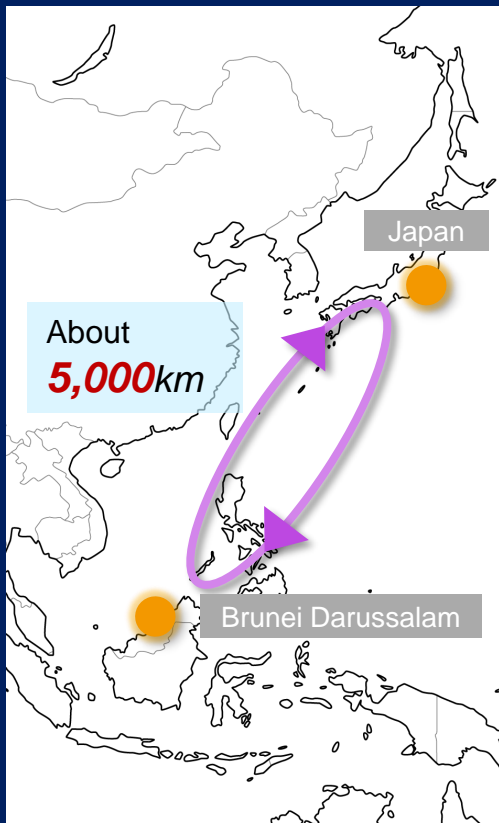


SPERA HYDROGEN FOR THE FUTURE



Global hydrogen supply chain
demonstration project

**The world's first
global hydrogen supply chain
connecting Brunei Darussalam
and Japan
has been realized, this year, 2020**

Hydrogenation

Transportation

Dehydrogenation

Power Generation



Hydrogenation plant, Brunei Darussalam

Hydrogenation

Transportation

Dehydrogenation

Power Generation



SPERA Hydrogen is transported by ISO tank containers

Hydrogenation

Transportation

Dehydrogenation

Power Generation



using a commercial container vessel

Hydrogenation

Transportation

Dehydrogenation

Power Generation



Dehydrogenation plant, Japan

Hydrogenation

Transportation

Dehydrogenation

Power Generation



Courtesy of TOA OIL CO., LTD.



Hydrogen is supplied to the gas turbines as a hydrogen-powered fuel

**Technology Development for the Realization of a Hydrogen Society: Project supported by NEDO, executed by AHEAD*

Key Features of SPERA Hydrogen Technology

Liquid at ambient conditions

Safe and chemically stable

Able to use existing infrastructure
(Oil tank, chemical tanker, etc.)

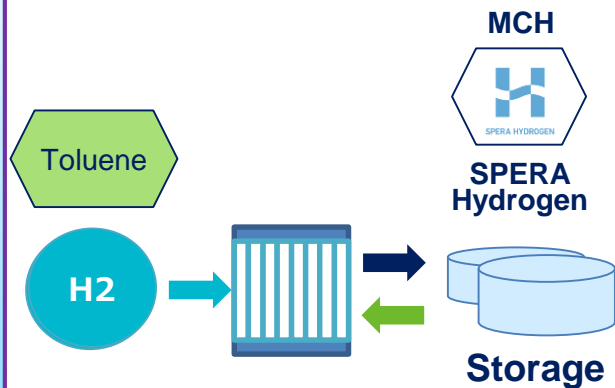


✓ ***Competitive hydrogen can be supplied***

✓ ***Early implementation possible***

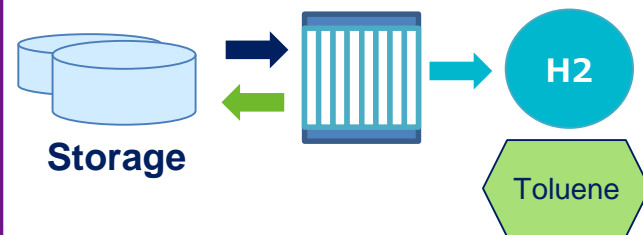
SPERA Hydrogen System

Supplying Countries



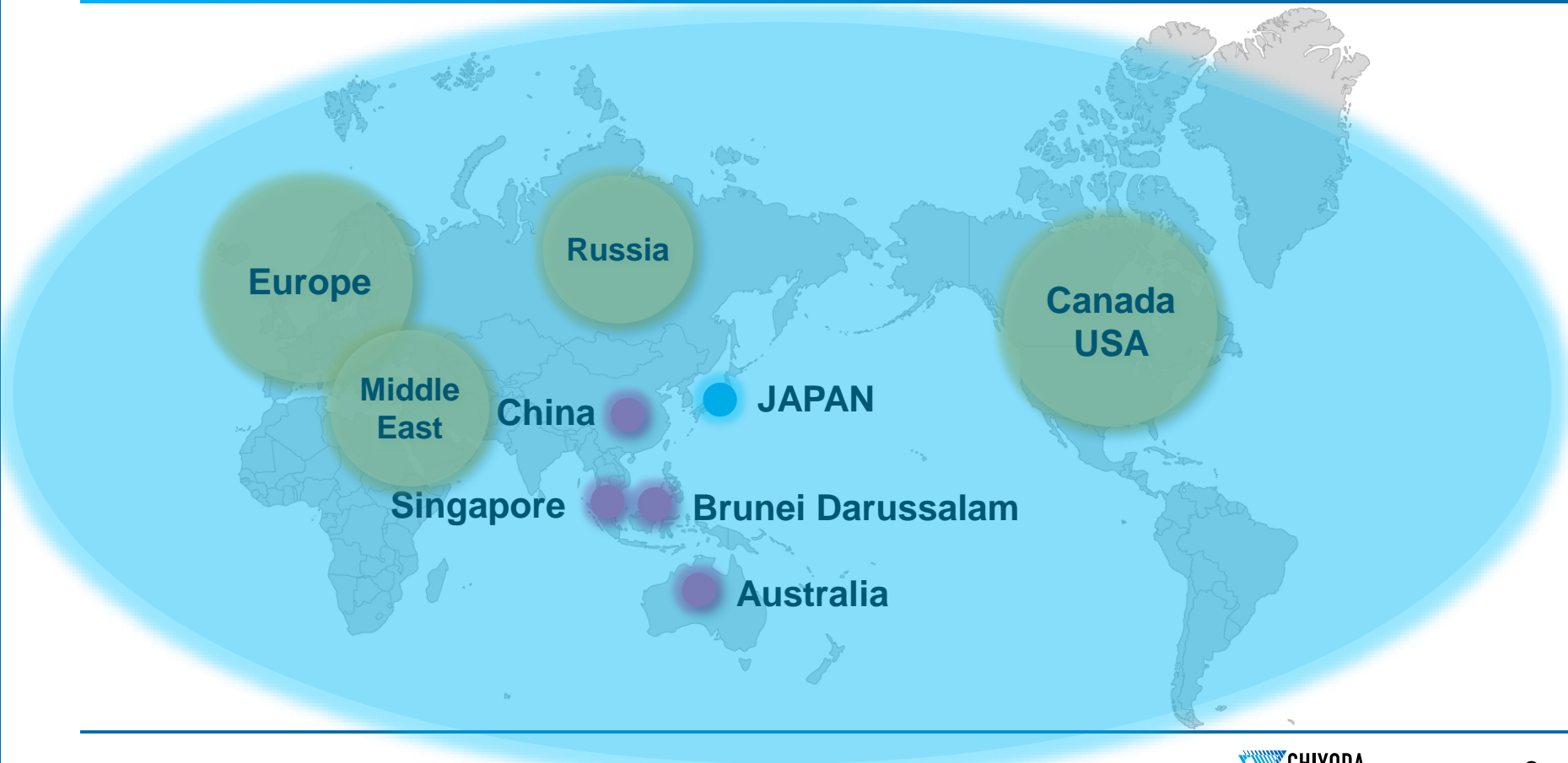
Hydrogenation

Demanding Countries



Dehydrogenation

Advancing a sustainable future towards Hydrogen Society





Changing energy into

“HOPE (SPERA)”

towards a Sustainable Society



SPERA HYDROGEN[®]

FOR THE FUTURE

Acknowledgements



The demonstration project is being carried out by The Advanced Hydrogen Energy Chain Association for Technology Development (AHEAD), supported by New Energy and Industrial Technology Development Organization (NEDO), and is operated with significant cooperation of the government of Brunei Darussalam and TOA OIL CO., LTD.

