

AVL AND GREENLIGHT INNOVATION

A partnership shaping the future of fuel cell development

Combining the fuel cell and testing expertise from two industry leaders, AVL and Greenlight Innovation recently introduced an unprecedented development platform for Fuel Cell Electric Vehicles (FCEV).

Greenlight manufactures the world's most sophisticated and reliable testing equipment for fuel cells. AVL is the world's largest independent company for the development of powertrain systems with internal combustion engines as well as instrumentation and test systems. Pairing Greenlight's fuel cell testing equipment with AVL's proven and reliable toolchain for validating internal combustion engines is revolutionizing the development process for FCEVs.

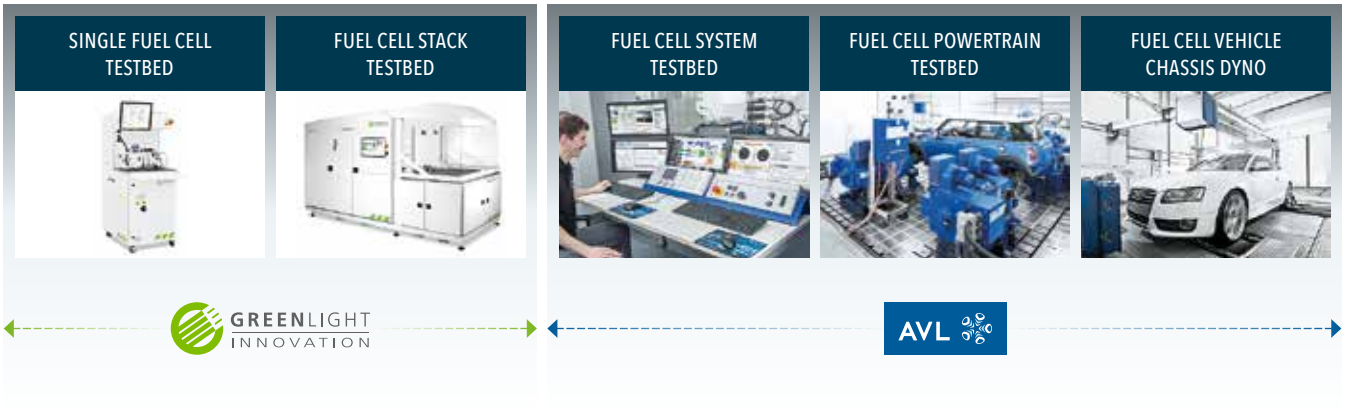
Thanks to the user-friendly AVL PUMA Go™ Fuel Cell automation software, complex test runs on the fuel cell testbed can be executed. The data can be efficiently processed with various software solutions out of the AVL Team SUITE™. Anticipated vehicle performance can be obtained by combining the real fuel cell system on the testbed with a virtual vehicle. The interplay of all the components opens up a new dimension of fuel cell development.

HIGHLIGHTS

- High-dynamic fuel cell test platform with a fully equipped virtual environment
- Intuitive usability thanks to the flexible, real-time AVL PUMA Go™ Fuel Cell automation software
- Smart fuel cell development support enabled by early online diagnosis of fuel cell degradation
- Time- and cost-effective fuel cell development made possible due to its integrated and proven AVL toolchain for vehicle development

HOW AVL AND GREENLIGHT BUNDLE THEIR KNOW-HOW

Combining virtual and real-world testing enables faster R&D loops and therefore steeper learning curves.



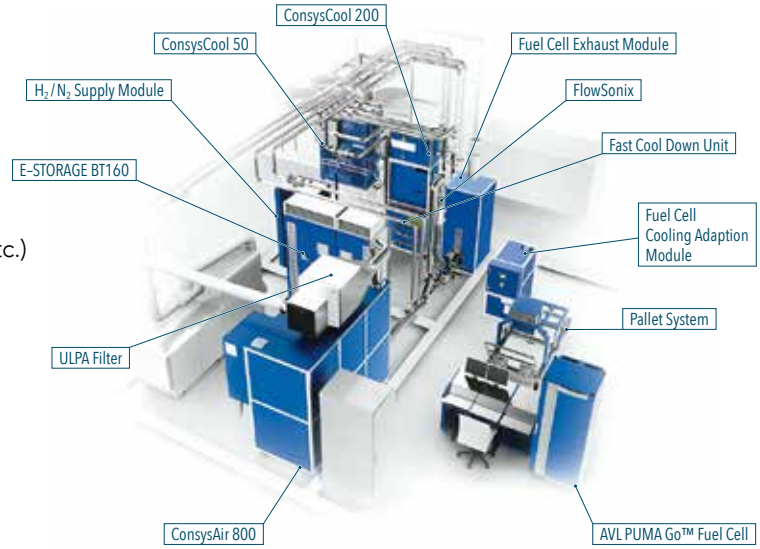
REAL WORLD USE CASE:
HYDROGEN CENTER AUSTRIA (HYCENTA) FUEL CELL SYSTEM TEST LABORATORY

HyCentA promotes the use of hydrogen as a regenerative energy and functions as a focal point and information platform for hydrogen-oriented research and development activities. Completed in 2017, AVL and Greenlight used their combined know-how of fuel cells to help HyCentA become the most modern fuel cell test laboratory in Europe.



TEST CAPABILITIES

- Environmental tests (cold-start test, etc.)
- Durability test (24/7)
- Driving cycles (New European Driving Cycle, Federal Test Procedure-75, World Harmonized Light Vehicle Test Procedure, etc.)
- User defined tests (sequences, Design of Experiments etc.)
- Fuel Cell Control Unit calibration and optimization (AVL CAMEO™, etc.)
- Vehicle and environmental simulation models
- Hardware-in-the-Loop testing
- Stationary and mobile PEM applications from
- High accuracy measurement equipment (Total Harmonic Distortion Analysis, gas analysis, mass flow, etc.)
- Analysis and optimization of dynamic operation



FIND OUT MORE:

AVL List GmbH, Hans-List-Platz 1, 8020 Graz, Austria
Phone: +43 316 787-0, fax: +43 316 787-400, email: info@avl.com, www.avl.com

March 2019, Classification Public