Natural Resources Wales permitting decisions

Review of an Environmental Permit under the Environmental Permitting (England & Wales) Regulations 2010 (as amended)

Variation and consolidation of a bespoke permit

We have decided to issue the variation for Port Talbot Steelworks operated by Tata Steel UK Limited.

The variation and consolidation number is EPR/BL7108IM.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

Purpose of this document

This is a decision document, which accompanies a variation notice being issued following a review of the permit.

It explains:

- **how** we have carried out our statutory review of the Operator's Permit;
- **why** we have decided to vary the Permit as a result of that review; and
- **why** we have included the specific conditions in the revised Permit through the variation notice we are issuing.

It is our record of our decision-making process, to show how we have taken into account all relevant factors in reaching our position.

This is a more complex variation than the norm, because it is doing three different things at the same time:

- **First**, it gives effect to our decisions following the statutory review of the existing Permit, following the implementation of the IED and the publication of BAT Conclusions covering the production of coke, iron & steel. That is what this variation is principally about.
- **Second**, it takes the opportunity to bring earlier variations into an up-to-date, consolidated Permit. These changes have already taken place and we are not re-explaining them, but the consolidated Permit should be easier to understand and use.
- **Third**, it modernises the entire Permit to reflect our current template. The template reflects our modern regulatory permitting philosophy and was introduced because of a change in the governing legislation. This took place when the Pollution Prevention and Control (England and Wales) Regulations 2000 were replaced in 2008 by a new statutory regime under

the Environmental Permitting Regulations 2010 (as amended in 2013) to effectively introduce the IED.

The introduction of new template conditions makes the Permit consistent with our current general approach and philosophy. Although the wording of some conditions has changed, while others have disappeared because of the new regulatory approach, it does not affect the level of environmental protection achieved by the Permit in any way. We therefore explain only the statutory review in this document.

Following the consultation carried out on the draft permit there have been minor changes made to the permit. These changes do not reduce any of the emission limits, the changes include:

- Additional Emission Limit Values (ELVs) and monitoring requirements during the Transitional National Plan. This includes:
  - Annual 95 percentile of daily mean monitoring and associated ELVs.
- Additional ELVs and monitoring requirements for the Industrial Emissions Directive. This includes:
  - Amendment for A50 ELV from 220 to 200 mg/m^3 for Monthly Mean release of Oxides of Nitrogen;
  - Daily mean ELVs and associated monitoring;
  - Annual 95 percentile of hourly mean monitoring and associated ELVs;
  - Requirement to monitor oxygen, water vapour, stack gas temperature, stack gas pressure and a flue gas homogeneity test;
  - Table for reporting annual limits during the TNP and IED.
- Emissions to air stack names updated for clarity.
- Additional interpretations added to Schedule 6.

To ensure the requirements of the Industrial Emissions Directive have been met a table has been inserted into the decision document referring to the relevant requirements and the associated condition in the permit.

Concurrent with this permit review we have considered an application for derogations from the applicant. This related to BAT Conclusion 26,48 and 49. Our decision and the reasons for it are included in this document.

Where we have granted a derogation, that derogation and the reasons for granting it , are also included in Annex 1 to the variation notice to the permit, as required by Article 15(4) of IED.

Structure of this document

- Key issues of the decision
- Combustion plants and associated ELVs

- Meeting the requirements of IED
- Annex 1 the decision checklist
- Annex 2 the consultation, web publicising and newspaper advertising responses
- Annex 3 PPD consultation responses
- Annex 4 Regulation 60 response received

Key issues of the decision

BAT Conclusions for the Production of Iron & Steel, which includes coke making activities, were published as a Commission Implementing Decision (2012/135/EU) in the Official Journal of the EU on 8 March 2012. There are 95 BAT Conclusions. This annex provides a record of decisions made in relation to each relevant BAT Conclusion applicable to the installation. This annex should be read in conjunction with the permit/variation notice issued.

A detailed response was received from Tata Steel UK Limited and has been included as annex 4 to the decision document. Where the Operator has concluded that they have achieved BAT, and we are in agreement, no further information / justification has been sought by Natural Resources Wales. Annex 4 provides the justification for achieving the relevant BATc and has not been reproduced in the 'Key issues' section.

Where Natural Resources Wales did not agree with the conclusions reached by the Operator, or where Natural Resources Wales required additional information / justification, an additional request for information was sent to Tata Steel UK Limited. These are listed in this section with the additional justification received as well as an explanation of how Natural Resources Wales has assessed this, and where necessary, amend the permit to ensure compliance with the BAT conclusions.

BAT conclusion 4

BAT conclusion overview: BAT is to use desulphurised and dedusted surplus coke oven gas and dedusted blast furnace gas and basic oxygen gas (mixed or separate) in boilers or in combined heat and power plants to generate steam, electricity and/or heat using surplus waste heat for internal or external heating networks, if there is a demand from a third party.
Reason for requesting additional information
More justification to ensure BAT is achieved.
Additional information received
All the process gases are dedusted before use, but coke oven gas (COG) is not currently desulphurised. It is intended to install a COG desulphurisation plant to treat all the gas arising from Morfa coke ovens, but this will not be operational before March 2016. The expected timescales and the justification for continuing to operate the coke ovens without COG desulphurisation are detailed in the accompanying derogation argument with respect to BAT 48. Given that undesulphurised COG will be generated, the best environmental option is to use that gas to reduce primary energy consumption in reheating furnaces, to enrich blast furnace gas and to use any surplus COG in boilers to generate steam and

electricity for internal use. The alternative would be to flare the surplus COG, which would generate the same SO_2 emissions as burning it in boilers, but without the benefit of producing steam and electricity and hence reducing consumption of primary fuels.
How NRW has addressed this BAT conclusion
BAT has been considered to be achieved and NRW are satisfied with the additional information received. BATc 48 ensures that COG will be fully utilised.

BAT conclusion 9

BAT conclusion overview: BAT is to maximise external use or recycling for solid residues which cannot be used or recycled according to BAT 8, wherever this is possible and in line with waste regulations. BAT is to manage in a controlled manner residues which can neither be avoided nor recycled.
Reason for requesting additional information
BAT refers to the use of waste BOS residues in the agricultural industry to improve soil. NRW agree that the BATc has been achieved. Before the BOS residues is used off site the Operator must demonstrate that it meets the relevant criteria to be spread onto land. Additional information required with regard to the use of the solid residues.
Additional information received
The use of mill residues within the 'Lego' blocks is still subject to the outcome from discussions with the NRW and the have detail yet to be finalised. BOS slag is currently sold to a third party and is not spread on land by the TATA itself. EMS to be updated in line with this as well as the operating techniques.
How NRW has addressed this BAT conclusion
BAT has been considered to be achieved and NRW will continue to have discussions with TATA as and when opportunities arise for recycling.

BAT conclusion 10

BAT conclusion overview: BAT is to use the best operational and maintenance practices for the collection, handling, storage and transport of all solid residues and for the hooding of transfer points to avoid emissions to air and water.
Reason for requesting additional information
To understand and agree the approaches proposed by Tata.
Additional information assessment
The EMS will be updated in line with the response to improvement condition 1 that ensures compliance by 2016 as well as being incorporated into the operating techniques.
How NRW has addressed this BAT conclusion
To be incorporated through IC with associated timelines to demonstrate compliance by 2016.

BAT conclusion 11

BAT conclusion overview: BAT is to prevent or reduce diffuse dust emissions from materials storage, handling and transport by using one or a combination of the techniques mentioned.
Reason for requesting additional information
Response to BATc states that BAT is achieved for all the sub categories but overall BAT is not achieved. Improvement Condition will determine how it will be achieved by 2016.
Additional information assessment
The EMS will be updated in line with the response to the improvement condition as well as being incorporated into the operating techniques and the fugitive emissions plan.
How NRW has addressed this BAT conclusion
To be incorporated through IC with associated timelines to demonstrate compliance by 2016.

BAT conclusion 14

BAT conclusion overview: BAT is to measure the stack emissions of pollutants from the main emission sources from all processes included in the Sections 1.2 – 1.7 whenever BAT-AELs are given and in process gas-fired power plants in iron and steel works.
Reason for requesting additional information
To ensure the appropriate monitoring is in place in line with the requirements of the BATc.
Additional information assessment
The permit will be modified to reflect the requirements of monitoring for the relevant emissions.
How NRW has addressed this BAT conclusion
To be incorporated through IC with associated timelines to demonstrate compliance by 2016.

BAT conclusion 15

BAT conclusion overview: For relevant emission sources not mentioned in BAT 14, BAT is to measure the emissions of pollutants from all processes included in the Sections 1.2 – 1.7 and from process gas-fired power plants within iron and steel works as well as all relevant process gas components/pollutants periodically and discontinuously. This includes the discontinuous monitoring of process gases, stack emissions, polychlorinated dibenzodioxins/furans (PCDD/F) and monitoring the discharge of waste water, but excludes diffuse emissions (see BAT 16).
Reason for requesting additional information
Emissions to air What are the proposals for ongoing monitoring of mercury? **Emissions to water** An approach for the monitoring of emission to water needs to be agreed. The permit will require monitoring and compliance with the ELVs from 2016.
Additional information assessment
BAT achieved for emissions to air

Surrogate monitoring is not proposed as no such method currently exists and a significant amount of data would have to be generated to produce a reliable, “calibrated” surrogate parameter. Future compliance will be demonstrated by routine monitoring at Port Talbot if this requirement is included in the revised Environmental Permit. For emissions to water the monitoring table has been amended and will require compliance from 2016.
How NRW has addressed this BAT conclusion
To be incorporated through IC with associated timelines to demonstrate compliance by 2016.

BAT conclusion 16

BAT conclusion overview: BAT is to determine the order of magnitude of diffuse emissions from relevant sources by the methods mentioned below. Whenever possible, direct measurement methods are preferred over indirect methods or evaluations based on calculations with emission factors.
Reason for requesting additional information
To understand and quantify diffuse emissions from the installation.
Additional information assessment
The scope will be sent to NRW with the agreed timescales as set out in the associated improvement condition.
How NRW has addressed this BAT conclusion
To be incorporated through IC with associated timelines to demonstrate compliance by 2016.

BAT conclusion 17

BAT conclusion overview: BAT is to prevent pollution upon decommissioning by using necessary techniques.
Reason for requesting additional information
To understand how Tata will undertake any future decommissioning works.

Additional information assessment
Any future decommissioning at the site will follow BAT requirements in effect at that time. Tata have successfully decommissioned Blast Furnace 4 and have an established site closure toolkit.
How NRW has addressed this BAT conclusion
BAT has been considered to be achieved and NRW are satisfied with the additional information received.

BAT conclusion 18

BAT conclusion overview:
BAT is to reduce noise emissions from relevant sources in the iron and steel manufacturing processes by using one or more of the following techniques depending on and according to local conditions.
Reason for requesting additional information
To ensure that the existing improvement condition is complied with.
Additional information assessment
BAT not achieved but Tata is undertaking ongoing work to assess noise sources against BAT.
How NRW has addressed this BAT conclusion
To be incorporated through IC 10 and submitted within 3 months of permit issue to ensure compliance with the BATc.

BAT conclusion 20

BAT conclusion overview:
BAT for primary emissions from sinter plants is to reduce dust emissions from the sinter strand waste gas by means of a bag filter.
Reason for requesting additional information
To ensure the requirement will be in place at the sinter plant by 2016.
Additional information assessment

The scope will be sent to NRW with the agreed timescales as set out in the associated improvement condition.
How NRW has addressed this BAT conclusion
To be incorporated through IC with associated timelines to demonstrate compliance by 2016

BAT conclusion 21

BAT conclusion overview: BAT for primary emissions from sinter strands is to prevent or reduce mercury emissions by selecting raw materials with a low mercury content (see BAT 7) or to treat waste gases in combination with activated carbon or activated lignite coke injection.
Reason for requesting additional information
To understand how emissions of mercury are reduced / prevented.
Additional information assessment
The mercury content of raw materials is measured and if found to be significantly higher than normal, an assessment of the potential impact on emissions from the sinter plant can be undertaken, taking into the account the proportion of the material in the blend. Emission concentrations at Port Talbot ranged from 0.012 to 0.018 mg/m^3 when measured in 2006, which is well below the BAT-AEL.
How NRW has addressed this BAT conclusion
BAT has been considered to be achieved and NRW are satisfied with the additional information received.

BAT conclusion 24

BAT conclusion overview: BAT for primary emissions from sinter strands is to prevent and/or reduce emissions of polychlorinated dibenzodioxins/furans (PCDD/F) and polychlorinated biphenyls (PCB).
Reason for requesting additional information

To understand further how emissions of PCDD/F and PCB from sinter strands will be reduced / prevented.
Additional information assessment
Over 30 samples of the raw input material of sinter feedstock have been analysed for dioxins by Tata Steel. All the results were extremely low with a mean value of 0.11 ng I-TEQ/kg and were in the range 0.005 to 1.8 ng I-TEQ/Nm3. These low results indicate that there is no significant input of dioxins into the process, and that dioxins are formed at ultra-low concentrations at elevated temperatures within the process itself. Typical results from trials have been published by Tata Steel and these papers are listed below and are have also been submitted *SOURCES OF DIOXINS IN THE UNITED KINGDOM: THE STEEL INDUSTRY AND OTHER SOURCES, David R. Anderson, Raymond Fisher, Chemosphere 46 (2002) 371–381* *INVESTIGATION OF THE FORMATION OF DIOXINS IN THE SINTERING PROCESS, R.FISHER, D.R.ANDERSON and T.A.T.FRAY, ICST / Ironmaking Conference Proceedings,* *1998, 1183-1193.* *DIOXIN FORMATION AND SUPPRESSION IN IRON ORE SINTERING IN THE UK STEEL INDUSTRY, David R. Anderson Raymond Fisher (Corus R,D&T, Rotherham, UK)* *Derek Hemfrey, Trevor A.T. Fray; International Symposium on Global Environment and Steel Industry (ISDES'03); Beijing, China; October 28 – 30, 2003.*
How NRW has addressed this BAT conclusion
BAT has been considered to be achieved and NRW are satisfied with the additional information received.

BAT conclusion 25

BAT conclusion overview: BAT for primary emissions from sinter strands is to reduce emissions of polychlorinated dibenzodioxins/furans (PCDD/F) and polychlorinated biphenyls (PCB) by the injection of adequate adsorption agents into the waste gas duct of the sinter strand before dedusting with a bag filter or advanced electrostatic precipitators when bag filters are not applicable.
Reason for requesting additional information
To ensure the requirement will be in place by 2016.
Additional information assessment

The scope will be sent to NRW with the agreed timescales as set out in the associated improvement condition.

How NRW has addressed this BAT conclusion

To be incorporated through IC with associated timelines to demonstrate compliance by 2016.

BAT conclusion 26

BAT conclusion overview:

BAT for secondary emissions from sinter strand discharge, sinter crushing, cooling, screening and conveyor transfer points is to prevent dust emissions and/or to achieve an efficient extraction and subsequently to reduce dust emissions.

Reason for requesting additional information

Derogation sought by Tata Steel UK Limited.

Additional information assessment

Submitted response below

Current techniques and emission levels

Hoods and enclosures achieve efficient extraction of secondary dust from sinter plant operations and an electrostatic precipitator is currently used to reduce dust emissions. Over the period 1st September 2013 to 1st September 2014, the continuous emission monitor on the stack showed a maximum daily mean dust concentration of 48.7 mg/Nm³, which exceeds the level associated with BAT. Emissions are not continuously as high as 48.7 mg/Nm³, and for the majority of the time the BAT-AEL is achieved, but nevertheless the monitoring results demonstrate that emission control needs to be improved.

The highest measured volume flowrate at the sinter plant dedust stack is 835,200 Nm³/hr on a dry basis, and taking the worst-case of emissions at 48.7 mg/Nm³ would give a dust emission rate of 976 kg/day. It is estimated that only 46% of the dust emitted from the stack is below 10 µm aerodynamic diameter, and hence the worst-case PM_{10} emission rate is 449 kg/day.

Impact of current emissions

Dispersion modelling has been undertaken to assess the impact of the estimated dust emissions from the sinter plant dedust stack at Port Talbot. Ground level concentrations have been predicted at the local authority monitoring station at the

Fire Station and the results, along with the relevant Air Quality Standards for PM_{10}, are:

- 90.4th percentile of daily means = 3 ug/m^3, AQS = 50 ug/m^3
- Annual mean = 0.87 ug/m^3, AQS =40 ug/m^3

Therefore the current emissions from this source despite not meeting the BAT-AEL for dust, contribute only around 2% of the long term air quality standard for PM_{10} and 6% of the short-term PM_{10} AQC at the monitoring station.

Potential pollution abatement through achieving BAT

For the purposes of this assessment, it is assumed that when the BAT-AEL for sinter plant secondary dedusting is achieved through refurbishment or replacement of the existing electrostatic precipitator, the mean dust concentration in the emission will be reduced to 20 mg/Nm^3. On this basis the emissions would fall to 401 kg total dust/day and 184 kg PM_{10}/day.

If the sinter plant stop to install a new sinter cooler, during which the required improvements to emission control from secondary dedusting would also be implemented, commences at the end of September 2016, then emissions may exceed the BAT-AEL for a period of nearly seven months and a worst-case assessment (dust concentrations and volume flows continuously at the maximum recorded values) is that this could result in additional dust emissions of:

1. (976 - 401) x 7 x 30 / 1000 = 121 tonnes total dust
2. (449 - 184) x 7 x 30 / 1000 = 56 tonnes PM_{10}

The true impact of delaying implementation of BAT 26 will be less than this, as even with the existing equipment the BAT-AEL is achieved for the majority of the time.

Relevant technical characteristics of the sinter plant

Although it is technically feasible to improve sinter plant dedusting emissions before March 2016 in order to achieve BAT, this would require stopping the sinter plant for a period of several weeks in early 2016. It is already planned to have a lengthy sinter plant stop later in 2016 in order to install a new sinter cooler – this stop cannot be brought forward due to the lead time for the sinter cooler scheme.

Any prolonged planned interruption to sinter plant operations requires increased sinter production prior to the stop, with excess sinter being stockpiled to maintain blast furnace production during the stop. Stockpiling and reclaiming sinter is a source of diffuse dust and increased sinter production rates may lead to increased emissions from both the dedusting stack and sinter plant main stack. Although these increased emissions have not been quantified, the potential reduction in sinter plant dedusting emissions by implementing improved abatement by march 2016 would at least be partially offset by the increased emissions as a result of two lengthy sinter plant stops during 2016, compared to only one stop if the sinter plant dedust scheme is delayed to coincide with the installation of a new sinter cooler.

Cost of achieving BAT in March 2016 rather than October 2016

The cost of an additional two-week sinter plant stop to achieve BAT by March 2016, rather than synchronising this with the already planned stop comprises:

1. Additional stocking costs as sinter stocks are increased prior to the stop
2. Additional costs of increased pellet consumption during the stop, since it is not possible to build up sufficient sinter stocks to fully supply the blast furnaces for the whole stop period

The overall additional cost is estimated to be just over £3 million at present prices, which would be incurred in 2016. Applying a discount factor of 3.5% and neglecting inflation means that the Net Present Cost of the additional stop would be £2.8M.

Other factors

In normal operation, the majority of the sinter produced is transported directly to the blast furnaces through a system of covered conveyors. Stocking of sinter prior to a stop period and reclaiming of the sinter during the stop will produce additional dust from materials handling operations. The amount of dust produced from an extra stop period has not been quantified, but would reduce the effective benefit of implementing BAT in March 2016 rather than October 2016.

Cost-benefit analysis

The PM_{10} abatement cost can be calculated by dividing the Net Present Cost of implementing BAT 26 in March 2016 rather than October 2016 by the amount of PM_{10} that would be abated by earlier implementation. On this basis, the effective abatement cost would be at least £50,800 per tonne PM_{10} abated.

One means of assessing whether achieving BAT would lead to disproportionately higher costs compared to the environmental benefits is to compare the abatement cost calculated above to the marginal external cost attributable to each additional tonne of pollutant emitted (the damage cost). No definitive set of damage costs exists, but a report[1] by Eunomia consultants undertaken for the Environment Agency in 2012 suggested a value of €16,443 per tonne PM_{10} (at 2010 prices). Using an exchange rate of €1=£0.815 and increasing the value by 2½% per annum to account for inflation and by a further 2% per annum to account for increased willingness to pay, as recommended in a report[2] from the UK Interdepartmental Group on Costs and Benefits, gives a damage cost of around £16,000 at 2014 prices.

Conclusions

The effective abatement cost of achieving BAT for secondary dedusting at the sinter plant in March 2016, rather than the proposed date of October 2016, is at least £50,800 per tonne PM_{10}. The damage cost of PM_{10} is £16,000 per tonne, and hence implementation of BAT in March 2016 is disproportionately costly compared to the environmental benefits. The relevant technical characteristic giving rise to this disproportionately high cost is the practicability of interrupting the activity so as to install improved emission control.

On this basis, Tata Steel's intended delay in implementation of BAT until October 2016 meets the criteria for a time-limited derogation from achieving the relevant BAT-AEL.

How NRW has addressed this BAT conclusion

NRW assessment

Is the technology proposed, BAT?

BAT 26 allows the use of electrostatic precipitators (ESP) or a bag house. Tata have chosen the use of ESP as the technology is currently used on site.

Article 15 (4) tests

Is there a cost benefit analysis?

Yes

Are there geographical or local environmental reasons for derogation?

No geographical reasons have been identified for derogation from BAT 26

Are there technical reasons for derogation?

Yes there are technical reasons.

In order to achieve BAT 26 the sinter plant has to be shut down for a period, the shutdown of the sinter plant involves the over production of sinter in the time running up to the shutdown and the stockpiling of sinter in order to maintain iron production. Whilst the dust emissions from the sinter plant will be constrained by the current ELV, the additional stockpiling of raw material and sinter product will produce additional fugitive emissions which cannot be entirely quantified; this assertion is based on historic impacts during the stockpiling of additional materials on site. The sinter plant has to shut down in December 2016 in order to replace sinter coolers, this work cannot be brought forward as the coolers will not be available until that time. Shutting down the plant twice in one year will cause operational difficulties, concentrate the sinter production and result in additional stockpiling increasing the adverse effect on air quality.

If we allow the derogation will there be a breach of Environmental Quality Standard?

Port Talbot has an Air Quality Management area for PM_{10}

1 "Review of the Mineral Oil and Gas Refining BREF - Proposed Approach to Using CBA to Determine BAT Conclusions and BAT-AELs", Eunomia research and consultants, October 2012

2 "Air Quality Appraisal – Damage Cost Methodology", February 2011, www.gov.uk/government/uploads/system/uploads/attachment_data/file/182391/air-quality-damage-cost-methodology-110211.pdf

The European Air Quality Standard places a limit of 50ug/m^3 as a daily mean, allowing no more than 35 exceedance days in any one year. For 2013 there were 15 breaches at the official monitoring point.

There will be other improvements on the site to control dust in the period leading to 2016, the impact of this release point has been shown to contribute around 2% of the long term air quality standard and 6% of the short term PM_{10} AQS. The current standards will be maintained in the interim therefore there will be no breach of environmental quality standard from this source.

Does the derogation breach any applicable limit in the Annexes to the Directive?

The limits in the Annexes to the Directive do not apply to this source.

Will the derogation result in any significant pollution?

No significant pollution will be caused, see explanation on contribution of this source to the overall air quality under impact of emissions above

There is currently no significant pollution coming from this source, however there is a small contribution to the PM_{10} emission from the site as a whole.

Is a high level of environmental protection achieved?

As the emissions from the site as a whole are reducing and the current standards will be maintained in the interim then a high level of protection is achieved.

Does the cost benefit analysis use recognised figures for harm where they exist?

NA

Is the derogation time limited?

The derogation is for a period of 7 months, the additional load to the environment is circa 56 tonnes of PM_{10}, this will have an insignificant impact on the Air quality management zone.

Does the cost benefit analysis use costs that can be verified.

The costs are consistent with those mentioned in the Bref, however the improvements of the ESP system in Port Talbot are site specific and therefore the costs involved are unique. NRW are of the opinion that the costs quoted are reasonable.

NRW statement

NRW accept the quoted costs of an additional £3 million for achieving BAT by March 2016 are accurate.
The derogation will be for a period of 7 months.
In the cost benefit assessment NRW have not considered inflation as it would be insignificant over the timescale of the derogation.

In the assessment NRW have used costs quoted on the .gov.uk website in the guidance on Air Quality: Economic analysis. The cost per tonne of PM_{10} for industrial sources is quoted as £25229.

The delay in complying with the BAT will result in an additional 56 Tonnes of PM_{10} being released to the environment.

The benefit costs would equate to ((7/12)*25,229)*56 = circa £809,000

The costs of bringing the project forward by 7 months therefore would be 3.5 time higher than the benefits achieved.

NRW consider this disproportionate in this case.

NRW recommendation

NRW agree that the technical reasons for the derogations are valid. Article 15(4) states that a derogation may apply **only** where an assessment shows that achieving the AEL's would lead to disproportionally higher costs compared to the environmental benefits.

NRW are satisfied that there are disproportionally higher costs compared to the environmental benefits.

The derogation request for BAT 26 is approved on the grounds that it meets the criteria for derogation as stated in Article 15(4) of the Directive.

BAT conclusion 29

BAT conclusion overview: BAT is to prevent waste generation within sinter plants.
Reason for requesting additional information
More information required on how Tata will reduce the amount of chlorine in the waste.
Additional information assessment

Due to current plant configuration, techniques to reduce chlorine in recycled back into the sinter plant are being explored in the form of washing material containing chlorine either by means of a hydrocyclone or lamella system whichever gives the best option.
How NRW has addressed this BAT conclusion
BAT has been considered to be achieved and NRW are satisfied with the additional information received.

BAT conclusion 32

BAT conclusion overview: BAT is to reduce thermal energy consumption within sinter plants.
Reason for requesting additional information
Further information required to ensure compliance to the BATc.
Additional information assessment
The sinter cooler up grade project is currently part of Tata's capital plan (subject to full approval) and is being technically evaluated at this time. 3 potential suppliers have been consulted with heat recovery (steam and hot water generation) as an option. A feasibility study of the options will then be carried out.
How NRW has addressed this BAT conclusion
To be incorporated through IC with associated timelines to demonstrate compliance by 2016

BAT conclusion 42

BAT conclusion overview: BAT for coal grinding plants (coal preparation including crushing, grinding, pulverising and screening) is to prevent or reduce dust emissions.
Reason for requesting additional information
The BATc has an AEL but there appears to be no stack associated with the process..
Additional information assessment
There is not a point source emission related to coal grinding dust therefore the ELV is not applicable

How NRW has addressed this BAT conclusion
BAT has been considered to be achieved and NRW are satisfied with the additional information received.

BAT conclusion 44

BAT conclusion overview:
BAT is to charge coke oven chambers with emission-reduced charging systems.
Reason for requesting additional information
Further detail needed on approach to meet BAT including charging technique.
Additional information assessment
A working group including all the UK coke oven operators is collecting data on assessing visible emissions. Representatives from all sites have attended a training session to ensure a standard approach and procedures will be developed that will allow comparison with the BAT-associated standard.
How NRW has addressed this BAT conclusion
To be incorporated through IC3 with associated timelines to demonstrate compliance.

BAT conclusion 46

BAT conclusion overview:
BAT for coke plants is to reduce the emissions through achieving continuous undisrupted coke production by using the following techniques.
Reason for requesting additional information
Further information required to ensure compliance to the BATc.
Additional information assessment
A working group including all the UK coke oven operators is collecting data on assessing visible emissions. Representatives from all sites have attended a training session to ensure a standard approach and procedures will be developed that will allow comparison with the BAT-associated standard.
How NRW has addressed this BAT conclusion

To be incorporated through IC3 with associated timelines to demonstrate compliance.

BAT conclusion 47

BAT conclusion overview: BAT for the gas treatment plant is to minimise fugitive gaseous emissions.
Reason for requesting additional information
Verification required for demonstrating compliance with this BATc.
Additional information assessment
P&ID drawings to indicate that majority of pipework is welded with flanges for valves and equipment. Gaskets are used in valves to ensure appropriate sealing. Some flanges have asbestos gaskets, but are being replace be Gaskoid jointing some information about this is shown below *Description:* *Economical cellulose-based material impregnated with plasticised gelatine. It is brown in colour with a smooth finish.* *Typical applications* *Predominantly used in the automotive sector as a gasket material for carburettors, fuel and oil pumps, gear casings and pipeline flanges. It is ideal for use at low bolt loadings.* *Chemical properties* *Excellent resistance to fuels, oils and most organic solvents.* *Service capabilities* *Maximum operating pressure : 1MPa/10bar* *Operating temperature range : -20°C to +120°C.* There are no over pressure relief valves on the Coke Oven Gas cleaning system- the design did not include this. There is a minor system over pressure system within the Benzol plant which uses a similar method where vessels recycle gas back to the suction side of the exhauster.
How NRW has addressed this BAT conclusion
BAT has been considered to be achieved and NRW are satisfied with the additional information received.

BAT conclusion 48

BAT conclusion overview: BAT is to reduce the sulphur content of the coke oven gas (COG).
Reason for requesting additional information
Derogation sought by Tata.
Additional information assessment
In this case, the costs of achieving BAT are focussed only on the costs between now and March 2019 (the assumed date by which a new coke ovens with COG desulphurisation could be operational). The longer-term picture previously presented, taking into account the likely remaining life of the existing plant, has not been considered here. Two scenarios have been assessed: **The BAT AEL compliance scenario** 1. Cease coke production at Port Talbot in March 2016; rebuild the coke plant to incorporate coke oven gas desulphurisation and in the interim purchase coke from external suppliers and additional natural gas. This scenario avoids producing coke oven gas with an H_2S content greater than the BAT-associated emission level after March 2016. **The derogation Scenario** 2. Continue to operate the existing plant without coke oven gas desulphurisation until March 2018, but then install a desulphurisation unit to treat the gas arising. Although at a later date the coke ovens would be rebuilt within the normal investment cycle, this cost has not been considered in the assessment as it falls outside the timescales of the required derogation. This alternative would result in greater SO_2 emissions than achieving BAT, but would be less costly. **Net Present Cost** The Net Present Cost (i.e. the cost at 2014 prices, taking into account both capital and operating costs) of each of these options has been estimated. **Scenario 1:** The cost of meeting BAT is based on the following assumptions: • A new coke plant incorporating coke oven gas desulphurisation would be built, to become operational in March 2019

- The capital cost of the new coke plant would be £250M
- 25% of the capital cost would be incurred in the year when the plant started operation, 50% in the previous year and 25% in the year before that
- There would be no overall change in operating costs, manning, maintenance costs or revenues for the new plant compared to the existing plant, other than the additional costs for COG desulphurisation
- Whilst the new coke plant is being built, 913,000 tonnes of coke would be bought each year (based on 2013 production)
- The cost of purchasing coke from external suppliers, purchasing additional natural gas and loss of revenue from by-products sales would be equivalent to £20 per tonne coke compared to maintaining coke production on site

On this basis, the Net Present Cost of scenario 1 over the period from now up to March 2018 would be £308M.

Scenario 2: The cost of the proposed option of retrofitting coke oven gas desulphurisation to the existing coke plant has been assessed based on the following assumptions:

- The COG desulphurisation plant would become operational in March 2018
- The capital cost of the COG desulphurisation plant would be £26.6M
- 25% of the capital costs would be incurred in the year when the plant started operation, 50% in the previous year and 25% in the year before that
- The net operating costs would be £5.38M per annum

On this basis, the Net Present Cost of scenario 2 from now up to March 2018 would be £35.3M.

SO_2 emissions

The additional SO_2 emissions arising from the proposed scenario 2 are 2,089 tonnes per annum greater than could be achieved through implementation of BAT, but since the derogation is only required for two years, this amounts to 4,177 tonnes SO_2 overall.

Cost-benefit analysis

The effective SO_2 abatement cost of achieving BAT can be calculated by dividing the difference between the Net Present Cost of the two options by the amount of SO_2 that would be abated by earlier installation of coke oven gas desulphurisation.

Thus the effective SO_2 abatement cost of achieving BAT would be (308-35.3) $x10^6/4,177$ = £65,286 per tonne SO_2 abated.

Sensitivity analysis

Because of the uncertainty of the cost of buying coke and natural gas whilst the ovens were being rebuilt, the sensitivity of the SO_2 abatement cost to this value has been assessed:

If the cost is £20/tonne coke, the cost to achieve BAT = £65,286 per tonne SO_2

If the cost is £10/tonne coke, the cost to achieve BAT = £59,393 per tonne SO_2

If the cost is £40/tonne coke, the cost to achieve BAT = £77,050 per tonne SO_2

Because of the uncertainty of the capital cost of a new coke plant, the sensitivity of the SO_2 abatement cost to this value has been assessed:

If the cost is £250M, the cost to achieve BAT = £65,286 per tonne SO_2

If the cost is £200M, the cost to achieve BAT = £52,887 per tonne SO_2

If the cost is £300M, the cost to achieve BAT = £77,670 per tonne SO_2

How NRW has addressed this BAT conclusion

NRW assessment

Article 15 (4) Tests

Is there a cost benefit analysis

Yes: Full cost benefit analyses has been submitted

Are there geographical or local environmental reasons for derogation?

No geographical or local environmental reasons have been listed.

Are there technical reasons for derogation?

Yes: The age of existing plant, meaning that retrofitted pollution abatement equipment would have a more limited operational life, significantly increasing costs

The installation of coke oven gas de-sulphurisation lies outside the normal investment cycle for the plant.

The requirement to improve tar and ammonia removal to ensure effective operation of the de-sulphurisation plant increase the capital cost of the project.

Does the derogation breach any applicable limit in the Annexes to the Directive?

Coke ovens are combustion units but are specifically excluded from Chapter III the special provisions for combustion plants and Annex V by virtue of Article 28[3].

If we allow the derogation will there be a breach of Environmental Quality Standard

The current emission levels will remain, there is currently no breach of EQS for SO_2 and therefore allowing the derogation will not result in a breach of EQS.

Will the derogation result in any significant pollution?

The current emission limit values will be maintained throughout the period of the derogation. The current emission limit values have been set to be protective of the environment and not result in significant pollution. No significant pollution will occur as a result of the derogation.

Is a high level of environmental protection achieved?

The current emission limit values and other permit requirements will remain throughout the period of the derogation. The EPR permits are designed to ensure a high level of environmental protection is achieved.

NRW statement

NRW has assessed the costs and benefits of closing the coke oven at Port Talbot in March 2016 and rebuilding it against the costs and benefits of a retrofitting scenario in 2018, utilising a derogation for the two year period. The cost-benefit used Capital Expenditure (CAPEX) and Operational Expenditure (OPEX) estimates on annual bases supplied by Tata, cumulative interest on Weighted Average Cost of Capital (WACC) and Green Book (Government Guidance to the Treasury) compliant discounting factors with a base year of 2014.

Analysis limited solely to the 2016 to 2019 period would indicate that discounted costs under the closure / rebuild scenario were around 8.5 times those associated with the retrofitting scenario. This broadly confirmed Tata's own Net Present Costs.

The difference between the two scenarios in discounted costs terms was then set against the potential environmental benefits over the 2016 -2019 period.

As its central estimation NRW has taken the highest valuation of sulphur dioxide and has applied both a regional adjustment factor and a price weighting to deal with inflation since the estimates were made. Taking the highest valuation for a pollutant is considered a screening stage; if the cost benefit fails other internationally agreed valuations can be used in order to properly asses the submission.

[3] List of combustion plants to which Chapter III on Special provisions for combustion plants does not apply.

Discounted benefits are outweighed by discounted costs some nine-fold (Benefit Cost Ratio (BCR) 0.11). When the calculation is reworked using the central DEFRA estimate of SO_2 valuation, the BCR falls further to 0.04 on account of the discounted aggregate benefits being lower.

We have only looked at derogating for a period of three years as Tata will be able to meet the new limit in 2019.

However, at some point the capital will have to be replaced. This would be done at a more usual point in Tata's investment cycle. Clearly, analysis limited solely to the 2016-2019 period takes no account of this.

Nevertheless the entire costs over a three year replacement 2024-2026 have been factored in on a discounted basis. The expenditure figures used for this period are those supplied earlier as part of an initial package of scenario information from Tata over and above the usual operation costs for that period which were deducted from the supplied costs for the years. The early (2026) scenario has been taken rather than either 2031 or 2036 as discounted costs will weigh heavier under this scenario.

NRW has sensitivity tested this addition to the model by replacing the supplied costs with the full closure / rebuild costs shifted down the line and appropriately discounted. Under none of these scenarios does the 2016 closure option have a BCR of greater than 0.53 when the baseline option is the retrofitting alternative. Therefore, unless further information to the contrary is supplied, it would appear that the closure / rebuild scenario is an inefficient allocation of resources in terms of its returns in environmental benefits and that a derogation to 2019 could be allowed.

Is the derogation time limited?

Yes the derogation will be until March 2018

Does the cost benefit analysis use recognised figures for harm where they exist?

The cost of harm used by NRW in the evaluation of this derogation was the Eunomia figure for SO2, this figure is the highest cost of harm available and is used as a conservative screen.

Does the cost benefit analysis use costs that can be verified?

The BREF document states the following

'Economics
Typical operating and capital costs for the desulphurisation of 42000 Nm3/h coke oven gas containing 6 g/Nm3 H2S and 6 Nm3 NH3 of the two main types of coke oven gas desulphurisation techniques used in Europe (ASK and Stretford) are given in Table 5.18. It was reported that an increase in desulphurisation efficiency from 95 to 99.9 % in the Stretford process only costs 10 % extra. In the Stretford process, the most important operating costs items are the capital charges and the chemicals (see

Table 5.18). Coke oven gas with high HCN concentrations (>2 g/Nm3) consumes relatively large amounts of chemicals. In this case it might be beneficial to install an HCN prewash before the Stretford unit.
Implementing the gas desulphurisation technique costs around EUR 30 million (capital cost) in a coke oven plant with about a hundred ovens (ArcelorMittal).'

NRW recommendation

The derogation from BAT 48 should be allowed until March 2018. Following the installation of Coke Oven Gas desulphurisation, the BAT conclusion concentration of H_2S[4] applicable to the technology used will have to be met.

BAT conclusion 49

BAT conclusion overview:
BAT for the coke oven underfiring is to reduce the emissions
Reason for requesting additional information
Derogation sought by Tata.
Additional information assessment
Coke Oven Gas is not currently desulphurised at Port Talbot, SO2 is currently controlled by the use of low-sulphur coking coals, this does not achieve the same level of environmental protection as desulphurised coke oven gas. However in normal operation the gas used for underfiring at Port Talbot is predominately Blast Furnace gas which is inherently low in sulphur, only a proportion of coke oven is gas added to elevate the calorific value and in this situation the BAT-AEL is not exceeded. This cannot be achieved until coke oven desulphurisation is complete.
How NRW has addressed this BAT conclusion
BAT 49 is linked to BAT 48 above, the use of coke oven gas for under firing can only be done when the coke oven gas is desulphurised. There is no breach of BAT AEL as the Coke Oven Gas is not used for underfiring at Port Talbot and therefore we do not need to issue a derogation from the BAT AEL. It is the opinion of NRW that using coke oven gas to under fire is BAT for standalone coke ovens, in the case of an integrated works, providing the gas is used on site and that all BAT AELs are met

[4] The H_2S concentration relates to the H_2S content of the gas after treatment. This does not relate to an emission to the environment as the H_2S is converted to SO_2 during combustion. The cost of harm calculations relate to the SO_2 released.

then it should be down to the operator to decide where to use the onsite gases based on need and calorific value.

The coke oven gas at Port Talbot is mainly used in the reheat furnaces and power plant due to its high calorific value.

The table below shows that when COG is used in the power plant then the limit for SO_2 is tighter therefore more environmentally protective. Annex V does not apply to the re-heat furnace as article 28 specifically excludes plants where the products of combustion are used for direct heating. In order to ensure the BAT AEL is being complied with then we will apply a limit of 500 mg/m^3 for SO_2 at the reheat furnaces and power plants following the installation of de sulphurisation.

Combustion source	Current ELV for SO2	BAT AEL for Coke ovens underfiring COG	Annex V ael for combustion units using COG
Reheat furnace	800 mg/m^3	NA	Annex V does not apply however ELV will be set at 500 mg/m^3
Power plant	800 mg/m^3	NA	400 mg/m^3 Monthly average
Coke ovens	250 mg/m^3 (lean) 1000 mg/m^3 (rich)	500 mg/m^3	Annex V does not apply

No derogation from BAT AEL is required, an equivalent level of environmental protection is achieved by installing de sulphurisation and using the gas where appropriate.

As the COG is being used elsewhere on the integrated works, the ELV applicable to combusting COG must apply at those sources. By applying the 500 mg/m^3 limit required by BAT 49 at the other combustion sources we ensure that the equivalent level of protection is achieved.

BAT 48 deals with the cost benefit of delaying the installation of de sulphurisation therefore no further discussion is required under BAT 49.

BAT-AEL derogated until 2018.

Desulphurisation plant to be installed and commissioned by 2018 with associated IC with associated timelines to demonstrate compliance by 2018.

BAT conclusion 52

BAT conclusion overview:

BAT for coke grading and handling is to prevent or reduce dust emissions.

Reason for requesting additional information

Further information required to demonstrate compliance with this BATc.

Additional information assessment

Extract out of Air Quality Management Plan

	Type of Release	Abatement Technique	Procedure (If available)	Monitoring/Frequency
Coal & Coke Handling	Coke Conveyor System	Routing maintenance & sheeting	Notes LinkControl of Dust Emissions from Conveyors	SAP & Structural Inspections
	Emergency Dump wharf and haul road	Coke moisture and Bowser		As Required – Section Leader.
	Primary Coal Stockyards	Latex cover and bowser		As required – Visual.
	Coal Conveyor systems	Routine maintenance and sheeting	Notes LinkControl of Dust Emissions from Conveyors	SAP & Structural Inspections
	Coke making Roads	Water bowser		As required – Darlow Lloyd control but Tata request more if needed.
	Coal Silos	Self Contained – Sheeting.		Visual.
	HAA stockyard and Haul road.	Water bowser and water sprays on conveyor from tippers.		Water Bowser as required – Darlow Lloyd control but Tata request more if needed. Water Sprays - as required

How NRW has addressed this BAT conclusion

BAT has been considered to be achieved and NRW are satisfied with the additional information received.

BAT conclusion 56

BAT conclusion overview: BAT for pretreated waste water from the coking process and coke oven gas (COG) cleaning is to use biological waste water treatment with integrated denitrification/nitrification stages.
Reason for requesting additional information
Further information required to ensure compliance to the BATc.
Additional information assessment
The scope will be sent to NRW with the agreed timescales as set out in the associated improvement condition.
How NRW has addressed this BAT conclusion
To be incorporated through IC with associated timelines to demonstrate compliance by 2016

BAT conclusion 59

BAT conclusion overview: BAT for displaced air during loading from the storage bunkers of the coal injection unit is to capture dust emissions and perform subsequent dry dedusting.
Reason for requesting additional information
Further information required to ensure compliance to the BATc.
Additional information assessment
The scope will be sent to NRW with the agreed timescales as set out in the associated improvement condition.
How NRW has addressed this BAT conclusion
To be incorporated through IC with associated timelines to demonstrate compliance by 2016

BAT conclusion 60

BAT conclusion overview: BAT for burden preparation (mixing, blending) and conveying is to minimise dust emissions and, where relevant, extraction with subsequent dedusting by means of an electrostatic precipitator or bag filter.
Reason for requesting additional information
Further information required to ensure compliance to the BATc.
Additional information assessment
The scope will be sent to NRW with the agreed timescales as set out in the associated improvement condition.
How NRW has addressed this BAT conclusion
To be incorporated through IC with associated timelines to demonstrate compliance by 2016

BAT conclusion 64

BAT conclusion overview: BAT is to reduce dust emissions from the blast furnace gas by using one or a combination of the following techniques:
Reason for requesting additional information
NRW need to understand the associated ELV for the stove that would control the levels of dust emitted.
Additional information assessment
The ELV for Stove (A7) is set at 10 mg/m^3.
How NRW has addressed this BAT conclusion
BAT has been considered to be achieved and NRW are satisfied with the additional information received.

BAT conclusion 67

BAT conclusion overview: BAT for treating waste water from blast furnace gas treatment is to use flocculation (coagulation) and sedimentation and the reduction of easily released cyanide, if necessary.
Reason for requesting additional information
Further information required to ensure compliance to the BATc.
Additional information assessment
The scope will be sent to NRW with the agreed timescales as set out in the associated improvement condition.
How NRW has addressed this BAT conclusion
To be incorporated through IC with associated timelines to demonstrate compliance by 2016

BAT conclusion 78

BAT conclusion overview: BAT for secondary dedusting, including the emissions from the following processes:
Reason for requesting additional information
BATc worded differently from BATc document and the submitted Tata report. *"or any other technique with the same removal efficiency"*, has been added. Further information required to ensure compliance to the BATc.
Additional information assessment
The scope will be sent to NRW with the agreed timescales as set out in the associated improvement condition.
How NRW has addressed this BAT conclusion
To be incorporated through IC with associated timelines to demonstrate compliance by 2016

BAT conclusion 81

BAT conclusion overview: BAT is to minimise the waste water discharge from continuous casting.
Reason for requesting additional information
Further information required to ensure compliance to the BATc.
Additional information assessment
The scope will be sent to NRW with the agreed timescales as set out in the associated improvement condition.
How NRW has addressed this BAT conclusion
To be incorporated through IC with associated timelines to demonstrate compliance by 2016

BAT conclusion 82

BAT conclusion overview: BAT is to prevent waste generation.
Reason for requesting additional information
BAT refers to the use of waste BOS residues in the agricultural industry to improve soil. Although NRW agree that the BATc has been achieved before the BOS residues is used of site the Operator must demonstrate that it meets the relevant criteria to be spread onto land. **Justification/clarification required**
Additional information assessment
The use of mill residues within the ‘Lego’ blocks is still subject to the outcome from discussions with the NRW and the have detail yet to be finalised. BOS slag is currently sold to a third party and is not spread on land by the TATA itself.

EMS to be updated in line with this as well as the operating techniques.
How NRW has addressed this BAT conclusion
BAT has been considered to be achieved and NRW are satisfied with the additional information received.

Combustion plants and associated ELVs

Combustion plants are subject to two provisions in the IED. The first, specific to large combustion plant, is described in Chapter III and defines the minimum standards required for such plant. This will require a review of permits to ensure they have the appropriate conditions from 2016 onwards.

The second provision is in relation to BAT conclusions and will require permits to reflect the BAT conclusions within 4 years of the publication of the Combustion BAT reference document (BREF). It is currently anticipated that the revision of permits in relation to this will need to be completed by 2019 (if the BREF is published in 2015 as planned).

Natural Resources Wales has reviewed and revised the associated combustion ELVs in the permit. This will bring the permit up to date in terms of current BAT (based on historical performance to prevent “back-sliding”) during the period 2016 to 2019, and to implement the compliance route selected to achieve the minimum standard provisions as required by Chapter III of IED or to closure.

LCPD categories of plant include those that meet the ELVs, those in the National Emissions Reduction Plan (NERP). Controls include concentration and annual mass emission limit values (ELVs), tradable annual mass caps under the NERP and Air Quality Management Plans (AQMP) to help secure compliance with domestic air quality objectives and European air quality standards.

The AQMP conditions require annual modelling for the upcoming year and the last year to demonstrate that combustion plant have not, and will not breach air quality standards or objectives. The plans require ambient monitoring up and down wind to help validate the AQMP findings.

The key European Directives have been the Large Combustion Plant Directive (defining minimum standards for plant subject to the Directive), and the Integrated Pollution Prevention Directive (IPPCD) which requires the application of Best Available Techniques (BAT). These Directives have now been replaced by the Industrial Emissions Directive (IED) which will have implications for combustion plant through from now until, in some cases, 2023.

The BAT ELVs resulting from the review are intended to be achievable, not penalise past good performance or reward poor performance, i.e. to secure no back-sliding. The proposed emissions have been accepted by NRW and have been reflected in the permit through the monitoring tables. The monitoring tables have been incorporated into four Schedules:

Schedule 3(a) – Emissions until 31st December 2015

These are the existing ELVs in the permits consolidated into this permit

Schedule 3(b) – Emissions from 1st January 2016

This version of the monitoring requirements amends the ELVs for the combustion units under the Transitional National Plan under the Industrial Emissions Directive. Monitoring during the TNP for the combustion activities will consist of both monthly and annual 95% daily mean, with no further requirement to monitor 48 hourly averages. The Operator has demonstrated that there is not much difference between compliance of the daily and 48 hourly average and best reflects the requirements of IED.

Schedule 3(c) – Emissions from 10th March 2016

This version of the monitoring requirements amends the ELVs for all emissions point affected by the BREF BATc AELs.

Schedule 3(d) – Emissions from 1st July 2020

This version of the monitoring requirements amends the ELVs for the combustion units under the Industrial Emissions Directive as the TNP period ends. The ELVs in the permit may require a further variation to the permit due to the varying nature of the fuels burnt. If an ELV change is required the Operator will undertake the necessary assessments to ensure there is no negative impact upon the environment.

Meeting the requirements of IED Chapter III

IED Article reference	IED requirement	Permit condition
32(4) TNP	The transitional national plan shall also contain provisions on monitoring and reporting that comply with the implementing rules established in accordance with Article 41(b), as well as the measures foreseen for each of the plants in order to ensure timely compliance with the emission limit values that will apply from1 July 2020.	3.5.1 refers to emissions for TNP plant
38	Monitoring of air emissions in accordance with Ann V Pt 3	Sections 3.5 and 3.6
40	Multi-fuel firing	Sections 3.5 and 3.6
41(a)	Determination of start-up and shut-down periods	Sections 3.5 and 3.6
Ann V Pt 1(1)	All emission limit values shall be calculated at a temperature of 273,15 K, a pressure of 101,3 kPa and after correction for the water vapour content of the waste gases and at a standardised O2 content of 6 % for solid fuels, 3 % for combustion plants, other than gas turbines and gas engines using liquid and gaseous fuels and 15 % for gas turbines and gas engines.	Schedule 6 - Interpretation
Ann V Pt 1(6(1))	Definition of natural gas	Schedule 6 - Interpretation

AnnV Pt 1 (6(Footnote 4))	NOx ELV derogation for older plant<500MW firing BFG & low CV gases on heaters and boilers.	Sections 3.5 and 3.6
AnnV Pt 3(1)	Continuous monitoring for >100MWth for SOx, Nox, Dust; CO for gas fired.	3.5 (air emissions), 3.6 (IED LCP)
AnnV Pt3(7)	CEMs, oxygen, temp, press & water vapour (unless dried)	Section 3.5
AnnV Part 3(8&9)	CEN standards, M1 guidance	3.6.4 and 3.6.5
AnnV Pt3(10)	Confidence intervals and validated data	Section 3.5 and 3.6
39, AnnV Pt 4	Compliance with ELVs	Section 3

Annex 1: decision checklist

This document should be read in conjunction with the application and supporting information and permit.

Aspect considered	Justification / Detail	Criteria met Yes
Receipt of submission		
Confidential information	A claim for commercial or industrial confidentiality has been made. We have accepted the claim for confidentiality. We consider that the inclusion of the relevant information on the public register would [not] prejudice the applicant's interests to an unreasonable degree. The reasons for this are given in the notice of determination for the claim. The decision was taken in accordance with our guidance on commercial confidentiality.	✓
Identifying confidential information	We have identified information provided as part of the application that we consider to be confidential. The decision was taken in accordance with our guidance on commercial confidentiality.	✓
Consultation		
Scope of consultation	The consultation requirements were identified and implemented. The decision was taken in accordance with RGN 6 High Profile Sites, our Public Participation Statement and our Working Together Agreements.	✓
Responses to consultation, web publicising and newspaper advertising	The web publicising, consultation and newspaper advertising responses (Annex 2) were taken into account in the decision. The decision was taken in accordance with our guidance.	✓
European Directives		
Applicable directives	All applicable European directives have been considered in the determination of the application. The Industrial Emissions Directive came into force on the 6 January 2011, and was transposed in England and Wales law by an amendment to the Environmental Permitting Regulations in 2013. The purpose of the Directive is to achieve a high level of protection for the environment, taken as a whole, from the	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
	harmful effects of industrial activities. It does so by requiring each of the industrial installations listed in the Directive to comply with the best available techniques (BAT) and associated emission levels (AELs). Each sector will eventually have a BAT reference documents (Bref) published setting BAT and the AELs. An operator has four years from publication in the official journal to ensure they meet BAT and the AELs[5]. However, Article 15(4) of the Directive does allow competent authorities to set less strict emission limit values providing certain criteria are met. The Bref for the Iron and Steel Industry was published in the official journal in March 2012. The industry now has until March 2016 to achieve BAT and the appropriate AEL's. In order to facilitate this process NRW served an EPR regulation 60 notice on Tata that required the company to provide us with information on how they aim to achieve the new requirements.	
The site		
Site condition report	The operator has previously provided a description of the condition of the site. We consider this description is satisfactory but requires to be updated as part of the review of the Port Talbot permit. NRW have set an improvement condition for a review of the baseline report to be submitted to NRW. The decision was taken in accordance with our guidance on site condition reports and baseline reporting under IED– guidance and templates (H5).	✓
Biodiversity, Heritage, Landscape and Nature Conservation	The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat . As a result of the implementation of IED and its associated ELVs there will be a reduction of emissions from the stacks at Port Talbot. Therefore this would have a positive impact on the identified sites.	✓

[5] BAT AELs are numerical values set out in the BATc documents. These apply to all Member States and are based on what has shown to be achievable when the best available techniques are applied.

Aspect considered	Justification / Detail	Criteria met Yes
	We have not formally consulted on the application. The decision was taken in accordance with our guidance.	
Environmental Risk Assessment and operating techniques		
Operating techniques	We have reviewed the techniques used by the operator and compared these with the BATc set out through IED. NRWs decision can be viewed though this decision document.	✓
The permit conditions		
Updating permit conditions during consolidation.	We have updated previous permit conditions to those in the new generic permit template as part of permit consolidation. The new conditions have the same meaning as those in the previous permit(s). The operator has agreed that the new conditions are acceptable.	✓
Use of conditions other than those from the template	Based on the information in the application, we consider that we need to impose conditions other than those in our permit template, which was developed in consultation with industry having regard to the relevant legislation. The existing condition: *Notwithstanding the requirements of EPR/BL5636IF issued to Cambrian Stone Limited and EPR/BP3635MR, issued to Harsco Metals Group Ltd, the Operator (Tata Steel UK Limited) shall take responsibility for investigating all complaints made against the Installation in accordance with condition 1.1, whether directly or indirectly, for the purpose of establishing the cause of the complaint and establishing any actions necessary to prevent a re-occurrence.* will remain in the permit.	✓
Raw materials	We have specified limits and controls on the use of raw materials and fuels.	✓
Waste types	We have specified the permitted waste types as they are used in the processes at the installation.	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
	We are satisfied that the operator can accept these wastes for the following reasons.	
Improvement conditions	Based on the information on the application, we consider that we need to impose improvement conditions. We have imposed improvement conditions to ensure that the requirements of the BATC are met and the site is compliant by 2016.	✓
Incorporating the application	We have specified that the applicant must operate the permit in accordance with descriptions in the application, including all additional information received as part of the determination process. These descriptions are specified in the Operating Techniques table in the permit.	✓
Emission limits	We have decided that emission limits should be set for the parameters listed in the permit. These are in line with the relevant BATc AEL and associated IED requirements. The A66 ELV for NOx has been confirmed as being incorrect due to an error made when applying for a previous permit variation. originally proposed limit. The limit is associated with the BOS OG heat recovery – super heater (that burns Natural gas and BFG). As a result the current limit is unachievable. Based on this NRW have set an improvement condition for the Operator to propose an ELV for A66 and provide an associated environmental impact assessment to demonstrate the impact from the increased ELV.	✓
Monitoring	We have decided that monitoring should be carried out for the parameters listed in the permit, using the methods detailed and to the frequencies specified. These monitoring requirements have been imposed in order to be compliant with the requirements of the BATc. Based on the information in the application we are satisfied that the operator's techniques, personnel and	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
	equipment have either MCERTS certification or MCERTS accreditation as appropriate. The monitoring requirement for emission points A12 and A13 of particulate matter has been removed on health and safety grounds due to the nature of the gas stream being more than 90% Carbon Monoxide.	
Reporting	We have specified reporting in the permit.	✓
Operator Competence		
Environment management system	There is no known reason to consider that the operator will not have the management systems to enable it to comply with the permit conditions. The decision was taken in accordance with RGN 5 on Operator Competence. Accredited EMS system is in place that requires ongoing assessment and compliance with their EPR Permit.	✓

Annex 2: Consultation, web publicising and newspaper advertising responses

No responses were received during the consultation of the Regulation 60 response that detailed how the Operator would comply to the BATc.

Annex 3: Consultation response following PPD

No responses were received during the consultation of the draft permit. An advert was place in the South Wales Evening Post on the 2nd February 2015 with the draft permit and decision document placed on the NRW website for consultation from the 2nd February until the 9th March 2015.

Annex 4: Regulation 60 response received

Review of General, Coke, Sinter, Iron and Steel processes against Iron and Steel BAT Conclusions, March 2012. Environmental Compliance Department, Tata Steel Strip Products UK, Port Talbot Works.