

FY2022 Business Unit IR Meeting

Challenges for the Decarbonization and Recycling Energy Business

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Executive Vice President,
Head of Energy Innovation Initiative (EII)
December 8, 2022

Cautionary Statement Concerning Forward-looking Statements

This report includes forward-looking statements relating to our future plans, forecasts, objectives, expectations and intentions.

The forward-looking statements reflect management's current assumptions and expectations of future events, and accordingly, they are inherently susceptible to uncertainties and changes in circumstances and are not guarantees of future performance. Actual results may differ materially, for a wide range of possible reasons, including general industry and market conditions and general international economic conditions. In light of the many risks and uncertainties, you are advised not to put undue reliance on these statements.

The management forecasts included in this report are not projections, and do not represent management's current estimates of future performance. Rather, they represent forecasts that management strives to achieve through the successful implementation of the Company's business strategies. The Company may be unsuccessful in implementing its business strategies, and management may fail to achieve its forecasts. The Company is under no obligation -- and expressly disclaims any such obligation -- to update or alter its forward-looking statements.



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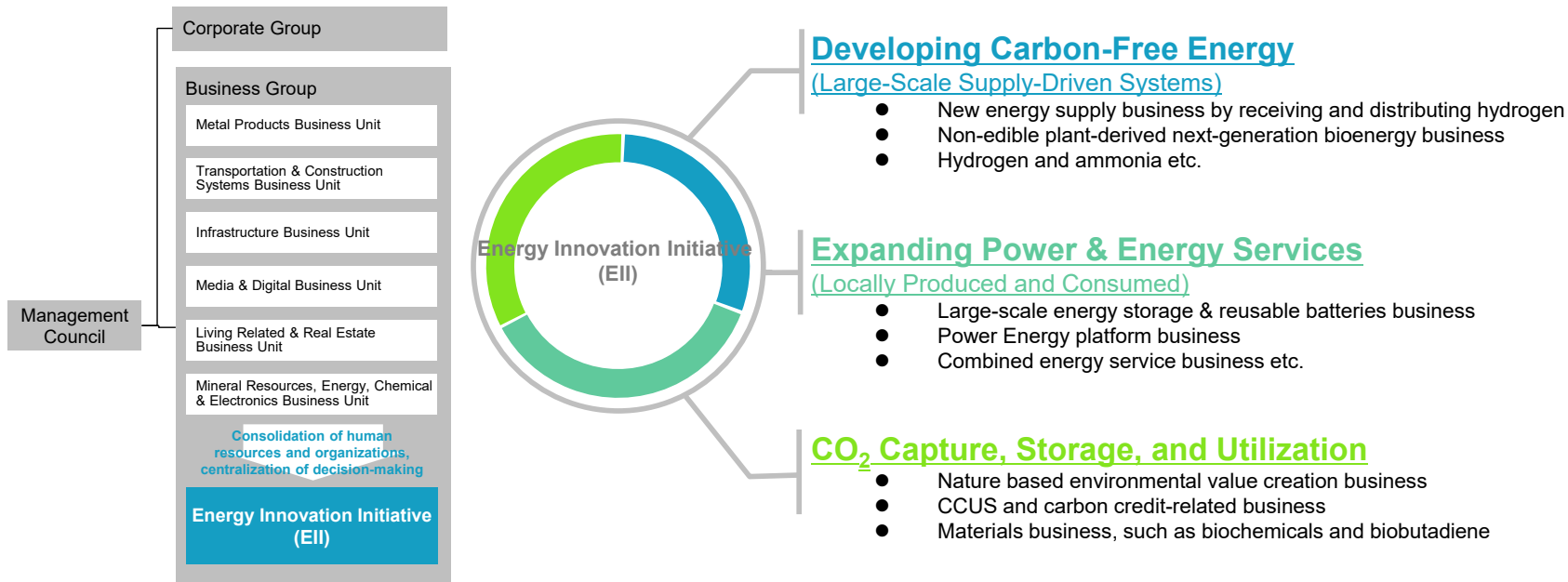
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01

Overview of EII

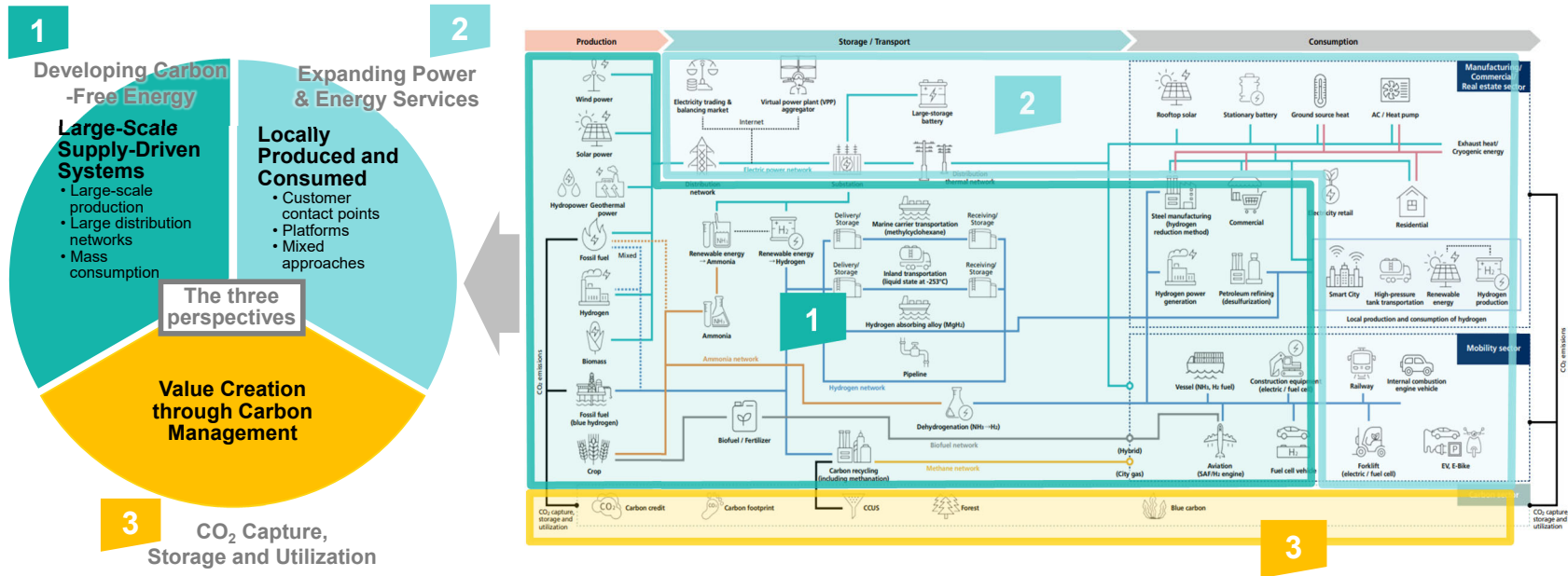
Establishment of Energy Innovation Initiative (EII)

- EII established in April 2021 as a new business organization to create next-generation businesses that will contribute to carbon-neutral society
- From a bird's-eye view of sustainable energy cycle, aiming to create and expand next-generation energy-related businesses based on the following three focused areas



Overview of the Decarbonization and Recycling Energy System and Three Focused Areas

- Overview of the decarbonization and recycling energy system that will contribute to carbon-neutral society designed by EII
- From a value chain perspective, classified three focused areas which EII will work for value creation



EII Organization Chart & Focused Areas

EII Management

Dept./Team

Focused Areas



Shingo Ueno
Head of EII
Executive Vice President



Seiji Kitajima
Director of EII
GM of EII Design & Strategy Dept.



Keiichi Mihara
Director of EII
GM of Planning & Coordination
Dept., Infrastructure Business Unit



Koji Endo
Director of EII
GM of Energy Division



Takayuki Sumita
Assistant CSO
Sumitomo Corporation Global
Research Co. Ltd.
EII Strategy & Design Dept.

EII Dept./Team Headcount
Total staff : 200
(136 in Japan/64 overseas)
*As of October 2022

Design & Strategy Dept.

Cross-organizational
Collaboration Platform

Hydrogen Business Dept.

Zero Emission Solution Business Dept.

Wood Resources Business Dept.

Biomass Energy & Materials Dept.

Power Frontier Business Dept.

Subsurface Energy Team

Carbon Solution Team

Developing Carbon-Free Energy (Large-Scale Supply-Driven Systems)	Expanding Power & Energy Services (Locally Produced and Consumed)	CO ₂ Capture, Storage, and Utilization	Business Overview
✓	✓	✓	- Formulation of overall EII Strategy - Support for the formulation and implementation of strategies for each organizations Carbon credit Ammonia CCUS Mobility x Energy Next-gen bio etc.
✓	✓	✓	Production and distribution of hydrogen and ammonia
	✓		- Large-scale energy storage business - EV battery reuse business
		✓	- Forest business (NZ/Russia) - Wood product trade(including wood chips) - Wood-derived biochemicals
✓		✓	- Wood pellet trade - E2G(ethanol), biogas, SAF, etc. - Bagasse pellet business
✓	✓		Green power platform business based on centralized and distributed photovoltaic power generation
	✓		Regional heat project
		✓	Development, promotion and trading of carbon credit business



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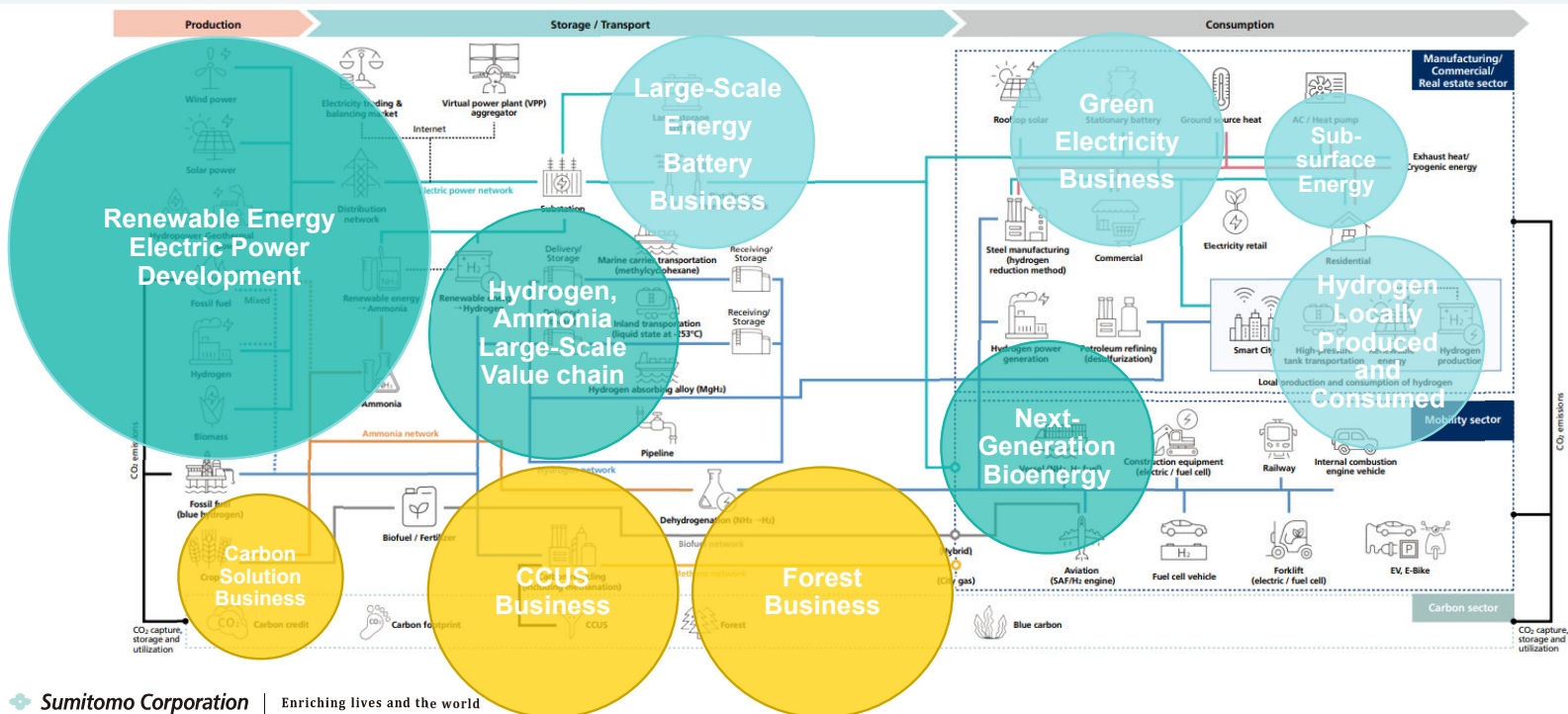
Enriching lives and the world

02

ESG Growth Strategy

Image of Invested Capital in the Next-Generation Energy Field

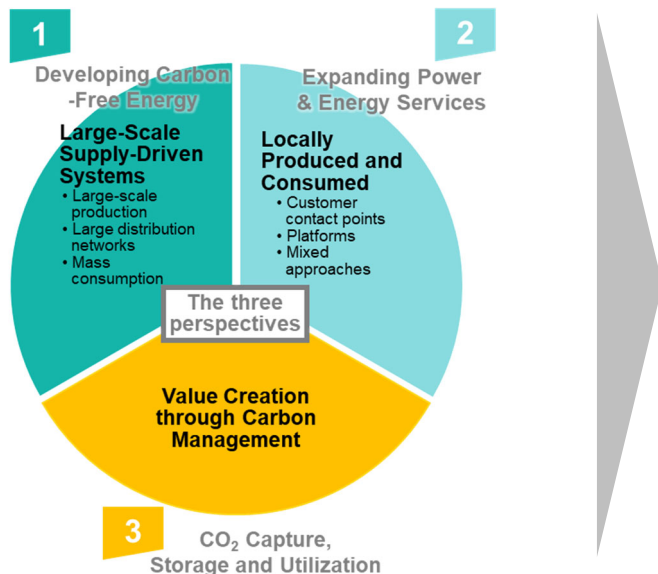
- From a perspective of the entire value chain in the next-generation energy field, build a sustainable revenue base through the creation of businesses that contributes to stakeholders' CO2 reduction
- Aiming to achieve 1.5 trillion yen of invested capital in the next-generation energy field company-wide by 2030



Business Development Progress in the Next-Generation Energy Field

- Pursuing both “business development in the three focused areas” and “cross-organizational initiatives with other business units” to build the decarbonization and recycling energy business
- Promoting business development at various stages and building foundations globally to create next-generation business that contribute to a carbon-neutral society

Pursuing both “business development in the three focused areas ” and “cross-functional collaboration and synergy creation between units”



* Detailed explanations in the following sections

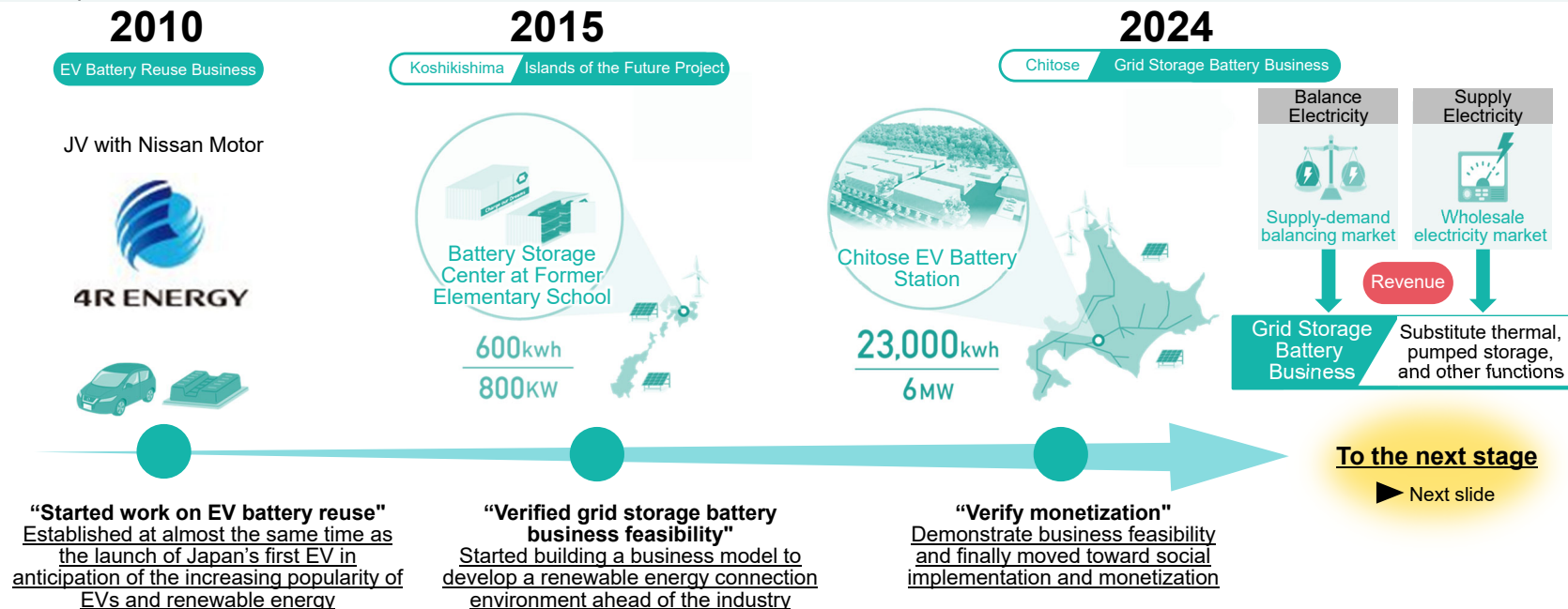
- 1** Major Milestone for Victoria's World-First Hydrogen Project with Australian and Japanese public and private sectors
- 1** Conclusion of a Comprehensive Partnership Agreement for the Large-Scale Utilization of Hydrogen in Chubu
- 1** Promotion of next-generation bioenergy business development utilizing overseas agricultural residues
- 2** Agreement with Rio Tinto for a hydrogen production project in Gladstone, Queensland, Australia*
- 2** Establishment of a joint venture with Shikoku Electric Power Company, Incorporated and Sunseap Group Pte. Ltd. for solar power generation business
- 2** Opening of EV Battery Station in Namie, Fukushima for the construction of a large-scale energy storage system*
- 2** Decarbonization support partnership with Nissan Motor Co., Ltd., for local governments
- 1** Commencing study on carbon neutrality project in Catchment area of U.K.'s Bacton gas terminal
- 3** Additional acquisition of forest assets in the Coromandel and Gisborne districts of New Zealand
- 1** Agreement to jointly start a feasibility study for producing hydrogen by ammonia decomposition using photocatalyst with Lotte Chemical in South Korea
- 1** Investment in TAE Technologies, a fusion power company in the United States
- 3** Capital and business alliance with UK CO₂ mineralisation start-up Protostar Group Limited (44.01)

03

Introduction of Initiatives Toward Growth

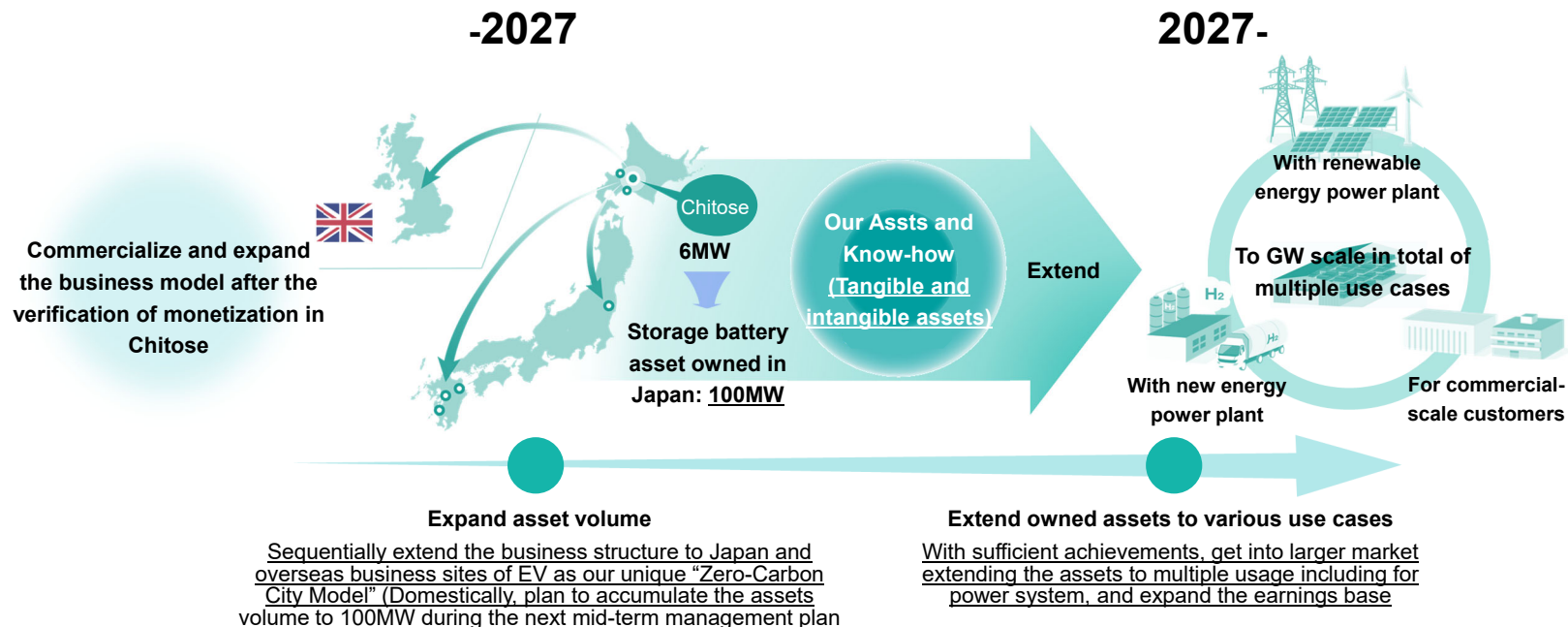
Large-Scale Energy Storage Business -Progress so far and Plans for Future-

- Developing future projects in the large-scale energy storage business in anticipation of the need to stabilize the power grid, which is necessary for the realization of a society that introduces renewable energy on a large scale
- With the system revision resolution in 2023, verify monetization in the electricity balancing market and move to the stage of asset expansion nationwide



Large-Scale Energy Storage Business -Vision-

- Aim to establish and expand business foundation, after verification of business feasibility
- Utilize know-how and experience accumulated through operation of owned assets, and extend them to outside assets



Large-Scale Energy Storage Business -Our unique strategy-

- First to launch a "4R (battery reuse) business," which will be the critical path to connect a decarbonized society, in anticipation of an electrified and renewable energy-based economy and society
- Desire to build a sustainable "ecosystem" by realizing monetization of the "large-scale energy storage business" using 4R batteries

Namie Namie EV Battery Station



Concept: Realization of 100% renewable energy at 4R Namie Plant

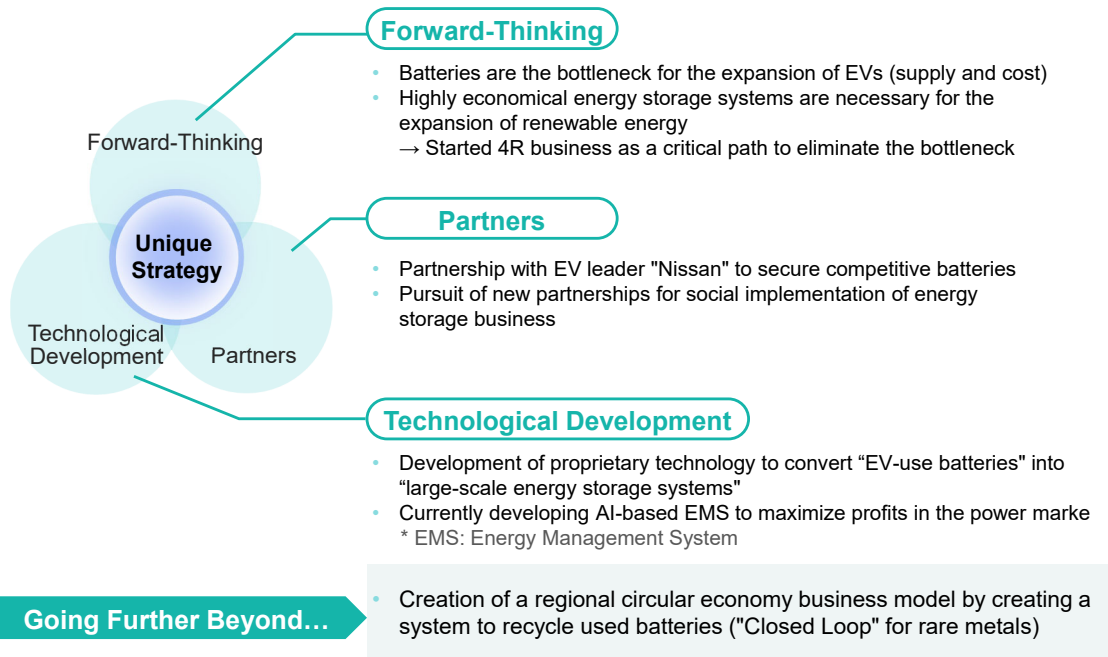
Applying the Namie Model to Chitose

Chitose Chitose EV Battery Station



<Site Photo> Construction to be completed in August 2023

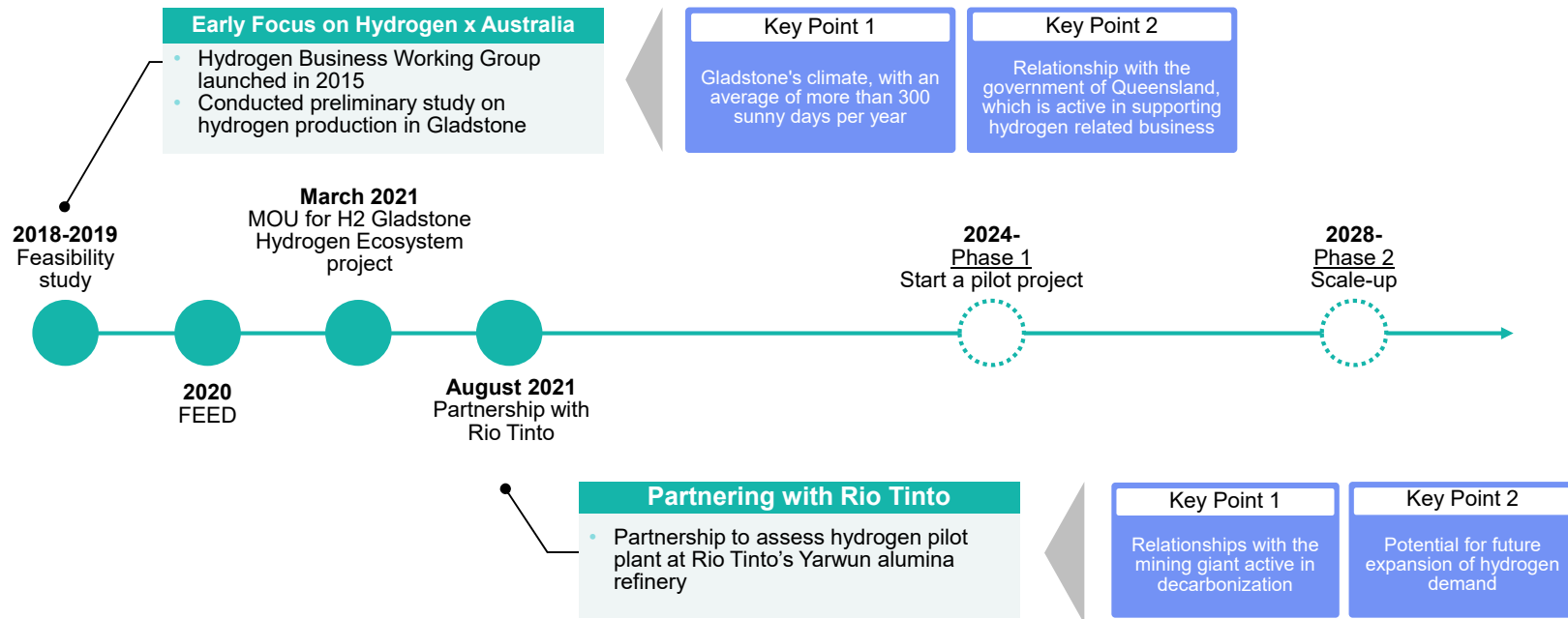
Concept: Commercialization based on revenues from the electricity supply-and-demand balancing market, capacity market, and wholesale market



Hydrogen Production Project in Gladstone, Australia

-Past Initiatives and Future Prospects-

- Produce hydrogen at Rio Tinto's alumina refinery, half of which will be supplied for pilot testing
- Supply the remainder to hydrogen customers in Gladstone to aggregate demand for hydrogen business expansion



Hydrogen Production Project in Gladstone, Australia

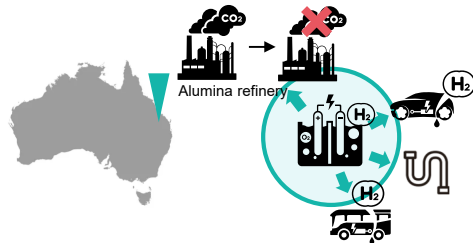
-Steps for Commercialization and Vision-

- Step by step approach for commercialization of hydrogen production business
- Scale up hydrogen production business by aggregating demand, and ensure business feasibility by realizing cost reductions
- Aim to contribute to the decarbonization not only Gladstone but also Japan and other countries

Phase1 2024-

Local production and consumption at Gladstone

Pilot project with Rio Tinto:
Hydrogen production and utilization in Gladstone
Expected hydrogen volume: Several hundred tons



Acquire hydrogen production business know-how

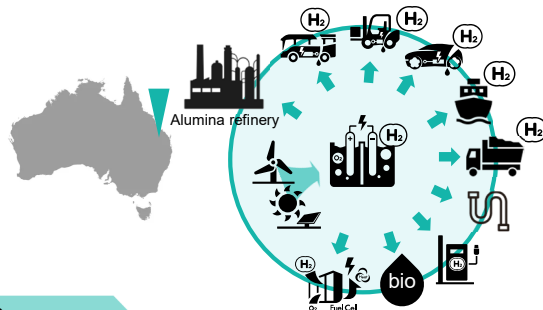
Aggregate demand for scale-up

Feasibility study for scale-up

Phase2 2028-

Expansion of local production and consumption at Gladstone

Scaling up the local production and consumption
hydrogen business to decarbonize Gladstone
Expected hydrogen volume: 200,000 tons



Scale-up local production and consumption business

Feasibility study for hydrogen exports

Phase3

Expand globally

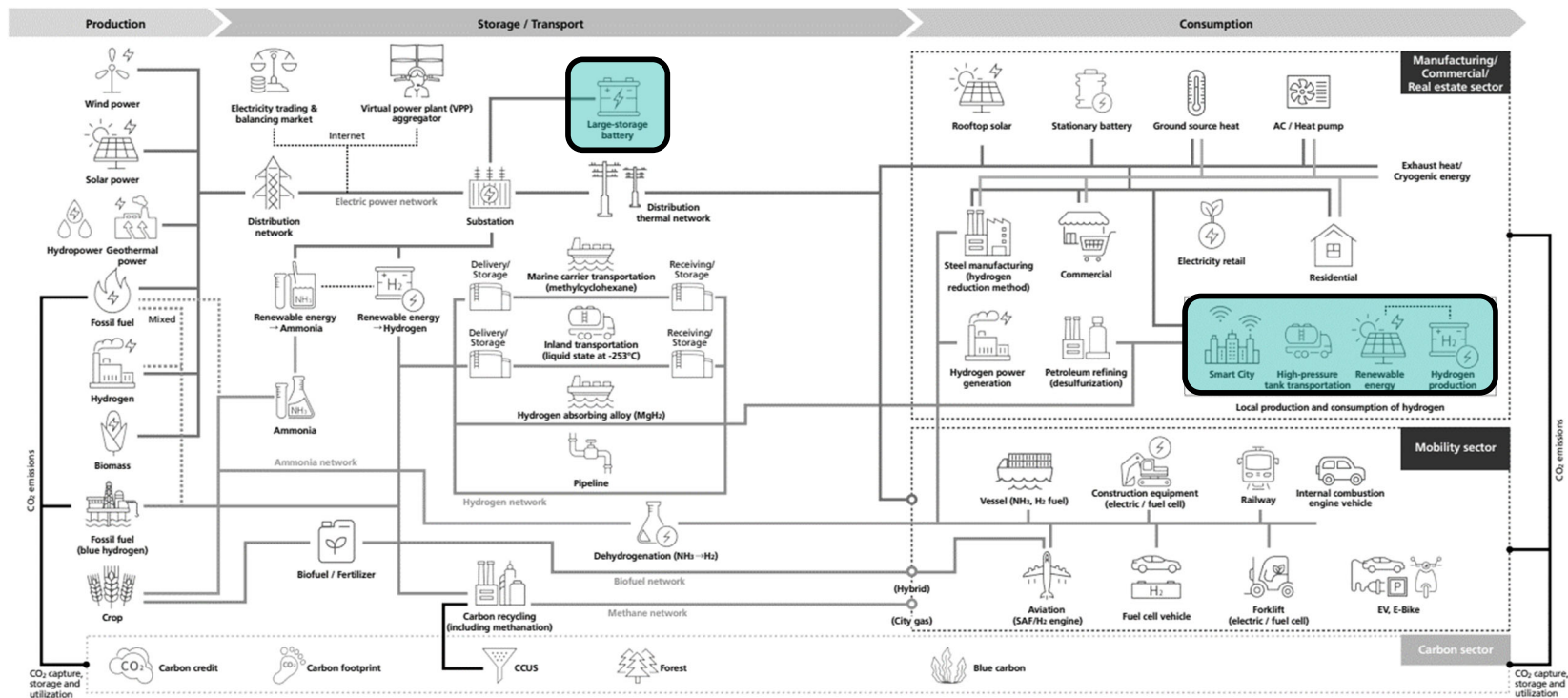
Export hydrogen outside of Gladstone

Expected hydrogen volume: 500,000 tons



Commencement of hydrogen export

Ell aims to develop the decarbonization and recycling energy system





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