

Date: [November 14, 2022](#)

Attention: [U.S. Department of Energy](#)

Company: [U.S. Department of Energy](#)

Address: [1000 Independence Ave SW, Washington, DC 20585, United States](#)

RE: CSA Group's Response to the U.S. Department of Energy Clean Hydrogen Production Standard (CHPS) Draft Guidance Proposal

Dear U.S. Department of Energy,

CSA Group is pleased to provide the following submission in response to the U.S. Department of Energy's (DOE's) initial proposal for a Clean Hydrogen Production Standard (CHPS). Included in the submission is an overview of CSA Group's mission, our unique program and service offerings, and our current work in developing Hydrogen standards.

CSA is currently exploring hydrogen production from all energy sources (including renewable energy, biogas, nuclear, biomass and oil & gas), and various production methods (electrolysis, steam methane reforming, pyrolysis including Carbon capture, utilization and storage (CCUS)). One of these projects is the development of a bi-national (U.S. and Canada) standard for *Hydrogen production intensity quantification and verification*.

It is our intent that with this letter, we can provide further information regarding the bi-national standards project and identify any potential opportunities for collaboration. We hope that this bi-national standard can be used as a tool to support the CHPS and any future work the U.S. Department of Energy undertakes in this area.

About CSA Group

CSA Group is a leader in standards research, development, education, and advocacy. The technical and management standards developed with our 10,000 members improve safety, health, the environment, and economic efficiency in Canada and beyond. We continue to keep pace with technology by facilitating the development and maintenance of standards, standards-based training, personnel certification, and registries.

Accredited by Standards Council of Canada (SCC) in Canada, and American National Standards Institute (ANSI) in the U.S., CSA Group is a leader in leveraging dual accreditation and collaborating with other Standards Development Organizations (SDOs) in Canada and the U.S. to develop binational standards. CSA Group also actively

participates in international standards development and harmonization efforts through other global organizations, including the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC). CSA Group has licensed CSA standards to ISO to serve as the basis for international standards.

CSA Group has an extensive research program focused on new and emerging areas that have the potential to impact safety, health, the environment, and the economy. Our strong research program provides guidance to industries on the development and adoption of new technologies and demonstrates our ongoing commitment to social good.

CSA Group's Standards Experience in Hydrogen and Classification of Carbon Intensity

CSA Group is engaged in multiple initiatives supporting the development of standards related to hydrogen. CSA has an extensive hydrogen standards portfolio in support of the transportation sector that includes fuel cells, vehicle components, and fueling stations. CSA continues to update its key hydrogen and fuel cell standards to reflect technological advances in this field, while also developing new standards for new applications. In addition, CSA is exploring hydrogen technologies that touch the entire value chain of the hydrogen ecosystem, such as power to gas, hydrogen distribution, hydrogen storage, carbon capture and storage, and other applications.

Additionally, CSA is serving as the committee manager for ISO/TC 197/SC 1, which recently balloted an NWIP for *Methodology for Determining the Greenhouse Gas Emissions*. As a result, CSA is well suited to support regional harmonization (Canada/US) and international harmonization.

CSA Group's Research Project: Hydrogen Production Intensity Quantification and Verification

CSA Group has initiated work on a research project on the Classification of Carbon Intensity for Production of Hydrogen, with the intent to better understand the current practices of life cycle assessment that are used to set these types of benchmark rates and provide recommendations for best practices for a consistent and clear quantification process across all production methods.

The document is intended to serve as a starting point (i.e., seed document) for the development of an accredited bi-national standard on the same topic, to be developed following the accredited process defined by the Standards Council of Canada (SCC) and the American National Standards Institute (ANSI). The development of a bi-national standard, which follows the accredited ANSI and SCC processes, can enable the future reference of this standard in regulation.

CSA Group's Standards Development: Bi-National standard for Hydrogen Production Intensity Quantification and Verification

CSA Group filed an ANSI Project Initiation Notification System form (PINS) on September 10, 2021, to notify the American National Standards Institute and relevant stakeholders of the initiation of a bi-national (U.S. and Canada) standards project for *Hydrogen production intensity quantification and verification*.

The purpose of the project is to establish a national quantification standard, using a life-cycle approach, to determine the emissions profile of hydrogen production accurately and consistently based on production methods. A more accurate classification system could replace or supplement the current colour classification in place (i.e. gray, blue, and green hydrogen). The national quantification standard will include the following:

- a. A process to establish life cycle assessment boundaries for each hydrogen production method, from cradle to gate
- b. Determination of the appropriate hydrogen quality specification to ensure quantification of production is resulting in equivalent comparisons and,
- c. Establishment of validation and verification requirements to provide assurance of emission profiles being communicated

We believe this bi-national standard aligns well with the CHPS in terms of our shared commitment to creating and strengthening technologically and economically feasible production, processing, delivery, storage, and use of clean hydrogen from diverse fuel sources.

As is highlighted within this submission, CSA Group has a long history of developing standards related to hydrogen. Recently, CSA initiated the development of a bi-national standard with Bureau de Normalisation du Québec (BNQ) for *Hydrogen production intensity quantification and verification*, and we completed a robust research project on this important topic.

We welcome the opportunity to further discuss how the development of CSA Group's bi-national standard could support and align with the DOE's development of the CHPS, and by extension, align with the new clean hydrogen policy drivers established in the IRA 45V Credit provisions.

Best regards,

A handwritten signature in blue ink, appearing to read 'Priya Patel'.

Priya Patel
Program Manager, Environment and Climate Change



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CSA Group

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