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SUSTAINABLE DEVELOPMENT GOALS

Transforming production in a low-emission transition

Session 3: Equity, Development, and Economic Diversification in a Low-Emissions Transition

Second Global Dialogue on the Impacts of the Implementation of Response Measures

Istanbul 30 March 2025

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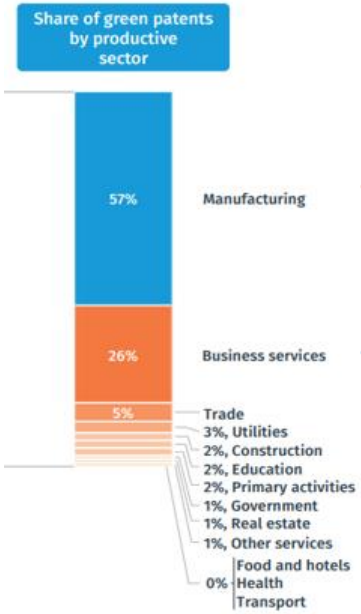
1. The challenge, the new reality: keep growth trajectories in the transition

- Break the **false dichotomy** between growth strategies and low-emission pathways
- In challenging times for climate political commitment, it is crucial to **understand the socio-economic co-benefits** of the low-carbon transition and the opportunities it offers – domestically and collectively
- Despite a volatile international political discourse, the **inertia towards low-carbon technological solutions and growth strategies remains strong** – including in the developing world, driven by **industrialization**
- The last few G20 Presidencies prioritized the **convergence** between the **climate** and the broader **sustainable development agendas**
- Considerable challenges remain, and the de facto **crisis of multilateralism poses risks** to hard-fought gains – and climate responsive decision making

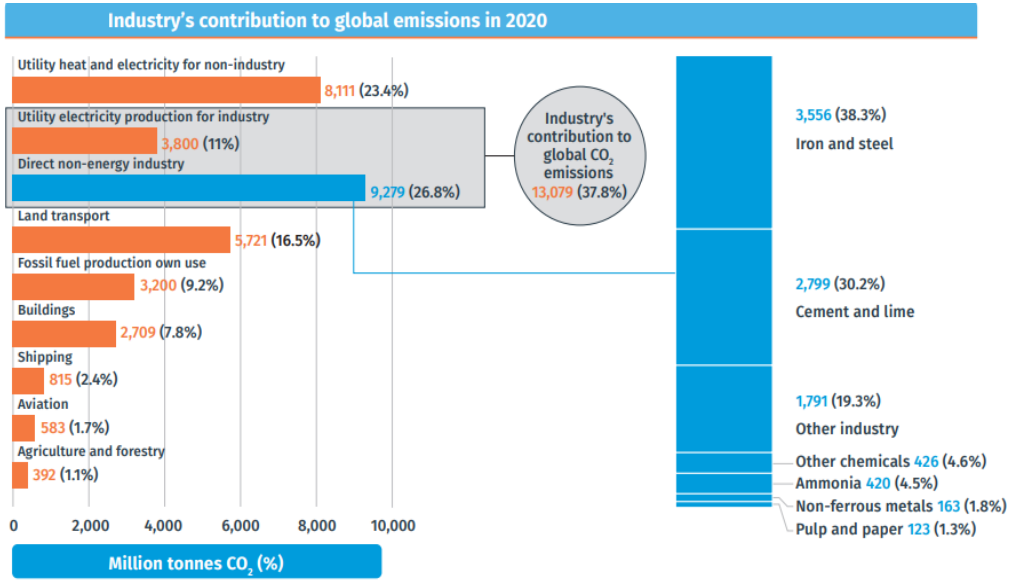
2a. Industry as part of the problem... and the solution



- **One third of global CO_2 emissions** can be reduced by industrial decarbonization
- **Two sectors** concentrate the highest emissions

… Moreover…

- **Industrial innovation** is essential to develop **green technology**:
  - **6 out of 10 green patents** are in manufacturing
  - The highest **R&D** share and intensity



Source: Background policy brief prepared by Bataille and Alfare (2023) based on IEA (2023a).

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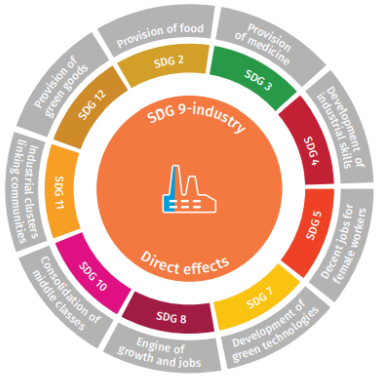
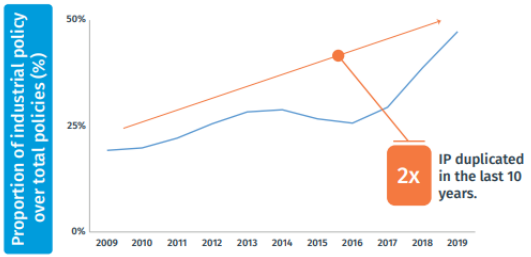
2b. The opportunity of the (green) industrial policy renaissance

- After years of deprioritization, today most countries are using Industrial Policies (IPs) as crucial economic policy tools.
- A new generation of IPs are showing the potential to drive green innovation and transformation
- The rationales vary and include:
  - Jobs and Growth
  - Innovation and digitalization
  - Meet climate commitments
  - Strong SDG correlation
  - Trade considerations
  - National security
  - …



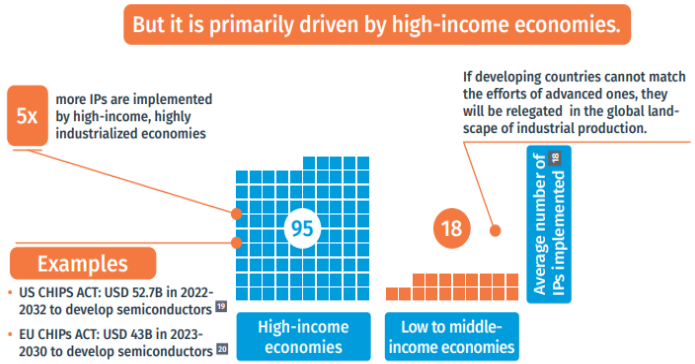
Source: UNIDO elaboration.

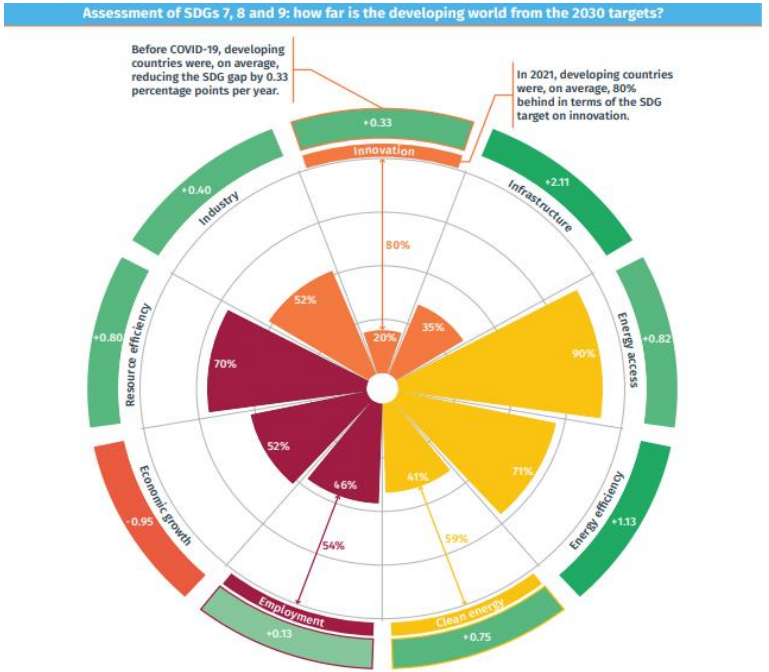
Industrial policy is on the rise.



Industrial policy (IP) seeks to change the structure of the economy towards sectors, technologies, or tasks that are expected to offer better prospects for economic growth or societal welfare.

2c. Opportunity, but need for greater international cooperation





- **Concentration** of IP implementation in developed countries
- **SDG gaps in developing countries** particularly in:
  - Innovation, Clean energy, Employment
- **Transformation of GVCs**, including regionalization
- Financing, capacity gaps

International cooperation is needed to avoid widening inequalities any further

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3. Diversification and innovation as key drivers of the required transformation

- **Production transformation** aims to achieve **climate goals** while increasing, i.a., **competitiveness and resilience**
- Economic and development literature (e.g. on green "product space") points to opportunities for developing countries and latecomers based on "**green windows of opportunity**"
- Existing **capabilities and value chain characteristics** can offer opportunities to diversify production towards green products
  - Policies should **strategically address the capabilities required to produce green products** as relevant to their product competitiveness. Green products will have greater growth potential in a country the closer they are to products with high competitiveness.
- Support to developing countries should **not only look at technology transfer**, but also aim to **strengthen innovation** and its ecosystems.

4a. Policy implications for developing countries: keys for success

Benefits: early greening (rather than delaying) can provide a competitive advantage:

- **Countries gain foothold in markets of the future**
- **Avoid lock-in** of energy-intensive pathways -> "green windows of opportunity"

The challenge: **building up production capabilities:**

- *Innovation is path-dependent on productive capabilities*
- *Green industrial policies must be adapted to each country's unique economic and social context and its pre-existing capabilities*

Key considerations:

- **Fluid stakeholder dialogue**: public agencies, higher education, financial institutions, private sector;
- **Resources for patient capital** that can be deployed **to finance long-term R&D**;
- **Stable demand-side policies**: effective use of public procurement policies and incentives for consumers and firms to avoid demand volatility for domestically produced local carbon technology;
- **Strategically strengthen productive capabilities**
- **Targeted development of skilled human capital** to produce and scale up low carbon solutions.
- **No one-size-fits-all approaches**

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4b. Policy implications: the need for global solidarity and cooperation

Domestic efforts alone will not be sufficient. Potential Vs. Realization

The international community must come together in solidarity to support the most vulnerable countries by:

- Ensuring expanded and sustainable **financing**
- Supporting the development of **government capabilities** to design and implement a modern industrial policy.
- **Supporting the transfer of** new **technologies** and domestic efforts to adapt them to the local conditions.
- Supporting the **development of new skills,** incl. of **MSMEs,** to reduce unemployment, increase productivity, and improve living standards.
- Opening the **policy space**.

Modern industrial policy

Failing to do so will exacerbate inequalities, and with them poverty, hunger and insecurity

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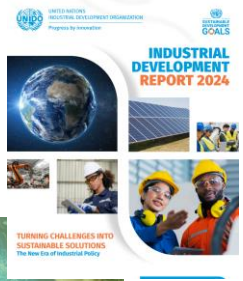
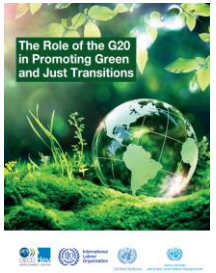
5. Useful tools

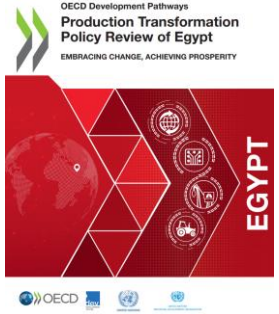
- We are not starting from scratch. There is growing attention among IOs on green industrial policies.
- UNIDO, as a specialized agency on inclusive and sustainable industrial development, offers a wide array of services to support these topics for sustainable development.

Useful UNIDO instruments include:

- Diversifying Industries and Value Chains for export (DIVE) tool
- Enhancing the Quality of Industrial Policies (EquIP) tool
- Multilateral Industrial Policy Forum
- Industrial Development Report
- Industrial Policy Lab (IPL)
- Global Cleantech Innovation Programme
- PAGE policy toolkit and online courses
- Council of Engineers for the Energy Transition (CEET)
- Clean Energy Value Chains in Africa (CLEVA)
- **Policy coherence** to achieve multiple, interconnected, goals –joint OECD/UNIDO/ILO/UNCTAD report for the G20
- Production Transformation Policy Reviews







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Thank you!

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Additional slides

Key areas of sustainable industrial policies

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IP Focus: Innovation and Technology-Driven Transformation

- Developing **green technologies is a precondition** for the energy transition.
- Industry 4.0, AI, and automation are making industrial processes more energy-efficient
- Developing countries must prioritize robust AI ecosystems, skill development, and international collaboration to **effectively integrate AI into their industrial strategies**
- Technology cooperation is essential to **close existing technological gaps between developed and developing countries**

	Priorities	Challenges	Policy Instruments
DIGITALIZATION	Adoption of ADP technologies	Lack of awareness	Awareness-raising tools
			Public demonstration and testing of ADP technologies
		Capital constraints	Adopting grants (match funding)
			Subsidized loans
		Low absorptive capabilities	Expert advice and technical assistance
			Digital skills development programmes
			Attraction of foreign qualified workers
		Supplier gaps	Supplier development programmes
	Creation of ADP technologies	Specialization in low value added segments	Technology transfer conditionality on production
			Joint ventures
			Local content requirements
		Low research capabilities	Public funding for basic research on digital technologies
			Development of research networks

Note: ADP = Advanced digital production.

Source: UNIDO elaboration based on background note prepared by CIIP (2024).

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IP Focus: Decarbonization (of the energy system)

- Decarbonization implies abandoning technologies that are often profitable for private producers but costly to society and the environment due to their emissions.
- Decarbonizing industry is technically possible but requires bold policy actions and transformative innovation.
- Achieving these tasks requires an entrepreneurial state that nurtures innovation in areas of great societal relevance.

	Priorities	Challenges	Policy Instruments
DECARBONIZATION	Deployment of renewable energy	Capital constraints	Global climate funds and international development assistance
			Public investment and long-term loans in renewable energy
			Preferential interest rates for renewable energy
		Sunk costs	Just transition programmes
			Phasing out of subsidies for carbon-based facilities
		Lack of technical expertise	Consultancy services
	Greening of existing production	Production is still linear	Regulation and technical standardization
			Plastic taxes
			Awareness-raising tools
		Lack of green skills	Apprenticeships for the greening industry
			Tax credits for "environmental occupation"
	Development of green technologies	Lack of emission-free technologies	Setup of environmental research agencies
			Support for green technology transfer
		Low research capabilities	Public funding for basic research on green technologies
			Development of research networks

Source: UNIDO elaboration.

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IP Focus: Inclusive Industrialization for Job Creation, Skills and Just Transition

- **Just transition**
- To minimize costs for workers, investing in **green skills development** as part of green industrial policies is essential
- As carbon-intensive industries become greener, workers currently employed in these industries need **financial compensation and reskilling**
- Industrial policies intended to create jobs should **focus on the whole industrial ecosystem**.

	Priorities	Challenges	Policy Instruments
JOB CREATION	Industrial ecosystems development	Limited linkages to local suppliers	Temporary tariff protection for infant industries
			Clusters creation around infrastructure development
			Establishment of thematic industrial parks or zones
		Difficulties in meeting quality standards	Consultancy services for quality management and certification
			Business angels
		Lack of skills	Technical and vocational education training
			Retraining programmes for skills mismatch
	Formalization	Small-scale of production	Grants and loans for small and medium-sized enterprises (SMEs)
			Transition vouchers
		Difficulties accessing markets	Consolidated public procurement
			Grants for market studies
	Technology bias mitigation	Development of appropriate technologies	Directed innovation programmes
			Support for indigenous technologies

Source: UNIDO elaboration.

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