
Asia Clean Energy Forum 2022

Technological Innovation for Deep Decarbonisation of Heavy Industry

*Session 2.2: Promoting Circular Economy Concepts and Decarbonisation
within the Energy Sector*

Dr. Peter Warren

Head of Climate Innovation & Finance

Department for Business, Energy & Industrial Strategy (BEIS)

UK Government

15 June 2022

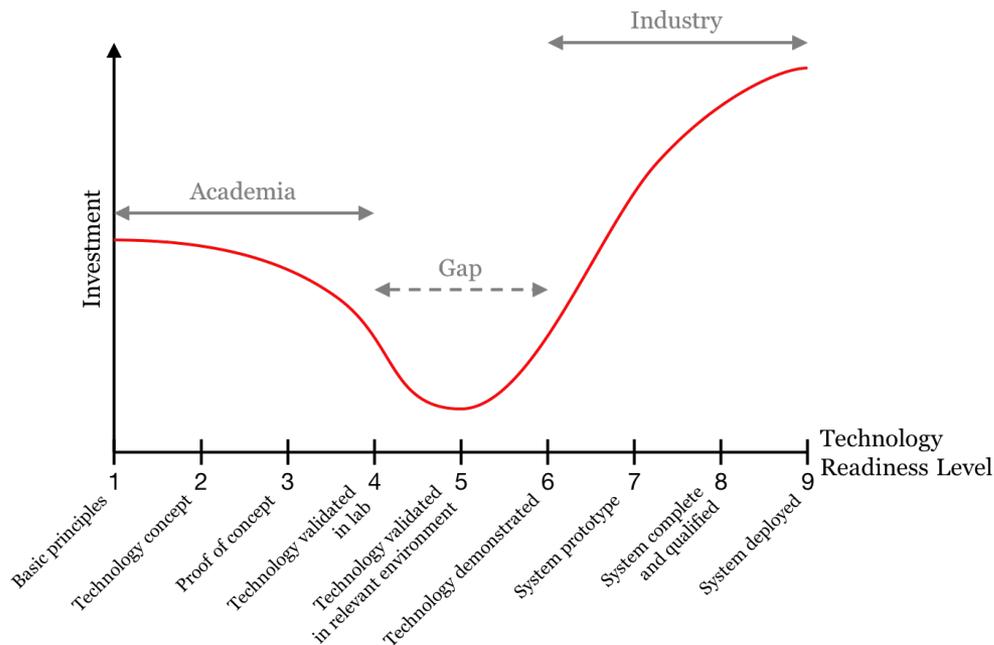


Global Context: Importance of Heavy Industry in Decarbonisation and Circular Economy Actions

- Industry energy consumption: ~40% of total final consumption (IEA, 2021)
- Demand for materials and goods is growing globally, particularly in Asia-Pacific
- Need for innovative deep decarbonisation, circular economy and energy efficiency solutions



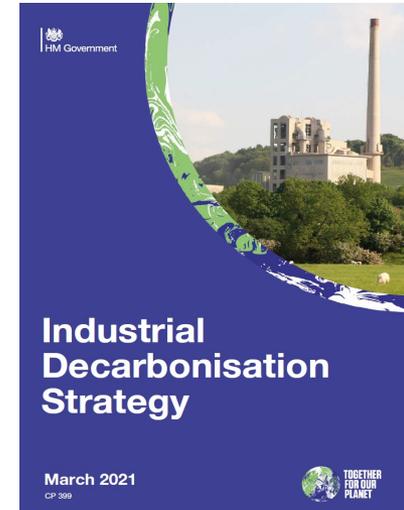
Importance of Accelerating the Commercialisation of Innovative Technologies



- 35% of cumulative emissions reductions will come from technologies currently at the prototype / demonstration phase (IEA, 2020)
- Further 40% will come from technologies not yet commercially deployed at scale (IEA, 2020)

UK Domestic Actions on Industrial Decarbonisation

- 78% emissions cut by 2035 in 6th **Carbon Budget** and net zero by 2050 (both legislated); **2050 Net Zero Strategy**
- **Industrial Decarbonisation Strategy** (March '21)
- **Hydrogen Strategy** (August '21)
- **CCUS investor roadmap** (April '22); **CCUS programme**: 2 industrial CCUS clusters by mid-2020s and 4 by 2030



UK Domestic Actions on Industrial Decarbonisation

- ❖ **£289m** Industrial Energy Transformation Fund (IETF)
- ❖ **£240m** Net Zero Hydrogen Fund for hydrogen projects
- ❖ **£170m** Industrial Decarbonisation Challenge Fund
- ❖ **£19.5m** CCUS Innovation 2.0 competition
- ❖ **£1b** CCUS Infrastructure Fund for Industrial CCS projects

International Actions on Industrial Decarbonisation

International collaboration is key for the acceleration of clean energy technologies for industrial decarbonisation in Asia-Pacific



*Glasgow
Breakthroughs:
Hydrogen, Steel*



*Industrial
Decarbonisation
Agenda*



International Actions on Industrial Decarbonisation

International Climate Finance

- **UK Official Development Assistance (aid)** supports climate mitigation & adaptation in ODA-eligible countries
- Increase in UK international climate finance to **£11.6b** over five years (to 2025/2026)

Industrial Decarbonisation Innovation Fund

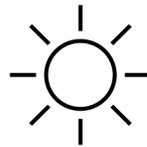
- *Programme:* under UK's £50m Clean Energy Innovation Facility
- *Grant funding:* to accelerate commercialisation of innovative technologies for heavy industry decarbonisation in ODA-eligible countries
- *Examples:* piloting fuel-switching, circular economy, CCUS
- *Lessons learned:* [Annual Review 2021](#)

Case Studies: Bangladesh

- Overview: supporting **Bangladesh** in identifying how renewable energy use can be expanded in Green Economic Zones for use in industry. Project on-going
- Actions:
 - Technical and financial assessments
 - Pre-feasibility studies and support for implementation
- Outputs to date:



Studies on material recovery and solar completed



Floating solar implementation plans in development



Regulatory work being completed

Case Studies: Kazakhstan

- Overview: supporting Kazakhstan in enabling clean energy transitions in industry through the Industrial Energy Transition Initiative. Project on-going
- Actions:
 - Engaging industries to identify appropriate industrial decarbonisation technologies
 - Fostering an enabling policy and regulatory environment
- Outputs to date:

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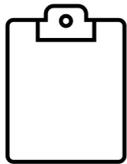
Identified technologies and measures for 5 “early adopter” enterprises

Recommendations presented to industries in Kazakhstan

Implementation commencing

Case Studies: Turkey

- Overview: promoting low-carbon technologies and circular economy methods in Organised Industrial Zones (OIZs) in Turkey. Project on-going
- Actions:
 - Capacity building and training for the Turkish government
 - Technical and financial analyses
 - Development of a certification system
 - Pre-feasibility study of a pilot model-factory within an Organised Industrial Zone
- Outputs to date:



Two Business Cases for OIZs developed



National Green OIZ Certification system proposed



Pre-feasibility study of a pilot model factory progressing