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# 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*

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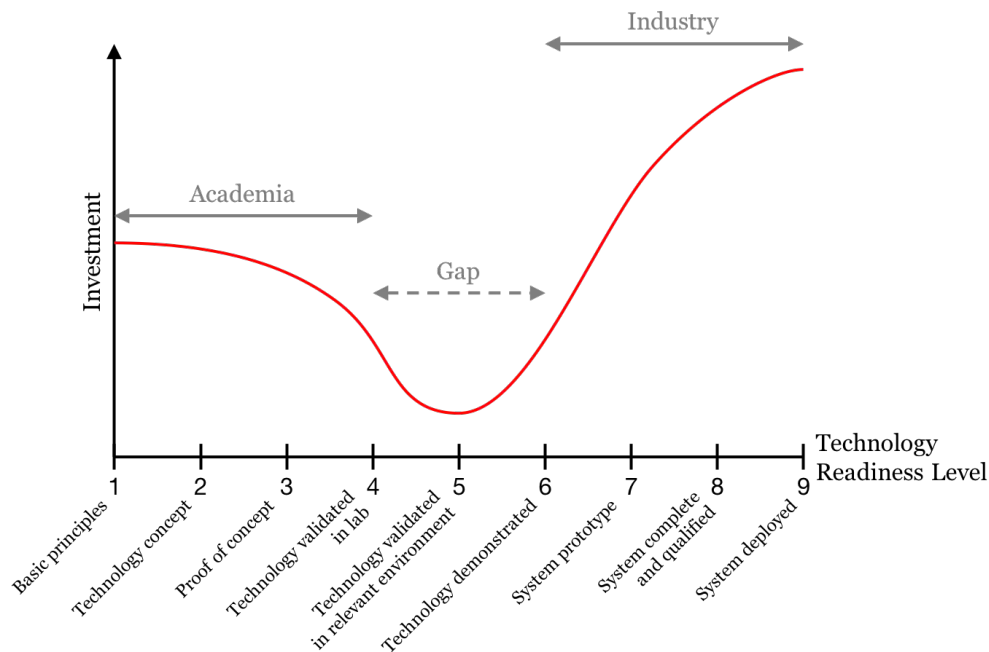


# Global Context: Importance of Heavy Industry in Decarbonisation and Circular Economy Actions

- 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



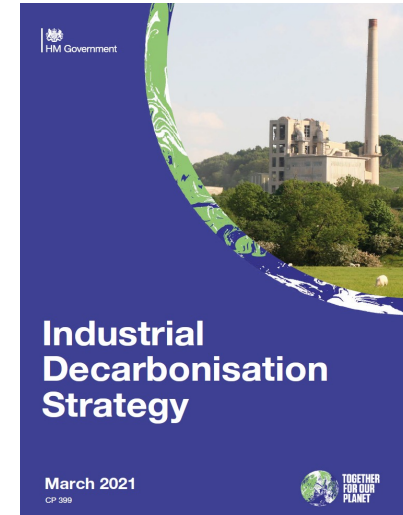
# Importance of Accelerating the Commercialisation of Innovative Technologies



- 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 6<sup>th</sup> **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*



# 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*

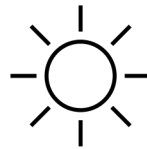
- *Programme:* under UK's £50m Clean Energy Innovation Facility
- *Grant funding:* to accelerate commercialisation of innovative technologies for heavy industry decarbonisation in ODA-eligible countries
- *Examples:* piloting fuel-switching, circular economy, CCUS
- *Lessons learned:* [Annual Review 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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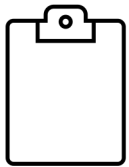
*Identified technologies and measures for 5 “early adopter” enterprises*

*Recommendations presented to industries in Kazakhstan*

*Implementation commencing*

# Case Studies: Turkey

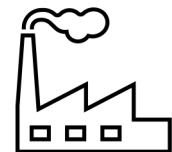
- Overview: promoting low-carbon technologies and circular economy methods in Organised Industrial Zones (OIZs) in Turkey. Project on-going
- Actions:
  - Capacity building and training for the Turkish government
  - Technical and financial analyses
  - Development of a certification system
  - Pre-feasibility 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*