



Hydrogen and Fuel Cells in Canada Country Update

**20th IPHE Steering Committee Meeting
City of Fukuoka, Japan
November 20-21, 2013**

- **Canadian firm Hydrogenics Corporation in partnership with Enbridge**
 - Canada’s largest natural gas distribution company
 - To develop a utility scale P-t-G energy system in North America
 - Using existing natural gas pipeline
- **Germany’s (E.ON) first P-t-G Plant in Falkenhagen**
 - E.ON, one of the world's largest power and gas companies
 - Canadian Technology from Hydrogenics Corporation
 - Using surplus renewable energy to produce H₂ for storage in the country's existing natural gas pipeline network

- **Commissioned a supply chain development project with the Automotive Parts Manufacturers Association of Canada (APMA) to:**
 - Assess Canada's capabilities in the FC supply chain
 - Identify supply gaps
 - Create a database of Canadian suppliers
 - Most importantly, engaged stakeholders
- **Findings:**
 - Wide range of capabilities in Canada
 - Engage & establish business relationships
 - Gaps are addressable
 - Suppliers generally not aware/focused on FC related opportunities
 - Traditional auto suppliers wary of the infrastructure & tooling costs associated with new production lines
 - APMA, Canadian Hydrogen and Fuel Cell Association, automotive OEMs, governments, industry & academic took positive positions to continue development

- **Associations:**
 - Automotive Parts Manufacturers Association (APMA)
 - Canadian Hydrogen and Fuel Cell Association (CHFCA)
- **Industry:**
 - Mercedes Benz Fuel Cells (MBFC)
 - Ford /Automotive Fuel Cell Cooperation (AFCC)
- **Government:**
 - Industry Canada
 - Department of Foreign Affairs & Trade Development (DFATD)
 - National Research Council (NRC)
 - Automotive & Surface Transportation (AST) portfolio
 - Energy Mines & Environment (EME) portfolio
- **Academia:**
 - University of British Columbia
 - Simon Fraser University
 - University of Victoria

- **APMA will maintain/host/promote the database**
- **Additional stakeholder & OEM engagement**
 - Broaden participation
- **Building on APMA project - create a national Canadian FC Supply Chain Alliance to:**
 - Create symbiotic relationships between FC automotive OEMs and current and potential suppliers
 - Improve manufacturing processes and testing methods
 - Attract additional foreign direct investment to Canada
 - Develop a strong supply chain for low cost FC components in Canada

- Agreements between Ballard Power Systems and Azure Hydrogen
 - For China Fuel Cell Bus Program (\$11M for initial 12 months)
 - Supply agreement for backup power systems in China
- The world's largest Power-to-Gas facility (2MW) is now operational with Hydrogenics technology
- Hydrogenics awarded a contract for a fueling station in Bolzano, Italy
- Daimler, Ford and Renault-Nissan signed a 3 way agreement to develop common FC system for 2017

- **Regional Workshops in Europe, North America and Asia**
 - North America workshop to take place in Washington D.C in Q1, 2014
 - H2 stakeholders from Industry, academia and government
 - Potential topics:
 - H2 in transport
 - H2 as a storage medium
 - H2 infrastructure
 - Role of Policy
 - Provide input to the H2 Road Map



Questions?

Tim Karlsson
Director
Emerging Technologies Directorate
Industry Canada