



# Thematic dialogue: Boosting climate technology incubators and accelerators in developing countries

Fernando Hentzschel – March 2018



Gobierno  
de Chile

[gob.cl](http://gob.cl)



# AGENDA

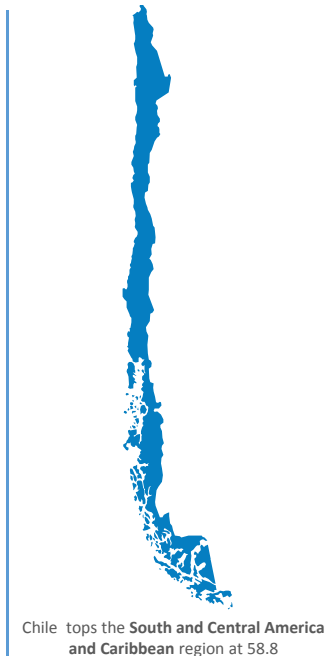
- 01** The rol of Corfo in Chile
- 02** CORFO's experience supporting Cleantech developments
- 03** Opportunities to enhance incubators and accelerators to mitigate and adapt to climate change
- 04** Key challenges that we face in enhancing such initiatives

# The rol of Corfo in Chile

Corfo's mission is to improve the competitiveness and the productive diversification of the country by encouraging **investment, innovation and entrepreneurship**, strengthening in addition the **human capital** and **technological capabilities** to achieve a sustainable and territorially balanced development.

## Global Entrepreneurship Index 2017

**CHILE: 1° en LAC (24) and 18° global (132)**



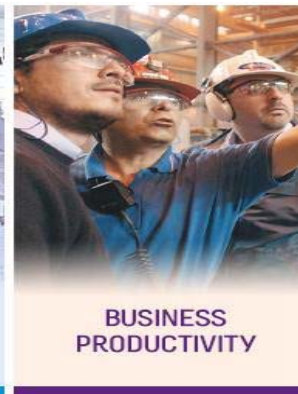
- Innovation grants
- R&D contract research grants
- R&D tax incentive



- Seed Capital
- Incubators
- Co-Works
- Start Up Chile



- Guarantees for financing SMEs
- PE & VC Funds
- Early Stage VC Funds



- SMEs programs
- Labor skills
- Smart Specialization programs



- Technology centres
- R&D Consortiums
- Tech transfer (TTOs and Hubs)

# CHILEAN PRODUCTIVE DEVELOPMENT POLICIE

## Neutral Policies for the promotion of self discovery

Broad policies without targeting, oriented to the promotion of innovation in companies and entrepreneurs of the of the whole economy, and evaluated on their own merits.

Business Innovation

Dynamic Entrepreneurship

More and better Financing

Chile has a complete “tool kit” to support dynamic enterprises, including:

- Incubators
- Accelerators
- Co-works
- Angel investors networks
- Mentoring networks
- Ventures Capital Funds

## Policy with National & Regional Strategic Focus for tackling coordination failures

Policies oriented to sectors, platforms or clusters that are inductors of technological changes, to the economic and institutional environment as a whole.

### Smart Specialization Strategic Programs

Strategic Sectors

Enabling Platforms

Cluster

Focus

National

Inter regional and Regional

Impact

Regional



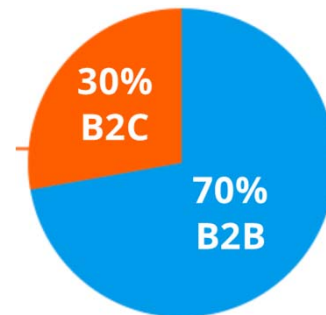
# STARTUPS DEVELOPMENT IN KEY CLUSTERS

Stimulate the generation of new startups in strategic markets, through an accelerator and a market incumbent that help the newcomers in their process of problem/solution fit, starting with a challenge and ending with a MVP.



## Support traditional industries (B2B)

Tech startups create software and hardware to support establishing industries and markets or to create new ones (push and pull).



## CHALLENGES LAUNCHED:

- **Smart cities**
- Financial accesibility
- Native tourism
- **Natural disasters**
- **Agrotechnology**
- **Food**
- **Mining**
- Tourism in non-traditional sectors



## Key challenges

- Scaling clean technologies needs incubators and accelerators with a specific focus on climate change technologies.
- Get where the markets need them most - and identify the technology needs of those markets.
  - **But how can we stimulate technological entrepreneurship in CleanTechs from relatively small local industries but with application in global markets?**
- Provide the CleanTech Incubators with adequate tools for technology Watching.



**Thank you**  
[www.corfo.cl](http://www.corfo.cl)

Fernando Hentzschel  
CORFO - CHILE.

# INNOVATION STRATEGY: VISION 2025

Chile: leading supplier of lithium and low-emission copper for the electric car industry



World's leading lithium producer



World's largest low emission copper producer

Long term supply of lithium carbonate/hydroxide (battery grade)

Lithium added value products (cathodes, others)

Solar energy for continuous electricity supply (mix PV/CSP) at average cost of 50 USD/MWh

Fossil fuels substitution  
Hydrogen and Synthetic fuels based on circular economy approach



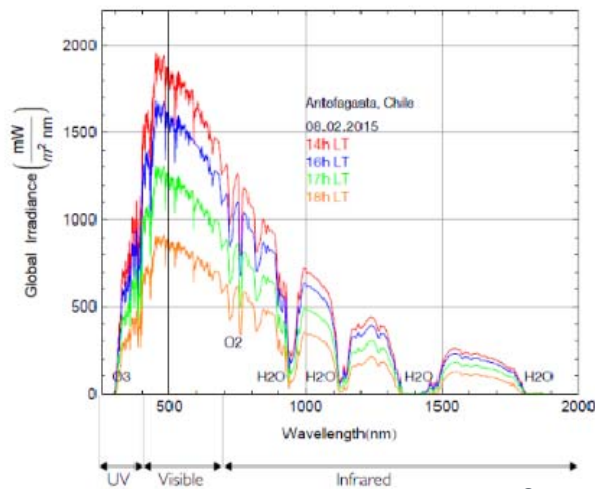


# TECHNOLOGY CONSORTIUM

## PV TECHNOLOGIES ADAPTED TO HIGH RADIATION IN DESERT CLIMATES

To adapt and/or develop solar photovoltaic power technologies that respond better to the unique conditions in desert and high-radiation regions in terms of their durability and expected performance that lowers the **levelized cost of energy to a target of US\$25/MWh by 2025** and placing special emphasis on the development and strengthening of local suppliers to create a sophisticated industrial sector of goods and services for the local and international market.

Corfo co-finance: USD 12 million (up to 50%)



Source: Estudio Caracterización del Espectro Solar – Programa Solar

	Condiciones estándar (STC)	Desierto de Atacama
AM (air mass)	1.5	1.17
Irradiancia	1000 W/mt2	> 1100 W/mt2
Radiación UV		35 - 65 % UV-B más que en Europa
Temperatura de la celda	25 °C	> 60°C
Módulo tipo	250 Wp	± 30% (200 – 300 Wp)



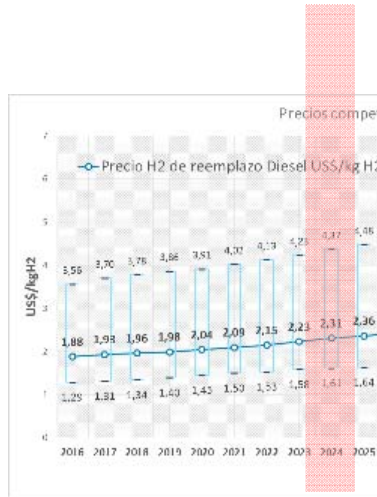
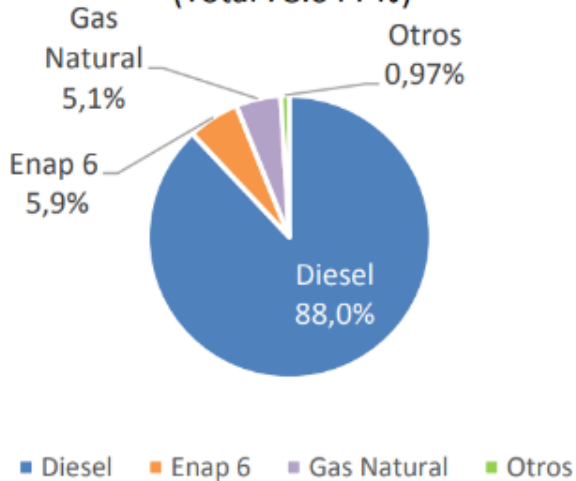
# HYDROGEN OPPORTUNITIES

By 2025, cost of H2 produced using solar PV (LCOE 25 USD/MWh, 33% plant factor) might be competitive compared to diesel

**Range: 2,2 – 2,6 USD/kgH<sub>2</sub>**

## Mining Fuel Substitution

(Total 78.044 TJ)



2 million m3 Diesel/ year  
 50% Hydrogen substitution  
 50,000 Nm3H<sub>2</sub>/h

- 900MW PV
- 25 Large H<sub>2</sub> electrolysis plants (750 MMUSD)

# PUMP STORAGE – SEAWATER AND SOLAR PV

CAP: 300 MW

INVESTMENT: USD 500 Million

LCOE: 45 USD/MWh



VALHALLA



**300 MW pump hydro plant  
that operates with seawater**

600 MW-AC photovoltaic solar plant with  
single-axis tracking in order to follow the  
sun from east to west.

