

SSE's Lerwick Power Station currently provides the majority of the Shetland Islands electricity generation using a number of diesel engines. The island's electricity system is in a period of change with the loss of generating capacity at Sullom Voe Terminal Power Station (SVT PS) and the impending connection of the island's distribution to the UK Mainland by subsea interconnector cable. To compensate for the removal of SVT PS contribution, SSE are installing three new low oxides of nitrogen (NO_x) abated engines in Station A to make up for the initial shortfall in capacity and to provide future generating resilience should there be any issues with the distribution system. The addition of these new engines will shift the overall generating capacity at the station from high NO_x emitting unabated engines to more efficient, lower emission ones. When compared to the historic emissions profile for the station, this will be a significant reduction in overall NO_x emissions. However, when viewed against the current transitional mix of engine use where an abated Station A engine is supplemented by the unabated Station B engines (which emit through a much taller chimney), there could be some increase in potential ambient NO_x concentrations at certain nearby receptors. The air quality impact assessment has shown that despite the lower stack height for the Station A engines and emission temperature, the relevant NO_x air quality standards will not be compromised for the scenarios that the station is anticipated to operate in the near and foreseeable future.

Station A's air emission limits have been updated to reflect the addition of the new engines and to add the 1,500 operating hours per year restriction required by the Energy Efficiency Directive (EED) for standby electricity generating installations. The air emission sampling requirements, that verify compliance for the various combustion plant at the station, have been updated to reflect current and future operations.

The addition of the new engines will result in a significant reduction in noise impact from the station on the surrounding properties by using modern silencers for the engine intakes and chimneys. Station A's ventilation system is also being replaced with a modern system which will be fitted with acoustic absorbing panels to reduce noise escape from the engine hall. Several other escape points are being removed or improved to reduce the station's noise impact from its current "significant adverse effect" level to an acceptable degree.

The application also contains proposals to change the site's off-site ambient air monitoring provision and its current water emissions sampling. The ambient air monitoring has been reduced to focus solely on NO_x as the emissions of SO₂ and particulate have reduced significantly over the years due to changes in fuel standards and the use of new modern abated engines. The water sampling requirements and associated emissions limit values have also been revised to reflect current practice in the regulation of sewage discharges, sampling methods and upgrade of surface water discharge monitoring systems.