



**Tata Steel UK Limited**

# **Electric Arc Furnace (EAF)**

Volume 1, Non-Technical Summary

Issued for PAC

RSK Project no. 664195575



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**SK GENERAL NOTES**

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Environmental Statement Non-Technical Summary (Volume 1)

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## PREFACE

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Tata Steel UK Limited is proposing to construct an Electric Arc Furnace (EAF) based steel production facility, located inside the existing Port Talbot Steelworks at Margam in South Wales.

RSK Environment Limited has been commissioned by Tata Steel UK Limited to undertake an Environmental Impact Assessment of the Proposed Development. This Environmental Statement reports the findings of the environmental assessments undertaken during the development of the Proposed Development.

Information relating to the Environmental Statement and supporting documentation is available in three volumes:

- Volume 1 – Non-Technical Summary
- Volume 2 – Environmental Statement
- Volume 3 – Technical appendices
- Volume 4 – Figures

A copy of the Environmental Impact Assessment report, together with the Non-Technical Summary outlining the information provided in the Environmental Impact Assessment report, known as an Environmental Statement, is available to download from **TBC** website online planning register at:

**To be completed for full planning application submission**

## EIA Quality Mark

This Environmental Statement, and the Environmental Impact Assessment (EIA) carried out to identify the significant environmental effects of the proposed development, was undertaken in line with the EIA Quality Mark Commitments.

The EIA Quality Mark is a voluntary scheme, operated by IEMA, through which EIA activity is independently reviewed, on an annual basis, to ensure it delivers excellence in the following areas:

- *EIA Management*
- *EIA Team Capabilities*
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- *EIA Content*
- *EIA Presentation*
- *Improving EIA practice*



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# 1 INTRODUCTION

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## 1.1 Background to Proposed Development

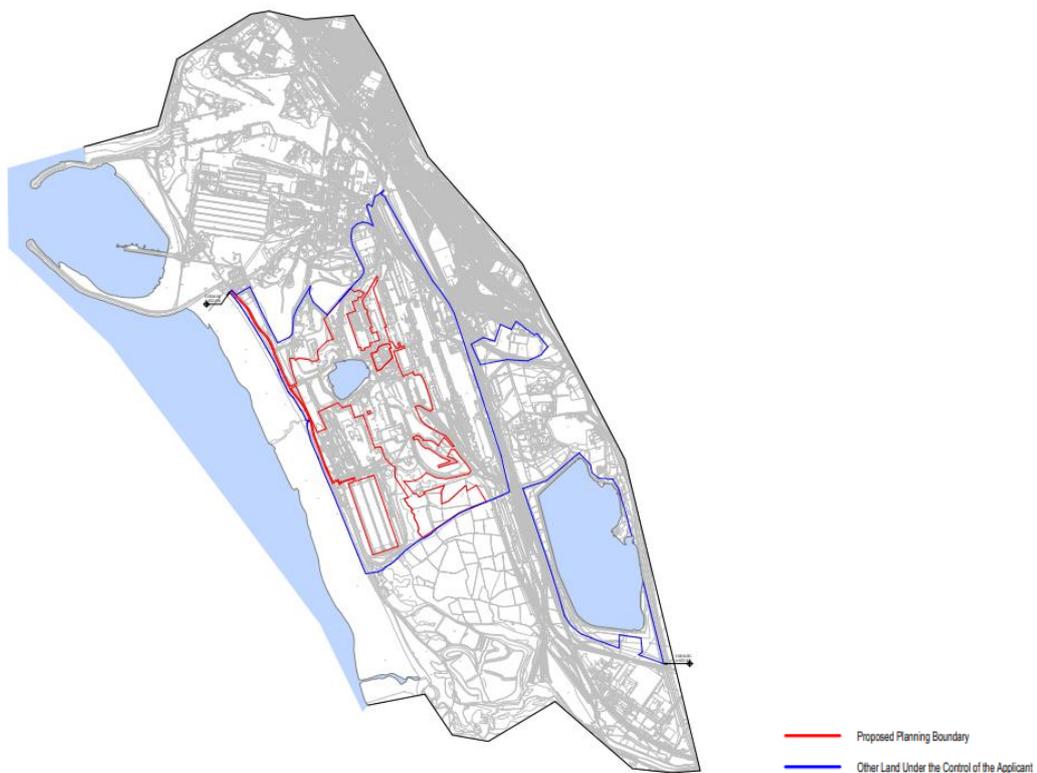
- 1.1.1 This is a Non-Technical Summary of the Environmental Statement that has been prepared for a proposed Electric Arc Furnace (EAF) based steel production facility, located inside the existing Port Talbot Steelworks at Margam in South Wales.
- 1.1.2 Tata Steel (referred to as 'the Applicant') is seeking to obtain planning permission for the construction and operation of an EAF-based steel production facility (which will be referred to as 'the Proposed Development') by way of a planning application to Neath Port Talbot Council under the Town and Country Planning Act 1990 (as amended).
- 1.1.3 This development follows a significant investment of £1.25bn from both the Applicant and the UK government with the goal of replacing the existing blast furnaces at Port Talbot with new EAF technology. This transition is designed to secure the sustainable future of the Welsh steel industry.

## 1.2 Environmental Impact Assessment

- 1.2.1 In Wales, the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 (referred to as 'the EIA Regulations') sets out the types of development that are subject to an Environmental Impact Assessment. The Proposed Development is considered to fall under the EIA Regulations as it falls under the 'production and processing of metals' description and exceeds the threshold of having 1,000m<sup>2</sup>. Therefore, the Applicant has decided to voluntarily undertake an Environmental Impact Assessment and to submit an Environmental Statement with the planning application.
- 1.2.2 Environmental Impact Assessment is a process for identifying the consequences of a development on the existing biological, physical and human environment. The process is undertaken to ensure that the environmental effects of certain types of development proposals are fully investigated, understood and taken account of in the planning process.
- 1.2.3 The Environmental Statement is presented in 4 volumes:
- Volume 1: Non-Technical Summary;
  - Volume 2: Environmental Statement;
  - Volume 3: Appendices; and
  - Volume 4: Figures
- 1.2.4 Volume 1, which is this Non-Technical Summary, provides a standalone document that represents a summary of the principal findings of the Environmental Impact Assessment in non-technical language.



**NTS Figure 1a: Site location and application boundary (red line)**



**NTS Figure 1b: Site location and application boundary (red line)**

## 2 PROPOSED DEVELOPMENT

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### 2.1 Introduction

2.1.1 The Proposed Development is located in the central and southern areas of the long-established Port Talbot Steelworks at Margam, South Wales, SA13 2NG (grid reference: SS 78154 86921). The planning application boundary is approximately 160 hectares in size, located in a complex of extensive active steelworks, brownfield land and sections of open greenfield land. The site location and planning application boundary are shown in **NTS Figure 1a** and **1b**.

2.1.2 The site has a rich industrial background, having originally hosted the Grange Works, built and demolished circa 1954 and 2004 respectively. Today, the site continues to play a key role in the UK steel industry thanks to the Applicant's long-established operational steelworks.

### 2.2 Need for the Proposed Development?

2.2.1 The Applicant is the largest steel producer in the UK, and the Port Talbot steelworks is of considerable socio-economic importance not only in South Wales, but across the entire UK. The steelworks offer crucial employment opportunities for local communities, and is a key contributor to the UK's economy. That said, the Port Talbot steelworks are increasingly seen as an ageing asset, and one that is a significant carbon user and greenhouse gas emitter in a world where achieving 'net zero' carbon targets has become a national and global priority.

2.2.2 Spurred by a heightened global awareness of climate change and the pressing need for decarbonisation, European steel manufacturers, including Tata Steel UK, are making ventures to transition to EAF technology. In the UK, this transition is not only crucial for keeping pace with global competitors, but also for modernising and decarbonising the UK's steel industry. The adoption of such technology is key for maintaining a competitive advantage and accelerating progress to the UK's 'net zero' carbon targets, placing the UK amongst global leaders in addressing climate change.

2.2.3 Finally, the Proposed Development offers additional benefits beyond carbonisation. Investing in EAF will enhance supply-chain resilience, strengthen domestic control over decarbonisation efforts, create jobs, support regional development, and once again place the UK at the technological forefront of steelmaking.

### 2.3 Consideration of alternatives

2.3.1 The EIA Regulations require an assessment of reasonable alternatives to explain the basis for the Proposed Development in terms of its location, design and potential significant effects.

#### **Do nothing/do minimum scenario**

2.3.2 As a result of ageing assets and difficulties maintaining profitability in the UK, the Applicant has reported an unsustainable loss of approximately £1 million a day. The 'do

nothing' scenario (a scenario where the Proposed Development does not occur) would therefore constitute the closure of the steelworks and cessation of steel production at Port Talbot. The site would likely be re-developed for unknown purposes.

### **Alternative sites**

- 2.3.3 While the Applicant has seven rolling mills and raw material sites within the UK, the Port Talbot site is the only one with 'heavy-end' plants – such as coke ovens and blast furnaces – approaching the end of their operational lifespan. It is for this reason that Tata Steel and the UK Government are evaluating current options for EAF, as investing further in these traditional technologies is not financially viable, and would require long-term commitments to coal beyond 2050.

### **Alternative designs**

- 2.3.4 Initial designs for the EAF considered a location further south within the steelworks, extending into greenfield land north of Longland Lane. This was done with the intention of continuing the existing 'heavy end' processes whilst the EAF was being constructed and commissioned, subsequently leading to the transition to the EAF through a phased closure of the 'heavy end'.
- 2.3.5 After it was determined that continuing the 'heavy end' processes was economically unfeasible, the location of the Proposed Development was moved north into the steelworks. This allows the Proposed Development to make use of more brownfield land, increase the distance from public access routes and their users, reduce the impact on greenfield areas and ultimately lead to a better environmental outcome.

### **Alternative technologies and rationale for choosing EAF**

- 2.3.6 Two other steel manufacturing and processing technologies were considered by Tata Steel when determining the future use of the site:
1. **Blast Furnace & Carbon Capture, Use and Storage:** This alternative entailed retrofitting existing facilities to capture and store CO<sub>2</sub>. This technology has not yet been applied at a large scale within the steel industry and would prolong reliance on coal, making this an unsuitable alternative.
  2. **H<sub>2</sub> direct reduced iron (DRI) & electric arc furnaces:** This alternative entailed replacing carbon in the ironmaking process with renewably sourced hydrogen, offering a route to carbon-free iron production. However, renewable sourced hydrogen is unlikely to be widely available in the UK until 2035, making this an unsuitable alternative.
- 2.3.7 EAF technology emerged as the most appropriate solution for the future of Port Talbot, as it focuses on recycling steel, of which the UK has a surplus, and promises considerably reduced emissions if powered by renewable energy. Compared to the two alternatives, EAF technology is already well established at scale and is compatible with green DRI.
- 2.3.8 Finally, EAF technology will create opportunities for a circular economy within the steel industry as follows:
- **EAF Steel Production:** Enables new steel to be manufactured from scrap metal
  - **Manufacturing of products:** During the manufacturing of steel products, any scrap steel can be re-introduced into EAF steel production.

- **Steel in use:** Steel is 100% recyclable and can be used indefinitely.
- **Post-consumer steel scrap:** Steel is easily identifiable and recyclable, contributing to sustainable supply chains across many industries.

## 2.4 The Proposed Development

2.4.1 The Proposed Development will require demolition of existing buildings and structures, and the construction of a new EAF steel production facility. A detailed layout plan of the Proposed Development is provided in **NTS Figure 2** below.

2.4.2 The new EAF steel production facility will feature a range key of components and infrastructure. These are summarised as follows;

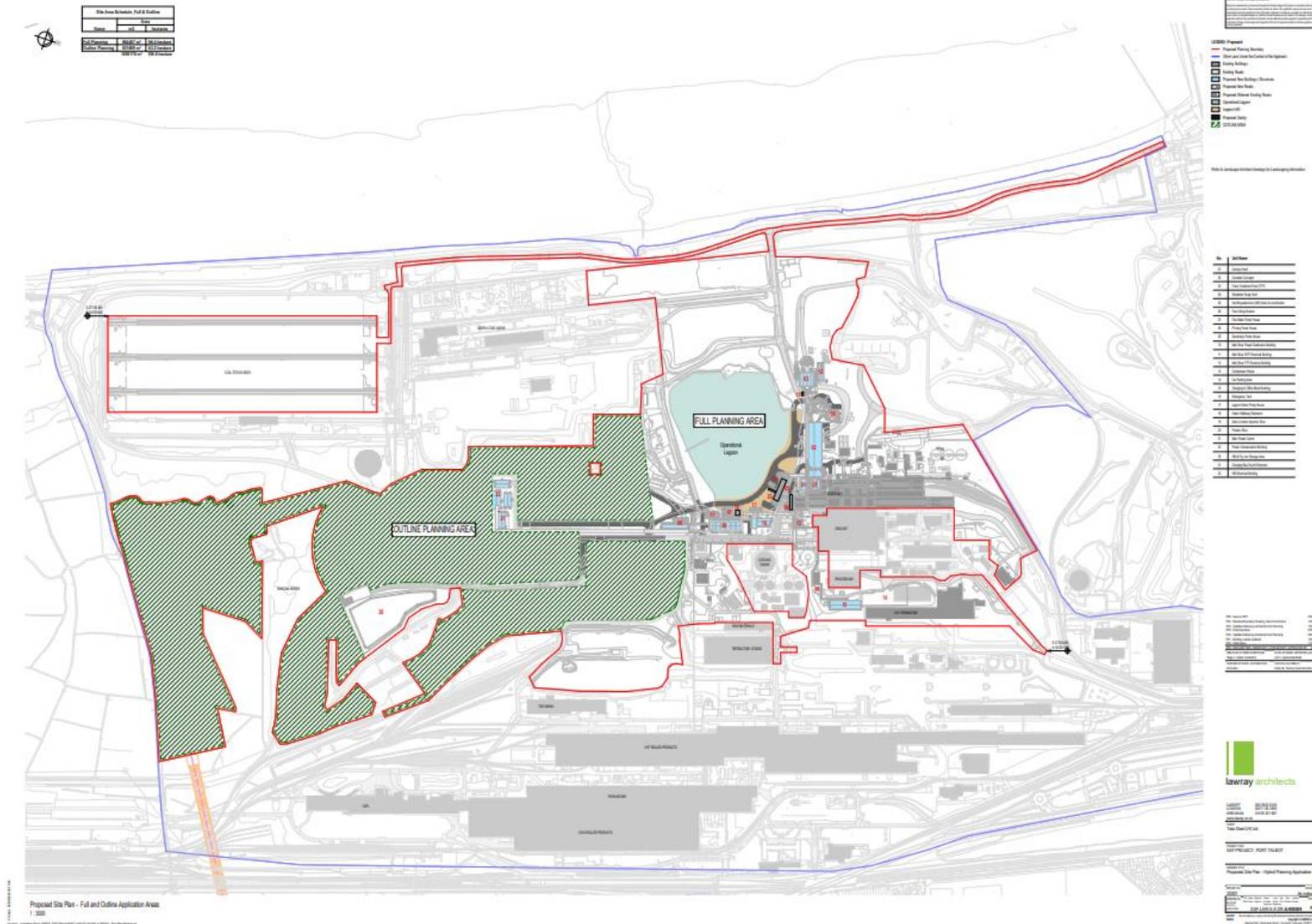
- **New EAF steel production facility:** This will replace older steelmaking processes and include essential systems such as water cooling, water treatment, and fume and dust extraction systems.
- **Scrap metal handling:** Scrap yards and a facility for handling, processing and recycling scrap metal will be established.
- **Slag processing:** There will be dedicated areas and systems for processing slag (byproduct of smelting ores and metals)
- **Storage and ancillary infrastructure:** The Proposed Development will include storage buildings, material handling systems and ancillary infrastructure such as electrical control rooms with cable carrier systems and other electrical infrastructure.
- **Transport and access:** New and improved access roads, parking areas and rail tracks.
- **Landscape and green infrastructure:** The Proposed Development will aim to enhance both the visual appearance and environmental quality of the site via landscaping proposals and green infrastructure.
- **Additional facilities:** Other facilities associated with the Proposed Development include a firefighting pump house, oxygen and argon vessels, and upgraded laboratories.

### **Electrical distribution**

2.4.3 In order to power the new facility, upgrades to the electrical distribution network are required. This includes the installation of a new substation and a number of new power distribution buildings.

### **Staff facilities**

2.4.4 A new office building would be constructed to house construction staff and, eventually, site personnel. Additionally, there would be a new car parking facility, along with an extended walkway to improve site access and safety for workers.



NTS Figure 2: Proposed Site Plan - Hybrid Planning Application



## 2.5 EAF process

2.5.1 The EAF process involves several key steps, from handling raw materials to producing steel and managing waste. This process is summarised below.

### **Raw materials handling:**

- The main raw materials – scrap metal, hot briquetted iron, and pig iron – are delivered to the site by train. These materials are stored in designated areas prior to being processed.
- Scrap metal is checked for radioactivity to avoid the hazardous material entering the furnace. It is then stored, processed and prepared for use in the EAF.

### **Steel production:**

- A newly established road network will support the movement of heavy good vehicles carrying raw materials to the EAF.
- Scrap metal is continuously fed into the furnace through a conveyor system that pre-heats the material to make the process more efficient. Inside the EAF, carbon electrodes create an electric arc that rapidly heats and melts the scrap metal.
- Once melted, lime is added to remove impurities. This forms a slag layer which is later removed from the molten steel.
- The molten steel is then refined to achieve the desired grade and transported to the casting plant to be solidified into steel slab to be used in the on-site rolling mills.

### **Waste management**

- The steelmaking process generates two primary waste products: EAF slag and EAF dust.
- EAF slag, which contains impurities, is processed on-site and can be repurposed for road construction.
- EAF dust, a mixture of dusts extracted from various stages of the EAF process flow, is captured and filtered. This dust can be recycled externally to extract materials such as zinc.

## 3 SITE SETTING

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### 3.1 Location and history

- 3.1.1 The application boundary is of an irregular shape as it covers approximately 160 hectares at the central and southern areas of the established Port Talbot steelworks Margam in South Wales. The site within the application boundary comprises an extensive complex of active industry, previously developed brownfield land, and sections of open greenfield land.
- 3.1.2 The site has a rich industrial background, having originally hosted the former Grange Works, built circa 1954. The former Grange Works included a number of steel manufacturing and processing units, particularly in the northern and western extents of the application boundary. All Grange Works buildings were decommissioned circa 1999 and subsequently demolished in 2004.
- 3.1.3 Today the site is a major industrial landmark that continues to play a key role in UK steel manufacturing, forming part of a long-established operational steelworks. Major industrial buildings of significant scale and mass are common in this location of Port Talbot, including large emissions stacks and the two operational blast furnaces.
- 3.1.4 The surrounding vicinity is comprised of a variety of different uses and character, including:
- West – Morfa Beach and coastline;
  - East – mainline railway line, Eglwys Nunydd Reservoir, and M4 beyond;
  - South – greenfield land of Margam Moors and Kenfig Industrial Estate; and
  - North – the Applicant’s operational steelworks, along with the harbour and docklands managed by Associated British Ports.
- 3.1.5 Port Talbot is located approximately 5 km north-west. The site is well connected, with access to major road networks including the M4 and A4241 to the east, and A48 to the north. An internal railway system serves both the site and wide Port Talbot Steelworks.

### 3.2 Landform and topography

- 3.2.1 The site is topographically flat, albeit with a slight downward slope westwards towards the sea.
- 3.2.2 The bedrock geology underneath the site is the South Wales Middle and Lower Coal Measures Formation, a sedimentary bedrock of mudstone, siltstone and sandstone. The superficial geology underneath the site is Tidal Falt Deposits (clay, silt and sand), Blown Sand and Marine Bench Deposits.

### 3.3 Settlements and transportation

- 3.3.1 The site is located approximately 5 km south-east of Port Talbot town centre, 1 km south-west of the residential estate of Margam and 2 km north-west of the residential estate of Eglwys Nunydd.



3.3.2 There is an internal rail system within the site and the wider Port Talbot Steelworks, which connects to the main line railway running to the east of the site. The site is well connected to the surrounding road network, including the M4 and A4241 to the east and A48 to the north.

3.3.3 National Cycle Network Route 4 runs approximately 1 km to the east of the site. Longlands Lane public right of way (PRoW) runs along the southern boundary of the site.

## 3.4 Land use

3.4.1 Land uses within the application boundary include:

- **Operational areas of the steelworks** – the planning application boundary comprises a number of operational areas of the steelworks, including:
- **Basic oxygen steelmaking (BOS)** and casting plant.
- **Contractor compound and process areas** – an area of the steelworks demarcated for contractor activity, including staff offices and welfare.
- **Works reservoir** – a large central body of water in the northern area of the site.
- **Slab yards** – a large area of steel slab storage and transfer.
- **Existing pipeline** – a route of over-ground utilities pipelines running from east to west across the site.
- **Coal stockyard** – located in the south-western section of the application boundary, adjacent to Morfa Beach.

3.4.2 **The former Grange Works** – built in circa 1954, the former Grange Works included a number of buildings, coke ovens, industrial structures and areas of plant equipment. The buildings and structures were decommissioned in 1999 and demolished in circa 2004. This area of the site is now previously developed but cleared land.

3.4.3 **Infrastructure** – sections of the incoming and outgoing railway line infrastructure and loading/unloading areas partly fall within the application boundary. A number of existing internal and private roads used by staff and visitors to the steelworks also cross the site.

3.4.4 **Open areas** – within the site are areas of undeveloped and/or re-greened industrial land. These are predominantly located in the southern section of the application boundary, particularly the cable connection corridor. This land includes watercourses and drainage ditches.

## 3.5 Surface water and waterbodies

3.5.1 The site is adjacent to Swansea Bay/Bristol Channel and is surrounded by several watercourses. Two main rivers – the River Afan to the north, and the River Kenfig to the south – are located within 5 km of the application boundary.

3.5.2 There is a network of small ditches and drainage channels to the south-east of the site associated with Margam Moors.

3.5.3 There are a number of waterbodies either within the site or within its immediate vicinity, including a works reservoir within the application boundary.



- 3.5.4 A small proportion of the southern extent of the site is located within Flood Zones 2 and 3 for rivers and the sea. Throughout the site, there are small areas within Flood Zones 2 and 3 for surface water and small watercourses, particularly near the works reservoir which is designated Flood Zone 3.

### 3.6 Environmental designations

- 3.6.1 There are a number of statutory designated sites for nature conservation at or near to the site are as follows:

- Margam Moors, a Site of Special Scientific Interest (SSSI) is located directly south of the site;
- Eglwys Nunydd Reservoir, a SSSI that is located within the site of Margam Moors, and just over 300 metres from the application boundary;
- Kenfig Special Area of Conservation (SAC) and SSSI are both located less than 1.5km south of the application boundary;
- Kenfig Pool and Dunes, a National Nature Reserve (NNR) is also located 1.5km south of the site;
- Cefn Cribwr Grasslands SAC is located 6.4km south east of the application site; and,
- Crymlyn Bog Ramsar site and SAC is located 8km to the north west of the application site.

- 3.6.2 There are three non-statutory designated sites located within the site or 1 km of the red application boundary:

- Neath Port Talbot Watercourses Site of Interest for Nature Conservation (SINC) is located within the Proposed Development;
- Eglwys Nunydd SINC is located 310m south-east of the application boundary; and,
- Junction 38 Wetland Complex SINC is located 335m south-east of the application boundary.

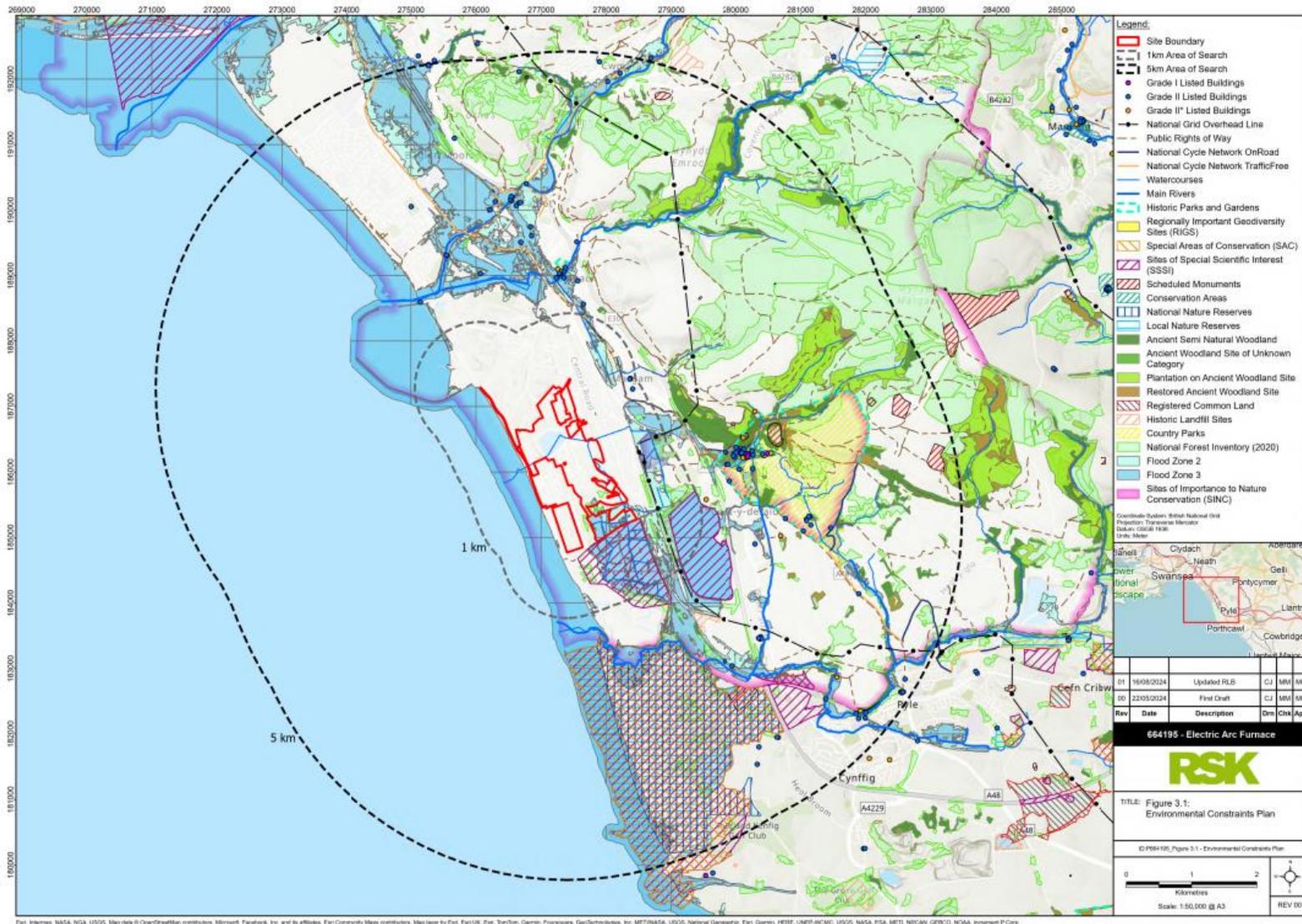
- 3.6.3 There is one nearby conservation area designation as follows:

- Margam Park Conservation Area is located approximately 1 km east of the site.

- 3.6.4 Additionally, designated heritage assets are located within 5km of the application boundary including 19 scheduled monuments, seven grade I listed buildings, 14 grade II\* listed buildings, 87 grade II listed buildings and two registered parks and gardens.

- 3.6.5 There is an Air Quality Management Area located approximately 550 m east of the application boundary. The Air Quality Management Area is situated west of the M4 Motorway and was designated in June 2000 due to the risk of exceeding the 24-hour mean for PM10 in relation to industrial emissions.

- 3.6.6 The environmental constraints plan provided in **NTS Figure 3** presents the main environmental features and designations within the vicinity of the Site.



NTS Figure 3: Environmental Constraints Plan



## 4 ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

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### 4.1 Introduction

4.1.1 Environmental Impact Assessment is a process for identifying the consequences of a development on the existing biological, physical and human environment. The Environmental Impact Assessment process has run alongside and influenced the design process.

### 4.2 Scoping

4.2.1 Scoping is an exercise that helps to identify which environmental effects associated with a development are likely to be significant. It is undertaken in consultation with the local planning authority and statutory consultees to agree which environmental effects should be included in the Environmental Impact Assessment process and the methods for assessment.

4.2.2 For the Proposed Development, the Applicant did not formally seek an Environmental Impact Assessment scoping opinion to agree with the local planning authority on the scope and level of detail to include in the Environmental Statement. However, informal pre-application consultation workshops have been held between the Applicant and Neath Port Talbot Council to discuss an appropriate scope of the Environmental Impact Assessment. Scoping concluded that the following aspects were relevant for investigation in the Environmental Impact Assessment and were taken forward to be given their own chapter in the final Environmental Statement:

- Landscape and visual impact;
- Air quality;
- Noise;
- Biodiversity;
- Water;
- Ground conditions;
- Heritage;
- Traffic;
- Climate; and
- Socio-economics and health.

4.2.3 The following environmental issues were also discussed but ultimately scoped-out of the Environmental Impact Assessment:

- Major accidents and disasters;
- Material assets and waste; and
- Daylight, sunlight and overshadowing.



## 4.3 Environmental Statement

4.3.1 The delivery of an Environmental Statement involves several key steps. Each of these steps are summarised below:

### **Establishing the baseline environment**

4.3.2 A detailed appraisal of the baseline environment was undertaken to confirm the presence of environmental receptors (for example, humans, property, landscape, ecology, water, atmosphere, etc.) in and around the Proposed Development and identify their relative importance and sensitivity to change. The appraisal combined desk-based studies and detailed site surveys.

4.3.3 The study area boundaries vary depending on the environmental topic being considered. For some, the study area may be relatively localised while others extend further to capture more distant environmentally sensitive receptors. The study area is defined more precisely for each of the topics in section 5 of this non-technical summary below.

### **Impact prediction and assessment**

4.3.4 Once the baseline has been established, the next step is to predict and assess the potential impacts of the Proposed Development. These impacts represent identifiable changes to the baseline environment as a result of the Proposed Development, and can be either beneficial or adverse.

4.3.5 Environmental Impact Assessment is both quantitative and qualitative in nature, depending on the assessment methodology agreed at scoping stage. It is based on comparisons between the environmental conditions before construction of the Proposed Development begins and the predicted environmental conditions arising from the construction and operation of the Proposed Development.

### **Environmental mitigation**

4.3.6 Mitigation measures can be embedded into the design of a development as it evolves to prevent, reduce or offset any significant adverse effects. For example, these measures might include materials for external walls or landscape design proposals, or they can be standard best practices, for example, dust control during construction. Mitigation may also take the form of outline proposals that require further design and agreement, such as offsite planting to screen the view of a development from nearby residences.

4.3.7 Additional mitigation measures are those required to reduce or offset likely significant adverse environmental effects of the Proposed Development, and these are discussed within each relevant environmental topic specific chapter.

4.3.8 In identifying appropriate mitigation measures, impact avoidance is prioritised so that mitigation prevents an impact from happening. Where this can't be achieved, a reduction in the magnitude of impact is sought and where reduction can't be achieved, compensatory mitigation is provided. Many mitigation measures can be enforced by the local authority through planning conditions attached to a planning consent.

### **Significance of environmental effects**

4.3.9 Effects are measured according to the receptor's value and sensitivity, and the predicted magnitude of impact. Professional judgement and established criteria and standards



have been used to report the environmental effects, which can be referred to as occurring before any mitigation is put in place or as residual effects occurring post-mitigation.

- 4.3.10 The significance of an environmental effect is identified by combining a range of well-established, standard criteria. This ensures effects are measured in a comparable manner. For some topics, alternative assessment criteria may be used depending on the Environmental Impact Assessment guidance specific to that topic.

#### **Environmental Statement/Assessment reporting**

- 4.3.11 The assessment of each topic scoped into the Environmental Impact Assessment is presented as a chapter in the final Environmental Statement following a common format that provides: an introduction to the assessment; a summary of the legal and policy requirements relevant to the topic; a description of the consultation undertaken; a description of the relevant primary (embedded) mitigation measures; a description of the scope and methodology for the assessment; a description of the existing environmental features (i.e. the environmental baseline); a description of the predicted impacts; details of the secondary and tertiary mitigation measures proposed; and a summary of the residual effects after mitigation. Cumulative effects are also described.
- 4.3.12 An abridged version of the Environmental Statement is presented in this Non-Technical Summary.

## **4.4 Assumptions and limitations**

- 4.4.1 The Environmental Impact Assessment was undertaken using the information made available to the Environmental Impact Assessment team by the Applicant and members of their project team, together with other readily available and publicly accessible information. The topic specialists in the Environmental Impact Assessment team carried out their own site visits, surveys and investigations at or in the vicinity of the site to provide more information for the assessments and to fill data gaps.
- 4.4.2 The Environmental Impact Assessment was undertaken during the initial design phase of the project and therefore some of the technical aspects of the construction and operation have yet to be determined. The Environmental Impact Assessment has taken a precautionary approach so that a reasonable 'worst-case' scenario was assessed. Whilst the Environmental Statement is based on the best available information at the time of publication, further information may become available during the detailed design phase, that will be used to inform the Proposed Development, if relevant.
- 4.4.3 It should be noted that the surveys and investigations were conducted on a sampling basis, and this places a limit on the certainty of the data. Assumptions adopted and limitations identified in the evaluation of impacts are reported in each of the relevant chapters.



## 5 ENVIRONMENTAL EFFECTS AND MITIGATION

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### 5.1 Introduction

5.1.1 This section provides a summary of the predicted environmental effects of Proposed Development and associated mitigation measures that are presented in full in the technical chapters of the Environmental Statement (Volume 2).

### 5.2 Landscape and visual impact

#### Scope and methodology

5.2.1 The landscape and visual impact assessment chapter assesses the potential impacts of the Proposed Development on the landscape and visual amenity within the site and the wider vicinity. It accounts for both landscape and visual impacts during construction and operation of the Proposed Development.

5.2.2 The assessment used a study area with a 15km radius around the application boundary, which indicated the areas where the development could potentially have an impact on landscape and visual assets. Landscape and visual receptors in which the Proposed Development would be most visible were identified within this area. Landscape and landscape related designations include land use, landscape elements and features, settlements and built elements, whereas visual receptors include residential receptors, recreational receptors such as Public Rights of Way and cycle routes, and social and community facilities such as leisure centres and schools.

#### Baseline

5.2.3 The landscape baseline of the site is characterised as an industrial area sited on coastal plain. The site is dominated by the Margam Steelworks. The area therefore already contains significant industrial infrastructure, including large-scale stacks which influence the landscape and its visual perception.

5.2.4 The national landscape in Wales is divided up into distinctive Landscape Character Areas. Landscape character is the distinct pattern of elements and features which together make up the pattern or sense of place. The key Landscape Character Areas for the Proposed Development are situated both within the application boundary, and within the wider study area. Notable among these are:

- Port Talbot Docks and Margam Works: The majority of the site is situated within this area
- Margam Marsh – Contains a small area of the site in its northern extent.
- Margam Park – Located approximately 1.2 km east of the site,
- Mynydd Bromil, Mynydd Emroch & Mynydd Dinas, 1.9 km east of the site.

5.2.5 For the visual baseline, various viewpoints were established from where the Proposed Development may be visible. The nearest of these to the Proposed Development are as follows:



- Longlands Lane – along the southern application boundary
- Morfa Avenue – 0.75 km north-east of the application boundary
- Tata Steel Recreation Ground – 1.1 km east of the application boundary
- Eglwys Nunydd Reservoir – 310m south-east of the application boundary
- Wales Coast Path near Mynydd Brombil – 1.7 km north-east of the application boundary
- Wales Coast Path at Mariner's Point – 1.75 km north-west of the application boundary.

## **Predicted impacts**

### Effects on landscape character

- 5.2.6 At most there would be a large to medium scale change within the existing steelworks as a result of the construction of the Proposed Development of the scrap facility. During the construction and operational phases, effects on landscape character would be greatest on the host landscape character areas, namely Port Talbot Docks and Margam Works, and Margam Marsh. As these areas are currently industrial and dominated by the existing steelworks, they are considered to have low sensitivity. The effects would be limited to the site and the fields of coastal marshes within which the site is partially located in, to the north of Longlands Lane.
- 5.2.7 Landscape character effects would reduce rapidly beyond approximately 0.5 km of the site, as visibility begins to become restricted by intervening vegetation or built form and the Proposed Development would be viewed within the context of the wider industrial complex it forms part of.
- 5.2.8 Effects on landscape character are determined to be less than small beyond 3.5km of the application boundary. At this point, the Proposed Development would simply be viewed as a minor addition to pre-existing industry on the coastal plain.
- 5.2.9 Beyond 5km, the Proposed Development would be virtually indistinguishable from existing industry and the scale of effects on landscape character at this distance are determined to be negligible.

### Effects on viewpoints

- 5.2.10 The greatest impact of views would naturally be at those locations within the immediate vicinity of the site. Significant moderate adverse effects during construction would be limited to users of Longlands Lane where visual effects would be experienced as a result of the near to medium distance views in the context of an existing industrial landscape. These would be short-term effects and localised in nature, arising from views during construction for walkers on the path. Once the works are completed, and with the implementation of the landscape strategy, these effects would reduce to non-significant.
- 5.2.11 Beyond the immediate vicinity of the application boundary, many visual receptors within a 2km radius – particularly those within Port Talbot and Margam – would experience limited views of the Proposed Development due to screening by intervening and existing townscape.



- 5.2.12 The scale and significance of visual effects would reduce beyond this 2 km radius as the Proposed Development becomes increasingly viewed as a small industrial element within a wider industrial complex and visual effects.
- 5.2.13 Beyond approximately 5 km radius of the site, the Proposed Development becomes difficult to distinguish from the existing industrial complex and the magnitude and significance of visual effects would reduce further.
- 5.2.14 Proposed lighting would be visible as points of light, especially at sensitive receptors such as Longlands Lane, nearby Public Rights of Way and Kenfig National Nature Reserve. The effects of lighting on these would be limited though, as the area is already quite well-lit from existing industrial lighting.

### **Mitigation and residual effects**

- 5.2.15 There would be no significant construction or operational effects on landscape character. Although there would be some temporary significant residual effects due to construction works on public rights of way, all other construction effects are not considered to be significant.
- 5.2.16 Mitigation is considered inherent within the siting and design of the scheme. The Proposed Development is located within the existing industrial area of the site and would largely be perceived as part of the existing site infrastructure and works. Additionally, a landscape strategy proposes screening and restoration of grazing meadows particularly around Margam Mash and Margam Park, to reduce the visual impact of the Proposed Development.
- 5.2.17 The scale of the proposals would not extend the working area of the site, and the height and massing of buildings will be predominantly subservient to existing plant and buildings, with the exception of the proposed flume. The Proposed Development would provide opportunities to undertake improvements to natural and semi-natural infrastructure, which would also provide a biodiversity net benefit.
- 5.2.18 The scale of the proposals will not extend the working area of the site, and the height and massing of buildings will be predominantly subservient to existing plant and buildings with the exception of the proposed chimney.
- 5.2.19 There would be no residual effects for visual receptors during operation due to the extent of local screening and extent of existing industrial development on site and in the coastal plain area. While the Proposed Development may be visible from some nearby viewpoints, such as Longlands Lane or the Ogwr Ridgeway, these effects would be minimal considering the development would not look out of place in the surrounding industrial context.
- 5.2.20 All long-term visual effects have been assessed as not significant for all sensitive receptors as it is considered that the Proposed Development could be successfully integrated into the existing landscape.



## 5.3 Air quality

### Scope of assessment and methodology

- 5.3.1 The air quality assessment considers the existing air quality conditions and the potential impacts on air quality that would result from the construction and operation of the Proposed Development. The assessment considers a range of potential sources of emissions, including dust generated from construction activities, vehicle movements, and emissions from operational process.
- 5.3.2 The assessment makes use of a study area with a 10 km radius around the application boundary, and considers sensitive receptors such as road networks, residential areas and ecologically sensitive sites.

### Baseline environment

- 5.3.3 To establish a reference point against which potential air quality impacts can be measured, baseline conditions were established using data from the operational site in 2023. The baseline study considered the concentration of existing pollutants including particulate matter, sulphur dioxide, nitrogen oxides, carbon monoxide and dioxins. The concentrations of these pollutants were measured at several monitoring locations representative of human receptors – such as residential properties located within 250m of the Proposed Development and nearby major traffic routes – as well as ecological sites – such as the Margam Moor Site of Special Scientific Interest.
- 5.3.4 The baseline assessment indicated that baseline air quality was most influenced by industrial activities at the site, as well as traffic emissions from nearby roads.
- 5.3.5 The air quality assessment also considered an ‘interim baseline’, which represents the period following closure of heavy end infrastructure, and before the Proposed Development becomes operational. The ‘heavy end’ is defined as the existing stockyard, sinter plant, coke ovens, blast furnaces and steel converter. Closure of the coke ovens has already taken place, with the closure of the remainder of the ‘heavy end’ scheduled to take place by the end of 2024. As the heavy end infrastructure is gradually closing during 2024, this represents the baseline, should the Proposed Development not proceed. The interim baseline anticipates a reduction in emissions following the closure of the heavy end infrastructure.

### Predicted impacts

#### Construction phase

- 5.3.6 The construction phase of the development is expected to generate dust and particulate matter through construction activities (demolition, earthworks, construction, etc.) and vehicle emissions. The assessment found that, although the construction phase would impact air quality, particularly at residential areas and ecological sites close to the Proposed Development, there would actually be an overall reduction in emissions from the current baseline conditions due to the closure of the operational ‘heavy end’ infrastructure.

#### Operational phase



- 5.3.7 During the operational phase, the main source of emissions is expected to result from fugitive dust emissions generated from operational activities (such as scrap metal handling) and vehicle emissions. Similarly to the construction phase, the operational phase would have minor effects on air quality at residential areas and ecological sites, as there would be an overall reduction in emissions due to the closure of the heavily emitting operational steelworks in favour of new EAF technology.

### **Mitigation and residual effects**

- 5.3.8 Mitigation measures during construction would be implemented through a Dust Management Plan in accordance with commitments made in a Construction Environmental Management Plan to control any significant effects. Residual effects for fugitive dust during construction are determined as not significant.
- 5.3.9 Once construction is finished, the 'heavy end' infrastructure is demolished, and the new EAF is operational, the processing of scrap for use in EAF is expected to be the main source of fugitive dust. The EAF facility itself will also generate dust, although this will be mitigated via an extraction canopy at the roof of the plant. Further dusts will also be generated from material handling systems and ladle furnaces.
- 5.3.10 Due to the closure of carbon emitting steelworks in favour of new EAF technology, emissions of pollutants are expected to fall. Consequently, the assessment determined that once operational, the Proposed Development would likely have negligible to beneficial impacts on air quality for human receptors and ecological receptors.
- 5.3.11 The site is governed by an Environmental Permit issued by Natural Resources Wales, which imposes conditions for regulating air quality. This permit will certainly require updating due to the new proposed EAF. No further mitigation measures were therefore anticipated to be required.

## **5.4 Noise and vibration**

### **Scope of assessment and methodology**

- 5.4.1 The noise and vibration impact assessment identifies any likely adverse noise and vibrational impacts that would arise from the demolition, construction or operation of the new EAF facility.
- 5.4.2 The scope of the assessment included comprehensive baseline noise surveys. The results of these informed noise impact assessments that used predictive sound modelling. The methodology for these was agreed in consultation with Neath Port Talbot Council and Natural Resource Wales.
- 5.4.3 The study areas took care to include receptors representative of humans (residential properties) and ecology (ecological sites, SSSIs, etc), with a particular focus on those closest to the application boundary.
- 5.4.4 Individual technical noise and vibration impact assessments for the EAF and scrap processing are detailed in technical reports in the Appendices of the Environmental Statement (Volume 3).



## Baseline

- 5.4.5 Baseline noise surveys were conducted to establish the existing baseline ambient noise experienced within the site and the surrounding area, and at ecological receptors. The surveys served to provide a reference point against which the potential noise impacts from the EAF could be assessed.
- 5.4.6 The surveys were carried out at representative locations to capture the typical noise levels at residential areas and ecological sites. Receptors nearest to the Proposed Development surveyed include:
- **Residential areas:** Properties at West End, Prince Street, Brynhyfryd Road, Longland Lane, and Eglwys Nunydd.
  - **Ecological sites:** SSSIs (Margam Moors, and Eglwys Nunydd Reservoir) and quiet areas (Vivian Park, and Talbot Memorial Park).
- 5.4.7 The current baseline noise levels were revealed to be mostly influenced by the ongoing industrial activities in and around Port Talbot, particularly those associated with 'heavy end' infrastructure.

## Predicted impacts

- 5.4.8 The noise and vibration impact assessment presents a prediction and assessment of the likely construction and operational noise levels.

### Construction phase

- 5.4.9 Construction noise, construction vibration and construction traffic noise resulting from the Proposed Development were not found to be significant enough to disturb sensitive residential areas. Noise levels are predicted to increase temporarily, particularly during periods of great construction activity. That said, these increases are temporary and expected to remain within acceptable noise limits. Residual effects noise and vibration during construction are determined as not significant.

### Operational phase

- 5.4.10 Predictions of operational noise, resulting from scrap material handling, plant activities, and operational traffic were similarly found not to be significant. Noise levels at residential areas would experience only a minor increase, which is not expected to disturb residential areas.
- 5.4.11 In ecological receptors, particularly the SSSIs, operational noise levels are unlikely to interfere with the ecology. Once operational, and with implementation of appropriate mitigation, the residual effects due to the Proposed Development are determined as not significant.

## Mitigation and residual effects

- 5.4.12 The construction phase will follow best practice to mitigate construction noise. Examples of such measures include prior consent agreement for any works outside weekdays and Saturday core hours, where there is potential for significant adverse effects. Quiet and



low noise equipment will be prioritised and located where required to minimise noise disturbance at nearby residential areas. Mitigation measures during construction would be implemented through a Noise and Vibration Management Plan in accordance with commitments made in a Construction Environmental Management Plan to control any significant effects.

- 5.4.13 The Proposed Development features a number of design choices that minimise and vibration during its operation. For example, the scrap handling facility will be built with a shear enclosure serving as a sound barrier. Additionally, plant buildings would be built with building façade cladding, and various pieces of plant equipment built with enclosures that reduce sound emissions.
- 5.4.14 As part of the detailed design phase of the Proposed Development, the operational phase noise assessment will be refined with specific requirements for mitigation measures, such as noise barriers or enclosures, to be confirmed.

## 5.5 Biodiversity

### Scope of assessment and methodology

- 5.5.1 The biodiversity chapter assesses the potential impacts of the construction and operation of the Proposed Development on existing ecological receptors within the application boundary and the surrounding vicinity.
- 5.5.2 The study area encompassed the application boundary, extending to a wider zone of influence that captures relevant ecological receptors.
- 5.5.3 The assessment methodology made use of both desk-based studies and an extensive list of field surveys, carried out over several seasons to build a comprehensive ecological baseline upon which potential effects could be assessed against.

### Baseline

- 5.5.4 The baseline conditions at the site revealed a diverse range of habitats. Within the application boundary are habitats consisting of scrub, semi-improved natural grasslands, coastal floodplain grazing marsh, and water bodies such as lagoons and drainage channels. These habitats support various species, including several protected or notable species. For instance, the grassland habitat areas on site demonstrated the potential to serve as important breeding grounds for bird breeds, such as Cetti's warbler and skylark, while the water bodies on site support a range of invertebrate species.
- 5.5.5 Several designated sites of ecological importance can be found within the wider study area. Notable among these are two SSSIs; Margam Moors, and Eglwys Nunydd Reservoir, both located in close proximity to the site boundary. These sites are known for their unique habitats, which host a variety of nationally significant rare species including bats, birds, invertebrates and reptiles.
- 5.5.6 It is anticipated that the future baseline, if the Proposed Development were not to proceed, would likely see an expansion of habitats such as ephemeral vegetation, as more areas within the application boundary would become disused. That said, this may also lead to an increase in invasive species given the cessation of maintenance efforts.



## Predicted impacts

5.5.7 A programme of baseline ecological surveys was completed between September 2021 and August 2024. The following surveys were undertaken:

- Habitat surveys;
- Invertebrate surveys;
- Badger surveys;
- Wintering and breeding bird surveys;
- Bat surveys;
- Great crested newt surveys
- Reptile surveys;
- Otter and water vole surveys; and
- Dormouse surveys.

5.5.8 All surveys were undertaken following the most relevant industry guidelines and incorporated relevant scoping responses. As well as the above surveys, a desk study was also undertaken.

5.5.9 The primary ways in which the Proposed Development may affect ecological features are:

- Direct effects associated with habitat loss or damage;
- Direct effects on protected species associated with resting place destruction, killing or injury of individuals;
- Indirect effects on habitats and species associated with dust, emissions, siltation, leaks and spillages;
- Indirect effects on protected species associated with disturbance; and
- Indirect effects on protected species through pollution of habitats/watercourses affecting food sources.

5.5.10 The construction and operation of the Proposed Development is expected to have several direct and indirect impacts on biodiversity, particularly on habitats within 1km of the application boundary and the various species associated with them. The following ecological receptors were identified to have the potential to be impacted by the Proposed Development:

- Statutory designated sites (Margam Moors and Eglwys Nunydd);
- Non-statutory sites;
- Coastal floodplain grazing marsh;
- Open mosaic habitat (scrub and ephemeral);
- Reptiles;
- Breeding birds;
- Wintering birds;
- Foraging/commuting bats;



- Invertebrates;
- Invasive non-native species.

5.5.11 Direct impacts would result primarily from the construction phase. These include the loss and degradation of ecologically significant habitats, such as the open mosaic habitats and coastal floodplain grazing marshes in the vicinity of the site which host species including birds, reptiles and invertebrates.

5.5.12 Indirect impacts may result from changes in air quality, light pollution, and noise during both the construction and operation of the Proposed Development. Air quality modelling in the air quality assessment suggests that air quality will see an overall improvement, resulting from the closure of the old steelworks, however light and noise pollution may disrupt bat and bird species across the site.

### **Mitigation and residual effects**

5.5.13 A range of mitigation measures have been incorporated and embedded into the design of the Proposed Development to minimise ecological impacts. Notably, these include the following:

- The layout of the Proposed Development has been adjusted to minimise impacts to the southern fields which contain lowland floodplain grazing marsh;
- The layout of the Proposed Development has avoided impacts to sensitive habitats where possible, for example the areas of soil with the highest peat content and the habitats of highest conservation value;
- Where avoidance has not been possible, the infrastructure would be constructed in such a way as to maintain the integrity and connectivity of the hydrology of hydrologically sensitive habitats; and
- Access tracks would be designed in keeping with good practice, of which further detail is provided in **ES Chapter 9 Surface water, flood risk and drainage**.

5.5.14 Further mitigation measures embedded into the Proposed Development would be implemented through a Construction Environmental Management Plan, that specifies undistruptive working hours, pollution prevention and management measures, surface water management measures and a dust management plan. Controls would also be put in place during construction through creation of a site-specific Species Protection Plan and appointing an Ecological Clerk of Works to monitor adherence to such plans.

5.5.15 Additional mitigation measures would be implemented with the aim of habitat creation and management. Great emphasis has been placed on the replacement or enhancement of any ecological features that are cleared for development.

5.5.16 Areas cleared for development would be either restored or replaced with habitats designed to carry out similar ecological functions. The Proposed Development could deliver approximately 18 hectares of new and enhanced habitats, including mixed scrub, ephemeral soil heaps, reedbeds, grassland and coastal floodplain grazing marsh species.

5.5.17 In addition, a Landscape and Ecological Management Plan, Net Biodiversity Benefit Report and a Green Infrastructure Statement have been designed in alignment with the principle of Biodiversity Net Benefit and enhancements required within the Environment (Wales) Act.



- 5.5.18 Following implementation of mitigation measures, the ecological effect of the Proposed Development is expected to be non-significant. Habitat creation resulting from the Proposed Development even has the potential to result in permanent beneficial outcomes for biodiversity, as the creation and management of habitats not only enhances the ecological condition of the site, but also benefits existing species, and can potentially attract new species.
- 5.5.19 Overall, the assessment concludes that with the implementation of mitigation measures, the Proposed Development's ecological will be negligible, and in some instance, may result in long-term ecological benefits.

## 5.6 Hydrology, water resources and flood risk

### Scope of assessment and methodology

- 5.6.1 The hydrology, water resources and flood risk chapter of the ES assesses the potential impacts of the Proposed Development on surface water, flood risk and drainage within the site and wider vicinity. It accounts for both direct and indirect effects on water resources and flood risks during the construction and operation phases of the development.
- 5.6.2 The assessment makes use of a study area with a radius of 2km, capturing water resources within the site, nearby waterbodies that are hydrologically linked to the site or used for process abstraction, and other sites designated for water related attributes.

### Baseline

- 5.6.3 The site is located adjacent to the Bristol channel. The site features a mix of industrial land and natural environments, including open coastal floodplain and the Margam Moors wetlands. The topography of the site is generally flat, sloping in a south-easterly. The eastern side of the site is generally lower than the west, with site levels typically remaining 10m above sea level.
- 5.6.4 The site's underlying bedrock geology is comprised of mudstone, siltstone and sandstone. Superficial geology at the Site is comprised of Tidal Flat deposits made up of clay, silt and sand. The soils have been assessed and shown to be loamy and clayey with naturally high groundwater.
- 5.6.5 The site has a complex network of surface water drainage that manage both process water and surface runoff. This includes various ditches, drainage channels and culverts. These include waterbodies that could be affected by water quality impacts, such as the on-site ordinary watercourses, Lower and Middle Mother Ditch, as well as the underlying aquifer, known as the Swansea Carboniferous Coal Measures groundwater body. Receptors to the impacts of water resource use include waterbodies utilised for process water abstraction. These are identified as NRW Rivers Nant Ffrwd Wylt, Afon Cynffig, Afon Afan as well as Port Talbot Docks, Eglwys Nunydd Reservoir and Middle Mothers Ditch. With regards to flood risk, the development is not considered to impact off-site flood risk. Therefore, the flood risk receptor is Less Vulnerable Development associated with heavy rain and surface water at the site itself.
- 5.6.6 Within the wider vicinity are key river catchments and waterbodies from the north east and south of the site. Notable among these are, Afon Cynffig, Afon Afan and Nant Ffrwd Wylt rivers, and the Eglwys Nunydd Reservoir, which is a designated SSI and supplies water to the steelworks.



- 5.6.7 The site's drainage system discharges into Swansea Bay through the site outfall.

### **Predicted impacts**

- 5.6.8 The Proposed Development could result in several impacts on surface water, drainage and flood risk during the construction and operation.

#### Construction phase

- 5.6.9 The construction phase has the potential for temporary impacts to water environment, particularly water quality. Potential impacts could result from the demolition of buildings, transport and storage of potentially contaminating materials, infilling of the onsite reservoir, groundworks, construction of hardstanding and vehicle movements.
- 5.6.10 The primary impacts associated with the aforementioned construction activities include:
- Increased sedimentation of waterbodies;
  - Pollution of waterbodies from construction materials;
  - Changes to drainage patterns resulting from ground disturbance; and
  - Abstraction of water for construction use.
- 5.6.11 Additionally, there are risks from increased overland flow entering on-site watercourses, and impediments or diversions to existing flow pathways, causing changes to drainage patterns and localised flood risk.

#### Operational phase

- 5.6.12 The operational phase has the potential for long term and permanent effects on the water environment receptors. The Proposed Development is expected to reduce the current water abstraction volumes for operational activities, having a potentially positive effect. However, the introduction of hardstanding could lead to increased surface water runoff. There is also potential for pollution of waterbodies from hazardous compounds during general site activities.
- 5.6.13 The primary water quality impact is the controlled effluent discharge from site operations to Swansea Bay, though it is expected that the volume of effluent discharge will decrease significantly from baseline conditions once the Proposed Development is operational. Concentrations for most contaminants will decrease, although sediments and oil have the potential to increase as a reduction in dilution effect and the influence of historical site contamination. Furthermore, there will be a reduction in the requirement for process water abstraction – some existing abstraction points can therefore be relinquished and licenses surrendered. This represents a small improvement to the water quality from the current baseline.

### **Mitigation and residual effects**

- 5.6.14 A range of mitigation measures have been embedded into the project design for both the construction and operational phases of the Proposed Development to minimise its impact



on surface water and flood risk. These include an approved Construction Environmental Management Plan:

- The Construction Environmental Management Plan would be approved by Natural Resource Wales, and includes measures for silt and sediment control, pollution prevention, and drainage and water management to manage water resources during the construction phase;
- A Sustainable Drainage Strategy (SuDS), to manage the risk of surface water flooding during operation, accounting for increased runoff rates resulting from general operations or storm events; and,
- The site's Environmental Permit from Natural Resource Wales would be updated to meet stricter requirements, ensuring effluent discharge is treated before discharge, and does not exceed allowable limits. A monitoring program will be implemented, ensuring compliance and improvement.

5.6.15 The environmental effects of the Proposed Development with regards to surface water, flood risk and drainage are assessed to be mostly negligible or minor as a result of mitigation measures embedded in the Proposed Development. Once operational, there is potential for beneficial impacts on water quality. The reduced contaminant concentrations and discharge volumes will benefit the Swansea Bay waterbody, while the reduction of water abstraction volumes reduce the risk of pollution and sedimentation.

## 5.7 Land, soil and groundwater

### Scope of assessment and methodology

5.7.1 This chapter assesses the potential impacts of the Proposed Development on the land, soil, and ground conditions of the site and the wider vicinity. The assessment covers both the construction and operational phases of the development, and assesses risks related to contamination, geological stability, and groundwater management.

5.7.2 The study area considered within this chapter is the site within the application boundary, plus an area of 1km outside of the application boundary.

### Baseline

5.7.3 With regards to ground conditions, historical uses of the site include coal mining in the western area (associated with the now closed Morfa Colliery). More recently it has been occupied by steelworks, which are still present. Both are activities which may have influenced the potential for contaminated land.

5.7.4 An active landfill site is located approximately 250m south of the application boundary which may influence ground conditions in the site's wider vicinity.

5.7.5 There are two main soil associations within the application boundary and one more within the wider vicinity. The site is predominantly underlain by loamy and clayey soils with naturally high groundwater. A strip of land in the south-western area of the site is described as sand dune soils. Land to the north and north-east of the site is classified as freely draining slightly acidic loamy soils.

5.7.6 Groundwater is defined as water which is present within soil or geological units, beneath the ground surface. The groundwater beneath the site is a secondary aquifer, which



means that some water from below the ground could be used to provide water resources. However, there are no recorded abstraction points for drinking water within 1 km of the application boundary. Furthermore, the groundwater quality is expected to be of low quality due to the legacy of industrial activity on the site.

### **Predicted impacts**

- 5.7.7 The Proposed Development could result in direct and indirect impacts on land, soil and groundwater during both the construction and operational phases.

#### Construction phase

- 5.7.8 The majority of potential impacts emerge during the construction phase, where there is a risk of disturbing and mobilising existing contamination from legacy industrial activities such as coal mining and steelworks. Construction activities including excavation and piling may disturb and mobilise existing contamination. This may adversely impact ground conditions of the wider vicinity either by direct contamination or leeching from rainwater.

- 5.7.9 Piling could also create pathways for contamination to move vertically, which may result in the pollution of the deeper geology of the site.

- 5.7.10 Ground investigation results confirm the presence of peat deposits within the site below ground level. Although there is no peat at ground surface with an 'active' vegetation layer, peat bodies remain of importance for their carbon storage. Piling and excavation activities during construction are expected to encounter peat bodies in some parts of the site, which will consequently release stored carbon into the atmosphere.

#### Operational phase

Without mitigation, activities planned at the site have the potential to impact land, soil and groundwater. This is primarily via contamination release resulting from the improper storage, handling and disposal of raw materials, products and waste products associated with the Proposed Development's operations.

### **Mitigation and residual effects**

- 5.7.11 Several mitigation measures have been embedded into the construction phase of the Proposed Development. During the construction phase, ground contamination level will be assessed and provided with remediation where necessary. Remediation actions would also be expected to mitigate against potential construction phase effects resulting from mobilisation of near surface contamination.

- 5.7.12 A Peat Management Plan would likely be included within a planning condition. Excavated peat will be stored appropriately to minimise carbon release.

- 5.7.13 The implementation of a Construction Environmental Management Plan will reduce potential impact to superficial and geological units at the site, covering measures like soil management, spill prevention and management, and the handling of potentially contaminated materials. A Material Management Plan will also allow all material types to be tracked and managed.

- 5.7.14 Once operational, the site will be governed by an Environmental Permit, which will include regular monitoring requirements for soil and groundwater conditions.



- 5.7.15 With the implementation of mitigation measures, the assessment concludes that the residual impacts from the Proposed Development are expected to be minimal. Overall, there will be no significant adverse effects on land, soil or groundwater resulting from the Proposed Development.

## 5.8 Cultural heritage

### Scope of assessment and methodology

- 5.8.1 The cultural heritage chapter evaluates the potential effects of the construction and operation of the Proposed Development on designated and non-designated historic assets.
- 5.8.2 The study area for this assessment comprises of a 1km buffer surrounding the application boundary for non-designated assets, and a 5km buffer for designated assets.
- 5.8.3 The assessment focused on identifying historic assets (archaeological remains, historic buildings, and landscapes) as well as assessing their significance. The assessment methods included desk-based research, site visits and consultation.

### Baseline

- 5.8.4 There are 130 designated assets located within the 5km study area, comprising of several scheduled monuments, Grades I, II and II\* listed buildings, one conservation area and two registered parks and gardens.

There are no designated assets located within the actual application boundary, however there are three non-designated historic assets within the site:

- Morfa Colliery – a now closed 19<sup>th</sup> century colliery in the north-western area of the site;
- Morfa Colliery Gas Works – a now closed private gasworks used to light the colliery buildings; and
- Theodrics Grange – a ruined medieval building which formed part of a monastic grange, possibly of a domestic function.

- 5.8.5 There are a further 32 non-designated assets located within the 1km study area. These include remnants from the Roman, medieval, and post-medieval period settlements and landscapes, particularly those related to the industrial heritage of the region.

### Predicted impacts

- 5.8.6 Both direct impacts such as physical damage during construction, and indirect impacts such as changes in the setting of assets were considered in the assessment for both the construction phase and the operational phase.

#### Construction phase

- 5.8.7 The existing non-designated assets within the site (Morfa Colliery and gasworks, and Theodrics Grande) would be subject to physical disturbance, though this is considered a minor impact as many of their surviving elements are already significantly disturbed.



- 5.8.8 Impacts upon unknown historic assets, such as unknown buried archaeological remains cannot be meaningfully assessed.. However, if any are present, they may be disturbed, damaged, or destroyed by construction groundworks and other activities.

Operational phase

- 5.8.9 Impacts during the operational phase have the potential to arise as a result of visual change within the site, particularly due to the introduction of new industrial buildings and their associated infrastructure.
- 5.8.10 The visibility of new industrial buildings may alter the visual settings of on-site historic assets; however, these effects are considered to be minor, considering the site and its vicinity already host significant industrial infrastructure.

**Mitigation and residual effects**

- 5.8.11 Several mitigation measures are proposed to minimise the potential impacts of the construction of the Proposed Development on historic assets. Mitigation against direct disturbance to historic assets is embedded into the design of the development, with efforts to site infrastructure away from onsite assets.
- 5.8.12 With regards to unknown archaeological remains that may be discovered, they will be preserved by record through documentation and reporting.
- 5.8.13 Whilst Morfa Colliery largely comprises below ground remains, there is an existing memorial located within the application boundary, which will be retained in the same location. Temporary fencing is proposed to ensure no accidental damage occurs. Similar preservation measures will be applied to Theodric's Grange to prevent damage or encroachment.
- 5.8.14 After application of mitigation, the residual effects of the Proposed Development on historic assets is expected to be minimal. Direct physical impacts will be avoided or mitigated through infrastructure siting and preservation of key assets. The introduction of new industrial infrastructure will result in visual impacts, though this is not considered to be significant given the existing industrial setting of the site and its vicinity.

**5.9 Transport and access**

**Scope of assessment and methodology**

- 5.9.1 The traffic and access chapter was prepared to address the likely significant effects of the Proposed Development on local traffic, transport infrastructure, and access routes during construction and operation.
- 5.9.2 The assessment considered current traffic volumes, future predicted traffic volumes and the impacts that may result from construction vehicles.
- 5.9.3 For the assessment, a study area was agreed with the local highway authority. The study area comprises of various junctions, roads, and access roads on-site and within the wider vicinity that may see a change in traffic movements as a result of the proposed development.



### **Baseline**

- 5.9.4 Being situated within an industrial area, the baseline was characterised by having considerable traffic movements. High traffic movements associated with the steelworks resulted from scrap metal and coal deliveries, each accounting for over 25,000 two-way heavy good vehicles movements a year.
- 5.9.5 Future predicted traffic movements indicate that there will be a significant reduction in site-related traffic. This is due to the reduction in site activities associated with the planned closure of heavy end infrastructure at the steelworks.

### **Predicted impacts**

- 5.9.6 The assessment identified the potential for the Proposed Development to have impacts on the road network during the construction and operational phases.
- 5.9.7 The construction phase would result in traffic movements, primarily from construction vehicles. However, traffic movements from construction will be offset by the significant reduction in traffic following the shutdown of the steelworks' heavy-end machinery.
- 5.9.8 The operational phase would see a further reduction in traffic volumes. With the closure of the steelworks' blast furnaces and coke ovens, coal deliveries to the site will halt. The majority of staff reductions will have also taken place, resulting in further considerable reductions in traffic movements.
- 5.9.9 Although scrap metal will still be delivered to the site post construction, it is intended that it will be delivered to and from the site by rail. Delivery by road would no longer be viable and would not support plans to reduce the site's carbon footprint.
- 5.9.10 On this basis it is confirmed that the proposed construction and operational phase of the development will result in a large reduction in traffic movements when compared to the established baseline position.

### **Mitigation and residual effects**

- 5.9.11 A number of mitigation measures will be embedded into the Proposed Development during the construction phase:
- A Construction Traffic Management Plan and Routing Plan will ensure heavy good vehicles are routed to reduce congestion on local road network;
  - Signage will be introduced to direct construction workers and reduce congestion on local road network.
- 5.9.12 For the operational phase, a travel plan will be developed to promote the use of sustainable means of transport to staff on site.
- 5.9.13 The reduction in traffic resulting from the closure of heavy-end infrastructure and introduction of the proposed development would result in a non-significant beneficial



effect on the local road network, during both the construction and operational phases. For this reason, no additional mitigation has been proposed.

## 5.10 Climate change

### Scope of assessment and methodology

- 5.10.1 The climate change chapter assesses the effect of the proposed development on climate change from the release of greenhouse gases. The assessment also considers the proposed development's resilience to climate change impacts.
- 5.10.2 The assessment uses greenhouse emission estimates during construction and operation and assesses them against current greenhouse emissions relative to the steelworks. The proposed development's contribution to national and international climate targets is also assessed.

### Baseline

- 5.10.3 Steel production at the site has to date used blast furnaces, which emit significant amounts of greenhouses: Tata Steel's Port Talbot site is the largest direct greenhouse emitter in the UK, accounting for around a fifth of Welsh greenhouse emissions.
- 5.10.4 The baseline emissions were based on a five-year average between the years 2020 and 2024 and revealed that the site averages approximately 6.25 million tonnes of CO<sub>2</sub>e equivalent (CO<sub>2</sub>e) emissions a year. The assessment predicted a significant emissions decrease from baseline levels in the interim period between closure of the operational steelworks and construction of the EAF.
- 5.10.5 The baseline climate data was based on Port Talbot averages between the years 1981 and 2010, revealing an average maximum temperature of 13.46°C and an average annual rainfall of 999mm a year. Future climate projections suggest that the area will experience wetter winters and drier summers.

### Predicted impacts

#### Construction phase

- 5.10.6 Construction of the proposed development is expected to take place over a 3-year period, during which a total of 61,469 tonnes of CO<sub>2</sub>e will be emitted. This is due to the manufacture of construction materials such as steel and concrete, and the movement of construction vehicles.
- 5.10.7 Given that this is a considerable reduction from baseline levels, the impact is considered minor.

#### Operational phase

- 5.10.8 Operational phase emissions from the EAF will be those associated with gas combustion and the EAF steelmaking process. Indirect emissions include those associated with electricity generation to operate the site.
- 5.10.9 Once operational, the Proposed Development is expected to reduce GHG emissions by 5.4 million tonnes. The operational phase's impact is therefore considered to be minor.



## **Mitigation and residual effects**

- 5.10.10 The Proposed Development features several climate change mitigation measures embedded within its design to reduce greenhouse emissions and increase resilience to climate change.
- The shift to EAF technology in favour of blast furnaces is a major mitigation measure, resulting in a significant reduction of greenhouse emissions:
  - The EAF will be subject to a range of permits and management plans, for example environmental permits and a Construction Environmental Management Plan. These would include recommendations and requirements to limit greenhouse emissions;
  - A drainage strategy has been embedded in the project's design to improve capacity to handle increased rainfall and potential flood events; and,
  - A travel plan would be developed to promote the use of sustainable means of transport to staff on site.
- 5.10.11 Relative to the current steelworks, the effects of the development on climate change are considered to be significantly beneficial, due to the reduction greenhouse emissions. The Proposed Development would consequently contribute to both national and international net zero targets and other legally binding carbon reduction commitments.
- 5.10.12 The assessment on climate resilience of the Proposed Development to future climate change effects associated with increased temperatures and changes in rainfall patterns, found that the Proposed Development is suitably resilient, and that there are no predicted significant effects.

## **5.11 Socio-economics and health**

### **Scope of assessment and methodology**

- 5.11.1 The socio-economics and health chapter assesses the potential effects of the Proposed Development on employment, public health, and the economy during the construction and operational phase.
- 5.11.2 The assessment involved examining economic activity, employment, income, and health, and how these may be impacted as a result of the Proposed Development. To inform the assessment, current and future baseline conditions at the Site and in Neath Port Talbot, the wider sub-region (Neath Port Talbot, plus the neighbouring local authorities of Swansea and Bridgend), Wales and the UK as a whole were analysed as appropriate in relation to the factors such as employment and economic activity; labour market and industry; wages and expenditure.

### **Baseline**

- 5.11.3 The site's established baseline supports a total of 9,790 full-time equivalent jobs across the UK, both directly and indirectly associated with the steelworks, and based on a local, sub-regional and country of Wales level. Many of these jobs held by local residents. The steelworks play a significant role in the economy and economic activity levels of the local area and Wales as a whole.



- 5.11.4 Within the wider Port Talbot area high levels of deprivation have reported across a range of indicators for health and wellbeing. The majority of small areas in Neath Port Talbot are more deprived than the average for Wales, with health data suggesting that the population suffers from relatively higher levels of poor health.

### **Predicted impacts**

- 5.11.5 The assessment concluded that the development would have significant socio-economic and health impacts, primarily associated with employment.

#### Construction phase

- 5.11.6 Although the demolition and construction phase are anticipated to both directly and indirectly support an uplift jobs, there is an anticipated significant net reduction of jobs in comparison with the established baseline. The assessment finds that a net reduction of 3,590 full time equivalent jobs will occur as a result of the Proposed Development at the scale of the UK during the construction phase.

- 5.11.7 Jobs and activity created within the construction sector is likely to improve the ability of workers to access related employment and training opportunities. However, whilst the creation of jobs will provide new opportunities for people seeking roles in construction – including people who had been previously unemployed and are re-entering the labour market, or those gaining skills and qualifications through apprenticeships and training – it is anticipated that the proportion of these roles created would represent a relatively low proportion of the total jobs created.

- 5.11.8 The assessment also identified the potential health impacts resulting from the reduction in employment may include increased stress due to job uncertainty.

#### Operational phase

- 5.11.9 Once operational, the Proposed Development is expected to support a total of 5,720 full time equivalent jobs across the UK. Whilst this is an improvement from the construction phase, this represents a significant reduction of jobs as a result of the Proposed Development when compared with the established baseline.

- 5.11.10 A reduction in employee expenditure in the regional economy is also anticipated, which would have an adverse effect on businesses and associated labour force as a result of the change in employee expenditure during the operational phase.

- 5.11.11 The reduction in employment may have a negative impact on health outcomes, particularly in those deprived areas within Neath Port Talbot, associated with stress due to job uncertainty. Given the scale of operational phase job losses, these detrimental effects on health outcomes could be long-term.

- 5.11.12 The closure of highly polluting blast furnaces is expected to have a positive long-term effect on health outcomes.

### **Mitigation and residual effects**

- 5.11.13 The mitigation measures that have been embedded within the project to address the Proposed Development's impacts on employment and health include redeployment of



supplier activities to retain supply chain employment capacity, and voluntary redundancy packages that have been offered to affected employees.

- 5.11.14 There will be an additional package of support in the form of a £100 million Transition Fund, with the objective of creating up to 2,800 jobs across the South Wales region over a five-year period. The Applicant is making a £20 million contribution to this fund which would provide embedded mitigation for socio-economic and health effects. The four priority uses of the fund are:
- Skills and learning accreditation programs have been developed, focused on the retraining of affected employees;
  - Outplacement support will be offered to help employees transition to new employment;
  - Mental health support including counselling and advice on a number of wider matters such as financial concerns; and
  - A re-skilling and re-training scheme.
- 5.11.15 Therefore, in light of the scale of the Transition Fund being proposed, it is considered that the impact of the job losses on health outcomes would be reduced.
- 5.11.16 Notwithstanding this, the Proposed Development would see a net reduction in jobs and would have a significant long-term adverse effect on local employment and income levels. Indirect impacts on health are anticipated to surface as a result of these job losses. After considering the introduction of mitigation measures, the residual effects on health and employment are still expected to be significant adverse both during the construction and operational phases.
- 5.11.17 Improved air quality for residents in Neath Port Talbot, and re-skilling initiative aim to contribute to non-significant, long term beneficial health effects.

## 5.12 Cumulative effects

- 5.12.1 There are two aspects of cumulative effects that have been considered in this chapter.
- **Intra-project cumulative effects:** The interaction and combination of multiple significant effects from the Proposed Development on common receptors; and
  - **Inter-project cumulative effects:** The combined effects of the Proposed Development together with other committed developments on commonly shared receptors.

### Intra-project cumulative effects

- 5.12.2 The assessment concluded that no single common receptor would experience multiple significant effects from different environmental factors.
- 5.12.3 During the construction phase, there is potential for human receptors to experience adverse visual effects (e.g. users of Longlands Lane) and adverse socio-economic effects (e.g. those in the local labour force) and adverse human health effects (e.g. those indirectly impacted by job reduction).



- 5.12.4 However, these effects are unlikely to combine or interact in any meaningful way. As such, no mitigation measures have been identified beyond those already identified in the Landscape and visual, and Socio-economics and health chapters.

Inter-project cumulative effects

- 5.12.5 With regards to the combined effects of the Proposed Development with other committed developments, no significant adverse effects are anticipated on common receptors. As such, no additional mitigation measures beyond those already proposed in the individual assessment chapters, are proposed.

## **5.13 Environmental management**

- 5.13.1 The assessment of the Proposed Development has identified a number of impacts that are likely to arise as a result of progression of the new EAF facility. Mitigation measures have accordingly been identified and developed to counter these adverse impacts and reduce the significance of residual effects on the receiving environment.

- 5.13.2 The environmental mitigation measures identified during the Environmental Impact Assessment process, including monitoring of potentially significant effects, are summarised in this report and detailed in the relevant chapters of the Environmental Statement. Subject to the granting of planning consent, these measures will form a mandatory schedule of commitments under the terms of any contract for the construction and future maintenance of the Proposed Development.



## 6 CONCLUSIONS AND FURTHER INFORMATION

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- 6.1.1 This Non-Technical Summary provides an abridged version of the Environmental Statement (Volume 2) submitted with the planning application for a proposed Electric Arc Furnace in Port Talbot. It concludes that, with the mitigation that forms part of the design of the Proposed Development together with the additional mitigation recommendations made by RSK's environmental specialists, there would be no long-term significant negative impacts on the environment due to the Proposed Development for most of the environmental factors that have been considered.
- 6.1.2 The key exception to this is the socio-economics and health assessment. The primary concern of employment reduction following closure of the current steelworks has been addressed with redundancy packages and retraining programs. The Applicant is also committed to skills and learning, outplacement support, mental health support and reskilling and retraining to help the creation of new jobs. This would be funded by a £100 million Transition Fund. Notwithstanding this, the assessment has concluded that there would still be residual significant adverse effects.
- 6.1.3 The Proposed Development will result in beneficial impacts on multiple environmental factors. These are summarised as follows:
- **Air quality:** The transition to EAF technology significantly reduces emissions, improving local air quality.
  - **Biodiversity:** Great emphasis has been placed on habitat generation and re-generation being embedded into project design.
  - **Hydrology:** There would be a considerable reduction in the contamination and discharge volumes being released into Swansea Bay.
  - **Traffic:** Traffic volumes would decrease due to fewer heavy good vehicles movements.
  - **Climate change:** A significant reduction in GHG emissions would contribute to decarbonization and climate change goals.
- 6.1.4 The full content of the Environmental Statement, and associated information relating to the proposed scheme and the planning application, is available via the Neath Port Talbot public website at:

<https://beta.npt.gov.uk/planning-and-building-control/planning-applications/>

Note – this will be available after the planning application is formally submitted



## REFERENCES

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