

EPA Application Form

4. Activity and Capacity

4.3.1 - Storage of Waste and Other Materials - Attachment

Organisation Name: *

Indaver Ireland Limited

Application I.D.: *

LA010332

Amendments to this Application Form Attachment

Version No.	Date	Amendment since previous version	Reason
V.1.0	July 2017	N/A	Online application form attachment
V.1.0	March 2018	Identification of required fields	Assist correct completion of attachment

Storage of Waste and Other Materials

State the maximum amount of waste and other materials that will be stored on the site at any one time in the table below¹.

Waste/Other Material	Amount (tonnes) *
Waste accepted and in storage pending treatment:	7,711 tonnes waste (including 600 tonnes aqueous waste) 0.82 tonnes waste oils 4.5 tonnes Interceptor residue 25 tonnes WEEE 20 tonnes Recyclables 1 tonne Miscellaneous Hazardous 340 tonnes third party wastes accepted for pre-treatment (including 260 tonnes flue gas cleaning residues and 80 tonnes boiler ash)
Other materials (Non-waste) accepted, including non-waste feedstocks:	456.5 tonnes lime (126.5 tonnes Quicklime, 330 tonnes Hydrated lime) 56.42 tonnes ammonia 56 tonnes activated carbon 56 tonnes expanded clay 5.45 tonnes acids / bases / boiler / treatment chemicals 0.3195 tonnes Sodium Hydroxide 3.45 tonnes Nitric Acid 4 tonnes Sodium Chloride 1.11 tonnes Ethylene Glycol 6.65 tonnes Lubricant Oil 5.8 tonnes Nitrogen 43.9 tonnes fuel oil for burners 0.0011 tonnes propane for burner pilot flame 1.68 tonnes of CEMS gases

¹ This should include waste and other materials in: (1) reception, inspection and quarantine areas; (2) storage pending treatment; (3) storage after treatment; and (4) vessels, chambers or tanks during treatment or processing.

* indicates required field

Waste/Other Material	Amount (tonnes) *
Capacity of treatment vessels and chambers:	Flue Gas Treatment Pathway (including boiler passes) 200,000 Nm ³ /hr (max annual average hourly Flue Gas Flowrate) 75 tonnes of KOH solution (HGU) 0.0045 tonnes of Hydrogen in HGU Gas Holder 2 tonnes of Hydrogen in storage tank 0.5 tonnes in fully loaded tube trailer
Treated waste, whether classified as waste or not:	5,600 Tonnes Bottom Ash 125 Tonnes Fe/Non-Fe Metals 97.6 Tonnes Boiler Ash 309.4 Tonnes Flue Gas Cleaning Residues 100 tonnes pre-treated residues

List any other feedstocks to the treatment process not classified as waste. State 'none' if none.*

- Lime as CaO and Ca(OH)₂
- Hydrated lime
- Nitric acid
- Ammonia as 24.9% Ammonium Hydroxide Solution
- Activated Carbon or Activated Carbon/Clay mixture.
- Sodium Hydroxide as 50% solution in water
- Sodium Phosphate for boiler feedwater treatment
- Nitric Acid as 27% solution for cleaning of lime milk rotary atomiser
- Ethylene Glycol which is used as a coolant in the grate furnace mid-section
- Fuel Oil for burners for temperature control and start-up/shut-down.
- LPG Cylinders (Propane) for burner pilot flame
- Process water
- Electrolyte (potassium hydroxide) for Hydrogen Generation Unit

* indicates required field

Waste and material outputs from waste activities (i.e., those subject to Waste licensing or class 11 of the First Schedule of the EPA Act)

Describe the waste and material outputs from the installation resulting from the treatment of waste. If no treatment is carried out on the waste, the waste outputs will be the same as the inputs.

If waste is treated, describe the nature and quantity of the treated waste and its onward fate/destination, and in particular whether it is sent for onward recovery or disposal operations.

If waste is treated and a material is produced that is no longer a waste, provide the rationale for such classification. The requirements of Article 28 of the European Communities (Waste Directive) Regulations 2011 should be addressed in any such rationale. Include the response in this attachment.

Waste Inputs

The waste inputs to the facility are primarily non-hazardous residual municipal, commercial and industrial solid wastes which are treated in the waste-to-energy plant and used principally as a fuel to generate energy. The total plant capacity is 250,000 tonnes per annum, of which 25,000 tonnes is suitable solid and liquid hazardous wastes. In addition, the site will accept up to 30,000 tonnes of additional third-party boiler ash and flue gas residues per annum for treatment in the existing ash pre-treatment plant. A full list of waste types which are accepted at the site, along with the relevant LoW codes, are provided in this licence application in *Section 4.3 Waste Activities* on EDEN.

Waste Outputs

Following treatment of waste through the waste-to-energy plant and the ash pre-treatment plant, the main waste residues produced include bottom ash, boiler ash, flue gas cleaning (FGC) residues, pre-treated boiler ash and FGC residues, ferrous and non-ferrous metals. Other wastes arising from the facility include minor quantities of waste from facility operations and staff and visitor facilities. A full list of waste generated on site, as well as relevant LoW codes and descriptions are detailed in Attachment 8-1 of this licence review application. The usage, handling and storage, and disposal methods of these residues are detailed in Attachments 4-3-5-1 and 4-3-5-2, and Attachment 4-8-1 Operational Report which accompany this application.

The following wastes are generated and pre-treated on-site before being sent off-site for disposal and recovery:

- **Bottom Ash:** Bottom ash is produced as a residue of the combustion process. Once extracted from the furnace via a water quench bath, it is transported to the bottom ash hall for metal recovery and storage. The bottom ash is sent to landfill for use as daily cover for the landfill cells and also for road construction on the landfill itself. It is the intention of Indaver to continue to identify potential uses for bottom ash.
- **Boiler Ash and Flue Gas Cleaning Residues:** Boiler ash and flue gas cleaning residues are generated as a by-product of the energy recovery and flue gas cleaning processes associated with the waste-to-energy plant. The residues are either discharged into road tankers for export or are transferred by enclosed conveyors to the pre-treatment plant on site. At the pre-treatment plant, boiler ash and flue gas cleaning residues are mixed with water and discharged into flexible

intermediate bulk container (FIBC) bags and subsequently exported for recovery. The plant also has the facility to bag the flue gas cleaning residues in dry form in FIBC bags also for export for recovery off-site. Untreated boiler ash and flue gas cleaning residues are also exported as required.

- **Ferrous and Non-Ferrous Metal Recovery:** Ferrous and non-ferrous metals are recovered from the bottom ash using overband magnets and an eddy current separator. The metals and the residual bottom ash are stored in the bottom ash hall prior to sending off-site for recovery. Ferrous metals are sent for recovery in Ireland and non-ferrous metals are exported to mainland Europe for recovery.

For Soil Recovery Activities (only), please complete the following table: N/A

All blank fields in the table are mandatory

Soil Recovery Activity Details	Input a value into ALL blank cells (where applicable)			
Volume of void to be filled and authorised by planning permission:	N/A		m ³	
Quantity of waste soil and stone that is required to fill the void:	N/A		tonnes	
Proposed annual intake of waste soil and stone:	N/A		tonnes per annum	
Proposed duration to complete the fill:	N/A		years	
Stage of fill: 'Not Commenced' OR 'Commenced':	N/A			
- If commenced: quantity of waste already deposited in the void: (Enter a value in both cells)	N/A	m ³	N/A	Tonnes
- Volume of void remaining:	N/A		m ³	
Period of previous fill: (<Year> to <Year>):	N/A			
Quantity of fill authorised by planning permission: (Enter a value in both cells)	N/A	m ³	N/A	Tonnes
Waste Licence, waste facility permit, or certificate of authorisation number: (Attach copy in this document)	N/A			