

Modelling financial value of coastal infrastructure at risk

A Scientific Rating Approach

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Why Climate Ratings for Infrastructure?

- Infrastructure assets are long-term, fixed-location assets and they **can't relocate** easily.
- Climate risk are usually **not priced into investment decisions**, so they are **invisible**.
- There's **no common framework** to compare risks across assets.

Having climate ratings over a universe of assets* convert complex climate science into:

- ✓ **Comparable** and **decision-useful** metrics.
- ✓ They make risk **visible** and **quantifiable**.



* Our infrastructure universe represent 90 % of investible assets

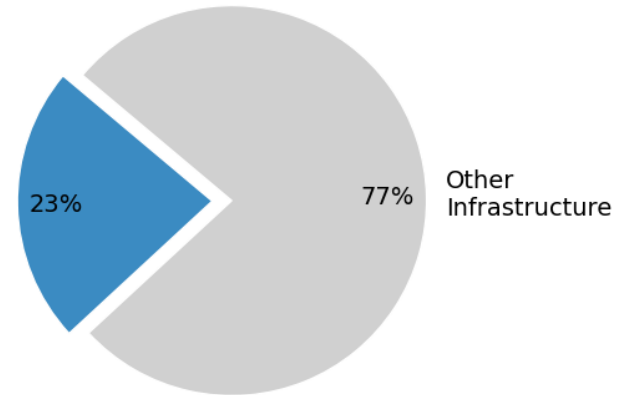
Scanning the Shore

Coastal Infrastructure in Our Portfolio

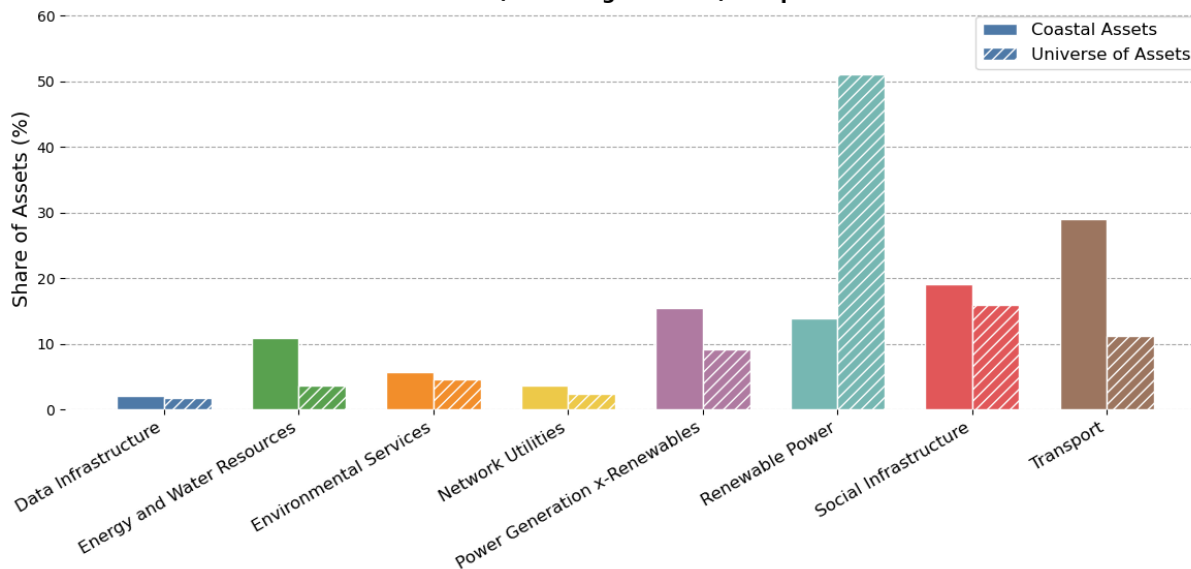
Coastal infrastructures assets in our universe



Coastal Assets



Sector Distribution: Coastal (excluding offshore) compared to Universe of Assets



Coastal assets represents 23% of our asset universe.

Transport and Power Generation non-renewable are more present over coastal assets compared to the universe of asset.

Seeing the Risk, Sizing the Loss

Two complementary ratings

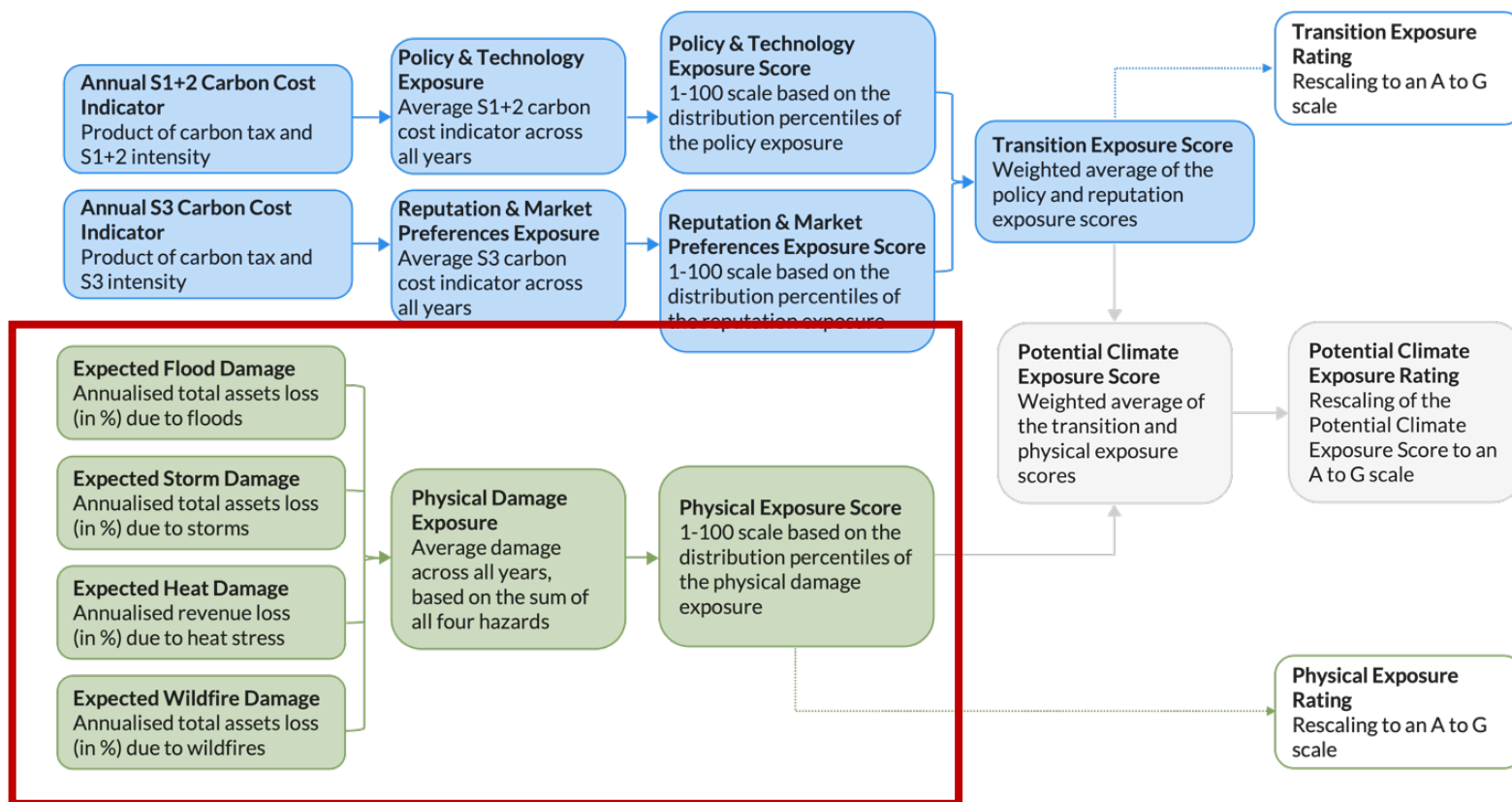
	Potential Climate Exposure Ratings (PCER)	Effective Climate Risk Ratings (ECRR)
Definitions	✓ Measures the exposure to future climate risks.	✓ Measures the expected financial losses under various climate scenarios up to 2050.
Main Inputs	✓ Current emissions, physical risk exposures, and existing resilience measures.	✓ Information required for PCER + Climate scenarios projection, alignment and resilience plans up to 2050.
Methodology	✓ Combines Transition (Scope 1, 2 and 3) and Physical Risk (Flood, Storm, Heat, Wildfire) scores to provide transparent and comprehensive rankings with access to underlying data.	✓ Quantifies financial impact in terms of net asset value resulting from transition and physical risks by 2035 and 2050.
Output	✓ Provides a comparable risk rating from A (for the lowest risk) to G (for the highest risk) for the covered universe.	✓ Provides a dollar-quantified financial impact evaluation.
Coverage	✓ 6,000+ infrastructures.	✓ 400+ infrastructures + On demand asset.

Potential Climate Exposure Ratings (PCER)

Overview

Physical risk exposure is assessed based on the **financial materiality** of four major climate hazards: **floods, wildfires, storms, and heat**.

These hazards are evaluated not just by their likelihood, but by their **potential to cause asset-level damage and financial loss**. The rating reflects how each hazard affects infrastructure differently, depending on **location and asset type**.

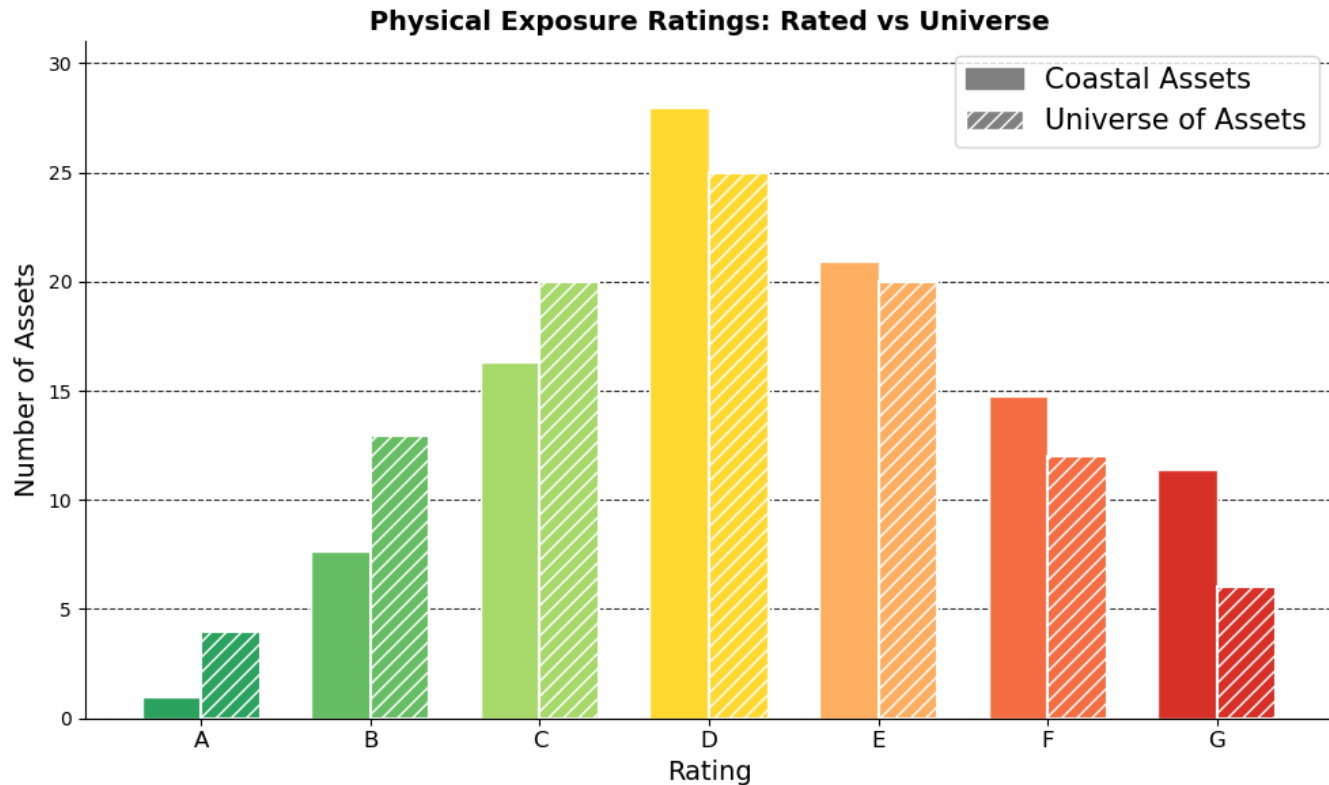


Higher Ground Needed

Coastal Exposure in Focus

Coastal assets exhibit a noticeably **higher physical exposure rating** overall, with the distribution skewed toward more severe risk ratings.

This is primarily driven by their exposure to **flood** hazards and to **storms** hazards.



** Results based on Climate Catastrophe scenario for a 2050 time-horizon.*

When Resilience Counts

Factoring Adaptation into Ratings

Climate adaptation is essential to managing physical climate risks especially for exposed infrastructure like coastal assets.

That's why our assessment not only measures risk but also incorporates **documented adaptation measures** designed to reduce climate-related damage.

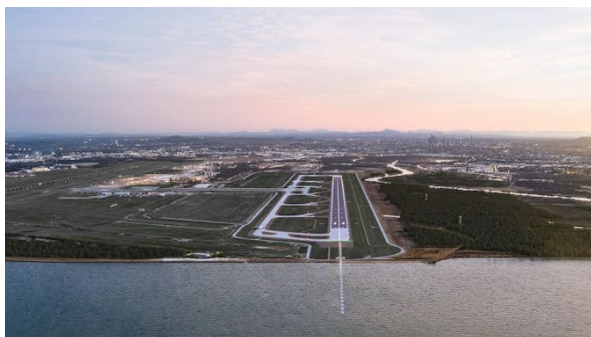
These measures are sourced from the **ClimaTech project**, which systematically documents actions and evaluates their effectiveness.

This evidence-based approach helps avoid **greenwashing** and ensures that only **credible, impactful adaptation efforts** are reflected in the ratings.



Brisbane Airport sits between the ocean and the river

Ratings	Flood	Storm	Wildfire	Heat	Physical Exposure
Estimated	G	E	C	E	E
Adjusted	E	D	C	E	C



Resilience technology	Hazard	Type	Return period (years)	Effectiveness
Elevation	Flood	Inland & coastal	100 or less	80%
Flood barriers	Flood	Coastal	1,000 or less	80%
Flood barriers	Flood	Coastal	More than 1,000	2%

Illustration of adjustments and their impacts on ratings for the Brisbane Airport

Conclusion

Climate Risk Ratings: a Necessary Compass

- ❑ **Rating climate risk** make it visible and measurable.
- ❑ Our approach provides a **comparable view across all infrastructure assets**, enabling consistent assessment.
- ❑ **Coastal assets are systematically more exposed**, with risk distributions skewed toward higher categories.
- ❑ This is driven by their location in sensitive zones, with greater exposure to floods and storms.
- ❑ **Adaptation measures matter**, by including them in our ratings, we avoid blind spots and ensure a **realistic view of actual exposure**.
- ❑ **Visibility of resilience is key**: risk ratings should reward action, not just describe vulnerability.



Thank you!

About us:

The EDHEC Climate Institute (ECI) focuses on helping private and public decision-makers manage climate-related financial risks and make the most of financial tools to support the transition to a low-emission economy that is more resilient to climate change.

It has a long track record as an independent and critical reference centre in helping long-term investors to understand and manage the financial implications of climate change on asset prices and the management of investments and climate action policies.

The institute has also developed an expertise in physical risks, developing proprietary research frameworks and innovative approaches. ECI is also conducting advanced research on climate transition risks, with a focus on supply chain emissions (Scope 3), consumer choices, and emerging technologies.

As part of its mission, ECI collaborates with academic partners, businesses, and financial players to establish targeted research partnerships. This includes making research outputs, publications, and data available in open source to maximise impact and accessibility.

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