SDG 9
Industry, innovation and infrastructure

Monitoring SDG-9 industry-related indicators in the Arab region
Objective

Increase data availability and reporting, improve data flows and enhance the use of **SDG 9 industry-related indicators** for policy guidance and evaluation

- Enhance understanding of SDG-related metadata
- Improve statistical capacities to invigorate production and use of comparable SDG indicators
- Strengthen inter-institutional coordination to facilitate production of SDG indicators and data flow
- Share and discuss country challenges in measuring SDG indicators
Contents

• UNIDO and the 2030 Agenda for Sustainable Development
• Description of SDG 9 industry-related indicators, including their compilation, methodological details and other metadata
• Tools for tracking progress along SDG 9 industry-related targets
• Q&A and discussion
UNIDO Statistics Division

i. Compilation, updating and dissemination of international databases with structural and short-term industrial statistics

ii. Methodological and analytical products based on statistical research and experience of maintaining internationally comparable industrial statistics

iii. Contribution to the development and implementation of international statistical standards and methodology

iv. Technical cooperation services to countries in the field of industrial statistics

v. SDG9 global monitoring
UNIDO and the 2030 Agenda

**Inclusive and sustainable industrial development (ISID)**

- UNIDO’s mission is to **promote and accelerate inclusive and sustainable industrial development** in Member States.
- "Inclusive" in this context means that industrial development must include all countries and all people, and **offer equal opportunities** and an **equitable distribution of the benefits** of industrialization to all stakeholders.
- “Sustainable” addresses the need to **decouple** the prosperity generated from industrial activities from excessive natural resource use and negative environmental impacts.

**Sustainable Development Goal 9 (SDG 9)**

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
Inclusive and sustainable industrialization, together with innovation and infrastructure, can unleash dynamic and competitive economic forces that generate employment and income.

They play a key role in introducing and promoting know-how and new technologies, accelerating international trade and enabling the efficient use of resources.
**INFRASTRUCTURE**

9.1.1 Proportion of the rural population who live within 2 km of an all-season road
9.1.2 Passenger and freight volumes, by mode of transport
9.a.1 Total official international support (official development assistance plus other official flows) to infrastructure

**INNOVATION**

9.c.1 Percentage of population covered by a mobile network, by technology
9.5.1 Research and development expenditure as a percentage of GDP
9.5.2 Researchers (in full-time equivalent) per million inhabitants

**INDUSTRY**

9.2.1 Manufacturing value added as a proportion of GDP and per capita
9.2.2 Manufacturing employment as a proportion of total employment
9.3.1 Percentage share of small-scale industries in total industry value added
9.3.2 Percentage of small-scale industries with a loan or line of credit
9.4.1 CO2 emission per unit of value added
9.b.1 Percentage of medium and high-tech manufacturing value added in total value added
ISID and SDG 9 industry indicators

SDG 9 industry-related targets cover all three dimensions of sustainable development

Advancing economic competitiveness
- 9.2.1: Manufacturing value added as a proportion of GDP and per capita
- 9.b.1: Proportion of medium and high-tech industry value added in total value added

Creating shared prosperity
- 9.2.2: Manufacturing employment as a proportion of total employment
- 9.3.1: Proportion of small-scale industries in total industry value added
- 9.3.2: Proportion of small-scale industries with a loan or line of credit

Safeguarding the environment
- 9.4.1: CO₂ emissions per unit of value added
UNIDO’s role in SDG 9 monitoring

UNIDO is the **custodian agency** of six SDG-9 industry-related indicators

- Responsible for collection, compilation and dissemination of timely, internationally comparable SDG indicators
- Goal of strengthening statistical capacities for the production of statistics for SDG 9 and ISID
- Role in supporting member States in formulating their development plans and programmes in the context of SDG 9 and ISID
- Global, regional and national reporting
# SDG reporting

## National
- SDG national reports
- Voluntary National Reviews (VNRs)

## Thematic
- Thematic reports published by international agencies
  - UNIDO’s report on inclusive and sustainable industrial development
  - UN Women’s report on gender indicators
  - ILO’s report on decent work

## Regional
- SDG regional reports
  - UNECA
  - UNECE
  - UNECLAC
  - UNESCAP
  - UNESCWA

## Global
- SDG Global Report
- SG report
- SDG Progress Chart
SDG reporting: data flow
Important guidelines and classifications

System of National Accounts (SNA) 2008

International Standard Industrial Classification of All Economic Activities (ISIC) - Revision 3 and Revision 4

International Recommendations for Industrial Statistics (IRIS) 2008

International Recommendations for Energy Statistics (IRES)

2006 IPCC Guidelines for National Greenhouse Gas Inventories
Monitoring SDG Target 9.4

SDG Target 9.4: By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.

- Custodian agencies: IEA, UNIDO
- Indicators assigned to Target 9.4 for global SDG reporting
  - 9.4.1 Carbon dioxide emissions from fuel combustion (millions of tonnes)
  - 9.4.1 Carbon dioxide emissions per unit of GDP (kilogrammes of CO$_2$ per 2017 PPP United States dollars)
  - 9.4.1 Carbon dioxide emissions per unit of manufacturing value added (kilogrammes of CO$_2$ per constant 2015 United States dollars)

9.4 Upgrade All Industries and Infrastructures for Sustainability

By 2030, upgrade all industries and infrastructures to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.
9.4.1 CO$_2$ emissions per unit of value added

- **Data sources**: CO$_2$ emissions are estimated based on energy balances, value added from national accounts

- **What does the indicator measure?**
  Environment sustainability and energy efficiency

- **CO$_2$ emissions related indicators**
  - Total CO$_2$ emissions from fuel combustion
  - CO$_2$ emissions from manufacturing industries

- **CO$_2$ intensity**
  - **Total intensity**: CO$_2$ emissions per unit of GDP (kilogrammes of CO$_2$ per 2017 PPP USD)
  - **Sectoral intensity**: CO$_2$ emissions from manufacturing industries per unit of MVA (kilogrammes of CO$_2$ per constant 2015 USD)
**CO₂ emissions from fuel combustion**

CO₂ emissions from fuel combustion are estimated by type of fuel (for a given source category)

\[ Emissions_{fuel} = FuelCombusted_{fuel} \times EmissionFactor_{fuel, tech} \]

- where \( Emissions_{fuel} \) are CO₂ emissions by type of fuel (for a given source category), \( FuelCombusted_{fuel} \) is the quantity of fuel combusted, and \( EmissionFactor_{fuel, tech} \) is the CO₂ emission factor by type of fuel and combustion technology used.

- Data on the production and consumption of fuels and energy products are part of national energy statistics, normally in the form of **national energy balances**.
CO₂ emissions from manufacturing industries
ISIC Revision 4

- Iron and steel industry [ISIC Group 241 and Class 2431];
- Chemical and petrochemical industry [ISIC Divisions 20 and 21];
- Non-ferrous metals basic industries [ISIC Group 242 and Class 2432];
- Non-metallic minerals such as glass, ceramic, cement, etc. [ISIC Division 23];
- Transport equipment [ISIC Divisions 29 and 30];
- Machinery comprises fabricated metal products, machinery and equipment other than transport equipment [ISIC Divisions 25 to 28];
- Food and tobacco [ISIC Divisions 10 to 12];
- Paper, pulp and printing [ISIC Divisions 17 and 18];
- Wood and wood products (other than pulp and paper) [ISIC Division 16];
- Textile and leather [ISIC Divisions 13 to 15];
- Non-specified (any manufacturing industry not included above) [ISIC Divisions 22, 31 and 32].
Understanding the flows of energy

Columns present the “commodity balances” for all products.

Rows present the “flows of energy” across products.

Total energy can be defined.

Three main “blocks” of flows:

1. Supply
2. Transformation
3. Final consumption
IEA data collection and compilation

Annual Questionnaires
OR
National publications, websites

Coal
Oil
Natural gas
Renewables
Electricity & Heat

Commodity Statistics

Energy balances
SDG 9
Industry, innovation and infrastructure

Tools for tracking progress along SDG 9 industry-related targets in the Arab region
UNIDO’s SDG-9 Industry Index

Composite measure benchmarking countries’ performance towards SDG 9 industry-related targets

- Captures five industry-related indicators of SDG 9 (9.2.1-MVAsh and MVApC, 9.2.2 - EMP, 9.4.1-CO2MVA, 9.b.1-MHTsh)
- Single measure comprising various dimensions
- Tool for increasing awareness and gaining attention of broader audience

This composite measure is a great invitation for a closer investigation of their components
UNIDO’s SDG-9 Industry Index

Data for all five indicators are needed to construct the index.

Coverage
131 economies, 2000-2018
UNIDO SDG 9 Industry Index 2018
UNIDO SDG 9 Industry Index 2018 in the Arab region
UNIDO SDG 9 Industry Progress and Outlook

Progress and Outlook
Tracking country progress towards achieving SDG 9 targets by 2030

**Progress:** How much progress has been made since 2000?
- Based on existing data from 2000 until now
  - Evaluate country progress with respect to the SDG region
  - LDCs: double their share as indicated in 9.2 target

**Outlook:** How likely will the targets be achieved by 2030?
- Forecasting country data series until 2030
UNIDO Industrial Analytics Platform (IAP)

The Industrial Analytics Platform (IAP) provides novel insights into industrial development around the world

- **DATA EXPLORER**: An innovative way to explore industrial indicators that aggregates trade and manufacturing data under a single domain
- **ARTICLES**: Data-driven, accessible to a non-technical audiences, addressing policy issues and setting the scene for communicating on technical topics of industrialization
UNIDO SDG 9 Industry Tracker in the IAP

What drives SDG-9 Industry performance in Ireland?

Explore a country’s progress towards achieving industrial development targets

How much progress has Ireland made towards the SDG-9 Industry targets?
Thank you!

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