

Mission Zero: Lendlease's Global Roadmap and Case Studies of Low Carbon/Net Zero Carbon Developments

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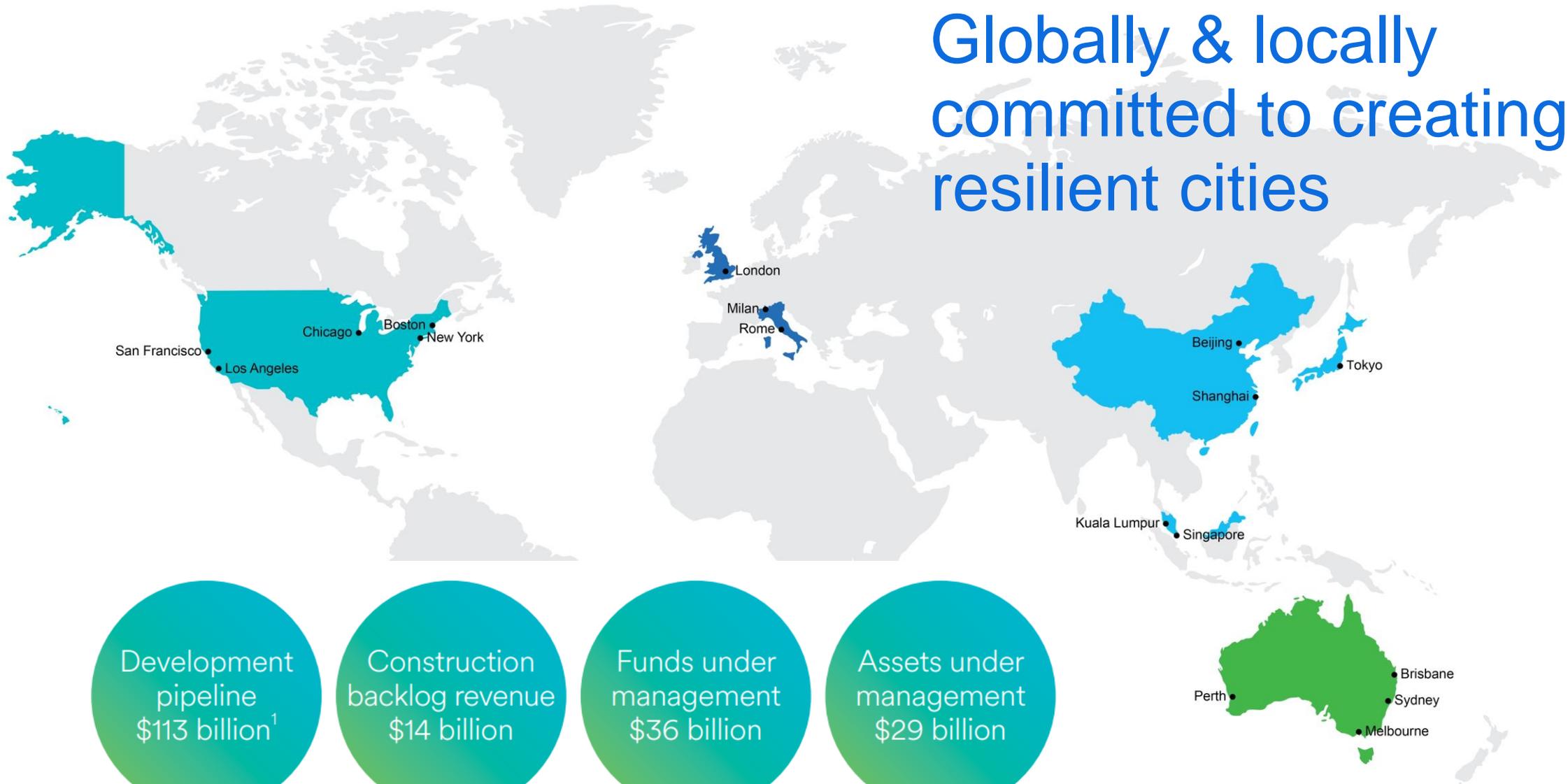
Presentation Outline

Introduction to Lendlease

Mission Zero – Our mission
to decarbonize our business

Examples of How We are
Doing It Globally

Globally & locally committed to creating resilient cities



Development pipeline
\$113 billion¹

Construction backlog revenue
\$14 billion

Funds under management
\$36 billion

Assets under management
\$29 billion

Our Future

By 2050, **70%** of global population will live in cities.

And **60%** of new urban settlements are yet to be built.

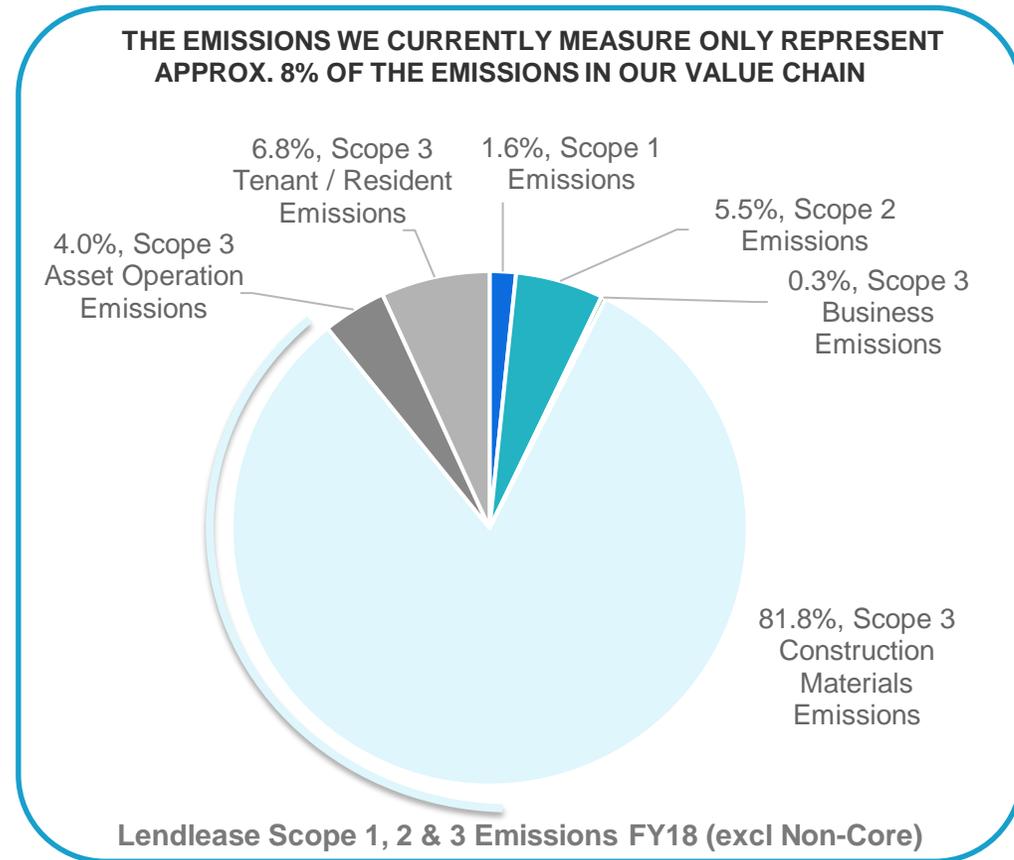
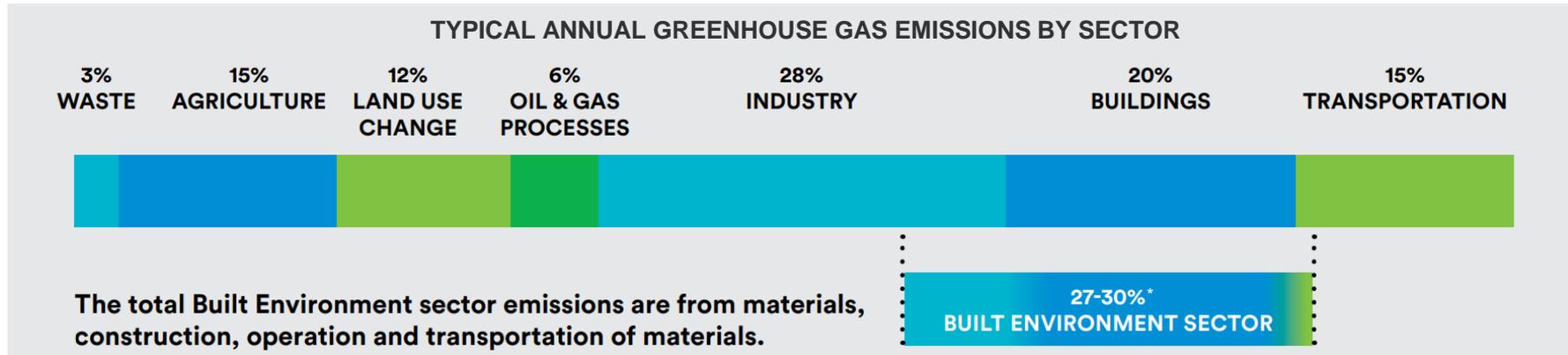
What we create today will still be here in **2080!**



Built Environment & Climate Risk

Building and construction are responsible for 39% of all carbon emissions in the world, with operational emissions accounting for 28%..

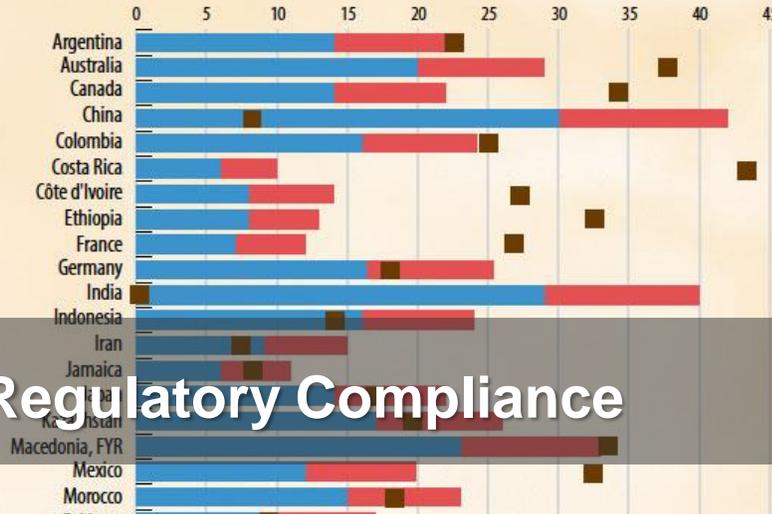
The remaining 11% comes from embodied carbon emissions, or 'upfront' carbon that is associated with materials and construction.



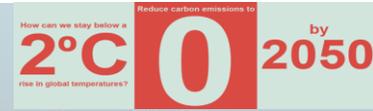
A New Normal?

Extreme Weather

Chart 1
Effect of carbon pricing
A \$35 per ton tax on carbon emissions is easily sufficient for some countries to meet Paris mitigation pledges but others need much higher prices.



Regulatory Compliance



Clients & Partners

Final Report

Recommendations of
the Task Force
on Climate-related
Financial Disclosures

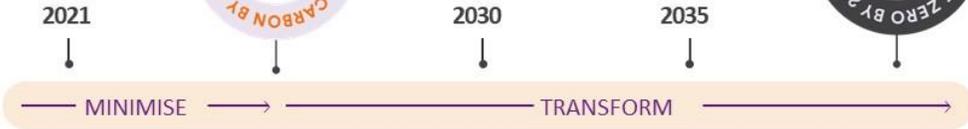
Investors & Insurers

Industry & Benchmarking

Supply Chain & Resources



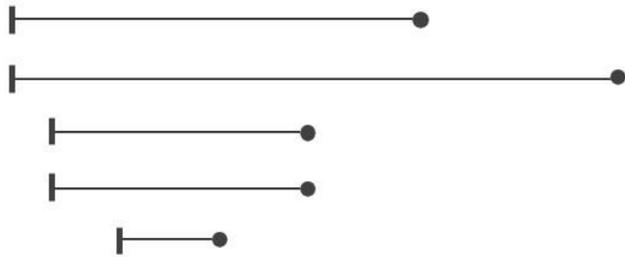
MISSION ZERO ROADMAP



Fuels we burn
SCOPE 1

INITIATIVES

- Trial hydrogen, renewable diesel and alternative onsite fuels
- Increase use of electric construction plant & equipment
- Battery storage & charging infrastructure on new developments
- All asset investment plans include phasing out of fossil fuels plant & equipment
- Develop green transition strategy for corporate vehicles



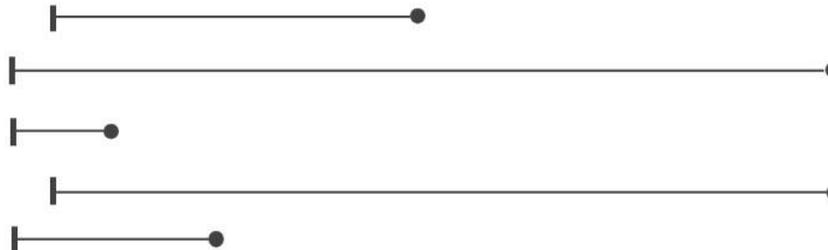
OUTCOMES

- Zero **liquid fossil fuels** used onsite in construction
- 100% **electric construction plant & equipment**
- No **fossil fuel infrastructure** on all our developments
- No **fossil fuel** use on our AUMs
- 100% **EV corporate vehicle fleet**



Power we consume
SCOPE 2

- Increase renewable electricity 30% by 2023, 50% by 2025, 100% 2030
- Increase onsite solar generation on our AUMs
- Develop net zero carbon investment pathways for existing AUMs
- Integrate renewable energy infrastructure on all new developments
- Only occupy high performance buildings for our workplaces

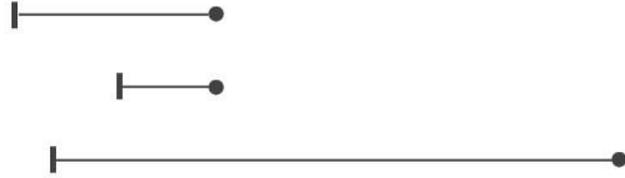


- Powered by 100% **renewable electricity**
- All AUMs generating **renewable energy** onsite
- 100% existing AUMs implement **net zero carbon investment plans**
- Renewable energy generation** on all our developments
- 100% of our workplaces obtain top tier **green building rating**



Materials and services we buy
SCOPE 3

- Measure and benchmark embodied carbon in the construction materials used on our projects
- Invest in R&D in embodied carbon of construction materials
- Collaborate with suppliers to eliminate embodied carbon in the construction materials we buy

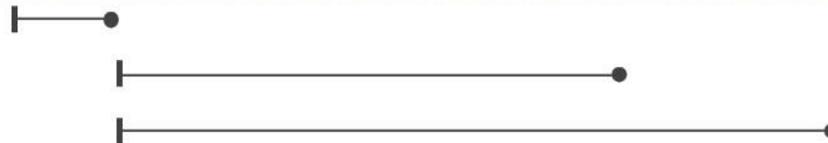


- 100% new bids and projects have **embodied carbon budgets**
- Establish industry benchmarks for **construction embodied carbon**
- All major suppliers have **zero carbon contract requirements**



Tenant emissions
SCOPE 3

- Perform net zero carbon commercial assessments on all new asset acquisitions
- Develop & pilot next generation Green Leases for tenants
- Educate & partner with our tenants to reduce their emissions



- 100% new acquisitions have **net zero carbon investment plans**
- 100% of tenants on next generation **Green Leases**
- 100% tenants powered by **renewable electricity**

Developments = LL integrated projects

- Built Environment Initiatives
- Community Resilience Initiatives

Thermal Comfort

Buildings are designed to exceed compliance standard (20% improvement over ASHRAE) and will be equipped with high performance glazing to improve thermal comfort.

Financial Position

The precinct is designed for 24-hour utilisation and assets that are complementary to one another, providing the perfect opportunity for a live-work-play community.

Passive Design

Building orientation, awning structures, trees and lush vegetation, green roofs and high albedo paving surfaces have been planned to mitigate urban heat island effect.

Biophilic Design

Sky gardens, vertical gardens and green spaces of the plaza and promenades will improve outdoor air quality for precinct users.

Connectivity

TRX is supported by first class infrastructure and connectivity, including KL's largest MRT interchange, access to the DUKE & MEX highways, SMART Tunnel and other primary arteries of KL such as Jalan Tun Razak & Jalan Imbi.

Flood Mitigation

Local drainage system will undergo a significant upgrade to improve capacity and reduce site overflow and downstream flash flooding.

Resilient Placemaking

As part of our planning and design process, all developments that Lendlease undertakes includes an initial assessment of climate-related, environmental and social risks, mitigation and adaptation measures.

Indoor Air Quality

MERV14 filtration will be installed in all commercial buildings to maintain high levels of indoor environmental air quality.

Healthy Precinct

The precinct has the opportunity to create stronger community resilience via improved physical and mental wellbeing for its visitors and occupants with its activated outdoor spaces and expansive greenery.

Recycled Water

Precinct recycled water treatment will recover 80% of wastewater for toilet flushing, landscape irrigation, and cooling towers, reducing demand for potable water by more than 50%.

Flood Mitigation

Drainage cells under the landscaping areas gets water quickly off the roof to avoid flooding within the Park.

Community Connections

The Exchange and TRX Park will function as a town centre, offering a vibrant, open space for the community to meet and mingle.

Access and Egress

Elevated pedestrian link bridges will provide access between The Exchange TRX and its surrounding neighbourhoods, enabling safe egress should surrounding areas of the precinct be subject to flooding.

Climate Awareness

Increased awareness and education about climate change provided to the TRX community, starting with the release of this Climate Change Adaptation and Resilience Plan.



Sustainability Ratings

Barangaroo South:

- 6 Star Green Star Community

International Towers:

- WELL Core & Shell Platinum
- 6 Star Green Star Office Design & As Built

International House:

- 6 Star Green Star Office Design & As Built

Daramu House:

- 6 Star Green Star Design & As Built

One Sydney Harbour:

- Residences Targeting 6 Star Green Star Design & As Built

Barangaroo South

Carbon Neutrality

Water Positive

Zero Waste Emissions

Community Wellbeing



Carbon Neutrality

- Barangaroo is the first urban precinct in Australia to be awarded carbon neutral status.
- 20% reduction in embodied carbon for all buildings achieved to date.
- Over 6,000sqm of rooftop solar panels and one of the largest precinct in the Southern Hemisphere to use 100% LED lighting.



Water Positive

- Water positive precinct, which means that at Barangaroo more water is captured, treated, recycled and reused than the drinking water that is consumed across the precinct.
- Up to 100 million litres of water projected to be saved annually by precinct-wide recycled water treatment plant and chilled water plant with harbour heat rejection.



Zero Waste Emissions

- Delivery of two cross-laminated timber buildings, sourced from certified sustainably managed forests and delivering significantly lower carbon footprint than other building materials as well as generating zero production waste.



Community Wellbeing

- Training delivered to over 8,900 construction workers between 2013 and 2015 via the Barangaroo Skills Exchange, generating \$78.5 million in social value (audited by Social Value International).
- More than 50 social programs delivered within the precinct over the life of the project.
- Public art program including permanent and temporary installations.

Elephant Park

Sustainability Ratings

Elephant Park Energy Hub:

- Excellent BREEAM¹

We aim to be the
1st Climate Positive
development in the

UK



ALL NEW HOMES DESIGNED
TO ACHIEVE AT LEAST

35%



LOWER EMISSIONS THAN
2013 REGULATIONS*

London:
Elephant Park
(Artist's impression)

[contents](#)

[contents](#)

London:
Elephant Park
(Artist's impression)

Any
Questions?

