

C3.1.1 DPS P3 07 WASTE

12.2.2 Waste arising during Operations

The proposed 144MW extension to the Delimara power plant can be run on different fossil fuels; heavy fuel oil (HFO) and diesel fuel. With some modifications, the plant can also be run on natural gas.

It is the intention of the developer to operate the plant on HFO. Furthermore, a HFO grade of 1% sulphur content is being assumed for the purpose of the waste assessment although it is understood that the intention of the developer to operate the proposed plant on HFO with 0.7% sulphur content. Furthermore, the proposed power plant can be operated on two different operational cycles referred to as '*Base Load Condition*' and '*Two Shift Condition*'. The *Base Load Condition* generates the most volumes of waste. In order to assess the *worst case scenario* in terms of waste generation, it is being assumed that the plant will be operated on HFO having a 1% sulphur content and running on the *Base Load Condition* cycle.

Table 12.2: Operational Phase Waste Streams

OPERATIONAL WASTE STREAMS				
Waste Type	EWC Code	Nature	Quantity p.a.	Disposal route
Flue Gas Desulphurization Chemical Composition: - 78% Sodium Sulphate Na_2SO_4 - 17% Sodium Carbonate Na_2CO_3 - 5% Fuel Ash	10 01 18*	Solid Hazardous Waste	9, 880t	Exported for final treatment
Spent Catalyst	16 08 02*	Solid Hazardous Waste	5.5t	Exported for final treatment
Sea water cooling system oxidants and disinfecting agents	10 01 26	Effluent treated to Directive 2006/11/EC	10.8t	Liquid treatment to Directive 2006/11/EC requirements prior to discharge back to sea
Oil Sludge	13 05 02*	Liquid Hazardous Waste	993t	Incinerated locally or sent to haz. landfill or exported
Oily Water	13 05 07*	Effluent treated to Directive 76/464/EEC	9,933t	Treated to <5ppm and which then can be discharged to the sea in accordance with Directive 76/464/EEC.
Boiler Wash Down Sludge	10 01 22*	Semi-solid Hazardous Waste	8m ³	Hazardous Landfill
Sanitary Waste Water (sewage)	16 10 02	Liquid waste	2,300 litres/day	Sent to public sewers

The proposed 144MW plant will generate oily water, mainly water drains that are contaminated with oil, and oil sludge direct from the fuel oil filtering equipment. This oily water will be sent to an Oily Water Treatment plant in order to retain the bulk of the oil fraction and purify the remaining water to a level that can be discharged at sea. In the treatment plant, the oily water is filtered in such a way that the oil and sludge are separated from the water. The clean water (containing max. 5ppm oil in it) is then dumped to the sea via the interceptors. The existing Delimara power station is fitted with oil traps (internally known as interceptors) on the water drain ducts which lead to the sea. In the case of an oil spill these interceptors prevent the oil from reaching the sea. In this manner, all drain water being directed towards the sea, first passes through these interceptors for additional protection against the possibility of contaminating the sea with oil.

The proposed 144MW plant needs to be cooled and will be using the sea water civil cooling system structure already in place for the exiting power plant. No added civil infrastructure for this purpose is deemed necessary.

The wastes arising during operation are listed in Table 12.2. In summary, it is believed that when the proposed plant is operated using HFO the waste arising will be:

- Solid waste generation from the flue gas purification will be some 10,000 tonnes/yr;
- Sludge oil approximately 1,000 tonnes/yr;
- Discharge of treated oily water to sea around 10,000m³/yr;
- Sea water cooling system will increase the current discharge by some 50% (an increase of 13,500 m³/hr on the current flow of 29,500m³/hr);
- Sludge generated from the Boiler Wash Down treatment facility will generate 8m³/yr of sludge.