



The Canadian Transportation Fuel Cell Alliance

MILESTONES

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On August 12, 2003, the Government of Canada announced the extension of the Canadian Transportation Fuel Cell Alliance until March 31, 2008. An additional \$10 million will be provided to the organization over this period.

2002 / 2003 PROGRESS REPORT

Canadian Transportation Fuel Cell Alliance

The Canadian Transportation Fuel Cell Alliance (CTFCA) is a partnership of 50 organizations whose focus is to demonstrate and evaluate Canadian hydrogen fuelling options for fuel cell vehicles. An initiative under *Canada's Action Plan 2000 on Climate Change*, the CTFCA is providing \$23 million of federal funding over five years to evaluate and demonstrate fuelling systems for light, medium and heavy duty vehicles, and to develop appropriate codes, standards and testing procedures related to fuel cell and hydrogen technologies.

The CTFCA is comprised of a Core Committee, which provides strategic and operational advice; a Project Advisory Committee, which evaluates proposals; and five Working Groups, which develop and implement projects in specific areas. This report highlights progress made by the CTFCA Working Groups during fiscal year 2002/2003.



CTFCA MEMBERS

ATCO Gas
Ballard Power Systems
BC Hydro
BC Transit
BMW of North America
Bureau de normalization du Québec
California Air Resources Board
Canadian Natural Gas Vehicles Alliance
Canadian Petroleum Products Institute
CCS Business Improvement Services Inc.
DaimlerChrysler
Dynetek Industries Ltd.
EH2 inc.

Electric Vehicle Association of Canada
Ford Motor Company
Ford Motor Company of Canada Ltd.
FuelMaker Corp.
Fuel Cells Canada
Fueling Technologies Inc.
General Hydrogen
General Motors of Canada Ltd.
Government of Alberta
Government of British Columbia
Government of Manitoba
Government of Ontario
Government of Québec

HERA Hydrogen Storage Systems
Hydro-Québec
Hydrogenics Corp.
IMW Industries Ltd.
Imperial Oil
Industry Canada
Kraus Global Inc.
Manitoba Hydro
Membrane Reactor Technologies Ltd.
Methanex Corp.
Motor Coach Industries

National Research Council
Natural Resources Canada
New Flyer Industries
Nova Bus
Petro-Canada
Pembina Institute
Powertech Labs Inc.
QuestAir Technologies Inc.
Sacré-Davey Engineering
Saskatchewan Research Council
Society of Automotive Engineers

(S&T)2 Consultants Inc.
Standards Council of Canada
Stuart Energy Systems Corp.
TISEC Inc.
Toyota Canada Ltd.
Transport Canada
University of Québec at Trois-Rivières
University of Toronto
Vandenborre Hydrogen Systems
Western Economic Diversification



Natural Resources Canada

Ressources naturelles Canada





Light Duty Vehicle Fuelling Demonstration Working Group:

develops projects to demonstrate fuelling systems for automobiles and other vehicles.

- Launched the CTFCA's first two demonstration projects, located at Hydrogenics Corporation in Mississauga, Ontario. The first is a vehicle fuelling apparatus and gas purification system for hydrogen produced from a natural gas reforming system. The second project will incorporate the company's proprietary water electrolysis system into a mobile hydrogen fuelling system. Several additional proposals for fuelling demonstrations are in development and expected to be finalized next fiscal year.
- Established a formal link with the Vancouver 2010 Winter Olympic-bid. Sustainable transportation was a cornerstone of the-winning bid.

Heavy Duty Vehicle Fuelling Demonstration Working Group:

develops proposals to demonstrate large hydrogen fuelling systems, mainly for transit buses.

- Established a working relationship with the Northeast Advanced Vehicle Coalition in Boston, a leading group for developing and administering procurement support programs for fuel cell buses in-the US.
- Developing a request for proposals for a *Fuel Cell Transit Bus Study*. The-study is intended to assist transit operators in making the transition from diesel powered fleets to fuel cell powered fleets.
- Developing proposals for fuelling demonstrations.

Codes and Standards Working Group: development of national and international standards for hydrogen fuel and fuelling systems, in addition to related safety, training and certification concerns. Its five-year work plan identifies three primary areas: codes and standards, information documents for stakeholders, and training and certification.

- Prepared a document outlining the regulatory and standards process in-Canada.
- Began planning a proposal for a virtual fuelling station.
- Contacted the US Department of Energy to establish a joint approach for siting distance criteria for hydrogen fuelling stations.
- Working with the Canadian Association of Motive Power Educators to develop training and certification courses.
- A technical committee under the auspices of the Bureau de normalisation du Québec was established to develop a *Canadian Hydrogen Installation Code*.

Studies and Assessments Working Group: provides research and policy advice on potential fuelling pathways, and also on the economic, energy and-emissions consequences of various feedstock and processes for hydrogen production.

- Completed Phase I of the *Electrical Capacity Study*, which examines cost, supply and resulting emissions of electricity produced via electrolysis for the years 2010 and 2020. Phase II of-the study, which will analyse the key parameters of Phase 1, is-expected to be completed in-2004.
- Participating in a study with the Institute of Transportation Studies (University of California at Davis), which focuses on market research, design and analysis of hydrogen fuelling stations and the distribution infrastructure.
- The *Environmental Labelling for Hydrogen in Canada* study was completed. This report summarizes existing environmental label mechanisms for other products, evaluates environmental labelling options for hydrogen fuel, and recommends procedures to develop a-label for hydrogen fuel.
- Ernst and Young was awarded a contract to perform an economic analysis of seven hydrogen fuelling pathways and-determine which policy tools would best allow these technologies to compete with gasoline and diesel.
- Several hydrogen fuelling pathways were added to Natural Resources Canada's *GHGenius* model, which is used to assess lifecycle emissions of fuelling pathways.

Communications Working Group: communicates the activities of the CTFCA, provides on-going communications advice and support to other CTFCA Working Groups, and promotes Canada's fuel cell and hydrogen industry.

- Announced the CTFCA's first two demonstration projects in-co-operation with Hydrogenics Corporation.
- Produced a CTFCA kit folder, masthead, annual report and-fact-sheet.
- Developed guidelines for application and an application form for CTFCA-funded communications products.
- Collaborated with the National Research Council, Industry Canada and Fuel Cells Canada to develop education courses on-hydrogen and fuel cell technologies.
- Co-produced a display and a brochure for the Hydrogen and Fuel Cells 2003 Conference and Trade Show in Vancouver.
- Produced a *Catalogue of Worldwide Hydrogen Fuelling Demonstrations* in collaboration with Fuel Cells Canada.
- Developing an information bulletin for regulatory officials in-collaboration with the Codes and Standards Working Group.
- Updating the CTFCA website in an effort to achieve a comprehensive source of information for the Alliance's members, stakeholders and the-public.