

28th January 2022

Mrs E A Parr
PPC Compliance Assistant
Natural Resources Wales
Rivers House
St Mellons Business Park
St Mellons
CARDIFF
CF3 0EY

Our Ref: W:\Environmental\IPPC\Environment Agency Reporting\Permit Reporting\New Melt Shop\Annual\2021\TP3639BH 4.2.2. Annual Returns 2021.doc

Dear Mrs Parr,

RE: Melt Shop EPR Permit TP3639BH 4.2.2. Annual Returns 2021

In accordance with CELSA Manufacturing (UK) Ltd Environmental Permitting Regulations (EPR) Melt Shop Permit TP3639BH, permit condition 4.2.2 requires the following:

4.2.2 For the following activities in schedule 1, table S1.1, A1 to A8. A report or reports on the performance of the activities over the previous year shall be submitted to Natural Resources Wales by 31st January (or other date agreed in writing by Natural Resources Wales each year. The report(s) shall include as a minimum:

- a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data, and*
- b) the annual production/treatment data set out in Schedule 4 Table S4.2*

1.1 Introduction

Within CELSA Manufacturing Mission statement, we are 'the UK's leading environmentally focused integrated steel manufacturer'. Despite an exceptionally difficult market, CELSA are committed to achieving continual improvement of our environmental performance.

The Melt Shop's environmental performance in 2021 has been reviewed, including the environmental Objectives and Targets which have been set for 2022 in conjunction with senior management. CELSA received 8 complaints in 2021. 4 complaints of which were from local residents referring to noise, and have since been investigated and resolved. 1 complaint was received regarding flies, however, after a site visit NRW have since agreed that this was unfounded and that existing treatment measures on site are sufficient to manage pests. The remaining 3 complaints are regarding dust fallout in the local area, and have come from neighbouring businesses and residents. These continue to be investigated.

1.2 Environmental Performance Review

1.2.1 Production and Energy Consumption

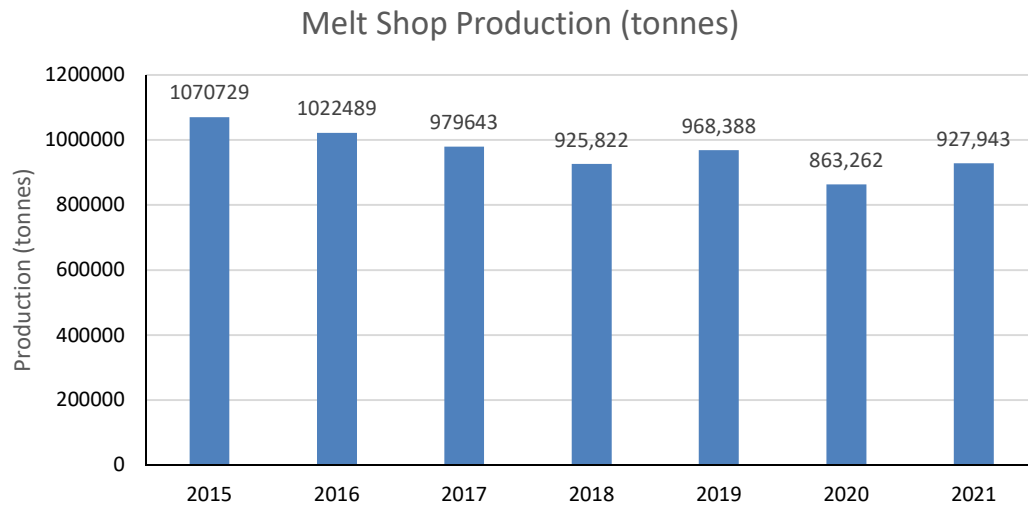


Figure 1: Melt Shop Production (tonnes). There was an increase in production of 7.49% from 2020 to 2021.

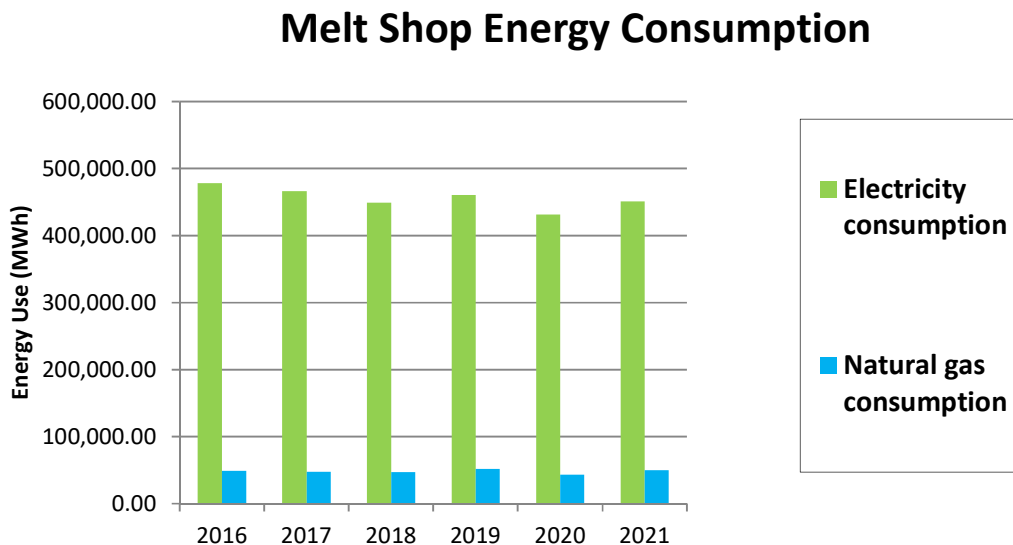


Figure 2: Melt Shop Energy Consumption (MWh)

Electricity consumption at the Melt Shop saw a 4.56% increase, compared with 2020, while gas consumption saw a 15.06% increase since 2020. The Melt Shop will continue to focus on energy as part of their Objectives and Targets throughout 2022.

Melt Shop Energy Consumption (MWh / tonne)

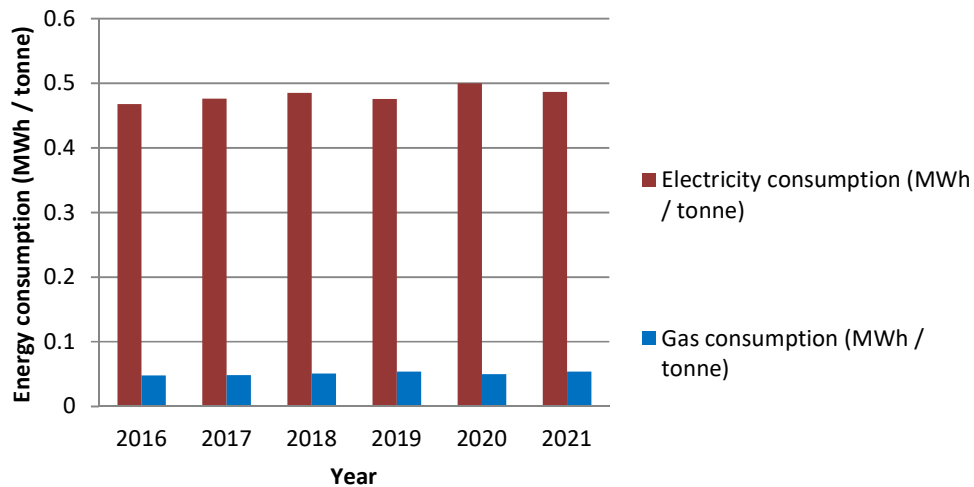


Figure 3: Melt Shop Energy Consumption per tonne (MWh/tonne)

From 2020 to 2021, per tonne of steel produced, electricity consumption decreased by 2.80% while natural gas use increased by 7.03%.

1.2.2 Air emissions – A1 & A2

Melt Shop Air Emissions (kg/production tonne)

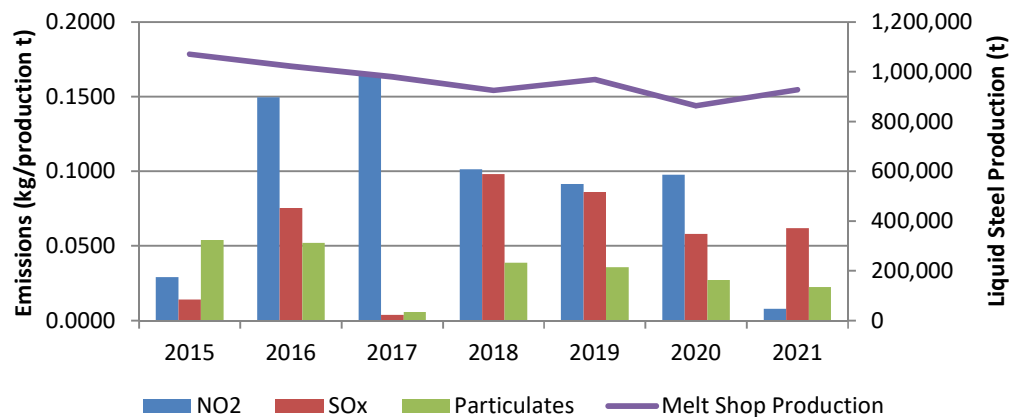


Figure 4: Melt Shop Air Emissions (kg/production tonne)

The air emission parameters for A1 and A2 were all below the set limits.

1.2.3 Waste Water Quality – S1 & S2

S1 Wastewater Quality

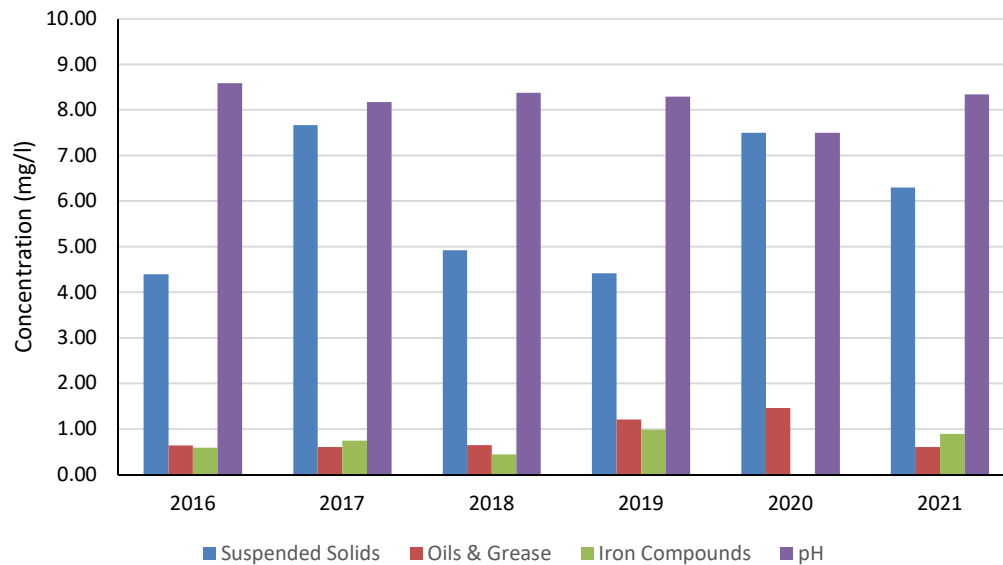


Figure 5: Melt Shop Waste Water Quality (mg/l)

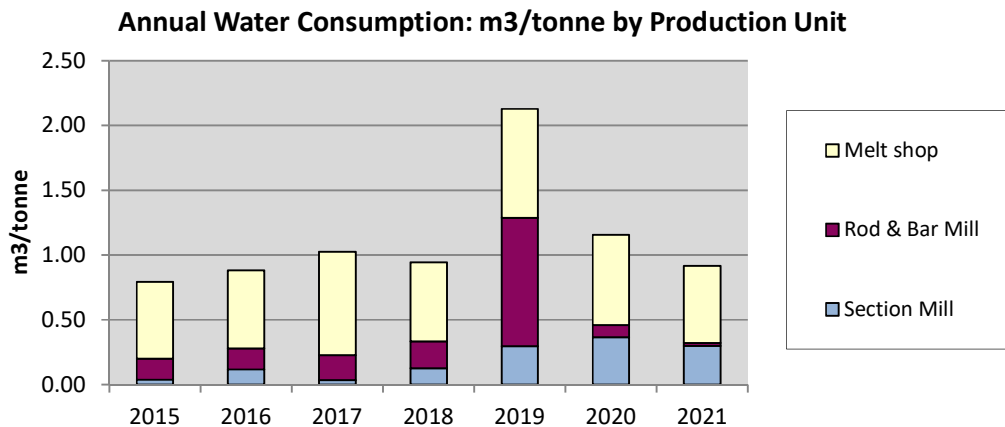


Figure 6: Melt Shop water consumption (m³/tonne)

Water consumption for both the Sections Mill and the Melt Shop remained consistent with 2020 figures. Both saw a slight reduction in water used per tonne of production output (19% and 15% respectively). This is likely down to increased production in comparison with 2020, which enables a greater efficiency of resource use. The Rod and Bar Mill saw a 78% reduction in the amount of water used, due to the fact that no new water was extracted from Bute East Dock for use in the process from September through to the end of 2021.

1.2.4 Waste Production

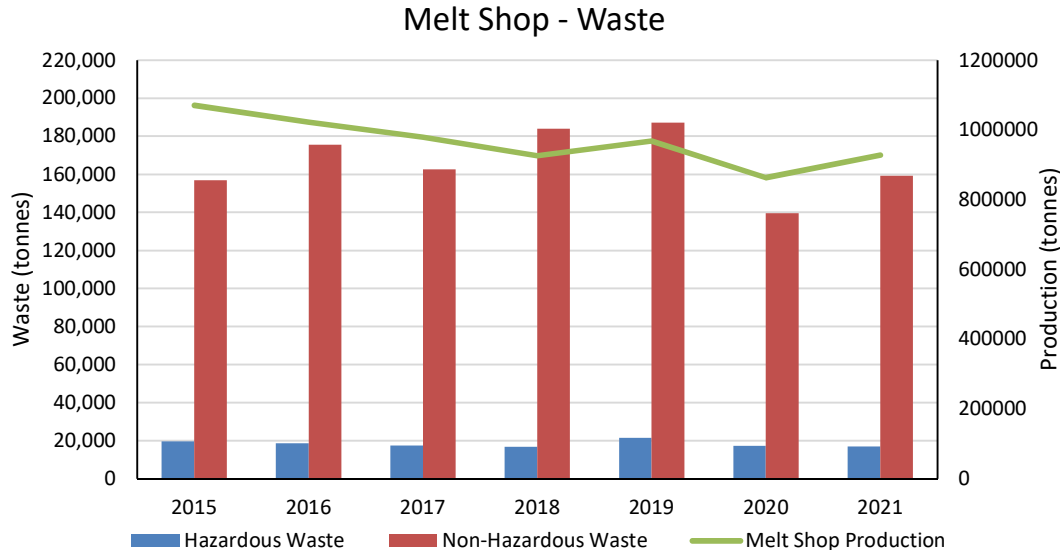


Figure 7: Melt Shop waste production (tonnes)

1.2.5 Fugitive Emissions

Particulates are formed as a consequence of EAF steelmaking and are created from the volatilisation of the steel scrap during the electric arc melting process. Large volumes of fume are generated during the melting process, which are handled up to 2 million cubic metres per hour of extraction. Fume is drawn off both the electric arc and ladle furnace using extraction fans. The main fume discharge and any fugitive releases in these areas are captured by the roof canopy (total capture system) and conveyed by ducting to the abatement plant (bag house).

In December 2020 a carbon injection system was installed in the de-dusting system of the Melt Shop. This was in response to the dioxins breach which occurred in May 2019. This has continued to have successfully lower our dioxin emissions in 2021 according to our A1 emissions testing and reporting.

Celsa completed a large amount of maintenance work during their maintenance periods which has had a beneficial impact at reducing fugitive emissions and oil leaks, some of this work includes:

- Replacement of hydraulic piping in EAF system in the new Gantry.
- Complete annual maintenance of our preheaters systems and tundish dryer.
- Primary duct of DED plant replacement
- T1/T2 and T5 Cooled Ducts replacement
- Complete change of the pending not cooled ducts.
- Roofs renewals in several areas:
- Ladle Furnace-Pitside
- Canopy in the EAF roof. (to continue this year)
- Booster fan changes and repairs in dust filter plant.
- Cleaning in some areas of the DED plant ducts.

- Oil and grease tank emptied
- Annual cooling towers cleaning and filters boxes changed
- Caster hydraulic piping refurbishment
- New supports for the fix pipework in the TOB
- Renew of piping in other caster areas.
- Optimization of our air compressed systems to reduce the energy and air consumption

Slag is produced during the making of steel and is a normal by-product of the EAF process. Slag from the EAF is tipped to flow beneath the furnace onto the slag bed. As this is conducted within the main Melt Shop, any emissions arising from this are captured by the air collection and abatement system. The slag is then moved by a specially adapted bulldozer to an outside intermediate staging area, to blade the material out and allow cooling water to be sprayed onto the slag. The slag is kept in the staging area until a cooled economic load has been assembled. It is then transported via dedicated wagons to the slag reprocessing plant on the other side of the Rover Way.

As part of the secondary steel process an artificial slag is generated on the steel ladle. Subsequent to casting, this slag will be tipped to the ground. When cooled, it is also transported to the slag handling plant across Rover Way. Once transferred to the Mineral Site, the slag is used in the onsite Asphalt Plant to produce asphalt used in the construction of new roads.

At the mineral site, where slag is cooled and weathered, controls are in place to minimise fugitive dust lift off. This is stated within Environmental Control Procedure 12, titled Fugitive Emissions Management Procedure. This procedure refers to all direct and ancillary activities associated with continuous operation from the CELSA Melt Shop and Mineral Site which may give rise to fugitive emissions. This procedure also refers to the road dampening at the Melt Shop.

The Turnkey Optical Particle Analysis System (TOPAS), located at Willows High School, enables CELSA to gain a greater understanding of dust levels in Tremorfa. The TOPAS particulate results are reported to NRW on a quarterly basis. In 2019, CELSA set up an additional TOPAS monitor on the roof of Baden Powell, the local primary school to enhance CELSA's understanding of dust levels in Tremorfa. This also provides us with supplementary data should the Willows High School monitor fail.

1.2.6 The review of annual production/treatment data set out in Schedule 4 Table S4.2

A1 Monthly Average Concentrations

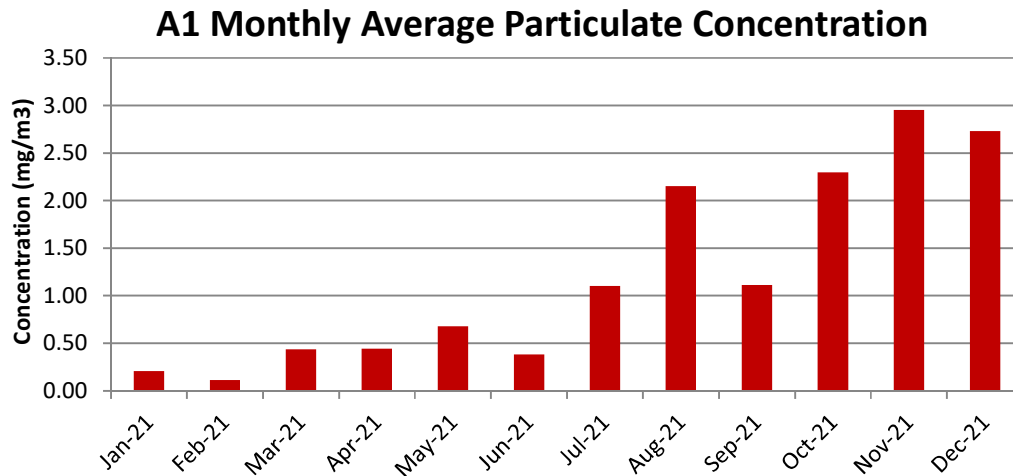


Figure 8: 2021 Melt Shop Monthly Average Concentration of continuous monitoring (mg/m³) – A1

CELSA's A1 continuous emissions are monitored and analysed throughout each shift and discussed in the daily morning meetings with the Melt Shop senior managers, production personnel and engineers. Investigations are conducted in order to identify any issues that could contribute to particulate breaches.

In 2021 there were 9 days where the CEMS calculated daily average exceeded the permit limit of 5.00mg/m³ between August and December. Each of these breaches were investigated internally by the Melt Shop for a root cause. Action plans to prevent future occurrence of particulate breaches were immediately implemented.

Ambient Air

In 2021, there was a period in September where both TOPAS particulate monitors were not operational. This coincided with an annual, scheduled maintenance period at the Melt Shop, so there would have been no emissions at this time. Because of this, the consequential data gap is considered to be of low risk, due to the low likelihood of any high emissions during this time. Data output from both monitors continues to be frequently monitored.

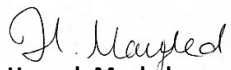
Conclusion

In summary, improvements have been made in a number of areas, all wastewater discharges were within permit limits. Regarding waste management, the melt shop continued to improve engagement and communication with both the workforce and the external waste management provider. Further to the Environmental Training package (ISO14001) that was rolled out in 2017, and the additional training introduced in 2020, the Environmental Induction Training that all new employees undertake saw many improvements made in 2021. Training now includes examples of environmental awareness specific to individual roles within the business, to ensure that individuals can make educated decisions with respect to environmental matters from their first day with the company onwards.

In 2022, CELSA will continue to manage and improve environmental impacts through the Environment Management System and strive to achieve the challenging targets set.

If you require any further information, please do not hesitate to contact the Environmental Department.

Yours sincerely,



Hannah Mayled
Environmental Advisor