1. Non-Technical Summary

1.1 Introduction

Enva Battery Recycling Ltd (Enva) run a battery recycling facility at Immingham Materials Recycling Facility, Unit 1-5 Pelham Industrial Estate, Manby Road, Immingham, Lincolnshire, DN40 2LF. The site is regulated by the Environment Agency (EA) under the terms of an Environmental Permitting (England and Wales) Regulations 2016 (EPR) Permit (Permit Ref: EPR/CP3294LE). This permit was originally issued to S.A.R. Recycling Ltd in January 2009. S.A.R Recycling changed their name to Enva Batteries Recycling Ltd which was confirmed in a Permit Variation in April 2021.

The proposed change(s) to the permit can be summarised as:

- Extending the Permit boundary (c.45m northwest, see Permit Boundary Plan).
- Associated site layout amendments – move location of the battery recycling plant, associated change to air emission points, amend waste storage areas
- Increase in waste throughputs from 40,000 tpa to 60,000 tpa.
- Add waste codes
    - For lead-acid batteries for treatment.
    - For transfer of batteries of other chemistries (previously allowed by S2 exemption).
- Move DAA for storage and transfer of non-hazardous waste, to a regulated activity per EA pre-app advice

The boundary extension will allow installation of a new battery recycling plant which treat lead-acid batteries only, so that the recycling activities can run concurrently, without interruption. It is proposed that the existing recycling plant will be decommissioned, following successful commissioning of the new plant. It is estimated that there would be a 1-2 month cross-over period to allow commissioning only.

The proposed battery recycling plant will only treat lead-acid batteries which are a waste that is currently accepted by the site. Therefore, the proposed battery recycling plant will not treat any additional waste codes.

Enva occasionally receives Waste Electrical and Electronic Equipment (WEEE) which contains batteries of mixed chemistries. It is proposed to include a transfer activity to allow the transfer only, of small quantities of other batteries (i.e., not lead-acid batteries).

Many of the waste operations currently undertaken by the Enva site will remain unchanged and in use following this proposed variation (i.e., battery sorting). Therefore, the only additions to the site will be:

- A battery treatment plant and associated infrastructure;
- Collection pit for batteries; and
- Quarantine storage area.

1.2 Process Description

The areas used for the reception of waste batteries will not change following this proposed variation. The site will accept some WEEE waste which will contain batteries of other chemistries (i.e., not lead-acid batteries), these batteries will be sorted in the site's current dedicated sorting area stored in a dedicated Shipping Container designed for the purpose, to await transfer off-site.

The site currently accepts bulked waste batteries which are delivered to the site via tipper and are then stored in a collection bay. Bins and pallets of batteries are also accepted by the site; these are then sorted depending on their chemistries and sent to an appropriate storage area to await treatment. The areas used for the storage of batteries received in bins and pallets and for the sorting of mixed chemistry batteries will still be utilised following this proposed variation and will not change. However, the collection bay used for the storage of batteries delivered via bulk tipper will no longer be used as an area located in the extension of the site will be used for this purpose.

The current battery treatment plant utilised by Enva will be decommissioned and replaced by a new battery treatment plant located in the new area of the site.

The components obtained from the new treatment plant will differ slightly from what is currently observed at the site. However, as the site will still only treat lead-acid batteries, the output waste components are similar, and a large number of output storage areas will remain unchanged following this proposed variation.

Enva are proposing to add a connection from the new area of the site to the current area to allow all transfers of waste to be undertaken indoors.

In general, the reasoning behind these proposed changes is to:

- Increase waste throughput;
- Automate the process to a higher degree;
- Increase staff safety; and
- Reduce contamination in output materials.

1.2.1 Point Source Emissions to Air

As Enva are proposing to decommission the current lead-acid battery treatment plant, it is proposed that the emission point currently associated with this plant (A1) is removed from the site's EPR permit.

There will be one additional point source emission to air associated with the wet scrubber system (location given in Drawing DW04 Emissions Plan in Appendix A).

1.2.2 Point Source Emissions to Surface Water

There are no point-source emissions to controlled water or sewer from the waste treatment installation.

1.2.3 Point Source Emissions to Groundwater

There are no point source emissions to groundwater.

1.2.4 Point Source Emissions to Sewer, Effluent Treatment Plant or Other Transfers Off-site

There shall be no emissions to sewer or effluent treatment plant. Process effluent shall be transferred off-site.

1.2.5 Point Source Emissions to Land

There are no point source emissions to land.

1.2.6 Odour

Very low risk of malodour from the treatment of lead-acid batteries. It is expected that this will continue following the proposed variation.

1.3 Management

The activities undertaken at the Enva site are operated in accordance with an Environmental Management System (EMS). The site will continue to use the same management system and techniques following this proposed variation. The EMS will be updated to explicitly address the changes made to the site.

As the site have previously operated under an EPR permit which includes waste operations, technical competence, through the WAMITAB scheme is already in place at the site.

1.4 Raw Materials

The Enva site currently do not utilise any raw materials to support site activities. This will change following the proposed variation due to the installation of a closed loop water neutralisation system and a wet scrubber.

The selection of raw materials at the site will be carefully controlled by senior Enva management in line with relevant legislation and the material selection process will be regularly reviewed as part of ongoing environmental and cost control, with the long-term objective being the demonstration of sustainable site operations.

The site will keep an up-to-date inventory of raw materials consumed in site processes. This inventory will be an essential part of process management, site scheduling and stock control. The use of raw materials onsite will be monitored and analysis of material utilisation through monitoring main process inputs against output to ensure maximum efficiency.

1.4.1 Water Use

All water use at the site will be in the form of mains water, there will be no storage areas for water. The primary uses of mains water at the site will be:

- To top-up closed loop systems; and
- To develop a scrubber liquor.

Small quantities of mains water will also be used for domestic facilities, including lavatories and hand-washing basins. Effluent from these facilities is routed to the public foul sewer.

1.5 Waste

Enva have designated areas in the current site for the storage of output waste streams from the treatment of lead-acid batteries, although these waste streams will differ slightly due to the new treatment process, the nature of the waste streams will only change minimally. Therefore, these areas are deemed suitable for the storage of output waste streams from the proposed treatment plant.

Enva utilise a variety of standard operating procedures which dictate waste streams should be managed, these will be updated to account for the changes to output waste streams.

Enva currently follow the principles of the Waste Hierarchy as all waste streams are sent off-site for further re-processing, this will continue following this variation.

1.6 Energy

Although it is proposed that the Enva site will increase their waste throughput, the new battery treatment plant will be an altogether more efficient unit than what is currently utilised on site.

1.7 Accident Risk

Enva will develop an accident management plan, in line with the appropriate technical guidance as part of this proposed variation. This updated accident management plan will be included in the site's EMS.

1.8 Noise and Vibration

The Enva site has not received any noise complaints during the time that the EPR permit has been in place. The proposed plant will be enclosed indoors, therefore, the noise from this system at sensitive receptors is expected to be minimal. Additionally, as the site is located in a heavily industrialised area, it is far away from noise sensitive receptors. Through pre-application discussions with the Environment Agency (Ref: EPR/CP3294LE/P001), it was determined that a noise impact assessment and noise management plan would not be necessary for this permit variation.

1.9 Monitoring

Air: The Enva site currently has one point source emissions to air (A1) associated with the site's current treatment plant. As this plant is to be decommissioned it is proposed that this emission point is removed from the site's permit following this variation.

The following technical guidance have been consulted to determine an appropriate monitoring programme for this new point source emission to air:

- Waste Treatment BAT
- Chemical Waste: Appropriate Measures for Permitted Facilities;
- Waste Electrical and Electronic Equipment (WEEE): Appropriate Measures for Permitted Facilities;
- Non-hazardous and Inert Waste: Appropriate Measures for Permitted Facilities; and
- Waste Batteries: Appropriate Measures for Permitted Facilities (Consultation Draft)

Water: Given the pollution prevention measures which will be installed at the site, together with the separation of surface water drainage from the process effluent and foul drainage system, it is anticipated that the surface water discharge from the site will solely comprise uncontaminated rainwater run-off from the site's buildings and yard areas. Consequently, monitoring of the surface water discharge to the mains sewer is not required.

There will be no emissions to groundwater associated with the Enva site. No monitoring of emissions to groundwater is, therefore, required.

All process effluent will either be contained in an isolated drainage system and directed to a storage tank for removal off-site via tankering or be pumped directly to a storage tank for removal off-site via tankering. Therefore, there will be no emissions to sewer from the site and no monitoring of emissions to sewer is required.

1.10 Emissions

An H1 risk assessment has been undertaken for the proposed new point source emission to air at the Enva site.

The proposed variation is not expected to impact odorous emissions and as such, no environmental monitoring (i.e., beyond the installation boundary) is proposed.

A dust management plan has been developed as part of this permit variation application and has been submitted as Appendix G alongside this permit variation support document.

There will be no emissions of process effluent from the site.

1.11 Environmental Impact

1.11.1 Air Quality

A H1 risk assessment has been undertaken for the new point source emissions to air at the Enva site. All relevant parameters 'screen out' from this assessment and therefore, emissions can be considered as not significant.

1.11.2 Water Quality

There will be no emissions of process effluent from the site.