Workshop on Industrial Cluster Decarbonisation: Sharing International Experience
Note of key findings

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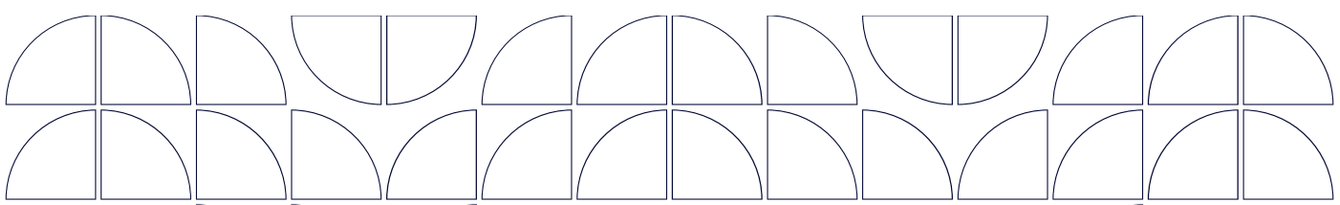

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In this brief, we outline the potential role of industrial clusters in the industrial transition and present key messages from a recent Net Zero Industries Mission (NZIM) sponsored international workshop on how to accelerate their development.

A growing role for industrial clusters[1] in the low carbon transition

- In a growing number of developed economies, industrial decarbonisation policy is focusing on how to reduce emissions from large industrial clusters of energy intensive industries, often found in coastal locations and around ports.
- These industrial clusters provide co-location of supply and demand for a range of decarbonisation interventions, including electrification; low carbon hydrogen; carbon capture, use and storage; and industrial symbiosis.
- Proximity has the potential to reduce upfront investment in supporting infrastructure and de-risk development by providing a guaranteed customer base.
- In addition, the concentration of skilled personnel provides opportunities for learning and innovation sharing.
- Although there are clear advantages to using clusters as sites to launch the industrial transition, many initiatives are at an early stage. National and global knowledge exchange has the potential to prevent duplication of effort and speed up work.

Key messages

We identified the following key messages from the workshop discussions.

1. Remove barriers to scaling up the industrial transition

Participants identified three common barriers that need urgent attention to accelerate progress:

- Reduce the time taken for planning and permitting decisions.
- Develop novel business models to make projects commercially viable (even if direct government support is also available).
- Greater engagement with surrounding communities to reduce opposition to decarbonisation plans.

2. Interventions for scaling out

Participants identified four enabling factors that would assist in expanding the industrial transition across sectors, company types and countries.

- Availability of supporting infrastructure to facilitate decarbonisation technologies.
- Funding to kick-start decarbonisation activities (noting that many companies are unused to bidding for government money and that many industrialising countries may require international financing).
- Policy incentives to attract private sector investment.
- Mechanisms for knowledge exchange and learning from the initial clusters' experiences.

[1] There is no single definition for what constitutes an industrial cluster, with differences in geographical scope, technology focus and organisations involved. The term "Hub" is also used to describe a similar concept.

3. Priorities for international collaboration

The workshop was unanimous in agreeing that international collaboration had a vital role to play in accelerating the decarbonisation of energy intensive industries worldwide. Three areas for immediate activity were highlighted.

- Share knowledge on what works in different situations. This would be helped by classifying clusters into archetypes so that those that were similar could access relevant information, identifying appropriate intermediaries to facilitate the dissemination of information both between and within countries, and building on the success of the IDRIC workshop to widen the conversation to more countries and actors.
- Create common frameworks and standards in carbon accounting and approaches to carbon border adjustments mechanisms, as well as standards for hydrogen purity and carbon intensity and regulations for CO2 purity and shipping.
- Develop global supply chains and building import and export markets (e.g. for low carbon hydrogen) via cluster links and based on these common frameworks and standards.

Next steps

- IDRIC will continue to work on international aspects of industrial cluster decarbonisation and has plans to hold a follow-up workshop alongside COP28 in Dubai in December 2023.
- NZIM will follow-up with future Communities of Practice meetings. The first event will be at the Mission Innovation Ministerial MI-8 in Goa, India on 19 July 2023 on “Technology innovation to and from emerging economies: deep decarbonization of industry”.

Details of the stakeholder workshop

- The Industrial Decarbonisation Research and Innovation Centre (IDRIC), organised the workshop on behalf of NZIM as a UK contribution to Pillar 1 of the NZIM Action Plan: to facilitate a dialogue between stakeholders and joint learning across countries, sectors and technology pathways.
- It was organised with the support of the UK Department for Energy Security and Net Zero, the International Energy Agency, the Australian Heavy Industry Low-carbon Transition Cooperative Research Centre and the Clean Energy Ministerial Industrial Deep Decarbonisation Initiative, co-ordinated by the United Nations Industrial Development Organization.
- The meeting was held in London on 21 and 22 June 2023.
- It attracted more than 60 participants from 14 countries in Europe, North America, the Middle East, Asia and Australasia, plus representatives from several international organisations.
- Participants discussed the following four topics: lessons learned; priorities for policy makers; governance and commercial arrangements; scaling up and scaling out.

Supporting IDRIC project

IDRIC is a UK Research and Innovation funded academic centre focusing on research and innovation to accelerate the decarbonisation of the UK’s largest industrial clusters. The Learning from international experience in decarbonising industrial clusters project aimed to understand the barriers and opportunities facing industrial clusters on their journey through the low carbon transition.

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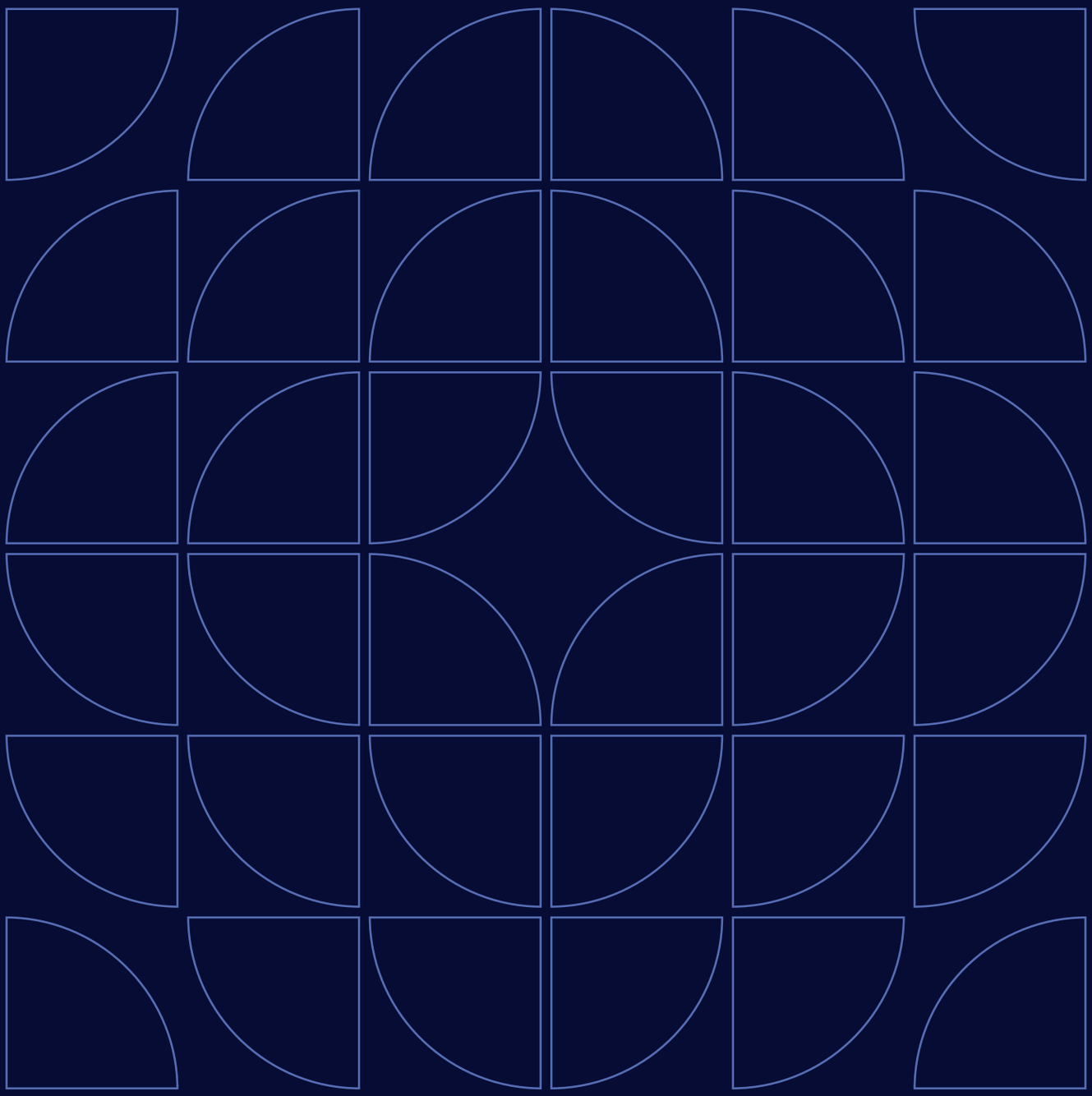
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