



CSA Group's Standardization Activities for Hydrogen

ANSI Hydrogen Webinar

March 16, 2026

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Standards developed by expert members through a consensus-based, transparent and accredited process

IMPROVING HEALTH, SAFETY, THE ENVIRONMENT, AND TRADE.

100+

Years of experience

14

Areas of focus

11,000+

Dedicated members

3,000+

Standards

1,000+

Committees



Our Pillars



**Standards
Development**



Research



Education



Advocacy



Standards Development

Improving safety, health, the environment, and economic efficiency.
CSA's standards solutions span a breadth of critical economic sectors:



**Agriculture &
Agri-Food**



**Construction &
Infrastructure**



Electrical



**Environment &
Business
Excellence**



**Fuels &
Transportation**



**Health Care &
Well-being**



**Information &
Communication
Technology**



**Management
Systems**



**Mechanical &
Industrial
Equipment**



**Nuclear Power
Generation**



**Occupational
Health & Safety**



**Petroleum &
Natural Gas**

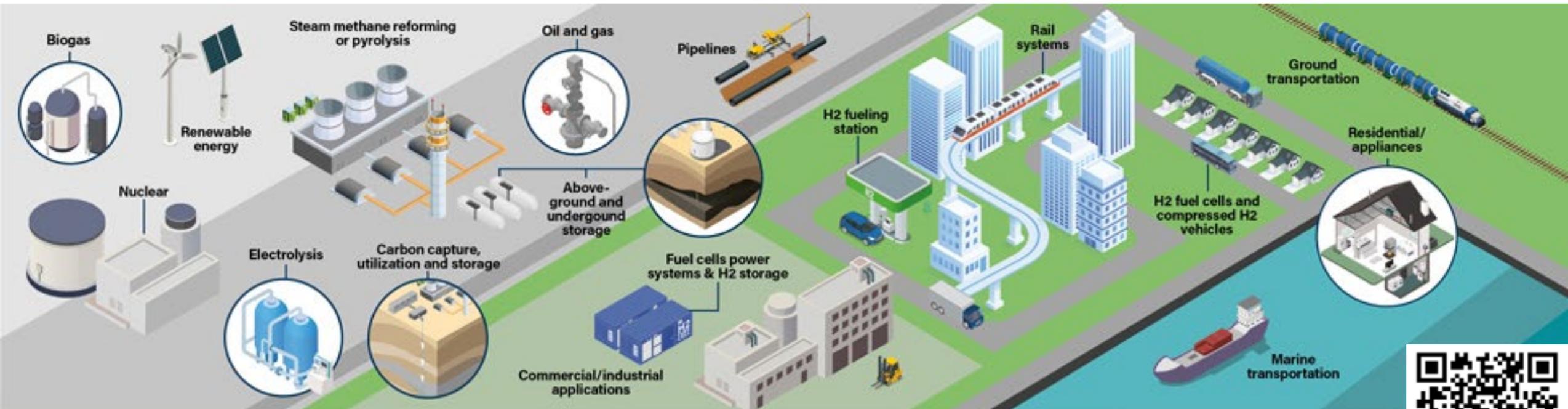


Public Safety



Transit

CSA research and standards across the hydrogen ecosystem



DOE recommends “addressing safety and developing the necessary codes and standards” and “enabling international harmonization of codes and standards related to hydrogen technologies.”

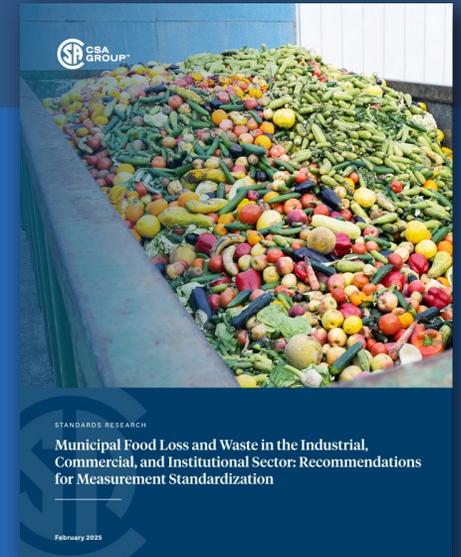
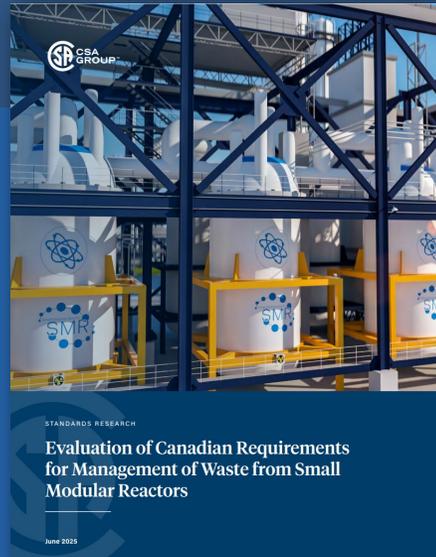
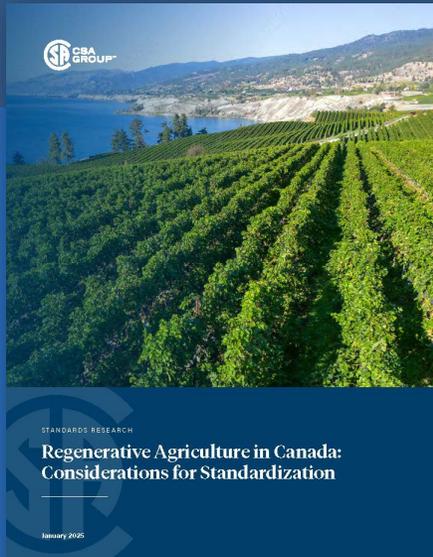
-U.S. DOE National Clean Hydrogen Strategy and Roadmap, 2023



Standards Research

Understanding our changing world to drive tomorrow's solutions.

Our research reports support the development of standards and our ongoing commitment to social good.



CSA Research - Identifying barriers for hydrogen deployment



From production...

...To end use

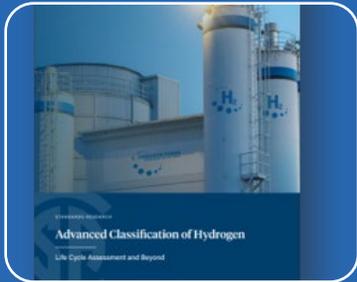
Hydrogen Production

Hydrogen Production



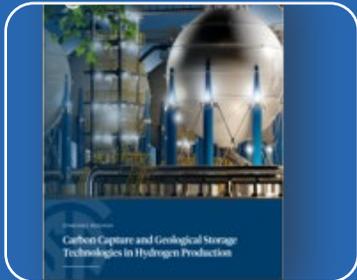
Equipment

- Binational standards developed by the Fuel Cell and Hydrogen Generation TC
- Product safety standards for hydrogen production equipment, such as electrolysis and fuel processing (CSA/ANSI B22734, CSA/ANSI FC 5)
- Safety standards for hydrogen equipment enclosures (CSA/ANSI B107)



Environmental Considerations

- Requirements and methodology for reporting the key characteristics of hydrogen production, such as carbon intensity & energy sources, feedstock, water consumption
- CSA Research report – Advanced classification of hydrogen
- Binational standard CSA/ANSI R124/CAN/BNQ 1789-200



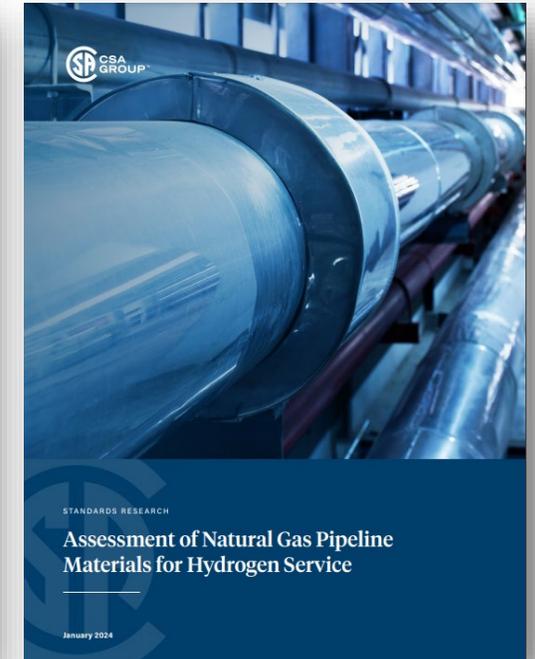
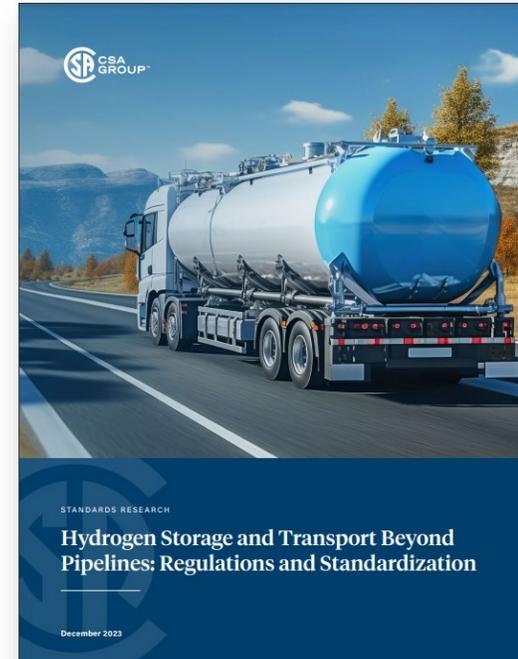
Carbon Capture and Storage

- ISO/TC 265 Support
 - ISO Committee Manager and US TAG Administrator
- Binational adoptions by a binational technical committee
 - CSA/ANSI ISO 27916, *Carbon dioxide storage using enhanced oil recovery*
 - Planned: ISO 27914, *Geological storage*
- CSA Research report – CCS technologies for hydrogen production

Hydrogen Delivery & Storage

Hydrogen Delivery & Storage

- CSA Group delivery & storage activities focus on Canadian standardization while collaborating with various SDOs to support harmonization
- Portfolio covers:
 - Pipelines (CSA Z662)
 - Pipelines materials, components & coating (CSA Group research reports)
 - Delivery by truck (CSA B33x series and CSA B625)
 - Above ground and underground storage (CSA B51 and CSA Z341)



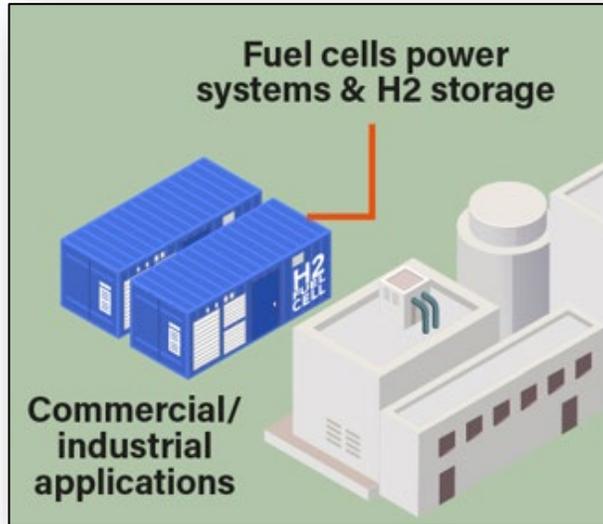
Hydrogen End-Use

Hydrogen End-Use – Transportation and Mobility

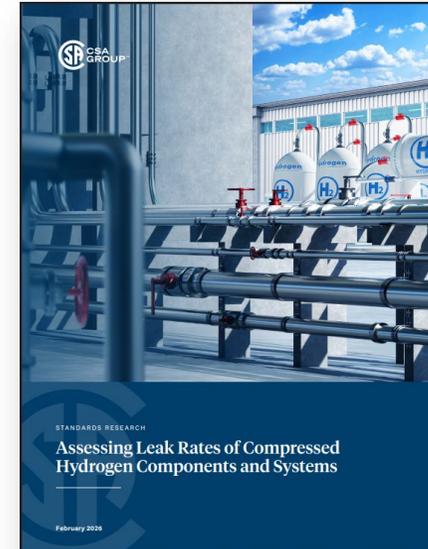
- Binational Hydrogen Transportation Technical Committee
- Safety standards for:
 - Hydrogen refueling infrastructure (CSA/ANSI HGV 4 series)
 - On-board fuel system components (CSA/ANSI HGV 2, HGV 3.1)
 - Industrial trucks (CSA HPIT series)
 - Vehicle maintenance facilities (CSA B401.3)
- ISO/TC197 Support
 - 13 CSA standards licensed ISO/TC 197
 - Committee Manager for ISO/TC 197/SC 1
 - Member of US TAGs to TC 197 and SC 1
- Research and initiatives to support use of hydrogen in other modes: rail, aviation, mining, and maritime



Hydrogen End-Use – Fuel Cells



- Binational Fuel Cell and Hydrogen Generation TC
- Product safety standards for:
 - Stationary power (CSA/ANSI FC 1)
 - Portable power (CSA/ANSI FC 3)
 - Fuel cell modules (CSA/ANSI FC 6)
 - Hydrogen equipment enclosures (CSA/ANSI B107)
- IEC/TC 105 Support
 - US TAG Administrator

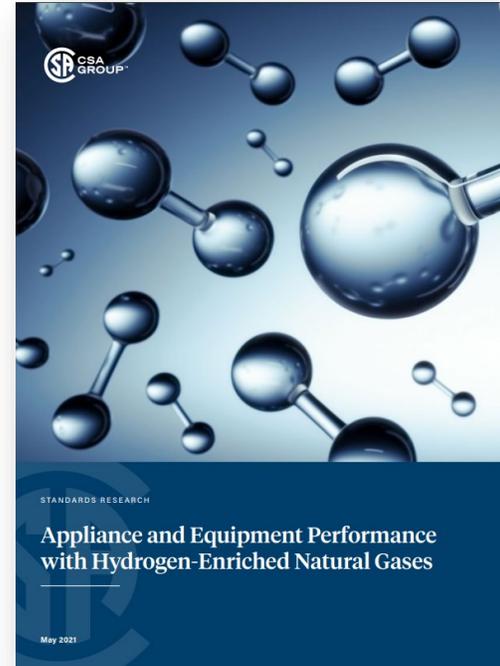


- CSA Research: Assessing hydrogen leak rates for hydrogen components and systems

Hydrogen End-Use – Appliances and Equipment



- Product safety standards for fuel products – heating, cooking, hearth, and controls (Z21 series, Z83 series)
 - Developed by Z21/83 Binational Gas Appliances and Related Accessories Technical Committee
- Energy efficiency for equipment operating on hydrogen and hydrogen blends (CSA P.17 in development)



- CSA Research: Appliance and equipment performance with hydrogen-enriched natural gas

Hydrogen Education

Hydrogen Education

- Hydrogen services & maintenance fundamentals
 - Gain baseline knowledge to safely work with hydrogen systems, including standards for scheduling, planning, executing, and documenting hydrogen system maintenance and service.
- Hydrogen Fuel System Inspection training & certificate
 - Provides technicians and mechanics with guidance for the inspection of compressed hydrogen gas (CHG) containers.



Thank you

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