Session 4.4: Digital Solutions for Industrial Decarbonization

Scene-Setting

Peter Warren, United Nations Industrial Development Organization (UNIDO)
Key challenges in Asia-Pacific and context for digital solutions in hard-to-abate sectors
In 2022, Asia-Pacific contributed to 41% of GDP, 55% of global manufacturing value added (MVA) and 48% of total manufacturing exports (UNIDO, 2023).

Important industries promoting regional manufacturing growth are computer, electronic and optical products, chemicals and chemical products, and machinery and equipment. Growing these industries through a sustainable, low carbon pathway will have an important contribution to economic growth and reducing emissions in the region.
Digital Solutions for Decarbonizing Hard-to-Abate Sectors

Clean energy transitions require advancements in digital technologies (e.g. smart devices, cloud computing, big data analytics, blockchain, machine learning, AI) to enhance productivity and lower emissions, including factories, buildings, industrial sites.
Digital Solutions for Decarbonizing Hard-to-Abate Sectors

- Advanced Data Analytics
- Edge Computing
- Digital Twins
- Blockchain for Carbon Management
- Decentralized Energy Systems
- Collaborative Platforms and Digital Ecosystems
- Circular Economy Solutions
- Cybersecurity and Resilience
- Regulatory Compliance and Reporting
- Human-Centric Design

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A2D
Accelerate to Demonstrate Facility
UNIDO’s Role in Advancing Digital Solutions in Industry

DEVELOPMENT DIALOGUES ON THE UNIDO 4IR STRATEGIC FRAMEWORK 2021-2030

During the Development Dialogue for the Asia-Pacific and Arab region (October 2021), the following aspects were discussed:

Promotion of STEM sectors to accelerate 4IR, SMEs and start-ups.

Capacity building to empower change, digitalization consulting, developing, delivery and deploying solutions to accelerate digital adoption and to help academic institutions develop talent pools (examples: in India: Make in India and the Smart Advanced Manufacturing and Rapid Transformation Hub (SAMARTH)).
UNIDO’s Role in Advancing Digital Solutions in Industry

**PARTNERSHIPS AND COLLABORATION**

**UNIDO’s core contributions and expertise:**

- Policy and industry dialogues
- Technical Assistance projects and programmes
- Capacity building
- Investment and innovation funding/support

Example: AIM Global

**Aims:** UNIDO established a sharing platform for international stakeholders to foster dialogue and connectivity between government agencies, companies, technology leaders and major players in AI development, the R&D community, civil society and finance institutions.

**Areas of focus:**
- Vital Technology
- International Partnerships
- Reinforced Competitiveness

Example: new Accelerate-to-Demonstrate (A2D) Facility

**Aims:** the ~USD 80 million new A2D Facility aims to accelerate the commercialization of innovative solutions in developing countries through later-stage “lighthouse” demonstration projects.

**Areas:** focuses on smart energy and digital solutions, industrial decarbonization, clean hydrogen, and critical minerals.

Example: Industrial Deep Decarbonization Initiative

**Aims:** IDDI is the largest and the most diverse coalition of governments and private sector working to decarbonize heavy industries, such as steel, cement and concrete.

**Current members:** Brazil, Canada, Germany, India, Japan, Saudi Arabia, Sweden, UAE, UK, USA.

**UNIDO:** coordinating organization, including with related initiatives (Mission Possible Partnership, Climate Group, LeadIT, etc.).
Thank you