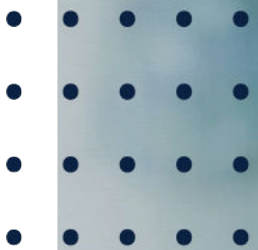
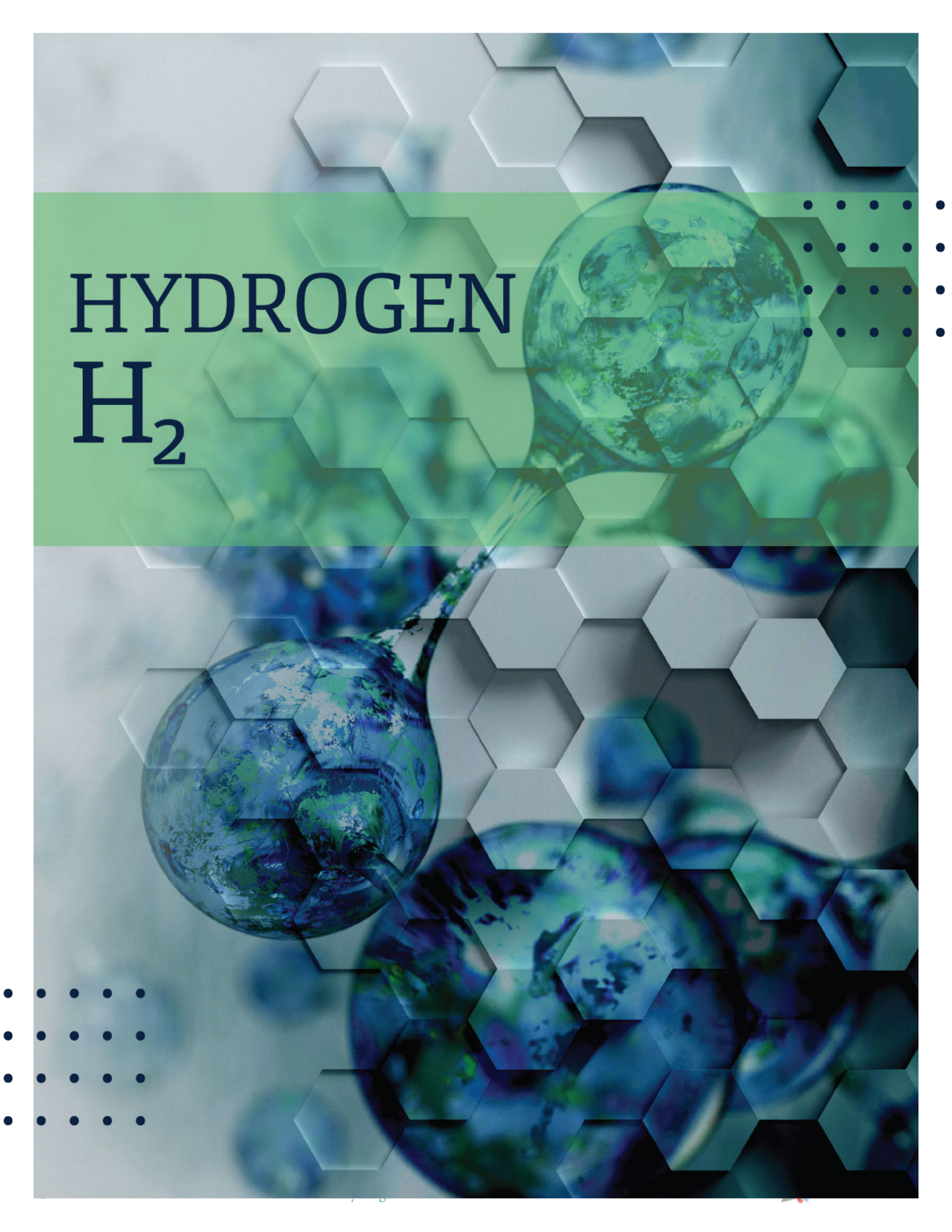


# HYDROGEN

# H<sub>2</sub>



# EXECUTIVE SUMMARY

The world is headed towards an unprecedented energy transition and Canada with emerging industries like hydrogen is poised to lead that transition. Canada has been an Oil & Gas producer leader for decades and the innovation of Hydrogen energy industry is essential for Canada's energy leadership future. By 2030 Canada has committed to reduce its GHG emissions by 30% and the Federal Government is developing a plan to achieve net-zero emission by 2050. With this ambitious goal, there is a distinct opportunity for innovative Canadian industries. Keeping this in view it is very important for new players to understand the dynamics of the market in terms of the status of the sector, important players in the industry, major investors, and exiting & new activities.

This report is written by PrismTeck Inc. for PCL to provide insights on Canada's Hydrogen Industry Leaders. It provides PCL with the information about current & forth coming Hydrogen projects planned in for Canadian Hydrogen industry. The report is divided into different sections where each section has industry members according to the business nature such as Hydrogen Producers, Original Equipment Manufacturers, Engineering Firms, Quality Support Firms, Consultancy Firms and Support Members. In addition to these details, this report also includes the details about Government Grants introduced by Government of Canada in support of alternative energy idea, Hydrogen. The information presented in this report is collected from secondary resources such as Google, Company Websites, LinkedIn, News etc.

## Disclaimer:

This information document is to introduce the subject matter and provide a general idea and information on the subject. Although, the material included in this document is based on data / information gathered from various reliable sources; however, it is based upon certain timelines which may differ. The information has been provided without any warranties or assertions as to the correctness or soundness thereof. Although, due care and diligence has been exercised to compile this document, the contained information may vary due to any change in any of the concerned factors. We drafted this report with diligence and gather any information which is necessary for making an informed decision; including taking professional advice from a qualified consultant / technical expert before taking any decision to act upon the information.

Copies of this document are available upon request or can be downloaded from our website at [www.prismteck.com](http://www.prismteck.com)

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# HYDROGEN INSIGHTS

Hydrogen is playing a vital role in the global energy transition by helping diversify energy resources worldwide and fostering business and technological innovations for long-term economic growth. Unique properties of Hydrogen make it a powerful source for energy transition providing benefits to the energy system and end-user applications like transport and building heat. Several companies are representing over USD 6.8 trillion in market capitalization and more than 6.5 million employees. The CEO-led initiative “The Hydrogen Council” is also supporting accelerate the deployment of hydrogen solutions around the world where 100+ members shared a united vision and ambition for hydrogen to foster clean energy. The latest research shows a significant volume of investment in hydrogen projects, development of favorable policies and funding support as the industry enters 2021.

- 200+ large-scale projects have been announced across the Hydrogen Value Chain, with a total value exceeding \$300 billion.
- 30+ countries have National Hydrogen Strategies in place with increase in Public Funding.



# HYDROGEN PRODUCERS

There are numerous Hydrogen producers in Canada and these companies are mainly involved in the production and storage of green, blue, and grey hydrogen as well as capturing and storing of Co2 emissions from the manufacturing of blue hydrogen. Hydrogen producers are collaborating with other companies like OEMs, Engineering, Consulting, and supporting firms to promote the development of hydrogen industry by working on multiple large-scale projects involving the production, storage, and distribution of hydrogen energy to replace the reliance on fossil fuel energy. Hydrogen producers mainly deal with renewable hydrogen energy, heat, and power, automotive, oil & gas, and marine sectors. The number of Hydrogen Producers in Canada are rapidly rising, and many domestic and global companies are providing innovative hydrogen technology solutions and components to support and promote the hydrogen industry. Some of the big Hydrogen Producers in Canada include Proton Technologies that has developed innovative hydrogen technology to produce hydrogen in mature oil fields and reservoirs leaving all the hydrocarbons under the ground while separating and extracting the only hydrogen into the surface for consumption with zero emissions. Other big companies include Enbridge, Renewable Hydrogen, and Planetary Hydrogen.

# 01



## Proton Technologies



**Website:** <https://proton.energy/>

**E-Mail:** [info@proton.energy](mailto:info@proton.energy)

**Contact Number:** Tel: +1 403 467 1220

**Location:** #810, 396 – 11th Avenue S.W.,  
Calgary, Alberta T2R 0C5

### About Company:

Proton Technology started its operation in 2015 in Canada and its first office in the international market was launched in 2016. Proton Technology provides green and affordable energy from deep earth. Using the technology Hygienic Earth Energy, industries around the globe will convert hydrocarbon into hydrogen mine and thermal generators, which will help in eliminating carbon and other pollutants from the ground. Proton Technology can produce and store global volumes of hydrogen with zero emissions to contribute towards the net-zero future and supplying Canada with a clean, safe, rich, affordable, sustainable, and renewable energy source.

### Products & Services:

Proton Technology has developed the Proton Process for solving complex energy challenges and shortages and producing clean hydrogen that will revolutionize the global economy with safe, clean, abundant, and affordable energy. This process utilizes two patented technologies to produce hydrogen in mature oil fields and reservoirs leaving all the hydrocarbons with their GHG emissions under the ground while separating and extracting hydrogen into the surface for consumption with zero emissions. This solution will utilize the old natural gas pipelines to supply hydrogen without any hardware changes or the creation of new pipelines. The Proton Process will benefit the energy, transport, utility, and other sectors, environment, economy, and government altogether and can be utilized for large scale manufacturing of hydrogen.

# Project

## Project name

Hygienic Earth Energy

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## Project description

Proton's process involves injecting oxygen into oilfields. This triggers reactions that produce hydrogen. Then a downhole hydrogen filter only allows hydrogen to come into the production well and up to surface, leaving all carbon in the ground. The cost structure is low because late-life oilfields become Proton's reaction vessel which already contains decades of fuel.

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## Project Location

Kerrobert, Saskatchewan

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## Project Timelines

2020-2040

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## Key Milestones

Commercialization of Proton's hydrogen is well underway, and the company has secured license agreements with companies in 11 countries.

Proton will receive robust funding for a fast build-out and proliferation to achieve its target of producing hydrogen at a large scale as a way of decarbonizing energy.

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## Project Status

On-going

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## Source of Project feedstock

Abandoned Oil Fields in Saskatchewan

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## Project offtake agreement

Proton Canada aspires to supply 10% of total energy by 2040.

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## Contracting strategy EPC or EP + C (separate EP and C contracts)

EPC

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## Project Total Install Cost (TIC) value (if stated)

N/A

---

## Project name

Proton Technology

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## Key Owner Contact Name, Phone no. and Email

Grant Strem (CM)

Email: [grant.strem@proton.energy](mailto:grant.strem@proton.energy)

Phone: (403) 467-1220

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## Notable Project investors or partners that have been made public

Saskatchewan Petroleum Innovation Incentive.

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## Engineering firm involved / contact (if stated)

N/A

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