



ISO/TC 197
Hydrogen technologies

Email of secretary: jim.ferrero@bnq.qc.ca
Secretariat: SCC (Canada)

CSA H2 and FC - ISO TC 197 Plenary 12.4.2015

Document type: Other meeting document

Date of document: 2016-11-27

Expected action: INFO

Background: This is a presentation from the 2015 plenary meeting in California.

Committee URL: <http://isotc.iso.org/livelink/livelink/open/tc197>

Standards for Hydrogen and Fuel Cell Safety

December 4, 2015

Sara Marxen, Project Manager



**CSA
Group**

- Independent, **not-for-profit**, membership association in business since **1919**.
- One of the largest **Standards Development Organizations** in North America.
- **Nationally Recognized Testing Laboratory** providing third party Certification & Testing, Field Evaluation, and Product Evaluation services

3,000+

Standards and Codes

8,700

Standards Committee Members

1,800

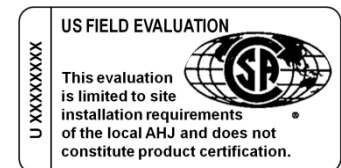
Highly Dedicated Staff

35,000

customers using CSA services

1 Billion

products bear CSA mark worldwide



Certified by
CSA Group





**Standards
Development**

**Product
Testing &
Certification**

**Consumer
Product
Evaluation**

Over 35 offices in 16 countries



Hydrogen & Fuel Cells

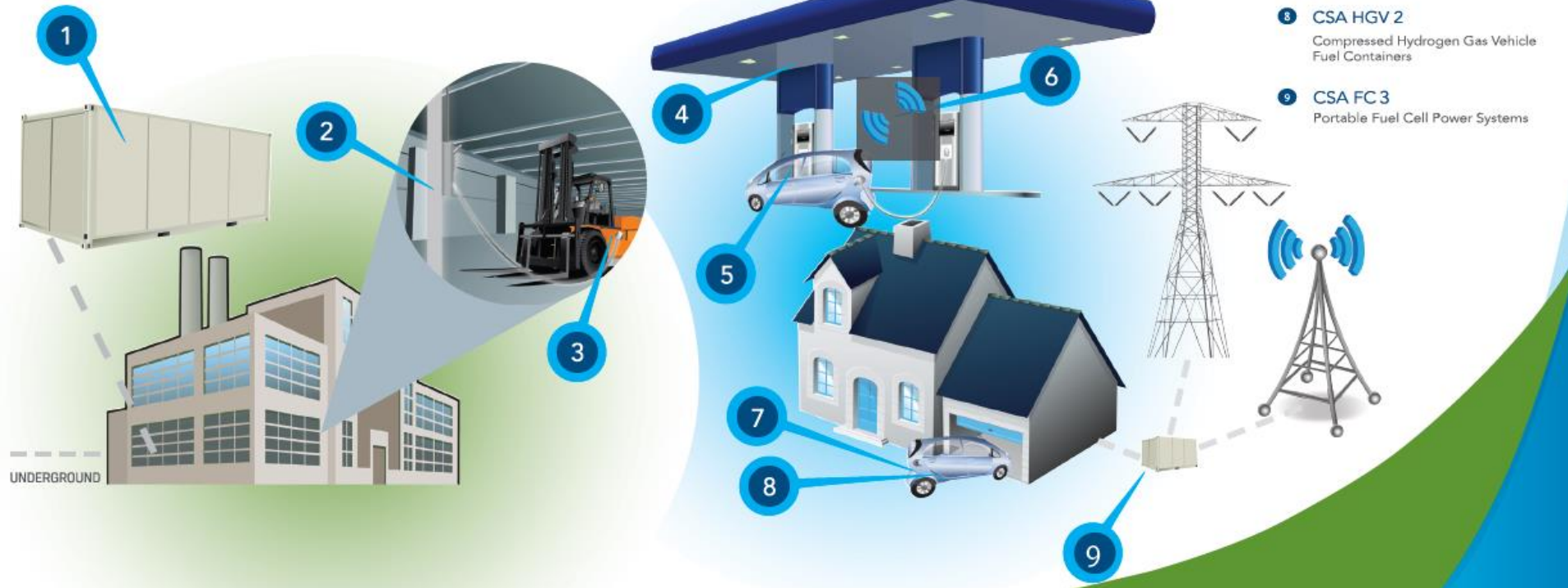
- 1 **CSA FC 1**
Stationary Fuel Cell Power Systems
- 2 **CSA HPIT 2 NEW**
Compressed Hydrogen Station and Components for Fueling Industrial Trucks
- 3 **CSA HPIT1 NEW**
Compressed Hydrogen Powered Industrial Trucks On-Board Fuel Storage and Handling Components

- 4 **CSA HGV 4 SERIES:**
 - CSA HGV 4.1**
Hydrogen Dispensing Systems
 - CSA HGV 4.2**
Hoses for Compressed Hydrogen Fuel Stations, Dispensers, and Vehicle Fuel Systems
 - CSA HGV 4.4**
Breakaway Devices for Compressed Hydrogen Dispensing Hoses and Systems

- CSA HGV 4.5**
Priority and Sequencing Equipment for Hydrogen Vehicle Fueling
- CSA HGV 4.6**
Manually Operated Valves for Use in Gaseous Hydrogen Vehicle Fueling Stations
- CSA HGV 4.7**
Automatic Valves for Use in Gaseous Hydrogen Vehicle Fueling Stations

- CSA HGV 4.8**
Hydrogen Gas Vehicle Fueling Station Compressor Guidelines
- CSA HGV 4.9 NEW**
Hydrogen Fueling Station Guidelines
- CSA HGV 4.10**
Fittings for Compressed Hydrogen Gas and Hydrogen Rich Gas Mixtures

- 5 **CSA HPRD 1**
Thermally Activated Pressure Relief Devices for Compressed Hydrogen Vehicle Fuel Containers
- 6 **CSA HGV 4.3**
Test Methods for Hydrogen Fueling Parameter Evaluation
- 7 **CSA HGV 3.1**
Fuel System Components for Compressed Hydrogen Gas Powered Vehicles
- 8 **CSA HGV 2**
Compressed Hydrogen Gas Vehicle Fuel Containers
- 9 **CSA FC 3**
Portable Fuel Cell Power Systems



International

- ISO/TC 197 –Hydrogen Technologies
 - US TAG member
 - 13 CSA standards provided as seed documents for international standards
- ISO/TC 22/SC 41 – Road Vehicles/Specific Aspects for Gaseous Fuels
 - US TAG member
 - Administrator of Canadian Mirror Committee
- IEC/TC 105 – Fuel Cell Technologies
 - Administrator of US TAG
 - Administrator of Canadian Mirror Committee

North America

- Canadian Hydrogen Installation Code – Bureau de normalisation du Québec (BNQ)
 - CSA is a committee member

U.S.

- Documents in Development:
 - HPIT 2 Dispensing Systems and Components for Fueling Hydrogen Powered Industrial Trucks
 - Scope: Mechanical and electrical features of hydrogen dispensers for hydrogen powered industrial trucks in non-public use
 - First edition due Q1 of 2016
 - HGV 4.3 Test Methods for Hydrogen Fueling Parameter Evaluation
 - Scope: Evaluation of field installed hydrogen fueling station dispensers to determine compliance with SAE J2601 fueling protocol
 - Second edition due Q1 of 2016
 - HGV 4.9 Hydrogen Fueling Station
 - Scope: Site-built and modular hydrogen fueling stations for light duty vehicles
 - First edition due Q1 of 2016

U.S.

- Key Relationships
 - DOE – major proponent of Codes & Standards for the FC industry
 - SAE – MOU for complementary development of standards
 - NFPA – NFPA 2 references and participation
 - FCHEA – National Hydrogen and Fuel Cell Day

- Future Work
 - Hydrogen Generators
 - Materials Compatibility
 - Residential Fueling
 - HGV 4.x updates

1. Provide time and talent

- Membership to join a CSA Committee is free
- Influence industry and connect with industry peers and customers

2. Direct Funding of Standards Development

- Provide a financial contribution to the development of a standard

3. Subscribe to the CSA Communities

- Discover new ideas, connect with stakeholders, and collaborate on projects
- Sponsorship opportunities available to gain enhanced benefits and increase visibility of organization
- More details at community.csagroup.org

Brent Hartman

Program Manager, Alternative Energy

Brent.Hartman@csagroup.org

Craig Webster

Senior Manager – Transportation Fuels

Craig.Webster@csagroup.org

Greg Chirdon

Technical Advisor, Fuel Cells

Greg.Chirdon@csagroup.org