

# WORLD



**Left:** Tan Xuguang, director of the State Key Laboratory of Engine Reliability and president of Weichai Power, delivers a speech at the new product launch ceremony on Sunday. **Right:** Weichai Power receives a certificate for the diesel engine with a brake thermal efficiency of 52.28 percent from TUV SUD on Sunday. PHOTOS PROVIDED TO CHINA DAILY

## Weichai fueling development of global engine industry

By YUAN SHENGAO

Weichai Power, a leading Chinese powertrain developer and manufacturer, introduced the first commercial diesel engine in the world with a brake thermal efficiency of 52.28 percent on Sunday, marking a new milestone in its industrial upgrade.

The new product was certified by TUV SUD, one of the leading German certification and testing service providers.

It is the third time in less than 2.5 years for Weichai to surpass the benchmark of the industry. The company released the world's first commercial diesel engine with a brake thermal efficiency of 50.23 percent in September 2020. It hit a new world record that increased brake thermal efficiency to 51.09 percent in January 2022, further consolidating its position in the global internal combustion engine industry.

It is estimated that the new product can reduce fuel consumption and carbon dioxide emissions by 12

percent compared to those with a brake thermal efficiency of 46 percent, according to the company. With mass use of the technology in the industry, it is expected to generate huge economic and social benefits.

A total of 162 patent applications were submitted and 124 of them have been approved.

According to Tan Xuguang, director of the State Key Laboratory of Engine Reliability and president of Weichai Power, improving the brake thermal efficiency of diesel engines is a common pursuit of the global diesel engine developers since diesel engines were first developed 125 years ago. More than 100 researchers in Weichai have been pushing the envelope for bigger goals.

"The latest advance is a significant breakthrough in research and development for Weichai," said Tan. "It will expand Weichai's competitiveness and support the diesel engine industry of China to pursue higher growth."



**Left:** The diesel engine with a brake thermal efficiency of 52.28 percent developed by Weichai. **Right:** The natural gas engine with a brake thermal efficiency of 54.16 percent developed by Weichai.



An array of enterprises, research institutes, industry institutions and strategic partners, including the Chinese Mechanical Engineering Society, the Chinese Society for Internal Combustion Engines and the China Internal Combustion Engine Industry Association, sent congratulatory letters or videos to Weichai.

Weichai also released a natural gas engine with a brake thermal

efficiency that broke 54.16 percent for the first time in the world on Sunday. The brake thermal efficiency surpassed that of diesel engines for the first time, marking a milestone for the internal combustion engine industry.

For more than 10 years, Weichai has been attaching significant importance to the development of clean energy products.

In 2012, it developed the first

engine for high-pressure direct injection of natural gas. In 2020, when the average brake thermal efficiency of natural gas engines in the industry was 42 percent, it successfully introduced a new product with a 45 percent rating. In 2021, the rating increased to 50 percent. It has become a driving force in global natural gas engine development and occupied about 70 percent market share globally, according to the company.

As stated by the company, the latest product can help users to reduce fuel consumption by more than 20 percent and lower dioxide emissions by 25 percent compared with ordinary natural gas engines in the market.

The commercialization of the two new products, which are the diesel engine with a brake thermal efficiency of 52.28 percent and the natural gas engine with a brake thermal efficiency of 54.16 percent, will help China reduce carbon emissions by 90 million metric tons every year, according to Tan.

Tan said that the development

of internal combustion engines with continuous rises in brake thermal efficiency and mass applications of new energy resources in products are the two crucial driving forces for Weichai and have kept the company ahead in the development of high-performance conventional engines and new energy engines. The moves have also opened a new path for diversified energy transformation under the national strategy of carbon peak and carbon neutrality.

Li Xiaohong, president of the Chinese Academy of Engineering, said that it is an exciting moment for Weichai and China. The academy will spare no effort to support Weichai to achieve bigger goals in the next few years.

Ling Wen, vice-governor of Shandong province, who is also a member of the Chinese Academy of Engineering, said that the Shandong government hopes Weichai can make greater progress in R&D to contribute to regional economic development.