

Cleaner than electric? Mazda talks up gasoline engine fuel economy ambitions for SkyActiv 2

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(Phys.org) —Auto-focused sites are buzzing over a recent report in *Autocar*, reporting Japanese automobile manufacturer Mazda's future gasoline engine technology, which will reduce carbon dioxide emissions

below the amount generated to power electric cars.

As *Geek.com* noted, while [electric cars](#) do not [pump](#) out CO₂ as they travel, they have a carbon footprint created when the electric power they run on is produced. Though not due for some years to come, the very idea of a gasoline engine efficient enough to release less carbon dioxide than an electric car was tantalizing enough to make the numerous blog and car site headlines. Specifically, the spotlight is on advances in Mazda's SkyActiv engine technology. Mark Tisshaw, writing in *Autocar*, said "So efficient is its latest internal combustion engine technology, the Japanese firm claims that it could even eclipse pure electric cars for well-to-wheel CO₂ emissions, without adding expensive and heavy hybrid or plug-in hybrid components."

At Mazda, the engine of the future is called the SkyActiv-G Generation 2, a follow-up to Mazda's SkyActiv-G Generation 1. For SkyActiv-G Generation 2, Mazda will adopt homogeneous charge compression ignition (HCCI) and an even higher compression ratio of 18:1 over SkyActiv-G Generation 1 high compression ratio of 14:1. Mazda said on its site that increasing the compression ratio considerably improves thermal efficiency. According to *Autocar*, it is likely SkyActiv-G Generation 2 technology could arrive in production before the decade is out..

For SkyActiv-G Generation 2, Mazda will [adopt](#) homogeneous charge compression ignition (HCCI) and the higher compression ratio of 18:1. *Autocar* said The HCCI system works in a way similar to a diesel engine, using piston compression rather than a spark plug to ignite the mixture in the chamber.

Automotive News explained how HCCI "compresses the fuel-air mixture to such a high pressure and temperature that it ignites by itself without requiring a [spark](#), similar to the way a diesel engine operates."

That Mazda had ambitious plans for a generation of engines in years to come that could achieve 30 percent better fuel economy than the current line of Skyactiv engines was already evident back in January this year, when Mitsuo Hitomi, in charge of powertrain development, spoke at Mazda's Yokohama technical center. Discussing goals, Hitomi said Skyactiv 2 will focus on improved internal combustion "If we want to dramatically improve fuel economy from here, the only route is through lean burning," Hitomi referred also to plans for a Skyactiv 3 lineup in the future that may help Mazda comply with 2025 emissions targets.

More information: www.mazda.com/technology/skyactiv/engine/

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