



# FARMDO ENERGY CHILE

## Developing Solar Energy Projects

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# CHILEAN ELECTRICAL MARKET



## **GENERATION**

25 GW installed capacity mainly Hydroelectric, Natural Gas, Coal/Petcoke. Followed by Diesel and NCRE (Non Conventional Renewable Energy).



## **TRANSMISSION**

Electric Grid, called Electric National System. Natural Monopoly with regulated prices.



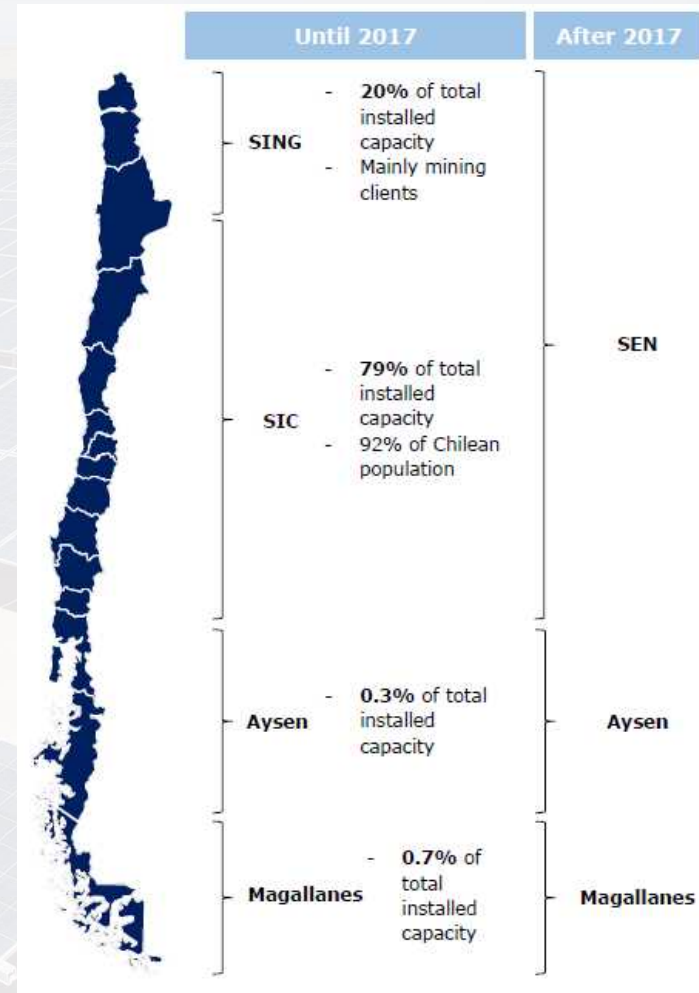
## **DISTRIBUTION**

Suppliers of regulated clients due geographic concession.

# CHILEAN ELECTRICAL MARKET – COUNTRY

- Chile has free trade agreement with 64 countries, becoming one of the world's most open economies.
- Has an average of US\$ 10 billion foreign direct investment per year, mainly in Mining, Services and Energy industries.
- Most competitive country in Latin America and one of the best evaluated among emerging economies according to the Global Competitiveness Index (GCI).

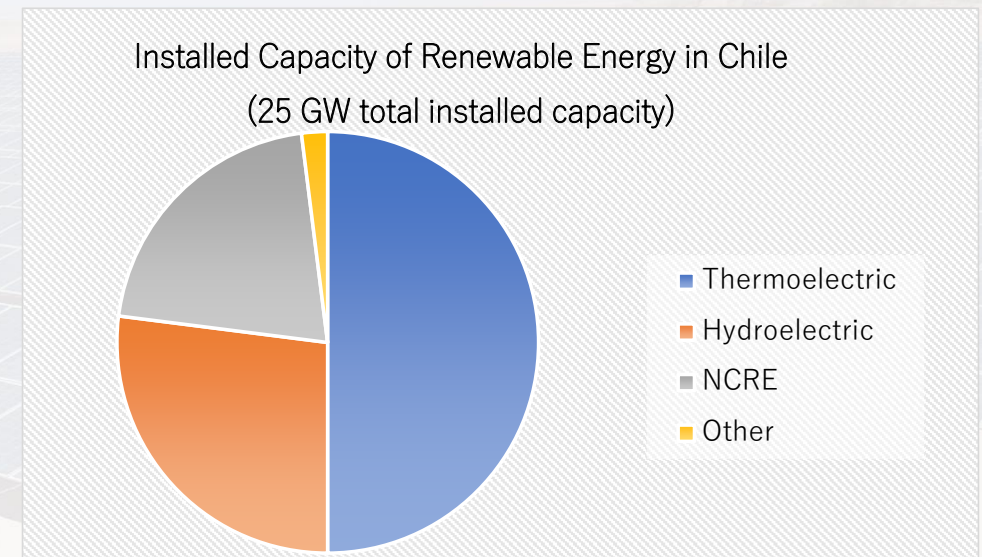
• Language:	Spanish
• Currency:	Chilean Pesos
• GPD:	US\$ 280.4 billion
• GDP/cap:	US\$ 15,935
• Inflation:	3%
• Unemployment:	7%
• Exports:	US\$ 96.7 billions
• Imports:	US\$ 65.5 billions
• Renown Industries:	Copper, Fish, Wine, Energy





# CHILEAN ELECTRICAL MARKET – RENEWABLE ENERGY

- Within the Generation market, there are several technologies to transform energy into electricity. The energy matrix is mainly composed of Thermoelectric Plants (50%, gas, Diesel and coal) and Hydroelectric Plants (27%). Today, with new technologies, sources of generation with less environmental impact or Non-Conventional Renewable Energies have been connected (21%, NCRE, **wind** and **photovoltaic** mainly).
- This is due to the fact that in 2006, by means of Supreme Decree N°244, modified in 2015 and since 2019 in the process of improvement, it establishes a mechanism of stabilization of the energy sale price so that small projects of **Distributed Generation** (PMGD) can be financed by being able to project stable income flows without risk due to the volatility of the spot price.
- This law allows the energy matrix to be more efficient by injecting energy near the sources of electricity consumption.



- Therefore, comes the idea of implementing a generation project, Solar PMGD, with all equipment insured to minimize risk and take advantage of the **Stabilized Price** guaranteed by SD 244 and calculated every six months by the CEN, National Electric Coordinator.
- The number of these projects is limited by capacity of the grid, which can be expanded if the CEN determines.

# FARMLAND CORPORATION LTD (GUNMA, JAPAN)

- Japanese company operating in agriculture and energy generation industries.
  - Harvest and farming
  - Crop selling
  - Solar energy generation
  - Wind energy generation
- Support agriculture and help farmers increase their income.
- 300 direct sale stores of agricultural crops. Direct sale system where shoppers can identify farmers who grow the crops when buying.
- Deliver crops produced locally to urban residents and return their values to regional community.
- 120 young employees, local part-timers, disabled part-timers and students. Providing opportunities to gain job experience.
- **Over 210 PV stations (123 MW), mainly in Aomori, Japan.** Using unlimited solar power for CO2 reduction.
- Farmdo Group contributes to growth and development of agriculture, local communities and global environment.



<https://farmdo.com/en/company.html>



# LAND AND SEA- LAS ENERGY

*"We are a young company in Chile committed to the transition to a cleaner and more sustainable energy matrix, through the development of 3-9 MW PV Solar Generation Parks under the PMGD regulation scheme. We intend to develop more than 200 MWp in Ready to Build (RTB) projects in the next years."*

- Establishment date: June 2017
- Full-time employees: 7 people
- LAS Energy was initially established in June 2017 as a retailer/exporter company, turning entirely to the solar developing (ID) business since February 2018.
- The company has broad managerial and outsourcing experience; enabling to develop PV PMGD projects from scratch to RtB, including the land lease contract and all required permits.
- The current project portfolio consists in:

Development Status	Number of Projects	TOTAL MW AC
Ready to Build (RtB)	4	20
Under Development w/ ICC	6	27
Under Development w/o ICC	6	40
Future Pipeline (SCR w/o F4)	20	120

# JOINT VENTURE (6 MW) – FARMDO ENERGY CHILE

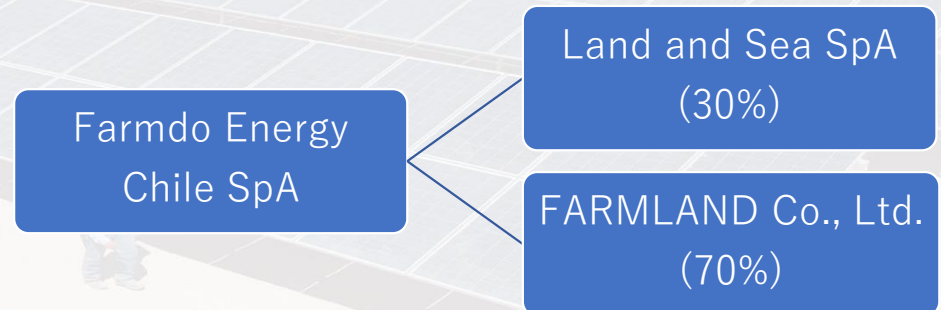
- **LAS Energy** SpA,

Specializes in the development of solar PMGD projects, from Electric Impact Studies, to the celebration of Land Lease Agreement, through the presentation and approval of several sectorial permits.

- **Farmland Co., Ltd.**

Members of Farmdo Group, recognized pioneers in the investment of new technologies, experience in photovoltaic systems and obtaining financing carbon footprint reduction.

From the Japanese Ministry of Environment, through the Global Environmental Centre (GEC) they promote the Joint Credit Mechanism (JCM) financing mechanism for projects that reduce the carbon footprint in developing countries, according to Japan's development plans and goals of gas emissions and according to the Paris agreement.











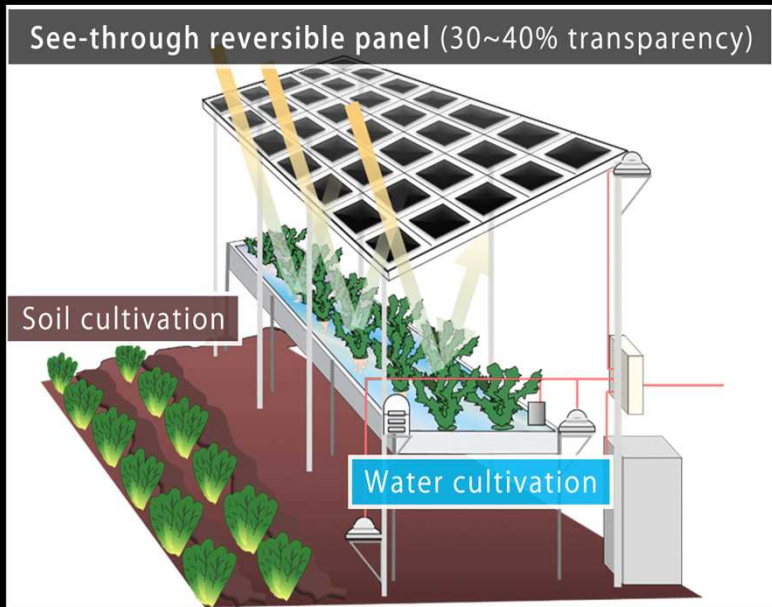
**Support agriculture & help  
farmers increase their income**







# Innovative Technology



## Solar Farm®



**Solar Farm®** system can install more capacity on 1 Ha of land than other conventional systems.



**Solar Farm®** system uses patented technology to allow adequate light penetration for plant photosynthesis.



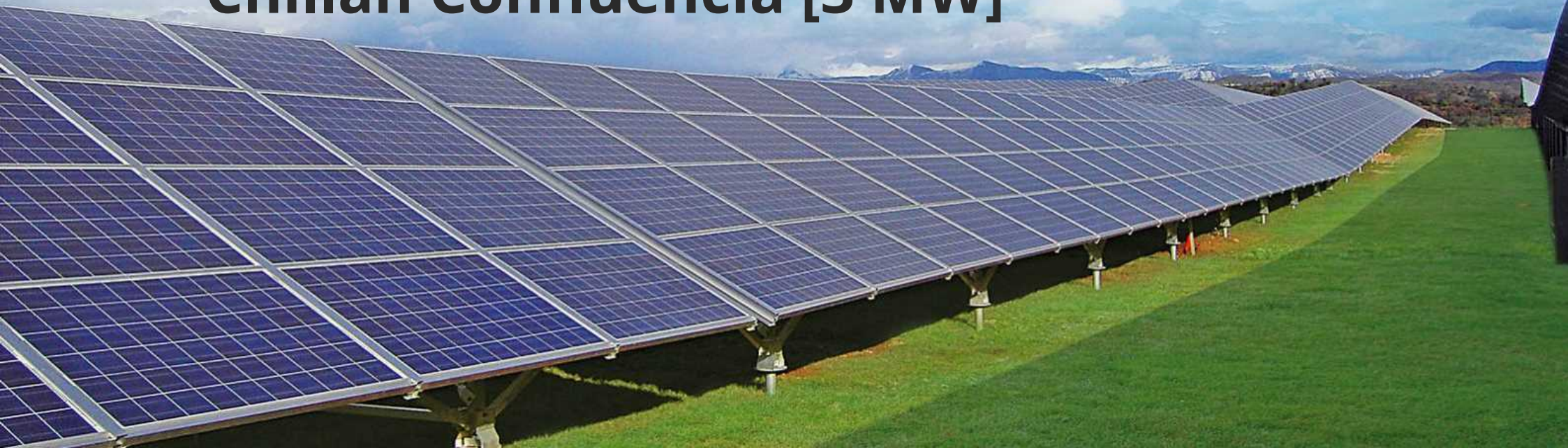
**Solar Farm®** system can be configured to be built with open air or closed systems, hydroponics, soil culture, or other growing mediums.



**Solar Farm®** provides an opportunity for farmers, governments and solar developers to work together towards increasing agriculture **AND** electricity yields.

# **FARMDO ENERGY CHILE PHASE 1 (3 MW)**

**Chillán Confluencia [3 MW]**

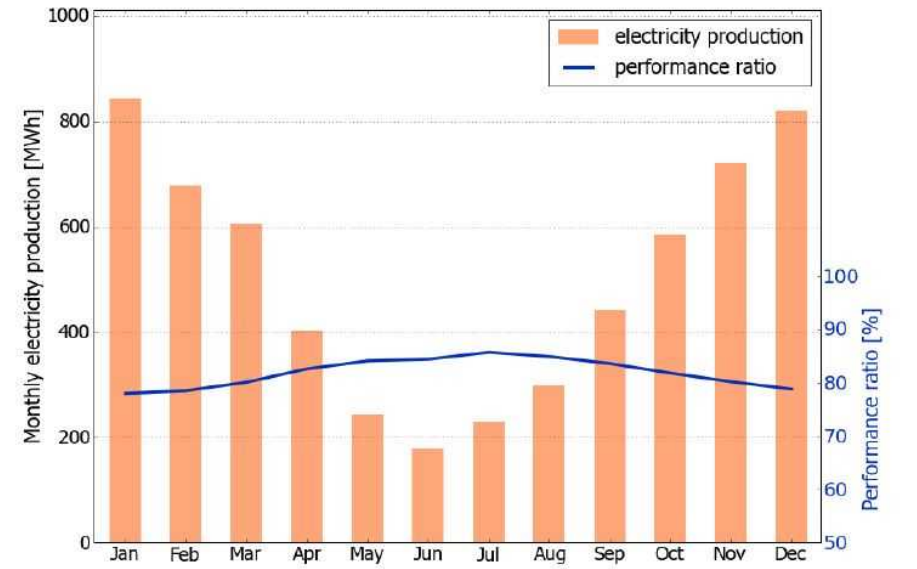
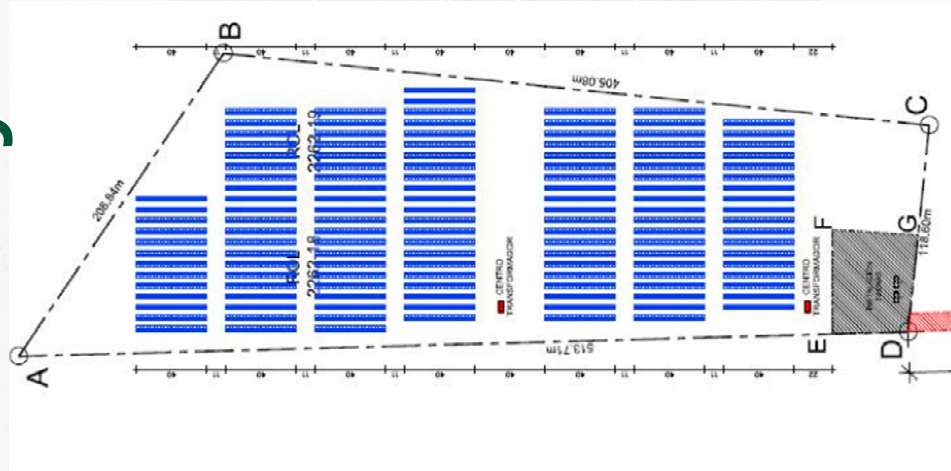




# Chillan Confluencia



## Plant layout



## Monthly yields



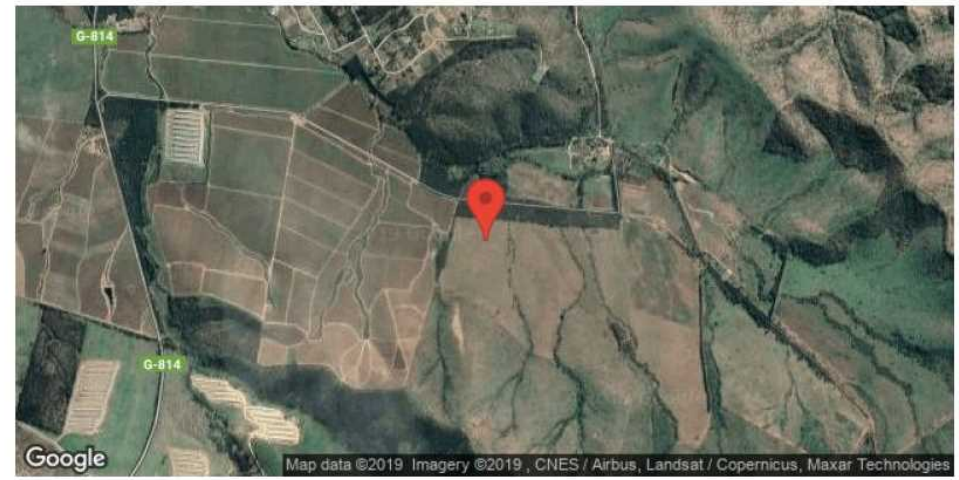
# **FARMDO ENERGY CHILE PHASE 2 (3 MW)**

**San Antonio Malvilla [3 MW]  
Proyecto Piloto INIA [200 KW]**



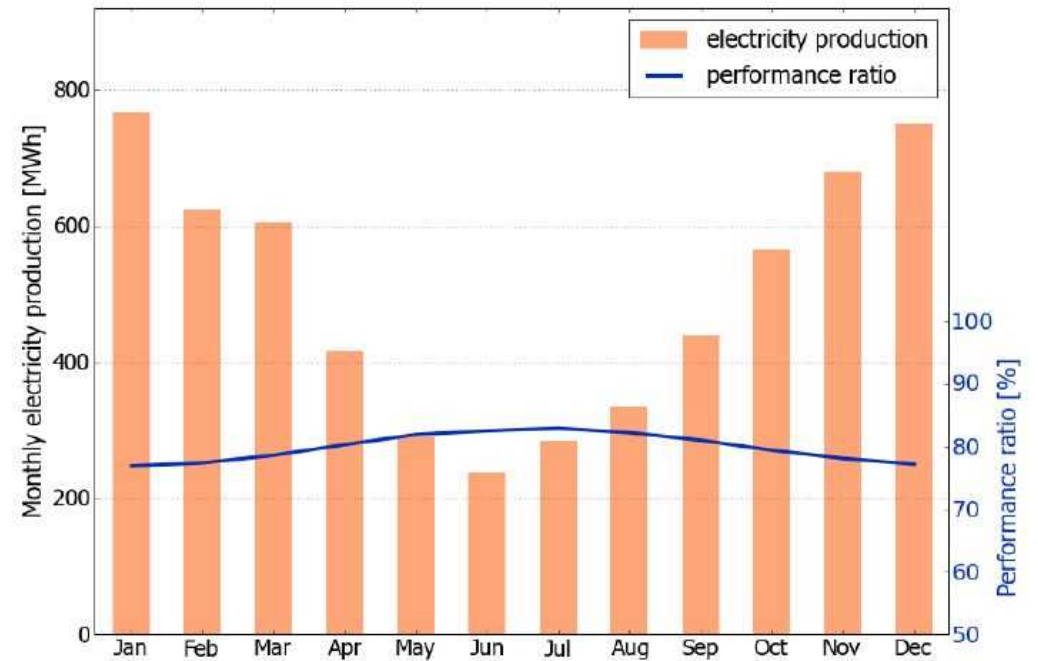


# San Antonio Malvilla



Google Maps © 2019 Google

## Plant layout



## Monthly yields



# Maule



## 20 kW Solar Farm pilot project with



&



## Goal

Spread Solar farm system to 50 small and medium farmers through INDAP in the year 2021. Spread to over 200 farmers within the next 5 years.



**Ejemplo en Japón**  
**(coles que crecen bajo el sistema Solar Farm de Farmdo)**



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# Future Projects

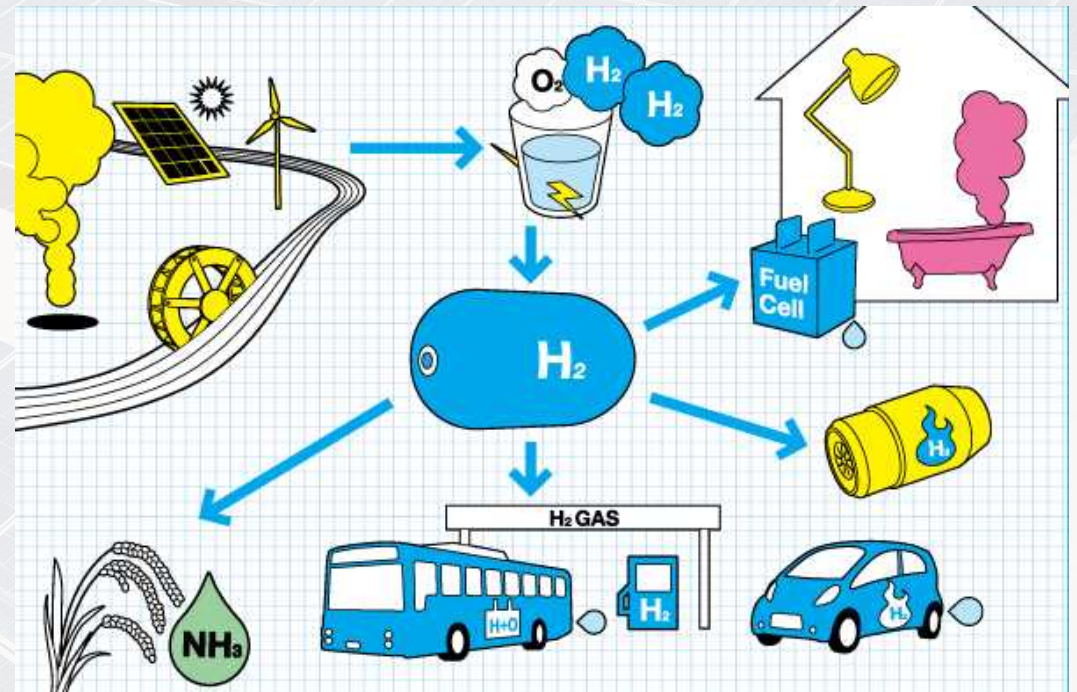
Planned to enter within the next 5-10 years

## Wind power



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## Green Hydrogen



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A large, modern greenhouse with a complex metal frame and a translucent roof. Inside, rows of green plants are growing in long black trays. The plants are densely packed and appear to be in various stages of growth. The greenhouse structure is made of white metal beams, and the roof is composed of a grid of translucent panels. The overall atmosphere is bright and airy, typical of a controlled agricultural environment.

Thank you