

Non-Technical Summary of Determination

The H100 facility will produce hydrogen by the electrolysis of water. The site is expected to produce sufficient hydrogen to meet the demand for 300 homes with the ability to expand to approximately 900 homes in the future.

Water supply - water is supplied from the Scottish Water mains supply.

Electricity for the electrolysis process is provided by a wind turbine, however a connection to the national grid is provided in case of failure of the wind turbine to provide an adequate supply. Due to the critical nature of the hydrogen supply (home heating and cooking), a further back-up supply is provided by a gas oil generator which is located on site and regulated as a Medium Combustion Plant.

Water emissions - trade and foul effluent from the facility will be discharged to Scottish Water sewer, with surface water being released into the Firth of Forth via a long outfall.

Air emissions – the hydrogen manufacturing process will release oxygen on a continuous basis and hydrogen and nitrogen during start-up and shutdown periods. When in use, the back-up gas oil generator will emit combustion products (nitrogen oxides and carbon monoxide).

Odour – the hydrogen manufacturing process itself is not expected to be odorous, however as the hydrogen is being transported to homes via a local hydrogen grid, it must be odourised so that leaks can be identified (as with natural gas). The injection of Odorant NB into the natural gas grid is standard practice within the UK and as such equipment and procedures for preventing and minimising odour are known and routinely used without odour issues.

Noise - the hydrogen manufacturing process equipment and gas oil generator are located in enclosures so should not cause noise nuisance. For safety reasons, in the rare occurrence that an emergency shutdown of the plant is required, hydrogen may need to be vented via the emergency vents. In this case there may be significant noise from the vents for a very short period (2-15 mins), but this is considered to be acceptable due to the short period of impact and the infrequent nature of the emission.

SEPA has assessed the application and considers that the proposal meets the requirements of the Pollution Prevention and Control (Scotland) Regulations 2012 and as such is minded to issue a permit.