

AN EVALUATION OF SHELL GAS-TO-LIQUIDS DIESEL – THE ENVIRONMENTAL BENEFITS

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The Shell gas-to-liquids (GtL) technology, better known as the Shell Middle Distillate Synthesis (SMDS) process, converts natural gas into diesel or kerosine and speciality products via a modern, improved Fisher-Tropsch synthesis. The diesel cut has very good cetane quality, low density, and virtually no sulphur and aromatics. The environmental credentials of SMDS diesel continue to be evaluated in terms of vehicle and engine exhaust regulated emissions. Other key environmental properties of SMDS diesel, including ecotoxicity, biodegradability, and product sustainability, have also been investigated.

Data from both ecotoxicological screening and biodegradation tests show positive outcomes for both SMDS diesel and certain blend combinations with conventional diesel.

The sustainability of the SMDS process has been studied to encompass all aspects from production to the end use of all products. From the specific viewpoint of diesel usage, test programmes indicate benefits in both mass fuelling and CO₂ emissions when compared with conventional diesel. A proportion of these benefits can be derived in SMDS diesel blends.