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1. Introduction

ASCOR is an investor-led initiative launched to provide comprehensive and comparable assessments on how sovereigns are managing the low-carbon transition as well as the physical risks stemming from climate change.

This report outlines use cases for the ASCOR tool, organised by user type: investors and sovereign bond issuers. We explain how these users might harness the ASCOR tool for their respective needs. The potential use cases and practical case studies are gleaned from the TPI Centre's research and outreach through bilateral meetings, webinars and roundtables with various stakeholders. The report is designed to expand awareness of the practical applications of the ASCOR tool as well as stimulate greater use.

In this Introduction we first provide some background to the framework, our assessment process, and the landscape of climate data on sovereigns before turning to the various use cases in Sections 2 and 3.

The ASCOR framework

Using publicly available data, the TPI Centre assesses countries' performance across three pillars: Emissions Pathways, Climate Policies and Climate Finance (see Table 1.1). The framework provides a picture of country performance using 'Yes' or 'No' indicators as well as quantitative metrics.¹

Table 1.1. Overview of the ASCOR framework

Pillar 1. Emissions Pathways (EP)	Pillar 2. Climate Policies (CP)	Pillar 3. Climate Finance (CF)
EP 1. Emissions trends	CP 1. Climate legislation CP 2. Carbon pricing CP 3. Fossil fuels	CF 1. International climate finance CF 2. Transparency of climate costing
EP 2. 2030 targets EP 3. Net zero targets	CP 4. Sectoral transitions CP 5. Adaptation CP 6. Just transition	CF 3. Transparency of climate spending CF 4. Renewable energy opportunities

A fair and holistic assessment

The ASCOR framework was shaped to avoid penalising emerging markets and developing economies (EMDEs). Developing economies often have higher emissions from industrial processes compared with developed economies, reflecting different starting points in their transitions to carbon neutrality. They also tend to be more exposed than developed economies to physical climate risks. Addressing these disparities pragmatically, while considering fairness, was deemed essential in the development of the ASCOR framework. This challenge is often framed using the principle of 'common but differentiated

¹ Further details on the research process, indicators and assessment methodology can be found in this ASCOR methodology note. Insights from the results of our 2024 analysis are presented in State of Transition in Sovereigns 2024: Tracking national climate action for investors.

responsibilities', enshrined in the UN Framework Convention on Climate Change (UNFCCC), whereby high-income countries are expected to make comparatively more rapid progress on emissions mitigation.

Integrating this principle has several implications for the ASCOR framework's approach:

- Low- and middle-income countries are exempted from certain indicators and metrics based on fairness considerations. Our decisions on exemptions required a balance between agreed design principles and investor expectations: some perspectives preferred consistency while others emphasised fairness. Taking the baseline of the framework's universally applicable indicators, the exemption approach involved exploring potential income-based challenges for certain countries and adapting the framework accordingly. It is important to note that even if a country is exempted from an indicator, good climate change management in that area could still exist. Exemptions in the ASCOR tool should not discourage users from conducting further research and engagement on relevant topics with relevant countries.
- The focus of the framework is on the *management* of climate change risks and not on the measurement of climate risk per se. A direct assessment of exposure to climate risks could bias the results against many middle- and low-income countries, as they are expected to face more severe impacts from climate change while also having higher levels of vulnerability (United Nations Environment Programme [UNEP], 2024). Stakeholders interested in the exogenous exposure of countries to physical climate risk have other sources at their disposal, such as the Notre Dame Global Adaptation Initiative (ND-GAIN) index. ASCOR assesses climate risk *management* through forward-looking analysis that evaluates targets, policies and planning as well as backward-looking performance data such as historical emissions. Although ASCOR is not a financial risk tool as it does not measure risk exposure directly, it includes information on how and whether countries are *managing* current and future climate risks.
- In most sovereign investment decision-making, developed and emerging markets are each analysed separately on financial performance as well as environmental, social and governance (ESG) factors, reinforcing the need for differentiated benchmarks. To ensure meaningful comparisons that consider development priorities in parallel to climate action, a country's ASCOR performance should be considered in the context of its income group. This is because key factors such as financial resources, institutions and technologies to manage climate change are affected by income level. Investors can use ASCOR inputs to frame their investment considerations based on the average performance in a region or income group. We analyse how country performance differs based on region and income level in Section 3 of State of Transition in Sovereigns 2024.

Country governments, a key stakeholder group consulted in the development of the ASCOR methodology, emphasised the importance of using the tool as a basis for constructive dialogue. To understand a country's climate risk management, comprehensive analysis is needed. At the same time, investors may wish to prioritise specific areas of climate policy for the purposes of targeted sovereign engagement.

Investors should not expect countries to 'tick all the boxes' in the ASCOR framework. The indicators are not designed to be a set of perfectly discrete or universally necessary policy actions. For example, a country may reasonably choose not to establish carbon pricing and instead incentivise emissions reductions through other means such as bans on carbon-intensive activities or green subsidies. In general, users of the tool should consider specific national contexts when examining assessment results.

Sovereign climate data landscape

Sovereign climate risk analysis is still relatively new and there is a shortfall in tools shaped for investors' needs (Institutional Investors Group on Climate Chante [IIGCC], 2024a). The ASCOR tool and this report aim to contribute to the growing body of guidance on sovereign climate analysis, including that published by the Network for Greening the Financial System (NGFS) and the IIGCC. The sovereign climate data landscape includes various resources, though they differ in outputs, purposes and intended audience – see Table 1.2.

Table 1.2. Selected tools used to assess countries on climate change

	Tool	Target audience	Country coverage	Frequency of updates	Climate risk analysis	Climate opportunity analysis**
Policy and target tracker	framework	Investors, general	70	Annual	Transition Physical	Prospective renewable energy capacity
and tar	Climate Watch	General	197	Rolling	Transition Physical	Not stated
Policy	Climate Action Tracker	Policymakers, general	39	Rolling	Transition Physical*	Not stated
farget tracker	Net Zero Tracker	General	195	Rolling	Transition	Not stated
Target .	IMF Climate Dashboard	General	197	Rolling	Transition Physical	Not stated
	Climate Change Performance Index	Investors, general	63 + EU	Annual	Transition	Not stated
Index	Environmental Performance Index	General	180	Biennial	Transition	Not stated
	ND-GAIN	Policymakers, general	181	Annually	Transition* Physical	Not stated
	Climate Risk Index	General	180	Annual	Annual Physical	
	Sovereign ESG Data Portal	General	213	Rolling	Transition Physical	Not stated
	Systems Change Lab	General	197	Annual	Transition	Not stated
Data portal	1.5 National Pathway Explorer	Policymakers, civil society organisations, general	64 / 25	Rolling	Transition	Air pollution reduction; renewable energy
	SDG Tracker	General	195	Rolling	Transition Physical	Not stated

^{*}This type of risk is only a partial focus of the tool. **The presence of climate opportunity analysis is based on information provided in the methodology of each tool.

Source: Authors' analysis with input from source organisations

In Table 2.1 the selected tools are categorised as 'policy and target trackers', 'target trackers', 'indices' or 'data portals'. We identify whether the tool focuses on transition or physical risk, and whether it self-identifies as including an analysis of climate-related opportunities, based on information provided in the respective methodology documentation. We note that some tools include data and information that can implicitly inform an understanding of climate opportunities, but most do not have a dedicated approach to evaluate such opportunities.

Compared with the existing sovereign climate data landscape, ASCOR distinguishes itself by being an investor framework and covering both transition and physical risks, while focusing on risk management. It is also among the few tools that assess climate-related opportunities in the form of prospective renewable energy capacity (see p.19 of the ASCOR methodology note). ASCOR assessment data is open source, and all analysis is drawn only from publicly available information.

The ASCOR tool in practice: use cases addressed in this report

In the following sections, we describe each of the uses listed below and include examples and relevant quotes from market participants.

Investor uses of the ASCOR tool (Section 2):

- Frame climate change in sovereign debt investment decisions and meet investment goals.
- Conduct stewardship activities through informed dialogue with sovereign issuers.
- Comply with reporting regulations on climate change in certain jurisdictions.
- Provide background information to assess the credibility of sovereign green, social, sustainable and sustainability-linked (GSS+) bonds.
- Support corporate investment decision-making with insights into how countries manage climate risks.

Sovereign bond issuer uses of the ASCOR tool (Section 3):

- Showcase their progress on climate policies, especially when engaging with investors, and promote internal coordination on climate policies across different ministries.
- Conduct peer-group comparisons on climate policy and risk management.
- Structure sovereign sustainability-linked bonds by adopting ASCOR indicators or metrics as Key Performance Indicators (KPIs).

2. How investors can use the ASCOR tool

The ASCOR project was initiated by investors who sought a comprehensive and practical way to integrate climate considerations into sovereign bond investment decision-making. Investors require information on the climate performance of sovereigns to be able to integrate climate risks and opportunities into the different stages of their investment and stewardship processes. Investors with net zero targets in particular need to measure portfolio alignment across asset classes.

The ASCOR tool meets investor needs by providing a one-stop-shop on national climate performance. The tool includes source links for all data points, which enable users to dig deeper into any given topic for their investment analysis.

As an assessment tool pitched at the entity level, rather than the asset level, the ASCOR tool can also facilitate transition finance. Transition finance enables an entity to make progress along a pathway consistent with the low-carbon transition without the financing necessarily being purely for 'green' projects.

Use case: Develop and achieve investment goals

Investors can improve their traditional risk-return sovereign investment analysis by incorporating information on climate risks and metrics. ASCOR has been recognised by investors and investor networks in the finance ecosystem as providing granular data on climate factors beyond greenhouse gas (GHG) emission metrics (NGFS, 2024). Mitigation and adaptation policies assessed by ASCOR are a form of risk management that can reduce future transition and physical climate risks.

ASCOR provides granular data to inform investment and engagement objectives. Investors can assess portfolio alignment and set investment and engagement targets using the Net Zero Investment Framework (NZIF), an approach developed by a group of climate-focused investor networks. The NZIF methodology outlines 10 criteria that help investors organise and interpret data on sovereign climate performance (IIGCC, 2024b). To analyse a country's climate profile, investors can leverage ASCOR data across the NZIF criteria (see Table 2.1).

Table 2.1. Mapping the ASCOR tool to the NZIF alignment criteria

NZIF criteria Relevant ASCOR areas, indicators and metric			
1.	Ambition	2030 target (EP 2.a)	
1.	Ambition	Net zero target (EP 3.a)	
		2030 target alignment with 1.5C benchmark (EP 2.c)	
2.	Target	2030 target alignment with fair share (EP 2.c)	
۷٠.	Target	Net zero target alignment with 2050 (EP 3.b)	
		Net zero target alignment with 2045 (EP 3.c)	
3.	Emissions performance	Emissions trends and alignment (EP 1)	
4.	Emissions disclosure	Not explicitly covered in the ASCOR tool	
	5 D	Carbon pricing (CP 2)	
5.		Phasing out fossil fuel subsidies and production (CP 3)	
٦.	Decarbonisation strategy	Sectoral transition policies (CP 4)	
		Transparent breakdown of NDC costs (CF 2.a)	
6.	Capital/budget allocation	Expenditure disclosure and climate budget tagging (CF 3)	
7.	Climate policy/finance	Contributions to USD 100bn climate finance (CF 1)	
8.	Climate governance	Framework climate legislation (CP 1)	
9.	Just transition	Human rights conventions and just transition policy (CP 6)	
10.	Climate risk and accounts	Not explicitly covered in the ASCOR tool	

Source: Authors' analysis drawing on IIGCC (2024c)

It should be noted that the ASCOR framework was developed as a range of policy options rather than a prescriptive set of requirements. It is also important that investors consider which countries are exempted from certain indicators.

Using ASCOR, investors can complement existing indexinvesting or tilting methodologies. In our report State of Transition in Sovereigns 2024, we present an approach to calculate pillar-level scores to research the relationship between country climate performance and country characteristics such as region and income level (see p.40). Investors are using the data in similar ways. ASCOR is referenced in the target-setting protocol of the UN-convened Net Zero Asset Owner Alliance ([UNAOA] 2024) and integrated into a framework developed by AXA Investment Managers (see Case Study 1).

"We intend to use ASCOR to customise our GDP-weighted sovereign benchmarks, along with other climate metrics, to get a climate tilt for the steering portfolio."

Dr Udo Riese, UN Net Zero Asset Owner Alliance and Allianz Investment Management Head Sustainable Investing, Allianz Investment Management SE

Case study 1. AXA framework to assess sovereign net zero progress

AXA Investment Managers have developed a framework to support their investment teams and clients in understanding sovereigns' past progress, current state and remaining journey in transitioning to net zero emissions by 2050 (AXA Investment Managers, 2025). The framework draws on the NZIF structure and incorporates ASCOR data into its analysis. AXA specifies the information considered in its framework to measure each of the NZIF criteria. For example, under the NZIF criterion for 'emissions disclosure', AXA considers whether a country has established mandatory climate-related disclosure, which is a policy measure assessed in the ASCOR tool (indicator CP 4.c). Using ASCOR data in combination with other sovereign assessment tools, AXA classifies countries into six categories: 'no data', 'not committed to aligning', 'committed to aligning', 'aligning to net zero', 'aligned to net zero' and 'achieving net zero'.

AXA states that adopting the same structure for sovereigns that they previously developed for corporates enables their investment teams and clients to assess portfolio alignment towards net zero across fixed income assets.

"The ASCOR tool and its recent expansion in coverage are very welcome additions to the analytical toolkit of sovereign climate action. It is a nice complement to our Net Zero Sovereign Index, sharing commonalities on emission trends and pathways, for instance. Given its current broader coverage of countries, we will look to integrate the ASCOR tool's assessment of Climate Policies and Climate Finance more directly into our scoring of emerging market economies."

Nicolas Jaquier, Portfolio Manager, Emerging Market Debt, Ninety One

Use case: Conduct dialogue and engagement

Investor engagement with sovereigns on ESG topics is a relatively new practice compared with corporate shareholder engagement, but relevant guidance has emerged in recent years. For example, the Principles for Responsible Investment (PRI) developed specific guidance for sovereign engagement, encouraging sovereign bondholders to integrate ESG-related information, alongside more traditional topics for dialogue with sovereigns (PRI, 2020).

Such dialogue provides one channel through which investors can advocate for climate action. Through engagement, investors can clarify their expectations of sovereign climate performance, improve data disclosure and foster long-term relationships. It is mutually beneficial for sovereigns to understand investor perspectives, address misconceptions and access capital markets more efficiently.

Communications around climate risk can be difficult and politically sensitive. Common language is needed to understand, interpret and compare sovereign climate performance. A workshop organised by the World Bank with investors and sovereign issuers found that data availability and a lack of a shared understanding of ESG risks pose challenges in engagement (2019). The ASCOR tool provides a common language and input for engagement which benefits from being sourced from an independent academic institution. Preliminary assessments are shared with representatives of assessed countries for their feedback, which builds familiarity with the ASCOR tool among some of the relevant government stakeholders, including Ministries of Finance or Environment and Debt Management Offices.

Case Study 2. PRI Australian pilot study on collective sovereign engagement

The PRI is coordinating an investor-led initiative on collaborative sovereign engagement on climate change (PRI, 2024). It aims to enable investors to support governments to act on climate change and to engage with sovereign entities to assess their response to climate and transition risks. It was launched in 2022 as a pilot focused on Australia. The ASCOR tool played a key role in informing the engagement process during the pilot's development, before the first ASCOR assessments were published in 2023. For example, the framework was used to demonstrate to Australian authorities the kinds of metrics investors were starting to integrate into their decision-making. The tool contributed to engagement with the sovereign and sub-sovereign governments of Australia by helping investors to identify policy gaps and trends, enabling them to ask informed questions.

As the PRI initiative expands beyond the pilot study with Australia, the ASCOR tool can help to determine priority areas for engagement and facilitate progress by tracking a range of countries. It may also be instrumental in understanding the impact of sovereign engagement over time.

"The ASCOR framework has assisted the PRI Collaborative Sovereign Engagement on Climate Change in helping to illustrate for policymakers the increasing investor consideration of the climate profile of government issuers and the implications for capital market competitiveness. As the ASCOR framework evolves we expect it will continue to assist the initiative in focus market identification, market analysis, impact assessment and engagement strategy." Tom Arup, Head of Stewardship, Sovereign Engagement, Principles for Responsible Investment (PRI)

International commitments and frameworks such as the Paris Agreement and the UNFCCC can serve as a neutral reference point for conversations with issuers (PRI, 2020). ASCOR aligns with this understanding as the framework was built to assess countries' targets and policies against Paris-aligned benchmarks.

Despite sovereign engagement being in its early stages, the ASCOR tool is already in use in existing practices. For example, the PRI's initiative on collaborative sovereign engagement on climate change integrates the ASCOR tool into its engagement strategy (see Case Study 2).

Use case: Meet climate-related reporting requirements

Mandatory disclosure of sustainability risks and impacts by financial market actors is increasingly required in a range of jurisdictions including the European Union, the United Kingdom, Australia and Japan. Investors therefore have a growing need to compile climate-related data across asset classes and integrate climate considerations into their decision-making. To this end, ASCOR can help asset owners request clearer climate-related disclosure from the asset managers that manage their holdings. At the same time, ASCOR data and its methodology can contribute to the set of tools asset managers have to track and improve the climate alignment of their holdings.

Government regulations on climate-related disclosure aim to enable asset owners to make informed decisions and avoid greenwashing risks. This is a newly developing field of environmental policy: the EU's Sustainable Finance Disclosure Regulation (SFDR) (see Explainer Box 1) and the UK's Sustainability Disclosure Requirements are some examples. Other countries are exploring similar regulations or guidance for the financial sector. These regulatory requirements aim to facilitate the harmonisation of reporting on climate risks.

Explainer Box 1. EU Sustainable Finance Disclosure Regulation (SFDR) reporting requirements

The SFDR requires financial market participants in the EU to disclose how they integrate sustainability risks in their investment strategies and how they assess the principle adverse impacts (PAI) of their investments on society and the environment. For investments in sovereigns, there are two climate-related PAI indicators. The first indicator is the GHG intensity of the sovereign, which is calculated by weighting a country's Scope 1, 2 and 3 GHG emissions relative to its gross domestic product (GDP). The second indicator is the share of bonds held by the investor that are considered environmentally sustainable according to EU legislation.

The Joint Committee of the European Supervisory Authorities' report on a sample of PAI statements, found that disclosure on PAI indicators for sovereigns is not at a sufficient level that would allow meaningful comparison between investors' disclosures (ESA, 2024). Investors like Robeco have stated that limited availability of ESG data on sovereigns and a lack of comparability between existing data sources create barriers in disclosing PAI indicators for sovereign holdings (Robeco, 2023).

The ASCOR tool provides publicly available, comparable data on sovereigns' performance in climate change, including their absolute and intensity-based emissions trends over the last five years. These quantitative metrics may provide useful inputs for PAI disclosure of sovereign entities' GHG intensities.

Use case: Assess the credibility of sovereign GSS+ bonds

ASCOR was developed to assess entity-level climate performance: as such, it can inform investment decisions on all types of sovereign bonds, whether they are conventional 'plain vanilla' bonds or thematic bonds. Investors who are considering purchasing sovereign green, social, sustainability or sustainability-linked (GSS+) bonds can complement their assessment of the sustainability credentials of those specific issuances with an analysis of the country's entity-level climate strategy.

Case Study 3. Colchester Global Investors' use of ASCOR to complement internal green bond analysis

Colchester Global Investors is a medium-term, value-driven, sovereign-only investment manager. The factors that underpin its investment process are wide-ranging, incorporating macroeconomic and financial analysis alongside ESG factors. In 2019, Colchester launched a Global Green Bond Program that extended its ESG framework in this arena.

Colchester reports that the ASCOR tool provides a consistent framework with which to compare and contrast alternative sovereign bond issuers. It is used at Colchester as a baseline against its own proprietary assessment of countries' efforts and progress towards its climate objectives. It has used some of the ASCOR indicators in one-to-one engagements with sovereigns and during collaborative sovereign engagements on climate change, such as the PRI Australia pilot project.

Colchester recognises the value of the ASCOR tool's ability to drill down into the specifics of a country's climate action as it provides a centralised source of up-to-date information. For example, it finds the climate laws indicators in the Climate Policies Pillar particularly helpful; climate framework laws are important to investors because they establish the overarching climate governance of a country; are linked to emissions targets assessed in the Emissions Pathways Pillar; and set accountability elements and a strategic direction for climate action.

For countries that issue green bonds, the ASCOR data allows an asset manager to ensure the issuer's overall strategy is aligned with the green bond's funding intentions. It also provides an independent assessment of the issuer for investors to consider, which can mitigate greenwashing risks. Colchester finds such information useful as an input in its overall investment analysis and as a complement to its proprietary Green Bond Framework.

"Regulators and asset owners are requiring more sustainabilityrelated reporting from asset managers. ASCOR provides investors with a consistent framework with which to assess countries' progress towards their emissions targets, thereby helping them make more informed decisions." Claudia Gollmeier, ASCOR co-chair and Head of Investment Asia Pacific & Middle East and Africa, Colchester Global Investors Use-of-proceeds bonds, including green, social, sustainability and transition bonds, commit to financing predetermined 'eligible' projects. Green taxonomies developed by governments can help determine acceptable projects for the use-of-proceeds bonds, which increases their credibility (World Bank, 2022). An issuing entity, such as a government, could issue a green bond while failing to demonstrate overarching national climate ambitions. ASCOR can assist investors in conducting due diligence on whether a government has a robust transition strategy and thereby decrease the risk for investors of being accused of greenwashing (Robinson-Tillet, 2023). With information on countries' emissions trends, targets and climate policies, investors can assess the credibility and coordination of the country's national transition planning.

Credibility considerations are especially important for transition bonds, at both the instrument and the issuer level (Sustainalytics, 2021). Although these bonds are used to finance activities that reduce greenhouse gas emissions, the activities do not necessarily qualify as 'green' and they typically occur within carbon-intensive industries. Analysing the credibility of the issuer's climate performance minimises the risk that funds are misused for activities that do not align with the goals of the Paris Agreement.

Similarly, entity-level credibility is important for sustainability-linked bonds (SLBs), which are structured around performance targets rather than specifying the use of proceeds. Such bonds have a step-up or step-down in the coupon rate depending on whether the bond's KPls linked to sustainability targets are met. When evaluating a sovereign SLB, investors can analyse entity-level climate performance to assess the credibility of performance targets set out in the bond framework. The Climate Bonds Initiative suggests drawing on the ASCOR Climate Policies Pillar to assess country-level climate action in the context of sovereign SLBs (Climate Bonds Initiative, 2024).

In addition to providing an understanding of the entity-level climate performance of sovereigns, the ASCOR results may also enable investors to evaluate the ambition level of the specific targets set within a sovereign SLB framework. Only three countries, Chile, Thailand and Uruguay, have issued an SLB so far. With potential market entrances by Brazil, Vietnam, South Africa, Kenya and Rwanda, this market is expected to grow. The bonds issued by Chile and Thailand link their targets directly to their nationally determined contribution (NDC), the emissions reduction target set under the Paris Agreement. ASCOR assesses the 1.5°C alignment of NDCs in the 2030 targets area within the Emissions Pathways Pillar. This assessment of alignment can help investors understand whether the relevant SLB performance targets are ambitious enough to align with 1.5°C (see Explainer Box 2).

Case Study 4. PPM's use of ASCOR to assess the credibility of SLBs

By Matthew Graves, Managing Director, Portfolio Manager, Emerging Markets Debt, PPM America, Inc.

Sovereign sustainability-linked bonds (SLBs) are well-suited for sovereign issuers, given governments' need to guide the economy-wide energy transition and national adaptation paths. By tying financial incentives to economy-level KPls such as emissions targets detailed in nationally determined contributions (NDCs), SLBs encourage the adoption of good climate policies. The hope is that this facilitates greater private sector participation in climate investment, allowing fiscal interventions to be more targeted.

These would all count as material benefits from an issuer's perspective, which can lower the cost of capital. But country-level commitments must be credible for SLBs to work as sustainable instruments. ASCOR provides us with a roadmap to make this assessment.

- Pillar 1: Emissions Pathways. Pillar 1 helps us level-set. We want to understand a country's current trajectory, its alignment with national targets, and those targets' alignment with multilateral agreements. Any misalignment provides an opportunity to discuss plans with national authorities principally, on policy implementation and the way an SLB might serve as a tool to bring about desired outcomes. Importantly, ASCOR provides different ways to look at emissions trends, helping tailor discussions to the appropriate economic and developmental context.
- Pillar 2: Climate Policies. We place the most importance on this pillar. Political consensus is a critical underpinning of credible public policy. If transition and adaptation policies reside on a shaky political basis, it weakens the credibility of a country's future commitments. Given that context, we always look for the climate legislation framework as a starting point. From there, the rest of the pillar provides a (non-prescriptive) roadmap on best practice. This serves as a diagnostic for prevailing policies, and also as an objective basis for engagement on future plans.
- **Pillar 3: Climate Finance.** This pillar gives key information on accountability and transparency. We view transparency on prospective costs, as well as climate-related fiscal expenditure as an important ingredient in a healthy climate investment ecosystem.

The ability to assess credibility of commitments is the cornerstone of a functioning SLB market. Without it, the market does not deliver. ASCOR puts this information at investors' fingertips, allowing us to make a critical assessment of credibility both effectively and quickly.

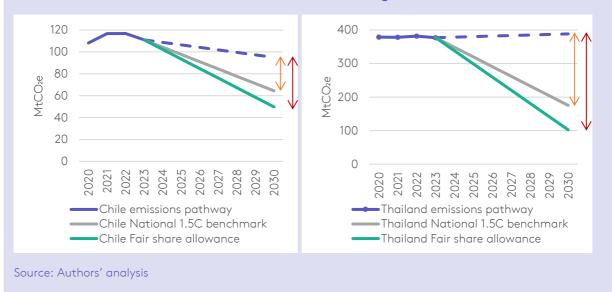
The views expressed here are solely the views of the author and do not necessarily reflect the opinions or positions of PPM America, Inc.

Explainer Box 2. Assessing the alignment of a country's NDC target

ASCOR assesses the alignment of NDC targets for 2030 against two benchmarks. First, a national 1.5°C benchmark is based on least-cost modelling. Second, a 'fair share' 1.5°C allocation distributes a global carbon emissions budget in 2030 based on fairness principles such as historical responsibility for emissions. More details on this approach can be found in the ASCOR methodology note (p.8-9).

According to our 2024 analysis (see figure below), Chile's 2030 target is not aligned with 1.5°C: it is 47% above its cost-effective national benchmark and 91% above its fair share allowance. Thailand's 2030 target is also not aligned with 1.5°C: it is 122% above its national cost-effective benchmark and 279% above its fair share allowance.

ASCOR assessment of Chile's and Thailand's NDC targets



Use case: Analyse corporate investments

Beyond sovereign bondholders, investors in corporate debt and equity instruments can also use the ASCOR tool as a complement to their company analysis, for example to inform country risk. Country risk refers to the uncertainty associated with a range of factors including political, economic and exchange rate risk. In some cases, an improved understanding of climate risk management may enhance investor information about the risk factors of a country in which an investee company operates, although country risk and sovereign risk should not be conflated (S&P, 2013).

Specifically, the ASCOR tool can help understand companies' regulatory environment concerning climate change and transition risk. The TPI State of Transition Report 2024 offers insights into the connection between government policy and corporate climate performance. Based on where companies are headquartered, national net zero targets, multi-sector climate strategies, national carbon pricing systems and mandatory climate disclosure laws are associated with improved corporate climate action. Such policies set out a strategic direction for domestic climate action and provide a signal to companies that decarbonisation will need to become part of their business operations.

In particular, the ASCOR analysis can help evaluate the climate alignment of state-owned enterprises (SOEs). ASCOR's country-level assessments can serve as an initial proxy for SOEs' approach to climate change. Such enterprises in the oil and gas sector control 90% of the world's oil and gas reserves and are responsible for 55% of production (Organisation for Economic Co-operation and Development [OECD], 2022). Oil and gas SOEs are economically significant for the economies of their host countries and highly exposed to transition risk (International Energy Agency [IEA], 2024). For SOEs with limited climate disclosure, country-level information on preparedness for the low-carbon transition may inform investors about an SOE's transition risk, given the often close relationship between sovereigns and semi-sovereign entities. The TPI Centre's corporate climate assessments of SOEs can be complemented by the ASCOR assessments of the sovereigns in which they operate (see Explainer Box 3).

Explainer Box 3. Layering the TPI Centre's corporate and sovereign climate assessments

Corporate assessment of Oil and Natural Gas Corporation Limited

Oil and Natural Gas Corporation Limited is a state-owned Indian company that accounts for 71% of India's oil and gas production. The TPI Centre's corporate climate assessment finds that the company is on Management Quality Level 3, indicating that although it has integrated climate change into operational decision-making, it has not done so at a strategic level. The company has a 2038 target to reduce its emissions, but because this target excludes its significant Scope 3 emissions, the Carbon Performance assessment shows that the company is not aligned with sectoral emissions benchmarks in the short (2027) or medium term (2035). The company also lacks a long-term net zero target for 2050.

Sovereign assessment of India

The ASCOR assessment of India shows a complex picture that can provide investors with greater context to understand the corporate assessment of Oil and Natural Gas Corporation Limited. Low per capita emissions and a 2070 net zero target make India perform better relative to its peers in the lower-middle-income group on the Emissions Pathway Pillar. However, India's five-year emissions trend and its 2030 target are not aligned with 1.5°C and the country performs relatively poorly on most areas in the Climate Policies and Climate Finance Pillars (see p.43 of *State of Transition in Sovereigns 2024*).

This sovereign assessment of India can be used as complementary information for the climate assessment of companies operating in India. The net zero target for 2070 sets a national commitment that could entail eventual decarbonisation mandates for SOEs in the country, given their semi-sovereign status.

3. How sovereign bond issuers can use the ASCOR tool

Countries are facing increased climate transition and physical risks that will affect fiscal sustainability, credit risk and sovereign bond demand. Although the literature on the relationship between climate risk and sovereign bonds is embryonic, emerging research suggests that preparedness to deal with physical climate impacts has started to be priced into bond markets, especially for countries that show poorer climate performance (Bingler, 2022). Meanwhile, countries with lower emissions appear to be rewarded with lower borrowing costs for long-term maturity bonds (Collender et al., 2023). For sovereign issuers with strong climate performance, the ASCOR assessment can therefore

climate performance, the ASCOR assessment can therefore help attract international capital.

Although divestment from sovereign bonds is not as prominent as in other asset classes due to the limited country universe, there is some evidence of investors withdrawing capital from sovereigns based on country climate performance (Reuters, 2019). As such, issuers that lack a climate change strategy may face difficulties securing the funds needed for the transition to a low-carbon economy or to deal with the impacts of climate change. Given the complexity of the transition challenge, clear governance and communication between ministries is crucial.

Use case: Showcase progress to investors

The ASCOR tool provides a baseline framework for issuers to demonstrate their climate credentials to sovereign bond investors. Enhanced disclosure from governments can support investors' own sustainability reporting. A promising development is the recent Sustainability Reporting Standards Exposure Draft published by the International Public Sector Accounting Standards Board (IPSASB) for climate-related disclosure by public sector entities (2024). The ASCOR framework includes many areas (e.g. climate legislation, sectoral transitions and climate spending) that can help national governments provide disclosure on their climate-related public policy programmes, as set out by IPSASB's draft standard.

At the national level, climate change is often managed by the Ministry of Environment, but various mitigation, adaptation and just transition efforts may be carried out by different government agencies. Participating in the government feedback process of the ASCOR tool encourages government officials responsible for managing bond issuance, such as Debt Management Offices, to engage with ministries responsible for climate and energy policy. This process can also foster inter-ministerial communication with other units, such as labour and finance ministries.

"ASCOR serves to internally advocate within governments for the importance of addressing climate change in capital markets."

Alexandra Beust, Head of Investor Relations & Green Finance, Debt Management Office, Germany

"In designing and executing Uruguay's sovereign SLB, engaging investors early on and maintaining open communication was crucial. We consulted around 100 investors as we were setting up our SLB Framework. When we published our first annual report in 2023, it was the first time a sovereign published such a report. The reporting followed the ICMA and EMIA's SLB principles, which are both voluntary. But beyond these requirements, we engaged with key stakeholders to find out what they wanted to see included in this progress report, and ASCOR helped us in understanding market expectations."

Herman Kamil, Head, Debt Management Office, Uruguay

The ASCOR tool can support country governments to:

- Build a common ground for discussing climate risk management across ministries and improve horizontal coordination within government (Coalition of Finance Ministers for Climate Action, 2023).
- Prepare for engagement meetings with private investors with information on national efforts that will be familiar to investor audiences.

- Demonstrate improvements in the country's performance against ASCOR indicators.
- Encourage the timely provision of climate-related data, thereby reducing data availability challenges which are especially prevalent in sovereigns (International Capital Market Association [ICMA], 2024).
- Include relevant climate policy information in bond frameworks, terms of reference or prospectuses.

Use case: Conduct peer-group comparisons

Governments can conduct comparisons on how they perform relative to their regional or income group peers. Such comparisons can help identify the most important gaps in disclosure and policymaking relative to what similar countries have successfully implemented. For example, the climate policies of relative 'leaders' within an income group can be used as a source of peer learning (see Explainer Box 4). Because ASCOR assesses countries based on publicly available climate policies reported in UNFCCC documents or domestic legislation and lists them in the tool, users can easily access these sources.

"The Paris Agreement and related global guidelines have been very helpful for our government to establish and implement our climate change policies successfully. In the process of moving forward, the ASCOR data collection can be useful for the South Korean government as well as for other national governments."

Sang Hyun Kwak, Director, Future Vision and Strategy Division, Future Vision and Strategy Bureau, Ministry of Economy and Finance, Republic of Korea

Use case: Develop targets for sustainability-linked bonds

Explainer Box 4. Comparing countries by income group

In State of Transition in Sovereigns 2024, we provide an analysis of countries' pillar-level scores against the ASCOR framework. In line with the investment approach of sovereign investors, who typically manage separate portfolios for developed and emerging markets, we publish pillar scores for countries by quartile and by income group (p.43). Among high-income countries, Austria, Denmark, Finland and Sweden are strong performers on both the Emissions Pathways pillar and the Climate Policies and Finance pillar. As such, they may be useful sources of good practice for other high-income countries to draw findings and conclusions from. Similar income group comparisons can be done for middle- and

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Income group	Quartile	Emissions Pathways			Climate Policies and Finance		
	First	Austria Barbados Cyprus Denmark	Estonia Finland Latvia Lithuania	Luxembourg Slovenia Sweden	Austria Chile Denmark Finland	France Germany Ireland Norway	Portugal Spain Sweden
	Second	Belgium France Germany Hong Kong	Hungary Ireland Malta Netherlands	Norway Portugal Slovak Rep	Australia Canada Estonia Japan	Malta Netherlands New Zealand Rep. of Korea	Slovenia Switzerland UK
High	Third	Canada Chile Italy Japan	New Zealand Panama Romania Spain	Switzerland UK United States	Belgium Cyprus Czechia Hungary	Italy Latvia Lithuania Luxembourg	Romania United States Uruguay
	Fourth	Australia Bahrain Czechia Israel	Oman Poland Qatar Rep. of Korea	Saudi Arabia Singapore UAE Uruguay	Bahrain Barbados Hong Kong Israel	Oman Panama Poland Qatar	Saudi Arabia Singapore Slovak Republic UAE

Governments that are considering issuing SLBs could draw on ASCOR indicators to develop performance targets. Post-issuance reporting requires the disclosure of KPls to demonstrate whether stated targets have been met. Countries that are expected to issue SLBs could draw on the examples of SLBs issued by Chile, Thailand and Uruguay or on the ICMA KPl registry.

Measurable and credible KPIs are key for countries entering the SLB market. ICMA's Sustainability-Linked Bond Principles (2024) and the World Bank's (2021) requirements for KPIs provide a useful starting point. The ASCOR tool's indicators and metrics fulfil the requirements of both the ICMA and the World Bank principles and could therefore serve as KPIs (see Appendix). Specifically, the benchmarks that the ASCOR tool presents in the area on 2030 targets can support countries in setting ambitious emissions reduction targets that are aligned with country-specific 1.5°C benchmarks (see Explainer Box 3).

SLB targets could go beyond GHG emissions to focus on other more qualitative aspects of a country's climate ambition and strategy. The idea to formulate SLB targets based on ASCOR's qualitative policy information emerged from discussions with relevant stakeholders: an issuer could design an SLB framework that adopts a flexible combination of policy measures to create a performance target structure (see Explainer Box 5).

"While the SLB market has room to improve, these instruments are gaining traction and could be useful for developing market sovereign issuers as a way of tying debt issuance to NDC or SDG targets. This would send strong signals to bond investors about a country's commitment to achieving targets. Each country's sustainability performance targets are dependent on its unique goals and disclosure capabilities. As such, SLB issuance comes with investor engagement to explain how KPIs and targets were chosen. The ASCOR tool can be useful for both issuers and investors to identify which indicators could be reliable for target setting and monitoring progress." Esther Law, ASCOR co-chair and Senior Portfolio Manager, Emerging Market Sovereign and Responsible Investing Lead, Amundi Asset Management

"An important question is whether the KPIs of a sustainability-linked bond are relevant and ambitious. ASCOR has proven to be a useful tool when comparing the local reality with other countries, helping climate performance benchmarking processes, and identifying weakness and strengths."

Victor Gonzalez, Head, Debt Management Office, Chile

Explainer Box 5. Hypothetical SLB structure based on ASCOR indicators

In principle, an SLB framework could be designed to require the issuer to achieve a specific number of ASCOR indicators (e.g. any three out of five potential options) to fulfil the bond's sustainability performance targets. In other words, it would need to achieve at least a certain number of indicators, but with a degree of flexibility on which precise indicators are met. A hypothetical bond structure using this concept is presented below.

Combination of ASCOR indicators serving as performance targets

Target	ASCOR indicator	Achiev	/ement	of targ	et (exar	nple)
1: GHG goal	EP2.b. Is the country's 2030 target aligned with its 1.5°C benchmark?					
2: Net zero target	EP3.c. Is the country's net zero CO ₂ target aligned with a global 1.5°C scenario?					
3: Fossil fuels	CP3.a. Has the country committed to a deadline by which to phase out fossil fuel subsidies?					
4: Carbon pricing	CP2.b. Does the country's carbon pricing system cover at least 50% of national greenhouse gas emissions?					
5: Budget tagging	CF3.b. Does the country apply climate budget tagging?					
Achievement	Number of targets met	5	4	3	2	1
Penalty	Step-up coupon	-	-	-	0.2%	0.4%

Source: Authors' analysis based on stakeholder discussions

4. Conclusions and outlook

ASCOR was initiated by investors to provide comprehensive and comparable data on how governments are managing the low-carbon transition and the impacts of climate change. Its goal is to provide rigorous assessment data, support dialogue between sovereigns and investors and encourage financial flows to fund a resilient and just low-carbon transition.

Beyond investors and sovereign entities, other user groups may also draw on the ASCOR tool for a range of purposes. Central banks could analyse and align their sovereign bond portfolios with climate goals using the ASCOR tool, as recommended by the NGFS (NGFS, 2024). Credit rating agencies could also draw on the framework and data to further integrate climate change into their sovereign analysis. Index providers could develop sovereign ESG indices based on the climate change performance data provided in the ASCOR tool. Researchers in academia and beyond can use the consistent assessment data and methodology to explore research questions relating to climate change, policy, and sovereign risk analysis (Manning et al., 2024). Civil society groups could also track country performance as part of their efforts to hold country governments accountable to the Paris Agreement.

The ASCOR tool can be used in a variety of ways by investors, sovereign entities and other stakeholders. This report has provided a non-exhaustive initial list of potential applications and users. We welcome further feedback on insights, use cases and experiences.

Appendix. ASCOR alignment with SLB principles

Table A.1. ASCOR alignment with ICMA Sustainability-Linked Bond Principles

Principle	How can sovereign bond issuers align with these principles by using the ASCOR tool?
Relevant, core, and material to the sovereign's economic, social and governance policies and of high strategic significance to the issuer's sustainable development policies.	ASCOR offers a dataset of the most relevant and material climate areas for countries.
Consistent with the overall issuer's sustainability policies but also reflecting the most material strategic dimensions for the issuer.	Users of the tool can assess the consistency of the bond's KPIs with the entity's overall sustainability policies by examining the country's ASCOR assessment.
Quantifiable on a consistent methodological basis.	Some of the ASCOR indicators are accompanied by quantitative metrics, as described in the methodology note.
Verifiable by external third parties.	ASCOR lists all data sources for its results in each country's assessment webpage.
Benchmarked against external reference or definitions to facilitate the assessment of the SPT's level of ambition.	Some ASCOR indicators, for example those on emissions reduction targets and carbon pricing, involve benchmarks derived from climate modelling.

Source: Authors' analysis based on ICMA (2024).

Table A.2. ASCOR alignment with World Bank Sustainability-Linked Bond Principles

Principles for setting KPIs	How can sovereign bond issuers align with these principles by using the ASCOR tool?
Available	The ASCOR data is publicly available online.
Attributable	The ASCOR data, particularly the Climate Policies pillar, is directly associated with governments' actions.
Frequent	The ASCOR data is re-assessed annually.
Regular	The ASCOR data is provided in sequence, which will eventually cover several years.
Comparable	The ASCOR data across countries rests on the same assessment methodology.

Source: Authors' analysis based on World Bank (2021)

References

AXA Investment Management [AXA IM] (2025) Assessing Sovereigns' Progress Towards Net Zero for Fixed Income Investors. https://www.axa-im.com/sustainability/insights/assessing-sovereigns-progress-towards-net-zero-fixed-income-investors

Bingler J (2022) Expect the Worst, Hope for the Best: The Valuation of Climate Risks and Opportunities in Sovereign Bonds. CER-ETH Working Paper 22/371. https://ssrn.com/abstract=4076323

Climate Bonds Initiative (2024) *Sustainability linked bonds: Building a High-Quality Market.* https://www.climatebonds.net/files/reports/cbi_slb_report_2024_04d.pdf

Coalition of Finance Ministers for Climate Action [CFMCA] (2023) Strengthening the Role of Ministries of Finance in Driving Climate Action. A Framework and Guide for Ministers and Ministries of Finance. https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2023/06/Strengthening-the-role-of-Ministries-of-Finance-in-driving-climate-action.pdf

Collender S, Baoqing G, Nikitopoulos C S, Richards K and Ryan L (2023) *Climate transition risk in sovereign bond markets*, Global Finance Journal, Volume 57, 2023,100868, https://doi.org/10.1016/j.gfj.2023.100868.

European Supervisory Authorities [ESA] (2024) *Principal Adverse Impact disclosures under the Sustainable Finance Disclosure Regulation*. https://www.esma.europa.eu/sites/default/files/2024-10/JC_2024_68_Final_Joint_ESAs_2024_Final_Report_on_PAl_disclosures__Article_18_SFDR_.pdf

Institutional Investor Group on Climate Change [IIGCC] (2024a) Sovereign Bonds & Country Pathways. https://139838633.fs1.hubspotusercontent-

eu 1. net/hubfs/139838633/IIGCC % 2004% 202024% 20 Sovereign% 20 Bonds% 20% 26% 20 Country% 20 Pathways.pdf

Institutional Investor Group on Climate Change [IIGCC] (2024b) Net Zero Investment Framework 2.0. https://www.iigcc.org/hubfs/NZIF%202.0%20Report%20PDF.pdf

Institutional Investor Group on Climate Change [IIGCC] (2024c) Sovereign Bonds & Country Pathways – Target setting and implementation guidance.

https://www.iigcc.org/hubfs/2024%20 resources%20 uploads/IIGCC%20 sovereign%20 bond%20 target%20 setting%20 and%20 implementation%20 guidance%202024.pdf

International Capital Market Association [ICMA] (2024) Guidance Handbook.

https://www.icmagroup.org/assets/documents/Sustainable-finance/2024-updates/The-Principles-Guidance-Handbook-November-2024-041124.pdf

International Energy Agency [IEA] (2024) World Energy Outlook. https://www.iea.org/reports/world-energy-outlook-2024

International Public Sector Accounting Standards Board [IPSASB] (2024) Sustainability Reporting Standards Exposure Draft (IPSASB SRS ED) 1, Climate-related Disclosures.

https://www.ipsasb.org/publications/ipsasb-srs-exposure-draft-1-climate-related-disclosures

Manning M, Bowhay R, Bowman M, Knaack P, Sachs L, Smolenska A, Stewart F, Tayler T, Toledano P and Walkate H (2024) *Taking the lead on climate action and sustainable development:*Recommendations for strategic national transition planning at the centre of a whole-of-system climate response. London: CETEx and Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science.

https://www.lse.ac.uk/granthaminstitute/publication/taking-the-lead-on-climate-action-and-sustainable-development/

Network for Greening the Financial System [NGFS] (2024) Considering climate-related risks and transition impact in the sovereign investments of central banks.

https://www.ngfs.net/system/files/import/ngfs/media/2024/05/16/ngfs_technical_document_on_considering_climate-

related_risks_and_transition_impact_in_the_sovereign_investments_of_central_banks_0.pdf

Organisation for Economic Co-operation and Development [OECD] (2022) Climate change and low-carbon transition policies in state-owned enterprises, OECD Publishing, Paris, https://doi.org/10.1787/e3f7346c-en

Reuters (2019) Sweden's central bank dumps Australian bonds over high emissions. *The Guardian*, 14 November. https://www.theguardian.com/environment/2019/nov/15/swedens-central-bank-dumps-australian-bonds-over-high-emissions

Robeco (2023) Robeco Euro Government Bonds. https://www.robeco.com/files/docm/sfdr-euro-government-bonds.pdf

Robinson-Tillett S (2023) *Analysis: Greenwashing risk in sovereign green bonds.* IPE, 22 August. https://www.ipe.com/analysis/analysis-greenwashing-risk-in-sovereign-greenbonds/10068461.article?adredir=1

S&P (2013) Country Risk and Sovereign Risk.

https://www.spglobal.com/marketintelligence/en/documents/country-risk-and-sovereign-risk-1-.pdf

Sustainalytics (2021) Transition Bonds Second Party Opinions.

 $https://connect.sustainalytics.com/hubfs/SFS\%20-\%20Videos\%20 and \%20 recordings/SFS\%20-\%20 Transition\%20 Bonds\%20 Launch/BROCHURE_TRANSITION_BONDS.pdf$

UN-convened Net-Zero Asset Owner Alliance [UNAOA] (2024) *Target-Setting Protocol Fourth Edition Background document*. https://www.unepfi.org/wordpress/wp-content/uploads/2024/04/NZAOA-TSP-Background-Doc-2024.pdf

United Nations Environment Programme [UNEP] (2024) Adaptation Gap Report 2024: Come hell and high water — As fires and floods hit the poor hardest, it is time for the world to step up adaptation actions. Nairobi, https://www.unep.org/resources/adaptation-gap-report-2024

United Nations Principles for Responsible Investment [PRI] (2024) Collaborative sovereign engagement on climate change: Australian pilot progress report.

 $https://dwtyzx6upklss.cloudfront.net/Uploads/y/m/a/pri_collaborative_sovereign_engagement_on_climatechange_australian_pilot_progress_report_406693.pdf$

United Nations Principles for Responsible Investment [PRI] (2020) ESG engagement for sovereign debt investors. https://www.unpri.org/download?ac=12018

Scheer A, Cristancho-Duarte C, Dietz S, Hizliok S, Honneth J, Lutz S, Monsignori G, Nuzzo C and Sullivan R (2024) State of transition in sovereigns 2024: tracking national climate action for investors. London: Transition Pathway Initiative Centre, London School of Economics and Political Science, 2024-state-of-transition-in-sovereigns-2024-tracking-national-climate-action-for-investors-report.pdf

World Bank (2022) Sovereign Green, social and sustainability bonds: Unlocking the Potential for Emerging Markets and Developing Economies. Washington,

https://thedocs.worldbank.org/en/doc/4de3839b85c57eb958dd207fad132f8e-0340012022/original/WB-GSS-Bonds-Survey-Report.pdf

World Bank (2019) Greater transparency on environmental, social and governance (ESG) issues: New focus for sovereign debt issuers https://blogs.worldbank.org/en/voices/greater-transparency-environmental-social-and-governance-esg-issues-new-focus-sovereign-debt