

Toyota's Initiatives for Realizing a Hydrogen-based Society

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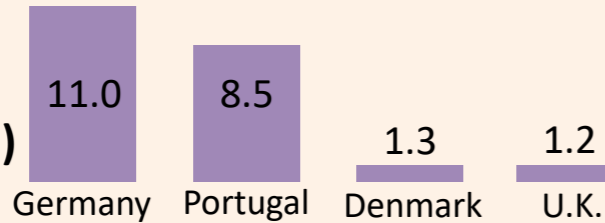
Rising Expectations for Hydrogen

TOYOTA



- **Large-scale investment plans**
- **Use by industry** via existing pipelines
- **Plan to import renewable hydrogen** (CO₂-free hydrogen from Africa and Eastern Europe)
- Renewable hydrogen manufactured in 2030 equivalent to 40 nuclear plants

Investment amount
(100 billion yen)



Orange: Ongoing
Green: Discussing



PVs: More states/provinces with ZEV regulations

CVs: New ZEV regulations



- Roadmap for hydrogen-driven economic revitalization, etc.
Promotion of hydrogen as a national policy



- Industrial development and **CV shift to FCs**
- Currently verifying **the use of all kinds of hydrogen**, such as that made from renewable energy and reformed coal

Mobility



Approx.
6,000 units



60 places

Other fields



Railroads



Plants



Airports

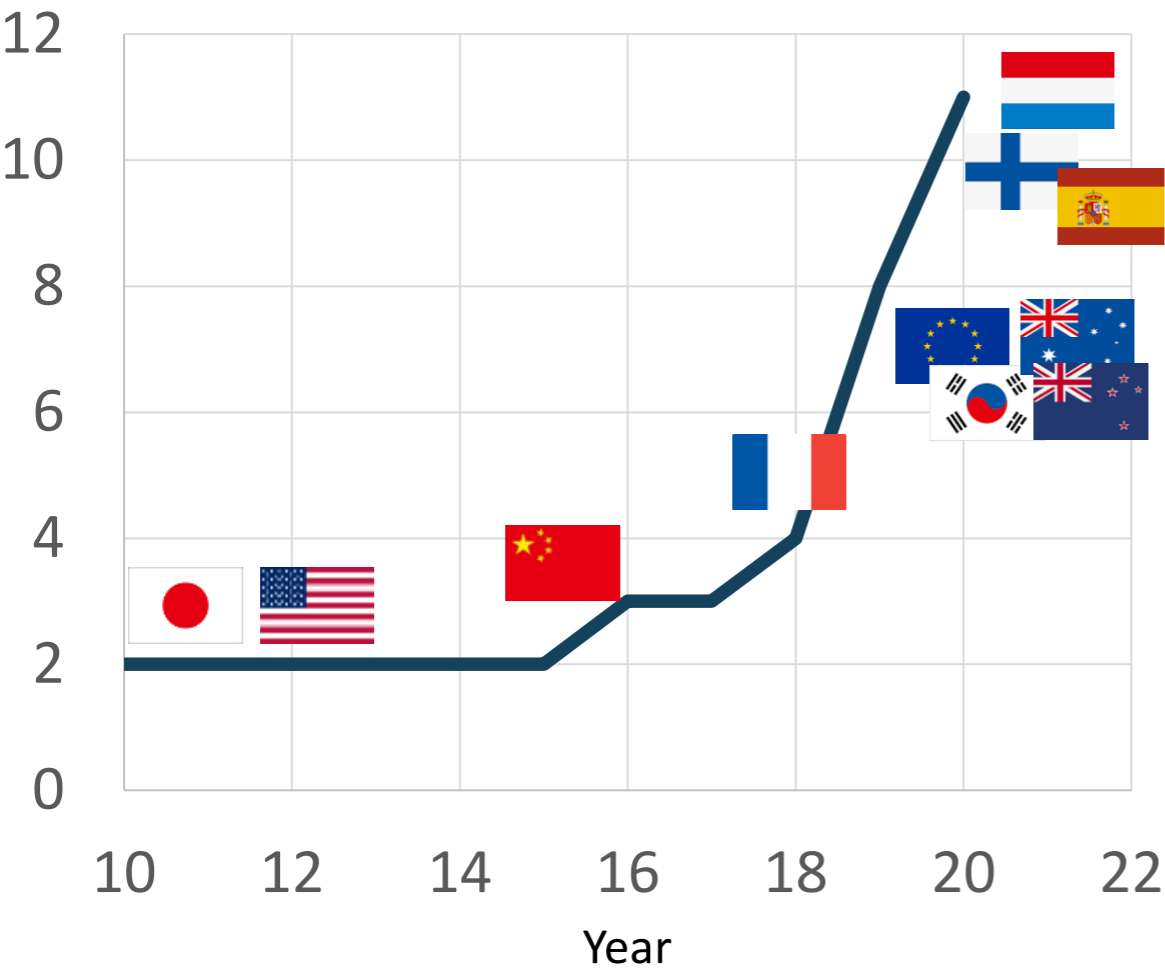


- Promotion of use of FCEVs and hydrogen stations
- Verification of **more use in power generation** and of **CO₂-free hydrogen**

Toward decarbonization, expectations for hydrogen are rising and societal implementation is advancing

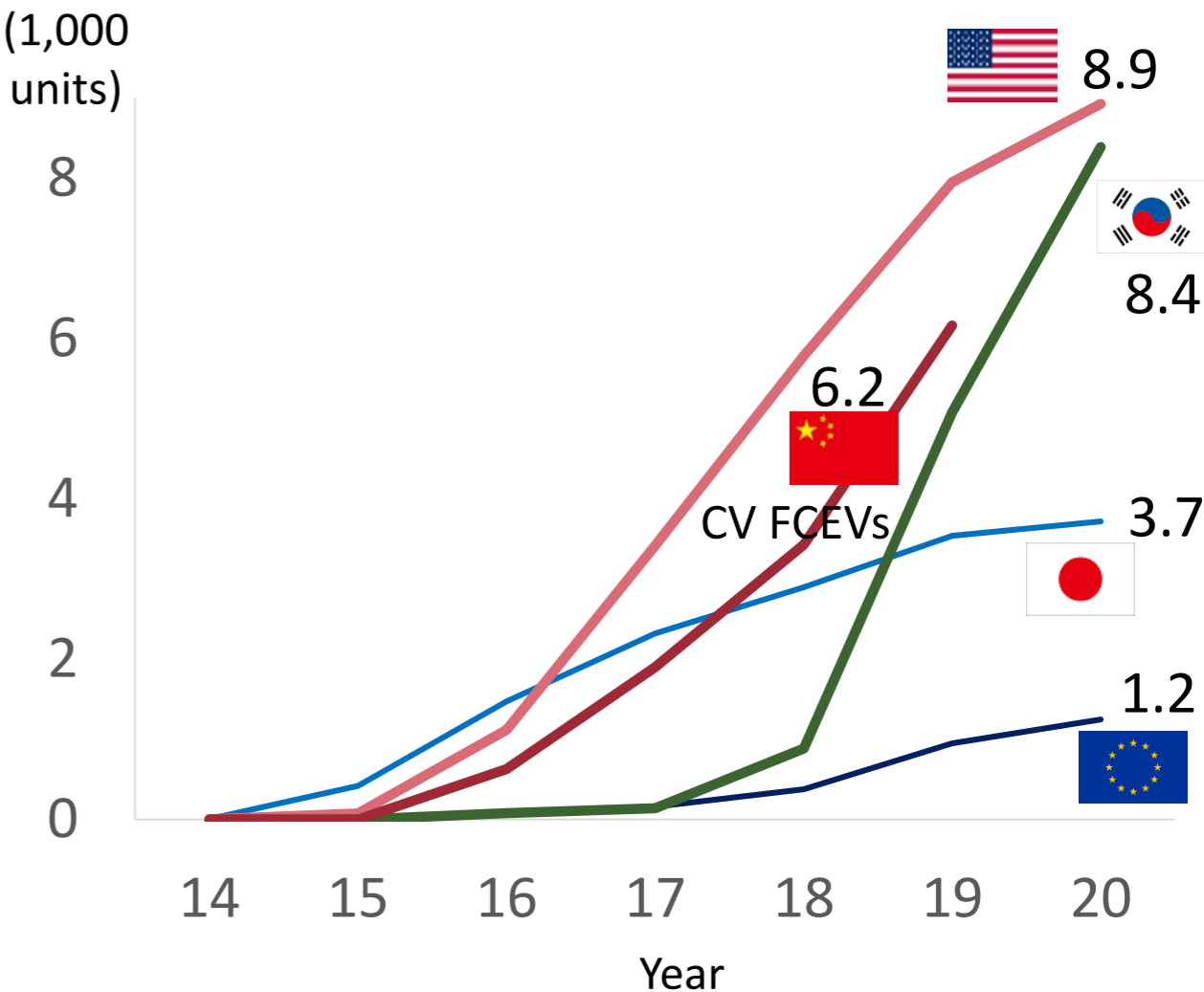
Rising Expectations for Hydrogen

Number of countries with national hydrogen strategies



Countries eyeing hydrogen since 2019

Cumulative sales of PV FCEVs



Rapid increases in China and South Korea

Steering members



Supporting members



A CEO-led initiative started in 2017 for promoting a hydrogen society, and now with 92 members

FCs Introduced by Toyota

TOYOTA

FCEV Mirai

Introduced in 2014



Approx.
10,800 units
in Japan, U.S.,
and Europe

FC forklifts



Toyota Industries Corporation

236 units

FCEV bus Sora



88 units

Next-generation Mirai

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Sales start:
End of 2020



FCEVs, FCEV buses, and FC forklifts

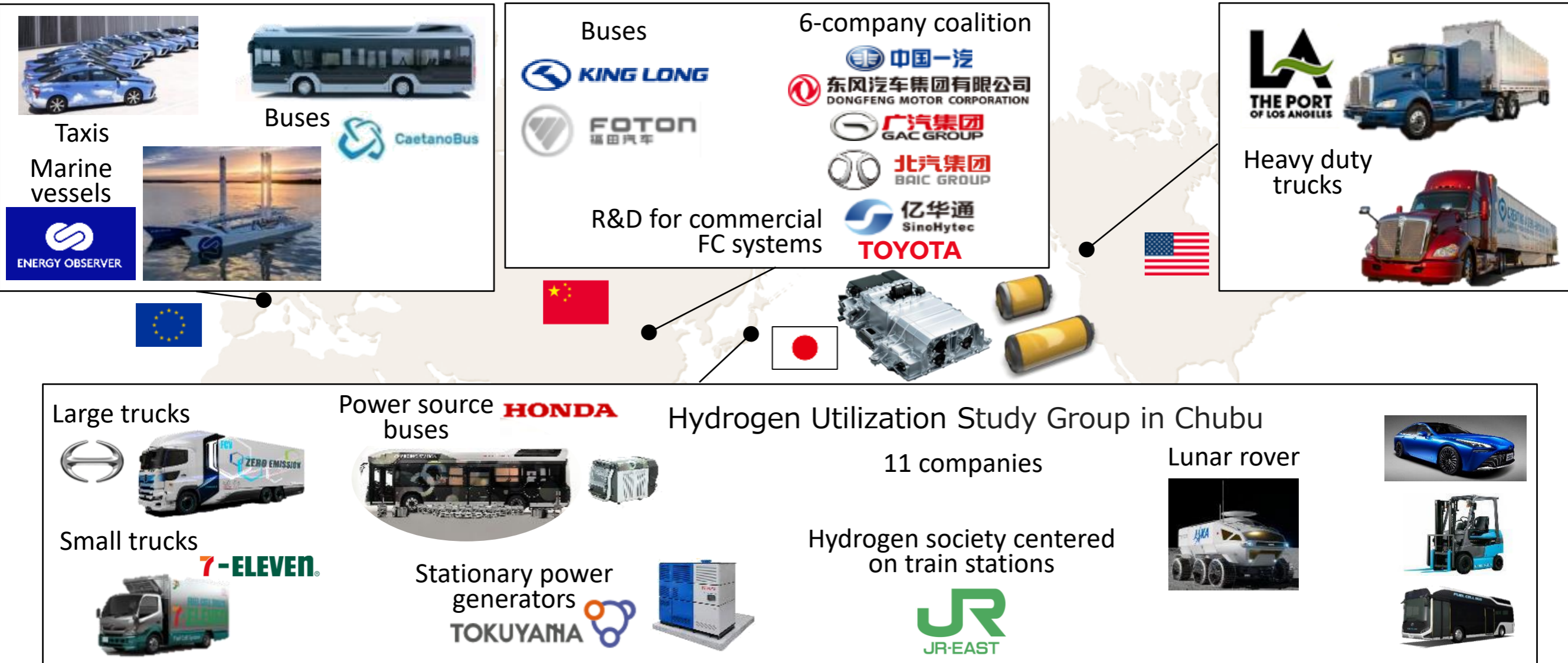
Aim: Global annual sales of 30,000-plus units from around 2020



New facility for producing FC stacks

Toyota's Initiatives for Realizing a Hydrogen-based Society

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Provide Toyota FC systems for PV/CV FCEVs, to other industries, and in various situations

Examples of Various Initiatives in Japan (Including concluded activities)

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Make **Transport • Supply chain** **Use**

International hydrogen energy supply chain

Kawasaki Brunei-to-Japan transport of hydrogen in liquid form at normal temperature and pressure

Kobe Australia-to-Japan transport of liquefied hydrogen

Fukuoka

Creating hydrogen using wastewater biogas

FC power source vehicle trial
Approx. 72 hours of electric power



FC ship practical application trial

Niigata

Taxi trial

Shikaoi-cho and Obihiro in Hokkaido

Biomass (livestock excreta) hydrogen supply chain

Fukushima

New-energy company concept (Renewable hydrogen)

Fukushima

Hydrogen mixed-combustion power generation trial

Aichi

Low-carbon (renewable) hydrogen supply chain

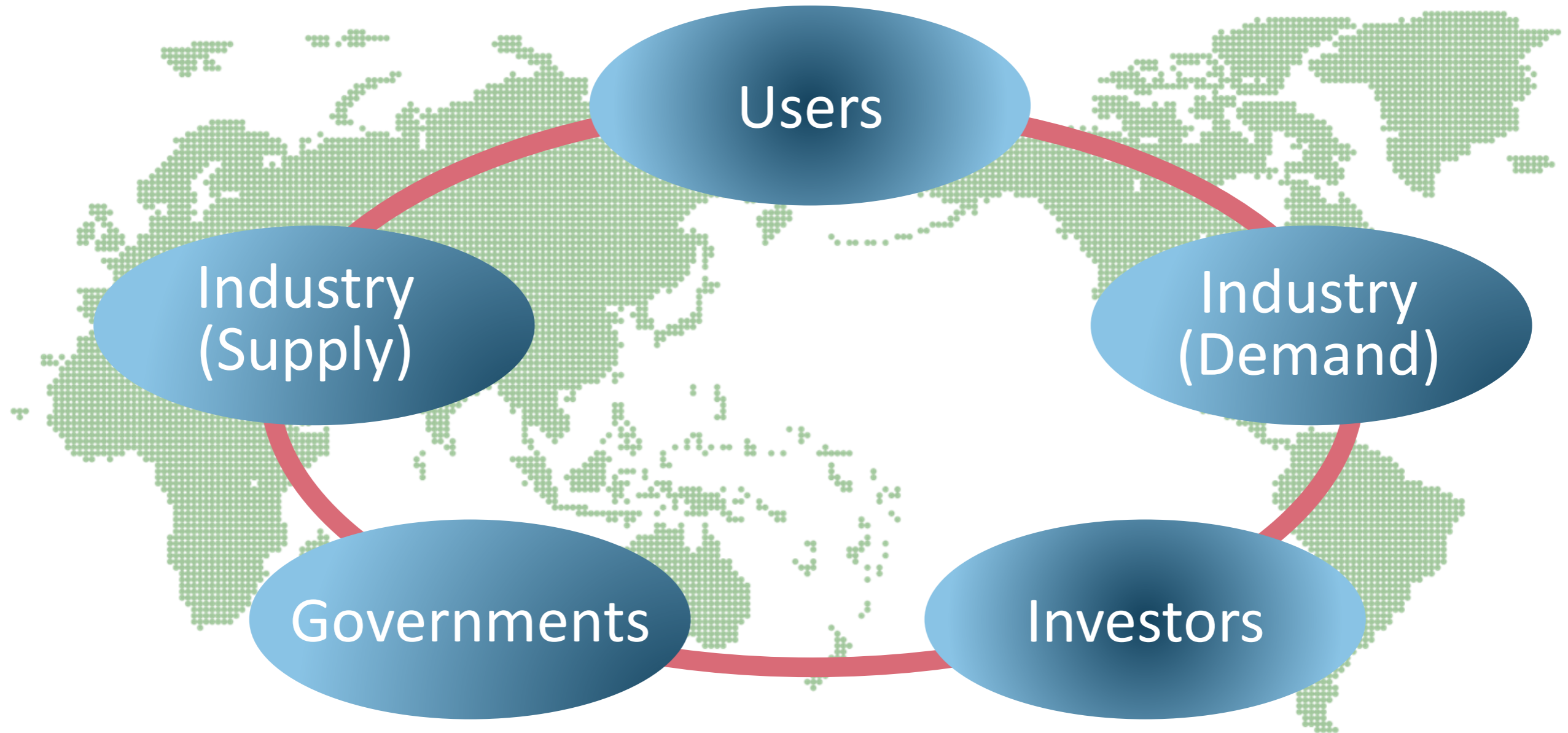


Kanagawa

Low-carbon (renewable) hydrogen supply chain



Companies and organizations with various technologies in various industries participate, centered on verification trials



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