Tata Steel UK – Port Talbot Steelworks

Document Reference:	Covering letter to accompany a substantial variation to Permit Number EPR/BL7108IM
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1. Purpose of this document

This non-technical summary accompanies the initial submission for a substantial variation to the environmental permit for Tata Steel's Port Talbot steelworks (permit number EPR/BL7108IM). It aims to inform Natural Resources Wales (NRW) about the strategic and operational context for the proposed changes and is intended to facilitate early engagement, internal triage and forward planning within NRW and to initiate discussions on regulatory expectations linked to the transformation of the site.

The submission supports Tata Steel's transition from traditional blast furnace-based steelmaking in the UK to an electric arc furnace (EAF) based operation. It outlines the anticipated changes in activities, emissions, infrastructure and permit boundaries, framed within the broader decarbonisation of Welsh heavy industry.

2. Nature and scope of the proposed changes

The proposed variation is significant and marks a complete transformation in steelmaking processes at Port Talbot. The key elements of the transition include the decommissioning of existing iron and steelmaking facilities, which had relatively high emissions of CO_2, dust, NO_x, SO_2 and other pollutants, introducing new, lower-emission technologies, and reconfiguring the operational footprint of the site. This initial submission does not include all the details that will be required for NRW to assess every aspect of the proposed changes – these details will follow in a series of further submissions focussed on different aspects of the overall transformation. An outline timetable of the future submissions is included in a separate document – the Engagement Plan.

2.1. Decommissioned activities

The following processes, associated with the former blast furnace-based steelmaking route, have already been decommissioned and will be removed from the permit:

- Unloading and handling iron ore
- Coke ovens
- Sinter plant
- Blast furnaces
- Basic Oxygen Furnaces
- On-site power generation units (Large Combustion Plant)

A complete list of the operations to be removed, including reference to the appropriate activities in the Environmental Permitting Regulations, will be submitted at a later date.

2.2. New activities

The following activities will be added to the permit:

- Electric arc furnace
- Ladle furnaces
- Materials handling system for EAF/LF additions
- Pickle line (to replace the existing pickle line)
- Acid regeneration plant
- Boilers and/or heaters
- Fume and effluent treatment plants

Further activities may also be proposed, for instance associated with processing of scrap steel or treatment of wastes arising from the new operations. All the new activities will be subject to separate submissions in the future when sufficient detail is available to undertake comprehensive risk assessments and assess each operation against appropriate technical standards.

2.3. Relocated and reconfigured activities

Due to the changes in operational footprint, some existing activities will be relocated to different parts of the site (though still within the current overall permit boundary). The scope of some of these activities may also change, as they were formerly focussed on returning valuable materials into the steelmaking cycle via the sinter plant, blast furnaces and/or oxygen steelmaking plant. The following activities will be affected:

- Processing and storage of internally-generated scrap
- Processing of millscale, sludges and dusts (Yard Zero)
- Processing of slag and other materials (HAA)

2.4. Other permit amendments

Further changes to the permit will include:

- An existing effluent treatment plant at the Cold Mill, currently regulated under a separate permit, will be consolidated into the main permit
- Some ring-fenced areas of the site currently under the control of contractors, under their own environmental permits, may be brought back under the operational control of Tata Steel
- New ring-fenced areas may be created for future contractor operations
- Areas of land outside the future operational footprint of the steelworks will be surrendered for other uses at an appropriate time in the future

3. Context and rationale

Tata Steel UK Limited (TSUK) and predecessor companies at Port Talbot have made steel by the blast furnace route for over a century. The original steelworks in the area began construction in 1901 and the complex was extended several times until the current Abbey Works opened in 1951. More recently, the pressures of transitioning to a net-zero CO_2 economy in Wales and the rest of the UK, increased demand for “green” steel from customers and society and the fact that the blast furnaces and other process plants were nearing the end of their effective life meant that TSUK engaged in extensive studies on the available options to transform steelmaking operations at the site in such a way as to remain economically and environmentally viable.

In September 2024, Tata Steel and the UK Government confirmed a joint investment package to secure a sustainable future for steelmaking in Port Talbot, modernise and decarbonise steel production and protect skilled jobs. Tata Steel committed to invest £1.25 billion, including a UK Government grant worth up to £500 million, in a new, state-of-the-art electric arc furnace (EAF) for greener steel production at Port Talbot; the EAF is expected to be commissioned in late 2027.

Blast furnaces use carbon (in the form of coal or coke) to convert iron ore (iron oxide) to metallic iron for further processing to make steel, but the carbon is ultimately emitted from the site as CO_2 and the Port Talbot steelworks was the UK's largest single industrial CO_2 emitter in recent years. Electric arc furnaces, on the other hand, use scrap steel as the primary raw material, supplemented with additional iron units, significantly reducing the amount of CO_2 emitted since the raw materials already contain metallic iron, rather than iron oxide.

CO_2 emissions for Wales for 2022 were 26.8 million tonnes, with the interim 2030 target set at 20.8 million tonnes. On average, between April 2019 and March 2024, Tata Steel's Port Talbot site contributed 6.3 million tonnes CO_2 per annum of direct and indirect (e.g. from generation of electricity imported to the site) emissions, excluding emissions from production of raw materials, which generally do not originate in the UK. Once the EAF is commissioned, emissions from steelmaking at Port Talbot, including from the associated electricity generation, will fall to under 0.8 million tonnes per annum. The reduction in CO_2 from the Tata Steel site, at nearly 5.5 million tonnes per annum, will thus contribute a large proportion of the overall CO_2 saving required for Wales to achieve the carbon budget set for 2030.

In addition to the climate change mitigation benefits, transitioning to electric arc steelmaking at Port Talbot will reduce emissions of many other pollutants from the site by eliminating the processes required to prepare the raw materials for the blast furnaces (coke ovens and sinter plant), as well as the blast furnaces themselves and the existing steel plant. The EAF to be built in Port Talbot will be fed continuously with scrap steel (a first-of-the-kind installation for the UK) rather than the conventional method of removing the furnace roof to drop in baskets of scrap at intervals; use of a continuous furnace will reduce dust emissions and noise compared to a conventional EAF of the same size. Overall, it is estimated that the future EAF-based steelworks at Port Talbot will emit around 90% less dust from chimneys than was emitted from the blast furnace-based site in 2023. In addition, the storage of large amounts of dusty materials such as coal and iron ore in open stockyards will no longer be necessary. Emissions of SO_2 are predicted to fall by 80% and NO_x emissions by 75% compared to the former steelworks.

This project also represents a broader shift to a circular economy model, using UK-sourced scrap steel, enabling more resilient supply chains, lower emissions and future compatibility with lower CO_2 raw materials such as hydrogen-based DRI.

4. Description of the proposed development

The new development will be located entirely within the existing industrial footprint of TSUK's Port Talbot site. At the heart of the new plant will be a Melt Shop containing:

- A single, state-of-the-art EAF with continuous scrap charging
- Two new ladle furnaces
- Two further secondary steelmaking vessels (RD degasser and CAS2), previously used in the former blast furnace-based steelworks, which will be recommissioned to serve the EAF
- Two continuous casters previously used in the former blast furnace-based steelworks, which will be recommissioned

Key supporting infrastructure to be built alongside the EAF will include:

- Materials handling systems for additions to the EAF and ladle furnaces
- A fume treatment plant to clean the off-gases from the furnaces
- Scrap offloading, storage and processing facilities
- Offices, control rooms and laboratories
- Substations and power infrastructure
- Upgraded internal roads, drainage and environmental protection systems

Landscaping and habitat restoration measures are also incorporated into the overall programme, supporting biodiversity and reducing visual impacts.

Planning permission for this development was granted by Neath Port Talbot Council in February 2025 after extensive consultation with a wide range of stakeholders, including NRW.

Alongside the EAF and associated infrastructure, there will also be investment at the Hot Mill and the Cold Mill to replace or modernise significant parts of these processes. This includes the provision of a new acid regeneration plant linked to the pickle line to further increase the circularity of Tata Steel's operations and reduce the amount of fresh acid brought onto the site by over 90%.

5. Transition timeline

The transformation of the Port Talbot site began during 2024, when the coke ovens, sinter plant, blast furnaces, steel plant and energy generation plants on the site were decommissioned. The mills and energy distribution remain in operation, processing purchased steel slabs and coil as an interim measure to ensure an uninterrupted and reliable supply of products to customers until steelmaking resumes on the site.

Engagement with NRW regarding the transformation, including discussion of the emission guarantees proposed by the suppliers of the EAF and other new plant, began in 2024. This initial submission for a substantial variation to the environmental permit has been submitted in May 2025 and a separate document, the Engagement Plan, outlines a timetable of future submissions focussed on different aspects of the overall transition.

Contracts have already been signed for the construction of most of the major components of the new EAF-based site, with some construction activities expected to commence later in 2025 and construction of the EAF itself in 2026. The EAF is expected to be commissioned late in 2027.

6. Permit boundary and control

As part of the transformation, changes are anticipated to the permitted site boundary and operational control arrangements. These may include:

- Consolidation of contractor-held permits for relevant activities
- Transfer of some ancillary processes (e.g. slag management) under TSUK or third-party control
- Progressive surrender of non-operational land as alternative uses are identified

These changes will be clarified through future submissions and supporting documentation.

7. Next steps and regulatory engagement

This document and the accompanying application forms are submitted as the first step in a phased permitting approach. They provide NRW with an overview of the project's scale and significance, allowing for early resource planning and engagement.

TSUK will follow this with:

- Further, more detailed submissions defining activities to be removed from the current permit and activities to be relocated
- Detailed descriptions of the proposed new activities, including comprehensive risk assessments and assessments against appropriate technical standards
- Air quality and noise assessments
- Updated monitoring proposals
- Changes requested to permit boundaries
- Revised site condition reports prior to surrender of any areas of land

It should be noted that as well as varying the site's main environmental permit (EPR/BL7108IM), the changes outlined in this document will also affect other regulatory regimes associated with, for instance, Greenhouse Gas emissions, radioactive substances and landfills. The separate Engagement Plan also includes an indication of submissions to be made under these other regulations.

Ongoing dialogue with NRW will ensure that environmental protection and regulatory compliance are embedded throughout this transformational project.