# A cost effective switch from diesel to Shell GTL Fuel for Hitachi



### Introduction

Following successful storage stability and cold weather operability trials in two Zaxis-5 excavators, in May 2013 Hitachi Construction Machinery Europe (HCME) switched over to Shell GTL Fuel for the first fill of all its machines sold in EU. "We knew that Shell GTL Fuel is compatible with existing diesel technology and refuelling infrastructure, which allows easy switch over from regular diesel.

This meant that we could test and use it in existing machinery without the need for any modifications, cleaning of fuel systems or additional investment," says Igor de Liefde, who is responsible for product regulation in HCME's engineering department.

## The challenge

The European construction industry is placing increasing importance on the use of new technology to meet European Union (EU) Stage IIIB engine emission regulations. In addition, product quality is vital to Hitachi. "We wanted to demonstrate the benefits of Shell GTL Fuel in our equipment and how it can help tackle local air pollution" continues Igor.

#### The solution

HCME used a ZX210LC-5 medium excavator for a storage stability test with Shell GTL Fuel, which ran for eight months. The excavator was left out in the most demanding conditions, from winter through to summer, with the engine only occasionally being switched on briefly to warm up. This was an extreme test, since in normal use the fuel would be regularly replenished.

In addition, HCME ran a cold weather operability test with Shell GTL Fuel with two Stage IIIB-compliant ZX470LCH-5s in Norway for three months during the winter of 2012-13. The civil construction contractor and owner Carl Fon conducted the test moving soil and solid materials at a road building project in the Mysen region: "I'm a leader rather than a follower of new technology. So when the opportunity arose to test something innovative like Shell GTL Fuel, I grabbed it with both hands! We had to try it in severe winter conditions so Norway and this site in particular was ideal."

The trials demonstrated that Shell GTL Fuel was fit for purpose and remained stable for the entire duration of the extensive testing. This helped to prevent clogging of the fuel filters when machines were started up, even after long periods of storage. In addition, the tests showed that Shell GTL Fuel's consistent low temperature performance could potentially help deliver reliable year round operations, so that HCME would not have to use additives as a preventative measure.

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Shell GTL Fuel is a gas-derived liquid fuel. It burns cleaner than conventional diesel so produces fewer local emissions and less visible black smoke. This is because it contains virtually no sulphur or aromatic compounds and has a high cetane number. Shell GTL Fuel can be used in existing vehicles and other equipment with heavy duty diesel engines without modification and has been available in the UK since 2016.

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