

FutureSteelVehicle Interim Report on Lightweight Steel Body Structures Released Today

Steel Technology Assessment and Design Methodology Divulged for Seven Sub-Systems that reduce vehicle carbon footprint

Brussels, 30 June 2010 – WorldAutoSteel today releases interim report, ***FSV Steel Technology Assessment and Design Optimisation***, detailing the development and optimisation of seven light weight, vehicle structural sub-systems that reduce the vehicle's carbon footprint. The report documents the optimisation of multiple solutions for the rocker, B-pillar, roof, rear and front rails, front upper load path and battery tunnel load path members. Within this portfolio of solutions are applications that all vehicle manufacturers and segments will find relevant, each evaluated on the basis of cost versus weight and life cycle Greenhouse Gas GHG emissions.

FutureSteelVehicle (FSV) is a multi-million Euro and multi-annual programme that will deliver auto body concepts addressing radically different structures for advanced powertrains, such as advanced hybrid, electric, and fuel cell systems. The goal of the research is the demonstration of safe, lightweight steel structures for future vehicles that reduce GHG emissions over the entire life cycle while maintaining vehicle affordability relative to alternative materials.

Included in the report release is an Overview Report, providing highlights of the programmes achievements thus far, as well as a detailed Engineering Report produced by global engineering firm EDAG, managers of FSV's technical development. The Overview Report is available online for free download at worldautosteel.org/Projects/Future-Steel-Vehicle/FSVInterimReport. The detailed Engineering Report is available by contacting WorldAutoSteel or any representative of its 17 member companies located around the world.

Midway through its second phase, the reports reveal programme findings to date, which include the following:

Steel materials portfolio foretelling the future of steel production. The programme brings yet more advanced steel and steel technologies to its portfolio than ever seen before in steel industry projects, and consequently to the tool sets of automotive engineers around the world. Included are over 20 different new Advanced High-Strength Steel (AHSS) grades representing materials expected to be commercially available in the 2015–20 technology horizon.

New benchmark in weight reduction. FSV targets an A/B-Class BEV body structure mass of 190 kg that meets the projected year 2020 safety regulations, and reduces the total life cycle vehicle emissions. This mass target represents a 35 percent reduction over a baseline vehicle body structure, setting a new goal for vehicle lightweighting.

Life Cycle Assessment (LCA) Comparisons. Significant mass reduction targets achievable through AHSS are further supported by an LCA of each sub-system's mass reduction effect on the



vehicle's total GHG footprint based on the University of California at Santa Barbara (UCSB) GHG Materials Comparison Model.

New design methodology to realize the best environmental solution for compliance with future vehicle emission regulations. An SAE award-winning “state-of-the-future” design optimisation process used to develop structures for FSV has the same resource efficiency objective that mirrors what happens in nature, creating radically different, non-intuitive architectures optimised for the structure’s function within the total system. Consequently, the lightest solutions are realized for the given material and structural performance targets.

As of June 2010, the programme is midway through Phase 2, designing optimised AHSS body structures for four proposed vehicles: battery electric (BEV) and plug-in hybrid electric (PHEV-20) for A and B Class vehicles; and plug-in hybrid electric (PHEV-40) and fuel cell (FCV) for C and D class vehicles. For more information about FutureSteelVehicle, visit futuresteelvehicle.org.

Notes to Editors:

About WorldAutoSteel

WorldAutoSteel, the automotive group of the World Steel Association, is comprised of 17 major global steel producers from around the world. WorldAutoSteel's mission is to advance and communicate steel's unique ability to meet the automotive industry's needs and challenges in a sustainable and environmentally responsible way. WorldAutoSteel is committed to a low carbon future, the principles of which are embedded in our continuous research, manufacturing processes, and ultimately, in advancement of automotive steel products, for the benefit of society and future generations.

To learn more about WorldAutoSteel and its projects, visit www.worldautosteel.org

Members of WorldAutoSteel are:

- Anshan Iron and Steel Group Corporation – China
- Arcelor Mittal - Luxembourg
- Baoshan Iron & Steel Co. Ltd. - China
- China Steel Corporation – Taiwan, China
- Hyundai-Steel Company - South Korea
- JFE Steel Corporation - Japan
- Kobe Steel, Ltd. - Japan
- Nippon Steel Corporation - Japan
- Nucor Corporation - USA
- POSCO - South Korea
- SeverStal - Russia/USA
- Sumitomo Metal Industries, Ltd. - Japan
- Tata Steel & Corus - India, UK, Netherlands
- ThyssenKrupp Stahl AG - Germany
- United States Steel Corporation – USA, Slovakia
- Usinas Siderúrgicas de Minas Gerais S.A. - Brazil
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