



Task Force on Climate-related Financial Disclosures

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Forward

KAsset and Our Approach to Climate Change

Kasikorn Asset Management Co., Ltd. (“KAsset”) is one of the leading domestic asset managers in Thailand. Our asset under management as of December 30, 2022 was USD39.12bn (excluding trustee business). As for investment management business, our products and services cover mutual fund, private fund and provident fund area. KAsset also offers a role of a property fund managers and REITs trustee. The Company is a wholly owned subsidiary of Kasikornbank Plc. (“KBank”), one of the largest commercial banks in Thailand. Our investment approach is to invest in companies which generate both financial and sustainable economic value for investors. We strive to integrate Environmental, Social and Governance (“ESG”) and Climate-related issues into our investment analysis, decision-making process and portfolio construction across all asset classes.

KAsset fully recognizes the impact of climate change and the urgent need to accelerate the sustainable transition towards global net-zero emissions as environmental impact could have adverse consequence on investment performance. We strive to evaluate climate risks and opportunities and try to manage risks that consider material to our investments and operational business. Climate change is one of our engagement priority topics with investee companies.

Since we deem transparency and disclosure on climate-related risks is important in order for quantify the potential impact of climate change to financial performance of companies. KAsset has signed up as official supporter of Task Force on Climate-related Financial Disclosures (TCFD) in August 2022 and pursued alignment of our practices in accordance with the recommended framework. This is our first TCFD report and we will continue to refine and enhance disclosure on our activities and progress on climate-related risk management. We are determined to make progress and deliver on [our net zero commitment for scope 1 and 2 for our own operation by 2030](#). As for our overall AUM emissions, we have [set net zero target by 2065 which is in line with Thailand’s aspiration or will accelerate the journey when possible](#).

Scope of Assessment and Limitations in This Report

This is the first year we conducted our climate-related risks and opportunities assessment and formulate relevant strategy and initiatives. As being the asset management company, in addition to our own operation, we focused our assessment on investments portfolios that we managed on behalf of our clients with a total value of USD39.12bn as of year end 2022. This year we have focused on climate-related issues on an aggregated investment portfolio and by asset class. Our climate-related risk and opportunities assessment covers both KAsset direct and indirect investments (third-party managed funds) in which we performed a look through based upon data availability. Although our assessment and disclosures are attempted to best possible reflect overall portfolios characteristics with regards to climate-related issues, given the limited availability of data disclosure at the investee companies and continued evolving on measurement methodologies, our assessment and data sources are based on best effort basis. Our assessment results may be subjected to changes according to evolvement of assessment standard or more information from official sources are updated or available.

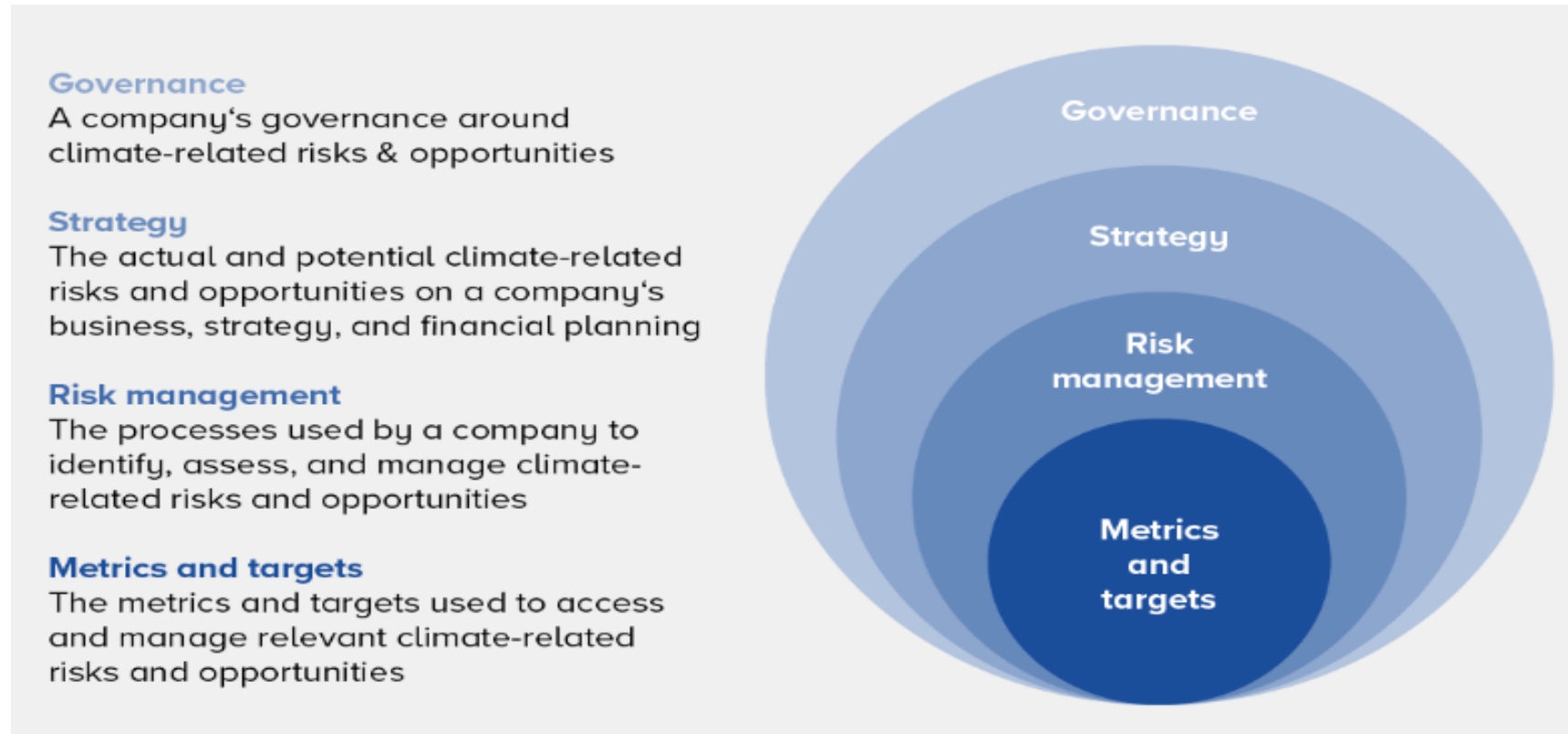
We are in the process of developing climate related tools and database to assess our investments. This will supplement our de-carbonization strategy in the medium to long term to reduce the climate related risks in our portfolios. However, given currently the climate-related information disclosure of investee companies are considered limited as well as the measurement methodology is still evolving, the quantification process on complex financial impact is expected to take sometime to develop. At this stage, our approach will focus more on understanding the materiality of metrics on climate-related issues of investee companies, monitoring and engaging them and consider these as a major part of our risk management strategy.

The assessment is on inherent risk, which does not yet integrate our investees mitigation and adaptation actions. Going forward, we will try to collect more information on these actions in order to understand our residual risk better. Our physical risk analysis is not yet looking at investee companies individually but according to domiciled geographical base, in the future we will start engaging with investees on their physical risk. Our transition risk methodology currently looks at the selected investees that are believed to represent their respective sectors, going forward we will increase the coverage of our assessment to cover more investees. Sovereign debt transition risk has not yet been fully evaluated as the industry models and methodologies are still in infancy and underdeveloped. We will continue to review new methodologies and integrate transition risk into sovereign debt investment decisions when more data and models are available.

Our assessment and carbon emission data are calculated according to PCAF* methodology and assisted by the external environmental consultant. However, this year we have not yet used an external verifier.

*The partnership for Carbon Accounting Financials (PCAF)

Our TCFD report is structured based on the Four Pillars of TCFD recommendations as outlined below

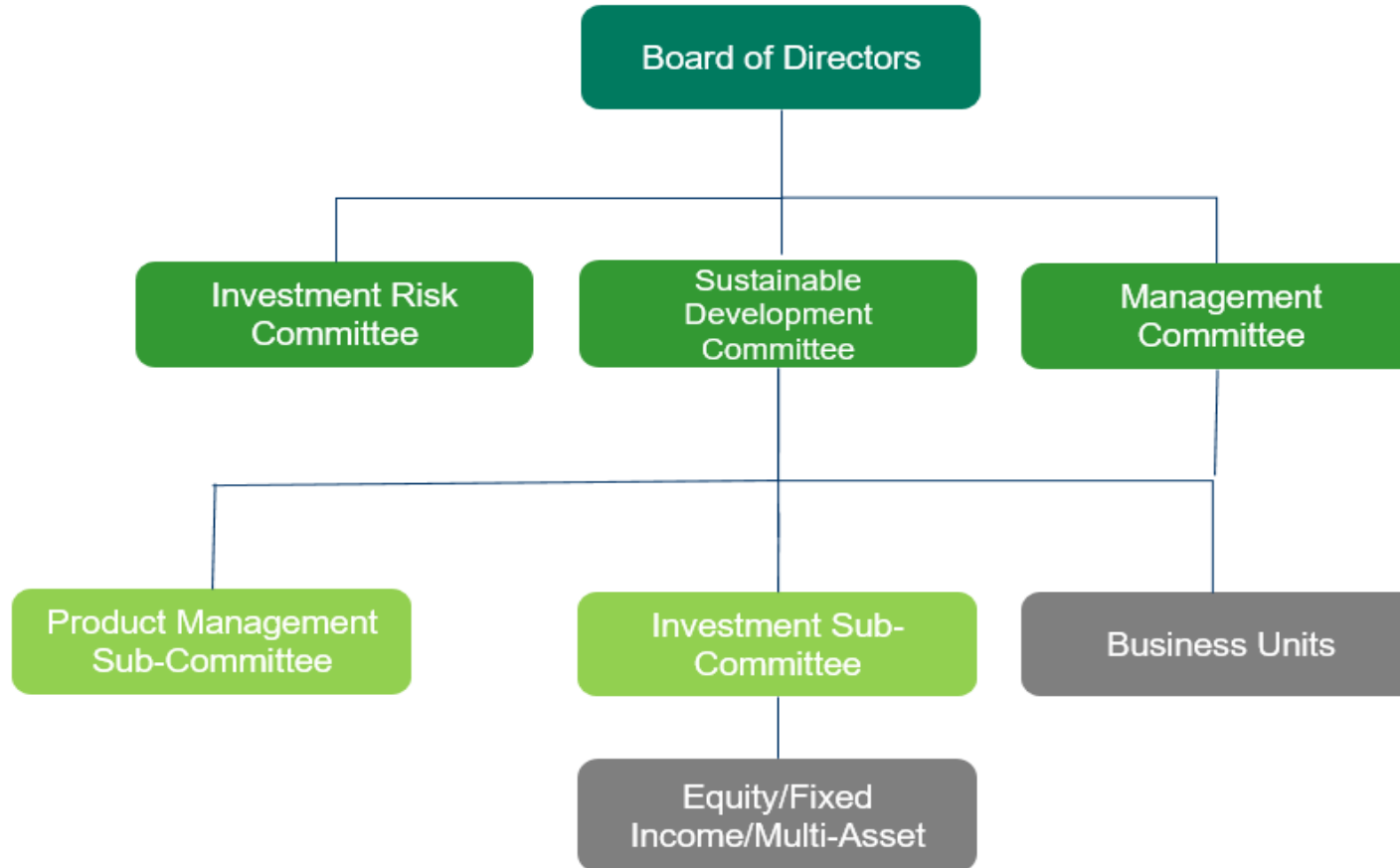




Governance

Governance

Our Climate-Related Governance Structure are Illustrated in the Below Diagram



Governance

a. Describe the board's oversight of climate-related risks and opportunities

The Board of Directors has oversight over ESG and climate-related issues which are embedded into our governance structure, strategic planning and business model. The Board is fully accountable for the Company's sustainability commitment. The Board members consist of leaders with balanced backgrounds including climate risk management area which we believe to complement in delivering our climate ambition and strategy. Roles and responsibilities related to climate change of the Board of Directors are summarized below.

Function	Roles and Responsibilities
Board of Directors	<ul style="list-style-type: none">• Set long-term business goals and strategy for the Company based on sustainable development by taking into consideration of environmental, social, governance (ESG) and climate change dimensions both risks and opportunities in investment management as well as the Company own operation in accordance with the international standards• Review and approve policies related to responsible investment which including ESG and climate-related issues• Oversee KAsset governance structure and business processes to align with responsible investment practices and ensure effective risk management• Delegate oversight of ESG and climate-related issues to the Sustainable Development Committee• Hold accountable to the Company's sustainability commitments

Governance

b. Management’s role in assessing and managing climate-related risks and opportunities

Senior executive managements are appointed in all committees related to ESG and climate-related risk governance. The Company has established a Sustainable Development Committee (“SDC”) which is directly responsible to drive ESG and climate-related issues for both our business operation and investment management. The SDC comprises of 2 Board members, Chief Executive Officer, Managing Director and Chief Investment Officer who is directly assigned to oversee sustainability investment area.

The Sustainable Development Committee (“SDC”)’s roles and responsibilities are summarized below:-

Function	Roles and Responsibilities
Sustainable Development Committee	<ul style="list-style-type: none">• Oversee direction and management of ESG and climate-related issues for both business operation and investment management• Review policies related to responsible investment• Review and approve strategic strategy, frameworks, and metrics related to responsible investment which including ESG and climate-related issues• Oversee the investment process to ensure alignment with responsible investment within international standards. The SDC delegates the authority and responsibilities to the Investment Sub-committee to 1) approve and integrate ESG and climate-related issues into the investment process across all asset classes 2) monitor process related to ESG engagements and stewardship activities with investee companies in KAsset investment universe• Delegate the authority and responsibilities to Product Management Sub-committee to oversee integration of sustainability into overall product development process, progress monitoring as well as ESG/SRI labelled products• Review and approve public disclosures related to ESG and climate-related issues, including UN PRI Transparency Reports, TCFD Report and Investment Governance Report, etc.• Review, support, and promote ESG and climate-related initiatives within the organization including employee trainings related to ESG and responsible investment• Annually review alignment of policy and advocacy initiatives with UN PRI and TCFD commitments• Report and update progress and outcome of ESG and climate-related issues and initiatives to the Board of Directors at least 2 times per year

Governance

b. Management’s role in assessing and managing climate-related risks and opportunities (Cont.)

Investment Sub-Committee’ s roles and responsibilities related to ESG and climate related issues are summarized as per below:-

Team/Function	Roles and Responsibilities
Investment Sub-Committee	<ul style="list-style-type: none">• Review and apply responsible investment approach by integrating ESG and climate change dimensions into the investment process and decision making for respective asset classes including investee securities evaluation, financial modeling and portfolio construction• Review ESG and climate assessment of KAsset investment universe at least on an annual basis or when necessary in a timely manner• Review and approve list of investee companies to be included in the “Watch List”, and potentially divested from KAsset’s investment universe due to ESG-related concerns• Oversee the process in which proxy voting is appropriately conducted in line with international ESG engagement and Stewardship expectations• Coordinate with Product Management Sub-committee, and Equity, Multi-Asset, and Fixed Income teams to implement climate strategies, targets, and action plans for specific asset classes to achieve climate-related targets• Report and update progress and outcome of ESG and Climate-related issues and initiatives to the Sustainable Development Committee at least 2 times per year

Governance

b. Management's role in assessing and managing climate-related risks and opportunities (Cont.)

Roles and responsibilities of Investment Risk Committee, Product Management Sub-Committee and Risk Management Department related to climate-related risks and opportunities are as per below:-

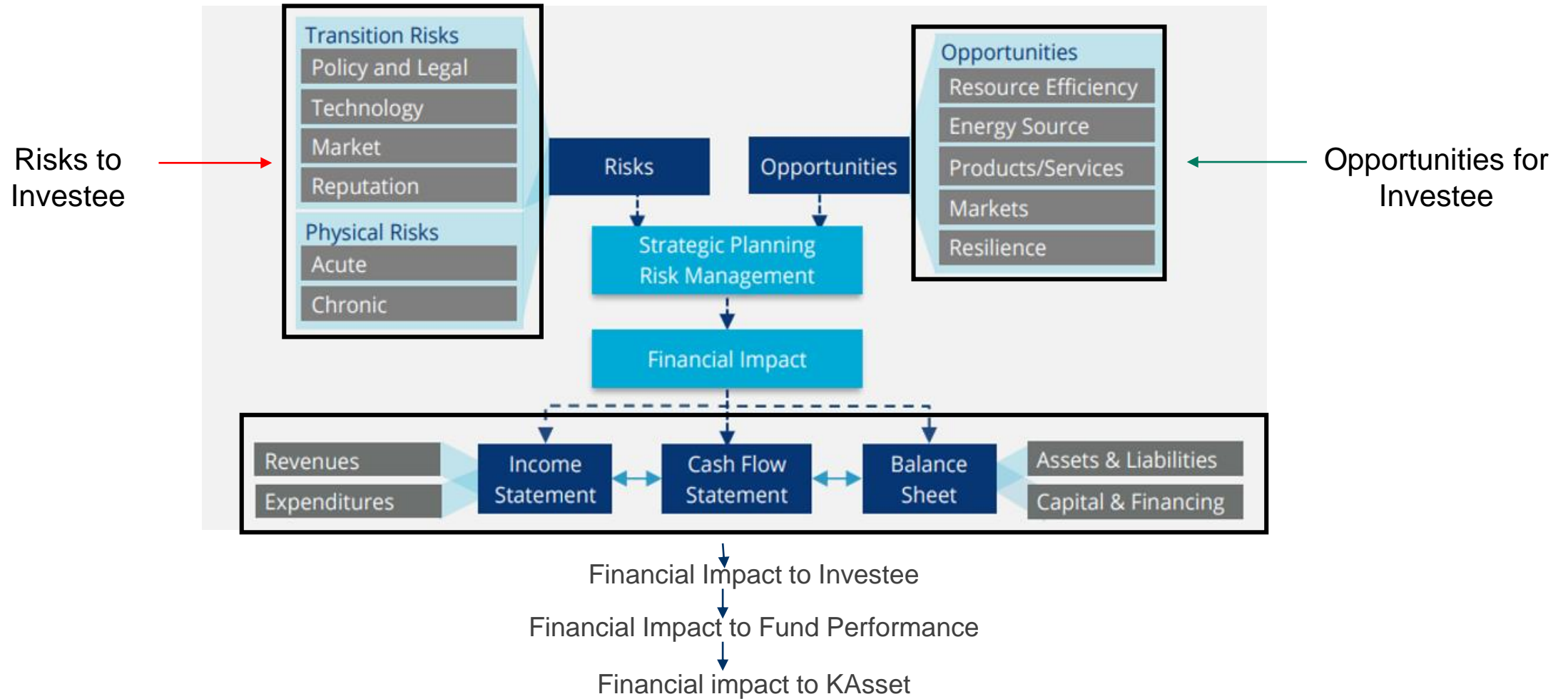
Function	Roles and Responsibilities
Investment Risk Committee	<ul style="list-style-type: none">• Review ESG and climate change risk management policy• Identify, monitor and assess current and potential ESG and climate-related risks that could have a material impact on KAsset's overall performance both at Company and portfolio levels.• Approve securities to be included in or exclude from KAsset investable universe by taking into consideration of ESG and climate-related issues• Oversee risk management process with regards to ESG and climate change aspects and report to the Board of Directors at least 1 time per year
Product Management Sub-Committee	<ul style="list-style-type: none">• Review and approve to integrate responsible investment guidelines which including ESG and climate-related issues in the product management process covering designing, developing, approving, and monitoring of investment products, including ESG/SRI-labelled products• Report the update and process regarding the implementation to Sustainable Development Committee at least 2 times per year
Risk Management Department	<ul style="list-style-type: none">• Assess, review and propose ESG and climate change risk management policy covering identifying relevant risks, scope of assessment, and risk frameworks for approval from Investment Risk Committee and the Board of Directors respectively• Assess, review and propose KAsset's relevant risk appetite to Investment Risk Committee at least annually or when necessary• Assess, monitor, and report risks in line with the identified risks frameworks as well as legal and regulatory obligations• Report and update the risk assessment of ESG and Climate-related issues to Investment Risk Committee at least 2 times per year



Strategy

Strategy

Climate-Related Risks, Opportunities and Financial Impact Considerations on Business and Investee Companies



Strategy

Summary of climate-related risks and opportunities KAsset has identified over the short, medium, and long term

Time Horizon	Risks	Opportunities
Short Term (< 5 yrs)	<ul style="list-style-type: none"> Focus more on transition risk than physical risk as companies need to respond to climate change through the mitigations and adaptations due to the following factors:- <ul style="list-style-type: none"> - Increased regulatory requirement - Reputation - Technology changes - Shift in market demand 	<ul style="list-style-type: none"> During the transition period, companies that can offer low-carbon emission alternative products (e.g. energy resources, transports) may benefit from being the early mover In the early stage of transition, investee companies which can effectively respond to climate change are likely to benefit from governments incentives or subsidies to support the transition path
Medium Term (5-10 yrs)	<ul style="list-style-type: none"> Transition risk is still in focus for medium term time horizon similar to short-term time horizon. However, we expect the development of transition risk identified in short term time horizon to accelerate in the medium term Physical risk is expected to increase its severity and occurrence and will be closely monitored and effectively incorporated in our investment risk assessment 	<ul style="list-style-type: none"> Technology advancement will be key for potential rapid shifts for products and consumer preferences Tighter laws and regulations enforcement will benefit companies who have been prepared and ready for transition
Long Term (10-30 yrs)	<ul style="list-style-type: none"> The level of risks depend on degree of success on investee companies' transition on net zero path and transition strategies of investee companies Physical risk could turn more severe and increase in terms of frequency leading to business disruptions. 	<ul style="list-style-type: none"> Opportunities from massive shift of consumer preferences and market demand towards low carbon products

Strategy

A. The climate-related risks and opportunities KAsset has identified over the short, medium, and long term

- As being in the asset management industry, climate related risks have both impact on our business and investment portfolios under our management.
- For the **short to medium term** (<10 years), we would give more focus on transition risks and opportunities as the growing need for investee companies to mitigate climate change impact and increase ability to adapt which are expected to incur additional cost as well as opportunities. As for investment products, there is a risk of shifting in market demand for alternative products and increasing regulatory oversight such as policy implementation and practices regarding climate issues.
- Over the **long term** (10-30 years), we reckon physical risk will be material and could be both acute and chronic if investee companies and countries fail to achieve the net zero target path as planned. The opportunities are those who can provide the alternative low-carbon emission products or energy source with efficiency as well as adapted businesses and services to accommodate shifts in market and clients demand.
- **Transition risks:** We have assessed climate related transition risks to investee companies that we invest mainly through listed equity and corporate bonds, which comprise around 47% of our total AUM by value. We quantified the emissions on our total AUM and each of the 11 sectors according to GICS and reviewed the TCFD disclosures of representative investee companies for each sector to review each representative investee's view's on their own climate-related risks. From this analysis, though we have found that the majority of representative investee companies in each sector viewed that risks are more on medium to long term, we should not underestimate the potential outcomes and consequences that could severely affect economies when the climate boundary passes the tipping point which the standard economic or financial models are inadequate to incorporate.
- We use carbon pricing as a way to quantify risks, which is expected to be implementing in Thailand and other investee countries in the near term as a measure to assess transition risk impact. Although, we see carbon pricing will likely start low in Thailand, similar to Indonesia (pilot price at USD 2 per tCO₂e), and at a higher rate in other countries that have adopted carbon pricing for some time (such as the EU ETS where the price fluctuated between around 65 and 100 EUR per tCO₂e), the carbon pricing might be increasing rapidly than expected if regulator(s) is stricter (see our analysis on page 22)

Strategy

A. The climate-related risks and opportunities KAsset has identified over the short, medium, and long term (Cont.)

As for our **sovereign bonds investment** which accounts for 32% of our total AUM by value where mostly (98%) are Thai government, although transition risks may occur on a country level, currently there is only one main example of an international scheme that could affect countries regarding carbon price payments through the EU Carbon Border Adjustment Mechanism (CBAM) starting in full effect in 2027 (required purchase of CBAM certificate). However, there is currently no transparency on the amount of embedded carbon in products exported from each country, therefore we will await more comprehensive information before making an assessment on CBAM on countries, although the overall assessment would be an opportunity for countries with lower carbon profiles where export costs are lower under CBAM and a risk for countries with high carbon profiles where export costs increase under CBAM.

Certain countries GDP would be negatively impacted if they cannot produce the low carbon products demanded by other countries. Again, there is limited visibility on these potential market trends, as well as the % of GDP by that comprises of low carbon products, so we have not yet made an assessment of the risk to sovereign bonds. We will also seek to review methodologies on transition risk impacts to sovereign debt, however we view that at the moment these methodologies need time to mature before they are implemented.

- **Physical risk:** Physical risk has an impact to listed equities and corporate bonds, as well as sovereign bonds. We have focused our climate related risk assessment on Thailand and the investee companies located in Thailand, which accounts for 67% of total AUM (including listed equity, corporate bonds and sovereign bonds and excluding asset classes not covered under PCAF's GHG Standard). We used external climate database data and IPCC Representative Concentrative Pathway (RCP) AR5 which is RCP 2.6 and RCP 8.5 in 2030 and 2050 and Shared Socioeconomic Pathway (SSP) AR6 scenarios which is SSP1-2.6 (low emission – below 2°C by 2100) and SSP5-8.5 (high emission – reach 4.4°C by 2100) in 2030 and 2050 time-horizon to assess climate risks. From this, the projected risks in 3-5 years are seen to be limited as the impacts are likely to happen after 2030 onwards (see analysis on page 23-27)

Transition Risks & Opportunities Assessment to Our Corporate Bonds and Listed Equities

Portfolio Screening

11

Sectors

Screening-level transition climate risks and opportunities assessment for 11 out of 11 GICS sectors.

1

Countries

Selected investee locations based on direct investment by KAsset :

Thailand covering 77% of AUM value in total corporate bonds and listed equities



Climate Scenarios

2
Scenarios

2
Time Horizons

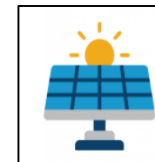
Medium-term (2030)
Long-term (2050)

Base case – IEA Stated Policies (STEPS)



A scenario that explores where the energy system might go, considering current stated policies, without additional policy implementation.





Paris Aligned Low Carbon – IEA Announced Pledges Scenario (APS)



A scenario which assumes that all climate commitments made by governments around the world will be met in full and on time. APS assumes global warming will reach 1.7°C by 2100

Identification of Relevant Transition Risks and Opportunities Drivers

In line with the Task Force for Climate Related Financial Disclosure (TCFD), transition risks and opportunities are categorized in 4 main categories:

	<p>Policy and Legal</p> <ul style="list-style-type: none">• Policymakers driving GHG emission-reducing goals, using tools such as carbon-pricing mechanisms, mandated shifts towards clean energy, and other mechanisms, thus raising capital and operational costs for exposed organisations or investees• Legal risks encompass increased climate-related litigation, often due to the failure of organisations/investees to mitigate impacts of climate change
	<p>Market</p> <ul style="list-style-type: none">• Reduced market demand for higher carbon products / commodities• Increased demand for energy-efficient, lower carbon products and services
	<p>Technology</p> <ul style="list-style-type: none">• The development and use of emerging low-carbon technologies e.g. renewable energy, battery storage, energy efficiency, and carbon capture and storage• The disruption caused by the displacement of old systems by new technology
	<p>Reputation</p> <ul style="list-style-type: none">• Growing expectations for low carbon, climate resilient action from stakeholders and shifts in consumer preferences• Implication for (social) licence to operate and access to (and cost of) capital

Transition Risk Assessment Methodology

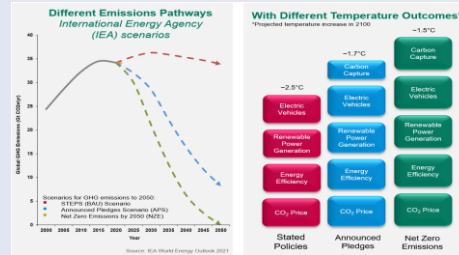


Rationale for Methodology

This process will help to:

- Identify **key 'hotspot' climate risk areas** for further in-depth assessment
- Prioritize** portfolios exposed to transition risks and opportunities
- To get **better understanding** how selected portfolio exposure to transition risk **in different climate-related scenarios**

1



Sector Coverage, Scenario and Time Horizon Selection

2



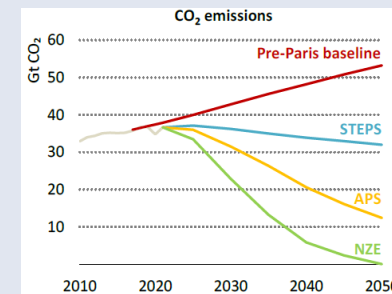
Identification of relevant transition risks and opportunities drivers

3

The table displays TCFD disclosure data for various sectors. It includes columns for Sector, Sub-sector, and various TCFD metrics (e.g., GHG emissions, water consumption, etc.). The data is presented in a grid format with colored cells indicating the presence or absence of data for each metric.

Assign Likelihood & Impact rating for each driver from investee TCFD disclosure

4



Quantify impact based on the 'Delta' or difference of the selected scenarios and risk driver

Transition Risk Identification by Representative Investee Companies* by Sector

In the 2030 timeframe, most business sectors viewed that overall transition risks are considered moderate to low where the common area of high risk is market risk. However, most business sectors reckoned that transition risks will be more pronounced from 2050 onwards where the high risk would have presence in all area though market risk are still considered the most critical.

These 4 Sectors represent over 90% of KAsset corporate bonds and listed equities AUM emissions

Sector	2030				2050			
	Policy and Legal	Technology	Market	Reputation	Policy and Legal	Technology	Market	Reputation
Utilities	Moderate	Low	Moderate	Moderate	High	Moderate	Very high	High
Materials	Moderate	Moderate	Moderate	Moderate	High	High	High	High
Energy	Moderate	Low	High	Low	High	Very high	High	Very high
Consumer Staples	Moderate	Moderate	Moderate	Low	Moderate	High	Moderate	Moderate
Industrials	Moderate	Low	High	Moderate	Moderate	High	High	High
Real Estate	Low	Low	Moderate	Very low	Low	Low	Very high	Moderate
Information Technology	Moderate	Moderate	High	Very low	High	High	Moderate	Very low
Financials	Moderate	High	High	Moderate	High	High	Very high	High
Health Care	Low	Low	Low	Moderate	Moderate	Moderate	Moderate	High
Consumer Discretionary	Moderate	Low	Moderate	Moderate	High	High	High	High
Communication Services	Low	Moderate	Moderate	Low	Moderate	High	High	Moderate

Very Low: Insignificant
Low: Climate strategy is a plus
Moderate: Require climate strategy to be resilient
High: Require business direction
Very High: Reformation

* Based on selected investee companies' TCFD and Sustainability Reports as sector representative (include corporate bonds and listed equities only)

Opportunities Identification by Representative Investee Companies* by Sector

In the 2030 timeframe, most business sectors viewed clearer opportunities in products & services area whereas in the 2050 timeframe, there are high likelihood for opportunities in products & services, energy source and resilience in order of ranking.

These 4 Sectors represent over 90% of KAsset corporate bonds and listed equities AUM emissions

Sector	2030				2050			
	Resource Efficiency	Energy Source	Products & Services	Resilience	Resource Efficiency	Energy Source	Products & Services	Resilience
Utilities	Moderate	Moderate	High	Low	High	High	Very high	High
Materials	Low	Low	Moderate	Moderate	Moderate	Moderate	High	High
Energy	Very low	Moderate	Moderate	ND	Low	High	High	ND
Consumer Staples	Low	Low	Low	Low	Moderate	Moderate	Moderate	Moderate
Industrials	Low	Low	Low	Low	Moderate	High	Moderate	Moderate
Real Estate	Low	Low	Moderate	Moderate	Low	Moderate	High	Moderate
Information Technology	Moderate	Moderate	Moderate	ND	High	High	High	ND
Financials	Low	Moderate	Moderate	Moderate	Moderate	High	Very high	High
Health Care	Low	Low	Low	Moderate	Moderate	Moderate	Moderate	Moderate
Consumer Discretionary	Low	Low	Low	Low	Moderate	Moderate	Moderate	Moderate
Communication Services	Moderate	Moderate	Moderate	Very low	High	High	High	High

* Based on selected investee companies' TCFD and Sustainability Reports as sector representative (include corporate bonds and listed equities only)

Scenario Analysis for Carbon Pricing on Portfolio

KAsset estimated the impact of carbon price on corporate bonds and listed equity investees by calculating as the amount the company would need to pay as a % of their revenue. We evaluated the impacts estimated across three scenarios representing a range from 1.5°C scenario (NZE) to 2.6C scenario (STEPS). The results show that our **utilities** exposure are most affected by carbon pricing followed by **material** and **energy** sectors. We will then prioritize our engagement and monitoring in these particular sectors.

Assumption on carbon prices

- Used IEA's carbon prices from the World Energy Outlook 2022 for three scenarios, and assigned each investee country (total of 24 countries) to the appropriate carbon price for that country from IEA (International Energy Agency)
 - STEPS: Stated Policy Scenarios – Applied Chile for Thailand
 - APS: Announced Pledge Scenarios – Applied EM for Thailand
 - NZE: Net Zero Emissions by 2050 – Applied EM for Thailand
- Calculated carbon prices exposed to 6,182 investee companies out of 6,384 investee companies or 98% of AUM (for corporate bonds and listed equities) across all 11 GICS sectors
- We assumed that each investee company will keep the same emissions to revenue ratio
- We assumed that carbon cost would be paid to the government of each investee's country under a "Cap and Trade" scheme. We assumed a 2.2% per year cap of emissions during 2022-2030 and then portion of cap of emissions will gradually increase from 2031 to 2050 in average number. In 2050, percentage per year of cap of emissions is 100%
- We assumed a compound growth rate of 2.6% per year for emissions and Revenue
- Formula: Carbon price cost to be paid per year (USD) = USD/tCO_{2e} x Investees' annual Scope 1 GHG emissions x % to be paid under cap scheme

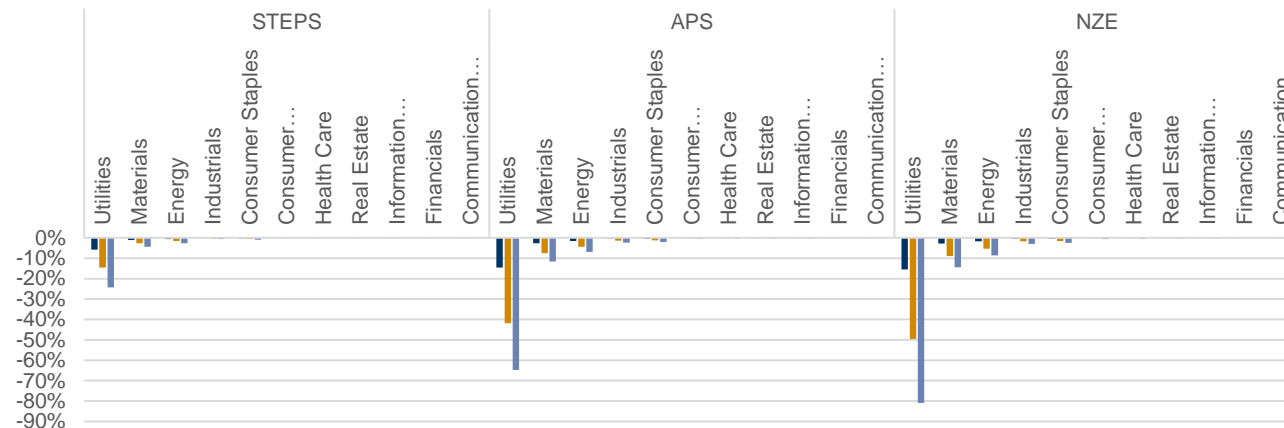
Results

- For all three scenarios and varying time horizon from 2030, 2040 and 2050, the results show that our utilities exposure are most affected by carbon pricing followed by material and energy sectors. We will then prioritize our engagement and monitoring in these particular sectors.

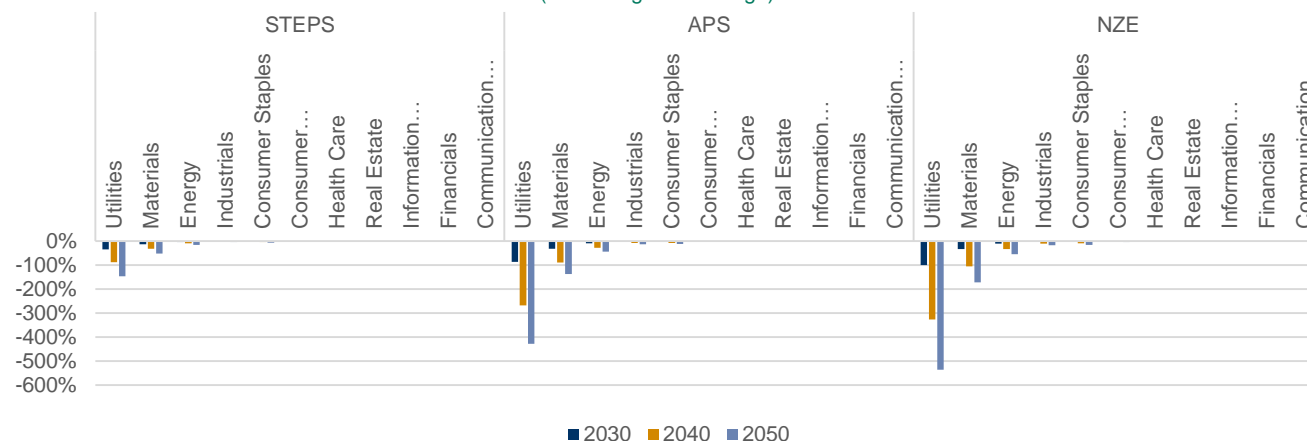
Remarks:

- For full set of IEA carbon prices utilized in analysis by country and scenario see [IEA World Energy 2022](#) pg.465
- Carbon price % of Revenue/Ebitda assessed on inherent risk (risk without implementing mitigation action)

Carbon Price* % of Revenue of Investee (AUM weighted average)

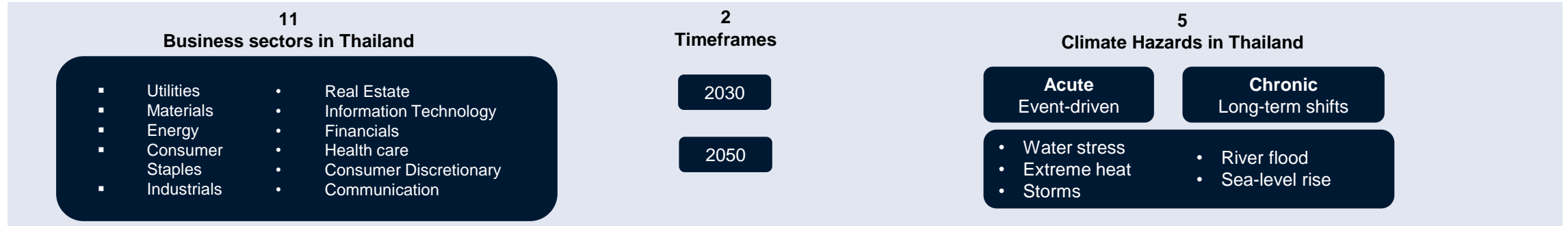


Carbon Price % of EBITDA of Investee (AUM weighted average)



Physical Risk Assessment and Scenario Analysis for Our Listed Equities and Corporate Bonds

We have assessed the physical risks to investee companies in Thailand, this represents 77% of our AUM in corporate bonds and listed equity by AUM value. We will then use this assessment to engage with investees on their adaptation actions to reduce physical risks.



Two scenarios utilized for analysis -

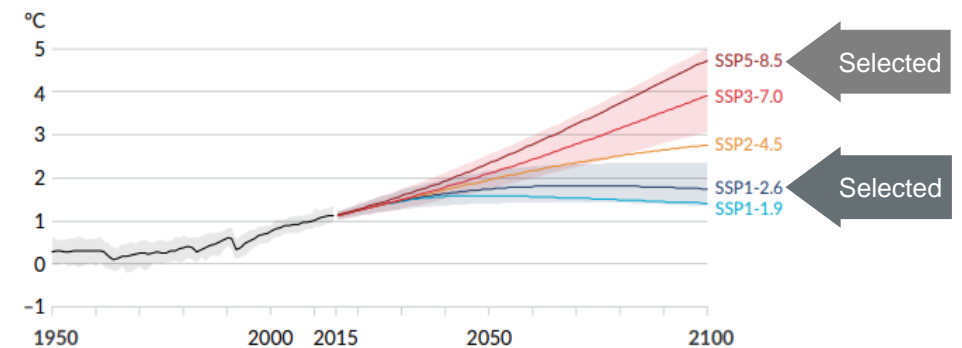
Shared Socioeconomic Pathways (SSPs) from IPCC Assessment Report 6

- SSP1-2.6:** a low emissions scenario that stays below 2°C warming by 2100, aligned to current commitments under the Paris Agreement.
- SSP5-8.5:** a high emissions scenario, which follows a 'business as usual' trajectory, assuming no additional climate policy and seeing CO₂ emissions triple by 2100. The selection of this scenario follows TCFD guidance to assess **stressed exposure** to physical climate change risks.

By using two scenarios, we can understand a broader range of potential risks to investees.

IPCC AR6 Scenario	Best estimate temperature by 2100
SSP1-1.9	1.4°C
SSP1-2.6	1.8°C
SSP2-4.5	2.7°C
SSP3-7.0	3.6°C
SSP5-8.5	4.4°C

Global surface temperature change under SSP scenarios

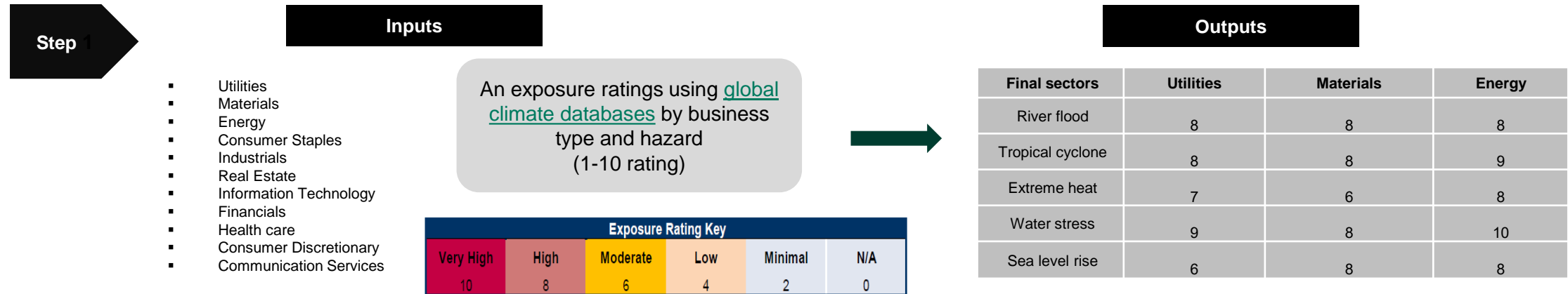


Source: IPCC ARG WGI Summary For Policymakers

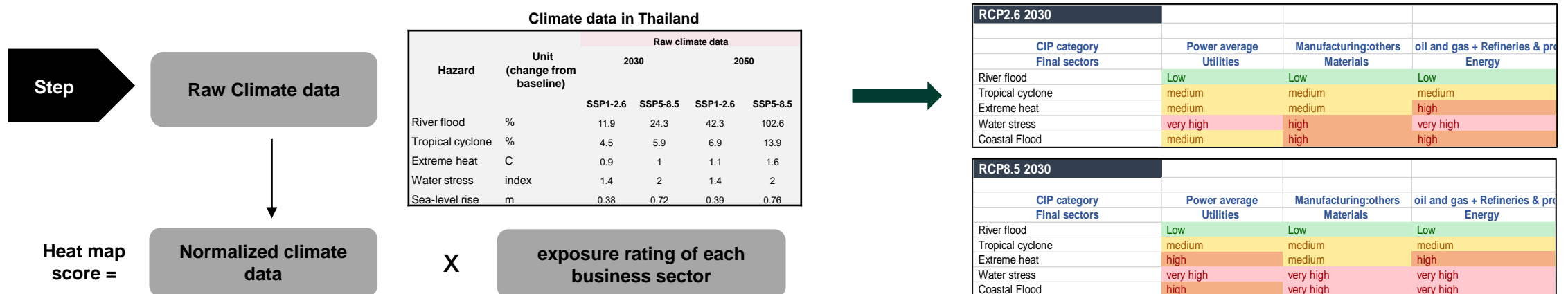
Assessment Methodology

We have assessed the exposure ratings (represent an asset type's predisposition to physical risk) and assessed the impact to investee companies through a heat map

Assess exposure ratings (Consider the significance of each climate hazard on an asset type's operation)



Heat mapping



Physical Risk: Climate Risk Heat Map by Hazard in 2030 - Thailand

In 2030, water stress and coastal flooding are seen as potential high risks for both scenario that temperature stays below 2°C warming by 2100 and scenario that temperature reaching 4.4°C

Hazard in 2030 (SSP1-2.6) – Temperature stays below 2°C by 2100

Business Sectors	Flood	Storms	Extreme heat	Water Stress	Coastal Flooding
1. Utilities	Low	Medium	Medium	Very high	Medium
2. Materials	Low	Medium	Medium	High	High
3. Energy	Low	Medium	High	Very high	High
4. Consumer Staples	Low	Medium	Medium	High	High
5. Industrials	Low	Medium	Medium	Very high	Low
6. Real Estate	Low	Low	High	High	Medium
7. Information Technology	Low	Medium	Medium	High	High
8. Financials	Low	Medium	Medium	High	High
9. Health Care	Low	Medium	Medium	High	High
10. Consumer Discretionary	Low	Low	Medium	Very high	High
11. Communication Service	Low	Medium	Medium	High	High

Hazard in 2030 (SSP5-8.5) – Temperature reaches 4.4°C by 2100

Business Sectors	Flood	Storms	Extreme heat	Water Stress	Coastal Flooding
1. Utilities	Low	Medium	High	Very high	High
2. Materials	Low	Medium	Medium	Very high	Very high
3. Energy	Low	Medium	High	Very high	Very high
4. Consumer Staples	Low	Medium	Medium	Very high	Very high
5. Industrials	Low	Medium	Medium	Very high	Low
6. Real Estate	Low	Medium	High	Very high	High
7. Information Technology	Low	Medium	Medium	Very high	Very high
8. Financials	Low	Medium	Medium	Very high	Very high
9. Health Care	Low	Medium	Medium	Very high	Very high
10. Consumer Discretionary	Low	Medium	Medium	Very high	Very high
11. Communication Service	Low	Medium	Medium	Very high	Very high

Physical Risk: Climate Risk Heat Map by Hazard in 2050 - Thailand

In 2050, the common risks for most business sectors in SSP1-2.6 scenario are extreme heat, water stress and coastal flooding where the highest risk found in water stress area. In SSP5-8.5 scenario (stressed scenario), all sectors are expected to be at very high risk.

Hazard in 2050 (SSP1-2.6) – Temperature stays below 2°C by 2100

Business Sectors	Flood	Storms	Extreme heat	Water Stress	Coastal Flooding
1. Utilities	Medium	Medium	High	Very high	Medium
2. Materials	Medium	Medium	High	High	High
3. Energy	Medium	High	High	Very high	High
4. Consumer Staples	Medium	Medium	Medium	High	High
5. Industrials	Medium	Medium	High	Very high	Low
6. Real Estate	Medium	Medium	High	High	Medium
7. Information Technology	Medium	Medium	High	High	High
8. Financials	Medium	Medium	High	High	High
9. Health Care	Medium	Medium	High	High	High
10. Consumer Discretionary	Medium	Medium	High	Very high	High
11. Communication Service	Medium	Medium	High	High	High

Hazard in 2050 (SSP5-8.5) – Temperature reaches 4.4°C by 2100

Business Sectors	Flood	Storms	Extreme heat	Water Stress	Coastal Flooding
1. Utilities	Very high	Very high	Very high	Very high	Very high
2. Materials	Very high	Very high	Very high	Very high	Very high
3. Energy	Very high	Very high	Very high	Very high	Very high
4. Consumer Staples	Very high	Very high	High	Very high	Very high
5. Industrials	Very high	Very high	Very high	Very high	Medium
6. Real Estate	Very high	Very high	Very high	Very high	Very high
7. Information Technology	Very high	Very high	Very high	Very high	Very high
8. Financials	Very high	Very high	Very high	Very high	Very high
9. Health Care	Very high	Very high	Very high	Very high	Very high
10. Consumer Discretionary	Very high	Very high	Very high	Very high	Very high
11. Communication Service	Very high	Very high	Very high	Very high	Very high

Physical Risk

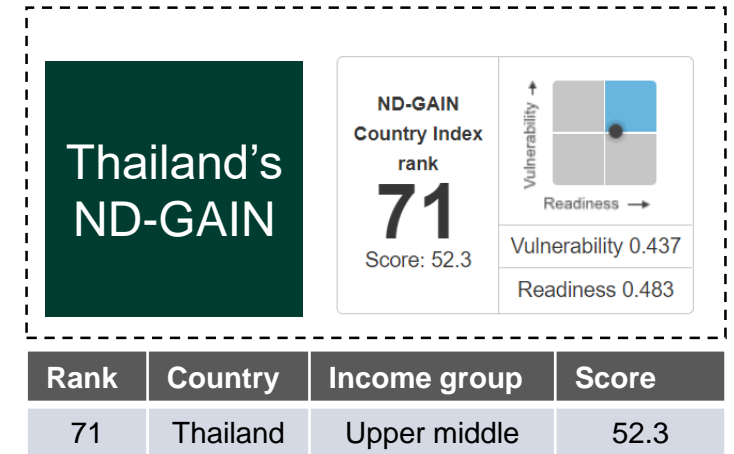
KAsset has reviewed physical risks relevant to our portfolio based on risk categories as outlined below

Risk Categories	Climate-Related Risks	Potential Financial Impact to Investee Companies
Acute	Floods Storms	<ul style="list-style-type: none"> Companies' operations may experience business and supply chain interruptions as well as increased costs due to risk-related damages. These can lead to declines in the value of assets which directly affecting the companies' financial performance and thus their respective valuation.
Chronic	Water stress	<ul style="list-style-type: none"> Companies in various industries rely on water for their operations, such as manufacturing and energy production. For those companies that are heavily reliant on water for their production processes, water stress could lead to business and supply chain disruptions, increased operation costs and declined profitability or financial performance.
	Extreme heat	<ul style="list-style-type: none"> Infrastructures assets such as water supply systems, transportation network, and utilities can face challenges during extreme heat. Higher demand for cooling can strain and potentially leading to blackouts. Water scarcity can impact industries reliant on water resources and disrupt supply chains.
	Sea-level rise	<ul style="list-style-type: none"> Real estate properties and infrastructure located in coastal or flood-prone areas could face damage or asset degradation due to inundation, erosion, or increased frequency and severity of storms. This can lead to a decline in property value and potential losses for investors holding these assets. Properties in high-risk coastal areas might experience higher insurance costs as insurers adjust their premiums to account for increased risks associated with rising sea levels and more frequent extreme weather events.

Integrate Physical Risk of Sovereign Bonds into Risk Management

Thailand sovereign bonds are the majority of our sovereign bond investment

- We have evaluated physical risk on a country level to supplement our sectoral assessment for use in assessing risk in sovereign bonds investment. Investment in Thailand sovereign bonds accounts for 98% of our total investment in sovereign bonds by AUM value of sovereign bonds.
- **The ND-GAIN Country Index** summarizes a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience. It aims to help governments, businesses and communities better prioritize investments for a more efficient response to the immediate global challenges ahead.
- The high vulnerability score and high readiness score of Thailand places it in the upper-right quadrant of ND-GAIN matrix means it is on the road to responding effectively to climate change, but the adaptation needs and urgency to act are greater.
- A country's ND-GAIN index score is composed of a vulnerability and readiness scores.
 - **Vulnerability** measures a country's exposure, sensitivity and ability to adapt to the negative impact of climate change. Considering 6 life-supporting sectors:-
 - Food, water, health, ecosystem service, human habitat and infrastructure.
 - **Readiness** measures a country's ability to leverage investment and convert them to adaptation actions. Considering 3 components:-
 - Economic readiness, Governance readiness and Social readiness



*Rank in 2021

Strategy

B. The impact of climate related risks and opportunities on the organization's businesses, strategy, and financial planning

- In the beginning stage, majority of our climate related strategy is done through our ESG integration process where climate risks and opportunities assessment is one of the key factors to form investment decision making for our investment portfolios. We believe that the asset manager role to help a transition to a lower carbon economy can be through our investee companies. By doing so, we emphasize more effective stewardship activities such as company engagements and proxy voting.
- We aim to expand our climate-related product solution and increase climate information disclosure at the product level for clients and their awareness with regard to the likely impact of climate change.
- In September 2023, we have established a Sustainable Development Committee to better manage ESG and climate-related risks and opportunities more effectively.
- We are in the process of developing tools to evaluate investee companies on ESG and Climate risk and opportunities for both issuers level and portfolio level. This is the first year that we have conducted assessment of climate-related risks and opportunities in our AUM portfolios. We are still studying to quantify impact of climate-related risks on our investee's financials, and how the investee financials would affect investment performance. In order to integrate climate-related risks and opportunities into our investment strategy we look at materiality metrics of climate risks and decide what to integrate it into our investment strategy. The three key metrics we consider to develop to integrate into our overall investment strategy are:
 1. Economic emissions intensity: tCO₂e/million USD in AUM
 2. Potential climate change impact to the investee companies' business performance, especially long term investments, where we compare our original project return on investment with and adjusted assessment based on transition and physical risk metrics.
 3. Portfolio temperature alignment: the metric can help us form necessary decisions/actions to manage a portfolio towards our climate target. It could help setting up engagement strategy with the investee companies on their respective alignment path towards net zero target.

Strategy

B. The impact of climate related risks and opportunities on the organization's businesses, strategy, and financial planning (cont.)

- As an asset manager, we are continuously adapting our portfolio to client needs (for example, if more clients are requesting climate themed products, then we will consider to develop more climate themed products) and direction of the market (both climate related and non-climate related impacts to investee financial performance). As climate change is usually a gradual trend, we believe we can adapt our investment strategies and products quickly enough to avoid most climate-related risks in our AUM.
- Given climate change has become a part of our investment risk management, it is important for us to set up a decarbonisation strategy for our investment portfolios and also our own operations to achieve net zero for Scope 1 and 2 by 2030 and net zero for AUM emission at least by 2065 in line with Thailand's commitment or accelerating the path when possible.
- KAsset financial projection and budget planning has factored in revenue sensitivity from client inflows according to potential shift in product demand and capital expenditure or expenses for research and study including developing tools and enhance investment professional skills to assess climate risks and opportunities of our investee companies at portfolio management levels as well as our own operation.

ESG Integration Process at KAsset

Major part of our climate-related strategy is done through our ESG integration process

Environmental

KAsset aims to support a sustainable and low carbon economy transition. We measure and assess our investee companies on their ability to control direct and indirect environmental impact as well as seek new opportunities that may arise. Our main area of focus are such as:-

- Greenhouse gas emissions
- Pollution
- Waste management
- Energy efficiency
- Climate risk
- Biodiversity

Social

We focus on how companies managing their human capital, establish their social goals and measuring social impact, considerations area are such as:-

- Child Labor
- Discrimination in respect of employment and occupation
- Diversity, equity and inclusion
- Human rights
- Employee health and safety
- Product quality and safety

Governance

Our approach to corporate governance and proxy voting are based on corporate governance principles listed below:-

- Integrity
- Transparency
- Independence
- Responsibility
- Accountability
- Fairness

Exclusionary guideline: Companies that involves in businesses that consider high carbon emission such as coal mining, coal-based electricity, fossil fuel will be closely monitored the development of the company' strategies to achieve a transition toward a low or net-zero carbon emission target.

Stewardship Activities

Climate-related Issues are also embedded in our stewardship activities

Prioritization of engagement topics

Engagement topics may vary upon circumstances/incidents and materiality of business that each company operates in. However, we have identified priority on ESG engagement topics that considered as common among investee companies across sectors but potentially have high impact on most of investee companies' performance:-

1. Climate Change and natural sustainability
2. Human capital
3. Company strategy, purpose and resilience
4. Board quality

Proxy Voting

We believe that proxy voting is an integral aspect of investment management and help navigating long term interests and business direction of our investee companies. Our internal proxy voting policy is also embedded guideline on ESG and climate change perspective. Given most of our direct investments are in Thailand, the practice of shareholder proposals for specific topics such as ESG or climate issues are not yet common, we expect to see the positive progress in terms of practice in the future. Our proxy voting policy is reviewed at least on an annual basis to ensure that KAsset votes proxies prudently and in the best interest of its clients as well as to incorporate the latest issues deem appropriate.

Strategy

c. The resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

Company operation

- Study and prepare for the potential impact from climate change on operational business according to time horizon including budget provisioning
- Exercise business continuity practice by incorporating climate impact to cope with business change or disruption

Investment

- **Integration through investment process:**
 - We are assessing our portfolio climate risks exposure and resilience as the insight for our fund managers and analysts a guidance to assess investee companies and approach for engagements. We consider factors that are material to our investee financial returns and identify high risk investees and engage them according to priorities.
 - Encourage investee companies to provide climate related disclosure and strategy in order for better understanding
 - Develop tools and investment capability to assess climate-related risks and opportunities
- **Scenario analysis**
 - We did analysis on impact of carbon price impact on corporate bonds and listed equity investees both % of their revenue and ebitda across three scenarios*. The results show that Utilities sector are most affected followed by material and energy sectors. However, the impact is more on the longer term (>10 years) (see analysis on page 22)
- **Portfolio Temperature Alignment****
 - The temperature alignment of our aggregated corporate bonds and listed equity investments *** was at 2.49°C. However, the temperature alignment of our aggregated Thai listed equities portfolio was at 2.33°C which is in line with SET50 Index at 2.34°C and SET100 Index at 2.35°C.
 - The result shows that 39% of our aggregated corporate bonds and listed equities portfolio weight was aligned to 2°C or less while 51% of our Thai listed equities portfolio weight were aligned to 2°C or less (see analysis on page 34).
- **From our overall assessment, utilities and energy sectors are our priorities to monitor their de-carbonization plans which consider important for our strategy on lowering AUM emission path.**

* Representing a range from 1.5°C scenario (NZE) to 2.6°C scenario (STEPS) in 2030, 2040 and 2050.

** Utilising MSCI ESG & Climate data's temperature rise rating that is based on investee GHG targets, and their alignment against a 2°C benchmark. Where MSCI data was not available for the investee, we utilized CDP's regional analysis as a default value (3°C).

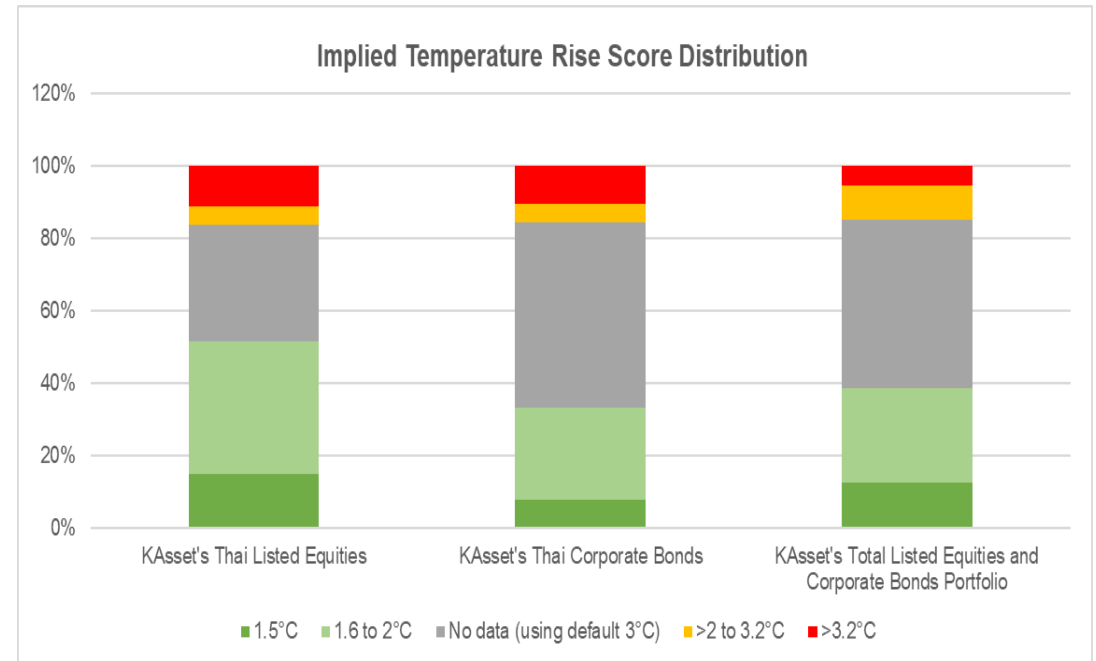
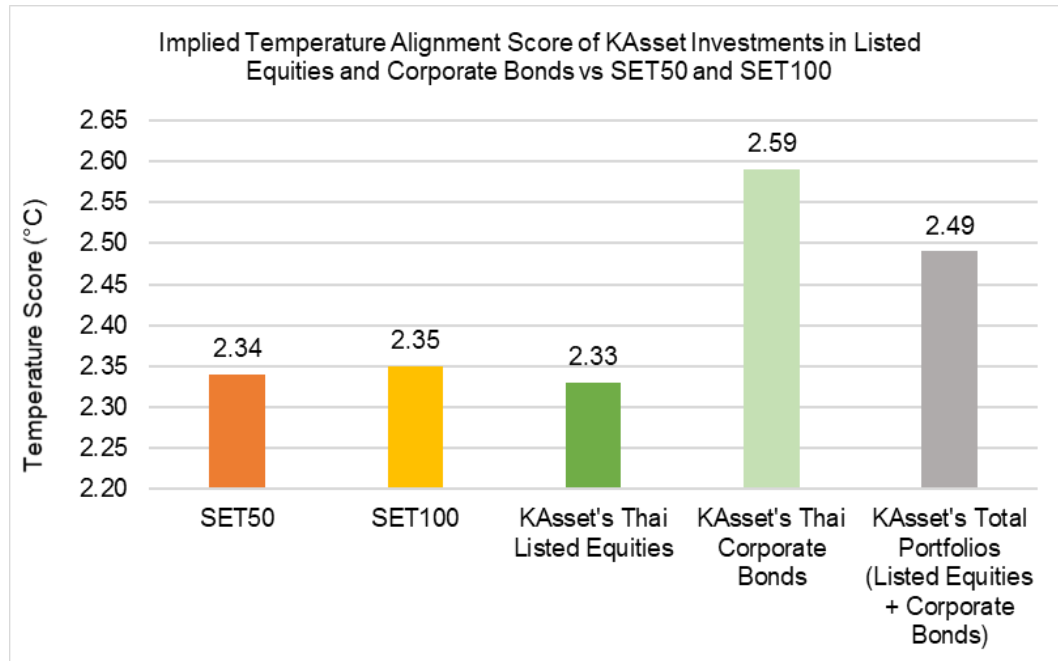
*** Total Portfolio weighted average for both corporate bonds and listed equity investment as of December 30, 2022

Portfolio Temperature Alignment

To measure the alignment of our portfolio investment towards net zero target AUM emissions goal

We utilized MSCI ESG & Climate data for implied temperature rise score* which is based on investee GHG targets, and their alignment against a 2°C benchmark. Where MSCI data was not available for the investee companies, we utilized CDP's regional analysis as a default value (3°C). Our aggregated listed equities and corporate bonds portfolio alignment was at 2.49°C. However, for our aggregated Thai listed equities portfolio temperature alignment was at 2.33°C, in line with SET50 and SET100 alignment which were at 2.34°C and 2.35°C respectively. As for our aggregated Thai listed equities portfolio, a total of 51% weight of our portfolio are aligned to 2°C or less, a higher portion than our total listed equities and corporate bonds portfolios which only 39% weight of AUM value are aligned to 2°C or less.

We will continue to monitor our portfolio temperature alignment and combined with the findings from risk assessment and scenario analysis, we have identified key sectors such as utilities and energy where we need to monitor our investee's de-carbonization plan.

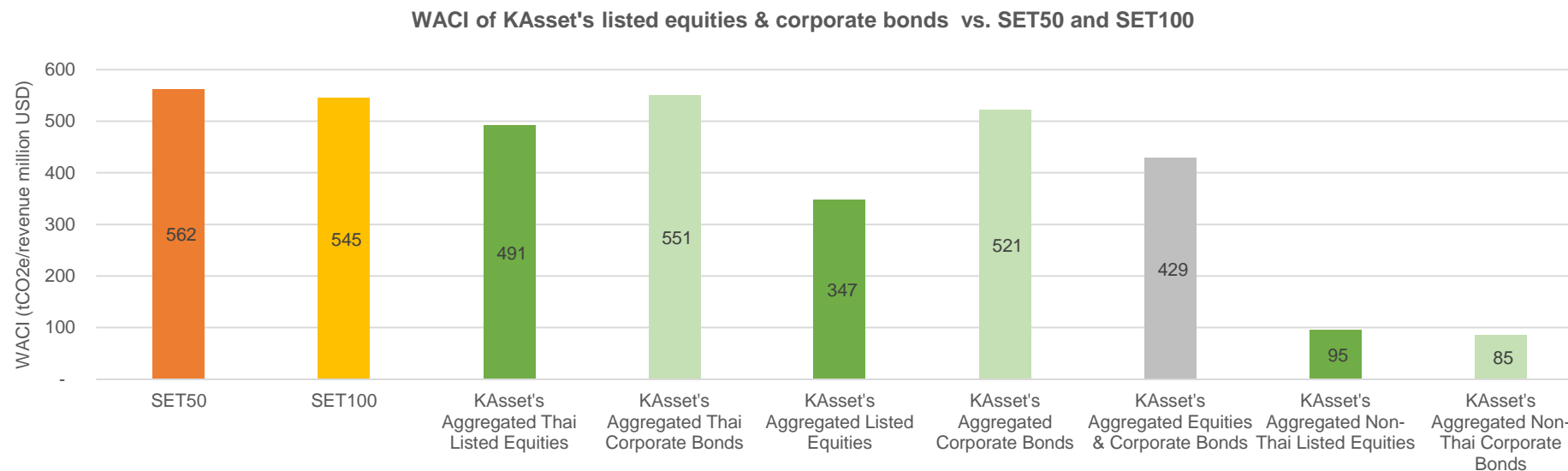


* Source : MSCI ESG and Climate Ratings Search Tool

Weighted Average Carbon Intensity (WACI) of Listed Equities & Corporate Bonds vs. SET50 and SET100 Indexes

We have conducted an analysis of the Weighted Average Carbon Intensity (WACI) which uses revenue to normalize emissions for our various aggregated portfolios. We also analyzed WACI for SET50 and SET100 Indexes for reference since the majority of our investment in listed equities and corporate bonds are in Thailand. The SET50 exhibited the highest WACI at 562 tCO₂e per million USD of revenue, closely followed by the SET100 with a WACI of 545 tCO₂e per million USD of revenue whereas KAsset's total portfolio, which includes both aggregated equities and corporate bonds and overseas companies, had a lower WACI, standing at approximately 429 tCO₂e per million USD of revenue. This is due to overseas investments having a lower carbon intensity.

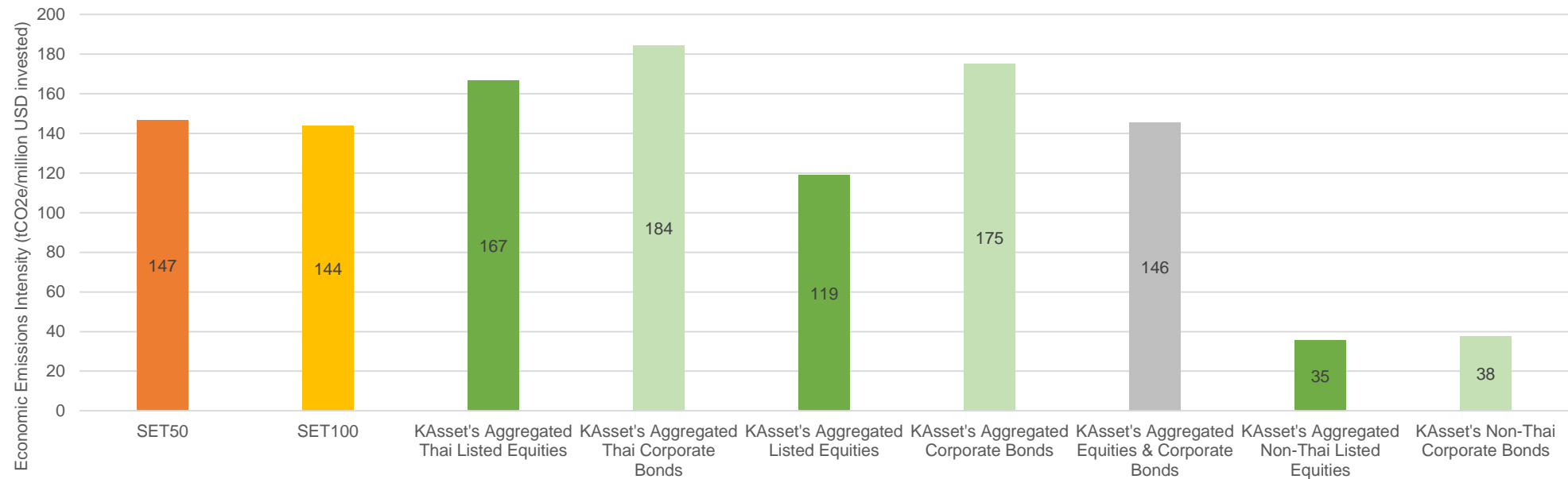
Furthermore, when examining KAsset's investments in Thai listed equities and Thai corporate bonds individually, they displayed similar WACI values. Specifically, the Thai listed equities had a WACI of 491 tCO₂e per million USD of revenue, while the Thai corporate bonds exhibited a WACI of 551 tCO₂e per million USD of revenue. For non-Thai corporate bond and equities, they displayed a lower values for 85 and 95 tCO₂e per million USD of revenue. respectively.



Economic Emission Intensity of Listed Equities & Corporate Bonds vs. SET50 and SET100 indexes

Trends of Economic Emission Intensity follows a similar pattern to Weighted Average Carbon Intensity (WACI) in the previous page. However, from an Economic Emission Intensity point of view, or the amount of emissions per value invested, KASSET's portfolio in the utilities, energy, materials and consumer staples sectors had a higher Economic Emission Intensity, especially in Thailand, this has therefore shifted the overall intensity to be higher. Again, foreign investment have a lower intensity and helped to reduce our portfolio's overall emissions intensity.

Kasset Economic Emissions Intensity of listed equities & corporate bonds vs. SET50 and SET100 Indexes





Risk Management

Risk Management

a. The organization's processes for identifying and assessing climate-related risks

- Climate-related risks and opportunities are assessed by our investment professional team which being first identified by sector level and drill down to investee company level according to materiality.
- Both transition and physical risks are assessed according to time horizon and integrate into investment process in all asset classes
- Risk team helps monitoring the threshold indicators. Climate risk is included within overall risk management framework.
- Continue developing portfolio and risk management tools and capabilities to be able to assess climate-related risks and opportunities more effectively

b. Describe the organization's processes for managing climate-related risks

- Our climate risk governance starts from Board oversight level and delegates to all related committees such as Sustainability Committee, Investment Risk Management Committee and Sub Investment Committee etc
- Climate-related risks are integrated into both company strategy planning and investment strategy for portfolio under management
- Three line of defense 1) investment team 2) risk management and compliance teams 3) audit team

c. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.

- ESG and Climate Change Risk policy is set as a guidance/framework for overall organization risk management. ESG and Climate-related risks can add on impact from other existing risks such as investment risk, regulatory risk, operation risk etc.
- Risk management is responsible for monitoring climate risk thresholds
- Sustainability Committee is responsible for overseeing climate related issues for both company operation and investment portfolios



Metrics and Targets



Metrics

a. Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process

Company operation

Our Scope 1, 2 and 3 emissions are calculated in line with GHG Protocol Corporate Accounting and Reporting Standard. We use 2022 calendar year as a baseline year. Our net zero target are applied only Scope 1 and Scope 2 as there is limited information disclosure and appropriate methodology for scope 3 currently. We will continue monitor and update the progress.

Investment management

Currently, we evaluate climate related risks and opportunities based on investee companies' materiality metrics and their scope 1 and 2 emissions. We are currently studying the appropriate tools, metrics and methodology to evaluate investee companies on climate risks and opportunities for both issuers and portfolio level more effectively and to quantify impact of climate-related risks on our investee's financials, and how it would affect investment performance.

Emissions calculation metrics

Key Metrics	Units
Assets Under Management (AUM)	Million USD
Assets Under Management (AUM) Emissions	tCO2e
Total GHG Emissions	tCO2e
Economic Emission Intensity	tCO2e/million USD Invested (EVIC Based)
Weighted Average Carbon Intensity	tCO2e/million USD Investee Revenue
Total GHG Emissions	tCO2e
PCAF data quality score	1-5 (High to Low)
Temperature Alignment	Degrees Celsius estimated temperature rise for investee companies using MSCI ESG & Climate data for implied temperature rise score

Greenhouse Gas Related Metrics for KAsset Scope 1, 2 and 3 including Methodologies and Standards Used in Our Assessment

Key Metrics	Definition
Direct GHG Emissions (Scope 1 – tCO ₂ e)	Direct emission from fuel usage in KAsset’s vehicle fleet
Indirect GHG Emissions (Scope 2 – tCO ₂ e)	Indirect emissions from power plants that supplied electricity to the grid. Electricity purchased from grid by KAsset for use in office operations
Other relevant direct GHG Emissions (Scope 3 – tCO ₂ e)	Indirect emissions from suppliers and vendors related to KAsset’s annual spending. KAsset does not have any downstream emissions, apart from Category 15 Investments, as we do not sell any physical products to customers.
Tonnes CO ₂ Equivalent (tCO ₂ e)	This metric combines the mass of CO ₂ as well as the other six greenhouse gases (CH ₄ , N ₂ O, HFCs, PFCs, SF ₆ , NF ₃). The other six greenhouse gases have different potencies from CO ₂ therefore we use Global Warming Potentials from IPCC’s Fourth Assessment Report which in line with Kasikornbank (parent company)’ s methodology.

Methodologies and Standards for Greenhouse Gas Quantification

1. Kasikornbank Environmental Data Tool
2. IPCC Guidelines for National Greenhouse Gas Inventories, 2006
3. Thailand Greenhouse Gas Management Organization: The National Guideline Carbon Footprint for organization
4. The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

Emission factors

Emission factors are conversion factors that convert KAsset’s activities (i.e. fuel use, electricity use, spending and investments) into emissions

1. Department of Alternative Energy Development and Efficiency (DEDE, 2022) – Energy conversion factors
2. Department for Business, Energy & Industrial Strategy (UK BEIS, 2022) – GHG conversion factors 2022

Metrics

b. Disclose Scope 1, 2, 3 GHG emissions and the related risks

The total GHG emissions by scope within KAsset boundary are as follows:-

GHG Direct and Indirect Scope	Unit	Performance 2022
Scope 1	tCO2e	52
Fleet	tCO2e	52
Scope 2 (location based only)	tCO2e	117
Purchased Electricity	tCO2e	117
Total Scope 1 and 2	tCO2e	169
Total Scope 1 & 2 emission intensity	tCO2e/ FTE	0.48
Full Time Employee (FTE)	FTE	350
Scope 3	tCO2e	974
Category 1: Purchased goods and services	tCO2e	581
Category 2: Capital goods	tCO2e	14
Category 3: Fuel and energy related activities	tCO2e	11
Category 4: Upstream transportation and distribution	tCO2e	16
Category 6: Business travel	tCO2e	8
Category 7: Employee commuting	tCO2e	324
Category 8: Upstream leased asset	tCO2e	0.08
Category 15: Investments	tCO2e	20

Scope 3 contributes the largest emissions where the top 3 significant sources of emissions are purchased goods and services, employee commuting, and electricity purchases which is in line with industry norms.

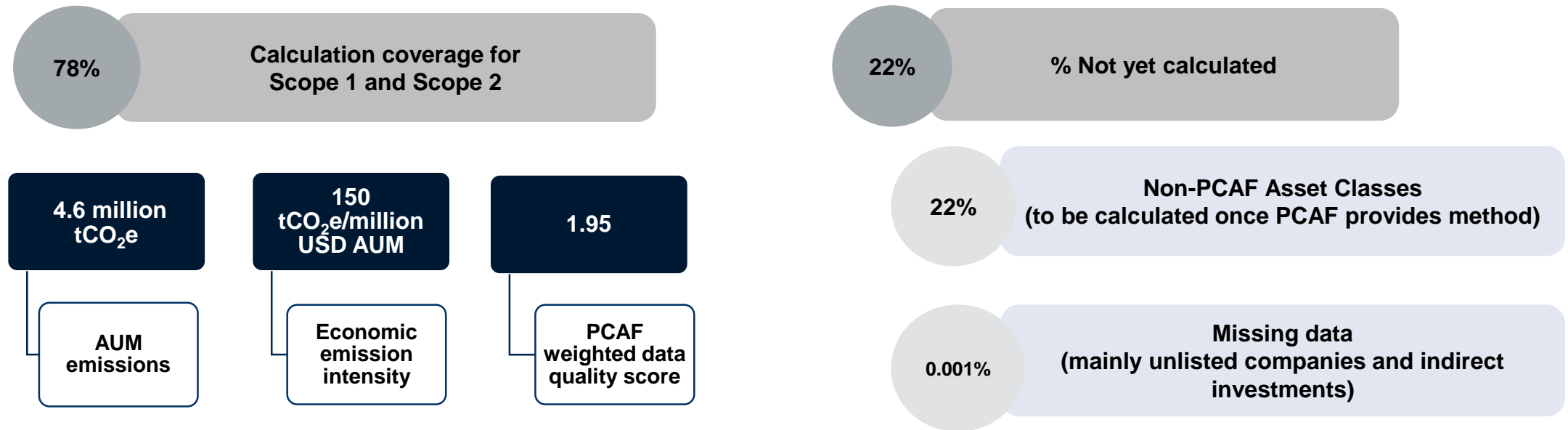
Remark:

Category 5 is excluded as waste data was not yet complete in 2022, we plan on completing our data collection by categorizing our waste in 2023. Data performance period from 1st January to 31st December 2022

Assets Under Management (AUM) Emissions

Of the total AUM value 39.12bn USD, our emission calculation coverage is 79% as the remaining 21% of AUM are non-PCAF asset classes such as deposits and derivatives etc. If excluding non-PCAF asset classes, our calculation of AUM emissions incorporated almost 100% of our investments. Our total AUM emission is 4.6million tCO₂e with economic emission intensity of 150 tCO₂e/million per USD AUM. The weighted data quality score is 1.96.

Total Assets Under Management 39,124 million USD



Methodology :

- Asset Under Management (AUM) calculation is as of December 30, 2022
- Financed emissions methodology follows [PCAF Global GHG Standard Part A](#)
- As per PCAF guidelines, the calculated emissions covers only assets that generate emissions
- AUM emissions reporting follows [IFRS S2 Appendix Volume Volume B15—Asset Management & Custody Activities](#)
- Data for emissions covers only Scope 1 and 2
- Investee companies financial data as of FY2022 were extracted from Refinitiv
- Investee companies Scope 1 and 2 data were extracted from Refinitiv (data quality score 1 or 2). If FY2022 data was not available, FY2021 data was used.
- If investee company data is not available, emissions were calculated based on company revenue multiplied by [USEEIO V2.0](#) direct emission factors (data quality Score 4)
- Country emissions for Sovereign bonds from [OECD.Stat](#) platform (data quality Score 2)

Details of AUM Emissions Metrics Breakdown by Asset Class and Sectors

Our calculated AUM emission in comprises of the following % AUM out of AUM calculated: listed equities 31%, corporate bonds 28% and sovereign bonds 41%. However, given the majority of our investment are Thailand dedicated mandates, our Thailand domiciled investment accounts for 67% of AUM in total (Thailand comprises of the following % of AUM out of the AUM for that asset class, Equities 63%, corporate bonds 91% and sovereign bonds 98%). Therefore, in the beginning stage of our climate-related disclosure and analysis, we will focus more on our exposure in Thailand.

PCAF Asset Classes/Sector level Description by GICs	Total AUM (million USD)	Calculated AUM (million USD)	AUM emissions (tCO2e Scope 1 + 2)	AUM emissions (tCO2e Scope 3)	Economic Emission Intensity (tCO2e/ million USD)	WACI (tCO2e/revenue million USD)	PCAF weighted data quality scores
Absolute Emissions Per Asset Class							
Equities	9,566	9,493	1,130,062	2,003,520	119.04	347.13	1.86
Corporate Bonds	8,775	8,497	1,487,569	2,194,744	175.07	521.46	1.99
Sovereign Bonds	12,574	12,574	1,970,957	N/A	156.75	N/A	2
Total	30,915	30,564	4,588,588	4,198,265	150.13	429.46	1.95
Listed Equity and Corporate Bonds Breakdown by GICS Sector							
Energy	1,215	1,215	601,414	1,899,414	495.13	436.92	1.15
Materials	1,120	1,117	591,184	837,825	529.42	788.32	2.02
Industrials	1,327	1,324	50,131	255,804	37.85	284.36	1.85
Consumer Discretionary	1,606	1,607	38,391	438,553	23.89	81.85	1.91
Consumer Staples	2,335	2,335	192,701	468,560	82.52	163.31	1.44
Health Care	927	926	6,680	13,588	7.21	38.61	2.22
Financials	4,211	4,198	27,490	10,599	6.55	80.88	2.33
Information Technology	641	641	9,662	24,342	15.07	46.01	2.13
Communication Services	1,243	1,243	13,790	5,669	11.09	42.31	2.69
Utilities	1,436	1,435	1,062,408	211,856	740.4	3,362.67	1.25
Real Estate	1,953	1,949	23,781	32,054	12.2	73.44	1.89
Not available	329	N/A	N/A	N/A	N/A	N/A	N/A
Total	18,341	17,990	2,617,632	4,198,265	145.5	429.46	1.92

Aggregated Listed Equities and Corporate Bonds Breakdown by Scope

Metric	Scope 1 (tCO2e)	Scope 2 (tCO2e)	Scope 3 (tCO2e)
Absolute Gross Carbon Emissions	2,372,917	244,726	4,198,265
AUM Calculated million USD	17,990	17,990	10,854
Carbon Emission Intensity per million USD AUM	132	14	387

Basis of Calculation

- Excludes companies that can not be classified under GICs, delisted, merged, etc
- Scope 1 and 2 are combined under Scope 1 for investees with PCAF data quality score 4 i.e. investees without reported GHG data
- Where Scope 3 are unavailable, we currently do not calculate emissions from investees
- "Total AUM" includes short-position value and AUM of companies where GHG data was not available while "Calculated AUM" metrics exclude short-position items
- AUM data as of December 30, 2022
- Investee companies financial data is as of actual FY2022 from Refinitiv
- GHG data are used latest reporting year data sourced from Refinitiv as of September 2023
- Emission Intensity calculated using EVIC, in line with PCAF standard

Metrics and Targets

c. Describe targets used by the organization to manage climate-related risks and opportunities and performance against targets

Emission Target: 2022 is our first reporting year and base year

Plans	Actions
Scope 1: Fleet	Replace fuel vehicles with EV vehicles to eliminate tailpipe emissions.
Scope 2: Purchased electricity	To consider purchasing Renewable Electricity Certification (REC)
Target net zero for Scope 1 +2 by 2030	In line with Kasikornbank target
Scope 3:	No target set but will continue to monitor emissions and make reductions where possible
Target Net Zero for AUM emission by 2065	In line with Thailand National Target or accelerating this journey where possible



Appendix



Definition of Assets Under Management GHG Metrics

Key Metrics	Units	Definition	Equation
Assets Under Management (AUM)	Million USD	This includes our entire portfolio, including direct investments where KAsset invests in an investee on behalf of the client, as well indirect investments where KAsset invests in a fund managed by a third-party manager.	$\sum_{i=1}^x \text{Market value of investment}_i$
Assets Under Management (AUM) emissions	tCO ₂ e	<p>Scope 1+2 emissions of investees, allocated to KAsset based on the amount of investment by KAsset divided by total value of the investee country or company.</p> <p>The emissions are reported separately from Scope 1, 2 and 3, as the investments are our client's money. This means investee emissions are our client's Scope 3, not KAsset's. For KAsset's emissions from KAsset's investments please see page 31, Scope 3 Category 15 Investments. We follow PCAF GHG Standard and IFRS S2 Draft Appendix Volume B15 reporting guidance for reporting this metric.</p>	<p>Listed equity and corporate bonds</p> $\text{Attribution factor} = \frac{\text{Market value of investment in investee (USD)}}{\text{Enterprise Value including cash (USD)}}$ $\text{Financed emissions} = \sum_{c=1}^x \text{Attribution factor}_c \times \text{investee emissions}_c$ <p>Sovereign debt</p> $\text{Attribution factor} = \frac{\text{Market value of investment in investee (USD)}}{\text{PPP - adjusted GDP (interational USD)}}$ $\text{Financed emissions} = \sum_{c=1}^x \text{Attribution factor}_c \times \text{Sovereign emissions}_c$
Economic Emission intensity	tCO ₂ e/million USD Invested	Total emissions divided by AUM that were included in calculation of emissions, excluding AUM that does not fall under PCAF and AUM where data was missing from investees.	<p>Economic Emissions Intensity</p> $= \frac{\text{Total AUM emissions}}{\text{Total AUM value} - \text{AUM of non - PCAF asset classes} - \text{AUM where investee data is issing}}$
Weighted Average Carbon Intensity	tCO ₂ e/million USD Investee Revenue	Total investee company emissions (listed equity and corporate bonds only) per investee revenue, weighted by value of investment.	$\sum_{c=1}^x \frac{\text{current value of investment}_c}{\text{current portfolio value}} \times \frac{\text{investee Scope 1 and 2}_c}{\text{issuers USD million revenue}_c}$
PCAF data quality score	N/A	PCAF score is a score from 1 (highest quality) to 5 (lowest quality) that varies from asset class to asset class. Our sovereign debt investments are all Scored 1 as we have access to each country's emissions. Our listed equity and corporate bonds are scored as either 2 (investee GHG data was provided by Refinitiv) or 4 (investee GHG estimated based on revenue and sectoral GHG emissions sourced from USEEIO V2.0).	<p>PCAFdata quality score</p> $= \frac{\sum_{i=1}^x \text{Market value of investment}_i \times \text{Data quality score}_i}{\sum_{i=1}^x \text{Market value of investment included in calculation of AUM emissions}_i}$
Temperature Score	Degrees Celsius	<p>Represents the alignment of corporate investees (not relevant for sovereign investees) to 2 degree Celsius pathway based on the company's targets. This metric is derived from MSCI's ESG Ratings and Climate tool.</p> <p>To consolidate investee temperature score to a portfolio level, we use a Weighted Average Temperature Score (WATS) based on portfolio weights.</p>	<p>Weighted Average Temperature Score</p> $\sum_i^x (\text{Portfolio weight}_i \times \text{Temperature Score}_i)$

Sources for Physical Risk Assessment

Assess Exposure ratings

Global climate databases used includes sources such as the following:

AMS	https://doi.org/10.1175/BAMS-D-18-0194.1
ESA	https://climate.esa.int/en/projects/fire
IBTrACs	https://www.ncei.noaa.gov/products/international-best-track-archive
IPCC AR6	https://www.ipcc.ch/assessment-report/ar6
ISIMIP	https://www.isimip.org/
NASA	https://earthobservatory.nasa.gov/images/89937/a-global-view-of-landslide-susceptibility
WRI Aqueduct	www.wri.org
Fathom- Global 2.0	https://www.fathom.global

Raw Climate Data in Thailand

Sources use for climate risk projection in Thailand

River flood	Climate Analytics — Climate impact explorer
Storms	Climate Analytics — Climate impact explorer
Extreme heat	Climate Analytics — Climate impact explorer
Water stress	Aqueduct Tools World Resources Institute (wri.org)
Sea-level rise	Sea Level Projection Tool – NASA Sea Level Change Portal