



**INDUSTRIAL
DECARBONIZATION
ACCELERATOR**



**Accelerating the transition of industries
worldwide to a zero-carbon economy.**

OCTOBER 2023

WHAT IS THE ACCELERATOR?

The Industrial Decarbonization Accelerator is a UNIDO-led network of international initiatives working to accelerate the shift of industrial organizations – both large and small – away from fossil-fuels. Working with governments, the private sector, and finance institutions in emerging economies, we help industry to rethink how they use energy.

OUR PARTNERS



WHY THE ACCELERATOR?

The race is on to protect a stable climate for generations to come

- Burning fossil fuels for energy consumption is one of the largest sources of global GHG emissions – and over a third of these emissions come from the industrial sector.
- If business continues as usual, heavy industrial sectors such as cement, chemicals and steel will account for the world's entire carbon budget in 2050, and the climate goals will be out of reach.
- As the world transforms its energy system and solves the climate crisis, it is essential to work hand-in-hand with industry.
- More energy efficient manufacturing practices, higher recycling rates, electrification, green hydrogen and renewable power have the potential to drastically cut industrial emissions and therefore put the world on track to net-zero.

OUR WORK

Centered on three areas of opportunity

1. Energy efficiency



Working with government and industrial stakeholders in emerging and developing economies, to drive momentum for energy efficiency with tailored training for industries, improved access to finance for entrepreneurs and policy advice for governments.

2. Renewables and alternative fuels



Helping industries from all sectors to integrate emerging sources of clean energy mainly to generate heat. These include biomass, solar thermal systems, green hydrogen, waste heat recovery technologies and others.

3. The Industrial Deep Decarbonization Initiative



Facilitating the creation of policy that enables industrial decarbonization, by creating a thriving market for low carbon industrial products such as steel and cement.

WHERE WE WORK?

16 countries
so far, with large
and/or growing
industrial sectors



BRAZIL



GHANA



INDONESIA



MOROCCO



SOUTH AFRICA



CHINA



INDIA



MALAYSIA



MYANMAR



SRI LANKA



EGYPT



PALESTINE



MEXICO



SENEGAL



TÜRKIYE



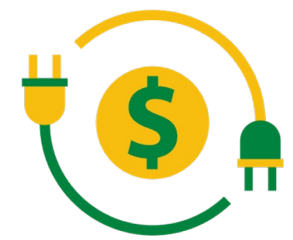
UKRAINE



OUR APPROACH



Training and know-how



Financing solutions



Advocacy and policy support



Tailored support to MSMEs & SMEs



Data systems and transparency

KNOWLEDGE AND COMMUNICATION

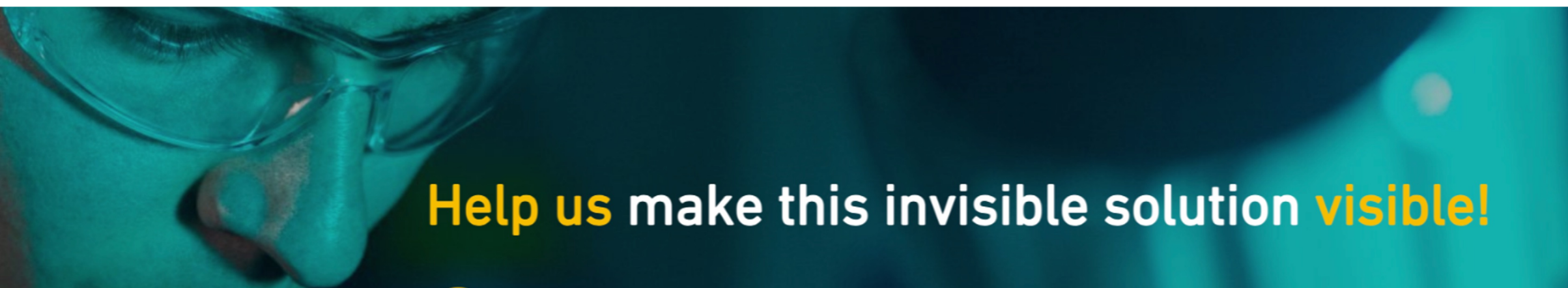
At the heart of the Accelerator's work



We systematically document what we learn through stories, thought leadership articles, case studies, reports, videos, infographics, knowledge kits and dedicated campaigns. We share this knowledge widely to inspire global action.

CAMPAIGNS

To mobilize urgent action and commitments



[See more](#)



[See more](#)

[Read the pledge →](#)



Pledge to:

Level One:

Starting no later than 2025, require disclosure of the embodied carbon in cement/concrete and steel procured for public construction projects.

Level Two (in addition to Level 1):

Starting no later than 2030, conduct whole project life cycle assessments for all public construction projects, and, by 2050, achieve net zero emissions in all public

EFFICIENCY SOLUTIONS KITS

To help industry leaders kickstart their energy efficiency journey



CASE STUDIES

To showcase solutions and demonstrate impact

How do Energy Efficiency projects create value?

Ceramic bricks industry
France



MEASURE

Replacement of the kiln

KEY FIGURES

Total investment cost
EUR 1,800,000

Annual energy savings
2,570,000 Nm³ (gas)
237,000 kWh (electricity)

Annual cost savings
EUR 286,800

Data courtesy of adelphi and partners:
<https://pf4ee.eib.org/downloads>

King Shaka International Airport (KSIA)
South Africa

SECTOR
Industrial Buildings

INTERVENTION
Lighting and Heating ventilation and air conditioning systems

- Reducing lighting demand by replacing old lighting with lower wattage light sources
- Programming BMS control to reduce internal lighting by 35% and 65% to suit operational requirement and to switch off external lighting during the day
- Programming BMS control to switch off Air Conditioning to suit operations

IMPLEMENTATION PERIOD
2010 - 2013



| | |
|-------------------------------------|------------------------------|
| Investment | R 400 641 (US \$26226.65) |
| Financial savings | R 2 761 249 (US \$180756.15) |
| Energy savings | 1 932 756 kWh/yr |
| CO ₂ Emissions reduction | 1850 tons/yr |
| Payback time | 1.8 months |

Visit: www.industrialenergyaccelerator.org

How do Energy Efficiency projects create value?

SUPERCERAM

Morocco

Ceramics, floor and wall tiles

MEASURES

The company has transitioned to the new version of ISO 50001 and revised their approach to energy planning, data analysis, measurement and monitoring.

They have seen improvement of their monitoring and control of their large energy users.

SAVINGS OF

2%

IN ELECTRICITY

6%


IN GAS

11%

IN FUEL

How do Energy Efficiency projects create value?

Paper company
Slovakia



MEASURE

- Implementation of a waste heat recovery system to tackle insufficient heat source performance.
- In addition to the savings generated, this measure delayed high investments in a new heat plant.

KEY FIGURES

Total investment cost
EUR 350,000

Annual energy savings
11,000 MWh (natural gas)

Annual cost savings
EUR 330,000

Data courtesy of adelphi and partners:
<https://pf4ee.eib.org/downloads>


Narayan Processor
India

SECTOR
Textiles

INTERVENTION
Installation of Screw Air Compressor

- Replacing 9 numbers of reciprocating compressors with a single screw air compressor with VFD and PM motor with 282.6 CFM, 60 hp capacity
- Replacing the existing reciprocating compressor with energy efficient screw compressor with variable frequency drive and permanent magnet motor

IMPLEMENTATION PERIOD
2012-2013



| | |
|-------------------------------------|--------------------------------|
| Investment | ₹ 16,00,000 (US \$21706.42) |
| Financial savings | ₹ 14,20,000 (US \$19264.44) |
| Energy savings | 187,651 kWh/yr |
| CO ₂ emissions reduction | 140 tCO ₂ -e GHG/yr |
| Payback time | 13 months |

Visit: www.narayanprocessors.com/


Socket Manufacturing
Cape Town, South Africa

SECTOR
Textile

INTERVENTION
Steam and compressed air energy systems

- Replacing electrode boilers with a liquid fuel (paraffin) water tube boiler and the distribution system was optimised
- Optimizing the steam system through effective insulation, leak repair and installation of a new condensate tank with partial flash recovery capability
- Installing a new 45kW variable speed air compressor, reducing system pressure to the required 7 bar setpoint

IMPLEMENTATION PERIOD
2012-2013



| | |
|-------------------------------------|-------------------------------|
| Investment | ZAR 550,000 (US \$36616.02) |
| Financial savings | ZAR 140,000/yr (US \$9320.44) |
| Energy savings | 92 000 kWh p/a |
| CO ₂ emissions reduction | 90 CO ₂ -e Tons/yr |
| Payback time | 4 years |

Visit: www.industrialenergyaccelerator.org

REPORTS AND ARTICLES

To dive deeper

INDUSTRIAL DECARBONIZATION ACCELERATOR | **UNIDO**

May 2022

Industrial Energy Efficiency Market Assessment in Ghana

United Nations Industrial Development Organization (UNIDO)

GREEN CLIMATE FUND | **MINISTRY OF FINANCE** | **MINISTRY OF ENERGY**

INDUSTRIAL DECARBONIZATION ACCELERATOR | **UNIDO**

GHANA CASE STUDY

Energy Management Systems Training

6. Industrial energy decarbonization

In this chapter, we first take a look at the potential in industrial motor efficiency and account for around 70% of the framework for deep decarbonization to be implemented for decarbonization.

6.1. Energy efficiency in industrial motors

Figure 2. Energy use in industry sector in Ghana

Figure 3. Energy intensity of industry in Ghana

Accelerating the uptake of Energy Management Systems

UNIDO in Ghana has been working with government, industry and academia to support the uptake of Energy Management Systems (EMS) in industry.

In 2021, UNIDO conducted a diagnostic assessment of the energy landscape in Ghana to identify the obstacles and opportunities for energy efficiency, as well as the institutional, national priorities to develop practical solutions and policies to address industry and institutional energy efficiency.

From May 2021 to April 2022, a team of UNIDO experts (technical and training) guided 30 Ghanaian industrial enterprises in implementing the internationally-recognized ISO 50001 energy management system (EMS) also known as a systematic and energy management system.

To meet the demand for increased energy efficiency, UNIDO is providing technical assistance and training to industry while also supporting coverage to disseminate the benefits and energy efficiency.

Accelerating industrial energy efficiency in Ghana

Climate change is fast becoming the focus and centerpiece of Ghana's development agenda. Ghana's industrial sector is a major contributor to the country's greenhouse gas emissions and is also a major consumer of energy. Improving the energy efficiency of the industrial sector is a critical part of the country's climate change mitigation strategy.

What's the energy context in Ghana now?

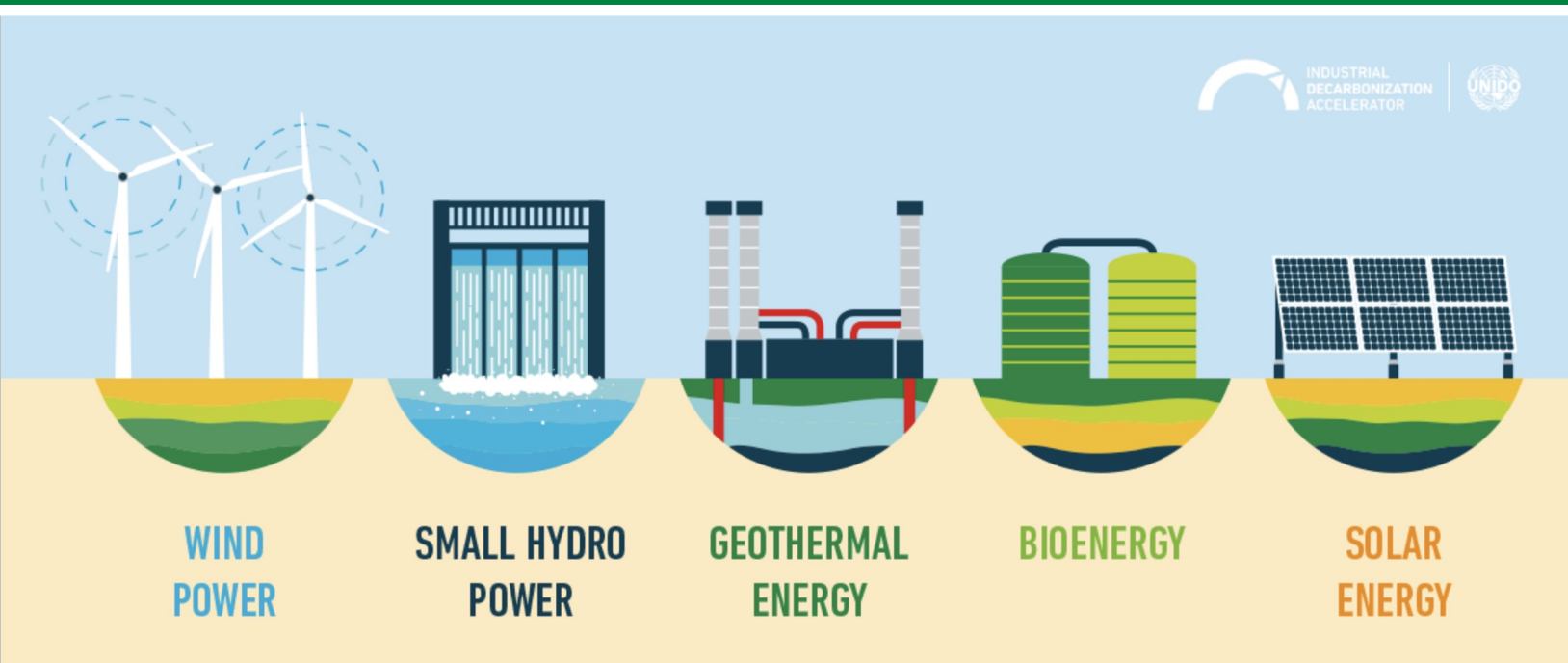
Ghana's energy sector is characterized by a high reliance on fossil fuels, particularly oil and coal, for electricity generation. The country's energy sector is also characterized by a high level of energy losses, particularly in the distribution and transmission sectors.

The country's electricity generation capacity is expected to increase significantly in the coming years, with a focus on renewable energy sources. However, the country's industrial sector is still heavily reliant on fossil fuels, which is a major barrier to achieving the country's climate change goals.

UNIDO is working with the Ghanaian government and industry to promote energy efficiency in the industrial sector. This includes providing technical assistance and training to industry enterprises, as well as supporting the development of policies and standards to promote energy efficiency.

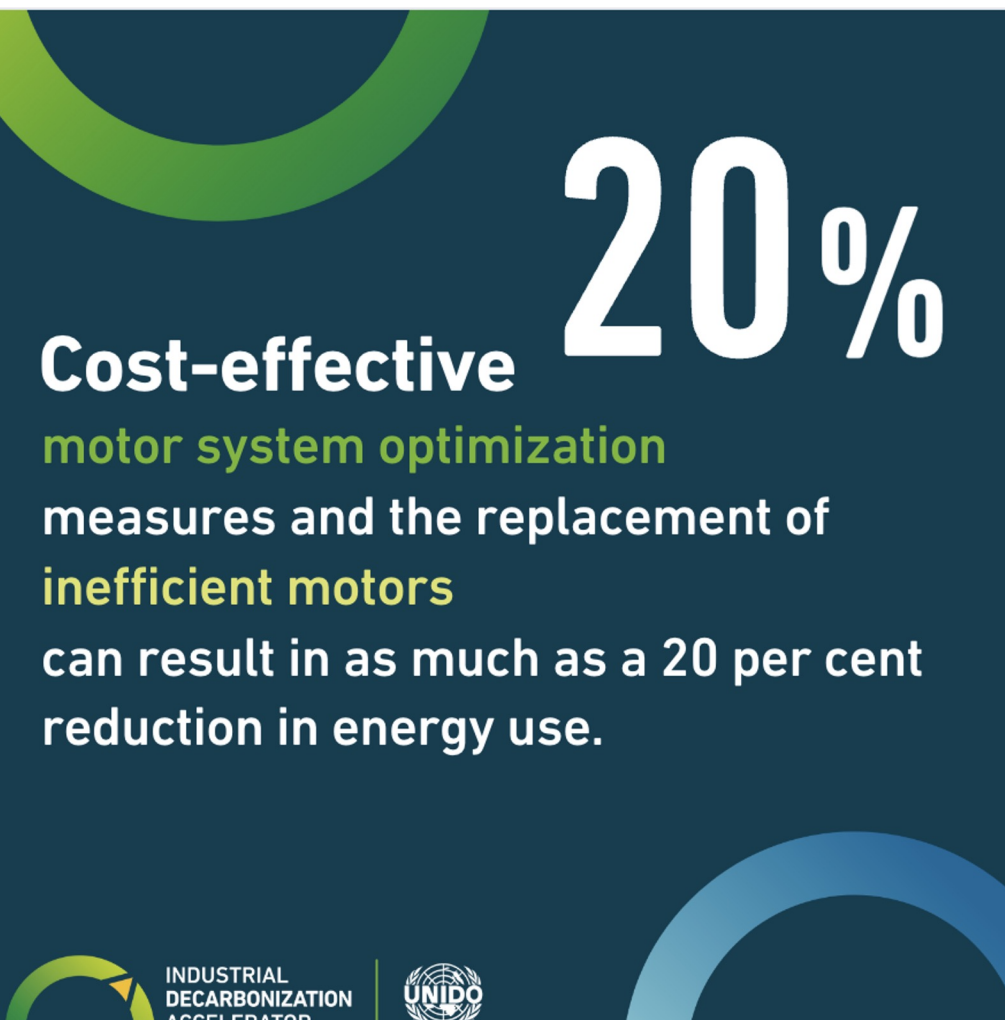
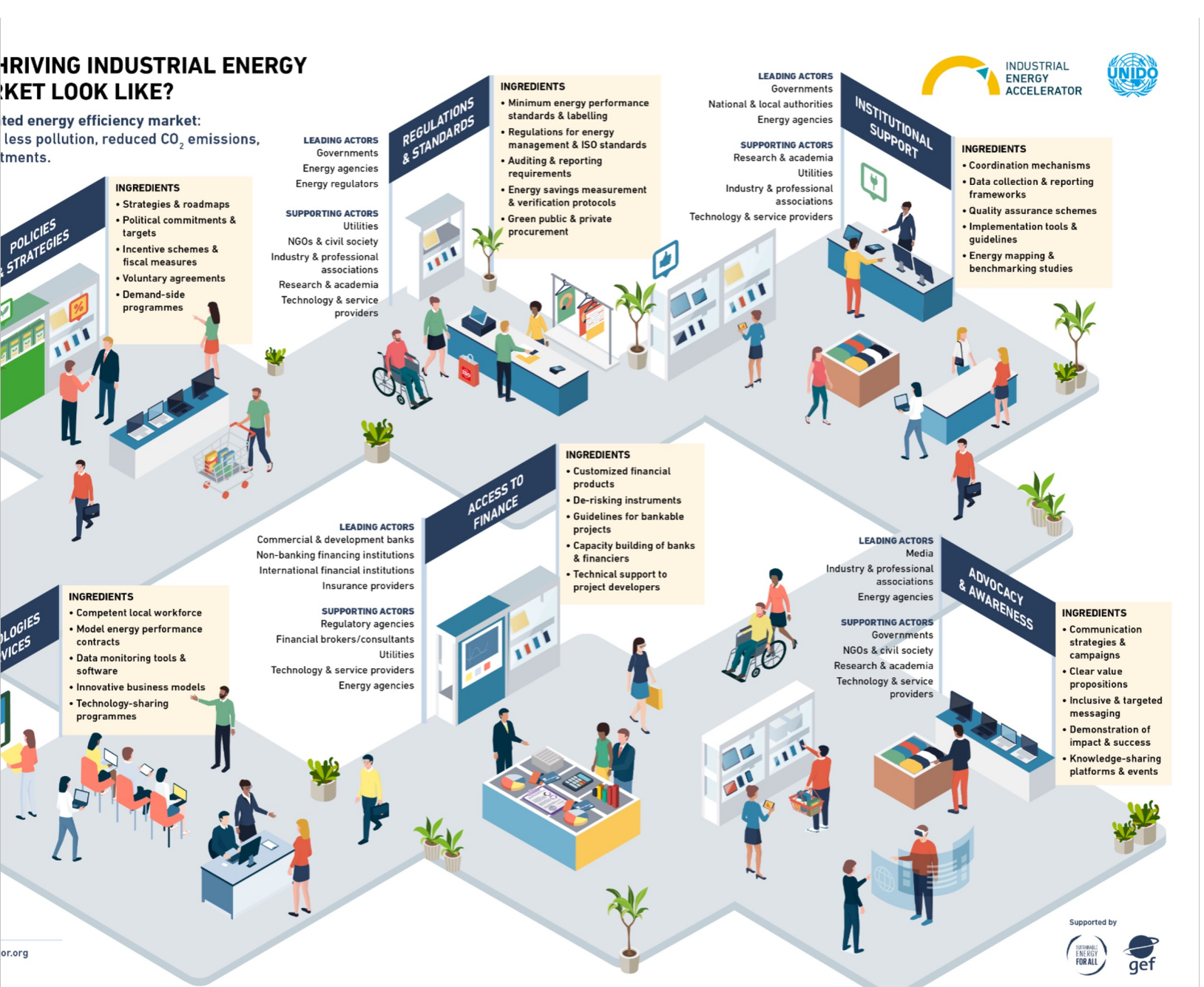
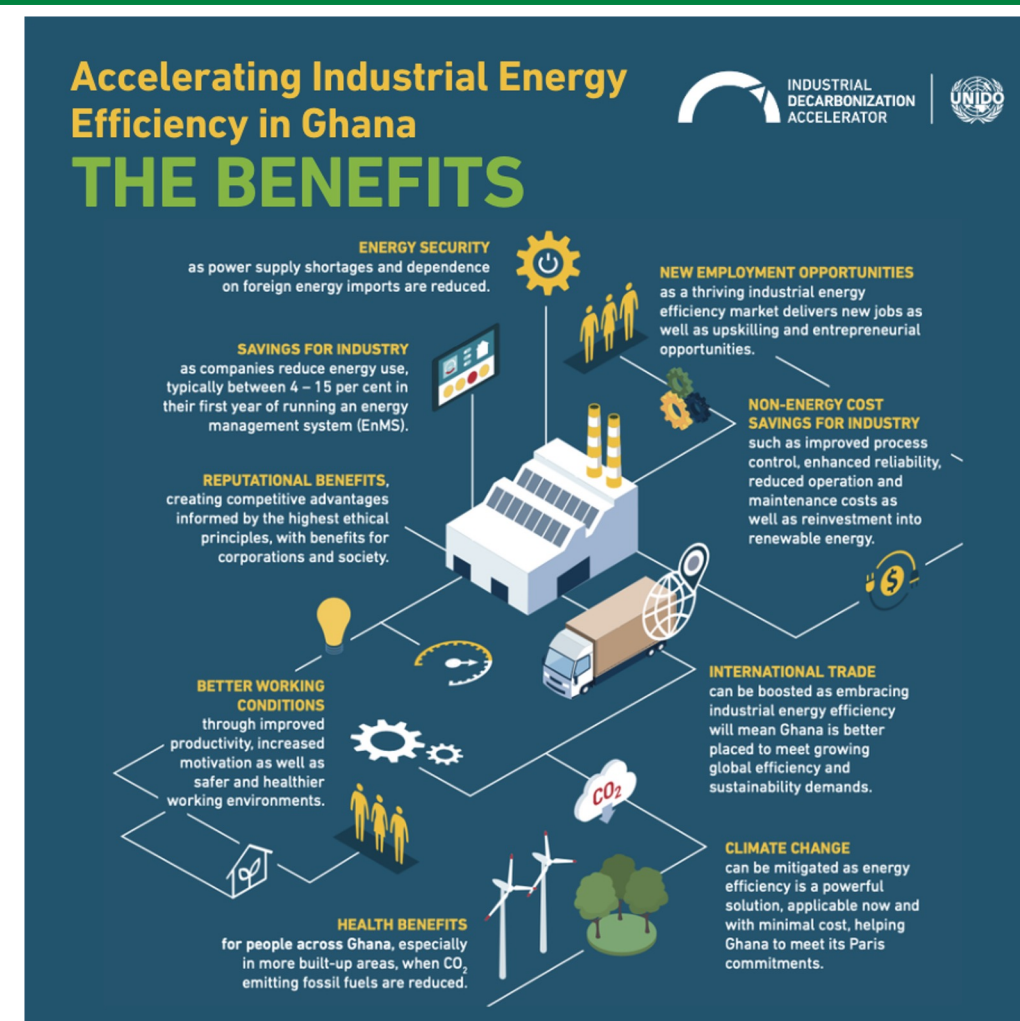
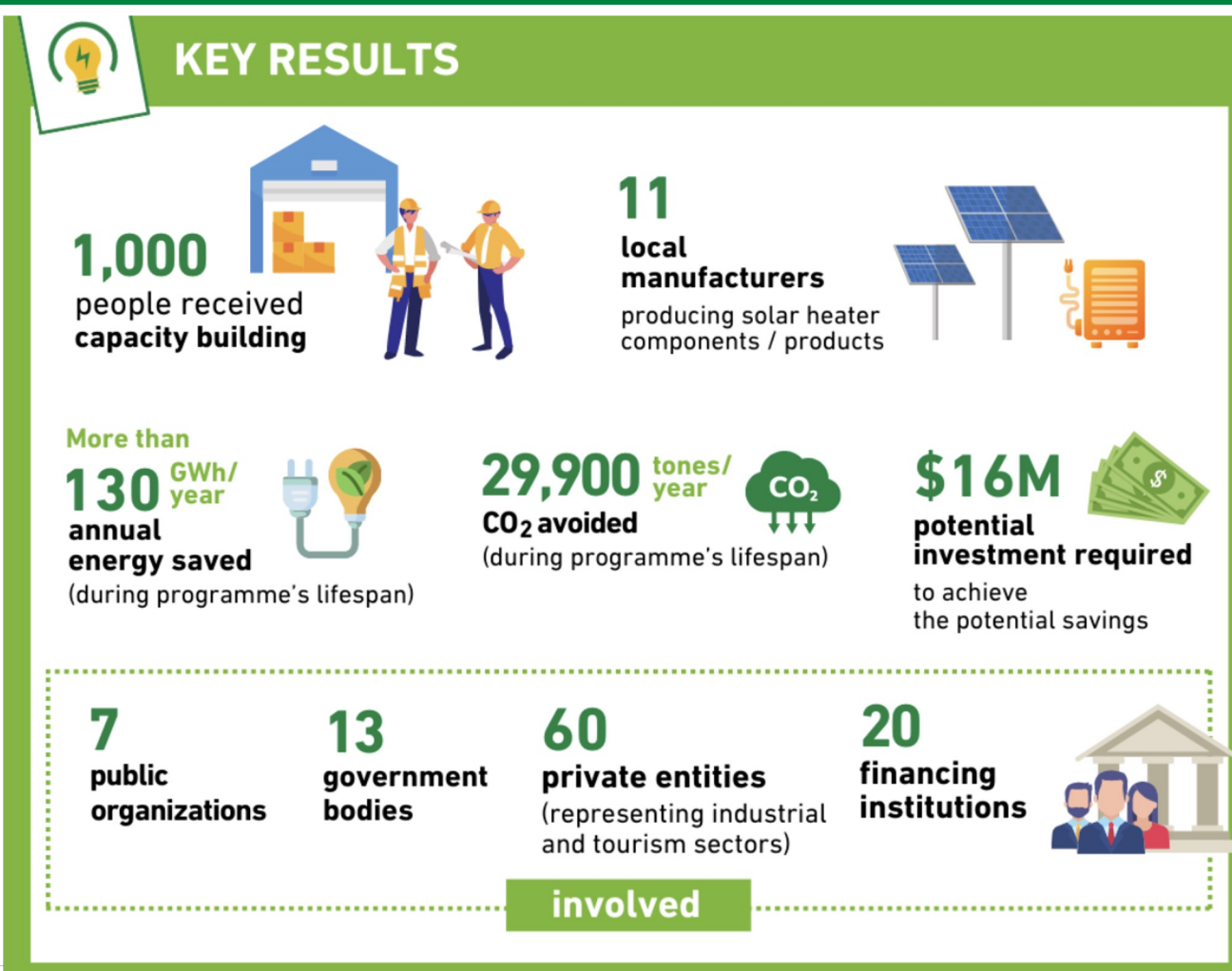
INFOGRAPHICS

To visualize key data and processes



Let's get energy efficient!

The easiest and cheapest clean energy solution lies in the energy we don't use



SOCIAL MEDIA CHANNELS

To amplify our lessons learned and build community

#ClimateSummit2023



UNIDO's Industrial Decarbonization Accelerator

6,603 followers
3w · Edited

Great news **Industrial Motors Efficiency Program - IMEP Project** and **UNIDO Egypt!** First Measurement and Verification (M&V) training taking place in **#Egypt** this week 🇪🇬🌱

Check out this handy fact sheet to learn more about Measurement, Reporting and Verification (**#MRV**): <https://lnkd.in/gnCm2tg4>

#decarbonization #energyefficiency



Industrial Motors Efficiency Program - IMEP Project

2,401 followers
3w

First "Measurement and verification (M&V)" training taking place in Egypt from 10-13 September 2023 by UNIDO international experts Siraj Williams and **Albert Williams** 👍👍👍

UNIDO Egypt
#decarbonization
#energyefficiency
#efficientmotors
#measurementsolutions



UNIDO's Industrial Decarbonization Accele... @EEAcceler... · Sep 29 ...

NEW ARTICLE: How do we unlock climate finance to decarbonize heavy-emitting industries - steel, cement, concrete? Collaboration is the key.

Our article on last week's 'financing **#decarbonization**' roundtable covers highlights of the discussion 📄 industrialenergyaccelerator.org/general/how-to...



UNIDO's Industrial Decar

@EEAccelerator

We inspire wide-scale global action **#climatechange** and to benefit peop

🌐 Global 🔗 industrialenergyacce

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UNIDO's Industrial Decarbonization Accele... @EEAcceler... · Oct 2 ...

This month, we're focusing on **#energyefficiency**. Did you know that the easiest and cheapest clean energy solution lies in the energy that we don't use!



UNIDO's Industrial Decarbonization Accele... @EEAcceler... · Sep 15 ...

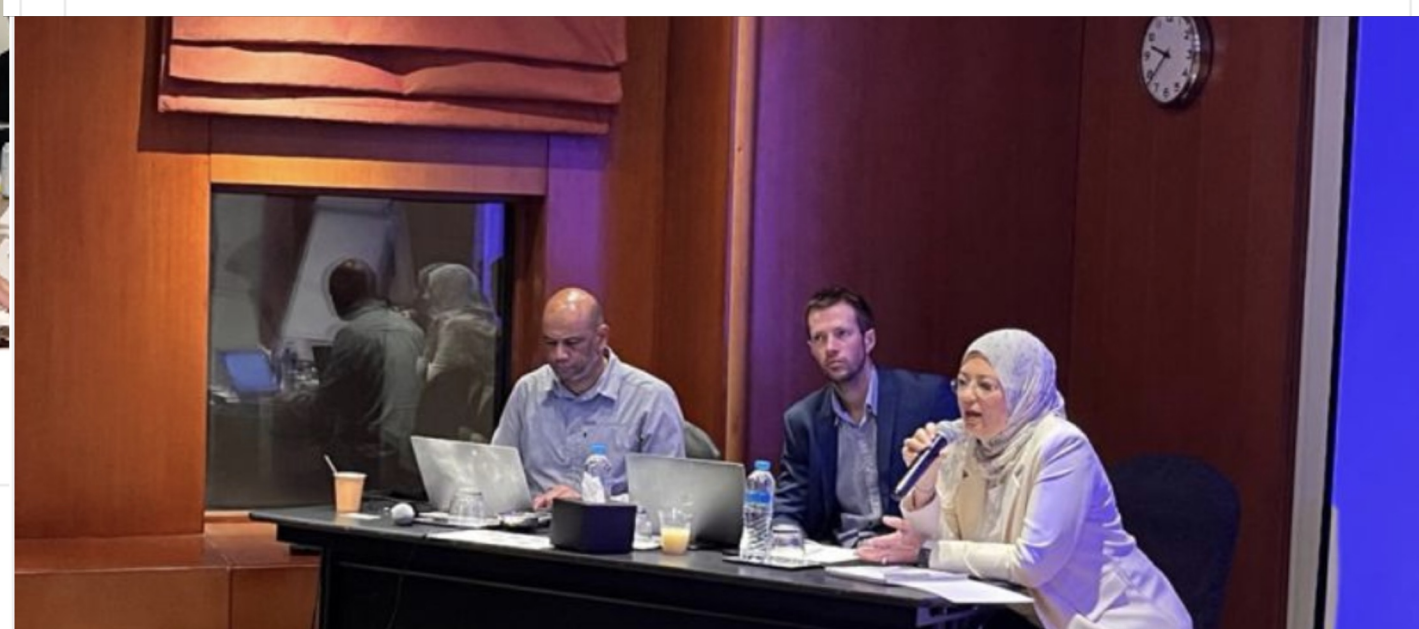
Our goal is to speed industry's move from fossil fuels toward:

#decarbonization
#energyefficiency
#renewableenergy

We're working with governments, the private sector & finance institutions in emerging economies to help industry rethink **#energyuse**: industrialenergyaccelerator.org



UNIDO and 8 others



75 · 2 Comments



Like



Comment

Thank you



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