RE: NIM initial submission for TAFF COP30 Roadmap

Thank you for the opportunity to respond on behalf of Mission Innovation: The Net-Zero Industries Mission (NIM)

Our focus is primarily on the acceleration of technology development, demonstration and deployment for the Steel, Cement and Chemicals industries.
These are of course accepted as the largest emitting sectors, and face exactly the varied and compounding challenges raised in the question set for the proposed COP roadmap.

We would welcome further discussion, but offer the following as an initial response for the roadmap preparation.
Please feel free to contact me at any time for explanation or further details.

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<tr><td colspan="2">Contributors may consider submitting concise inputs on one or more of the following questions</td></tr>
<tr><td>(a) What are the most critical barriers — whether physical, economic, financial, institutional, technological or social—preventing a transition away from fossil fuels?</td><td>Trust and confidence in the investability and commerciality of (changes in) technology to produce green products for individual industry entities. (This risk topic has a large number of sub elements, based on technology pathways, industry sectors, technical applications, and regional challenges)
The two main areas requiring the most complicated stakeholder interactions, knowledge sharing and risk taking are the <u>investability</u> and <u>adoptability</u> of green technologies. These decisions are concurrent, but concern different risks and stakeholders who must align.
Sustainable availability and commerciality of supply for alternative green energy sources.
Surety in demand and pricing of demand for green products to justify investment in technology and production changes
the complexity of the stakeholder and market changes required: from supply and demand uncertainty in pricing and stability, new technology risk, first mover advantage or disadvantage, market acceptance of competitor inaction, and shareholder backlash on too early or over-investment. (As well as the uncertainty of social and regulatory reaction if investments only target and deliver improvement over full attainment of net-zero). All of this pressure, risk, and uncertainty typically is centralised on individual stakeholders - the industrial investor and operator.</td></tr>
<tr><td>(b) What potential levers, whether economic, financial, institutional, social or technological,</td><td>Long term demand confidence, through subsidy, future contracts of supply, underwriting markets, clear and globally standardised penalties for non-compliance, etc.</td></tr>
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exist for accelerating the implementation of the transitioning away commitment?	• Investment decisions on “outside the fence” supply concerns on green energy supply by non-industry stakeholders, well in advance of individual corporate-entity industry investment decisions on green technology and production changes to their operations. • Open discussions and alignment with all financial stakeholders and industry operators on the requirements and hurdles to meet for investment to proceed in a commercially viable manner • Clear, open, safe, and dependable markets for green supply and demand, that willingly pay a luxury premium to offset all additional costs and risks in delivering that supply chain. • A fair and equitable green-product supply marketplace where penalties and standards apply equally to all competitors.
(c) What country, regional or sector roadmap experiences, best practices, and lessons learned can be shared?	• Trust in making both investment and change is built through shared experience and knowledge, in order to address stakeholder concerns. Programs that address risks and barriers, need to understand the different risks and barriers that each stakeholder has in each region, and ensure learnings and trust established in investment and technology adoption is shared as widely as possible to avoid duplication of effort, and to avoid the limited advancement of investment and decisions within geographical, sectoral, information or trust silos. • Improved stakeholder engagement to determine the real needs and perceived risks of all parties involved in a supply chain. • Determining through collaboration and open discussion the best owners of risks among the various stakeholder communities (finance, regulatory, engineering and delivery, researchers, industry operators and technology providers - and potentially the social pressures our public groups) to remove barriers from the adoption of investment in technology. • The fear of change and investment barrier is typically largest at the “commercialisation chasm” between TRL 6 and 8 for both operational innovations / changes and new technologies. Programs such as Australia’s “ARENA Future Manufacturing in Australia” and the US DOE “Office of Technology Commercialisation” as excellent examples of funding and encouraging investment and technology learning dissemination across this significant barrier. • Effective Knowledge Sharing (EKS) can increase the productivity and effectiveness of any investment in generation of knowledge towards these goals. EKS is a simple process to focus effort, ensure effort and investment is targeted on a real and stated need of a

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<td>stakeholder, and ensure common needs are met with a single effort, not duplicated needlessly. EKS has been endorsed as an underlying standard for Activation Group 2 on industrial decarbonisation across all industry PAS. EKS is defined as:

Establish relationships with the key stakeholders who will need to act on the problem
Identify the questions, barriers and risks they each need resolved
Create, consolidate or curate the information that meets those stated and prioritised needs
Communicate the knowledge to meet that stakeholder need to all stakeholder it applies to (across sector, geography and stakeholder grouping silos).

Incentivisation of knowledge sharing (comes under stage 3 of EKS) via competitive encouragement (e.g. the Net-Zero Industry Awards from Mission Innovation) or investment incentivisation (e.g. The ARENA technology demonstration investment grants in Australia) provide great focus on improving the quality of the knowledge to be shared on any technology or decarbonisation achievement, and increase the likelihood of learnings and risks undertaken to be available for sharing with the global stakeholder base and across multiple industry sectors.
No individual industry operator exists independently of a supply chain, which is often represented locally but is dependent on global factors. Mapping this supply chain and each stakeholder group affecting investment in each stage of that supply chain is key in identifying the priority barriers that can make investment and technological advancements that unlock progress in the overall supply chain.

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<td>(d) How can a just, orderly and equitable transition best reflect the diverse realities of countries at different stages of development and with different degrees of dependence on fossil fuels?</td>
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Trust required, regional legislative and environmental policies and commerciality vary greatly in each application due to markets, geographies, and regulations, as do social requirements and expectations. Higher margin sectors have the luxury and privilege of increased affordability of change, but not always social license or environmental approval of change. Identifying regions and industries with lowest barriers and sufficient motivation to demonstrate changes and adoption of technology, may require support in other elements that may not be commercially viable such as local supply of energy or demand for regional production of green product. However, they can build the knowledge required to generate trust in the viability of these changes, to then be applied in other jurisdictions and industries. This requires a global

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	cooperation instead of a sectoral or regional responsibility to find a location, governance jurisdiction, investor, and operator all contained in their geographical location, as well as an appetite or motivation to share their experiences and knowledge to build the trust of others who have not taken on such a consolidated and self-contained element of financial and operational risk. • Therefore, plan to develop knowledge and prove viability of technology solutions in regions, markets, sectors and industries where we can most afford to do so, but plan to share that experience and knowledge into the markets and applications where it is most needed but least viable to achieve independently in such a timely manner. • Investigate and actively action sharing of knowledge generated in all applications across sector and industry boundaries, funding or supporting incremental research and demonstration to prove how existing knowledge and technology demonstrations from one industry application can be applied into different sectors and industries.