Appendix

Meet the Team

Rowan Douglas

CEO

Howden Climate Risk and Resilience

Chair of the Insurance Development Forum Operating Committee, he previously led the Climate and Resilience Hub at WTW – a team of 130+ experts aligning WTW's risk, capital and people businesses towards clients' climate-related requirements, and managing engagement with programmes including the Coalition for Climate Resilient Investment, Insurance Development Forum, ClimateWise and the Climate Financial Risk Forum. Rowan also initiated and chaired the Willis Research Network to support WTW insights and capabilities.

Isa Cadignan

Chief Commercial Officer

Howden Climate Risk and Resilience

Isa is responsible for promoting the CRR team and embedding its proposition across Howden. Previous roles within Howden include Chief of Staff and Planning and Chair of the Howden One Network. Prior to joining Howden, Isa was Executive Director of Launch Operations and Change Management at NewAsurion and she held a number of positions during her 6 years at Marsh McLennan.

Kimberly Ong

Origination and Client Engagement

Howden Climate Risk and Resilience

Kim is responsible for bringing the CRR offering to clients and the rest of Howden. She was previously part of the Business Development Team in WTW's Climate and Resilience Hub and prior to that spent over 13 years working in the investment management industry. She was the International COO for the multi-asset investments group at J.P Morgan Asset Management where her responsibilities included overseeing and driving the team's sustainability agenda.

Meet the Team

Vipul Shetty

Director of Energy Transition

Howden Climate Risk and Resilience

Based in Singapore, Vipul has over a decade of specialised expertise in the field of natural resources , encompassing energy, power and renewables. Prior to joining Howden, Vipul worked for the Singapore Economic development Board and Marsh.

Mike Baker

Chief Client Officer, ASIA

Howden Singapore

Mike is dedicated to ensuring that client needs are integral to strategic decisions, leveraging the best capabilities and offerings from Howden and partners to navigate the evolving risk landscape.

He has nearly 40 years experience working for global insurers and Brokers in the UK, Australia and Singapore.

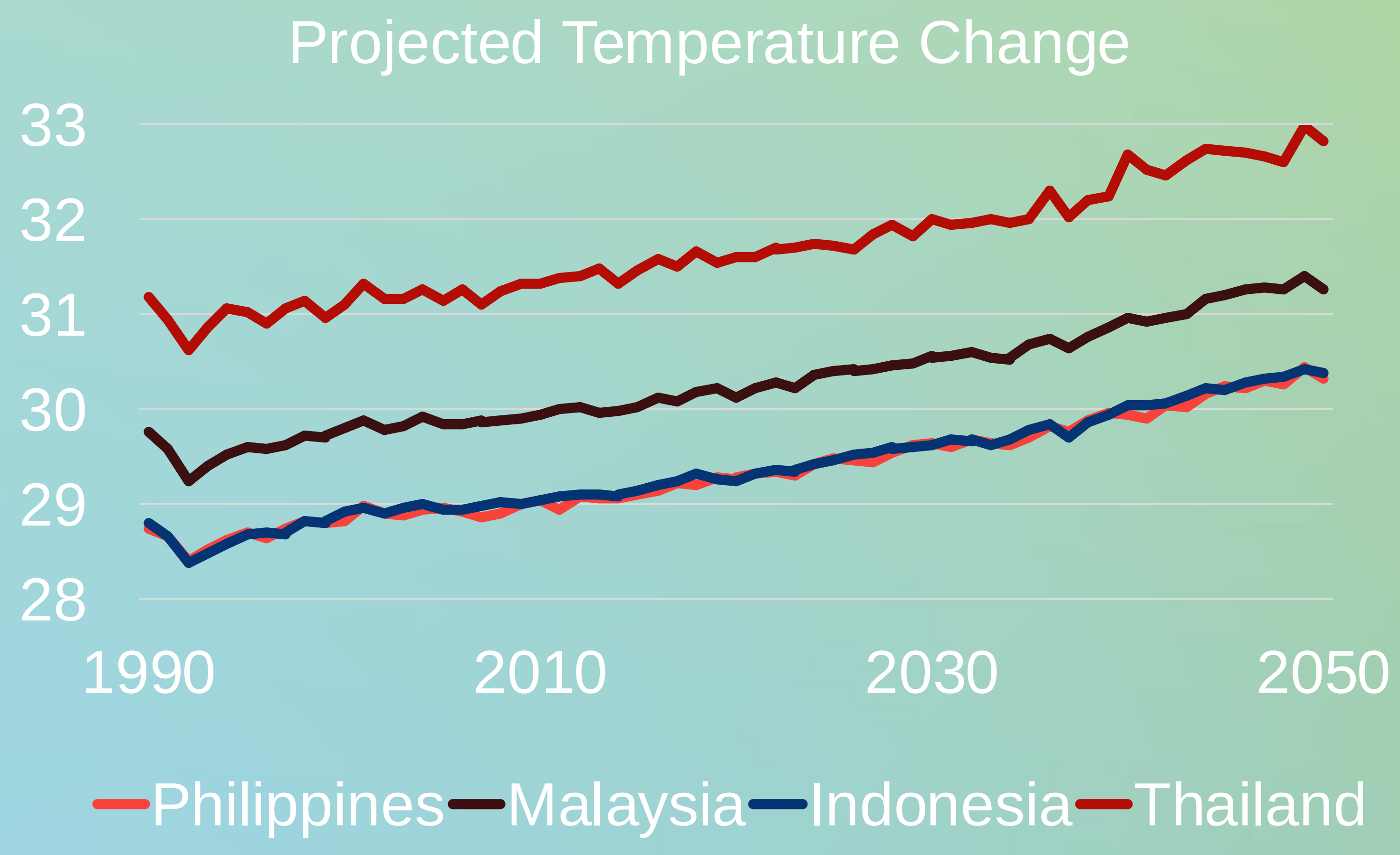
Country Risk Profiles

Extreme Heat

- Increases in heat stress will likely affect southern latitudes the most.
- Temperature extremes may be much higher than the country averages and may impact regions within countries differently.

→ Changes in mortality rates during hotter season

→ Increased frequency of disruption to key services



Country Risk Profiles

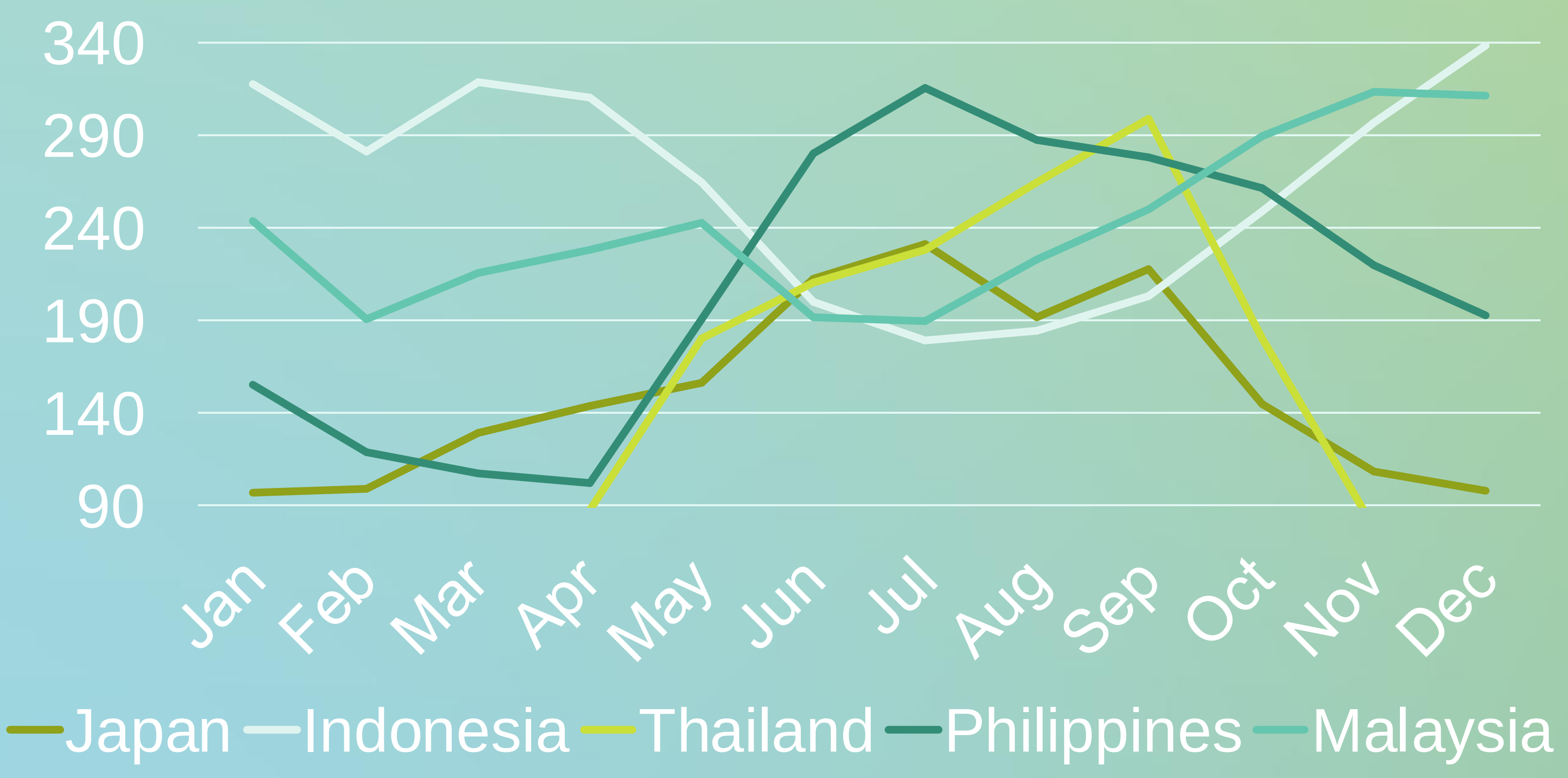
Precipitation

- High confidence of an increase in mean and extreme levels of precipitation across the region
- Higher variability between wet and dry seasons

→ Increased risk of surface water flooding

→ Increased risk of water stress, damaging

Monthly Precipitation (mm, 2050, 4°C warming



Country Risk Profiles

Typhoon

- Changes in typhoons have already been observed and attributed in part to changes in the climate
- Maximum wind speeds will increase, meaning more typhoons will reach higher categories
- Typhoons will also move northwards, increasing risks to southern Japan

→ Increased NatCat losses stretching beyond usual regions

+15% *Increase in typhoon intensity since the 1970's*

Intensification of landfalling typhoons over the northwest Pacific since the late 1970s | Nature Geoscience

Country Risk Profiles

Storm Surge

- An increase in the intensity of tropical cyclone activity will likely lead to an increase in the severity of storm surges
- Rising sea levels will exacerbate the impacts of storm surges Increased losses to coastal property and infrastructure

→ Potential limitations to capacity available to exposed assets

Proportion of land area flooded by 1-in-10-year flood (2030, 4°C warming)

Bangkok	96%
Hong Kong	2%
Tokyo	4%
Jakarta	17%
Manila	87%

966e1865-gpea-asian-cites-sea-level-rise-report-200621-f-3.pdf (greenpeace.org)

Examples of country commitments in Asia

Thailand

- **40% GHG reduction** from BAU by 2030
- **Carbon neutrality** by 2050, NZ by 2065
- Pledge for **100% electric new vehicle sale by 2035**
- Expectation to reach **120MtCO2e removals** with land use change and forestation by 2037

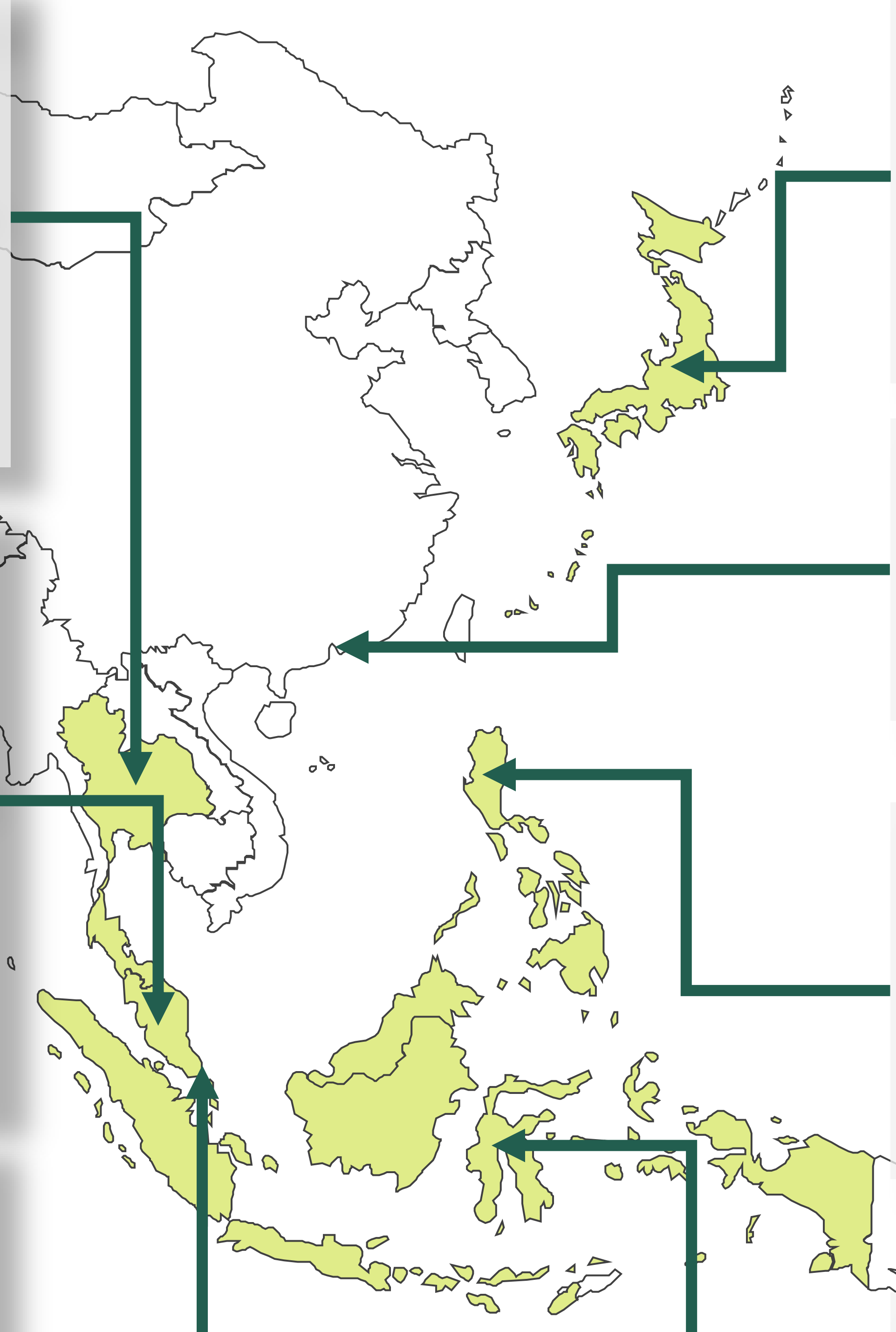
Malaysia

Cut carbon intensity against GDP by 45% by 2030
Stock exchange (Bursa) developed a VCM (BXC) to facilitate public-private sector engagement - providing access to **Malaysia Carbon credits**. This is the world's first Shariah compliant carbon exchange.
Malaysia developing **national adaptation plan**

Singapore

Carbon tax implemented in 2019
Singapore Green Plan:

- 1000Ha of **new green spaces** by 2030
- **50% electric busses** by 2050
- 80% **buildings greened** by 2030 – 80% new buildings to be "ultra green"
- **All vehicles run on cleaner energy** by 2040.
- Regional sustainability leader by 2030



Japan

- Reach **net zero by 2050**
- Proposed **carbon levy** on fossil fuel importers in 2028-29.
- **Emissions trading scheme** moves from voluntary to full-scale by around 2026-27.
- Striving to make renewables main source of energy.

Hong Kong

- **Carbon intensity target** of 65 to 70% by 2030 (2005 baseline) – approx. 26-36% absolute reduction.
- First trades completed in **voluntary carbon market**.

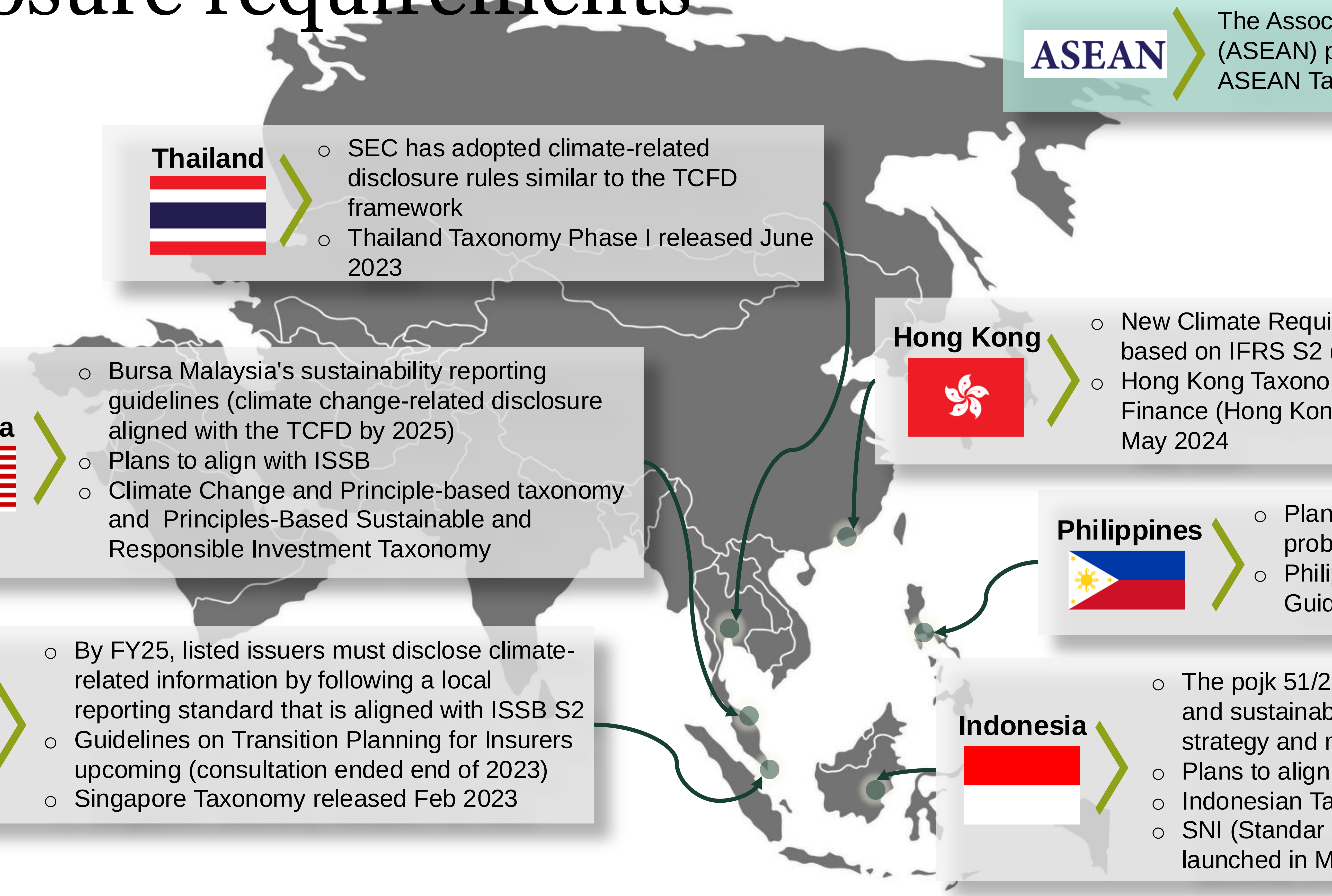
Philippines

- **Reduce emissions** by 75% by 2030
- **Renewable energy** 35% of the mix by 2030 and 50% by 2040.
- Feasibility study of implementation of **carbon pricing mechanisms** such as carbon tax

Indonesia

- **Reduce BAU emissions** by 29% by 2030.
- Mandatory **carbon trading for coal power plants** in force.
- **Zero emissions targets** by 2060

Snapshot of climate and sustainable-related disclosure requirements



Regional guidelines

ASEAN — The Association of Southeast Asian Nations (ASEAN) published in 2023 a version 2 of the ASEAN Taxonomy for Sustainable Finance

Thailand
- SEC has adopted climate-related disclosure rules similar to the TCFD framework
- Thailand Taxonomy Phase I released June 2023

Malaysia
- Bursa Malaysia's sustainability reporting guidelines (climate change-related disclosure aligned with the TCFD by 2025)
- Plans to align with ISSB
- Climate Change and Principle-based taxonomy and Principles-Based Sustainable and Responsible Investment Taxonomy

Hong Kong
- New Climate Requirements are developed based on IFRS S2 (FY 2025)
- Hong Kong Taxonomy for Sustainable Finance (Hong Kong Taxonomy) published May 2024

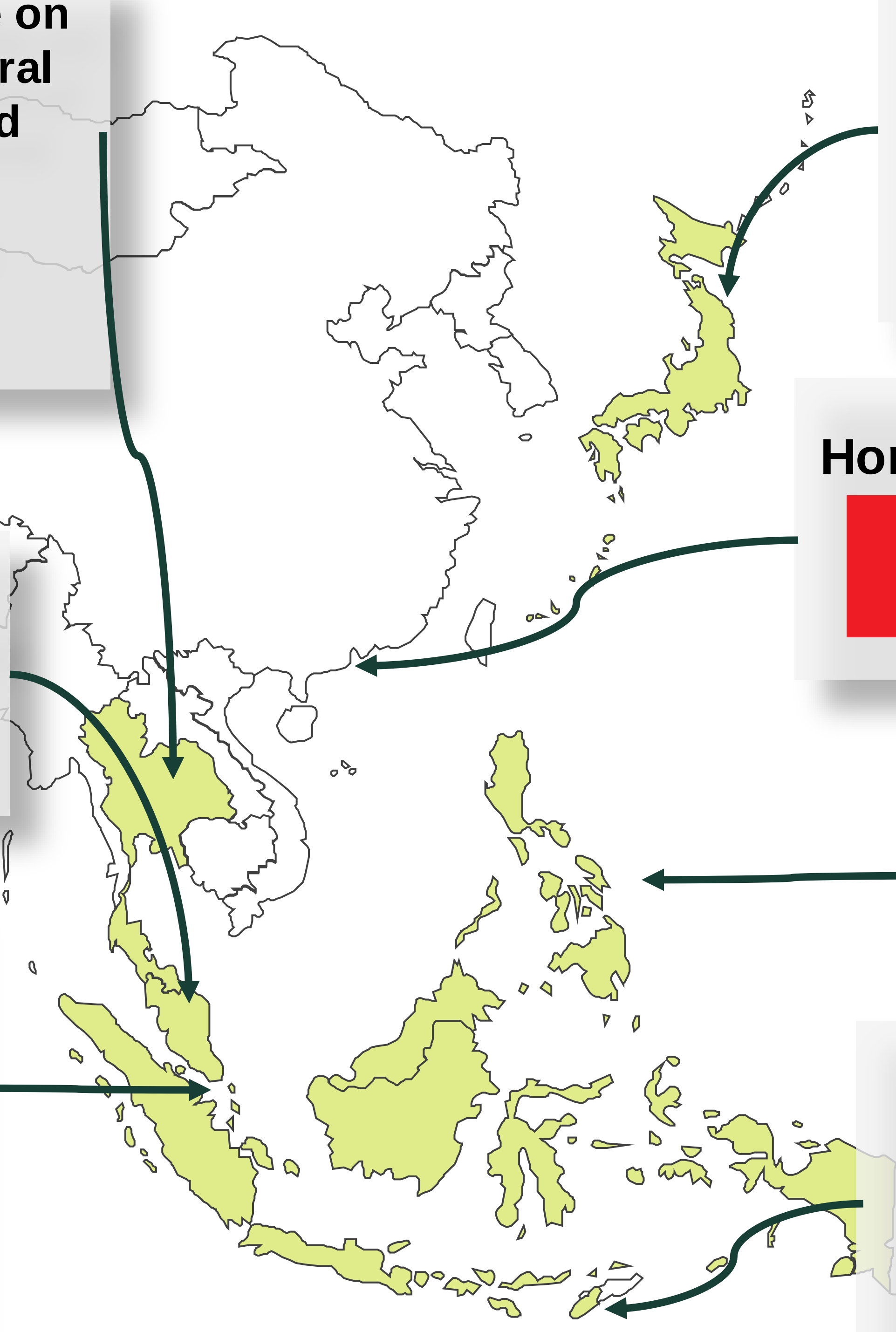
Philippines
- Plan to align with ISSB S1 and S2, probably to be effective January 2025
- Philippine Sustainable Finance Taxonomy Guidelines (SFTG) issued Feb 2024

Singapore
- By FY25, listed issuers must disclose climate-related information by following a local reporting standard that is aligned with ISSB S2
- Guidelines on Transition Planning for Insurers upcoming (consultation ended end of 2023)
- Singapore Taxonomy released Feb 2023

Indonesia
- The pojk 51/2017 requires a sustainability plan and sustainability report with governance, strategy and metrics (low level of details)
- Plans to align with ISSB
- Indonesian Taxonomy for Sustainable Finance
- SNI (Standar Nasional Indonesia) eco-label launched in March 2023

Vecteezy.com for the image of the map

Climate litigation landscape in Asia



Thailand

- **Residents of Omkoi v. Expert Committee on EIA consideration and the Office of Natural Resources and Environmental Policy and Planning**
- Approval of the Omkoi coal mining project revoked on the basis of national and international law obligations.

Malaysia

- No case recorded
- Only small number of environmental cases ever been decided in Malaysia

Singapore

- No case recorded.
- However, there is likely to be increased scrutiny by regulators in Singapore of the compliance of corporations with environmental law and standards and increased commercial disputes related to climate change
- First case of greenwashing in Singapore

Japan

- **Sendai Citizens V Sendai Power Stations**
- **Market Forces v SMBC, MUFG and Mizuho**
- **Citizens' Committee on the Kobe- Coal Power Plant V Japan**

Hong Kong

- No cases recorded
- Contingency could be related to the compliance of disclosure regulations

Philippines

- **Segovia et al. V Climate Change Commission**
- **In re Greenpeace Southeast Asia and Others.**

Indonesia

- **Indonesian Youth and others V. Indonesia**
- **Yayasan Wahana Lingkungan Hidup Indonesia v. Governor of Bali and others**
- **Greenpeace Indonesia and others V Bali Provincial Governor**
- **Several cases brought by the Minister of Environment against palm plantations**

Disclosure Support

Organisations may find it difficult **to report under climate-related financial disclosure regulations (TCFD, ISSB, CSRD, SEC, TNFD etc.)** due to the volume and complexity of the regulations, or because they have never done so before, have a low maturity risk management function, and need to improve their internal processes and disclosure.

What we can do:

- Horizon scanning
- Readiness assessment
- Peer analysis
- Gap analysis
- Roadmap creation
- Theme specific analysis

Benefits:

- Helps organisation for planning, efficiency and budget preparation
- Gives competitive advantage by identifying opportunities
- Improves internal risk processes

Climate and Nature Risk and Opportunity Assessments

Organisations may have **limited visibility of their climate-related risks and opportunities**, which prevents them from planning, preparing, adapting and mitigating as necessary. Not only do they need to identify and assess risks and opportunities, but they also need to understand how such exercises are conducted so that they can replicate them and integrate climate-related risk assessment into their ERM process.

What we can do:

- Climate and nature risk and opportunities identification and materiality assessment (present day & future risks)
- Quantification of financial impacts of risks and opportunities
- Roadmap creation
- Theme specific analysis
- Educational workshops
- Scenario analysis

Benefits:

- Enhance understanding of how climate risks translate into business impacts
- Improve decision-making and risk management
- Improve resilience
- Improve stakeholder confidence
- Helps organisation for planning, efficiency and budget preparation
- Gives competitive advantage by identifying opportunities

Decarbonisation Support

Organisations may be under **pressure from investors, clients and employees, to set and disclose credible decarbonisation targets and their plans** to achieve these. They may be unable to proceed because they struggle to understand what steps to take and how to incorporate the need to decarbonise and become resilient in the face of quickly evolving technological landscape, changing regulation, customer/investor expectations and future climate disruptions/events.

What we can do:

- Emissions profile
- Support with setting of relevant and credible decarbonization objectives
- SBTi validation support
- Technology readiness advice
- Investment plans support and de-risking options
- Offsetting strategy

Benefits:

- Helps set strategy for a low carbon world
- Helps organisation for planning, efficiency and budget preparation
- Confidence for investors and purchaser
- Improve reputation
- Improve resilience

Physical Climate Risk – Single Asset Deep Dives

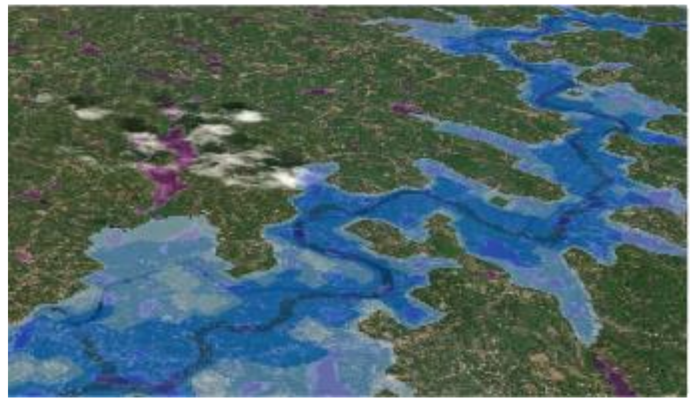
For single high-value exposed assets (e.g. a major industrial site or complex commercial facility) clients often require a deeper dive assessment to better understand these risks and take appropriate action. This may require the need for on-site assessments in order to 1) develop a more accurate estimate of the Probable Maximum Loss (PML due to flood, wind quake) to support critical risk transfer decisions and 2) seek solutions to reduce future risks at the site (climate adaptation).

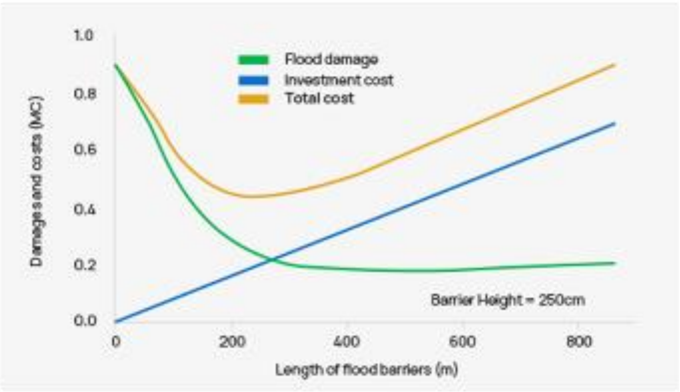
What we can do:

- Bring specialist climate risk engineering expertise to help solve complex issues
- Develop climate adaptation solutions to bolster future operational resilience

Benefits:

- Understand the range of risks and opportunities
- Improve decision-making and risk management
- Improve resilience
- Improve stakeholder confidence





CRR Risk Transfer Solutions Themes

Financing low-carbon infrastructure

Insurance solutions to decrease financing risks, including:

+ Guaranteeing technology performance e.g. hydrogen production and solar projects.
+ Backstopping warranties.
+ Insuring leakage in Carbon Capture and Storage.
+ Energy efficiency.

Securing the carbon markets

Breaking down carbon projects to identify insurable risks, including:

+ Protecting against government intervention that may delay carbon credits.
+ Covering developer fraud or negligence that results in the invalidation of carbon credits.
+ Carbon Credit warranties e.g. legal title or double counting.
+ Asset Protection from catastrophes.

Parametrics

Data-driven and index-based solutions that use insurance data, including:

+ Damage and business interruption from weather-related events and natural catastrophes.
+ Index-based solutions to smooth revenue volatility.

Food systems & biodiversity

Increasing focus on biodiversity and food systems is placing an increased value on associated projects. In turn, these projects will require insurance to help mobilise the necessary financing.

Carbon Markets

Howden look at risks across the carbon lifecycle. From technology performance, to project financing, to under delivery. A suite of products have been developed as a toolkit for investors to isolate and transfer unacceptable risks.

Carbon credit lifecycle

Design → Implementation → Monitoring → Verification → Issuance → Trading

Example products

Weather Parametric

Protection from asset damage due to natural catastrophes such as drought, flooding, wind, hail and fire.

Political

Protection from government intervention that may result in delays in carbon credits or lack of expected revenues from taxes.

Delivery

Protection from project not performing as anticipated and under-delivering expected volumes of credits.

Fraud & Negligence

Protection from developer fraud or negligence that results in invalidation of issued credits.

Warranties & Indemnities

Protection from specific warranties given by a seller such as legal tittle or double counting.

Parametric Insurance

- Parametric (or index-based) insurance is an objective form of protection that pays out based on a pre-defined index, as opposed to traditional insurance that pays out on a measured loss.
- This index is structured with the aim of matching financial losses with the magnitude of an event, typically used for weather or natural catastrophes, but can also be used in more novel cases.
- Pay-out is based on an index or parameter that is objective, reliable, and available.
- The Scope of cover:
  - Material damage: direct damage as a result of a weather or natural catastrophes
  - Business interruption: Direct (material damage), non-damage (business interruption that affects business operation), contingent (business interruption to suppliers)

What are the key benefits?

- Different thresholds of the index can be associated with different pay-out levels, where the expected loss of the magnitude of an event is captured effectively.
- Highly liquid, with claims potentially paid out from 48 hours following an event.
- Customisable based on the spread of risk that needs to be covered, or around a budget.
- Typically associated with weather or natural catastrophes, but the concept can be applied more broadly to a range of situations and business models.

Guaranteeing the output performance of a technology

- Technology performance insurance is an innovative solution designed to remove technology risks, protect investment and provide warranty wraps.

- The policy stands behinds the efficacy of a technology or system, assuming warranty and/or debt repayment obligations in the event of an underperformance event.

- This policy is typically structured in two ways:
  - **Direct Debt protection:** assumes the debt repayment obligations once efficacy falls below a pre-agreed attachment level.
  - **Warranty Backstop:** stands behind the warranties provided by OEM/ technology manufacturers and assumes such obligation in the event of claim(s) against the warranty.

What are the key benefits?

- Transfers technology risk to the insurance market, incentivising debt investment and simultaneously protecting project sponsors

- Removes uncertainty around survivability and scaling risks

- Improves covenant strength and reduces counterparty credit risk, as warranty is backed by an insurance (A rated) balance sheet

- Plugs gaps between component OEM warranties where the warranty is wrapping a system

- Enables an extension to manufactures’ warranties, often to match debt tenures

Counterparty credit enhancement for offtaker default risk

- Traditionally, counterparty credit exposures would have been covered by the established credit insurance market. However, whilst an extremely effective tool, credit insurance is often unable to consider sub-investment grade obligors.

- The unique nature of the energy markets, coupled with insurance expertise, have resulted in the development of a dedicated insurance product designed to protect against offtaker default risk

- Acting as a form of credit enhancement, this policy de-risks and incentivises investment along with potentially reducing the relative costs of capital

What are the key benefits?

- Increases bankability for projects that were out of scope due to minimum rating requirements, which in turn enable increased deal flow

- Secures and potentially increases debt capacity by removing credit risk from the underlying project and raising counterparty credit ratings to that of the insurer (AA rating)

- Reduces the cost of capital if the improved project credit risk results in a reduction of interest payments under existing (and new) credit facilities. The policy has historically been used to improve Debt Service Coverage Ratios (DSCR) and consequently project Investment Rate of Return (IRR)

Leakage protection for CCUS

- According to the Centre for Climate and Energy Solutions, CCS has the potential to achieve 14% of required global greenhouse gas emission reductions by 2050. In order to limit global warming to an ‘acceptable’ level, global CCS capacity must scale rapidly to c.5,600 Mt of CO_2 per year.
- Leakage, broadly defined as the escape of CO_2 from the CCS operations, is a risk often cited as preventing investment and debt into the technology. This risk is not typically covered by traditional commercial insurances.
- The cover helps project developers manage leakage risk through risk transfer into the insurance market, providing investors with a higher degree of confidence and enhance bankability for lenders, allowing this critical technology to be deployed at a faster speed and lower cost of capital.

What are the key benefits?

- Financial protection against leakage risks, not typically insured via traditional construction and operation insurance policies
- Demonstrates to governments and other interested parties that leakage risk is insured
- Enhances bankability of CCS projects to help attract creditors and optimise the cost of capital
- Protects expected project revenues from unexpected CO_2 losses
- Eases negotiations around supply and offtake agreements
- Provides long-term financial security against leakage risks post-closure

Debunking some common myths (1/3)

Myths	Facts
Both climate and CRR are too technical – I won't understand the science or what CRR are talking about.	Yes, climate is a complicated subject but the role of the CRR is to translate climate science into clear actionable insight.
There is no money to be made in climate.	Between now and 2030, globally $19 trillion of investment is forecast to be needed to finance the climate transition so the demand for insurance will only increase – it's a race between us and our competitors to secure a share of this.
My clients aren't interested in climate / climate does not matter to my client	Our experience shows us that climate impacts everyone. Your client may not be aware of how climate will impact them – we can help you start conversations with your clients and show them the impacts.
Climate advisory is expensive	Not necessarily. The cost of climate advisory varies, depending on the level and scale of advice and analysis the client needs. It's never a question of price but rather it's about the value we can deliver.

Debunking some common myths (2/3)

Myths	Facts
If I involve the Climate Risk and Resilience Team, I will need to share my revenues.	The climate team is incentivised to help you use climate to grow your book of business. Working with the climate advisory team is no different to working with any other group service (e.g. captives, risk analytics). Decisions around renumeration are always discussed with the Broking teams.
The CRR is London-focussed and therefore will not understand my clients.	True, the majority of the CRR is currently based in London but we have team members across the globe. We have a diversified skill set that enables us to serve all of our clients no matter who they are or where they are. Depending on demand we will expand regionally as required.
CRR cannot help me sell more insurance	Howden invested in and set up the CRR specifically to sell more insurance and grow our overall business – at the end of the day, climate risk is business risk.
Climate is only about risks, there are no opportunities	It is true that there are many different risks associated with climate change, but there are opportunities for businesses such as being early adopters of new technologies.

Debunking some common myths (3/3)

Myths	Facts
It is difficult/impossible to start a conversation about climate.	Climate impacts each and every one of your clients. The CRR can help you identify which risks are relevant to your clients. We can also guide you in starting a conversation with your clients and supporting them on their climate journey.
CRR is not a resource I can use – it is only for large clients/corporates.	CRR has been set up to help all of our clients, irrespective of size, business line and geography. Obviously, we need to apply some materiality criteria, but we are incentivised to help you win.
I don't know how to contact the CRR	Speak to your local champions.