

| ESG investing – the practical realities

| Real Estate

Nina Reid, Director of Responsible Property Investment, M&G Real Estate

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M&G Real Estate

The value of investments will fluctuate, which will cause prices to fall as well as rise and investors may not get back the original amount they invested”

- £33.5bn¹ assets: UK, European, and Asian real estate; part of M&G Investments, £321bn assets²
- £4.6bn³ invested across Continental Europe
- Over 260 institutional accounts including 212 pension funds
- Income focus aiming to deliver long-term sustainable returns
- Experienced and well resourced global platform
- £10.3bn⁴ of global investment transactions 2017 – 2019-Q2

Past performance is not a guide to future performance



Source: M&G Real Estate, as at 30 June 2019. Please note GRESB Green Star from the Global Real Estate Sustainability Benchmark (GRESB).

Other awards listed are those won by M&G Real Estate in 2017 and 2018.

1. Assets under management including cash, as at 30 June 2019.

2. Assets under management, as at 31 December 2018.

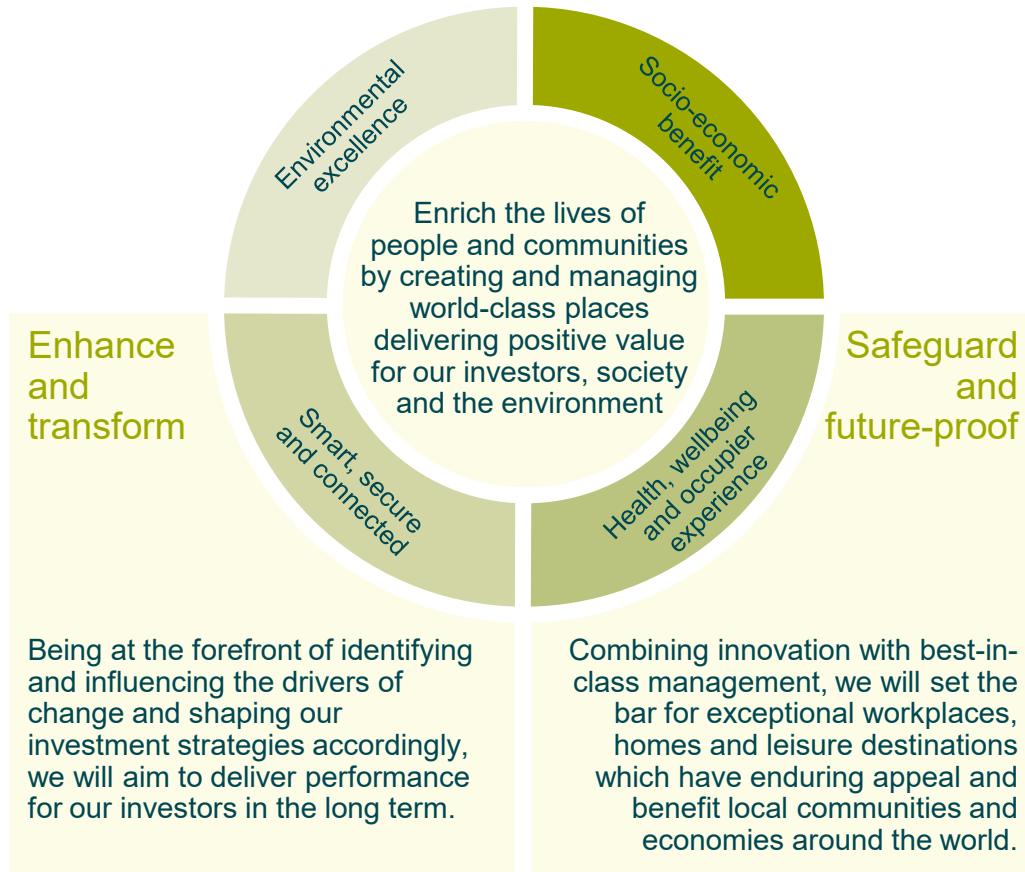
3. Assets under management including undrawn commitments, as at 30 June 2019. 4 Including contracted deals.

| Our approach to ESG/RPI



Long-standing focus on responsible property investment

A sector-leading approach



Over **340,000** people reached by our health, wellbeing and inclusivity programmes



Ten green stars in 2019 GRESB survey



27% AUM with green building certification



First in the real estate sector to be awarded the National Equality Standard



Over **300** events held during 2018 for residents, occupiers and visitors



'A' rating 2019 PRI Real Estate Assessment



M&G Sustainability Team

Long-standing focus on responsible property investment

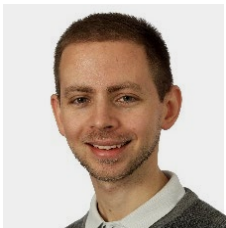


Nina Reid
Global Head of Sustainability
Responsible for Europe, Asia and alternatives

- Over 40 years of sustainability experience
- Currently report to Tony Brown, Head of M&G RE
 - From July 2019, they will report to the new Head of Investment Strategy
- Nina sits on the M&G Responsible Investment advisory Forum which coordinates ESG activities across M&G

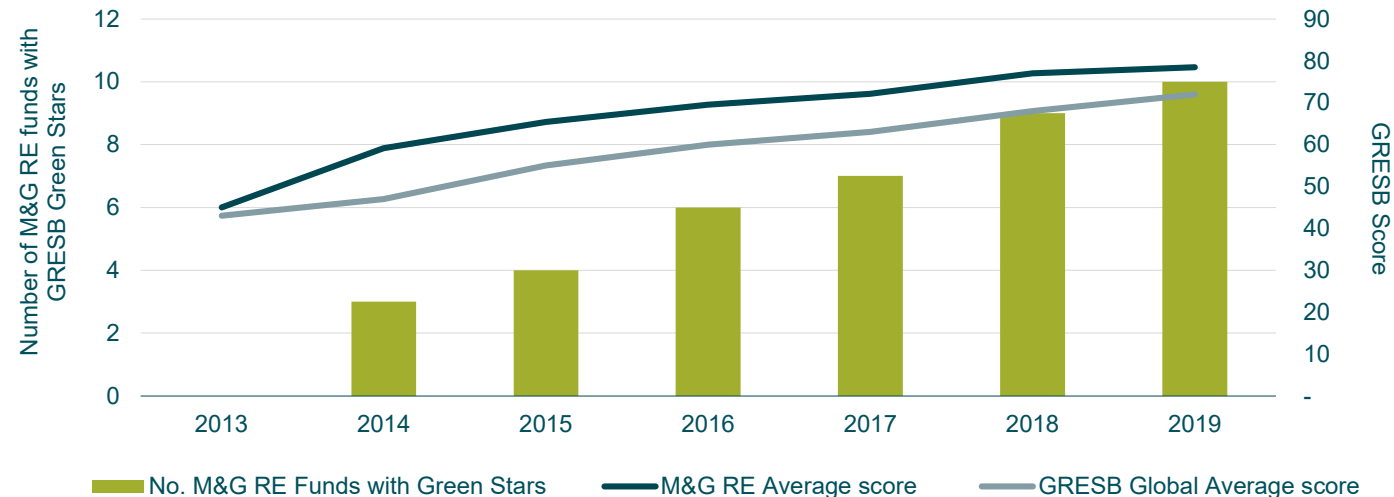


Jo Smallwood
Director:
Responsible Property Investment
Responsible for UK commercial














Alan Page
Senior Associate
Responsible for client reporting and GRESB

M&G Real Estate performance in GRESB over time

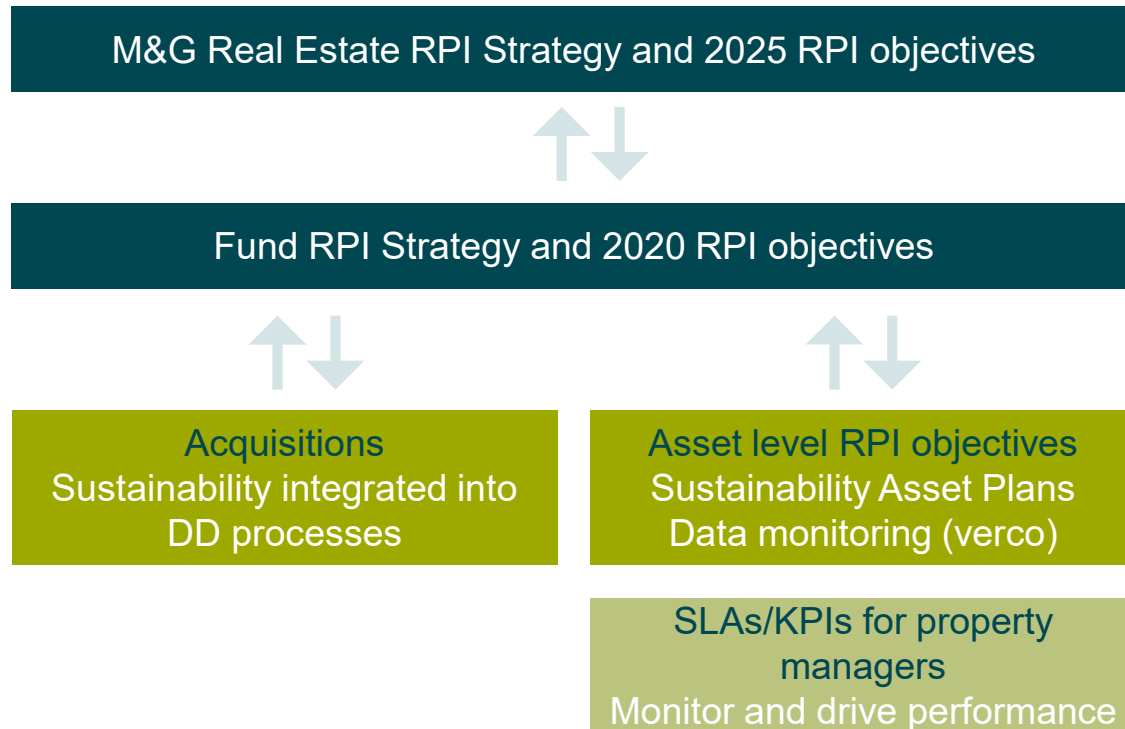


M&G Real Estate: Progress against our 2025 RPI objectives

	2025 target	
 Environmental excellence	Green building certification for 50% (by value) of assets under management globally	
	Achieve a 25% reduction in energy intensity and associated GHG emissions based on an indexed trend for all landlord-produced energy compared to a 2012/13 baseline	
	Achieve a 10% reduction in water intensity based on an indexed trend for all landlord-procured water (excluding sub-metered for tenant use) compared to a 2012/13 baseline	
	95% of waste to be diverted from landfill and seek to promote and increase recycling and reuse	
 Health, wellbeing and occupiers experience	10 million people reached with our health, wellbeing and inclusivity programmes by 2025	
	Measure and improve the satisfaction, happiness and wellbeing of our occupiers	
	Ensure an exceptional standard of safety and security in all the working environments we control	

	2025 target	
 Socio-economic benefit	Create positive socio-economic value and measure the social and economic impacts of our activities, demonstrating improvements by 2025	
 Smart, secure and connected	100 places globally have benefitted from community programmes	
	Deliver enhanced digital and physical connectivity at our assets through a framework of activities underpinned by thought leadership	

How do we implement our strategy?



Accountability

M&G RE Board

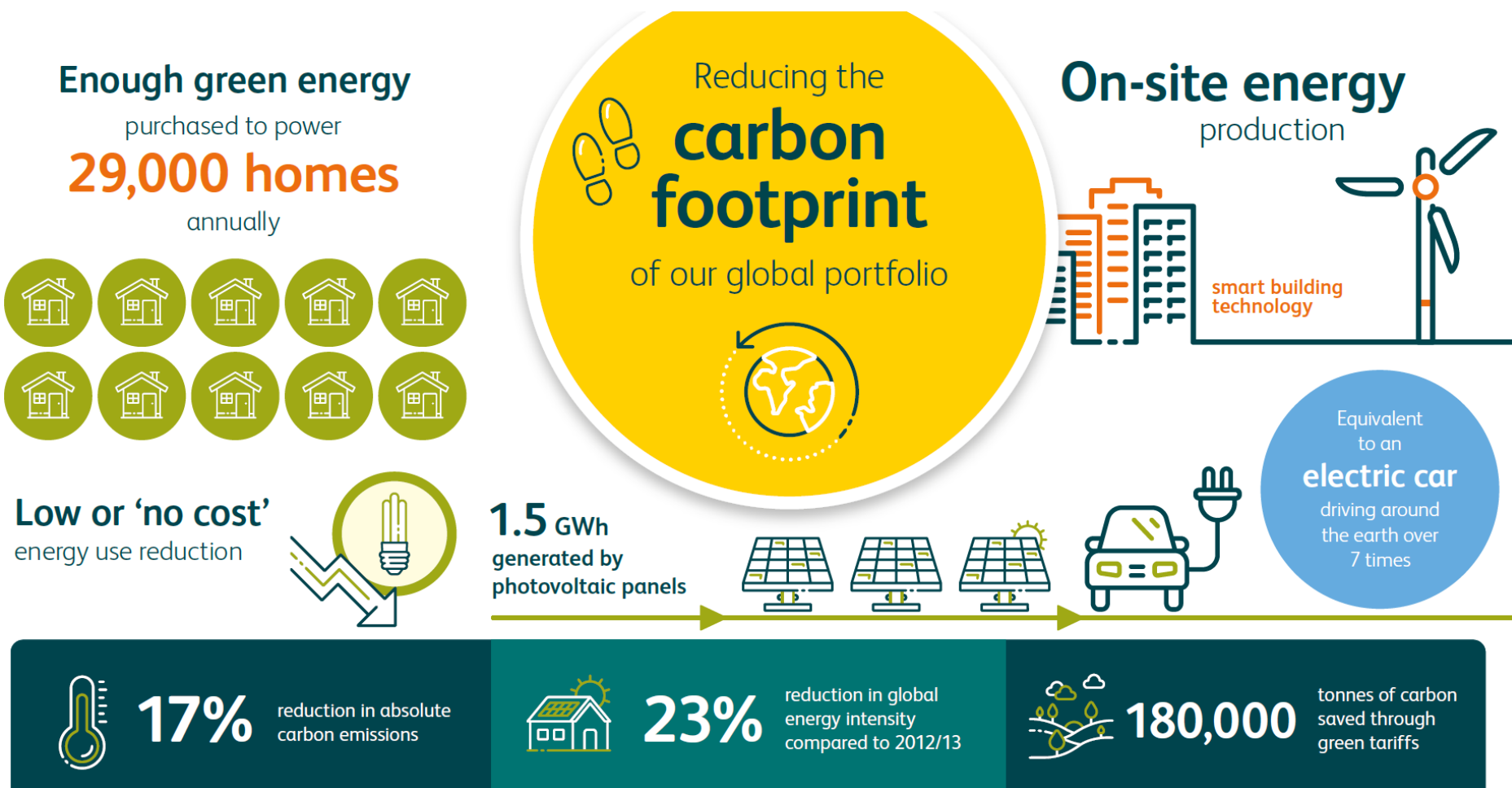
Fund Managers

Investment and Asset Managers

Property and Facility Managers

M&G Real Estate: Progress against our 2025 RPI objectives

Driving energy efficiency and carbon reduction



RPI in action: Centropolis, South Korea



26-storey, 134,399 sq m, twin-tower office complex in Seoul achieved LEED Gold certification



Environmental
excellence

- Photovoltaic panels produce 106.8kW
- Geothermal heat pumps
- Thermal ice storage system
- Seven fuel cells use water and natural gas to generate electricity and hot water
- Greywater recycling for reuse in the toilets
- 16 electric car charging points



Health, wellbeing
and occupiers
experience

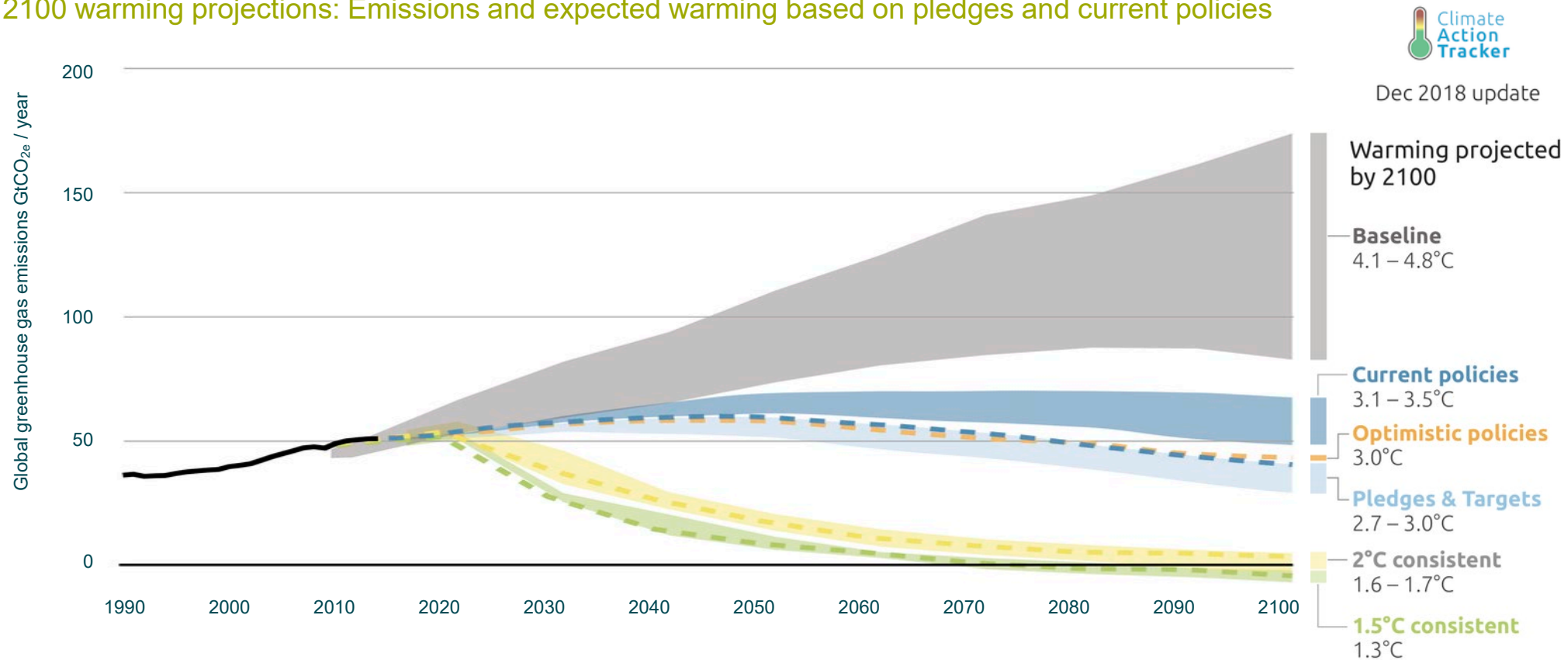
- On-site amenities are offered to enhance the occupier experience.
- Shared tenant space in the building will include male and female showers, separate wellness areas for men and women, a nursing room and a conference room for hire.
- Reviewing feasibility for air quality/H&W certification

| Climate risk and the investment process ■

Climate change

Humanity's greatest challenge?

2100 warming projections: Emissions and expected warming based on pledges and current policies



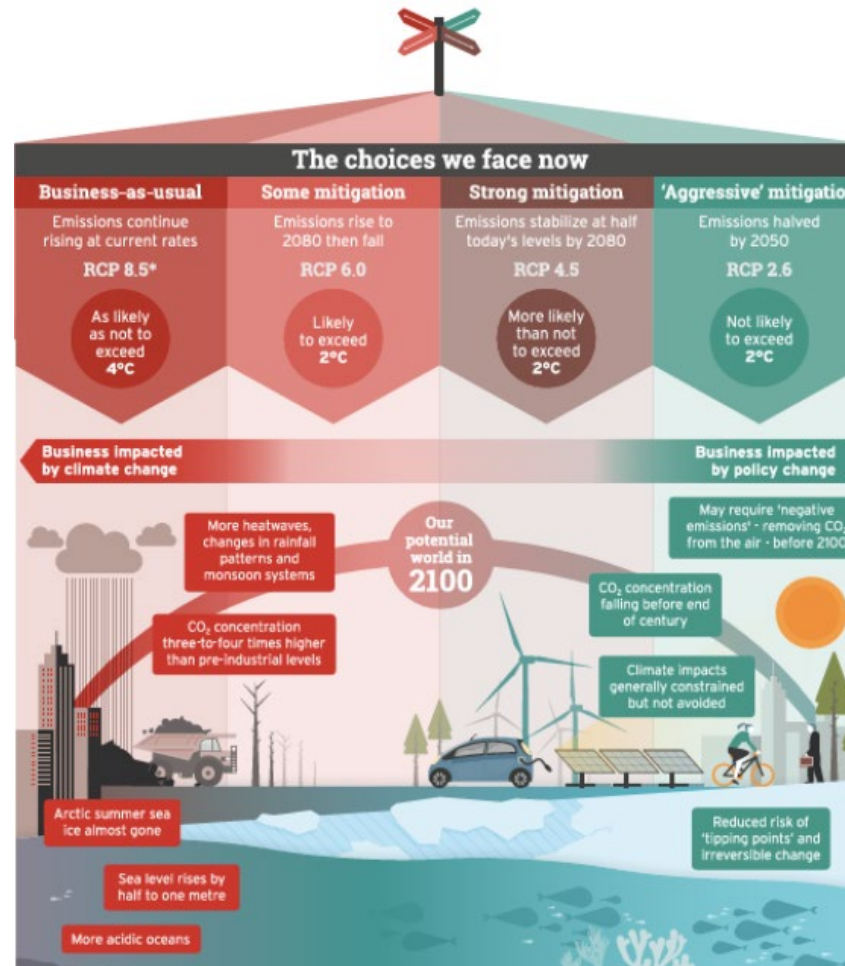
Carbon crossroads

Both directions come with investment

BAU

£

- Reconstruction
- Repair
- More stringent legislation



<1.5°C

£

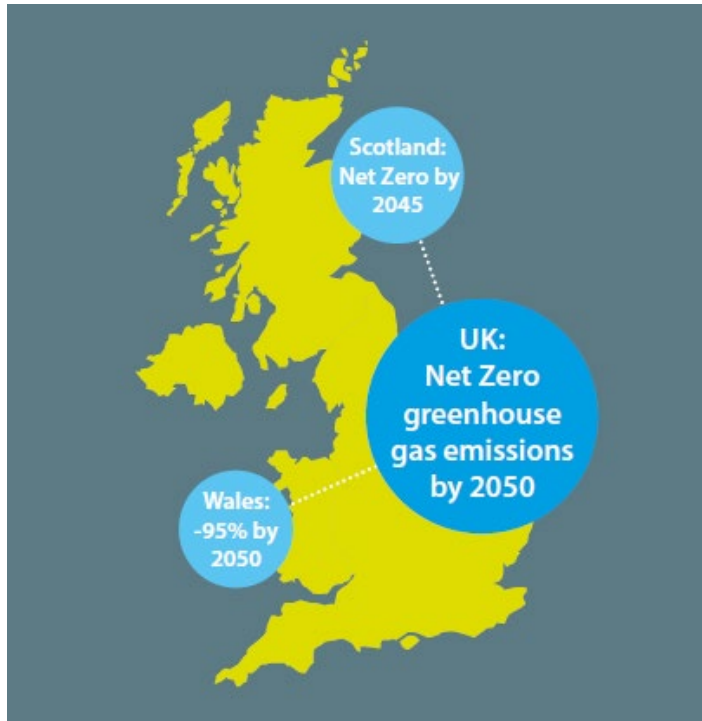
- Make buildings more efficient and resilient
- Stranded assets
- More stringent legislation

Growing climate awareness



Commitment to 1.5 degrees/net zero

Governments



Owners / fund managers

Net zero 2050:



Occupiers



Amazon's 'climate pledge' commits to net zero carbon emissions by 2040 and 100% renewables by 2030



Climate change – financial risk

“ The PRA is increasingly focused on cognitive dissonance in some insurers whose careful management of climate risks on the liability side of their balance sheets is not always matched by similar considerations on the asset side. ”

Mark Carney speech to European Commission Conference: A global approach to sustainable finance
21 March 2019

PRA expects firms to

- Embed the consideration of the financial risks from climate change in their governance arrangements
- Incorporate the financial risks from climate change into existing financial risk management practice
- Use (long term) scenario analysis to inform strategy setting and risk assessment and identification; and
- Develop an approach to disclosure on the financial risks from climate change, and advocates adoption of TCFD



Governance	Strategy	Risk Management	Metrics and Targets
Disclose the organization's governance around climate-related risks and opportunities.	Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material .	Disclose how the organization identifies, assesses, and manages climate-related risks.	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material .
Recommended Disclosures	Recommended Disclosures	Recommended Disclosures	Recommended Disclosures
a) Describe the board's oversight of climate-related risks and opportunities.	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	a) Describe the organization's processes for identifying and assessing climate-related risks.	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.
b) Describe management's role in assessing and managing climate-related risks and opportunities.	b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	b) Describe the organization's processes for managing climate-related risks.	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.
	c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

Investor queries

Bank of England PRA - Life Insurance Stress Test 2019 includes climate change

Impacts on investments from both physical and transition risk for Life and General Insurers

Sector	% of investment portfolio in following sectors	Assumptions	Transition Risks			Physical Risks		
			Scenario A	Scenario B	Scenario C	Scenario A	Scenario B	Scenario C
Real Estate Assets (inc. CRE, rental and leasing, construction, infrastructure) ¹	Change in property value for assets materially affected by physical climate change risk ² . Apply the price drop impact on mortgage valuations where relevant ³ .	Global Average (inc. other regions)	-10%				-15%	- 30%
		North America	-10%				-15%	- 30%
		Europe	-5%				- 8%	-15%
		Asia and Pacific	- 20%				- 30%	- 60%

Scenario A – (disorderly) sudden transition to ensure that temperatures kept below 2oC (maximum transition risk)

Scenario B – long orderly transition scenario that temperatures kept below 2oC

Scenario C – Current policy trends, temperature increase in excess of 4oC (maximum physical risk)

Investor queries past year

“ The panel remained very committed to low carbon investing.could look at ESG in more detail for this Fund and also CO2 emissions and how we would reduce these post our asset management initiatives. ”

UK Pension Fund

Please outline how you expect to evolve the portfolio to be 'carbon-neutral' in light of the UK commitment by 2050. What other ESG, climate change credentials does the Fund employ now or in the future?

How many assets by capital value are in a moderate to high or high flood risk area? Where there is a moderate/high flood rating, what is the cost of mitigation and is this factored into the asset business plan?

We are now starting to incorporate TCFD recommendations in our investment processes and client reporting....To what extent does your organisation look at the impact of climate related risks and opportunities on your investment strategy? For example, have you considered the issues listed below:

- (i) What climate changes are forecasted in the region where you hold assets,
- (ii) What is the likelihood of these weather events in the region, specifically affecting your assets and
- (iii) Then what would be the impact on the assets: Can people get to the asset? E.g. floods. Can they operate in those conditions? What will be the strain on the asset? Loss of service? E.g. Will air conditioning work on days where peak temperature is 2 to 4 degrees hotter than historical peak temperature; is drainage sufficient to manage more frequent minor flooding etc.
- (iv) Rank most vulnerable assets, prioritise and have an action plan

What does this mean
for real estate?



Physical

The physical assets of financial institutions – and those of their clients – are exposed to the risk of damage or destruction by extreme weather and other climate events.

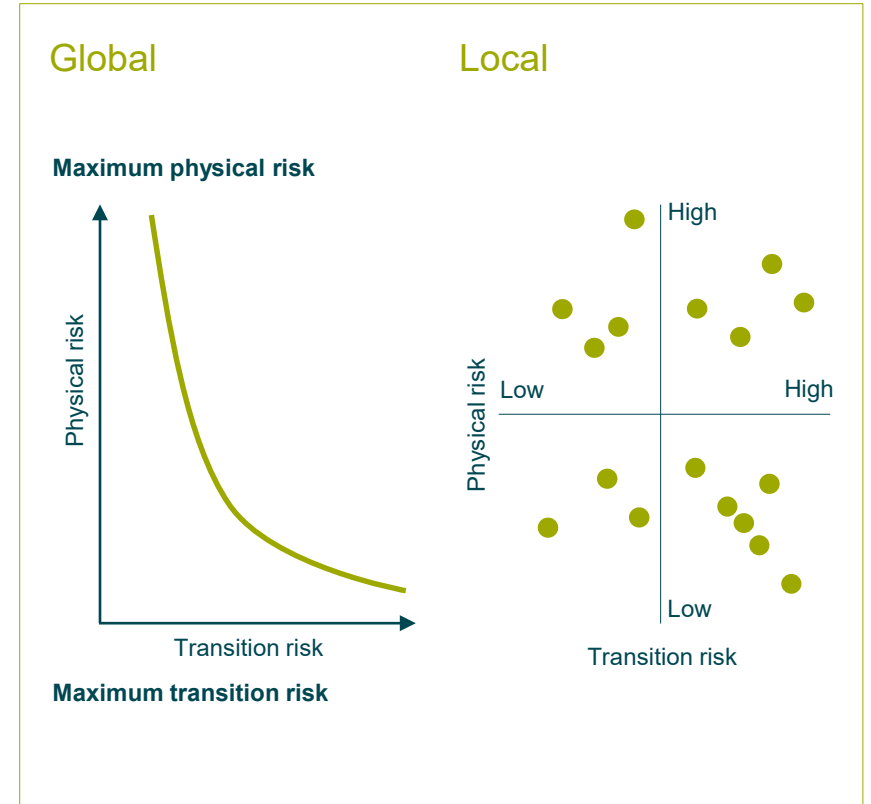
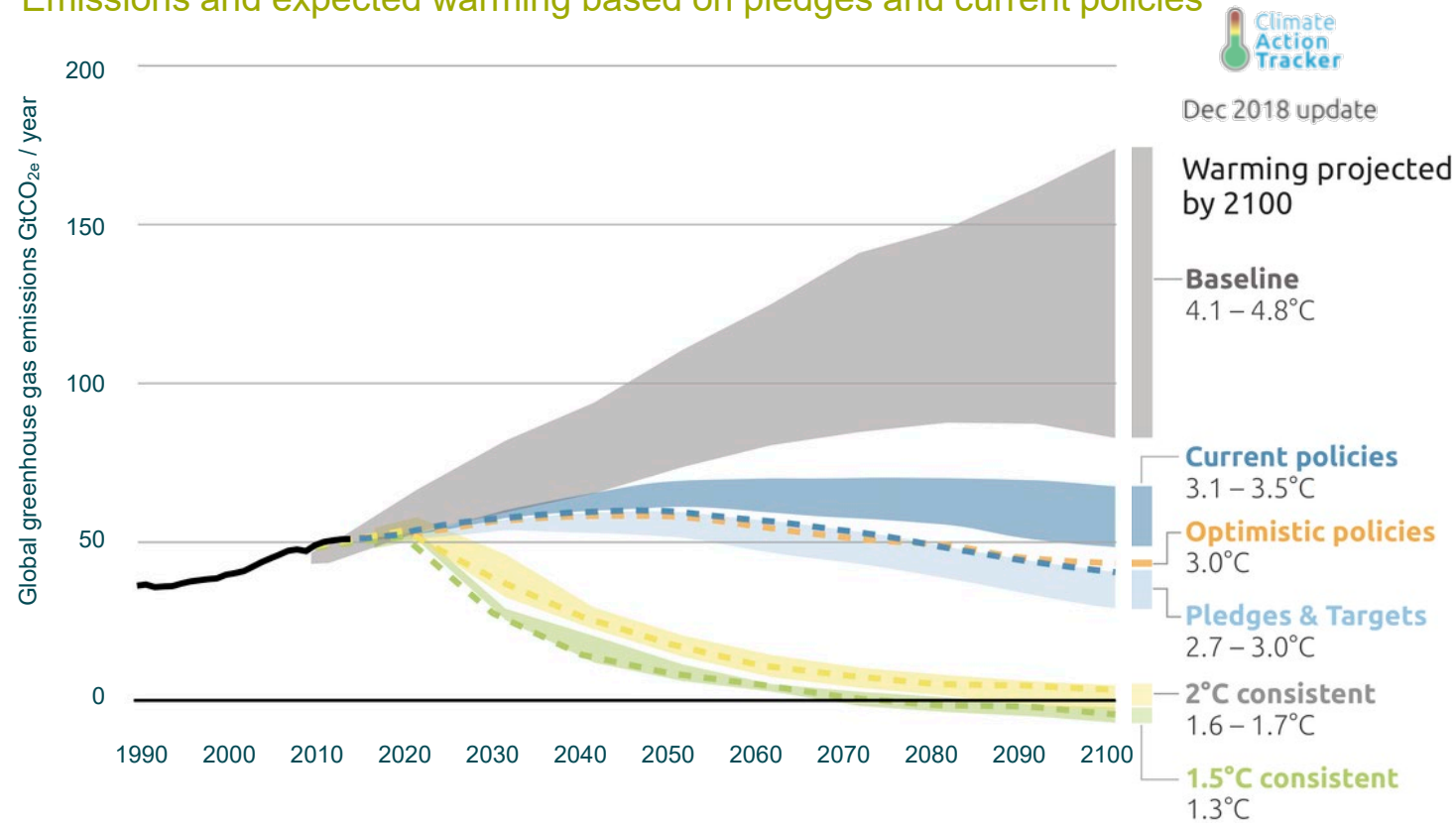


Transition

The value of the financial institution's investment in resource-based assets might significantly diminish in a lower carbon economy (for example, fossil fuel assets rapidly devalue as the global economy recalibrates to a low-carbon norm).

Climate risk

2100 warming projections:
Emissions and expected warming based on pledges and current policies





Transition risk

Impact/cost of adjusting assets to a low/net zero carbon economy

Reputational
risk

Investor
requirements
(push to low
carbon assets)

Regulation to
reduce energy
consumption
and/or carbon
emissions

Technology
shifts

Changing
occupier
preferences

What does this mean?

Paris proof/2050 ready/net zero carbon building (operation only):

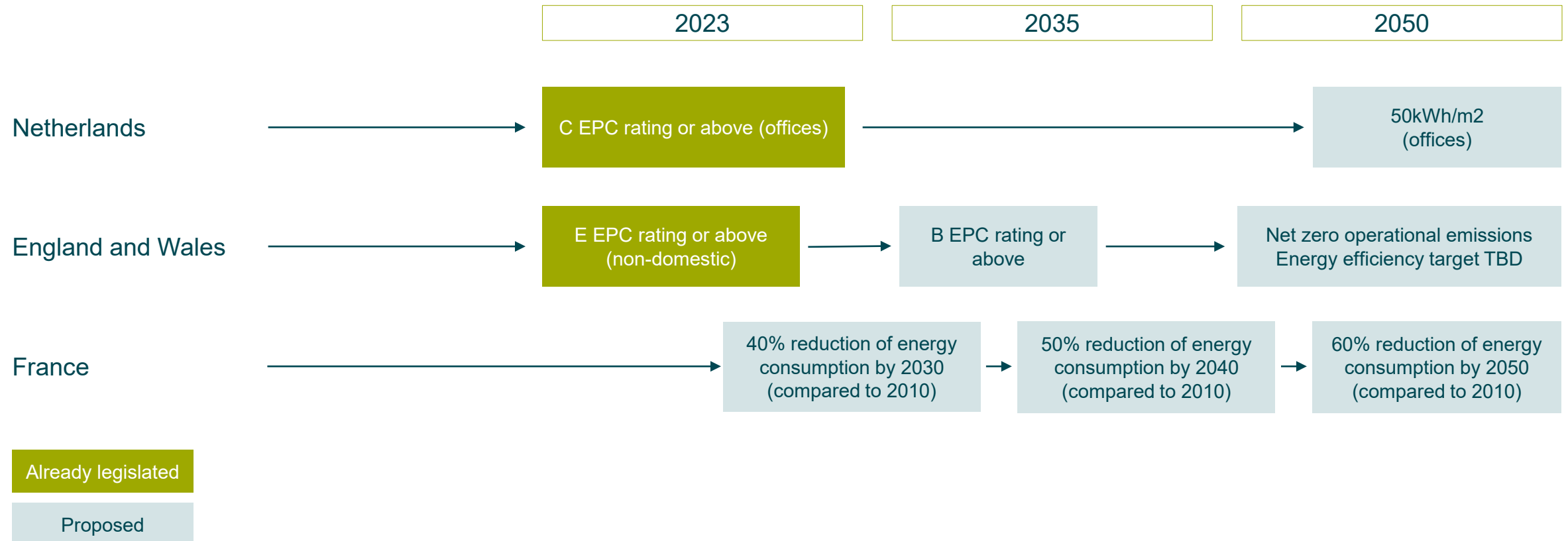
- 1 High energy efficiency
- 2 On-site energy generation
- 3 Green/zero carbon energy procurement
- 4 Offsetting remaining carbon emissions

How long will it be
viable to use gas?

What does this mean?

Paris proof/2050 ready

Step 1: Increase energy efficiency





Physical risk

Impact/cost of assets being exposed to greater physical risks

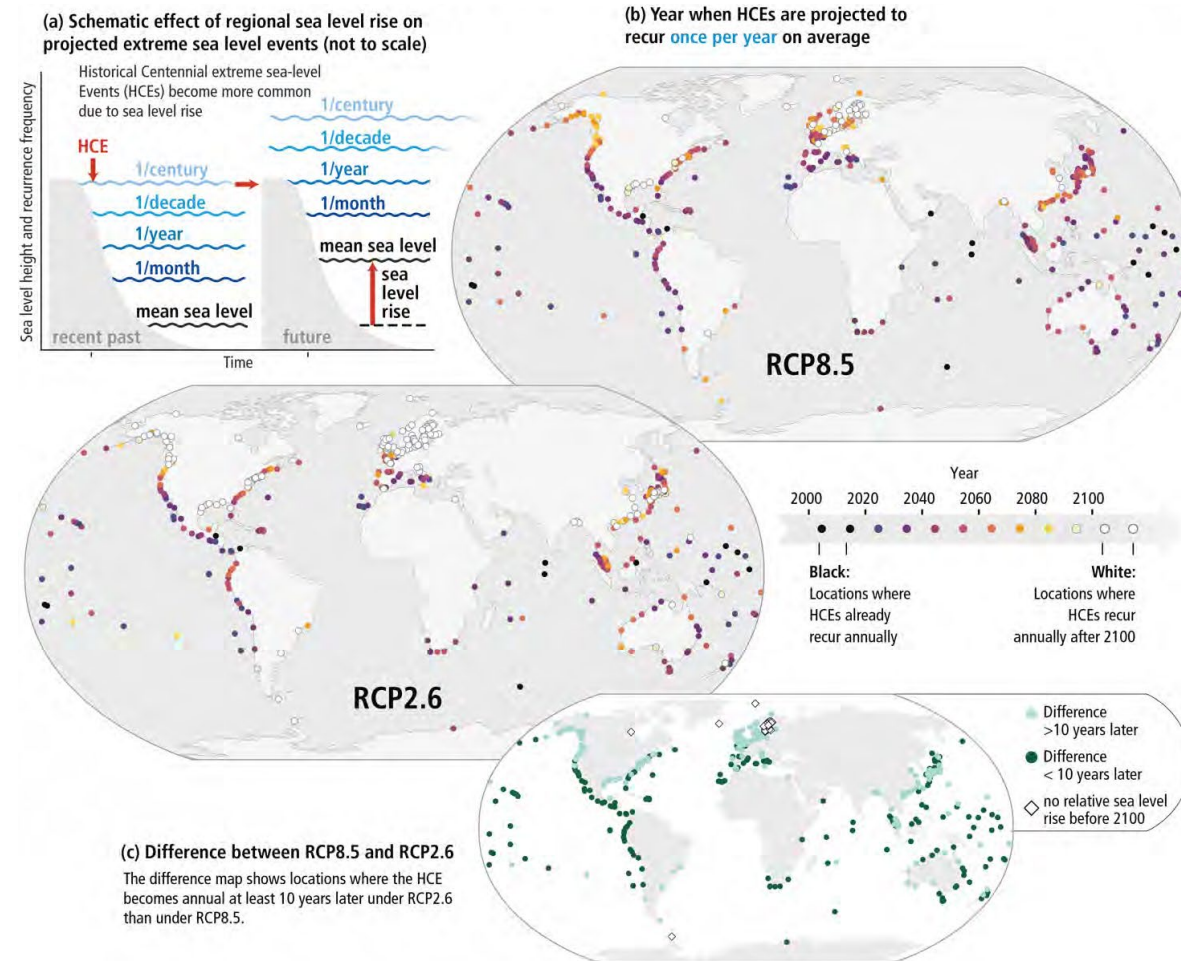


Physical climate risk

Extreme sea level events

Due to projected global sea level (GMSL) rise, local sea levels that historically occurred once per century (historical centennial events, HCEs) are projected to become at least annual events at most locations during 21st century.

The height of a HCE varies widely, and depending on the level of exposure can already cause severe impacts. Impacts can continue to increase with rising frequency of HCEs.



Physical risk

Big data analysis

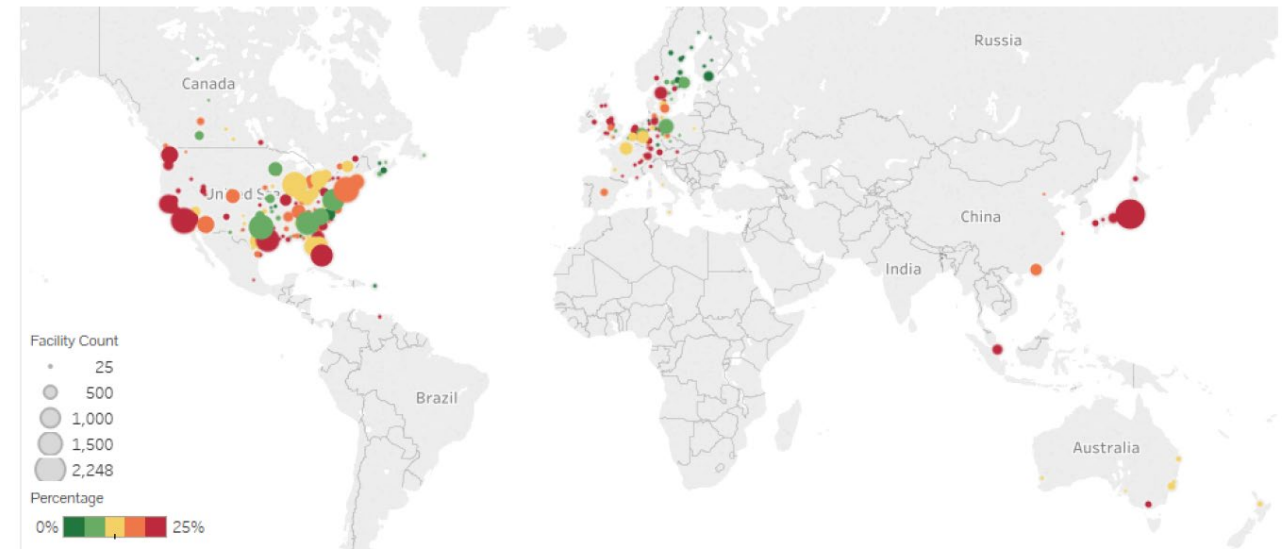
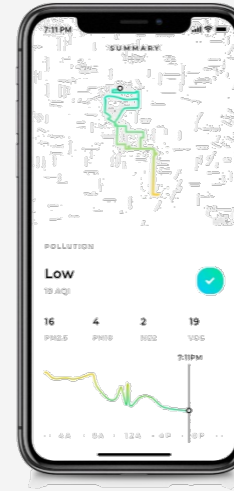


Figure 1. Percent of properties exposed to flood by urban area. This map represents the geographic repartition of the 73,694 sites scored by GeoPhy and Four Twenty Seven. The size of the dots represents the number of sites in a city or Metropolitan Area, and the color signals the percentage of these sites exposed to flood risk, with red representing the highest percentage and dark green representing the lowest. Note that cities with less than 25 sites are not represented on the map.

Health & well being & occupier experience

Why H&W in built environment?



Three pillars of health and wellbeing

Framework of opportunities for property management

Health, wellbeing and occupier experience



Training and Awareness

Enhancing customer service capabilities by working with our property managers providing training opportunities for their staff to better understand and therefore support people's needs.



Information and Services

Providing information about the buildings accessibility and facilities, offering services that enhance visitors' experience and promoting health and wellbeing action through collaboration with partners.



Physical Environment

Designing and managing places to positively affect visitors' experience, promote accessibility and serve the needs of everyone who wants to use them.

Delivering our health and wellbeing strategy

Retail: Galleries Shopping Centre, Washington, UK

Health, wellbeing and occupier experience



Accessibility symbols



Level access and automatic doors (or no doors)



Ramped / sloped access, and / or manual doors

Health, wellbeing and occupier experience



80 Ann, Brisbane

The seven concepts of the **Wellbeing** Standard

Air
Water
Nourishment
Light
Fitness
Comfort
Mind

Levels of **WELL** Certification



Carbon, energy, health, wellbeing and occupier experience



SDE4 is the first purpose-built net-zero energy building in Singapore. It also has WELL Gold certification. The building is energy efficient and environmentally friendly, with a suite of innovative building strategies to improve the comfort and well-being of building users.

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