Caterpillar Inc. is the world’s leading producer of construction machinery and distributes its high performance machinery worldwide through a global network of dealers. In Austria, Caterpillar is represented by Zeppelin Austria.

Zeppelin Austria tested the impact of new Shell Diesel on dirty nozzles in a field trial in Austria, in which the nozzles of a chain dredger 323D were taken out, inspected and reinstalled unchanged.

After 177 hours of testing with new Shell Diesel, the results showed:
- Fuel consumption decreased by 8.8%
- Engine performance improved in all ranges of pressure

The hydraulic pump test is used by Zeppelin Austria to calculate the engine power in kW by measuring the pump throughput at 3 fixed pressure points with engine rpms fixed at highest level.

To test the effect of new Shell Diesel on new engines, Zeppelin Austria installed new nozzles into a chain dredger CAT 320D and measure the performance after 257 hours of operation.

To compare the results of new Shell Diesel and standard diesel, standard diesel was tested with the same test set-up as new Shell Diesel.

After a normal running in period with decreasing fuel consumption – which is usually seen with new nozzles – Zeppelin Austria found that fuel consumption of the CAT 320D test engine stabilised and stayed at the low level with new Shell Diesel.

In comparison Zeppelin Austria found that with the standard diesel quality the engine performance started to decrease early in the operations.

Thus Zeppelin Austria’s test results showed a difference in performance and fuel consumption of new Shell Diesel compared to the standard grade:
- Improved engine performance
- No increase in average fuel consumption

*The above testimonial was provided in relation to usage of Europe’s new Shell Diesel. Canada’s new Shell Diesel Extra™ shares a similar detergency formula to that in Europe’s new Shell Diesel, only the additive in the Canadian version has been reformulated to ensure it is fit for purpose in the Canadian climate.

* Refers to Shell Diesel with fuel economy formula. Product name may vary per country. Known as Shell FuelSave Diesel, Shell Diesel Extra, New Shell Diesoline Ultra in other markets.

®/TM Trade-mark of Shell Brands International AG. Used under license.
“We are impressed with new Shell Diesel’s trial results!”
Interview with Joachim Gneis, Continuous Improvement Manager, Zeppelin Austria.

Tell us more about the challenging conditions in which construction machinery operate.
A big challenge is that construction machinery does not get as much cooling through head wind as on-road vehicles. This results in higher temperatures of the engine and fuel, which supports the formation of deposits on nozzles. The bio content in diesel effects these deposits even further.

How did new Shell Diesel help you to address these challenges?
We found that new Shell Diesel clearly prevented build up of deposits on nozzles, which are intensified through the bio content in diesel, thus helping to prevent efficiency loss in the engine. Moreover, the performance of the nozzles stayed closer to its original, manufacturing level.

And what about vehicles which were already in use for a longer period?
In our field trial, new Shell Diesel cleaned up the dirty nozzles and brought their performance closer to the performance level of new nozzles.

Did you experience other benefits as well?
We were surprised how significantly we were able to reduce fuel consumption with new Shell Diesel! Our results showed fuel savings of nearly 9%. That is impressive!

How important for your company are your CO₂ emissions values?
In the construction sector, reducing emissions becomes increasingly important. We are keen to reduce our environmental footprint and also help our customers reduce their emissions too. By lowering fuel consumption with new Shell Diesel, we were able to produce less CO₂.

Why did you start using new Shell Diesel?
Industry standards are rising constantly. We as a market leader are driven to continuously develop our vehicles in order to respond to increasingly strict emission standards, more bio content in diesel and the customer demand for more efficient equipment. The standards for fuels are rising too. In the construction sector, our machinery needs to stay in peak condition even when the hours pile on to be able to deliver the required performance and meet emission standards. We saw an opportunity to achieve this with new Shell Diesel.

Shell FuelSave Diesel
Shell Diesel with fuel economy formula is designed to maintain construction vehicles’ operating efficiency over the long term. Internal Shell tests have shown that new Shell Diesel with fuel economy formula can help prevent the build up of carbon deposits in the injector nozzles, thus improving combustion and lowering fuel consumption.

CAT Product Link
CAT Product Link offers fleet managers an overview of important operating data such as fill level, hours of operation, fuel consumption, condition of the vehicle and site of operation. CAT Product Link can help to optimize fuel consumption, reduce idle time and plan maintenance work proactively.

“WITH NEW SHELL DIESEL WE SAVE NEARLY 9% FUEL.”

Joachim Gneis [right] with Customer Advisor Martin Jarner [Shell Brand Partner] and Technology Advisor Christiane Schöner-Keyneres [Shell]