



MACQUARIE

Why Sustainability Matters to Investors

SEC-PSE Conference: Building a Sustainable Business Community

Kanna Mihara, Vice President, Private Capital Market Japan, Macquarie Capital

12 April 2019

Sustainability is going mainstream



\$30.7 trillion 

of assets were professionally managed under responsible investment strategies in 2018,

up from

\$13.3 trillion 

in 2012.

It is **over 50%** of total managed assets in Europe and Canada as of 2018

Source: 2018 GLOBAL SUSTAINABLE INVESTMENT REVIEW, Global Sustainable Investment Alliance

Almost a half of

650 

institutional investors

participated in the survey responded that their allocation to sustainable investing have increased in the past 5 years

Source: Shroeders Institutional Investor Study 2018

More than

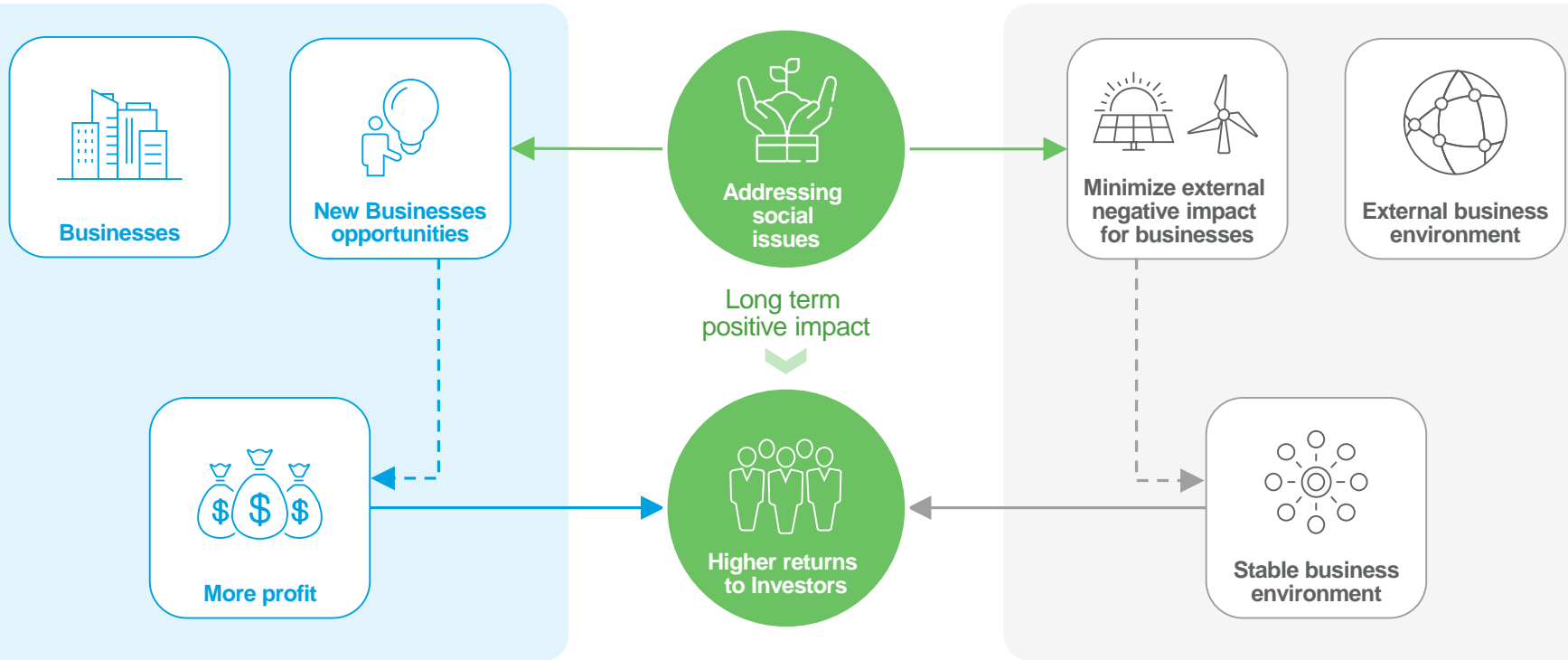
100 

new sustainable mutual funds and ETFs

were launched in the U.S. alone from 2015 to 2017

Source: Morningstar Research, January 2018

Taking a long view



Engaging with Investees – Canadian Pensions



- CPPIB, CDPQ, OTPP and PSP are active ESG investors – all are signatories to the UN Principles of Responsible Investing
 - In 2016, OTPP along with a number of American funds, including CalPERS and CalSTRS, formed an investor advisory group to improve the quality and comparability of sustainability-related disclosure to investors



Investors can play an important role in enhancing disclosure effectiveness, by expecting companies to disclose performance on material ESG factors and by participating in development of disclosure standards

Themes in CPPIB's responsible investment strategy

\$CAD 1.5 billion inaugural green bond

issued in June 2018, to provide additional funding for CPPIB's investment-focused approach to climate change

30 companies engaged with on remuneration

(50% yoy increase in engagement) providing opportunity for companies to explain key compensation decisions prior to voting



30 climate change resolutions

supported within portfolio companies, seeking stronger disclosure on risk and opportunity management

17% 'no vote'

on remuneration reports, citing deficient linking of executive pay with long-term company performance

Test case – A lawsuit in Australia



Rest

In mid-2018, Environmental Justice Australia brought a lawsuit on behalf of one of a superannuation funds, REST's members alleging that the **fund's trustees had breached their fiduciary duties by failing to factor climate change into investment decisions**



Non-disclosure amounted to 'non-consideration'

Claim further alleges that, in order to discharge trustees' duties, super funds **must seek information from its investment managers** about climate risk

Linked to acting with 'care, skill and diligence'

Claim **seeking detailed disclosure from REST** on its strategies for mitigating climate-related financial risks

Setting the standards – GPIF



MACQUARIE



GPIF's CIO, Mr Mizuno became one of the board members of PRI



GPIF's Chairman, Mr Takahashi was appointed as one of the members of Japanese government's committee to promote SDGs



GPIF agreed to jointly research on policies and guidelines to promote sustainable investment



FTSE Blossom Japan



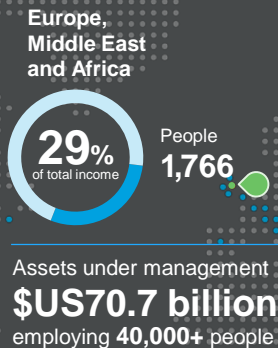
- GPIF started passive investment using ESG focused indexes for ~\$23billion of its asset
- GPIF hopes this initiative improves Japanese companies' ESG which in return improves their performance

Global financial group

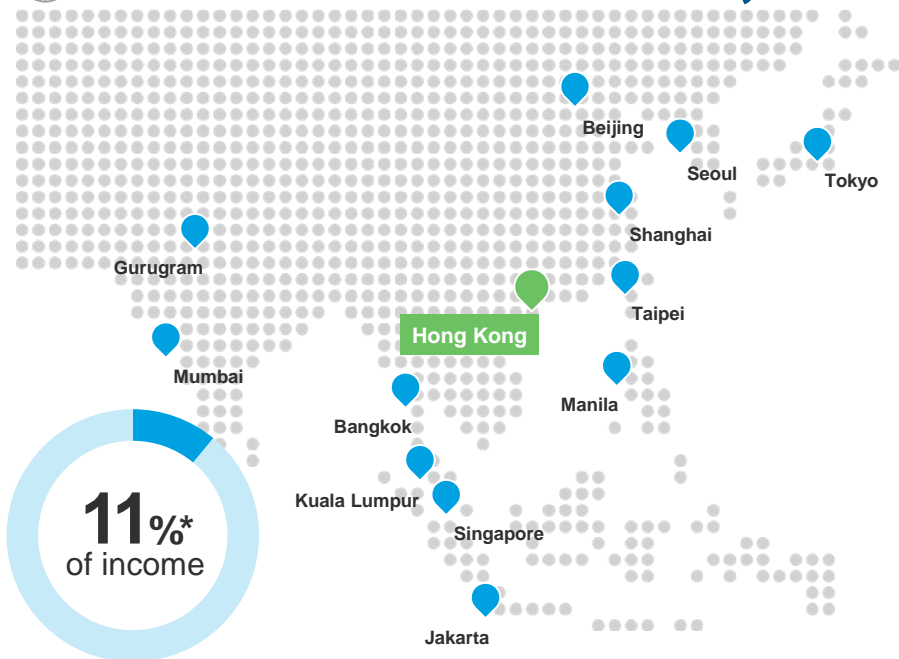


- Offices
- Regional head offices

14,469 people in 25 countries



Macquarie in Asia



Asia is becoming more important to the world than ever before and we're able to **facilitate that connectivity.**"

Ben Way
Chief Executive Officer, Asia

Local expertise and insight
linking Asia with the rest of the world

Established presence
in world's largest growth region

Regional presence **since 1995**

*Pie charts based on net operating income for the year ended 31 March 2018, excluding earnings on capital and other corporate items.

Our business activities in Asia



Leading regional **infrastructure** and **energy** business

More than

\$US39.7 billion

assets under management¹
across **66 infrastructure** and
real estate assets and **securities**



~11GW

renewable
energy portfolio

2017 Capital Advisory
Firm of the Year – **Asia**²



Driving
cross-border flows



of staff in shared services,
providing support to
Macquarie's global businesses



900+

stocks under coverage



Membership licences
for **15 regional**
stock exchanges³



A global integrated offering
across **equities**, **fixed**
income, **commodities**
and **foreign exchange**

Our infrastructure assets in Asia



China

Enfi
Dallan Wastewater Company
A petro-chemical storage portfolio
Mosaic Xi'an
Mosaic Beijing
Mosaic Qingdao
Mosaic Shanghai
Mosaic Chongqing
Nationwide Solar Power Platform
Nanjing Port Terminal
Shanghai Sineng
Shenyang Water Company
Shenyang Wastewater Company
Shenyang West Wastewater Company
Star King
Tianjin Port Terminal;

India

Adhunik Power and Natural Resources
Ashoka Concessions
GMR Airports
Gujarat Roads & Infrastructure Corp
Hindustan Clean Energy
Ind-Barath Energy
MB Power
Soham Renewable Energy
Swarna Tollways Private Limited
Viom Networks

Singapore

Universal Terminals
Oiltanking Singapore Chemical
Asia Power Development Platform

Philippines

Energy Development Corporation
GNPower Kauswagan
LRT 1 Metro
Negros Island Solar Power
NLREC Wind Farm
Philippine Coastal Storage & Pipeline
San Carlos Solar Energy

Korea

AJ Parking Tower
Baekyang Tunnel
Busan New Port Phase 2-3
Cheonan-Nonsan Expressway
CNE Motorway Service Stations
Daegil Industry / Daegil Environment
Daejon Cogeneration
DB Hotel
Deok Pyeong Land Company LLC
D'LIVE
Goyang Bus Terminal
Gwangju 2nd Beltway Section 1
Gwangju 2nd Beltway Section 3-1
Hangdam Island
Incheon Airport Hotel
Incheon Grand Bridge
Incheon International Airport
Expressway
Koentec

Japan

Central Tank Terminal
Japan solar platform
BM Japan
Acasia Renewables

Taiwan

Formosa 1
Formosa 2
Formosa 3
New Green Power Solar Platform

Machang Bridge
Moda
Jinju
Parking Tower II
Pyeong Chang Motorway Service Station
Seehan Environment Co.
Seoul Chuncheon Expressway
Soojungsan Tunnel
United Terminal Korea Limited
Woomyunsan Tunnel
Yeongyang Wind Power
Yongin-Seoul Expressway
Youngduk Wind Power
Icheon Waste Treatment
Re-clean Waste Treatment
Haman Waste Treatment
Yeoji Waste Treatment
Munbyeong Waste Treatment





MACQUARIE

Powering a cleaner future in Japan

Opportunity

Following the Fukushima nuclear crisis in 2011, Japan reformed its electricity system in favour of renewable energy generation

Actions

Macquarie is leveraging its global renewables expertise to accelerate the development of the Japanese market

Outcomes

Diversifying energy options

for consumers and businesses

Partnerships with local development companies have generated a solar and wind pipeline of

1GW+

Joint lead manager and bookrunner of Japan's largest renewable infrastructure fund IPO

Enough electricity to power
~475,000
households



Supporting Taiwan's offshore wind ambitions

Opportunity

Taiwan aims to increase electricity generated from renewable power from 4.8 per cent in 2016¹ to 20 per cent in 2025, reducing reliance on coal and becoming nuclear-free

Actions

Macquarie acquired a 50 per cent stake in Formosa 1 to develop Taiwan's first offshore wind farm and kick-start the island's supply of offshore wind-generated power. This will be followed by a further portfolio of 1.9GW of offshore wind in Taiwan

Outcomes

Formosa 1 is a **first-of-its-kind** project in Taiwan

Partnership with a local Taiwanese developer to deliver **128MW**

Providing clean energy to **50,000+** homes in Taiwan

Further pipeline of **1.9GW** of projects between 2021 and 2025

Will require **~200 turbines** providing clean energy to **1 million+** homes in Taiwan

1. Taiwan Energy Statistics 2017 Year Book, Bureau of Energy, Ministry of Economic Affairs. 4.8% of aggregate electricity generated in 2016.

Improving safety on India's roads

Opportunity

India has the world's second largest road network, transporting the bulk of the nation's passengers and goods, but faces significant safety challenges

Actions

Macquarie has invested ~\$US500 million in India's roads on behalf of investors since 2013, driving better safety outcomes for the community, workers and road users

Outcomes

Robotic flagmen,
fence barriers,
chicanes and signage

Collaborating with the
**National Highways
Authority of India**

26 million*
safe man hours

Rs2.2 million
solar street lighting
initiative lowering risks
for local residents

4,927
hours of road safety
training in FY17

Asia Power Development Platform



Macquarie and STEAG leverage each other's strong financial expertise and technical skills to invest in development activities in high-growth power sectors across ASEAN

KEY STRENGTHS



Macquarie's infrastructure and financing expertise

- Leading infrastructure adviser, investor and developer globally
- Experienced Asian infrastructure development investor
- Dedicated project risk management services through Macquarie Projects



STEAG's strong technical expertise in power sector

- One of the largest power generators
- 6.7GW installed capacity across the globe
- 10GW of capacity under O&M and servicing contracts
- Extensive operating and O&M experience



Dedicated management team

- Tharma Kunaratnam hired as CEO, who leads a multifaceted team, including STEAG and Macquarie secondees
- Strong corporate governance framework including implementation of world class ESG practices



Strong local partners

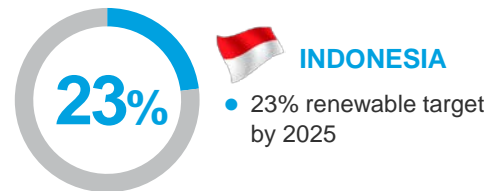
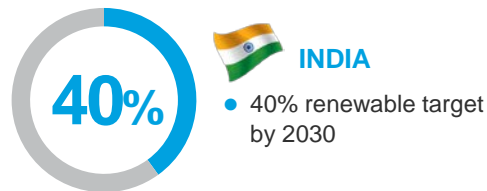
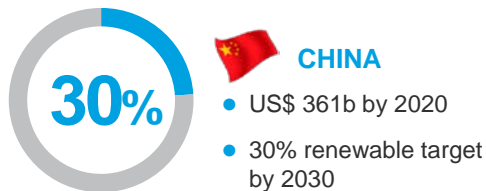
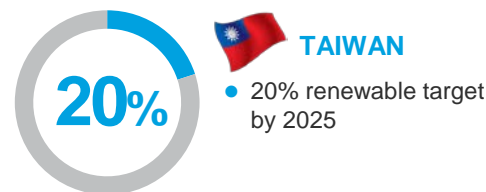
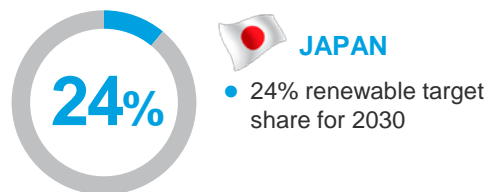
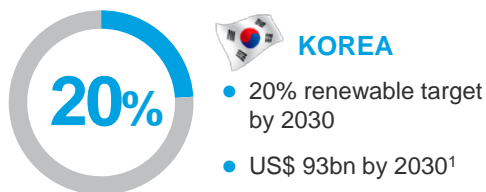
- Strong local partners with extensive industry experience and track record
- Established government and local municipal relationships

Renewables in Asia



There is a strong regulatory / government push on renewable energy generation across the APAC region

- 54% of the global power capacity will come from renewable energy sources by 2040
- Solar and wind will be the dominating renewable energy sources
- Favourable macro backdrop with ongoing regulatory reform and active presence across the region is driving opportunities



Case study: Formosa 1

Macquarie Capital successfully developed the first offshore wind project in Taiwan, and brought in JERA (a JV of TEPCO and Chubu Electric) as a new partner

MACQUARIE Jera

Formosa 1, a 128MW offshore wind power project in Taiwan
Undisclosed
2019

Principal Investment

MACQUARIE

One of 3 landmark demonstration incentive projects ("DIPs") approved by the government to promote offshore wind development

A number of firsts for Taiwan – Taiwan's first and only operating offshore wind farm to date, the first offshore wind project financing (awarded PFI's *Renewables Deal of the Year in Asia* for 2018) and the first PPA for an offshore wind farm

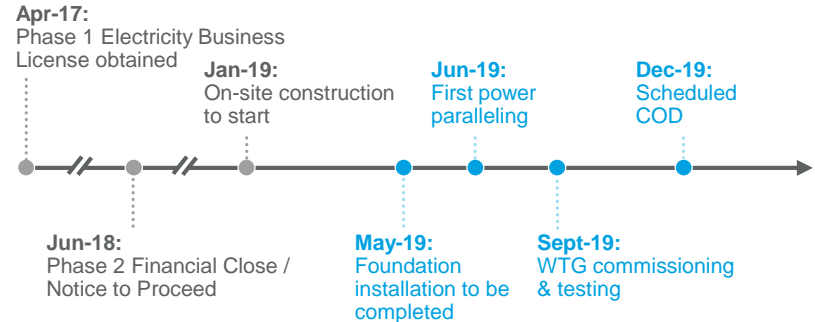
MACQUARIE
Orsted
Jera
Swincor

Phase 1 construction

Technical highlights

Capacity	128MW
Water depth	15 – 32m
Distance to shore	2 – 6km
Wind speed	Average 8.7m/s
Technology	<p>Turbines</p> <ul style="list-style-type: none"> — Phase 1: 2 x 4MW Siemens SWT-4.0-120 — Phase 2: 20 x 6MW Siemens SWT-6.0-154 <p>Foundations</p> <ul style="list-style-type: none"> — 22 monopile foundations <p>Substations</p> <ul style="list-style-type: none"> — One onshore substation, no offshore substation required

Key milestones



Case study: Race Bank



Project overview

- Macquarie Capital together with a Macquarie managed fund jointly acquired 50% of the 573MW offshore wind project Race Bank, and then invited Sumitomo Corporation, Arjun Infrastructure Partners and Gravis Capital Management as new partners to the project
- Green Investment Group, which is Macquarie Capital's renewables focused team, is providing asset management service for the financial investors in this project
- In December 2018, the project closed GBP1.4 billion refinancing, which is the largest refinancing in the sector to date. Macquarie Capital introduced institutional investors including Nippon Life who provided GBP200 million as their first project finance investment into offshore wind sector



The world's largest offshore wind holdco debt financing

 **Sumitomo Corporation**



Gravis