Being fuel agnostic may help combustion engines to contribute to a greener future. Partner Alex Bone takes a look at a recently unveiled engine design from @Cummins

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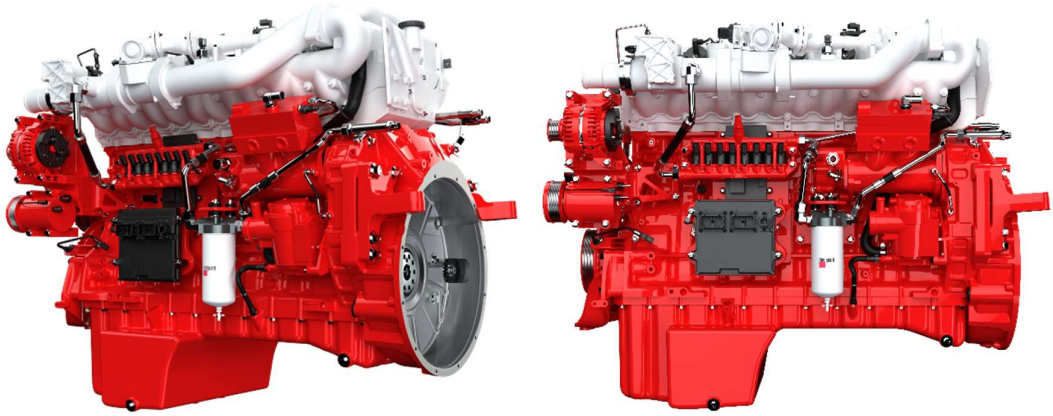
Being Agnostic can be better for the Environment

There has been much talk about stopping use of internal combustion (IC) engines, but reports of the death of the engine may have been exaggerated.

Cummins has produced conventional engines for many years starting with diesel and later including natural gas as fuel sources. As part of commitment to sustainability it is also looking to alternative fuels to help it achieve its decarbonisation goals. Cummins has committed to using hydrogen as a fuel and is already a leader in hydrogen fuel cell technology and hydrogen production technologies, but is also making good use of its existing know-how by producing hydrogen IC engines. One reason for Cummins continued focus on IC engines is that they can potentially provide drop in replacements for conventional engines, and this could lead to significantly faster adoption of the new, greener technology.

At the ACT Expo in the US in May **Cummins unveiled** a 15-litre hydrogen engine based on their fuel agnostic platform, with a 6.7 litre version to follow soon. The key to the fuel agnostic platform is that the bottom end of the engine (the parts below the head gasket) are largely similar irrespective of the fuel being burned, while the design of the head and associated components (the parts above the head gasket) are specific to a particular fuel.



Common parts means similar engine footprints which makes it easier for manufacturers to include a range of fuel options for a particular vehicle platform and should also help to standardise servicing

intervals and repair work meaning a reduced cost of ownership. According to Jim Nebergall, General Manager of the Hydrogen Engine Business at Cummins Inc. "*Our customers are responding favorably to this practical technology. These engines look like engines, they sound like engines, and fit where engines normally fit*".

In recent years Cummins has stepped up its focus on protecting the results of its R&D and recently **announced** that 2021 was a record year with the company receiving 564 patent grants, up from 287 in 2017, with the engine business segment receiving about 28% of those patents.

I have soft spot for internal combustion engines having spent many happy, if oily, hours tinkering with car engines in the past and I am pleased to see that developments may allow them to be part of a cleaner future. We look forward to hearing more about this technology in the future.

If you have any questions about IP protection for your own products, or about the IP protection of others, please do not hesitate to contact us at **aat@aathornton.com** to see how we can help.

Note: AA Thornton is not associated with Cummins, but we would like to thank them for permission to use the engine images above