

Chinese company Weichai Power made history by introducing the first diesel engine ever with an intrinsic thermal efficiency of 53.09%.

Engineers and scientists have worked to increase the thermal efficiency of diesel internal combustion engines ever since they were first developed 127 years ago, according to Interesting Engineering.

At the 2024 World Congress on Internal Combustion Engines, which got underway in Tianjin, China, the company unveiled its innovative technology.

The China Automotive Technology & Research Centre, a specialised testing body for Chinese internal combustion engines, and TÜV SÜD, a globally renowned testing organisation, both acknowledged the achievement.

The basic engine's thermal efficiency is the proportion of diesel combustion energy converted into useful engine output work without requiring a waste heat recovery device.

As the base engine's thermal efficiency increases, the engine's economy increases.

On September 16, 2020, Weichai Power introduced a diesel engine that broke the previous record with a body thermal efficiency of 50.23%, marking a significant milestone in this area.

The company achieved even greater success on January 8, 2022, when the engine's thermal efficiency was increased to 51.09%. The company's most recent record-breaking performance was 52.28% thermal efficiency on November 20, 2022.

An approximate 14% boost in a diesel engine's economy can be achieved by upgrading from a 45%-46% thermal efficiency level to 53%. This number is based on estimations of China's current diesel engine ownership.

An estimated 31 million tonnes of gasoline are saved annually and 97 million tonnes less carbon emissions are produced as a result of this innovation.