



PRESS RELEASE

European 'StasHH' consortium defines standard for fuel cell modules for heavy-duty applications

Brussels, 24 March 2022 - The European [StasHH](#) consortium has hit a major milestone by setting the first ever standard for fuel cell modules for heavy-duty applications. This standard aims to globally impact the uniform development of fuel cell modules by setting clear rules regarding physical dimensions and physical and digital interfaces. The StasHH standard is thus a real game changer as it provides clear advantages for users and producers of fuel cell modules in their common goal towards reaching market competitiveness of heavy-duty fuel cell applications.

About one year after the beginning of the process, the European StasHH consortium has published their StasHH standard as a result of a consensus reached between major European fuel cell module suppliers, original equipment manufacturers and research, test, engineering and knowledge institutes. The StasHH standard comprises three parts: a definition of sizes, physical interfaces, and application programming interfaces. Inspired by the AA nomenclature for batteries, the StasHH standard applies the HH nomenclature for fuel cell modules and defines three basic sizes: A, B and C. The basic sizes can be stacked resulting in derivatives such as AA, BB and BBB. Fuel cell modules built according to these sizes allow the use in any of the heavy-duty applications within scope, including stationary, rail, waterborne, road and off-road applications.

The StasHH standard sets the width and height of the basic sizes of the fuel cell modules at 700 mm and 340 mm respectively; types differ in their length, with 1020 mm for A, 1360 mm for B and 1700 mm for C, with increments of 340 mm (the next step would be twice A). The fuel cell module components like the fuel cell stack, the air-supply system, the cooling system, the hydrogen recirculation system and the control system are included within these dimensions. Fuel cell module suppliers can determine their own power output. Inclusion of an internal DC/DC converter is optional.

The physical interconnection area of the fuel cell module, which provides the interfaces for the hydraulic, pneumatic, electrical and voltage connections for the system and the application, is also defined in the StasHH standard in terms of length and depth at the length-height side and/or width-height side of the fuel cell module. The standard defines digital interfaces as well, allowing communications among the fuel cell module, the system and the application, and convenient digital integration with existing and new applications.

Bart Biebuyck, Executive Director, Clean Hydrogen Partnership states:

"Funded by the Clean Hydrogen Partnership, the project StasHH reached an important milestone in the development of standard sized fuel-cell modules in transport. By defining the first ever standard for fuel cell applications for hydrogen powered heavy-duty applications such as hydrogen trucks, StasHH will help to reduce market fragmentation, effectively lower costs and increase the competitiveness of fuel cell technology as a means to decarbonise transport."





Now that the StasHH standard is defined, each fuel cell module supplier in the project is going to develop at least one fuel cell module according to the StasHH standard. The knowledge obtained during the development of the fuel cell modules and the subsequent testing campaign will be used to update the StasHH standard, if necessary. The consortium is committed to enabling a worldwide adoption of the StasHH standard.

The StasHH standard is publicly available on the StasHH website: <https://www.stashh.eu/stashh-standard>.

About StasHH

The acronym StasHH stands for “Standard Sized FC module for Heavy Duty applications”. The [StasHH](#) project has received funding from Fuel Cells and Hydrogen 2 Joint Undertaking (now Clean Hydrogen Partnership) under Grant Agreement No. 101005934. This Joint Undertaking receives support from the European Union’s Horizon 2020 Research and Innovation Program, Hydrogen Europe and Hydrogen Europe Research.

About Clean Hydrogen Partnership

[The Clean Hydrogen Partnership](#) – the successor of the Fuel Cells and Hydrogen Joint Undertaking (FCH JU) – aims to strengthen and integrate European Union research and innovation capacity to accelerate the development and improvement of advanced clean hydrogen applications ready for market, across energy, transport, building and industrial end-uses, while strengthening competitiveness of the Union clean hydrogen value chain. The three members of the partnership are the European Commission, fuel cell and hydrogen industries represented by Hydrogen Europe and the research community represented by Hydrogen Europe.



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Partners

Original equipment manufacturers:



Fuel cell module suppliers:



Research, test, engineering and/or knowledge institutes:

