Invesco

ESG Investment Outlook

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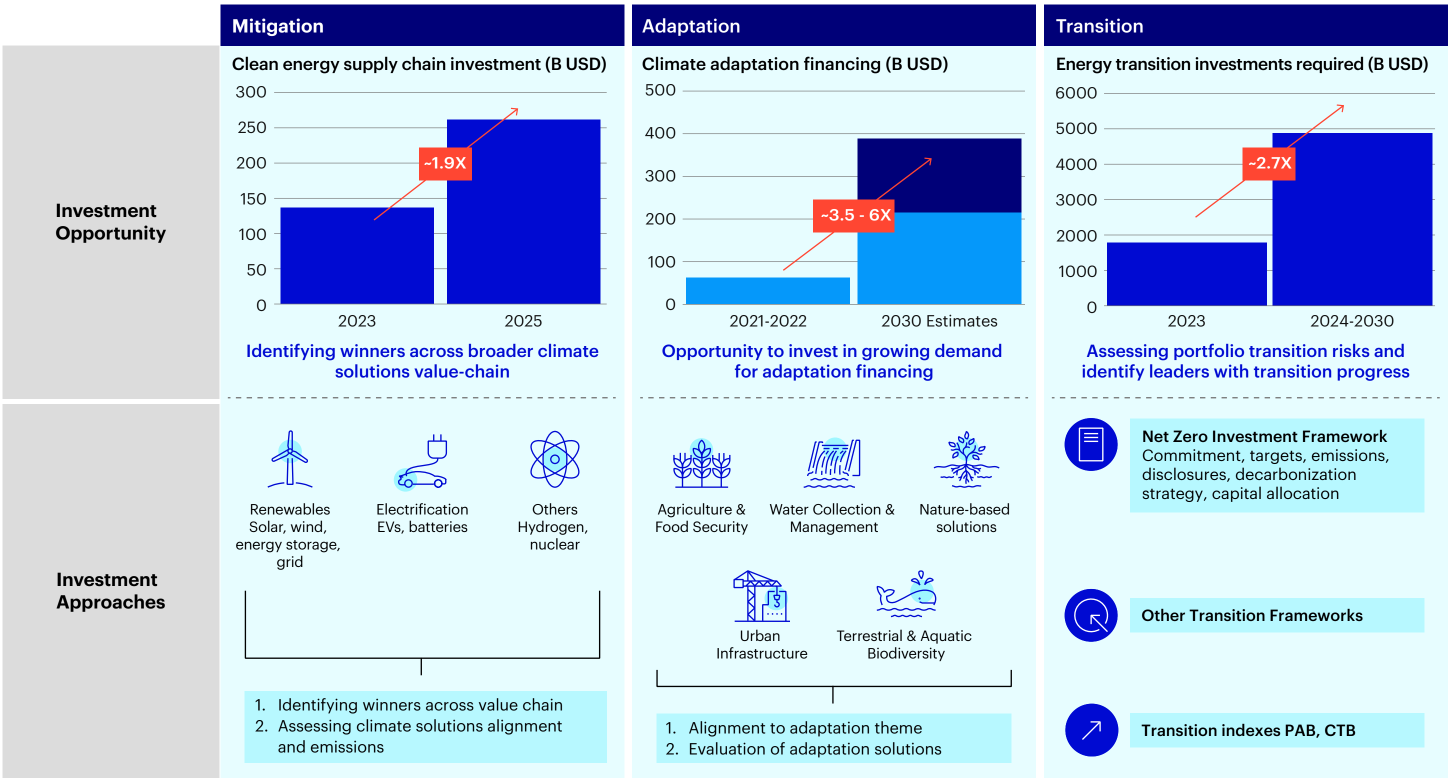
Outlook for 2H 2024 - The investment case for mitigation, adaptation, transition

As outlined previously, we expect that climate mitigation, adaptation, and transition (CMAT) will continue to present investment opportunities and risks for investors to consider with regulations pushing towards greater levels of transparency. Specifically, we believe opportunities exist across the themes of climate mitigation (solutions and technologies driving decarbonization), adaptation (solutions that increases climate resiliency), and transition (adoption of green technologies and business models). We believe that CMAT can serve as a good framework for investors to navigate the world of climate investing, whether that be through using these trends to invest in thematic strategies, sector allocation or in considering the risks holistically across a portfolio. In this outlook, we highlight climate investing approaches and ESG regulatory updates through the CMAT lens.

Investment Outlook: Trends & approaches for investing in mitigation, adaptation, transition

Per Figure 1, investments across mitigation, adaptation and transition are expected to grow substantially by 2030. Investors can capitalize on this trend by seeking opportunities for scaling up climate solutions and technologies and identifying companies that are well positioned to manage physical and transition risks in their businesses.

Figure 1- Risks and opportunities across mitigation, adaptation, transition



Source: BNEF Energy Transition Investment Trends 2024; CPI and WEF on climate adaptation and resilience funding; Invesco. For illustrative purposes only.

Mitigation: ***identifying winners across the broader climate solutions value-chain***

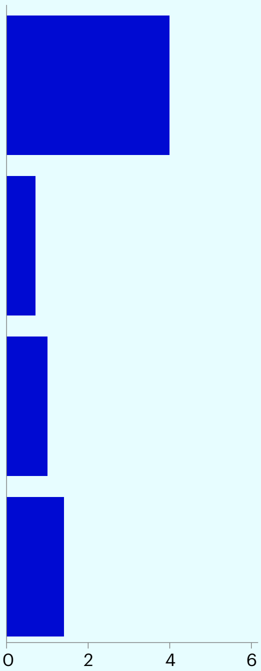
- **Opportunity:** 2023 saw $135B USD invested in global clean energy technologies—nearly triple the amount spent in 2020 ($46B USD); this amount is projected to double again to $259B USD by 2025 [1]. National targets in areas like renewables and electric vehicles could continue to drive growth with artificial intelligence and data center demand further driving energy needs. We expect mature technologies like solar, wind and electric vehicles will see costs continue to decline, pressure on margins and increasing competition and commoditization. There are also opportunities in the underlying supply chain and infrastructure that support green technologies, such as batteries, grid infrastructure and storage. We believe other fast-growing technologies will also see investment demand, such as nuclear and hydrogen where capacity will need to grow by factors of 8x and 45x, respectively [2].

- **Approaches:** Investors could map out the value chains of different technologies to identify the winners in each segment, based on differentiated technologies, costs, and scale. Investors could also assess how the supply and demand imbalance affect which segment is in favor or impacted; for example, significant overcapacity in the solar value chain has dampened prices and margins of polysilicon, wafer, and cell manufacturers. Investors seeking to increase their capital allocation to climate solutions could also analyze how activities and revenues are aligned to regional taxonomies, which defines green and sustainable industry activities such as the EU taxonomy and the China Green Bond Catalogue, and assess potential avoided emissions from these climate solutions. This is especially relevant given regulations relating to carbon such as the EU Eco design and Energy Label legislation for solar passenger vehicle modules.

Adaptation: ***transition into adaptation financing could present a good opportunity for investors***

Figure 2 – Adaptation Financing: key areas that can drive adaptation benefits

Adaptation Area	Financing Gap (USD)	Estimated net benefits (USD T/ $1T invested)	Adaptation Thesis	Examples of projects
Resilient infrastructure	• $56B/ year (energy/ transport) • $54B/ year (flood protection)		Reduce vulnerability of infrastructure against climate impacts such as disasters. Preventing long-term loss and damage	• Strengthening of infrastructure • Flood defenses, drainage systems, district cooling
Agriculture & Food	• $16B/ year		Increasing agrifood security and resilience against climate impacts such as climate-resilient crops or diversification of production	• Climate resilient farming; early warning systems • Heat and drought resistant crops and water saving irrigation methods • Diversified agriculture production
Nature, forestry, mangroves	• $5B/ year (fisheries/ oceans) • $56B/ year (coastal zones)		Dual role in emissions reduction while also supporting adaptation like reducing soil erosion	• Afforestation to support flood reduction • Sustainable forest management that reduce soil erosion
Water	• $1T cumulative to 2030 (water services/ resources)		Address expected changes or fluctuations in water supply as consequence of climate impacts	• Water & sanitation infrastructure • Increasing resilience of water storage • Water conservation



Source: OECD Rio Markers; Standard Chartered Bank Guide for Adaptation and Resilience Finance ; OECD; GCA; GCA.

1. BNEF, Jan 2024, Global Clean Energy Report
2. BNEF, Jan 2024, Global Clean Energy Report

- **Opportunity:** 2023 saw a record number of "National Adaptation Plans" submitted to the UNFCCC [3] (UN Framework Convention on Climate Change) that helps to track countries' progress on climate commitments and policies. These plans highlight national governments' increasing focus on building climate resilience and provide clarity on the sectors and areas most in need of adaptation projects and financing. While climate adaptation spending reached an all-time high of $63B in 2021-2022, this only represents 20-30% of projected annual adaptation and financing needs [4]. As more companies adopt adaptation initiatives, we see significant opportunities for financing adaptation solutions, particularly in the emerging economies most vulnerable to the impacts of climate change. Figure 2 provides a range of adaptation areas including agrifood security and infrastructure resilience.

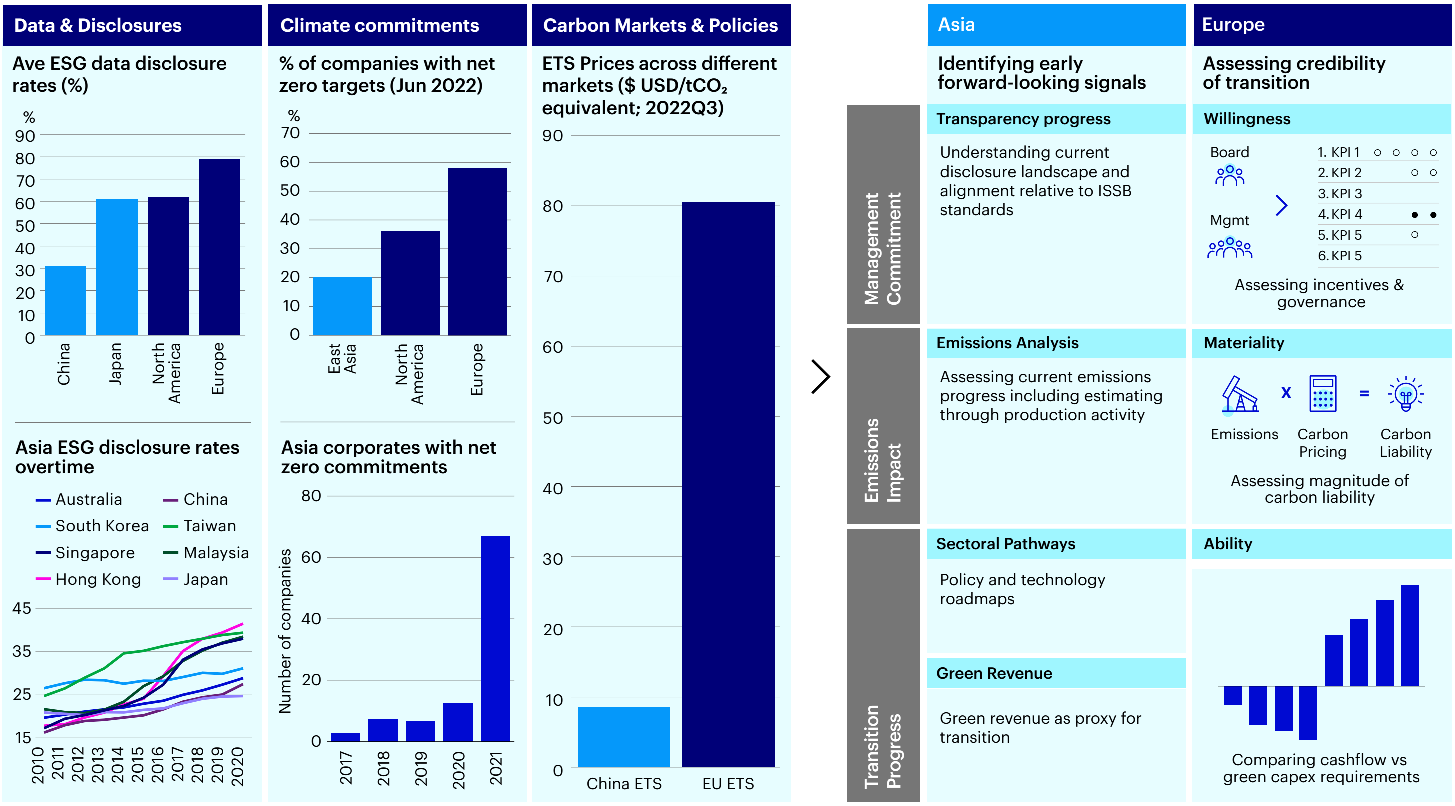
- **Approaches:** Defining climate adaptation can be challenging, given the many variables involved. Investors focused on adaptation financing can start by assessing the degree to which underlying activities and solutions lead to adaptation outcomes. For example, water and sanitation projects can reduce the vulnerability and suboptimal functioning of sanitation facilities during floods, while increasing water storage can help alleviate water stress and increase supply stability. The next stage involves evaluating each opportunity based on the climate vulnerability of the target location and assessing the adaptation needs of the population concerned. Finally, considering the impact and commercial viability that the adaptation solution can bring will help to define the opportunity.

Transition: ***assessing portfolio transition risks and identifying transition leaders***

- **Opportunity:** Transition investments are projected to average $4.84T USD per year from 2024 to 2030, a three-fold increase from the $1.77T USD spent in 2023 [5]. Regional governments are also promoting transition financing through policies and taxonomies. For example, the Japanese government launched a sizeable $11B USD climate transition bond issuance in early 2024 [6]. Taxonomies like the Singapore-Asia Taxonomy or Shanghai's transition finance taxonomy [7], provides definition on transition activities to encourage financing towards these sectors and projects. International Sustainability Standards Board (ISSB) and Taskforce on Climate related Financial Disclosures (TCFD) requirements are also driving corporates to step up their transition plans, including the assessment of climate risks and opportunities. These transition plans will provide investors with information to analyze financial implications on businesses, including green revenue opportunities or cashflow impact from investing in green capex for transition.

3. UNFCCC, Dec 2023, Record number of NAPs submitted in 2023
4. WEF, Feb 2024, Climate adaptation and resilience needs more innovative funding

Figure 3 - A range of transition investing frameworks based on regional maturity



Source: GS analysis; Bloomberg; SCMP/ Net Zero Tracker.

- **Approaches:** Investors can evaluate their portfolio against companies that are better prepared for potential climate risks and look to capture the revenue opportunities presented by the energy transition. With reference to Figure 3, assessment metrics could include forward-looking indicators such as climate disclosures, the targets and alignment to standards like Science-based Targets initiative, as well as assessing returns from green capex or revenues. In Asia focus would be on identifying early indicators of progress such as disclosures and policy tailwinds while in Europe focus is on assessing credibility of transition including board alignment, carbon liability and availability of cashflow for transition.

5. BNEF, Jan 2024, Energy Transition Investment Trends 2024
6. The Banker, Feb 2023, "World's first sovereign climate transition bond a significant milestone"
7. China Dialogue, Jan 2024, China's first 'transition finance' taxonomy launches

Regulatory Outlook: Examining regulatory developments through a CMAT lens

Figure 4- Global regulatory outlook relating to mitigation, adaptation, and transition

		Mitigation	Adaptation	Transition	Implications for investors
Government Policies	National Plans, Targets, Subsidies	**National Green or Sustainable Plans** (incl. 2050 vision/ roadmap, renewable/ EV targets) E.g. EU Green Deal, Singapore Green Plan 2030, Japan Green Transformation Policy **National Adaptation Plans**			• Policy support for growth in key climate solutions and technologies • Clarity on priority investment areas
	Bond Issuances	**Green Bonds** E.g. Hong Kong, India, South Korea		**Transition Bonds** Japan $11B Transition Bond 2024	
Corporate Disclosures		**Sustainability Disclosure standards** covering climate & broader sustainability risks and opportunities E.g. EU CSRD, ISSB adoption in broader Asia Pacific Regions			• Increased transparency provides additional information for investors assessment of company's climate progress
Taxonomies		**Green Taxonomies** E.g. EU Taxonomy, China Green Bond Catalogue, Australia Sustainable Finance Taxonomy		**Transition Taxonomies** E.g. Shanghai Transition Taxonomy, Singapore-Asia Taxonomy for Sustainable Finance	• Facilitate issuances of bonds/ loans/ debts aligned to taxonomies • Potential to be used as screening tool and metric
Transition	Transition Plans			**Transition Planning Requirements** Singapore Guidelines for Financial Institutions on Transition Planning	• Increases corporate and investors consideration of climate risks
	Transition Labels			**Investment Label** UK SDR Improver Category for funds	• Clarity to mitigate transition-washing and facilitate transition finance

Source: Invesco Analysis; The Banker "World's first sovereign climate transition bond a significant milestone"

Regulatory developments across mitigation, adaptation and transition include policy support on climate technologies, clearer definitions of activities and more robust disclosure and transparency requirements, enabling more in-depth analysis of companies' risks and opportunities:

- **Government policies:** National and regional governments continue to implement sustainability and climate plans such as the EU Green Deal and Singapore's Green Plan 2030. These plans include emissions reduction targets, sectoral policies or subsidies and growth targets on the adoption of climate technologies. Some regions have further supported sustainable financing through sovereign bond issuances, including India's sovereign green bond issuance [8] and the Hong Kong Government's retail green bonds [9].

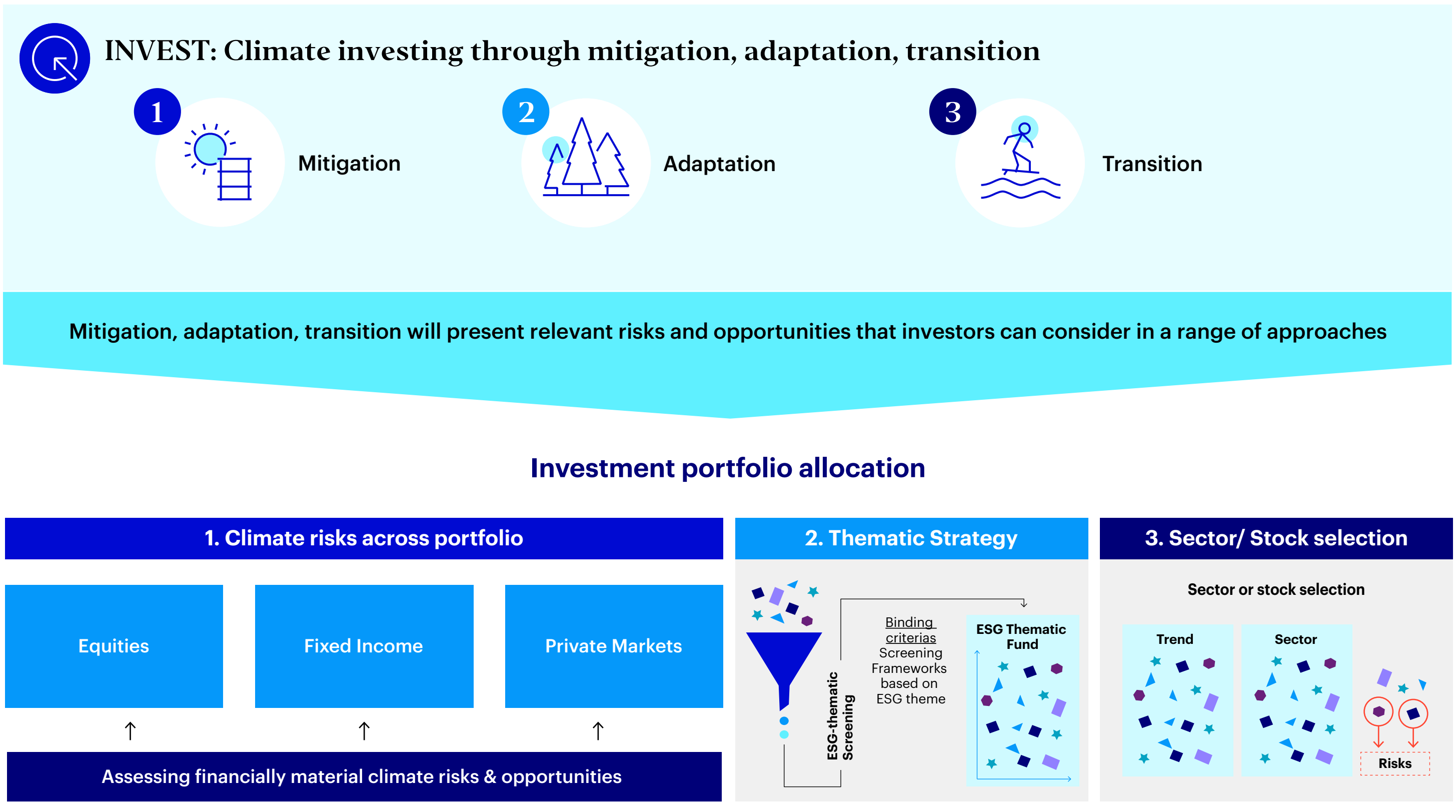
- **Corporate disclosures (ISSB (International Sustainability Standards Board), CSRD (Corporate Sustainability Reporting Directive)):** 2024 will see regional adoption of the ISSB standards, finalized in 2023, with Hong Kong, Singapore and Australia having already announced proposed aligned disclosure requirements. Climate (ISSB's S2 standards - IFRS - IFRS S2 Climate-related Disclosures) is the initial focus, emphasizing transition planning that promotes transition as an investing theme. Increased transparency through disclosure promotes greater standardization, alignment, and comparability, all of which may help investors to identify the leaders versus laggards. In addition, more robust data and harmonized reporting standards accelerate investments by facilitating sustainable investment fund creation and product innovation.

8. Business Standard, Nov 2023, First sovereign green bond of FY24 sails through amid thin greenium
9. HKMA, Oct 2023, Government announces subscription and allocation results of retail green bond

- **Taxonomies:** The continued increase in demand for taxonomies will be critical in facilitating bond issuance, defining sustainable investment, and enhancing sustainability disclosures by providing a standard for classification of green sectors and activities that investors and issuers can reference. These taxonomies provide clarity on definitions, addressing greenwashing concerns while also highlighting financing needs across sectors for investors to consider. Future considerations will include transition activities as we have seen in the Singapore-Asia Taxonomy for Sustainable Finance, [10] which defines a "transition category" in its taxonomy of activities.

- **Transition planning:** Singapore is one of the first countries to propose guidelines on transition planning for banks, insurers, and asset managers, providing recommendations on governance, forward-looking assessments, engagement, stewardship, and disclosures. As interest in transition gains momentum, assessing the credibility of transition plans will be key, as more regulators and policy makers seek to discourage "transition washing."

Figure 5 - Climate mitigation, adaptation and transition as a framework for investments and portfolio allocation



Source: Invesco, for illustrative purposes only.

Climate investing in 2024 has matured from a previously narrow focus on climate technologies to a broader spectrum of climate themes. A focus on financial materiality has led to a more holistic approach to assessing ESG risks and opportunities. In addition to dedicated thematic strategies, investors can use the framework of climate mitigation, adaptation and transition as a lens for stock and sector selection, broader risk management and in portfolio construction and asset allocation. These broad themes will see demand for financing growth alongside regulatory and policy support, and we strongly recommend that investors consider the future investment opportunities that may exist.

10. MAS, Dec 2023, Singapore launches first multi-sector transition taxonomy

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