

# Operating Platform presentations

Investor Day, 20 August 2024



The background of the slide is a photograph of a modern building with a prominent vertical garden facade. The building is covered in lush green plants, including ferns and various leafy species. A glass-enclosed balcony is visible on the ground floor. In the foreground, three people are walking on a paved path, and a blurred motorcycle is moving across the frame. The sky is blue with some light clouds.

# Infrastructure

Ms Cindy Lim, CEO, Infrastructure

Investor Day, 20 August 2024

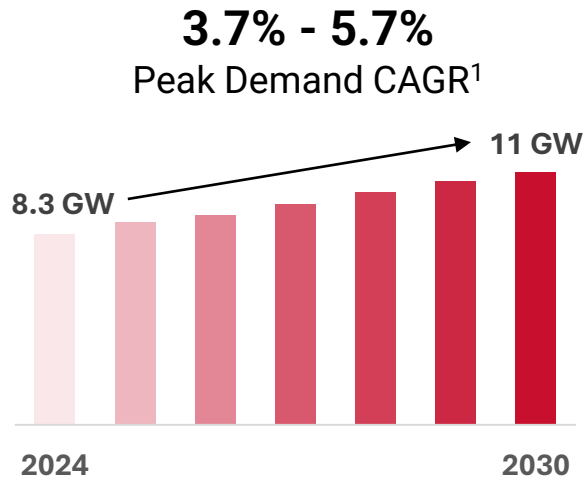
01



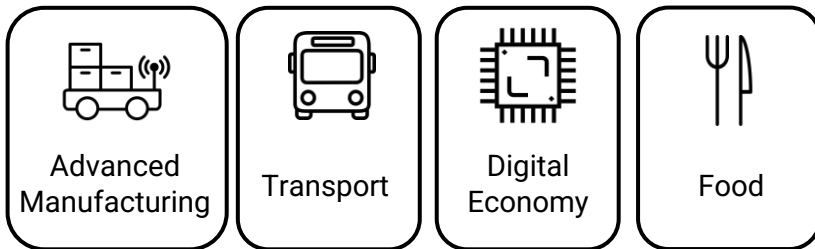
# Integrated power business

# Stable growing demand, reduced market volatility

Singapore's electricity demand will continue to grow organically...



New solutions required to serve emerging energy intensive industries



## Integrated Power Business

	1H 2023 (\$'m)	1H 2024 (\$'m)	Change (%)
Revenue	2,263	2,005	- 11%
EBITDA	315	356	+ 13%
Operating Income	261	317	+ 21%

- High energy prices from the energy crisis has run its course
- Strong regulatory guiderails to rein in energy price levels
- Despite the weakening of wholesale power prices, stable earnings are expected in 2024 and 2025



Lower spark spreads

*offset by*



Higher contracted position

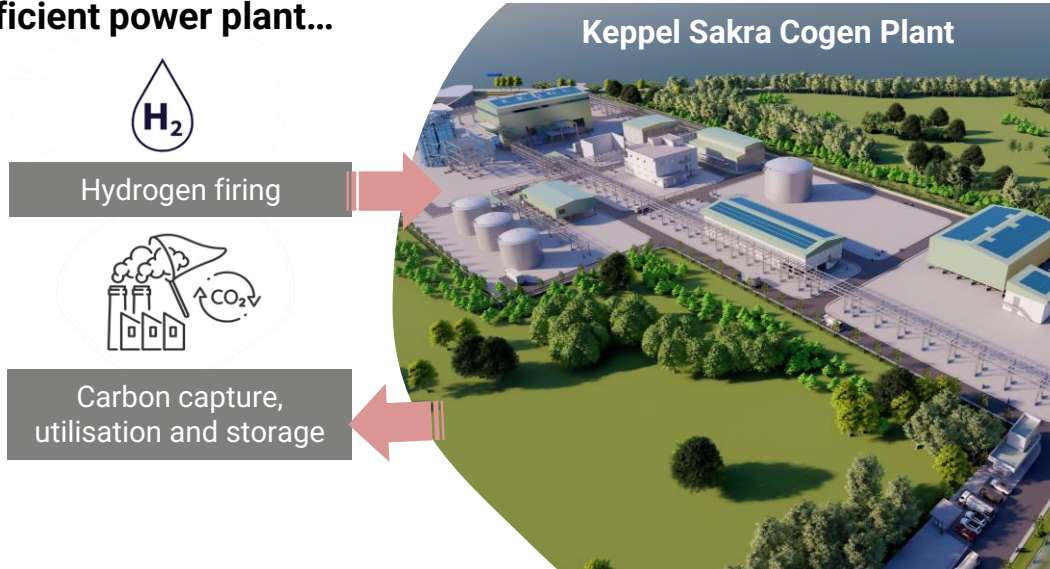
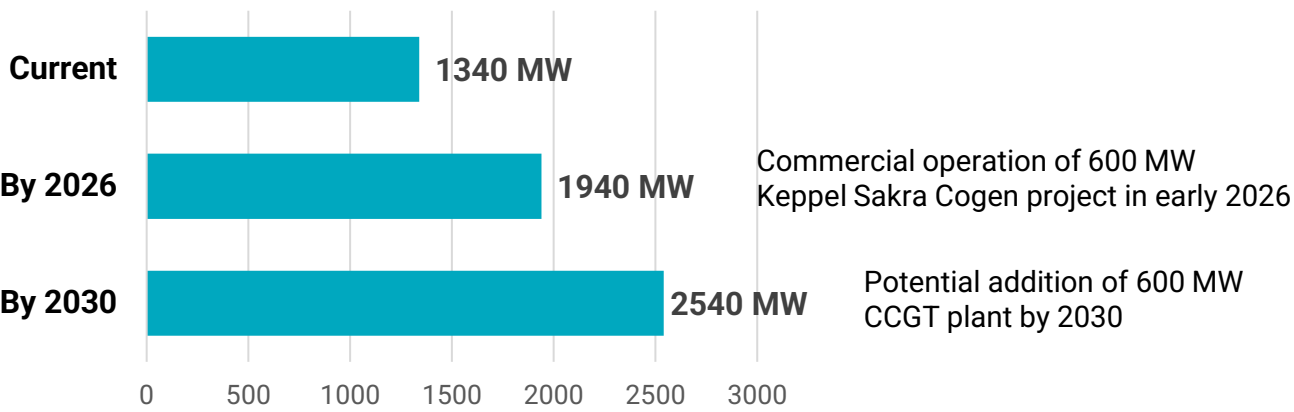
<sup>1</sup> As per EMA's demand forecast in the Request for Proposal to Build, Own and Operate New Generation Capacity issued on 4 June 2024

# Competitive advantages capacity and margin expansion



<p><b>01</b></p> <p><b>Asset Light</b></p> <p>Co-invested by KAIF, generating asset management fees</p>	<p><b>02</b></p> <p><b>Operational Capability</b></p> <p>Origination, project development, engineering, procurement and construction management</p>	<p><b>03</b></p> <p><b>Recurring Operating Income</b></p> <p>Operations &amp; maintenance fees and electricity retail</p>	<p><b>04</b></p> <p><b>Capital Recycling</b></p> <p>Potential for future capital recycling</p>
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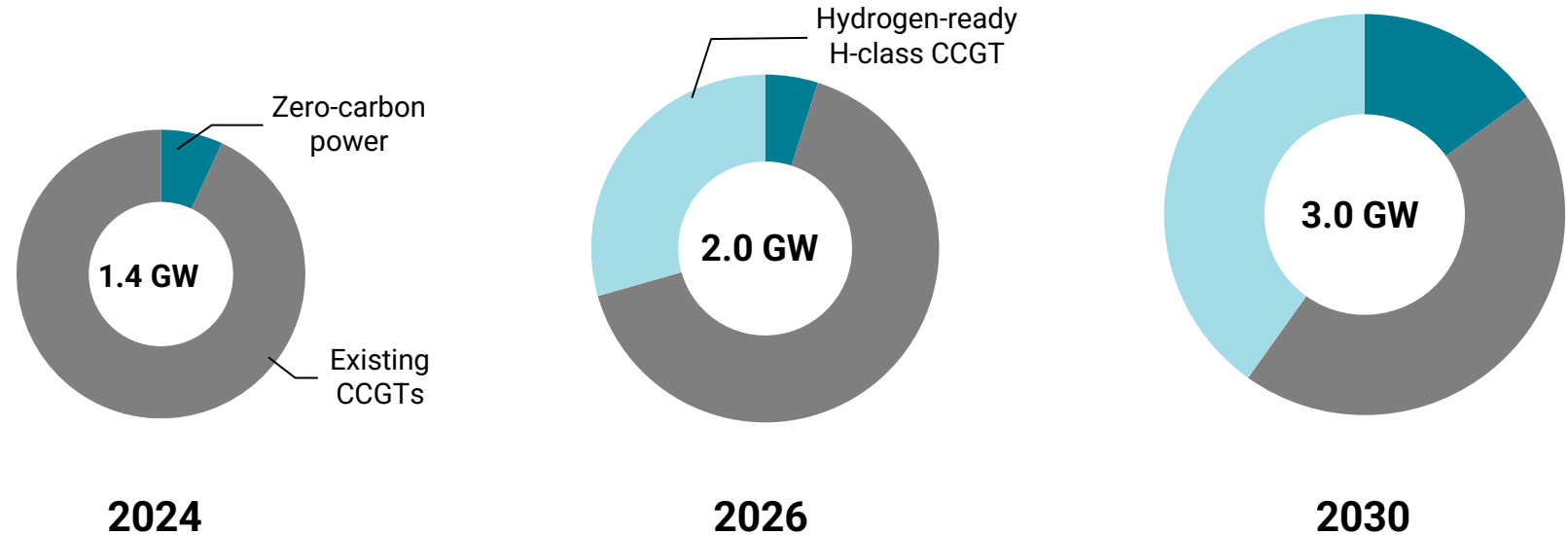
Growing market share in Singapore's electricity market with state-of-the-art, most efficient power plant...



# Future ready and resilient higher capacity with lower carbon intensity

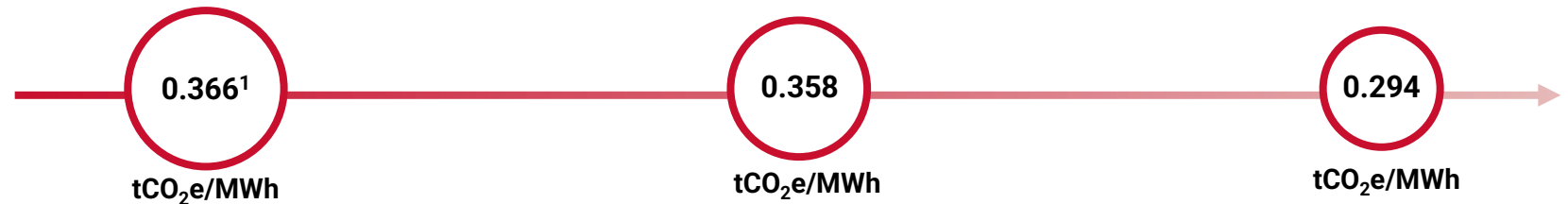
**+1.6 GW**

New generation capacity;  
doubling existing capacity  
in next 5 years



**20%**

Reduction in carbon intensity  
through best-in-class  
technologies, renewable  
imports and low-carbon fuels



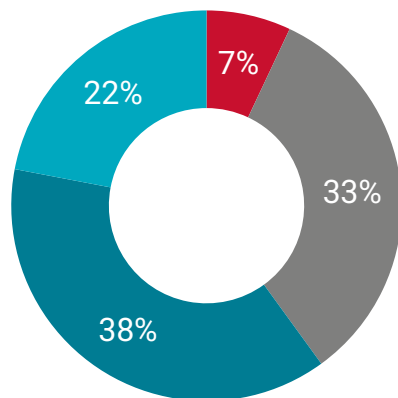
<sup>1</sup> GHG emissions intensity calculated based on direct emissions (Scope 1) from Keppel Merlimau Cogen's existing generation capacity

# Strong margins in 2024 underpinned by robust portfolio

**>99%** of our customers are locked in on fixed or indexed electricity price plans, delivering healthy recurring revenue

**60%** of portfolio is on long-term contracts of 3 years and above

### Portfolio Tenure

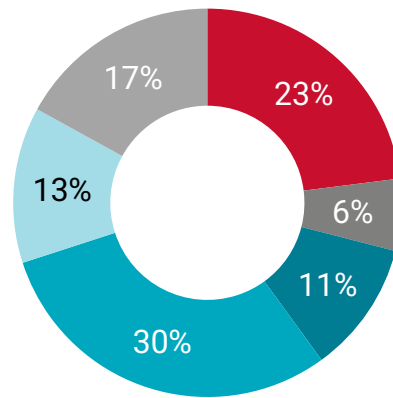


- <1 year remaining
- >=1 to <3 years remaining
- >=3 to <10 years remaining
- >=10 years remaining

### Diversified customer base

No more than 30% concentration in any one sector

### Customer Sector Mix



- Commercial Buildings
- Data Centers & Communication
- Healthcare
- Manufacturing - Electronics
- Residential
- Others



With a large proportion of our customers on long-term contracts, Keppel's margins are insulated from volatility in the wholesale energy markets



Execution remains key to profitability. Focused on operational capability to achieve reliability and high availability of generation units

02



**Keppel**

# **Decarbonisation & sustainability solutions**



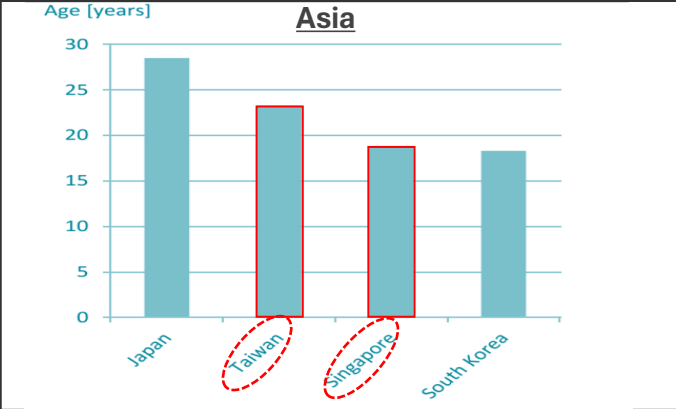
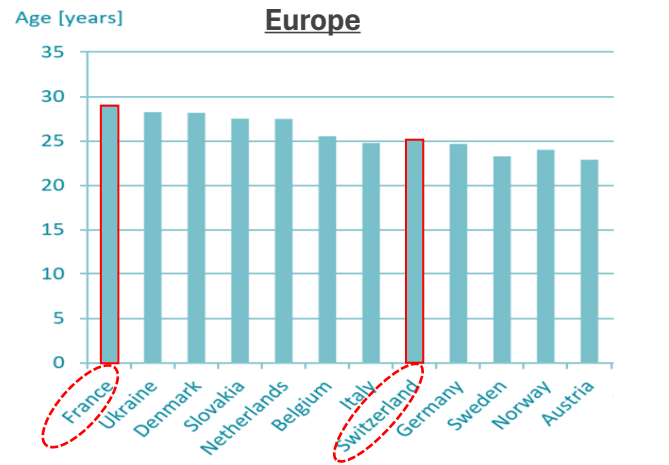
# World class technology provider with global track record



<sup>1</sup> Integrated Waste Management Facility (IWMF)

# Target markets and offerings

Strong pipeline of WTE in markets with existing WTE plants due for replacement



Technology Solutions



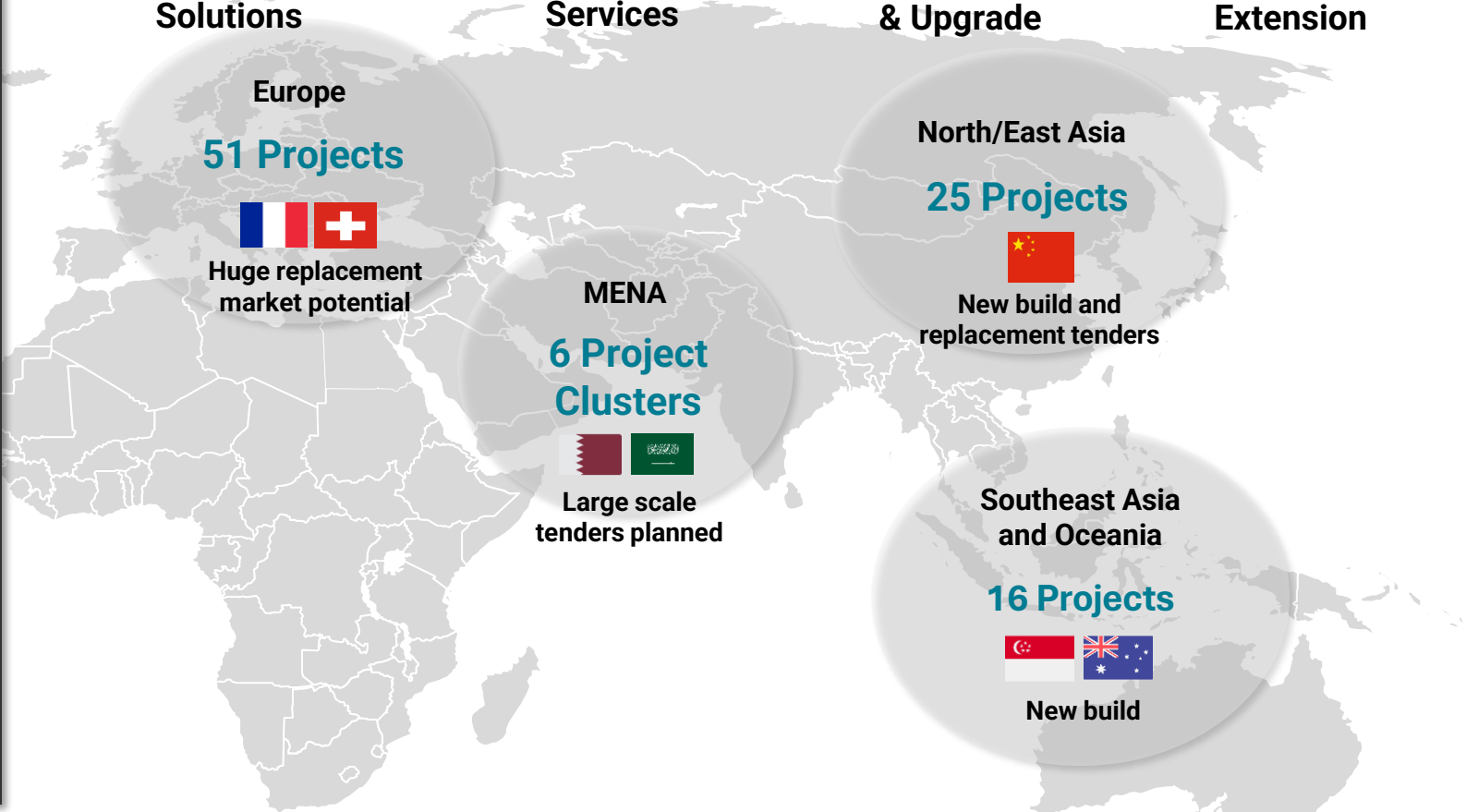
Technical Services



Plant Follow-up & Upgrade



Life Extension



<sup>1</sup> Source of data: ecoprogram

# Capturing landmark EaaS projects and beachheads overseas



## Entry into China

- Entered China with 11,000RT designed capacity for Perennial Holdings
- Testament of “Growth via partnership model” with customer
- Large addressable markets in China, Vietnam, Thailand



## HDB Cooling-as-a-Service

- 5,250RT designed capacity
- Replicable in other precincts
- Potential to provide additional value add services to residents



## Largest deployment of ultrafast chargers at a single site in Southeast Asia

- 15-year contract to deliver power
- Phased approach of up to 80 DC charging points of 360kW and 120kW ratings



## Jurong Lake District

- 29,000RT designed capacity
- Mixed used including residential
- Capability to expand beyond serving JLD to reach entire Jurong area



## Raffles City Singapore

- 12,000RT in cooling capacity
- Singapore's largest integrated development to adopt Cooling-as-a-Service
- Targeting Green Mark Platinum (Super Low Energy) for this 38-year-old iconic building



## Largest single-site rooftop solar panel system in Singapore

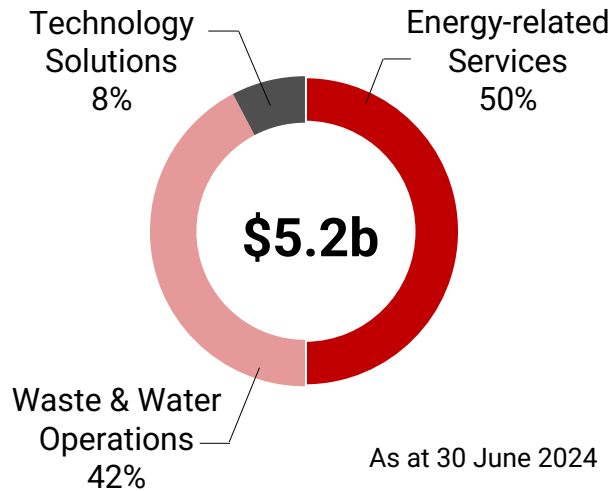
- 25-year contract
- 43MWp installed capacity
- First airfield side solar installation in the world
- Strong reference for international airports in gateway cities

EaaS in commercial & industrial segments is expected to grow rapidly

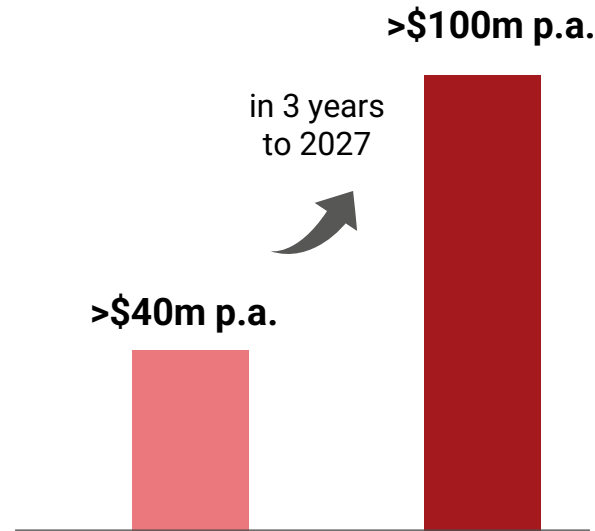
# Strong earnings growth from solutions and services riding the energy transition momentum

Recurring, steady cash flow over the next 10-15 years

**\$5.2b** long-term contracts secured  
**>20%** growth from \$4.3b at end-2023



**2.5x** EBITDA growth target



Actively developing low-carbon energy value chain



Developing strong capabilities and partnerships in the new energy sector

## Early Wins



Shortlisted by Singapore Authorities to undertake pre-FEED on end-to-end solutions for zero- or low-carbon ammonia for power generation and bunkering



One of the six shortlisted projects under the **Australia Hydrogen HeadStart Subsidy** programme

# Thank you



Keppel

The background of the slide is a detailed architectural rendering of a modern building. The building features a large, white, grid-like glass canopy structure supported by white, tree-like columns. The building's facade is composed of vertical wooden slats and large glass windows. Multiple levels of the building are covered in lush green plants and trees, creating a vertical garden effect. A wide, paved walkway with trees and a road with cars are visible in the foreground, suggesting an urban setting.

# Real Estate

Mr Louis Lim, CEO, Real Estate  
Investor Day, 20 August 2024



# We see trends shaping the **trajectory of asset values** in Asia

## **Adaptive Re-use**

Live-work-play integration evolving in urban centres

## **Sustainability**

Old buildings and precincts requiring a new, greener lease on life

## **Senior Living**

Rising market for aging-well products and services

## **Market Dynamics**

Opportunities from shifting consumer patterns and behaviours, investor expectations and increasingly complex geo-politics

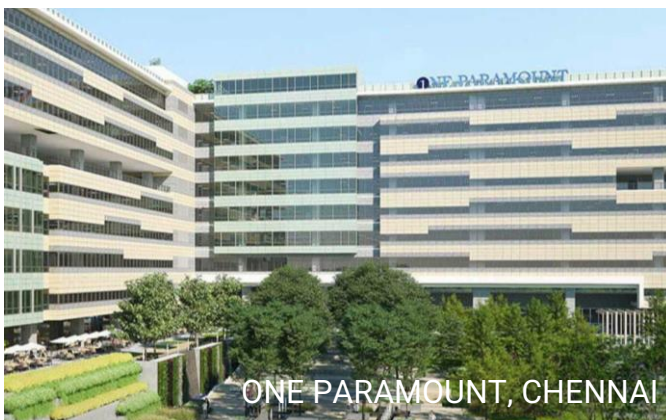
# Recent acquisitions **leverage Keppel's SUR capabilities** to drive sustainability performance and returns



The **Asset Enhancement Initiatives** in Inno88, Seoul, produced:

**30%** Decrease in energy consumption

**27%** Increase in gross floor area



For One Paramount, Chennai, we are **targeting to achieve**:

**>10K<sub>KL</sub>** Water consumption reduction<sup>1</sup>

**>70%** Renewable energy utilisation<sup>1</sup>

<sup>1</sup>By 2028 against baseline of 2025



# Building on our experience and expertise to **grow our urban renewal, urban solutions and retail platforms**



**Sustainable Urban Renewal – Ngee Ann Polytechnic**  
Retrofitting School of Design & Environment for net zero



**Urban Solutions – Joint Venture with Jinan Pioneer**  
Providing consulting services to large scale integrated project in Jinan



**Retail Platform – Hanoi Centre**  
Deepening our retail footprints in Vietnam



# We opened our first award winning senior living asset in Asia

## Global iF Design Award (Germany)

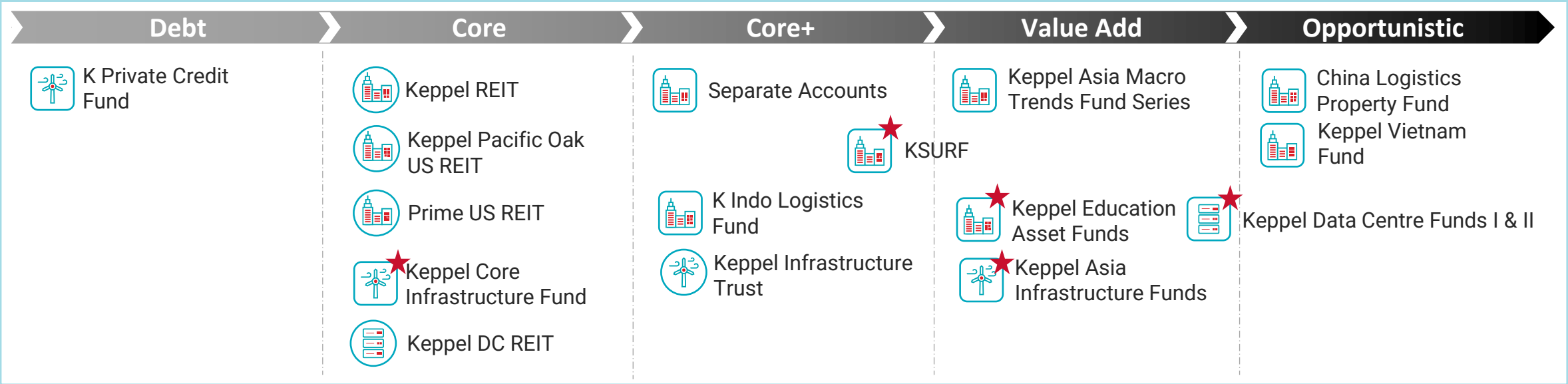
For the holistic transition programme to help elders assimilate to their new environment

## Gold Certification for Leadership in Energy and Environmental Design (United States)

US Green Building Council's Green Building Rating System for low-carbon, energy-saving and environmentally friendly designs



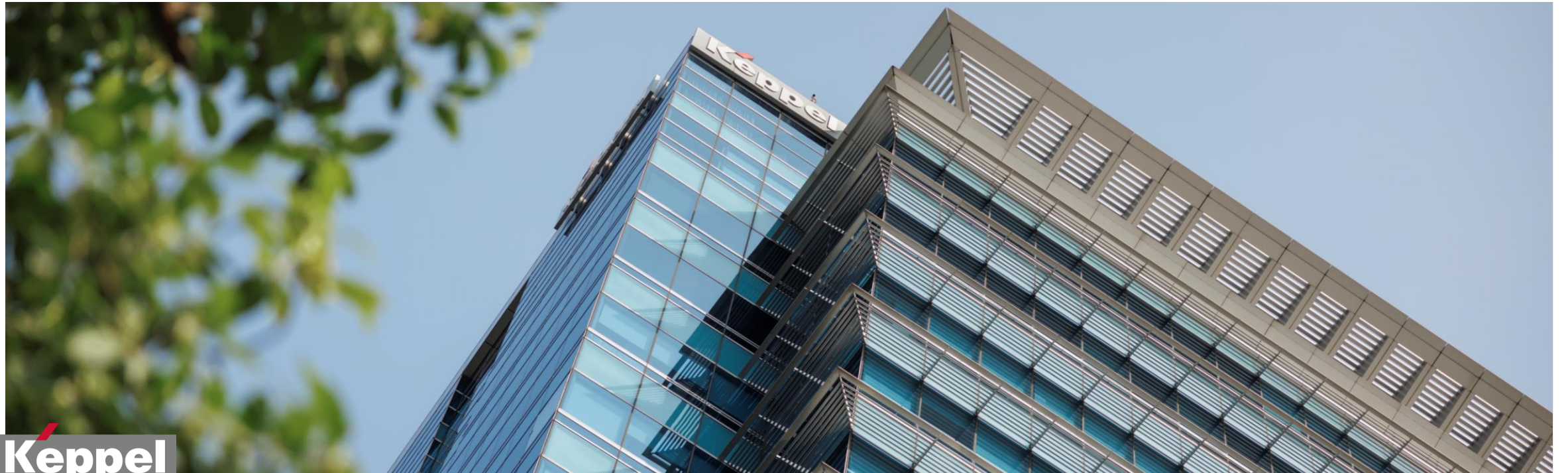
# Our real estate credentials and operating capabilities differentiate our real estate fund proposition



<p><b>1</b></p> <p><b>More than 40 years of property development and investment experience</b></p>	<p><b>2</b></p> <p><b>Strong operating capabilities</b>                        Sustainable Urban Renewal                        Urban Solutions   Retail                        Senior Living</p>	<p><b>3</b></p> <p><b>Collaborative partnerships</b>                        Workplace Solutions                        Urban Living   3<sup>rd</sup> party operator                        Digital Solutions</p>
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Infrastructure 
 Real Estate 
 Connectivity 
 Listed 
 Private 
 Flagship

# Thank you



The background of the slide is an architectural rendering of a modern, multi-story building. The building features a prominent facade of vertical, light-colored panels on the left side, which appears to be a slat or louvre system. To the right, there are sections with a grid-like pattern and a vertical strip of yellow panels. A green, multi-level structure, possibly a skybridge or a landscaped walkway, is visible on the right side of the building. The building is set against a blue sky with wispy white clouds. In the foreground, there are green trees and a paved area with a small white van.

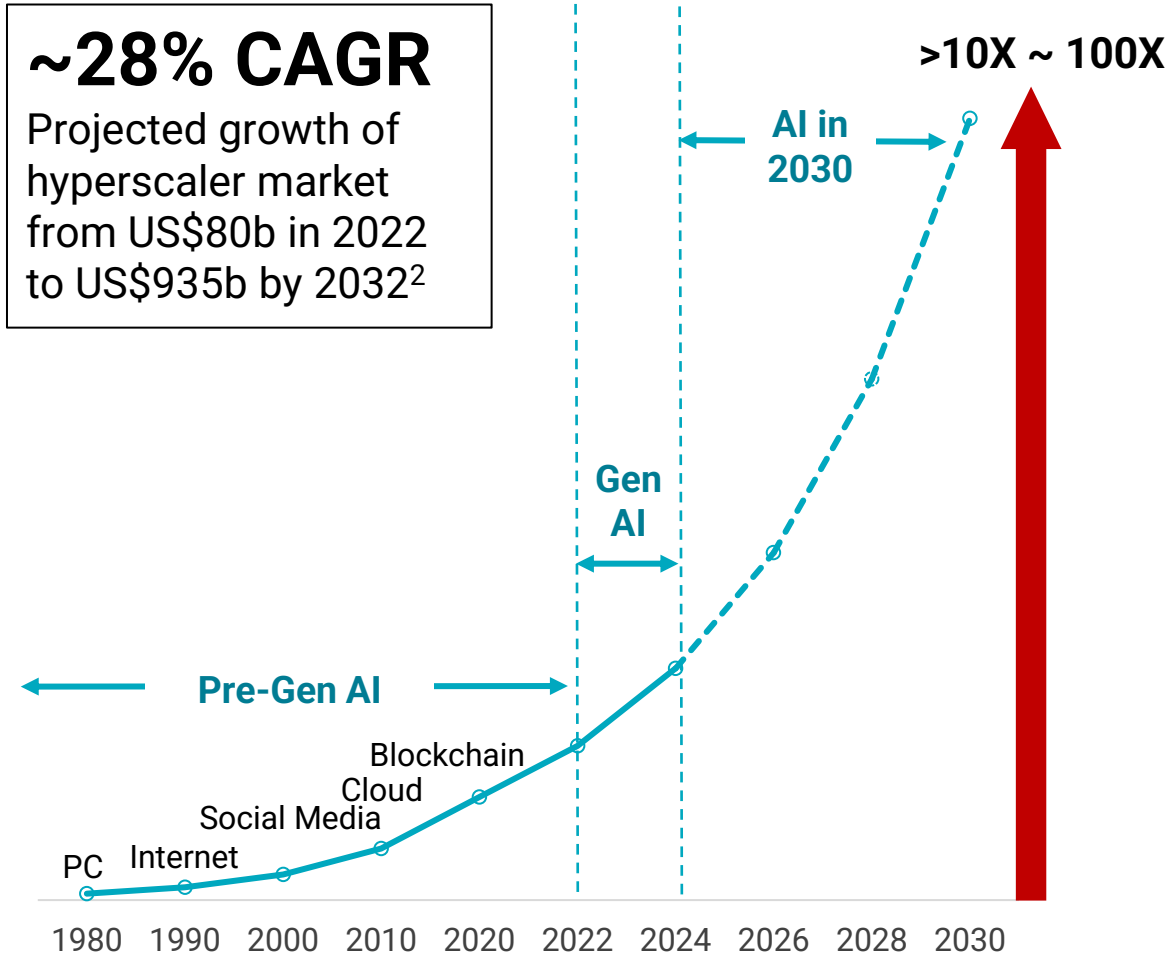
# Connectivity

Mr Manjot Singh Mann,  
CEO, Connectivity & CEO, M1

Investor Day, 20 August 2024

# Surging data demand driven by AI trends

AI requirements on compute have been increasing by 10 times every two years since 2022, a trend forecasted to continue<sup>1</sup>



## Rising AI market boosts hyperscale demand

- >50%** Existing hyperscale demand for global DC capacity<sup>3</sup>
- US\$150b** AWS planned expenditure from 2024 to 2039
- US\$2.9b** MS planned investments in Japan over 2025

## Strong DC market growth in Asia Pacific & Europe

- >4.2x** Total data centre supply grew from ~700 MW in 2017 to >3,000 MW in 2022<sup>4</sup> in Asia Pacific
- In Asia and Europe, spillover demand in key markets continues to flow into secondary markets<sup>5</sup>

## Greater emphasis on sustainable DCs

- 300 MW** Near-term increase in total capacity in **Singapore**, with potential capacity for green energy deployments<sup>6</sup>

# Fueling growth through strategic expansion

Established footprint across **7** countries, and **4** new target markets in Asia Pacific and Europe; highly targeted approach focused on high growth markets with strong customer demand



## Our expansion strategies

- Deepen foothold in existing markets
- Expand presence into new markets
- Pursue M&A opportunities
- Strategic partnership with JV partners in new/ existing markets

## Our planned AI-ready green DC campuses

- Singapore: accelerating green energy transition with hydrogen grid
- Malaysia: to be 30% solar powered
- India: to be >90% solar and hydro powered

# Creating sustainable DC campuses building on Keppel's ecosystem

## Infrastructure

### Renewable Energy

- Wind energy, Laos-Thailand-Malaysia-Singapore Power Integration Project (LTMS-PIP) and power generation
- Accelerating green energy transition with hydrogen value chain

### District Cooling & Heating

- Leveraging centralised district cooling systems expertise

### Waste Management

- Solutions for waste and water & wastewater treatment

## Real Estate

### Real Estate as Master Developer

- Premier real estate developer and manager
- Strategic urban planning to optimise campus layout

## Connectivity

### Data Centres

- Efficient operating model (end-to-end value chain to design, build and operate)

### Managed and Hybrid Cloud Solutions

- Leading managed communications service, IoT provider (through AsiaPac)

### Subsea Cable Systems

- Jointly own and develop the world's first subsea cable system, enabling global connectivity and seamless data centre operations



# DataPark+

Redefining data centres through cutting-edge technology and sustainable, community-centric solutions aligned with Singapore's Green DC Roadmap

## Singapore's Green DC Roadmap



### Energy efficiency improvements

- Tropical DC methodologies to reduce energy needed for air-cooling
- Low-carbon energy sources to power DCs
- Cooling solutions to meet DC needs



### Water efficiency improvements

- Water Usage Effectiveness target of 2.0m<sup>3</sup>/MWh or lower over next 10 years



## Key technical features:



Scalable up to 1 GW of green power



Compliant with tropical DC standards



Flexibility to operate at higher temperature



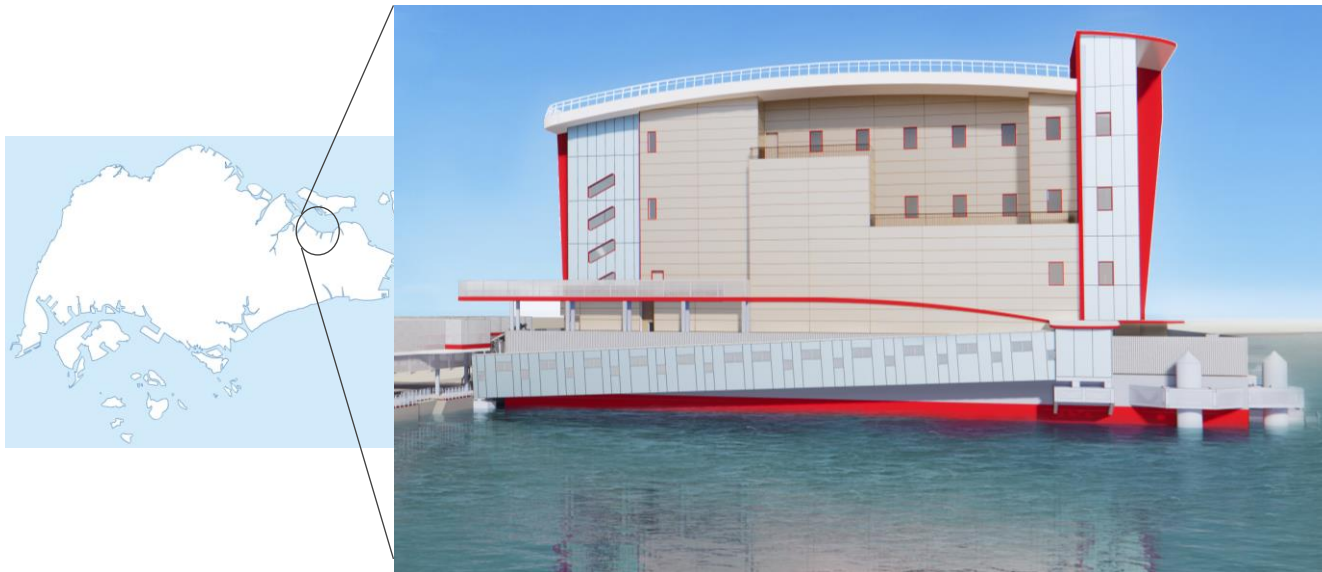
Seawater cooling eliminates use of potable water

## Integration with Keppel's submarine cables:

Enabling global connectivity and seamless data centre operations

# Floating DC

Designed to enable submarine cable connections directly between shoreside infrastructure and other regions; the design improves Power and Water Usage Effectiveness using technologies such as seawater cooling



\* Drawings are only for reference and subject to future planning and design



**Design Development:** In progress, working together with contractor and customer



**Electrical Load:** Power availability addressed, with confirmation of 20 MW maximum electrical load with SP PowerGrid by 2027



**FID:** Target completion in 2H24



**Target Completion:** 2027

# Bifrost Cable System

Enabling data centres with the world's largest capacity high-speed optical cable and subsea connectivity hub across the Pacific Ocean and beyond

- Cable laying operations: >80% completed to-date, with completion expected by early 2025
- Main trunk targeted to be ready for service by 1H25



**Length: >15,000km**

**Keppel's share of total project cost: ~US\$350m**  
Co-investors holding 60% stake in Keppel's share of fibre pairs

**Operating & maintenance fees: >\$400m**  
To be earned over 25 years from the first two committed fibre pairs upon completion

# Digital connectivity solutions

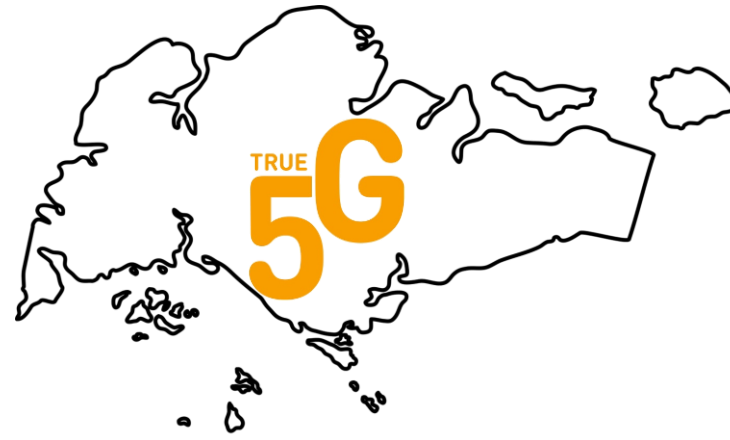


**Digital Platform**  
successfully implemented

Mobile & FBB Customers  
**100% Migrated**

From 200+ Databases  
**Now 1 Data Lake**

From 300+ Applications  
**Now 12 Core Applications**

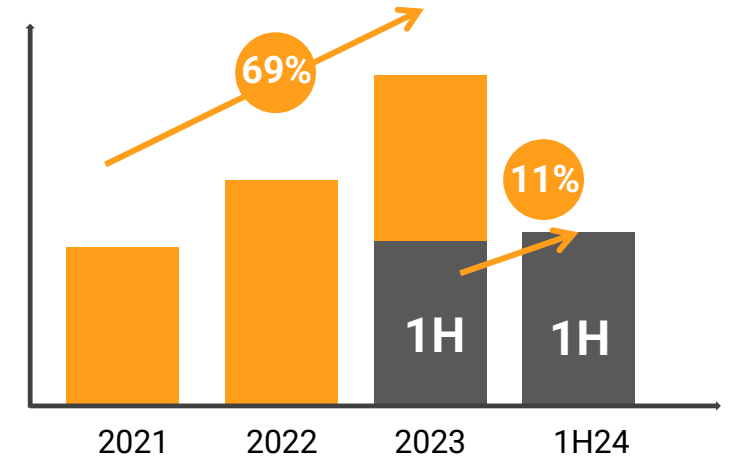


**5G SA Network**  
**>99% coverage nationwide**

**36** 5G enterprise use cases deployed

**~1/3** network traffic on 5G

**B2B revenue**



**Enterprise Biz**  
**double digit growth**

**+69%** from 2021 to 2023

**+11%** from 1H23 to 1H24

# Redefining digital infrastructure to enhance how we live, work and connect with one another

An integrated ecosystem that creates a seamless digital experience

## Data centres

Enabling the future of AI through more advanced and greener digital infrastructure



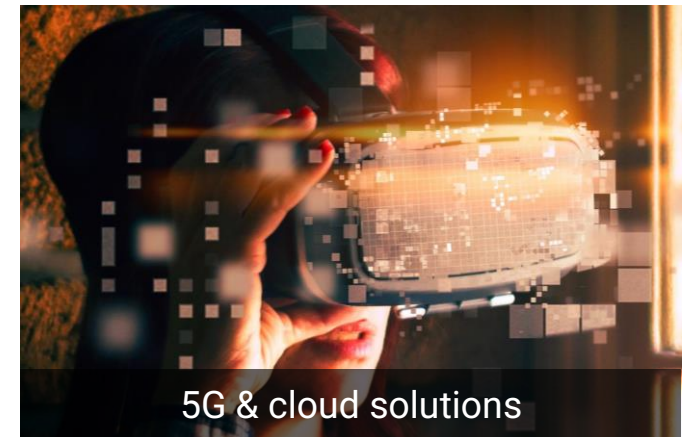
## Bifrost Cable System

Providing global connectivity with low latency for seamless data exchange



## Cloud native digital platform

Empowering businesses and individuals with scalable and secure on-demand services



# Thank you



Keppel

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