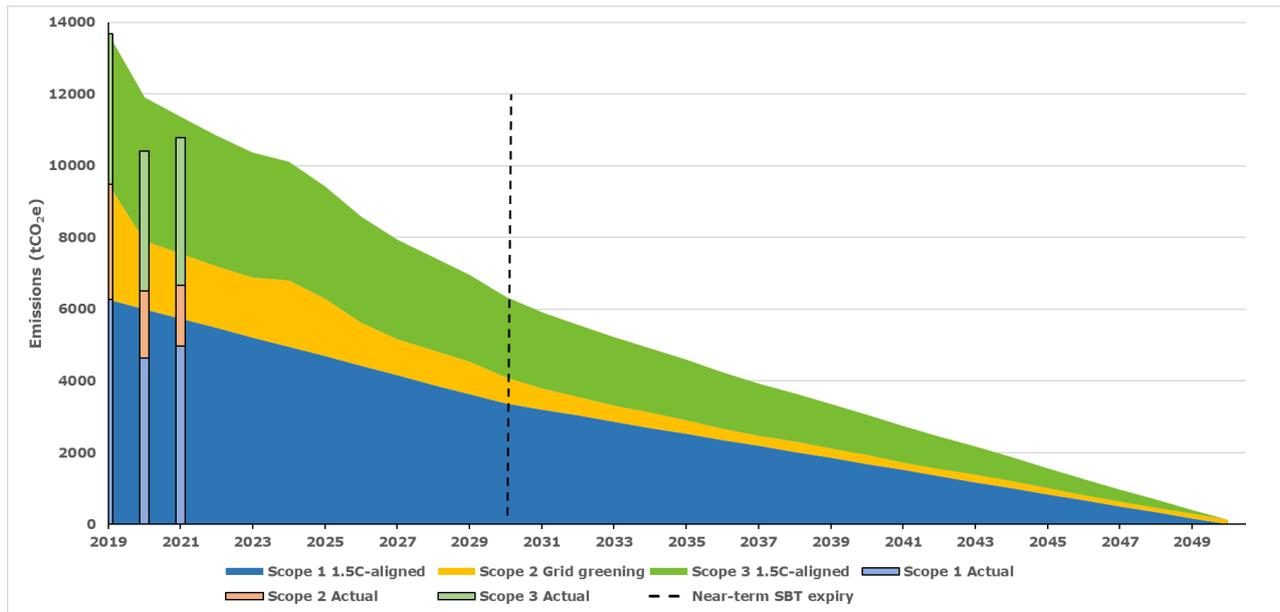
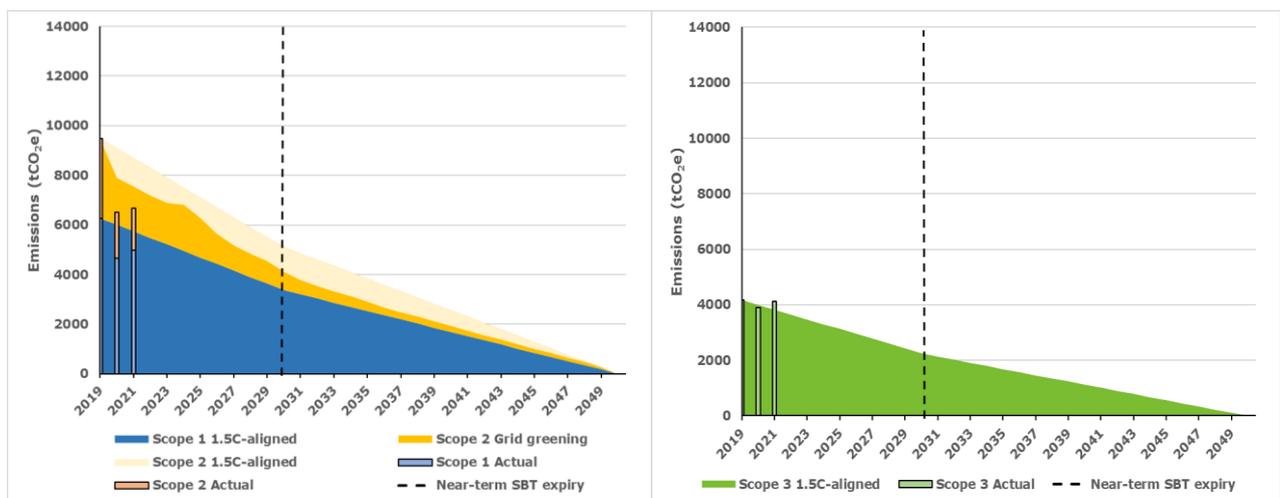


Figure 1: ADL's Scope 1, 2 & 3 emissions from 2019 baseline to 2050, modelled according to a 1.5°C-aligned reduction pathway. Between 2019 and 2030, emissions reduction is aligned with the requirements of a near-term, 1.5°C-aligned Science-Based Target (SBT). Post-2030, reduction is aligned to a 1.5°C-aligned long-term SBT. Bars show ADL's actual Scope 1, 2 & 3 footprints in 2019, 2020 and 2021.

The graphs below show the Scope 1 & 2 modelling separately to Scope 3. The Scope 1 & 2 graph on the left shows the predicted emissions impact of decarbonisation of the UK grid in comparison to a 1.5°C-aligned pathway.



Carbon Reduction Projects

ADL has implemented a number of carbon emission reduction projects with the goal of reducing the company's overall carbon footprint in line with targets. The following environmental management measures and projects have been completed or implemented since the 2019 baseline.

Completed Carbon Reduction Initiatives

Energy Efficiency

ADL has committed the following initiatives to reduce emissions from electricity and gas used across their operational sites:

- In 2019, ADL completed investment grade energy audits to identify opportunities to improve energy efficiencies.
- In 2019, ADL completed the installation of LED lighting systems, providing an annual reduction in electricity consumption of 38,2740 kWh. This equated to a savings of 97.7 tCO₂e within the Scope 2 baseline.
- In 2022, ADL completed the installation of further LED lighting systems, providing a reduction in electricity consumption of 17,6337 kWh, equating to 37.4 tCO₂e (1.2% reduction versus the Scope 2 baseline).

Ongoing improvements through facility retrofitting efforts and operational process design efficiencies will continue to be evaluated.

Supply Chain Engagement

ADL understands the importance of the supply chain when it comes to reducing Scope 3 carbon emissions. ADL is committed to engaging with their supply chain with the ambition to understand, manage and reduce wider environmental impacts associated with their purchased goods and services.

In the coming years, ADL will continue to engage with their largest suppliers, to gather more reliable GHG data and to work directly with those suppliers to support the reduction of embodied carbon within the parts and materials used in ADL's direct operations where possible.

Hybrid Working Models

ADL has built on lessons and experiences learned as a result of the global COVID-19 pandemic and introduced flexible work arrangements where available, decreasing daily commutes to the workplace and working towards reducing our Scope 3 emissions.

Future Projects

In the future, ADL aims to implement further measures in line with the business sustainability strategy and wider group decarbonisation goals. ADL will continue to explore opportunities to reduce Scope 1, 2 & 3 emissions.

Reducing Fossil Fuel Usage

ADL aims to reduce Scope 1 emissions by evaluating activities related to its fossil fuelled mobile combustion vehicles and machinery through end of life replacement opportunities such as possible decarbonisation through improved technologies and electrification.

Facility Energy Efficiency

Future energy efficiency projects include benchmarking and auditing (by ADL's in-house team) of the Company's facilities. Fossil fuel powered solutions will be reviewed with a view to timing and prioritising removal of older, inefficient products with newer, cleaner alternatives.

Reducing Travel

To further reduce our Scope 3 emissions, ADL will evaluate opportunities towards reducing travel or types of travel between sites where available.

Carbon Footprinting

ADL will continue to improve its measurement and reporting of carbon emissions. In 2021, ADL worked with EcoAct, an external climate consultancy, to develop a tool to aid its internal environmental data collection processes.

In addition, ADL will undertake further analysis to identify future physical and transitional risks and opportunities to the business. The analysis work or framework selected will aim to optimise carbon reduction initiatives and ease the burden of climate change across the business.

Declaration and Sign Off

This Carbon Reduction Plan has been completed in accordance with PPN 06/21 and associated guidance and reporting standard for Carbon Reduction Plans.

Emissions have been reported and recorded in accordance with the published reporting standard for Carbon Reduction Plans and the GHG Reporting Protocol Corporate Standard⁵ and uses the appropriate Government emission conversion factors for greenhouse gas company reporting⁶.

Scope 1 and Scope 2 emissions have been reported in accordance with SECR requirements, and the required subset of Scope 3 emissions have been reported in accordance with the published reporting standard for Carbon Reduction Plans and the Corporate Value Chain (Scope 3) Standard⁷.

This Carbon Reduction Plan has been reviewed and signed off by the board of directors (or equivalent management body).

Signed on behalf of the Supplier:



Paul Davies

President & Managing Director at Alexander Dennis Limited

7th November 2022

⁵<https://ghgprotocol.org/corporate-standard>

⁶<https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting>

⁷<https://ghgprotocol.org/standards/scope-3-standard>