

Sustainability Statement and Energy Assessment

Land at Port Talbot Steelworks

September 2024



Turley
Sustainability
and ESG

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Client

Tata Steel UK Ltd

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1. Introduction

This Sustainability Statement has been prepared to demonstrate the sustainability of the Proposed Development proposals at Port Talbot Steelworks.

It has been prepared by Turley Sustainability and ESG, on behalf of Tata Steel UK Ltd. (the applicant), to support the Hybrid Planning Application for the construction of an electric arc furnace (EAF) steel making production facility with associated scrap metal handling facility on land at Port Talbot Steelworks, Port Talbot.

This Sustainability Statement outlines the proposed sustainable design measures, primarily addressing environmental requirements set in the national and local planning policies, while other reports, such as the Environmental Impact Assessment (EIA), cover the social and economic aspects.

1.1 TATA Steel UK, the Sustainability Champion

Steel has been crucial to the UK's economy for the past two centuries and will remain essential in a future sustainable, circular, digital economy. Tata Steel UK is the country's largest steelmaker and the only strip producer supporting advanced engineering sectors.

The company has pioneered global steelmaking technologies and is leading efforts to develop zero-carbon supply chains. Recognized as a 'Sustainability Champion' by *worldsteel*, Tata Steel is set to further reduce GHG emissions by transitioning from coal-based to electric arc furnace

(EAF) steel manufacturing through the Proposed Development.

1.2 The Proposed Development

1.2.1 The Site

The land at Port Talbot Steelworks site is located south of Port Talbot, bound to the south-west by the Bristol Channel, and to the east by Margam and the M4. The Network Rail Swansea to London mainline generally forms the eastern boundary, with some small areas of Tata Steel owned land beyond this, as shown in **Figure 1**.

Most of the site consists of developed areas used to support the current production of steel. It is currently a large coal-based steel manufacturing facility. These developed areas contain existing buildings and structures, hardstanding storage areas and infrastructure such as access roads and a rail corridor to the south-east.

To the south of the site is undeveloped open fields, which forms the northern part of the Margam Moors.

1.2.2 Proposed Development

Planning permission is sought for the following description of Proposed Development:

“Hybrid planning application: full planning permission for the demolition of existing buildings and structures, partial infill of the BOS lagoon, and construction of a new electric arc furnace-based steel production facility (1 no. arc furnace, 2 no. ladle furnaces). The development includes an upgraded slag processing facility, chemical/material storage and transfer infrastructure and pipework and cabling (above and below ground), buildings, fume and dust treatment plant, water treatment facility and material handling systems. Electrical control rooms and power infrastructure. Offices and

ancillary facilities together with new and amended transport infrastructure, landscaping and green infrastructure, drainage and associated engineering operations.

Outline planning permission (with all matters reserved except for access and landscaping) for demolition and the construction of a scrap metal handling facility and associated scrap yards, scrap processing facility, underground and overground electrical infrastructure, and new and amended transport infrastructure, landscape and green infrastructure, drainage and associated engineering operations.”

Figure 2 shows the proposed master plan for the Proposed Development.

1.3 Document Structure

Chapter 2 of this Statement sets out the local and national sustainability planning objectives.

Chapter 3 provides a review of the sustainability measures that are proposed during the construction and operation of the Proposed Development.

Chapter 4 summarises the sustainability performance of the Proposed Development and how these accords with planning policy.

Approach to GHG Emissions:

The World Steel Association (ISO14404:2013) approach to assessing carbon dioxide emissions intensity from iron and steel production, which has been used for this assessment, is focused exclusively on CO₂ emissions, not CO₂e. Regarding non-CO₂ GHGs, the Applicant has reviewed the data it has on N₂O and CH₄. It estimates annual mass emissions of these pollutants from the Port Talbot steelworks using emission factors taken from credible references. These estimates are used in the Applicant’s annual Pollution Inventory reporting in accordance with its environmental permit and are reproduced in Table 5.1 ‘Pollution Inventory ‘by source’ emissions, not consistent with local authority emissions by end-user (kt CO₂e)’ of UK Local Authority & Regional CO₂ Emissions National Statistics: 2005 to 2022 (Ref. 13.18).

The applicant has also performed some non-accredited direct measurement of N₂O and CH₄ which has confirmed the broad suitability of the emission factors as the basis for ongoing estimates of emissions of the respective pollutants. As a result, the Applicant has confidence from these two independent streams of evidence that N₂O and CH₄ account for only approximately 0.5% of total CO₂e emissions from the Port Talbot installation in the current configuration, and with CO₂ emissions therefore accounting for 99.5% of operational GHGs. As a result, accounting only for CO₂ emissions from the operational facility in this assessment does not materially under-represent its total GHG emissions. When Scope 3 emissions are accounted for, then the contribution of non-CO₂ GHGs to the inventory of integrated steelmaking GHG emissions does increase, this is primarily associated with methane emissions from raw material mining. Accounting for Scope 1+2+3, CO₂ emissions are approximately 95% of all GHG emissions after the application of GWP (100 years) factors.

Figure 1: Site Location (Source: Lawray Architects)

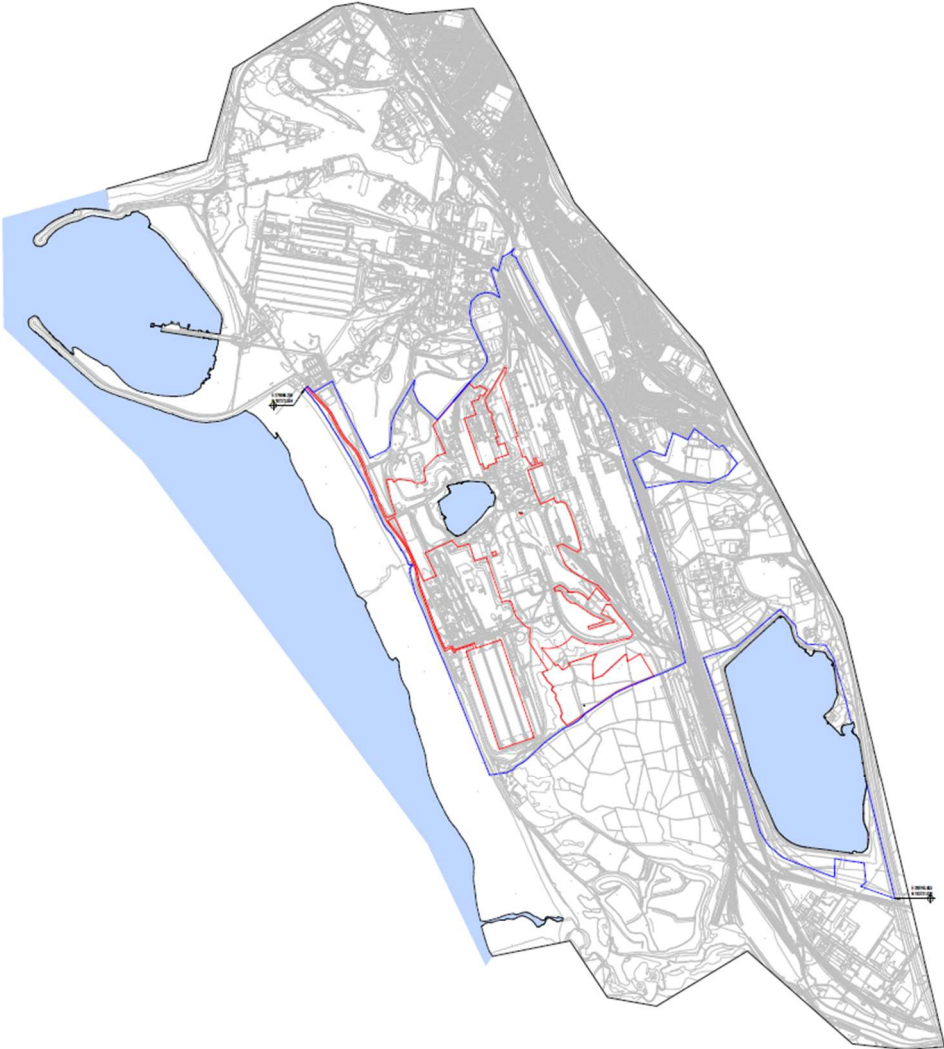
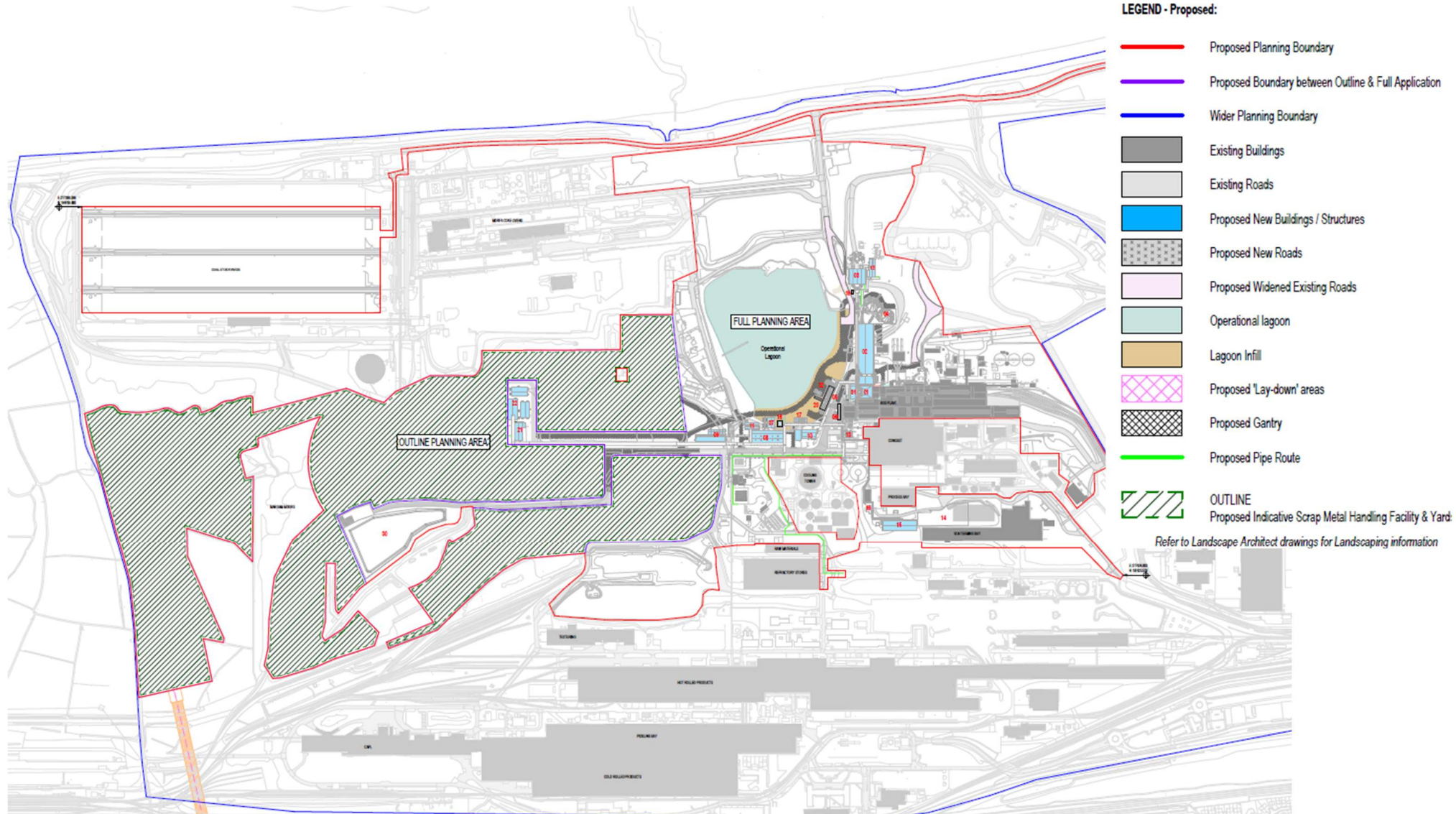


Figure 2: Proposed Development Plan (Source: Lawray Architects)



2. Policy Context

This chapter provides an overview of the relevant sustainability planning policy and guidance from a national and local perspective.

2.1 Introduction

This chapter sets out the planning policy context relating to sustainable design and construction at the national and local authority levels.

2.2 National Policy and Legislation

2.2.1 Planning Policy Wales

The Planning Policy Wales (PPW)¹, issued in 2024, outlines land use planning policies to ensure the planning system supports sustainable development and the well-being of future generations.

It is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters to provide the national planning policy framework for Wales.

It integrates social, economic, environmental, and cultural well-being into planning decisions:



Social and cultural Well-being: The policy requires compliance with the Well-being of Future Generations Act, which mandates the pursuing sustainable development by considering long-term impacts and integrating various aspects of well-being. Developments must align with the seven well-being goals outlined in the Act, promoting a resilient and globally

responsible Wales.



Economic: The policy emphasizes sustainable building design, requiring developments to incorporate high energy performance and decarbonisation measures. Planning authorities are encouraged to require energy reports for major developments, detailing energy efficiency measures and the incorporation of renewable technologies.



Environmental: The policy mandates reducing energy demand and increasing energy efficiency, promoting the use of renewable and low carbon energy sources, with targets such as generating 70% of electricity consumption from renewable sources by 2030. It also requires the sustainable management of natural resources, enhancing ecosystem resilience and minimising environmental risks.

2.2.2 The Well-being of Future Generations Act

The Well-being of Future Generations (Wales) Act² 2015 aims to enhance Wales's economic, social, environmental, and cultural well-being through sustainable development. It sets seven well-being goals, including creating a prosperous, resilient, healthier, and more equal Wales, fostering cohesive communities, vibrant culture, and global responsibility.

Public bodies must adopt long-term thinking, integrating their actions to balance immediate needs with future impacts. They should involve diverse populations in decision-making, collaborate to find sustainable solutions and focus on preventing problems by addressing root causes.

¹ [Planning Policy Wales](#)

² [The Well-being of Future Generations \(Wales\) Act](#)

2.2.3 Technical Advice Note (TANs)

Technical advice notes (TANs)³ provide detailed planning advice. Local planning authorities take them into account when they are preparing development plans. Each TAN covers a specific topic. The following TANs relate to sustainability:

TAN5: Nature Conservation and Planning (September 2009) - Guides how land use planning should protect and enhance biodiversity and geological conservation.

TAN11: Noise (October 1997) – Advises on minimising the impact of noise through the planning system without placing unreasonable restrictions on development.

TAN12: Design (March 2016) - Provides advice on promoting sustainability through good design and planning for sustainable building.

TAN15: Development and Flood Risk (April 2004) - Offers guidance on development and flooding policies.

TAN18: Transport (March 2007) - Aims to improve transport infrastructure and services for better accessibility, road safety, and sustainable communities.

TAN21: Waste (February 2017) - Advises on sustainable waste management and resource efficiency through land use planning.

2.2.4 Environment (Wales) Act

The Environment (Wales) Act⁴, which received Royal Assent in 2016, provides a legal framework for sustainably managing Wales natural resources, aiming to establish a low-carbon, green economy. The key parts of the act are:

Sustainable management of natural resources: Proactively and sustainably managing resources to address challenges and seize opportunities.

Climate change: Setting statutory emission reduction targets, ensuring that the net Welsh emissions account for the year 2050 is at least 100%

lower than the baseline.

Collection and disposal of waste: Improving recycling and energy recovery to reduce pressure on natural resources and benefit the economy and environment.

Biodiversity and ecosystem resilience: Public authorities must seek to maintain and enhance biodiversity as far as consistent with the proper exercise of their functions and in so doing promote the resilience of ecosystems.

2.2.5 Active Travel (Wales) Act

The Act⁵ came into force in 2014. It requires local authorities to map and continuously improve routes and facilities for “active travel” – defined as walking and cycling for a purpose, like accessing work or services, rather than for leisure.

2.2.6 Future Wales: The National Plan 2040

The National Plan⁶, issued in 2021, is a strategic development framework for Wales, guiding development until 2040. It aims to address key priorities such as fostering a vibrant economy, achieving decarbonisation and climate resilience, enhancing ecosystems, and improving community health and well-being through the planning system.

Policy 1: Where Wales will grow – Identifies Swansea Bay and Llanelli area as the focus for growth and investment, that area comprising Port Talbot.

Policy 8: Flooding - The Welsh Government supports flood risk management for sustainable growth, prioritising nature-based solutions.

Policy 9: Resilient Ecological Networks and Green Infrastructure – The Welsh Government will work with partners to protect and enhance ecological networks and green infrastructure, using nature-based solutions for climate adaptation and sustainable growth. Planning authorities should include these priorities in development plans.

Policy 16: Heat Networks – Planning authorities must identify opportunities for District Heat

³ [Technical advice notes \(TANs\)](#)

⁴ [The Environment \(Wales\) Act](#)

⁵ [Active Travel \(Wales\) Act](#)

⁶ [Future Wales: The National Plan 2040](#)

Networks and promote their implementation in Priority Areas, including Port Talbot.

Large-scale mixed-use developments should, where feasible, include a heat network using renewable, low carbon, or waste heat sources. Planning applications for these developments should include an Energy Masterplan to determine if a heat network is the best energy option and, if feasible, provide a plan for its implementation.

2.2.7 Net Zero Wales

Since declaring a climate emergency in 2019, Wales has legislated to reduce greenhouse gas (GHG) emissions to net zero by 2050.

Wales has established a series of statutory 5-year carbon budgets that define the pathway to meet the target. Net Zero Wales⁷, published in 2021, sets out 123 policies and proposals to meet the second carbon budget (2021-25), whilst also delivering against the 7 well-being goals in the Well-Being of Future Generations (Wales) Act.

2.2.8 Building Regulations

Part L, Conservation of Fuel and Power – Whilst not planning policy, the Building Regulations (and specifically Approved Document Part L: Conservation of Fuel and Power) set out the requirements for energy and carbon performance in new buildings.

Periodic updates to these national regulations drive energy efficiency and carbon reduction improvements. The government has stated that developers will continue to have flexibility in how they meet carbon reduction targets; but that the emphasis is on using a ‘fabric first’ approach.

On 29th of March 2023, the Building Regulations for buildings other than dwellings were updated as an interim step towards part of the roadmap to the ‘full’ Future Buildings Standard, due in 2025. The regulations aim to deliver buildings that are of higher quality, with lower energy bills and reduced GHG emissions.

A consultation on the 2025 Future Homes Standard (FHS) and Future Buildings Standard (FBS) for England began in December 2023, proposing a transition from gas to electricity as the primary heat source, a greater use of solar power and higher efficiencies for plants.

Wales has yet to launch a formal consultation on the Future Buildings Standard, but it is likely to follow the outline used in England.

2.3 Local Policy

2.3.1 Neath Port Talbot County Borough Local Development Plan (2011-2026)

The Local Development Plan (LDP)⁸, adopted in 2016, is the development plan for Neath Port Talbot and provides the basis for decisions on land use planning in the County Borough up to 2026.

The LDP sets out objectives to address key issues facing the County Borough, prioritising sustainable development. The main objectives addressing environmental issues are:

Climate Change Mitigation and Adoption:

OB 1 – Minimise the causes and consequences of climate change by reducing greenhouse gas emissions and adapting to its effects.

OB 2 – Reduce people’s exposure to the determinants of poor health and provide an environment that encourages healthy, active and safer lifestyles.

OB 19 – Promote renewable energy to reduce carbon emissions.

Valuing Our Environment:

OB 15 – Conserve landscapes and wildlife habitats.

OB 16 – Address air quality issues and minimise the adverse impacts of noise-generating and polluting activities.

OB 20 – Ensure adequate and appropriate waste treatment and disposal facilities.

⁷ [Net Zero Wales](#)

⁸ [Neath Port Talbot County Borough Local Development Plan \(2011-2026\)](#)

Achieving Sustainable Accessibility:

OB 4, OB 21, and OB 22 – Maximise accessibility, encourage active travel, and manage traffic congestion to create a more sustainable transport network.

Responding to the overarching objectives, the following policies have been set up:

Policy SP1: Climate Change – Response to OB 1 and OB 2, requires developments to enhance settlement efficiency and promote sustainable travel patterns to reduce greenhouse gas emissions. They should also avoid flood-risk areas and minimise habitat fragmentation.

Policy SP2: Health – Response to OB 2, ensures new developments promote healthy, active lifestyles by integrating community facilities and services.

Policy SP15: Biodiversity and Geodiversity – Focuses on OB 15, it requests to protect and manage designated and important biodiversity sites, ensuring developments conserve and enhance natural heritage.

Policy EN8: Pollution and Land Stability – Focuses on OB 16. Proposals causing unacceptable adverse effects on health, biodiversity and amenity due to factors including air, noise, light pollution, contamination, land instability, or water pollution will not be permitted. Mitigation measures are required for proposals that could create or worsen these issues.

Policy SP18: Renewable and Low Carbon Energy – Response to OB 19. It encourages renewable energy and energy efficiency measures in new developments to meet national targets while minimising environmental impact.

Policy RE2: Renewable and Low Carbon Energy in New Development – In relation to OB 19, proposals for large developments with over 1,000 sqm of floorspace must submit an Energy Assessment to explore the feasibility of connecting to renewable energy sources, district heating networks, and incorporating on-site zero/low carbon technologies.

If viable, these schemes must be implemented.

Policy W3: Waste Management in New Development – Proposals for new developments must show plans for waste design, layout, storage, and management during construction and occupancy. Site Waste Management Plans are required for industrial/commercial developments generating over 1,000 tonnes of waste annually or development that would generate hazardous waste.

Policy TR2: Design and Access of New Development – In response to OB 2, OB 21 and OB 22. Development proposals will only be permitted if they meet the following criteria:

- Do not compromise highway safety or efficiency, and do not generate excessive traffic.
- Provide appropriate parking, cycling facilities, and safe access for service vehicles.
- Are accessible by various travel means, including public transport, cycling, and walking.
- Include Transport Assessments and Travel Plans for developments likely to generate significant traffic.

Policy BE1: Design – All development proposals must demonstrate high-quality design that respects the natural, historic, and built environment. They should use appropriate materials, retain important local features, create safe public spaces, have effective drainage, and ensure accessibility for all.

2.3.2 Replacement Local Development Plan

The current Local Development Plan covers 2011-2026. The Council is developing a new Replacement Local Development Plan (RLDP)⁹ that will guide development from 2023-2038 to ensure appropriate development, community benefits, economic growth, and area protection.

The development of the RLDP is still in its initial stages, and the preferred strategy has not yet been drafted. The adoption of the RLDP is expected to occur in 2027.

⁹ [Replacement Local Development Plan \(RLDP\)](#)

2.3.3 Supplementary Planning Guidance (SPG)

Supplementary Planning Guidance (SPG)¹⁰ provides detailed guidance on how Local Development Plan (LDP) policies should be applied in specific circumstances or areas. While only LDP policies have legal status in planning decisions, SPGs can be material considerations.

Biodiversity and Geodiversity SPG (2018) – guides how to meet the requirements of related policies in the LDP, including Policy SP15 Biodiversity and Geodiversity. It clarifies the fundamental principles, outlines a step-by-step approach, and specifies the necessary information needed for compliance with these policies.

Pollution SPG (2016) – Supports the relevant policies, such as EN8 Pollution and Land Stability in the LDP. It discusses each pollution type, identifying key considerations and outlining the necessary steps for complying with these specific policies.

Renewable and Low Carbon Energy SPG (2017) – Responds to policies SP18 Renewable and Low Carbon Energy and RE2 Renewable and Low Carbon Energy in New Development. SP

It specifies the Policy RE2 requirements regarding the energy assessment, and outlines the information that should be included in the assessment:

- The likely energy demand of the development;
- The potential for renewable/low carbon energy generation on the site;
- The availability and potential to connect to existing sources of renewable/low carbon energy;
- The potential for incorporating or being part of a District Heating System; and
- The potential to share renewable/low carbon energy generated on the site.

Design SPG (2017) – provides guidance on implementing Policy BE1 concerning Design and SP21 which focuses on the Built Environment and Historic Heritage within the LDP.

2.4 Planning Policy Summary

Both local and national policy aims to ensure the delivery of sustainable and well-designed developments which mitigate and adapt to the impacts of climate change.

The latest national planning policy framework and legislative acts in Wales foster long-term thinking and collaboration for sustainable solutions to ensure that new buildings are well-designed and reduce emissions in line with the Net Zero Wales carbon targets.

The Neath Port Talbot County Borough LDP confirms the Council's commitment to the creation of sustainable new developments in the borough. It requires development to consider a range of sustainable design measures to ensure development is resilient to climate change, incorporates low carbon renewable energy systems, as well as measures to enhance biodiversity value.

The following sections of this Sustainability Statement set out the measures incorporated into the design of the development to ensure the delivery of a sustainable development and address the policy requirements.

¹⁰ [Supplementary Planning Guidance \(SPG\)](#)

3. Sustainability Strategy

This chapter summarises the proposed sustainability strategy for the Proposed Development at Port Talbot Steelworks, Wales, demonstrating how it responds positively to both national and local planning policy requirements.

The Proposed Development aims to incorporate sustainable design measures aligned with national and local planning policies focused on social, economic, and environmental factors.

While other reports, such as the Environmental Impact Assessment (EIA), address the social and economic aspects, this Sustainability Statement and Energy Assessment will demonstrate how the Proposed Development meets environmental requirements following the objectives of the Neath Port Talbot County Borough Local Development Plan.

3.1 Climate Change Mitigation & Adaptation

Climate change will lead to warmer temperatures in the UK, increased winter precipitation, and reduced summer rainfall. Adapting to these changes will significantly influence the design, construction, location, cost, and operation of all new buildings over the coming decades.

Wales has committed to achieving Net Zero emissions by 2050 and is moving towards developing the Future Buildings Standard. One of the core principles of Wales planning policy framework is to ensure that development considers both adaptation to and mitigation of climate change during the planning process. The adopted LDP emphasises high-quality, inclusive, and sustainable design principles for all developments.

In this context, the following sections outline the key climate change mitigation and adaptation measures that are deemed suitable for this Proposed Development, guided by the latest national and local directives.

3.1.1 Climate Change Mitigation

The steel sector emits around 8% of anthropogenic GHG emissions. It is a hard to abate sector due to the need for very high temperatures which are difficult or expensive to achieve with low carbon fuels. The Port Talbot site is the largest single CO₂ emitter in the UK. It is responsible for around 2% of the UK's emissions and 20% of Wales'.

UK Steel report on Net Zero Steel¹¹ explains that 1.85 tonnes of CO₂ are generated for every tonne of steel produced. They propose electric arc furnaces (EAF) as part of the answer for steel manufacture

¹¹ [UK Steel – Net Zero Steel](#)

decarbonisation. The Committee on Climate Change also recognises electric arc furnaces as a major pathway for decarbonisation.

The UK and Wales have carbon budgets to tackle climate change. The UK Government’s Carbon Budget Delivery Plan (March 2023)¹² outlines policies to meet these budgets, including Policy 69 Steel Sector Decarbonisation, which targets the electrification of UK steelmaking (using electric arc furnace) by 2035, with emissions reduction forecasts provided for the 4th, 5th, and 6th Carbon Budgets.

The switch to an electric arc furnace (EAF) will reduce GHG emissions immediately and allow continued decline as the electrical grid decarbonises.

An electric arc furnace (EAF) allows steel to be made from scrap, cutting energy use and reliance on raw materials, with each recycled steel item saving 1.5 times its weight in CO₂. Although the UK has ample scrap steel, much of it is exported to countries with lower environmental standards.

For most construction projects the GHG emissions stem from construction and operation. It is normal that for new development there is a net increase in GHG emissions from the development.

For the Proposed Development, the main emissions come from the process of steel manufacturing and there are very few occupied buildings proposed. The net result of the proposals is a substantial reduction in GHG emissions. Because most planning policy is focused on new occupied buildings, this section covers the overall results of the Proposed Development and the occupied building elements separately.

The Timeline and Changes

The baseline assessment for the site has been the financial year ending (FYE) 2023, when the Port Talbot blast furnaces were fully functional, producing 3,175,000 tonnes of crude steel. Scope 1, 2 and 3 CO₂ emissions in that year were 6,894,060 tonnes.

Over the period from 2024 to 2030, there is proposed to be a process whereby the blast furnaces are switched off, an interim period where steel is imported to be processed on-site only and then a process of the constructed electric arc furnace (EAF) ramping up production until reaching full output in around 2029. The timelines of these transitions are estimates and subject to change. It is this timeline and process that is shown in the data below.

When calculating and reporting GHG emissions it is standard to divide them into Scopes:

Scope 1 – Emissions directly from the site, for example, gas burned on the site and in chemical reactions in the manufacture of the steel.

Scope 2 – Emissions indirectly, such as the use of mains electricity

Scope 3 – Emissions related to upstream or downstream activity, for example, the use of steel products once manufactured or the mining of iron ore. Scope 3 emissions here are limited to upstream activity.

As an example, the 2023 Scope 1, 2 and 3 GHG emissions from the site are as follows:

Table 1: Year Ending 2023 Site GHG Emissions

	Scope 1	Scope 2	Scope 3
MtCO ₂	6.08	0.18	0.64

The total emissions saved will be reduced due to the need to import a fraction of virgin iron to mix with the recycled component. Exactly where that iron will come from will vary and in the analysis, a conservative approach has been taken around projected savings.

The analysis here is set out to show how all scopes change and how just Scope 1&2 activities, (those in Neath Port Talbot), change.

There are three main stages of the project considered, which overlap:

- The baseline – The Blast furnace site (2023 to

¹² HM Government (March 2023). Carbon Budget Delivery Plan

2025)¹³

- An interim stage – Steel imported and processed on site (2025-2029)
- Project Completed – The Electric arc furnace is fully functional (2029 onwards)

Scopes 1 & 2

The processes on site capture Scopes 1 & 2. These exclude emissions beyond the boundary of the site and are predominantly from the burning of gas, electricity uses and the iron reduction process. Table 2 shows how CO₂ emissions will go from just over 6Mts in 2023 to less than 1Mt in 2030, at which point the electric arc furnace (EAF) plant is expected to be fully operational and emissions broadly stable, except for the continued decline in emissions due to the continuing decarbonisation of the electrical grid.

The construction emissions have not been added to these tables.

Scopes 1, 2 and 3

The change to the electric arc furnace (EAF) will mean that steel will have to be imported, and this will increase the Scope 3 emissions. These will peak during the interim period where steel is imported purely for processing and reach a steady state for a small amount of imported iron to serve the electric arc furnace (EAF). Table 3 shows how CO₂ emissions will go from just under 7Mts in 2023 to less than 4Mt in 2030, at which point the electric arc furnace (EAF) plant is expected to be fully operational and emissions broadly stable. Figure 3 shows the broader Tata UK strategy. The construction emissions are included in the Scope 3 emissions and occur in 2025, 2026 and 2027. The total impact is small as the CO₂ emissions from the construction process are estimated to be 61,077 tonnes, in total <1% of annual emissions over that period.

Results

By the end of 2029, CO₂ emissions are predicted to have reduced by 87% in Scopes 1 and 2 and 44% in Scopes 1, 2 and 3.

The project is forecast to deliver the large majority, (over 71%), of GHG savings forecast by the UK Government up to 2030 from the electrification of the UK steel sector, a major beneficial climate change effect.

In the future, there are further decarbonisation options across scopes. These include lower carbon metallic inputs, using green hydrogen and using lower carbon coatings and alloys on the steel. An illustration of the options is provided in Figure 4.

¹³ The date used refers to financial years ending, i.e. 2023 is April 2022 to March 2023, inclusive.

Table 2: Scope 1 & 2 Emissions and Projections

	FYE 2023	2024	2,025	2026	2027	2,028	2029	2030	2,031
Total	6,256,137	6,256,137	1,976,112	246,839	234,424	290,362	697,705	802,597	792,872
Scope 1	6,079,449	6,079,449	1,876,503	204,818	202,798	255,491	603,566	702,134	702,134
Scope 2	176,688	176,688	99,609	42,021	31,626	34,872	94,139	100,463	90,738

Table 3: Scope 1, 2 & 3 Emissions and Projections

	FYE 2023	2024	2,025	2026	2027	2,028	2029	2030	2,031
Total	6,894,057	6,894,057	6,860,579	6,568,068	6,084,295	6,267,226	4,240,644	3,888,635	3,878,894
Scope 1	6,079,449	6,079,449	1,876,503	204,818	202,798	255,491	603,566	702,134	702,134
Scope 2	176,688	176,688	99,609	42,021	31,626	34,872	94,139	100,463	90,738
Scope 3	637,920	637,920	4,884,466	6,321,229	5,849,870	5,976,863	3,542,939	3,086,038	3,086,022

Figure 3: Tata UK Plan for CO₂ Neutral Steelmaking

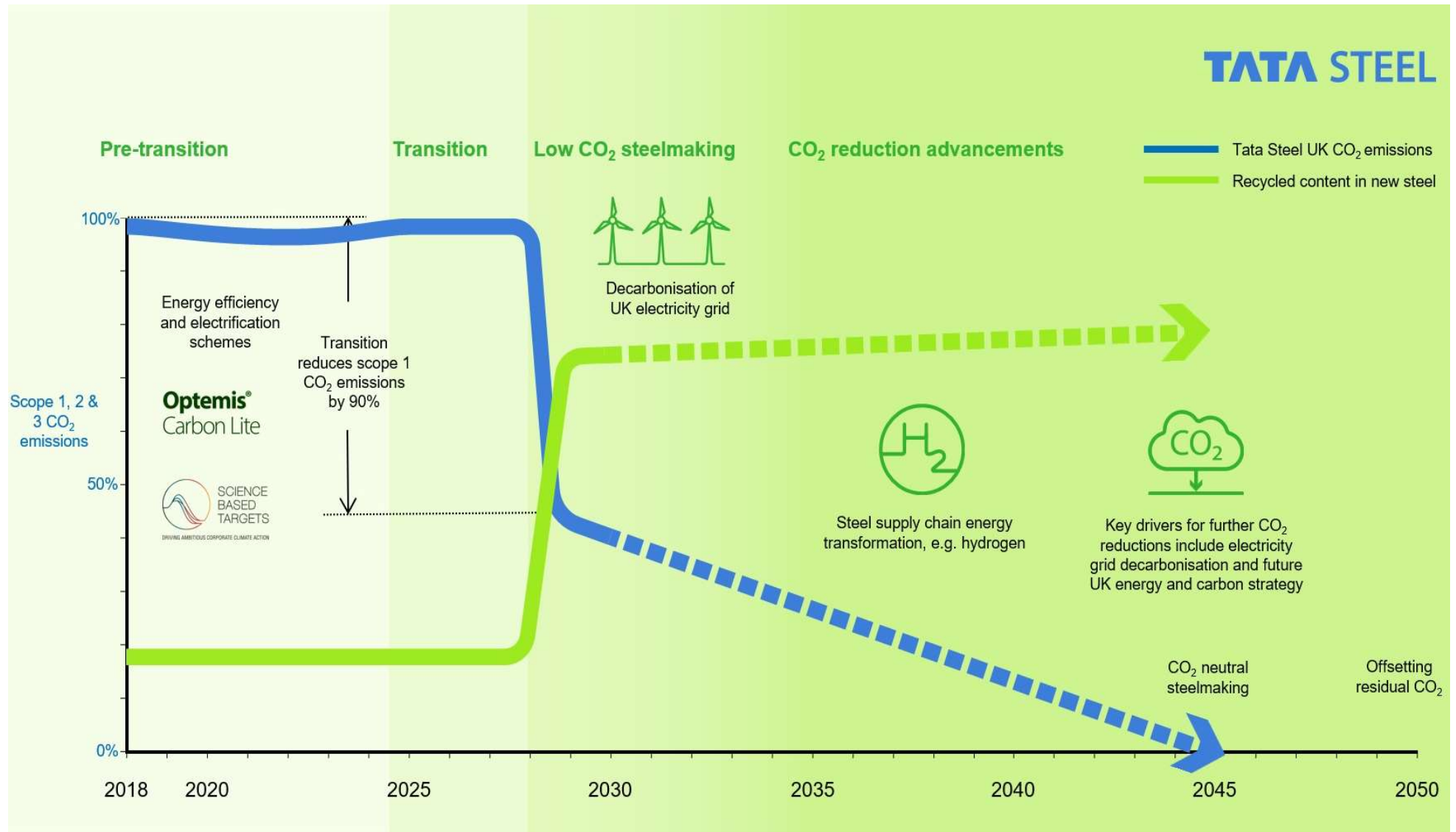


Figure 4: Decarbonisation Options after Electric Arc Furnace (EAF) Transition

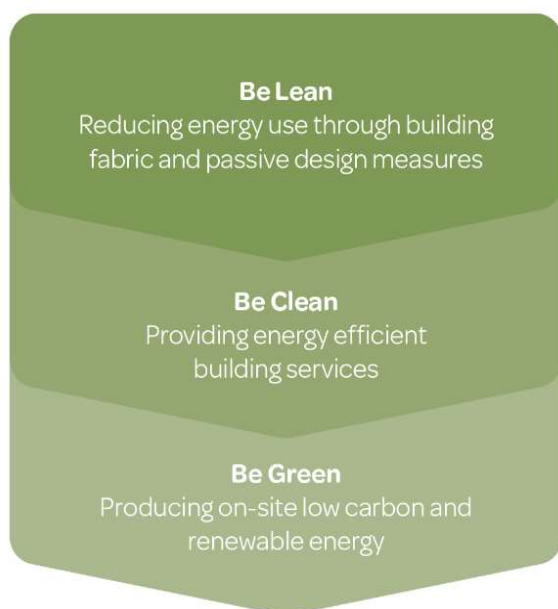


The Buildings

Most of the new development will comprise buildings which do not fall under Building Regulations. In addition, many of the existing administration, training and control buildings will continue to provide these services for the Proposed Development, once operational.

Of the new development, only one of the new buildings is expected to be occupied as an office and changing facilities. The analysis below is expected to be valid even if there are minor changes to the design and addresses the policy requirement for an energy assessment. For buildings, it is standard to follow an energy hierarchy.

Figure 5: Energy Hierarchy



NPT policies are supportive of this approach with low carbon and renewable energy technologies encouraged. Detailed modelling will be conducted during the detail application phase, but the proposed principles are laid out below.

Be Lean

The UK government has released a consultation on the “Future Building Standard.” This sets out anticipated regulations due to take effect in England from 2025. This outlines higher standards for plant efficiency and reduced air permeability and is set to ensure all new buildings are “net zero ready.” A

consultation on the same standard is due in Wales which is expected to be similar. In lieu of its publication, it is proposed that the new office and any other building that falls under Building Regulations will meet these standards, once confirmed.

Be Clean

Policy RE2 of the LDP and **Policy 16** of the Future Wales: The National Plan requires new developments to consider the use of heat networks. A heat network serves buildings from a central point. As the Proposed Development will consist of one new small, occupied building a heat network will not be appropriate.

It is proposed that the new building(s) will be all-electric, using no fossil fuels on-site. This will reduce air pollution and CO₂ emissions. It will align with the net zero agenda, allowing the building(s) to decarbonise as the grid does so.

Be Green

There are several renewable energy generation technologies that could be deployed as part of the Proposed Development in line with the **Policy SP18** of the Local Development Plan:

Heat pumps – Heat pumps use electricity to upgrade low grade sources of heat to a usable temperature for heating buildings and hot water. Because they deliver several units of heat for each unit of electricity input, they are partially renewable energy generation and because they use electricity there is no air pollution at the point of use. Heat pumps will be considered for all new occupied buildings use heat pumps for heating and hot water.

The sizing and heat generated would not be known until the buildings are in detailed design.

Solar power – Solar power or photovoltaics (PV) generates electricity from light. Systems can be deployed on roofs of buildings and connected to provide renewable electricity to the building or exported beyond. It is expected the new office will have roof space on which it will be feasible to deploy solar power.

Due to issues of shading, electrical networks on-site, safety and dust issues, solar is not proposed at this stage. Tata Steel plan to review this once the new Proposed Development is operational.

Biomass – Renewable biomass, normally in the form of wood pellets can be burned to provide heating for buildings and hot water. An advantage is that they can provide large amounts of heat and work comparably to a gas boiler. Biomass boilers require storage for the pellets and regular deliveries of fuel. In addition, they emit air pollution. For these reasons, and the very low thermal demand of modern offices biomass heating is not considered beneficial.

Wind power – Large scale ground mounted wind turbines generate electricity and are cost effective. They require a site with good average wind speeds and a large clear area. Although the site appears to have reasonable wind speeds, there is not a clear area of sufficient size. Neath Port Talbot council is supportive of renewable energy generation, but the site is not in an area designated for wind turbines and therefore the visual impact is unlikely to be acceptable.

Smaller scale, building mounted wind turbines are available, but performance is generally poor and the buildings on site are arranged in a manner that will cause disruption of wind flows.

The analysis indicates that:

- Heat pumps are feasible for the Proposed Development and will be considered for occupied buildings.
- Solar power will be considered once the Proposed Development is operational, considering shading, safety and dust.

Although the contribution at a building level will be significant, in terms of the functional site post-EAF (electric arc furnace), it will be far less than 1%.

3.1.2 Climate Change Adaptation

To ensure the Proposed Development is resilient to climate change, it will incorporate measures based on the UKCP18 projections. These projections indicate that the UK will experience increased

summer and winter temperatures, with significantly higher maximum temperatures, reduced summer rainfall, increased winter rainfall, and more extreme weather events.

The UK Climate Change Risk Assessment (2021) highlights key risks for the built environment, including reduced summer water availability, increased winter rainfall, and higher summer temperatures.

This section outlines the key measures that will be integrated into the design of new buildings and the overall Proposed Development to adapt to these climate changes.

Flood Risk and Drainage

In line with **Policies SP1 and BE1** of the LDP, the Flood Consequence Assessment (FCA) and Outline Drainage Strategy have been prepared by JBA Consulting. The FCA confirmed the Proposed Development is classed as less vulnerable development by Technical Advice Note 15: Development and Flood Risk (TAN-15). The Outline Drainage Strategy contains a Sustainable Drainage System (SuDS) strategy for SuDS Approval Body (SAB) approval by Neath Port Talbot Council.

The Proposed Development is at little or no risk of flooding from tidal, groundwater, sewer, or reservoir sources. The Proposed Development meets the Justification Test and Acceptability Criteria, ensuring compliance with TAN-15 and Planning Policy Wales, thus demonstrating that the flood risk for the Proposed Development is low.

The Proposed Development is mostly located in Flood Zone 1, indicating a low risk of flooding from rivers. Flood Zone 1 represents areas which have less than a 0.1% AEP (1 in 1000) chance of flooding in any given year, including climate change.

Only the southern part of the Proposed Development falls within Flood Zones 2 and 3, but no construction is planned in this higher-risk area.

Small areas of the Proposed Development may be at risk of surface water and small watercourse flooding, associated with existing waterbodies and localised ponding. These ponding areas will be

managed by SuDS features across the Proposed Development.

Further information on the Proposed Development's flood risk and the proposed surface water management system can be viewed in the accompanying Flood Consequence Assessment.

3.2 Valuing Our Environment

This section shows measures to conserve landscapes and wildlife habitats, minimise air, noise and other pollution impacts, and provide adequate waste treatment and disposal facilities.

3.2.1 Ecology

The Proposed Development aims to positively affect the local ecology through measures designed to protect and enhance biodiversity, in alignment with **Policy SP15** of the LDP.

RSK Group assessed the potential ecological impacts of the Proposed Development. Surveys were conducted from September 2021 to May 2024, covering habitats and various species. The surveys were comprehensive and followed industry guidelines, including existing site data and records.

The site features diverse habitats like scrub and grassland, supporting various species. Surveys recorded 43 bird species, including Cetti's warbler, highlighting local importance. Some invertebrates present have national significance, indicating regional importance. The site also hosts low-activity badger setts and bat populations, suggesting local ecological importance.

The assessment shows that the Proposed Development may lead to habitat loss and impact protected species through construction activities and pollution. Although close to two Sites of Special Scientific Interest (SSSI) and a Special Area of Conservation (SAC), the assessment predicts no significant adverse effects on these areas.

To minimise ecological impacts, several measures will be implemented:

- **Construction Environment Management Plan (CEMP)** - This plan will provide guidelines to reduce the environmental impact during

construction.

- **Species Protection Plan** - This will protect wildlife during construction by minimising disruption to their habitats.
- **Environmental Clerk of Works (ECoW)** - An appointed individual will oversee adherence to these plans, ensuring environmental standards are met.

Additionally, a Habitat Management Plan (HMP) and a Green Infrastructure Statement (GIS) will be developed to support biodiversity enhancement, aligning with the **Environment (Wales) Act** for net biodiversity benefits.

Overall, while the Proposed Development is near important ecological sites, thorough assessments predict no significant adverse effects, and strong mitigation measures are in place to enhance local biodiversity and achieve a net biodiversity benefit.

3.2.2 Pollution

In line with **Policy EN8** of the LDP, the Proposed Development will aim to minimise any negative impacts on the natural environment considering the impacts of water, noise, materials and air quality.

Water – Throughout construction water quality will be protected by the following measures:

- A Construction Environmental Management Plan (CEMP) will be developed, following best practices and guidelines, and monitored for compliance;
- Temporary drainage will align with permanent works, using filter drains and channels to manage surface runoff;
- Habitat restoration post-construction for areas affected by construction activities;
- Strict controls on potential pollutants, proper storage, and handling of hazardous substances will be implemented; and
- Additional controls for high-risk activities like dewatering and piling and ongoing monitoring by the Environmental Clerk of Works.

Noise – RSK Acoustics has undertaken noise and vibration impact assessments for the Proposed Development.

With the implementation of recommended mitigation measures, such as a Construction Environmental Management Plan (CEMP), noise and vibration during construction are expected to have no significant impact at the nearest sensitive receptors. Any initial concerns have been addressed, and the design will include further noise reduction features, such as noise barriers or enclosures to ensure minimal impact during the operational phase.

Sustainable Materials – Insulation materials containing substances known to contribute to stratospheric ozone depletion or with the potential to contribute to global warming will not be used.

To further enhance the Proposed Development additional measures will be considered during the detailed design of the new office to minimise pollution, including:

- The use of key internal finishes and fittings which comply with best practice emissions levels of Volatile Organic Compounds (VOCs) and other substances.
- Specification of low Global Warming Potential (GWP) and zero Ozone Depleting Potential (ODP) insulation materials.

Air Quality – The Proposed Development is expected to significantly improve air quality. There will be a significant reduction in emissions of pollutants including oxides of nitrogen (NO_x), fine particulate matter (PM₁₀ & PM_{2.5}), sulphur dioxide (SO₂), carbon monoxide (CO) and dioxins between 2023 (the EB) and once the electric arc furnace (EAF) is operational. Road traffic volumes from the Proposed Development are also expected to reduce, as are emissions of NO_x, PM₁₀ and PM_{2.5} from road traffic. Consequently, the Proposed Development will result in a substantial reduction in emissions.

Temple Group conducted an air quality assessment, to examine existing air quality and potential effects on human and ecological receptors. Notably, NO_x

emissions from the Proposed Development are projected to decrease significantly, with an 85% reduction expected once the electric arc furnace (EAF) is operational compared to 2017 levels.

Fugitive dust from demolition and construction activities will be managed through mitigation measures, resulting in non-significant residual effects.

Construction traffic, plant operations, and the operational phase generally showed negligible or beneficial effects on air quality for human receptors, and mostly beneficial impacts for ecological receptors.

Best Available Techniques (BAT) and a pre-existing Air Quality Management Plan (AQMP) will control operational dust emissions. These measures will be updated during the Environmental Permit application process.

3.2.3 Waste Management

Tata Steel have prepared a Waste Management report. The report sets out the strategy to minimise waste and store hazardous substances in line with **Policy W3** of the LDP.

The Proposed Development plans to manage waste sustainably through several measures:

EAF (electric arc furnace) Slag - This is a byproduct of the steelmaking process. About 255,000 tonnes will be produced each year.

The slag will be treated and primarily used to make road stones after a period of weathering.

Red Dust - Generated from the electric arc furnace (EAF) and Ladle Furnace (LF) operations, this dust will be captured, totalling around 83,000 tonnes annually.

This dust will be recycled to recover useful materials like zinc and iron, a standard practice in red dust management.

Refractory Bricks - These bricks line the furnaces and wear out over time. Every year, 3,000 tonnes of these bricks will need replacing.

Most of them will be regenerated and reused, with only a small amount going to the landfill.

Foreign Materials in Purchased Scrap - Scrap metal bought for the furnace often contains unwanted materials like plastics, metals, and glass.

Up to 135,000 tonnes of these materials will be separated and recycled each year, reducing landfill waste.

Process Water – The Proposed Development will reduce water discharge and improve water quality. Switching to an electric arc furnace (EAF) will significantly lower trade effluent compared to current blast furnace operations. The hot and cold mills will continue as usual, but the electric arc furnace (EAF) will discharge far less water, mostly through evaporation. Discharges will still go through Tata Steel's effluent treatment system to the Long Sea Outfall (LSO) under existing and future permits. The current discharge of 2,000 m³ per hour at the LSO will drop to less than 1,000 m³/hr, with fewer contaminants from coke production.

The Proposed Development will also store hazardous substances properly in line with regulations:

Lubricating Oils - Stored in compliance with the Oil Storage (Wales) Regulations. Used oils will be recovered whenever possible, with the remainder sent to Energy from Waste facilities.

Fuel (Diesel) - Stored at refuelling facilities compliant with the Oil Storage (Wales) Regulations, ensuring the safe refuelling of vehicles used for moving steel and scrap.

Water Treatment Chemicals - Required for cooling towers to prevent bacterial growth. These chemicals will be stored and managed according to established procedures already in place.

This waste management plan emphasises recycling and reusing materials, reducing water discharge and contamination, and ensuring hazardous substances are stored according to regulations.

More details regarding waste management plans are in the Waste Management report that accompanies the planning application.

3.3 Achieving Sustainable Accessibility

This section explains how the Proposed Development will enhance accessibility, encourage active travel, and manage traffic congestion for a sustainable transport network.

In line with **Policies TR2 and BE1** of the LDP, SCP has conducted a Transport Assessment. The assessment demonstrates that the Proposed Development will significantly reduce traffic movements due to lower staff numbers and the eliminating coal deliveries, leading to lower traffic congestion. The Proposed Development will benefit from the good existing site condition and effective construction traffic management, aligning with local policies to ensure reduced environmental impact and improved accessibility for sustainable travel options.

Walking/Cycling Services – The site already has a well-established active travel route, with shared footways and cycleways connecting to key local residential areas and transport hubs.

Pedestrian/cycle access to the Proposed Development will continue to be provided via the existing Main Gate Access off the A4241 Harbour Way.

Bus Services – The Proposed Development is also well placed to encourage travel by public transport.

The closest bus stops are located on both sides of the A48 Margam Road, less than 0.5 miles from the Main Gate Access. These bus stops offer convenient access to nearby towns and cities.

Rail Services – Port Talbot Parkway Railway Station is within a walkable distance to encourage existing and prospective staff to travel by train, offering regular services to major destinations such as Swansea, Cardiff, and London.

Accessibility – There is already an existing, well-established steel manufacturing company on the site which benefits from good levels of accessibility by sustainable modes and proximity to a large residential population and local amenities. Access to the Proposed Development on foot and by cycle is of a good standard and there are multiple transport connections nearby, providing access to local destinations.

Vehicular access will be primarily through the existing Main Gate site access, with occasional use of the West Gate for large deliveries. This minimises the impact on the local highway network.

Traffic Management – During construction, a Construction Traffic Management and Routing Plan will ensure minimal disruption and traffic congestion by directing traffic along routes with greater capacity and implementing disciplinary measures for non-compliance.

The Proposed Development is designed to enhance sustainable travel options, reduce traffic congestion, and comply with local planning policies. The good condition of existing infrastructure, combined with strategic improvements, ensures that the Proposed Development supports sustainable transportation.

More detailed information on transportation issues is contained in the Transport Assessment and Travel Plan that accompanies the planning application.

4. Conclusion

This Sustainability Statement has been prepared to demonstrate how the Land at Port Talbot Steelworks responds positively to national and local policy and legislation, incorporating measures to deliver environmental benefits.

The sustainable design measures incorporated at this stage and to be considered during the detailed design of the Proposed Development are summarised as follows:

Climate Change Mitigation and Adoption – The Proposed Development will incorporate a range of mitigation measures to reduce carbon emissions, and adaptation measures to ensure the long-term resilience of the Proposed Development to the effects of climate change. Measures include:

- **Steel Manufacturing Decarbonisation** - Transition from traditional blast furnaces to electric arc furnace (EAF) to reduce steel making emissions. Expected reduction of Scope 1 & 2 emissions by 87% and overall, Scope 1, 2, & 3 emissions by 44% by 2030.

By 2030, emissions from the site are projected to fall from 6.9 million tonnes to under 4 million tonnes.

This aligns with the core principles of **Wales planning policy framework** and **Policy SP1** of the LDP, ensuring Proposed Development considers the mitigation of climate change during the planning process.

- **Buildings and Energy Efficiency** – The new building will comply with Building Regulations. Energy efficiency measures will be incorporated wherever reasonably feasible.

Adoption of an Energy Hierarchy to optimise energy demand and consideration of renewable energy generation in line with **Policies SP18 and RE2** of the LDP.

- **Flood Risk and Drainage** – Proposed Development located mainly in Flood Zone 1 (low flood risk); areas with higher risks are managed with Sustainable Drainage Systems (SuDS).

The design complies with **Policies SP1 and BE1** of the LDP to ensure minimal flood impact.

- **Building Resilience** - The design will incorporate UK Climate Projections (UKCP18) for resilience against higher temperatures, altered precipitation patterns, and extreme weather events.

Valuing Our Environment – In line with **Policies SP15, EN8 and W3** of the LDP, the Proposed Development aims to protect and enhance the local environment, minimise any negative impacts on the natural environment through a range of design measures, including:

- **Biodiversity Enhancements** – Implementation of a Construction Environment Management Plan (CEMP) and Species Protection Plan to safeguard local wildlife.

Plans for a Habitat Management Plan (HMP) and Green Infrastructure Statement (GIS) to ensure biodiversity net gain, in line with the **Environment (Wales) Act**.

- **Air Quality** – The Proposed Development is expected to improve local air quality. It will significantly reduce emissions of various pollutants, including oxides of nitrogen (NOx),

fine particulate matter (PM10 & PM 2.5), sulphur dioxide (SO₂), carbon monoxide (CO) and dioxins between 2023 (the EB) and once the electric arc furnace (EAF) is operational.

The project will also reduce traffic-related emissions. Both during construction and operation, the Proposed Development is anticipated to have minimal negative impacts and mostly beneficial effects on air quality for both human and ecological receptors.

- **Noise** – RSK Acoustics' assessments show that with proper mitigation measures, the Proposed Development's construction and operational phases will have minimal noise and vibration impact.
- **Sustainable Materials** – Design will implement eco-friendly materials with low Global Warming Potentials.
- **Waste Management** – Operational waste, including electric arc furnace (EAF) slag, red dust, refractory bricks and others, will be reduced and recycled wherever possible.

Hazardous substances will be stored and managed properly, complying with regulations, and reducing environmental risks.

Achieving Sustainable Accessibility – Through a range of design measures the Proposed Development aims to enhance sustainable transportation, as requested by **Policies TR2 and BE1** of the LDP, including:

- **Traffic Reduction** - Traffic will be reduced due to fewer staff and no coal deliveries. A Construction Traffic Management Plan will be incorporated to reduce congestion.
- **Active Travel and Public Transport** – Pedestrian and cycling paths within the Proposed Development to support local and national travel routes.

Access to public transport, with nearby bus stops and Port Talbot Parkway Railway Station within walking distance.

The proposal for the Land at Port Talbot Steelworks is committed to the delivery of sustainable development which protects and enhances the environment, fosters sustainable transport, as well as mitigating and adapting to the long-term effects of climate change.

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