



CHILE 2020: GREEN HYDROGEN SUMMIT *Highlights*

ORGANIZERS:



SPONSORS:



PARTNERS:



CHILE 2020: GREEN HYDROGEN SUMMIT

- INTRODUCTION -

The challenge of climate change forces us to act responsibly and reduce greenhouse gas emissions. Decarbonizing the various sectors of the world economy and abandoning fossil fuels is a major task that must be addressed jointly by countries.

In Chile, the estimated potential of wind, small hydropower and solar energy amount to more than 1800 GW of electricity generation capacity, an enormous amount compared to the current installed power generation capacity of approximately 22 GW. These excellent natural conditions allow Chile to generate cheap electricity from a variety of renewable sources, placing it as a natural leader in the near future development of green hydrogen.

In this context, since 2017, international conferences, organized by the Ministry of Energy, CORFO and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, have been held in Chile to promote the production and use of green hydrogen. The third Green Hydrogen Summit - Chile 2020 International Conference, held on November 3rd and 4th 2020, became the largest hydrogen event in Latin America and one of the principle open access digital conferences on the subject in the world.

Over two days it brought together high-level authorities and business representatives to analyze the opportunities and challenges presented by hydrogen in the world. It also included a platform where more than 250 business meetings were held between the different actors in the hydrogen value chain.

Green hydrogen will be key to the global energy transition and thanks to its use, carbon neutrality can be achieved. In addition, in the context of the pandemic, its momentum will be part of the green recovery, positioning Chile as a global leader in hydrogen, as outlined in the National Green Hydrogen Strategy announced during the event.

- PROGRAM -

DAY 1 – 3 NOVEMBER 2020

The first day was dedicated to the exchange of experiences and good practices between governments, companies and international organizations, in order to join forces for the creation of a global green hydrogen economy. The discussion has been enriched with the participation of national and international high level authorities, such as H.E. Mr. Sebastian Piñera, President of the Republic of Chile, the International Energy Agency's Executive Director, Dr. Fatih Birol, the European Union's Director General of Energy, Ms. Juul Jorgensen, as well as the Germany's Secretaries of State, Mr. Andreas Feicht and Mr. Jochen Flasbarth, and the Energy Ministers of United Kingdom, Mr. Kwasi Kwarteng, and Chile, Mr. Juan Carlos Jobet.

OPENING REMARKS AND NATIONAL GREEN HYDROGEN STRATEGY PRESENTATION

The opening remarks of "Chile 2020: Green Hydrogen Summit" were given by President Sebastian Piñera, who unveiled the Chilean Government's national green hydrogen strategy and pointed out that this fuel "will allow us to export our renewable energies to a world that is moving rapidly towards decarbonisation and that needs clean and affordable energy". President Piñera highlighted how hydrogen will also allow us to bet on a balanced development throughout the country, as well as promote the growth of our human capital, generating progress and economic reactivation.

The Chilean Minister of Energy, Mr. Juan Carlos Jobet, presented the green hydrogen national strategy, which set three main objectives for the Country: 1. To produce the cheapest green hydrogen on the planet by 2030; 2. To be among the top three exporters by 2040; and 3. To have 5GW of electrolysis capacity under development by 2025. These targets lie on the conviction that "Chile is the ideal place to produce and export green hydrogen and its derivatives, including ammonia, methanol and synthetic fuels".

An action plan has been developed to speed up the use of green hydrogen in critical national applications by 2025 and enter the export market by 2030. A key initiative is an initial US\$50 million public support for green hydrogen projects to be awarded in 2021, which aims to help investors in addressing any shortcomings and create early experience. At the same time, a task force will be set up to guide permit processing and the implementation of pilot projects for green hydrogen and its derivatives. In Minister Jobet's words, "We will also create another task force to position Chile internationally and create three international consortia in Chile with at least 1 GW each". Other initiatives will focus on developing the required regulation, on developing local capabilities, and on consolidating domestic and international offtake for hydrogen.

Visit [this link](#) for the details of Chile's national green hydrogen strategy.

Dr. Fatih Birol, Director of the International Energy Agency, presented an analysis of hydrogen development worldwide, and concluded that for green hydrogen to succeed, countries need to be ambitious in creating long term strategies. Best practices and knowledge must be shared between countries, especially with Chile - which has an enormous renewable potential - to make green hydrogen a significant part of the energy matrix.

OPENNING STATEMENT

 **H.E. Mr. Sebastian Piñera, President of the Republic of Chile**

KEYNOTE ADDRESS


 **Dr. Faith Birol**, Executive Director, International Energy Agency (IEA)


THE NATIONAL GREEN HYDROGEN STRATEGY OF CHILE


 **Mr. Juan Carlos Jobet**, Minister of Energy, Chile

PANEL 1: POLITICAL ECONOMICS OF HYDROGEN: HOW TO BUILD BACK GREENER

Moderator:  **Prof. John Loughhead**, Chair, Mission Innovation

Speakers:  **Mr. Juan Carlos Jobet**, Minister of Energy, Chile

 **Mr. Kwasi Kwarteng**, Ministry for Business, Energy and Clean Growth, United Kingdom

 **Mr. Paul Lefebvre**, Parliamentary Secretary to the Ministry of Natural Resources, Canada


 **Mr. Andreas Feicht**, State Secretary for Energy, Germany

 **Mrs. Ditte Juul Jørgensen**, Director General, DG Energy, European Commission

PANEL 2: CLIMATE ACTION THROUGH GREEN HYDROGEN AS A BUSINESS OPPORTUNITY


Moderator:  **Mr. Gonzalo Muñoz**, High-Level Climate Action Champion, COP25

Speakers:  **Mr. Michèle Azalbert**, Hydrogen BU CEO, ENGIE

 **Mrs. Amy Adams**, FC & Hydrogen Technologies VP, Cummins

 **Mr. Terje Knutsen**, VP Farming Solutions, YARA

 **Mr. Aaron Puna**, CEO, Anglo American Chile

 **Mr. Cosma Panzacchi**, EVP Hydrogen BU, SNAM

PANEL 3: THE CHALLENGE OF THIS DECADE: REDUCING COST AND SCALING UP

Moderator:  **Dr. Xiaoting Wang**, Energy Specialist, Bloomberg NEF


Speakers:  **Mr. Bernd Heid**, Senior Partner, McKinsey&Co

 **Mr. Bart Biebuyck**, Executive Director, FCH JU

 **Mr. Daryl Wilson**, Executive Director, Hydrogen Council


 **Dr. Christoph Wolff**, Head of Mobility, World Economic Forum

PANEL 4: "COOPETITION": NAVIGATING THROUGH INTERNATIONAL COOPERATION AND COMPETITION


Moderator:  **Mr. Dan Dorner**, Head of Secretariat, Clean Energy Ministerial

Speakers:  **Mr. Ariel Yopez-Garcia**, Energy Division Chief, Infrastructure and Energy Sector, IDB

 **Dra. Sunita Satyapal**, Chair, IPHE

 **Mr. Jochen Flasbarth**, State Secretary, Ministry for the Environment, Nature Conservation and Nuclear Safety, Germany

 **Mrs. Marianne Fay**, Director Bolivia, Chile, Ecuador and Peru, World Bank


 **Mr. Dolf Gielen**, Director of the Innovation and Technology Centre, IRENA


PANEL 5: SHAPING OF THE GREEN HYDROGEN DIPLOMACY

Moderator:  **Mrs. Javiera Aldunate**, Head of International Affairs Office, Ministry of Energy, Chile

Speakers:  **Mr. Francisco Javier López**, Undersecretary of Energy, Chile

 **Dr. Christian Hellbach**, Germany Ambassador to Chile

 **Mr. Mauro Battocchi**, Italy Ambassador to Chile

 **Mr. Keun Ho Jang**, South Korea Ambassador to Chile

POLICY AND STRATEGY FORUM: (SOME) PANELISTS' TESTIMONIALS

- Bernd Heid, senior partner at McKinsey & Company emphasized Chile's competitiveness to produce green hydrogen at lower costs, due to the availability of solar and wind energy and said that "the regions with the greatest possibility of producing it at lower prices are Australia, North Africa and Latin America, especially Chile, which has fantastic resources such as its sun in the North and wind in the South".
- The CEO of Engie's Hydrogen BU, Ms. Michèle Azalbert, underlined the need to act immediately to support the economic recovery and accelerate decarbonization, bearing in mind the long-term horizon of massive investment. She explained how "Chile, and specifically the North, will benefit from the potential of green hydrogen and will play a key role in its production if the right economic conditions are met".
- According to Dr. Sunita Satyapal, Chair of the IPHE, in order to activate the international cooperation and see how the cycles work in the markets, it will be crucial to lower costs and invest mainly in R&D. And to do this, investment needs to be activated through banks, public-private partnerships and support in different areas. It is essential that all actors move with the same objective.

KEY TAKEAWAYS

- 1 The panelists agreed, on the basis of their experience and projections, on how green hydrogen will bring benefits to the entire value chain, and that it is a great opportunity that Chile must take advantage of for a sustainable future and for the fight against climate change.
- 2 The participants discuss the means by which green hydrogen can be produced on a large scale and reduce its production costs, which is basically one of the main challenges of this new energy. To achieve that, there is a general consensus on the need of increasing the scale of production and reducing the cost of electrolyzers.
- 3 This will require big investment in technology, research and development to improve the capacity. The market for green hydrogen is still in its beginnings, so the current high costs are expected to decrease as a consequence of the demand growth.
- 4 In this sense, it is essential to recognize the contribution of the private sector, which with its expertise and funds availability can support and strengthen this emerging sector. An important role will be played by competitiveness, which will be fundamental for this business to grow, by increasing demand and, therefore, reducing production costs.
- 5 Finally, international cooperation will be key to promote the development of green hydrogen in a strategic way and to follow a coherent, harmonious and shared path.

- PROGRAM -

DAY 2 - 4 NOVEMBER 2020




On the second day of the the Green Hydrogen Summit, the different opportunities for installing hydrogen projects in Chile were discussed. The conference was led by CORFO and was attended by its Executive Vice President, Mr. Pablo Terrazas, the Minister of Economy, Mr. Lucas Palacios, the Minister of National Assets, Mr. Julio Isamit, and the Ambassador of the European Union to Chile, Mr. Leon de la Torre, among other speakers. During the second forum were held more than 200 B2B round tables, beside an industrial forum, where several organizations analyzed, among other topics, the possibilities of creating alliances to promote the development of the green hydrogen industry in Chile. The virtual technology fair hosted more than 20 companies, which exhibited the latest developments in hydrogen production.

The Industrial Forum had an audience of more than 2,200 people and generated a high-level dialogue on unresolved key issues for the development of green hydrogen. The sharing of experiences served as incentive and inspiration for all those who are willing to advance in this matter.

WELCOME FROM THE AUTHORITIES

-  **Pablo Terrazas**, Vice President CORFO, Chile
-  **Lucas Palacios**, Minister of Economy

PANEL 1: PARTNERSHIPS TO DEVELOP THE INDUSTRY

- Moderator:  **Pablo Terrazas**, Vice President CORFO, Chile
- Speakers:  **Julio Isamit**, Minister of National Assets of Chile
-  **León de la Torre**, European Union Ambassador in Chile

PANEL 2: HYDROGEN COMPETITIVENESS

- Moderator:  **María Paz de la Cruz**, H2Chile
- Speakers:  **Stephane Gree**, Director Buisness Developement H2 Energy, Air Liquide
-  **Eric Guter** General Manager, Air Products
-  **Lisa Willnauer**, Senior Manager Innovation and Technologies, RWE
-  **Carlos Espinosa**, General Manager, Renewable Energy & Infrastructure, SUMITOMO

PANEL 3: TECHNOLOGY READINESS AND DEPLOYMENT

- Moderator:  **Ana María Ruz**, CORFO
- Speakers:  **Florence Lambert**, CEO, CEA Litten
-  **Terry Howe**, Business Development Ballard
-  **Josep Sanz-Argent**, R&D Energy Transition, Fundación Valenciaport
-  **Manuel Caballero Ocaña**, Project Manager, R&D, Patentes, Talgo
-  **Samuel Pérez Ramírez**, Prospective Research, Hydrogen & Heat Leader, Iberdrola

CLOSING WORDS

-  **Rainer Schroer**, GIZ

INDUSTRIAL FORUM: (SOME) PANELISTS' TESTIMONIALS

- Mr. Pablo Terrazas, CORFO Executive Vice President, announced the initiatives that the corporation is carrying out to promote the development of green hydrogen, saying that “CORFO seeks to promote innovation through subsidies, support the productive technological development of our industries, improve access to financing through investment funds and credits, as well as contributing to develop competencies for human capital in charge of productive development”.
- The Minister of National Assets, Mr. Julio Isamit, emphasized that the State will make government-owned lands available to entrepreneurs. “About 45 million hectares are owned by the government, in other words, they belong to all Chileans. We have many possibilities in our territory and the geographical diversity allows us to have an opportunity when promoting new energies and technologies. The role of the State as a promoter of technological and ecological innovation is fundamental”.
- Ambassador de la Torre highlighted the support of the EU to promote clean energy and the green hydrogen industry, through the funding granted to Chile in its role as president of the COP25. The Ambassador also emphasized the existence of the Chile-EU Bilateral Fund, which will support pre-investment studies for green hydrogen projects.
- The last panel revealed the wide technological offer that already exists about green hydrogen. Ms. Lambert presented CEA's work on PV modules, electrolyzers and fuel cells. Mr. Howe talked about Ballard's work with buses, mining trucks and even ships that they are developing. Mr. Caballero presented Talgo's hybrid trains and finally Mr. Sanz and Mr. Perez commented on green hydrogen technology in ports. All of these projects demonstrate that green hydrogen has already many uses underway and is actually helping to decarbonize the world.

KEY TAKEAWAYS

- 1 There is a broad consensus on the importance of public and private sector support for this industry, which will bring several benefits, especially in the fight against climate change.
- 2 One of the main challenges for green H2 development will be to lower the costs, especially of electrolyzers. In that sense, the State will play an important role by supporting financing, as well as creating regulations for this industry to create incentives and to promote competitiveness.
- 3 The objectives set out in the National Green Hydrogen Strategy are a source of inspiration for the region, as they demonstrate the political and private will, which is essential for the development of a sustainable economy. Chile's experience will be very important in sharing knowledge with the rest of the region.
- 4 In this sense, the creation of the H2 LAC Platform was announced, which aims to exchange the experience around the hydrogen in Latin America and the Caribbean, thus positioning the region in the global discussion of hydrogen and facilitating private sector initiatives in the region.



CHILE 2020 GREEN HYDROGEN SUMMIT

TUESDAY, NOVEMBER 3

POLICY AND STRATEGY FORUM



UNIQUE VISITORS



AVERAGE TIME OF EACH VISITOR

WEDNESDAY, NOVEMBER 4

INDUSTRIAL FORUM



UNIQUE VISITORS

OCTOBER 29 TO NOVEMBER 4



6.469

VIRTUAL TECHNOLOGY SHOWROOM

WEDNESDAY, NOVEMBER 4



252

BUSINESS MEETINGS

TECHNOLOGY FAIR

During Summit days, 3rd and 4th November 2020, companies and professionals virtually visited by first time the 39 stands at Technology Fair. It will stay open at <https://www.greenh2summitchile.com/feriavirtual?lang=en> or at <https://www.h2chile.cl/> until July 2021. The Carbonbiocapture stand received the maximum of 373 visitors and Supconsolar received the minimum of 82 visitors, the average number of visitors by stand was 173.

BUSINESS MEETINGS

Virtual platform for business meetings allowed to apply, schedule and accept a meeting, both parties had confidentiality guaranty. 405 private virtual business meetings were applied in advance and 247 were finally accepted and scheduled. Statistical analysis of meetings showed that 37%, of 247 business meeting, declared to have found options for commercial strategical partners and 31% of them scheduled private meetings. Evaluating the level of participation of decisions makers, CEOs or Commercial managers participated in 25% of the meetings. Concerning gender issues, women participation reached just 6.5%.

ORGANIZERS:



SPONSORS:



PARTNERS:

