Submission to the COP 30 Presidency Roadmap on the transition away from fossil fuels in a just, orderly and equitable manner

About us

Ambition Loop is a global NGO based in Santiago, Chile, co-founded in 2024 by Gonzalo Muñoz and Nigel Topping — the COP25 and COP26 High Level Climate Champions — alongside a team of practitioners with proven delivery track records and deep sectoral expertise. Our work is defined by a commitment to collaboration, and we lead and inspire coordinated, transformative action across a focused set of major challenges: climate change, plastics pollution, industrial decarbonisation, land conservation and restoration, agriculture and food systems, and ocean and mangrove protection.

The *Blueprint initiative* is a project led by the Industrial Decarbonization Loop. Its mission is to close the financing and deployment gap for first-of-a-kind (FOAK) industrial technologies by convening innovators, capital providers, policymakers, and industry off-takers around a common purpose. Our focus is on hard-to-abate sectors — steel, cement, chemicals, shipping, and aviation — where decarbonisation is both most urgent and most complex. We do this by building investable project pipelines, engineering the right capital structures, and generating independent, evidence-based analysis that helps turn promising technologies into bankable commercial realities.

We welcome the COP30 Presidency's initiative to dedicate resources and leadership to the roadmap on 'transitioning away from fossil fuels in a just, orderly, and equitable manner' (paragraph 28.d of the Global Stocktake adopted at COP28). Ambition Loop, through the Blueprint Initiative, is pleased to offer the following inputs, grounded in our operational work at the frontier of industrial decarbonisation.

These contributions are offered in the spirit of advancing the Paris Agreement and the collective commitment to limit global temperature rise to 1.5°C above pre-industrial levels and reach net zero emissions no later than 2050. The anticipated Roadmap, as a key legacy of the COP30 Presidency, represents a critical opportunity to translate political consensus into actionable guidance — building momentum not only for COP31, but for the investment and policy decisions that must be made well before then.

Context and Introduction

Since the Paris Agreement, numerous organisations and governments have developed roadmaps to guide the transition to net zero across energy, industry, transport, and land use. Yet a persistent and widening gap remains between the pathways that science demands and the implementation that markets, institutions, and governments are currently delivering. Systemic transformation requires more than commitments — it requires tipping points that fundamentally reverse business-as-usual trajectories, backed by policy frameworks, investment structures, and political will sustained over decades.

The hard-to-abate sectors — steel, cement, chemicals, shipping, and aviation — are at the centre of this challenge. They collectively account for approximately 40% of global greenhouse gas emissions[1], and unlike power generation, their decarbonisation cannot be achieved through electrification alone. Most of the technologies capable of decarbonising these sectors exist in some form, but they are not at scale and are not on track[2] to be deployed within the timelines required by science-based net-zero targets.

More than half of the emissions reductions needed to reach net zero depend on pre-commercial technologies — a figure that rises to 50–70% specifically in hard-to-abate sectors[3]. Yet globally, fewer than 15 industrial projects reach Final Investment Decision (FID) each year, against a 2030 target that requires a sevenfold increase[4]. The bottleneck is structural. First-of-a-kind (FOAK) projects — those seeking to build the first large-scale commercial plant for an innovative, emissions-reducing technology — sit in a financing no-man's land: too large and capital-intensive for venture capital, yet too novel and untested for infrastructure finance and commercial banks. The equity financing gap alone is estimated at $150 billion[5].

The Blueprint Initiative works directly in this gap. The inputs below reflect lessons drawn from that work and from our broader engagement with the innovation and finance ecosystems that must be unlocked if the fossil fuel transition is to move from aspiration to implementation.

a) Most critical barriers to transitioning away from fossil fuels

1. The technology and scale gap in the hard-to-abate sector

The most fundamental barrier is the unavailability, at commercial scale and competitive cost, of clean alternatives to fossil-fuel-based industrial processes. In hard-to abate sectors, emissions are largely process-derived and cannot be eliminated through electrification only. Alternative pathways exist, but all face critical bottlenecks: as examples, the cost and availability of low-emission hydrogen, the absence of CO2 infrastructure at scale, and the lack of sustainable feedstocks for synthetic fuels and carbon removal.

As the IEA made visible in its 2023 update to the Net Zero by 2050 roadmap, 35% of emissions reductions required for net zero depend on technologies not yet commercially available today — rising to 60% for hard-to-abate sectors specifically. Despite decades of incremental improvements, the GHG intensities of key materials such as steel and cement have stagnated over the past 30 years[6].
The path to net zero is feasible by mid-century, but it requires urgent and sustained acceleration of the first-of-a-kind technologies commercialisation pipeline. These projects share three

[1] IEA, Achieving Net Zero Heavy Industry Sectors in G7 members (2022)
[2] IEA, *Tracking Clean Energy Progress* (updated annually)
[3] IEA, Advancing Clean Energy Demonstration Projects (2024)
[4] MPP global Project tracker (2024)
[5] Traversing the Climate Technology Scale Gap" (Elemental Impact & BCG, June 2024)
[6] IPCC, Sixth Assessment Report, Working Group III, Chapter 11: Industry (2022), p. 11-8.

structural characteristics that make them uniquely challenging: they generate process emissions resistant to electrification; they involve long-term, capital-intensive investments with extended payback periods; and they operate on relatively thin commercial margins that leave little room to absorb the initial cost premium of novel technologies in the absence of regulation. By definition, FOAK projects carry higher risk and cost than projects deploying proven technologies — yet they are the necessary first step in making those technologies proven and available.

2. Structural financing gap

The capital markets are not currently set up to easily finance these first-of-a-kind technology projects for industrial decarbonization at the required speed and scale. Early-stage and venture capital investors are suited to smaller, faster-cycle innovation, not the magnitude and capital that characterise industrial FOAK. Meanwhile, infrastructure investors and commercial lenders require very low risk levels provided by revenue certainty, proven technology, and established risk profiles - features that new technology and novel projects cannot yet offer.

As part of that barrier, there is also a market and demand-supply dynamic: market size limitations emerged from high costs and limited technological maturity. The lack of existing demand for these new technologies made establishing dedicated production lines risky and costly, creating chicken-and-egg problems for market development. Large-scale deployment remained limited by resource availability and infrastructure constraints, with projected increases in demand for hard-to-abate sectors outpacing supply development.

3. Political uncertainty

Volatile energy prices and uncertain geopolitical factors complicate long-term investment decisions, hindering the acceleration of the transition. Financing the transition requires a stable, predictable policy environment over 10–20-year horizons. Political uncertainty, shifting subsidy regimes, and the persistent gap between national pledges and implemented policy all undermine investor confidence and delay FID. Multiple international alliances, for instance, the Climate Club, Mission Innovation, and LeadIT, have demonstrated genuine political ambition. But ambition is still lacking implementation and translation into incentive structures, subsidy reform, and the elimination of perverse fossil fuel support.

b) Key levers for accelerating the transition

1. Making a clean investment bankable

The strongest recurring lever is reducing the cost of capital for clean industrial projects. This means making a clean investment bankable. “The cost of capital plays a key role in determining investment decisions and, when elevated, can pose a significant barrier to accelerated climate action[7]”. This requires a combination of supportive policy measures, innovative capital

[7] Yanovski, Boyan and Lessmann, Kai, Financing the Fossil Fuel Phase-Out (August 11, 2021)

structures (blended finance and risk-sharing instruments) and clear, durable long-term rules that give investors confidence in terminal values and revenue streams.

2. Regulatory speed and policy predictability

The next factor is regulatory speed and predictability. Most of these technologies will require long-term investment decisions, whether for new projects or retrofitting existing ones, and necessitate an environment that supports their deployment. Clear permitting processes, established rules, and certainty about future events are critical for accelerating the development of new technologies. Pledges and commitments must be translated into guarantees for investment to reduce the risk of this transition.
Policy instruments and mechanism as subsidy reform, taxes and incentives, accelerate and support the mobilization of capital.

3. Building resilient, sovereign supply chains

The geographical distribution of renewable energy resources, critical minerals, and industrial infrastructure has profound implications for the pace and equity of the transition. Supply chain resilience and the economic sovereignty it requires are both conditions for just transition and the requisite for scaling clean industrial technologies. The IPCC is clear that regions with limited access to low-cost renewables, hydrogen feedstocks, or CCS infrastructure face structurally different transition pathways and require differentiated support. International cooperation on supply chain development — including technology transfer, capacity building, and targeted investment in emerging economies — is essential to ensuring the transition does not replicate existing patterns of energy dependence.

c) Roadmap experience, best practices and lessons learned

1. Example global sectoral alignment

The IMO Net-zero Framework is the first in the world to combine mandatory emissions limits and GHG pricing across an entire industry sector. It brings a new fuel standard for ships and a global pricing mechanism for emissions.

The sector started with the 2023 IMO Strategy on the Reduction of GHG Emissions from Ships and with the new framework, aims to reach the goals presented there and accelerate the introduction of zero and near-zero GHG fuels, technologies and energy sources, and support a just and equitable transition.

Its value lies not only in the ambition of the target but in the governance architecture, the mechanism for its implementation and the global sectoral alignment to move forward.

2. Example of Regional Transition Plans: The EU Case and CBAM

The European Union's industrial decarbonisation strategy, underpinned by the European Green Deal, the Innovation Fund, and the Net Zero Industry Act, demonstrates the value of a coherent policy stack: targets, finance mechanisms, and demand-side instruments deployed in concert. Acknowledging the requirement to increase supply chain resilience and sovereignty in the region, the region has been able to promote long term strategies and alignment to ensure resources are mobilised in the correct direction. Furthermore, given the interconnectedness of various countries and regions, there is a shared requirement for carbon taxation impacting trade and investment across different sectors. This leverages globalization and interconnectedness to promote decarbonization.

d) How can a just, orderly and equitable transition best reflect the diverse realities

A just, orderly, and equitable transition cannot be defined by a single pathway or a uniform timeline. There is enough learning on how the transition needs to reflect the different realities the world presents. The diversity of national circumstances, in industrial structure, fossil fuel dependence, renewable resource endowments, fiscal capacity, and institutional readiness, requires an approach that is grounded in a shared common target but flexibility in how it is implemented and how the different supports and incentives are distributed.

However, the most important requirement for a just, orderly and equitable transition is that the deployment and investment of capital for this transition build on the common agreement on how to protect people and nature. Sustainable transitions require social licence — the active consent and participation of the communities most directly affected.

Finally, the transition should be accessible and equitable. That means ensuring that developing and middle-income economies — which rely on fossil fuels and require further development — can access novel and clean technologies at competitive cost.