



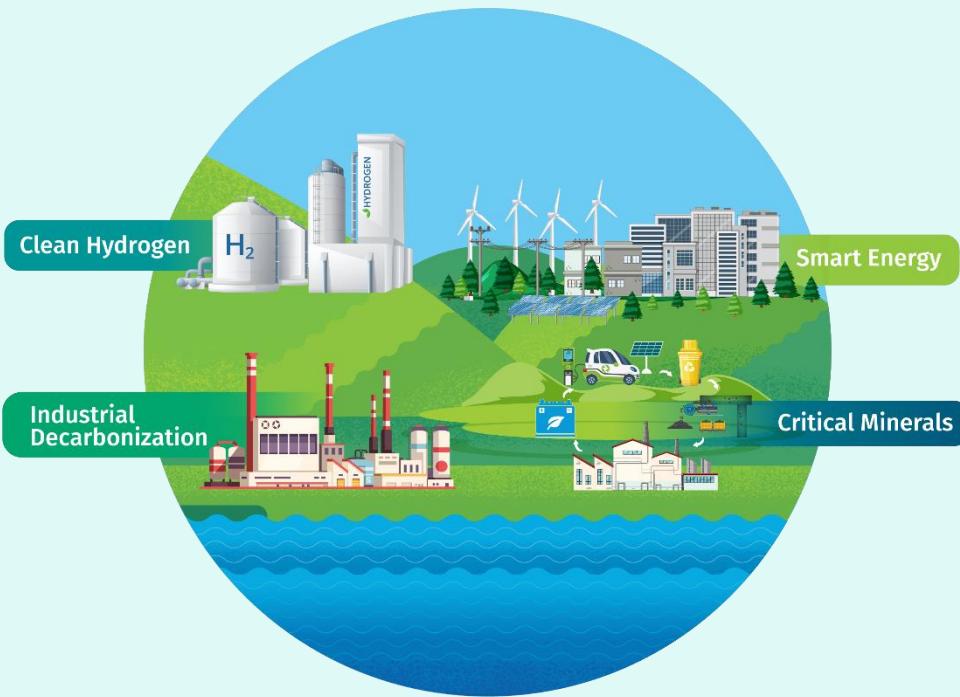
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# United Nations Industrial Development Organization (UNIDO)

## Accelerate-to-Demonstrate (A2D) Facility

*Accelerating the commercialization of transformational climate solutions in developing countries*





## Workshop Agenda

Time	Activity
08:30 – 09:30	<i>Breakfast Networking and Registration</i>
09:30 – 10:00	Opening Remarks
10:00 – 10:45	UNIDO and Climate Innovation
<i>10:45 – 11:15</i>	<i>Coffee Break</i>
11:15 – 12:00	Current A2D Facility-Supported Demonstration Projects
12:00 – 13:00	Designing and Implementing Demonstration Projects: Monitoring, Reporting and Dissemination
<i>13:00 – 14:30</i>	<i>Lunch Break</i>
14:30 – 15:30	Market Assessments: Landscape of Innovators, Technologies, Existing Projects and Financing Mechanisms for Climate Innovation
<i>15:30 - 16:00</i>	<i>Coffee Break</i>
16:00 – 17:00	Gender Equality, Social Inclusion and Safeguards
17:00 – 17:30	Feedback Form, Workshop Wrap-Up and Questions and Answers
17:30 – 20:00	<i>Networking Reception</i>



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# Opening Remarks



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**Mrs. Binoni Tio A. Napitupulu, SH., MA.**

Director of Industrial Resilience and Business Climate  
Ministry of Industry, Republic of Indonesia





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**Mr. Ianto Jones**

Head of Low Carbon Energy and Infrastructure,  
British Embassy Jakarta





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## **Mr. Marco Kamiya**

UNIDO Representative, Subregional Office in Jakarta for Indonesia,  
Timor Leste, and the Philippines | ASEAN Affairs





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# UNIDO and Climate Innovation



# United Nations Industrial Development Organization (UNIDO)

- ❖ UNIDO is the UN Agency for the promotion of inclusive and sustainable industrial development in developing countries.
- ❖ UNIDO focuses on three main priorities:



**Supporting sustainable supply chains** so that developing country producers get a fair deal and scarce resources are preserved.



**Limiting climate breakdown** by using renewable energy and energy efficiency to reduce industrial greenhouse gas emissions.



**Ending hunger** by cutting post-harvest losses and developing agribusiness value chains.



## UNIDO's expertise:

- ❖ Technical assistance and capacity building
- ❖ Investment and innovation funding
- ❖ Partnerships and collaboration
- ❖ Policy dialogues





## Climate Innovation

- ❖ Adopt **systems innovation** approach to sustainable and inclusive industrial development, and to address climate change.
- ❖ Drive innovation across **key levers of change** (technologies, policies, financing, regulations, society and integrated solutions for climate mitigation and/or adaptation, nature, ozone protection, land and all sectors).
- ❖ UNIDO provides **support and expertise across the innovation chain** (earlier-stage to later-stage).

### Areas-of-Focus:

- ❖ Support governments to **create ecosystems** (set policies, regulations and institutional capacity) to meet international obligations and create market for integrated climate solutions.
- ❖ **Enable industry** (start-ups, SMES, corporates and project developers) to drive innovation in the emergence, demonstration and large-scale adoption of integrated climate solutions.
- ❖ **Unlock the role of the private sector** in the transition to low-carbon and climate resilient development pathways.



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**Multilateral  
Fund**  
for the  
Implementation of  
the Montreal Protocol



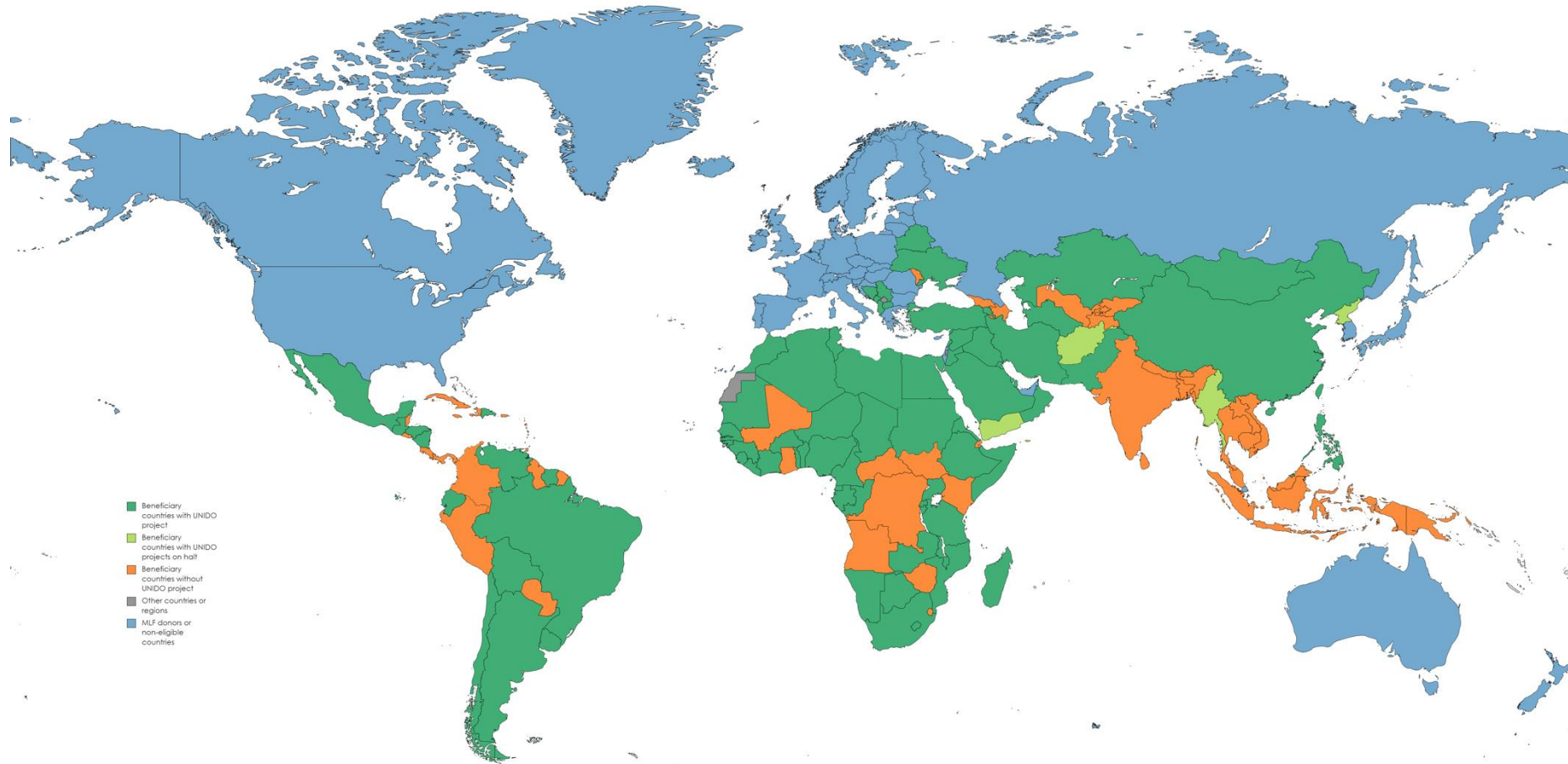
GREEN  
CLIMATE  
FUND



ADAPTATION FUND

# Climate Innovation

 Bilateral: UK, Japan, Korea, EU





## Contribution to UNIDO Priorities

### KEY SERVICES

Building,  
strengthening and  
connecting  
ecosystems

Innovation  
Accelerators and  
incubators

Compliance

Technology  
transfer and  
demonstration

Investment facilitation and  
innovative financing

### CONTRIBUTIONS & TARGETED IMPACT

Ecosystems (policies,  
regulations, compliance,  
relations,  
and institutions)  
strengthened

Innovative climate  
solutions emerge

Integrated climate  
solutions transferred,  
deployed and  
adopted.

Increased  
investments  
in integrated  
climate  
solutions

PEOPLE

PLANET

PROSPERITY

Achieving SDGs  
through  
contribution to  
zero hunger,  
climate action  
and sustainable  
supply chains



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# UNIDO in Indonesia



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# Global Eco Industrial Parks Programme II: Indonesia country level intervention (GEIPP II-Indonesia)



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs,  
Education and Research EAER  
**State Secretariat for Economic Affairs SECO**



**Kementerian  
Perindustrian**  
REPUBLIK INDONESIA

## Status updates





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## GEIPP II-Indonesia project overview

### Objective:

The development objective of the country-level intervention for Indonesia is in line with that of GEIPP II: to promote circular economy approaches, mitigate the climate impact of industries and to help industrial parks to adapt to the negative consequences of climate change.

### Donor:

Swiss State Secretariat for Economic Affairs (SECO), Government of Switzerland

### Budget:

EUR 1,846,329 (CHF 1,808,000)

### Duration:

5 Years (1 Jan 2024 – 31 Dec 2028)

### Counterpart Ministry:

Ministry of Industry of the Republic of Indonesia



GEIPP Indonesia: Phase 1  
(2019-April 2024)

GEIPP Indonesia: Phase 2  
(2024-2028)

## GLOBAL ECO-INDUSTRIAL PARKS PROGRAMME PHASE II

### COMPONENT 1: COUNTRY-LEVEL INTERVENTIONS



### COMPONENT 2: GLOBAL KNOWLEDGE MANAGEMENT



#### OUTCOME 1

EIP incentivized and mainstreamed in relevant policy and regulations



#### OUTCOME 2

EIP opportunities implemented in GEIPP I priority parks and additional parks

Experiences, Lessons Learnt and Feedback

EIP Finance Facilitation

Needs-based Knowledge Creation

Coherent Monitoring and Reporting



#### OUTCOME 3

EIP experience exchange, EIP financing facilitation, and Global EIP Public Goods Outreach

Knowledge Creation and Transfer

Skills and Competence Development

Visibility and Advocacy

Standard Setting

GLOBAL DISSEMINATION



**Outcome 2. EIP opportunities implementation, with environmental (e.g. resource productivity), economic and social benefits achieved by industrial parks and their enterprises confirmed**

**PILOT INDUSTRIAL PARKS**

**GEIPP-Indonesia Pilot Industrial Parks (Including the tenant companies)**



Batam, Riau Islands



Bekasi, West Java



Karawang, West Java

**Additional IPs from Indonesia for the GEIPP II – Indonesia country level intervention**



PT Kawasan Industri Medan (Persero)



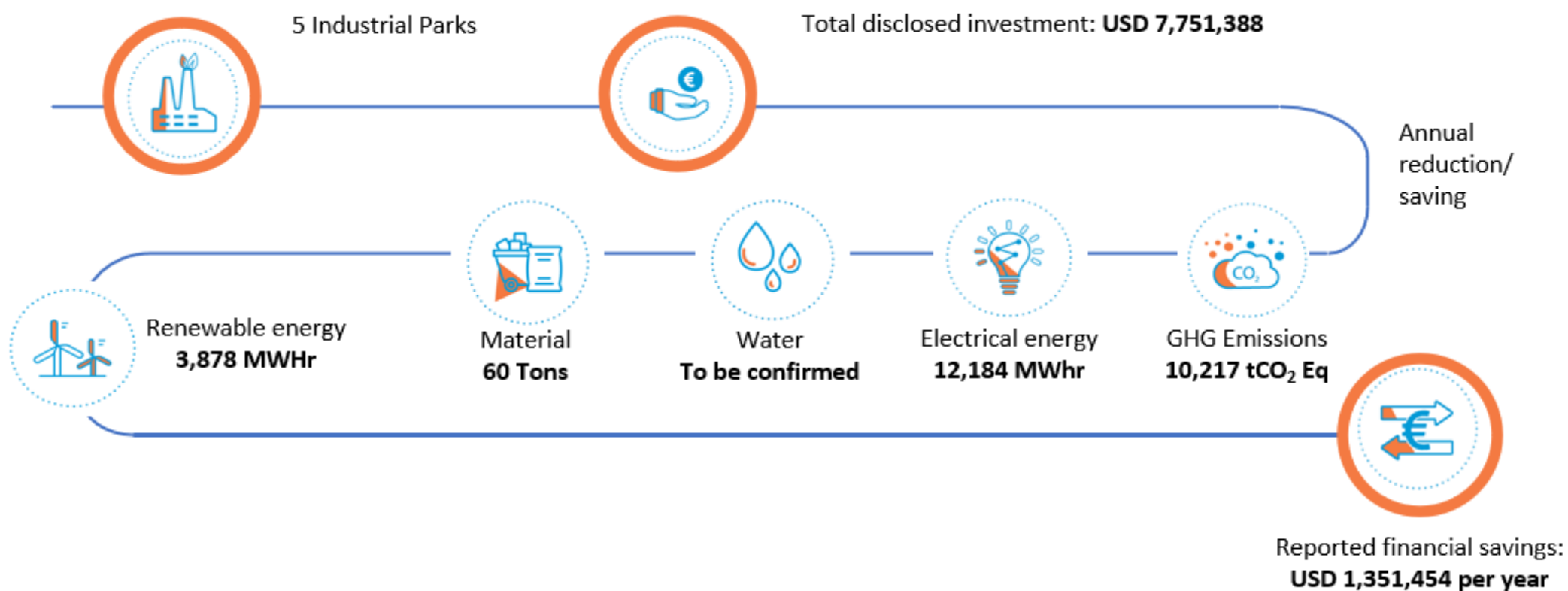
Greenland International Industrial Center (GIIC)





## Investment and savings (Jan – October 2024 for GEIPP II – Indonesia)

### Investment and Savings (Jan – October 2024 for GEIPP II – Indonesia)





GLOBAL QUALITY  
AND STANDARDS PROGRAMME

INDONESIA – Phase II

# Improving Market Access And Livelihood



Integrated shrimp-mangrove farm in  
Bulungan, Tarakan

## ABOUT THE PROGRAMME

### DURATION



**39 Months**  
2023-2026

### VALUE CHAIN



### LOCATION



11 provinces

### BUDGET



EUR  
**2,000,000**

### MAIN COUNTERPART

- ▶ Ministry of Marine Affairs and Fisheries (KKP)
- ▶ National Standardization Agency (BSN)



**22 Districts**



**TARGET  
IMPACTS**

### PARTNERS

#### Ministries



#### VC Associations





- **Outcome 1:**
  - Capable and recognized national quality infrastructure institutions and service support competitive sustainable and compliance fisheries and seaweed sectors
  - Support for strengthening quality infrastructures
- **Outcome 2:**
  - SUPPORTS MSMEs' Compliance with Standards – Seaweed, Shrimp & Milkfish



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## 3rd Steering Committee Meeting - Country Programme 2021 - 2025

UNIDO - ACCELERATING SDGs INVESTMENT IN INDONESIA (ASSIST) UNITED NATIONS JOINT PROGRAMME

Wed, 11 Dec 2024

# OBJECTIVES AND SDGs GOALS



1

**Enhance MSMEs' institutional capacities and productivity**



2

**Improve products' value addition through innovative and sustainable packaging**

3

**Increase awareness of MSMEs in sustainable practices**

4

**Improve capacities of MSMEs to reach competitive market through collective branding, marketing and access to finance.**



# IMPACTS

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## ACHIEVED FROM 2022-2023

20 Hotels & Restaurant

Supplied by beneficiary SMEs

27 Shops & Supermarket

Supplied by beneficiary SMEs

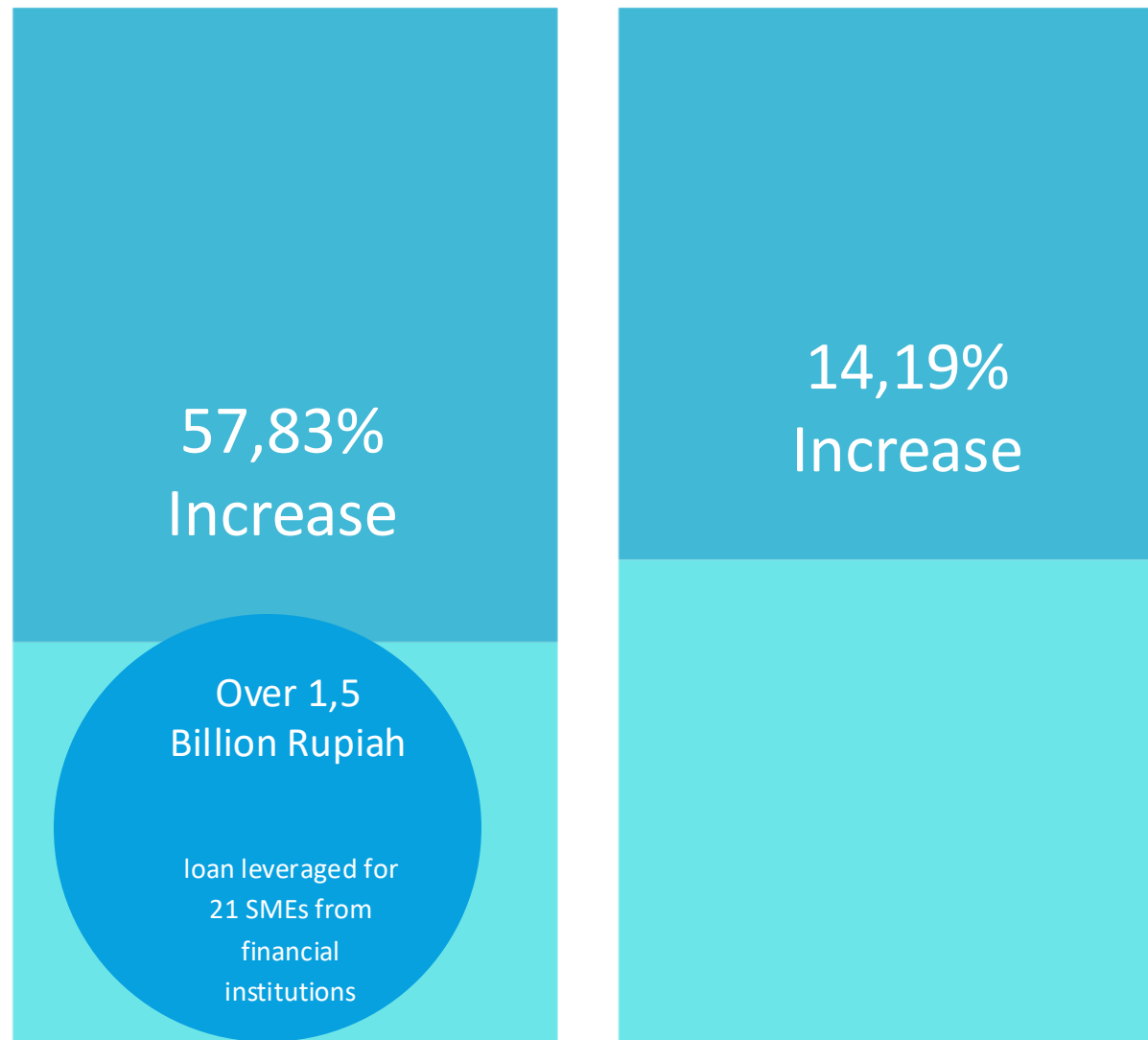
24 Suppliers

Listed as corporate partners of beneficiary SMEs



2022

2023



Sales

Employment



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# Maintaining and Enhancing Water Yield Through Land and Forest Rehabilitation (MEWLAFOR)





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# MEWLAFOR project overview

## Objective:

To demonstrate an innovative approach to how a proactive multi-stakeholder private sector-catalyzed partnership for water stewardship can be upscaled to achieve transformational changes in the restoration of degraded terrestrial ecosystems.

## Budget:

GEF project financing: USD 1,775,313, Co-financing: USD 14,712,918

## GEF Focal Area:

Land Degradation

## GEF approval date and Duration:

Jan 11, 2022 / Activities started and project extension until Dec 2027 was proposed in the last Project Steering Committee meeting on 6 Dec 2024

## Executing Partner:

Ministry of Forestry (earlier Ministry of Environment and Forestry), Directorate of Planning and Evaluation for Watershed Management, Indonesia



## Project components

### Component 1. Land restoration for water retention, sediment retention and improved livelihoods

**1.1** Restoration of upstream agroforestry systems to revert land degradation, enhance water retention and groundwater replenishment and cater for alternative livelihoods

**1.2** Restoration of riparian bamboo forests for sediment retention, water infiltration and pollution absorption and sustainable use of bamboo for value added product

### Component 2. Naturebased infrastructure and awareness creation for land and water conservation, sediment and water retention

**2.1** Construction of 597 absorption wells (2x2x2m) and awareness creation for enhanced water retention in the catchment area

**2.2** Establishment of 8,000 biopori and awareness creation for water conservation in 40 schools

### Component 3. Strengthen the enabling environment to promote community based land restoration

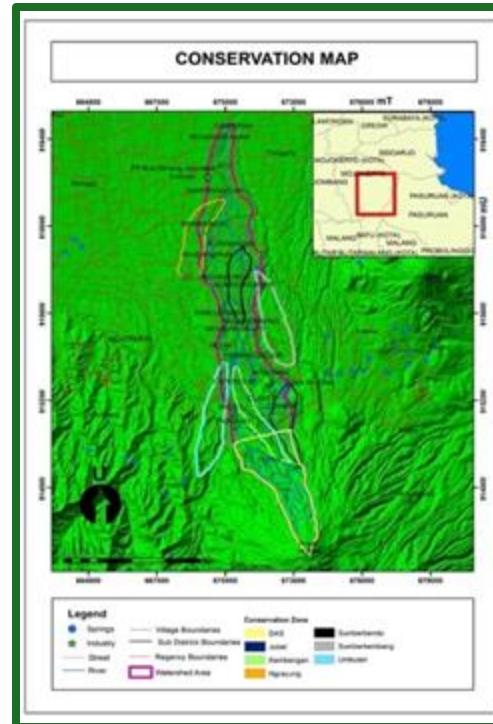
**3.1** Facilitation of active involvement of the staff of the Sidoarjo regional MOEF office in project execution and in the better enforcement of the regulatory framework geared at avoiding the loss of protected and conservation forests.

### Component 4: Monitoring and Evaluation

# Indicative areas of the project activities



Indicative Locations of Agroforestry Schemes in the Project Area  
(For GEF Incremental Funding - 251 ha Agroforestry Scheme)

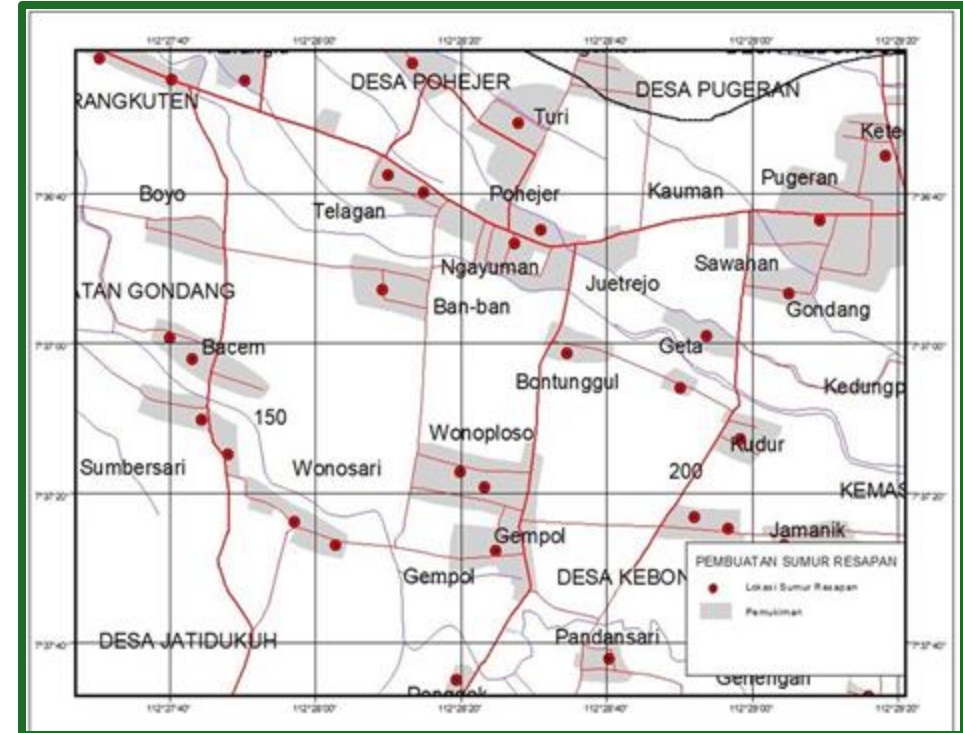
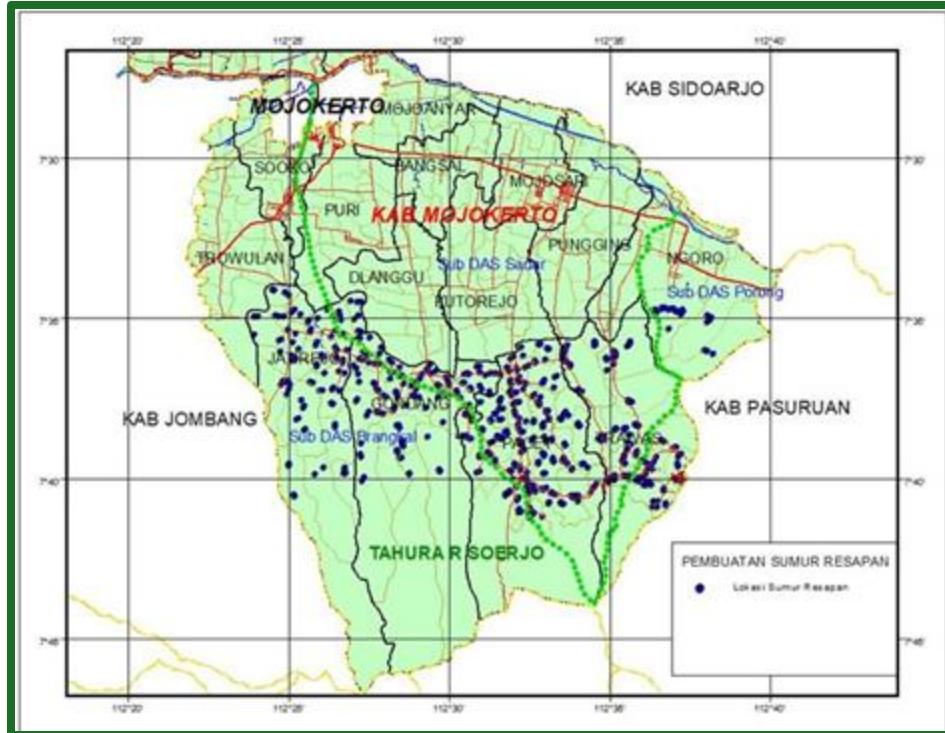


Indicative Area for Agroforestry Schemes in the Project Area  
(For PT Multi Bintang (Aliansi Air) - 136 ha Agroforestry Scheme)



Indicative Locations of Bamboo Plantation in the Project Area  
(For GEF Incremental Funding - 130 ha Bamboo Plantation)

## Indicative areas of the project activities



Indicative Locations of Absorption Wells in the Project Area  
(For GEF Incremental Funding - 597 Absorption Wells)

Indicative Locations of Biopori in the Project Area  
(For GEF Incremental Funding - 8,000 Biopori in 40 Schools)



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# **The Global Greenchem Innovation and Network Programme (GGINP) – Indonesia Component**





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## GGINP project overview

### Objective:

Strengthen the sound management of industrial chemicals and their waste through better control, and reduction and/or elimination

### GEF project budget:

Global Project: GEF Project Budget USD 12,600,000, Co-financing: USD 127,556,440.74

Indonesia Component (part of global budget): GEF Project Budget USD 1,115,000 + Co-financing from Indonesia

### GEF approval date, duration and GEF Focal Area:

Feb 18, 2022: 6 years (expected start of execution in July 2022), Chemicals and Waste

### Executing Agency:

Yale University

### National counterparts:

Ministry of Industry, Indonesia (deputed Pertamina University as execution partner), Royal Scientific Society (RSS); Jordan, Centro de Ecoeficiencia y Responsabilidad Social (CER), Peru; Faculty of Technology and Metallurgy, Cleaner Production Centre, University of Belgrade, Serbia; Uganda Cleaner Production Centre; Resource Efficient and Cleaner Production Centre, Ukraine

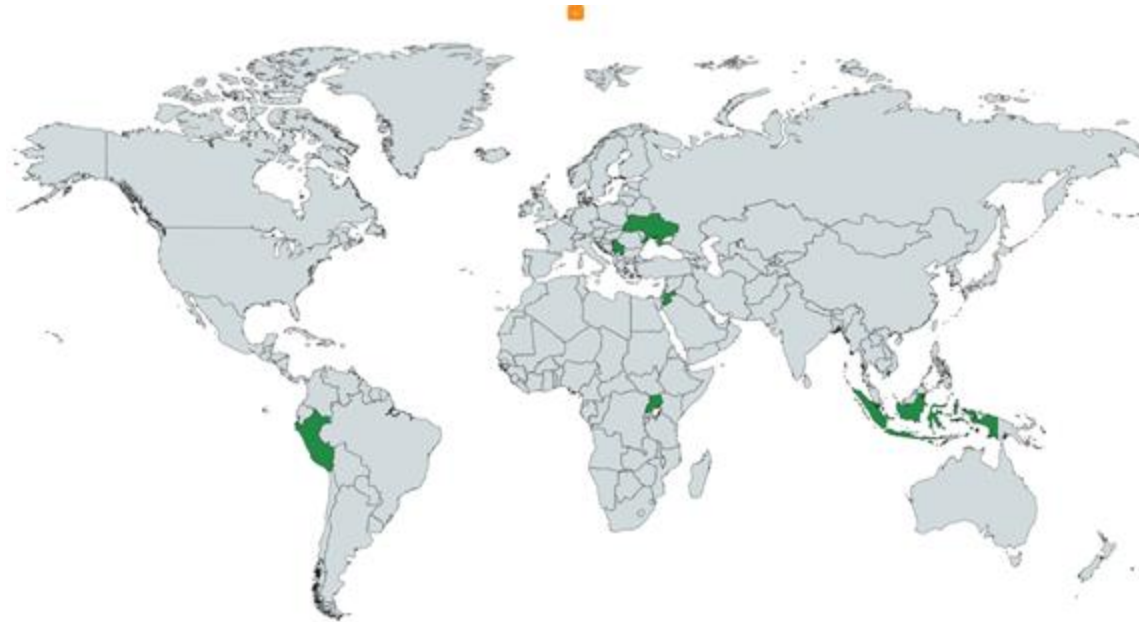


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## GGINP project overview

The national level activities of the components 2 and 3 of GGINP will take place in Indonesia, Jordan, Peru, Serbia, Uganda and Ukraine with the regional accelerator programmes covering Africa, Latin America, Easter Europe and South East Asia.





# Global Greenchem Innovation and Network Programme



Component 1  
Green Chemistry Inclusion **Network**  
for Capacity Building

A Green Chemistry Inclusion **Network for Capacity Building** will be established that goes beyond awareness raising and training within developing countries.



Component 2  
Green Chemistry **Accelerator** Programme

An accelerator programme to **nurture Green Chemistry entrepreneurs** and will support the development of demand-driven solutions by supporting bench-scale Green Chemistry and green engineering solutions that show promise to be scaled-up as commercialized technology.



Component 3  
Green Chemistry alternatives for **POPs, mercury and micro-plastics** for replication and up-scale

Scaled-up GC alternatives to POPs, mercury and microplastics at **six demonstration project locations with replication mechanisms** of GC alternatives for national, regional and global level up-take.



Component 4  
**Monitoring** and evaluation





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# Partnership for Action on Green Economy (PAGE) - Indonesia

## Status updates

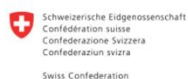
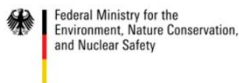


**PAGE** PARTNERSHIP FOR ACTION  
ON GREEN ECONOMY

- Indonesia joined PAGE as partner country in 2018, context: LCDI
- Timeline:** 2019 Inception, 2020-2022/23 Implementation Phase, 23/24 Phase Out
- PAGE Agencies**



- Lead/Coordinating Agency in Indonesia: UNDP**
- Government Implementing Partner/Focal Point:**  
**Ministry of National Development Planning (BAPPENAS)**  
**Directorate of Environmental Affairs**
- Funding Partners (through MPTF):**



## PAGE Approach





## UNIDO

- UNIDO's activities within PAGE Indonesia focus on **green industry** development and implementation, especially on demonstrating **Resource Efficient and Cleaner Production (RECP)** in selected big and resource/energy intensive industries such as **fertilizer and iron & steel industry**.
- The activities are intended to strengthen LCDI implementation by resource efficient and cleaner production industries; as well as supporting the Low Carbon for green recovery through promotion of circular economy in the Food & Beverage industry.

1

Green Industry and Trade Assessment (GITA)

1

Resource Efficient and Clean Production (RECP) Demonstration programme in fertilizer industry (**completed**)

2

Resource Efficient and Clean Production (RECP) Demonstration programme in iron & steel industry; and development of RECP guidance document (**completed**)

3

Green Recovery Programme, Circular Economy in the Food & Beverage Industry: In-depth Resource Efficiency Assessment in the selected F&B sub-sectors (**completed**)



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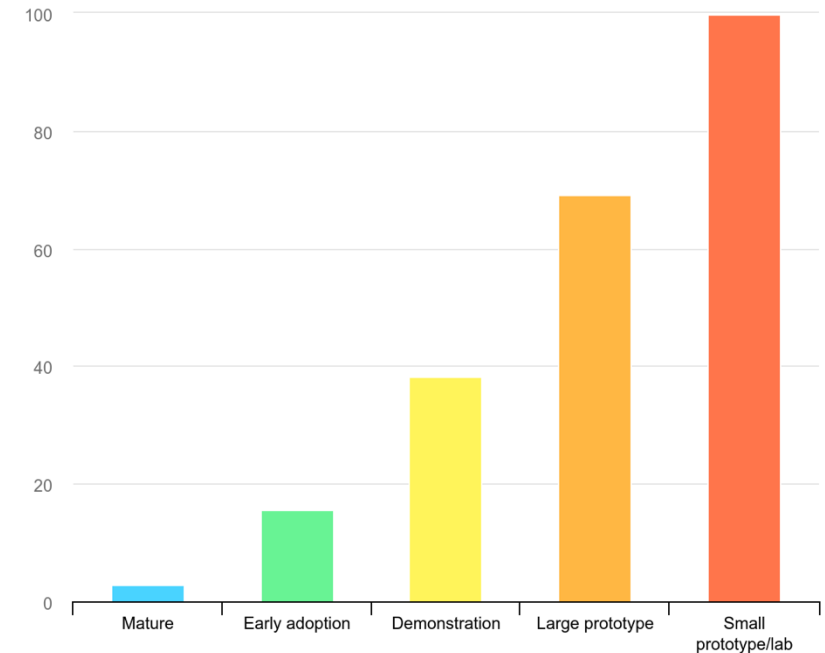
# Accelerate-to-Demonstrate (A2D) Facility

*Accelerating the commercialization of transformational climate  
solutions in developing countries*

# Deep Dive: Importance of Demonstration Projects

- ❖ Accelerating clean energy innovation is increasingly recognized as vital in global efforts to **combat climate change and to meet the Sustainable Development Goals (SDGs)**.
- ❖ The International Energy Agency (IEA) highlights that almost 35% of the emissions reductions necessary for achieving a global **net-zero scenario by 2050 will come from technologies that are still in the demonstration or prototype phase**.
- ❖ Alongside the important need for leveraging private sector finance, at least USD 90 billion in public funding is needed globally by 2026 for clean energy demonstration projects to be commercially ready by 2030.
- ❖ The A2D Facility contributes to filling this important gap in support to developing countries by **targeting the demonstration phase of the innovation chain**, bridging earlier-stage and commercial-scale projects.

Relative increase in carbon dioxide emissions savings in 2050 by current technology maturity category:



*Energy Technology Perspectives 2020. IEA, 2020.*

# Overview of A2D Facility

## The Solution

The **A2D Facility** aims to accelerate the **commercialization of innovative clean energy** solutions in developing countries by supporting catalytic and scalable demonstration projects in:

- **Clean hydrogen**
- **Critical minerals**
- **Smart energy**
- **Industrial decarbonization**



## Initial Funding and Timescales

- **Initial contribution of ~USD 80 million** from the UK Government
- Initially operates from **April 2023 to March 2029**
- Projects supported through **calls-for-proposals** (first call in July 2024)
- Global (**developing country-focused**) programme
- **Grants of USD 1-5 million** per project.
- Main Sustainable Development Goals (**SDGs**)-of-focus:



Activities bringing **transformational solutions** to the market at scale.

**Providing grant support** for transformational demonstration projects with strong scalability potential.

Creating and **disseminating knowledge and experiences** to foster collaboration, learning and scalability.

# Thematic area: Critical Minerals

## ➤ Challenge:

- Critical minerals, vital for the clean energy transition across different sectors, such as industry, transport, power and buildings, face limited supply and availability concerns, and escalating demand.

## ➤ Solution (A2D Facility's focus):

- Supporting demonstration projects of innovative and transformational solutions to decarbonize re-fining, processing, recycling and re-use of critical minerals (exploration and extraction are out-of-scope).



*Market Assessment on  
Accelerating Innovation in  
Critical Minerals*



## Programmes, Projects and Initiatives:

- A2D Facility
- Global Alliance and Partnership for Responsible and Green Minerals
- UN Framework on Just Transitions for Critical Energy Transition Minerals
- Artisanal Small-scale Gold Mining
- Global Electronics Management (GEM) Programme

**UNIDO's expertise in  
Critical Minerals**



# Thematic area: Clean Hydrogen

## ➤ Challenge:

Whilst an increasing number of countries are developing clean hydrogen strategies and projects, the urgency to tackle emissions necessitates a diffusion of support and capabilities, especially countries with abundant low-cost clean resources.

## ➤ Solution (A2D Facility's focus):

Supporting demonstration projects of innovative and transformational solutions to decarbonize across the clean hydrogen value chain across different sectors, such as industry, power, buildings and transport.



*Market Assessment on  
Accelerating Innovation in Clean  
Hydrogen*



### Programmes, Projects and Initiatives:

- A2D Facility
- Global Programme for Hydrogen in Industry
- GEF-8 Global Clean Hydrogen Programme (GCHP)
- Net Zero Partnership

The focus areas for UNIDO's interventions are:

- Policies
- Standards
- Financial instruments
- Skills and knowledge
- Innovation
- Coordination & convening

**UNIDO's expertise in  
Clean Hydrogen**



# Thematic area: Smart Energy

## ➤ Challenge:

Industries in developing countries, such as manufacturing, power, transport and buildings, often face inefficiencies in energy use, emissions and access.

## ➤ Solution (A2D Facility's focus):

Supporting demonstration projects of smart energy technologies, such as machine learning, blockchain, digital twins, Artificial Intelligence (AI) and smart grid-enabling solutions, to optimize and digitalize energy management across different sectors, such as transport, industry, power and buildings.



### Programme, Projects and Initiatives:

- A2D Facility
- Global Alliance on AI for Industry and Manufacturing
- UNIDO 4IR Strategic Framework to accelerate the attainment of inclusive and sustainable industrial development by 2030



*Market Assessment on  
Accelerating Innovation in  
Critical Minerals*



**UNIDO's expertise in  
Smart Energy**

# Thematic area: Industrial Decarbonization

## ➤ Challenge:

Forecasted growth in industrial emissions in developing countries due to rapid urbanization and an increase in middle-class consumers, poses a challenge for global efforts to combat climate change.

## ➤ Solution (A2D Facility's focus):

Supporting demonstration projects of innovative and transformational solutions in different industries in developing countries, such as manufacturing, processing and energy-intensive industries.



### Programmes, Projects and Initiatives:

- A2D Facility
- Industrial Deep Decarbonisation Initiative (IDDI)
- Net Zero Partnership
- Circular Economy programme
- Persistent organic pollutants (POPs) management



*Market Assessment on Accelerating  
Innovation in Industrial  
Decarbonization*



**UNIDO's expertise in  
Industrial Decarbonization**



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# A2D Facility Year 1 and 2 Key Milestones



15 May 2023

Official launch of the A2D Facility by UNIDO's DG and UK Ambassador.



18 July 2024

Announcement event to launch the first Call-for-Proposals, led by UNIDO Director General Gerd Müller. Launch of the A2D Facility Year 1 Annual Report and A2D Facility website.



January 2025

Selection of the first five supported demonstration projects, with at least one project per thematic area.



Initial announcement

Official launch

Participation in Asia Clean Energy Forum

Call-for-Proposals announcement event

Launch of Market Assessments at COP29

First demonstration projects begin

Completion of GESI-ESS project

7 November 2022

Initial announcement of the new clean energy innovation facility at COP 27.



3 - 6 June 2024

Organization of three events at the Asia Clean Energy Forum.



14 - 16 November 2024

Launch of 3 market assessments on Critical Minerals, Clean Hydrogen, and Smart Energy & Industrial Decarbonization at COP29.



31 March 2025

GESI-ESS Action Plans developed.







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# Upcoming Events: A2D Facility Annual Event (19 – 22 May 2025)

## Accelerating climate innovation – be part of it!

Join us at the **Accelerating Climate  
Innovation: A2D Facility Annual Event**  
2025, from **19-22 May** in Nairobi, Kenya.

Deadline: 9 March 2025



#A2DFacilityAnnualEvent2025

#AcceleratingClimateInnovation



<https://www.linkedin.com/feed/update/urn:li:activity:7302553159623696386>

# Upcoming Events: A2D Facility Annual Event (19 – 22 May 2025)



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SUSTAINABLE  
DEVELOPMENT  
**GOALS**



# Upcoming Events: A2D Facility Annual Event (19 – 22 May 2025)

Monday, 19 May	Tuesday, 20 May			Wednesday, 21 May		Thursday, 22 May
Arrival of participants	Check-in			Check-in		Site visits  Two options: - Kiru Tea Factory - Olkaria Geo-thermal Power Plant
	Plenary session 1: Opening (9:00-10.30 am)			Impacts session 2: Environmental and social safeguards (9.00-10.30am)	Thematic session 4.1: Industrial decarbonization (09.00-10.30am)	
	Coffee break: 10.30 - 11.00 am					
	Thematic session 1.1: Smart energy (11.00-12.30pm)	Thematic session 2.1: Clean hydrogen (11.00-12.30pm)	Thematic session 3.1: Critical minerals (11.00 – 12.30 pm)	Impacts session 3: Gender equality and social inclusion (11.00-12.30pm)	Thematic session 4.2: Industrial decarbonization (11.00 – 12.30 pm)	
	Lunch break 12.30 – 02.00 pm					
Registration and bilateral meetings	Thematic session 1.2: Smart energy (2.00-03.30 pm)	Thematic session 2.2: Clean hydrogen (02.00 – 3.30 pm)	Thematic session 3.2: Critical minerals (2.00-3.30pm)	Finance session 2: by UNIDO procurement (2.00-3.30pm)		
	Coffee break: 3.30-4.00 pm					
	Impacts session 1: Monitoring, evaluation and dissemination (4.00-5.30pm)	Finance session 1: Innovative financing mechanisms (4.00-5.30pm)	Free slot	Plenary Session 2: Closing (4.00-5.30pm)		
Evening reception	Evening reception (6.30-9.30pm)			Evening activity (6.30-9.30pm)		

Location: Hyatt Regency  
Nairobi Westlands

Registration:





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# Questions & Answers





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# Coffee Break



10:45 – 11:15



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# What is Innovation?



Menti.com  
1448 7384



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# Current A2D Facility-Supported Demonstration Projects



## Supporting Catalytic Projects to Transform Sectors

- **“Lighthouse” demonstration projects** in critical minerals, clean hydrogen, industrial decarbonization and smart energy.
- **Impacts on SDGs** 13 (climate action), 1 (no poverty) and 9 (industry, innovation and infrastructure) in supportive enabling environments that foster scalability.
- Projects at the demonstration phase and at the **implementation and operation stages of project development** (*earlier-stage pilot-testing or planning-related activities are out-of-scope*).
- Strong focus on **sharing lessons-learned, dissemination and monitoring** (supported projects facilitating training and capacity building, regular high-quality monitoring and reporting, risk management, hosting study tours, and presenting in international events and workshops, alongside the construction and equipment implementation activities).



## Current A2D Facility-Supported Demonstration Projects

### Smart Energy

Smart solar and storage microgrid for industrial-scale deployment at Laxmi Steel factory in Sunwal

*Location: **Nepal***

Peer-to-peer energy-sharing system to convert wasted renewables into community power

*Location: **Nigeria***

### Industrial Decarbonization

Biomass gasification plant to power a Kenyan tea factory using local agricultural waste and biomass

*Location: **Kenya***

### Clean Hydrogen

Ammonium sulphate fertilizer production facility powered by solar and clean hydrogen

*Location: **Namibia***

### Critical Minerals

Local manufacturing of lithium-ion batteries for electric two-/three-wheeler motorcycles, and installation of charging infrastructure in urban and rural areas.

*Location: **Tanzania***

# Clean Hydrogen: Ammonium Sulfate Fertilizers from Renewable Hydrogen in Namibia

## Objectives

- Produce green fertilizers, hydrogen, and ammonia to support carbon-free agriculture and reduce greenhouse gas emissions.
- Enhance local agriculture by improving fertilizer availability, affordability, and increasing productivity for farmers.
- Empower communities through job creation and capacity building in clean technology.

## Transformational Project

- At the core is the **use of green hydrogen, generated via electrolysis powered by solar energy**. This clean hydrogen is used to synthesize ammonia, a key component of ammonium sulfate fertilizer.
- By replacing traditional fossil fuel-based production processes with green hydrogen, the project significantly reduces greenhouse gas emissions, improves energy efficiency, and promotes circular economy principles.
  - *Example of how clean energy can transform agriculture.*

### PROJECT KEY INFORMATION

#### LEAD ORGANIZATION

The Daures Green Hydrogen Village

#### CONSORTIUM PARTNERS

- Enersense Energy Namibia
- Mondjila Project Advisory and Management
- Windhoek Consulting Engineers (WCE)
- Fichtner GmbH

#### DURATION

01 Feb 2025 - 31 Dec 2027

#### LOCATION

Namibia

#### THEMATIC AREA

 **CLEAN HYDROGEN**

#### STAGE

Initiated

#### WEBSITE

[www.daures.green](http://www.daures.green)

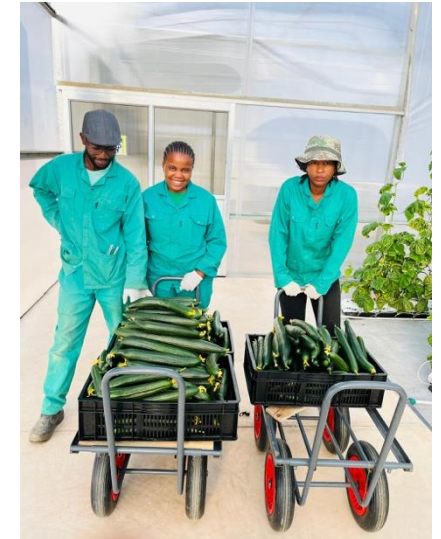
#### CALL

1st Call for Proposals

## Clean Hydrogen: Ammonium Sulfate Fertilizers from Renewable Hydrogen in Namibia

### Expected Impacts

- **Environmental:**
  - Produces fertilizers using **renewable green hydrogen**, reducing greenhouse gas emissions.
  - Decreases dependence on **carbon-intensive fertilizer imports**, supporting sustainability.
  - Promotes **cleaner agriculture**, improving soil health and boosting biodiversity.
- **Social:**
  - **Involves local communities** with opportunities for ownership and direct benefits.
  - Improves **food security** and strengthens **local livelihoods** through better farming practices.
- **Economic:**
  - **Creates jobs** in construction, operations, and agriculture, boosting the local economy.
  - Lowers **fertilizer costs** for farmers, reducing the need for imports.
  - Stimulates growth in the **agricultural sector**, improving **economic resilience** in Namibia and meeting both local and international fertilizer demand.





# Critical Minerals: Lithium-Ion Transport Solutions in Tanzania

## Objective

To accelerate the commercialization of innovative clean energy technology in transportation sector using **locally manufactured** Electric Charged Lithium-Ion Batteries in Tanzania.

## Transformational Project

The project's business model is based on three main pillars:

- **Local Lithium Battery Manufacturing:** Reducing reliance on expensive imports by producing cost-effective, high-quality lithium batteries within Tanzania.
- **Chassis Production and Assembly:** Producing durable, locally assembled chassis for electric two- and three-wheelers suited to the country's unique road conditions.
- **Charging and Battery Swapping Infrastructure:** Establishing a network of clean, affordable, and accessible fast charging and battery swapping stations to serve both urban and rural populations.

### PROJECT KEY INFORMATION

#### LEAD ORGANIZATION

Oasis Financial Services Limited

#### CONSORTIUM PARTNERS

- Payless Energy Limited

#### DURATION

01 Feb 2025 - 29 Feb 2028

#### LOCATION

Tanzania

#### THEMATIC AREA



#### STAGE

Initiated

#### WEBSITE

[www.oasisgroup.co.tz](http://www.oasisgroup.co.tz)

#### CALL

1st Call for Proposals

## Critical Minerals: Lithium-Ion Transport Solutions in Tanzania

### Expected Impacts

- **Environmental Impacts:**
  - 50,000 electric motorcycles produced each year
  - Reduces 65,000 tons of fossil fuel use annually
  - Lower CO<sub>2</sub> emissions from each bike, helping fight climate change
- **Social Impacts:**
  - 50% savings on fuel costs compared to gas-powered bikes
  - Less maintenance needed, so more time on the road
  - More charging stations and battery swap stations to keep bikes running smoothly
  - Creates jobs for both skilled and unskilled workers, especially for young people in Tanzania
- **Economic Impacts:**
  - Increased government revenue through taxes
  - Saves money by using fewer imported fuels and motorcycles
  - Lower transport costs and improved logistics





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# Industrial Decarbonization: "Green" Tea: Clean Heat and Power with Biomass Residues in Kenya

## Objectives

- Operate a 500kW **gasifier using waste biomass to reduce emissions from tea production** by 30% and demonstrate reliable, cost-effective performance.
- Create 50 new jobs in biomass management, gasifier operation, and monitoring, with a **focus on women and youth, while linking energy use to climate and community results.**
- Develop a governance framework for environmental and social safeguards and create a **pipeline for scaling the project to more tea factories** and other industries.

## Transformational Project

- The MicroHub gasifier converts local biomass into power and heat, **reducing fuel wood use and enabling tea factories to use 20% energy from prunings**, crop residues, and bamboo.
- Produces biochar (10-15%) to **improve soil fertility, increase tea yields, and sequester carbon**, promoting long-term environmental benefits.
- Supports green jobs, empowers women in energy, and promotes circular economy principles while strengthening value chains and sustainable land management.

## PROJECT KEY INFORMATION

### LEAD ORGANIZATION

Compact Syngas Solutions

### CONSORTIUM PARTNERS

- Supivaa
- IITA

### DURATION

01 Feb 2025 - 01 Mar 2028

### LOCATION

Kenya

### THEMATIC AREA



### STAGE

Initiated

### WEBSITE

[www.syngas-solutions.co.uk](http://www.syngas-solutions.co.uk)

### CALL

1st Call for Proposals





# Industrial Decarbonization: "Green" Tea: Clean Heat and Power with Biomass Residues in Kenya

## Expected Impacts

- **Environmental:**
  - **Improved soil health** enhances water quality, reduces erosion, and contributes to a more resilient local water cycle.
  - **Cleaner energy** from gasification replaces fuelwood, expanding biodiverse tree cover and restoring native forests, aiding carbon sequestration.
- **Economic:**
  - **Energy neutrality** through gasification reduces reliance on fossil fuels, lowers energy and fertilizer costs, improving factory margins and reducing vulnerability to price fluctuations.
- **Social:**
  - **Job creation and empowerment:** Supports green jobs and empowers local communities, particularly women, while fostering sustainable land management and improving livelihoods.



# Smart Energy: Grid Resilience through Intelligent PV and Storage in Nepal

## Objectives

- The project will scale up from 100 kW to 2 MW, demonstrating the potential of smart solar storage microgrids to replace diesel generators and coal-based electricity in the industrial sector, supporting Nepal's clean energy goals.
- It will provide a concrete demonstration of the cost-effectiveness and reliability of smart solar and storage systems, paving the way for larger-scale deployments in Nepal and beyond.

## Transformational Project

- Deployment of Nepal's largest battery-based microgrid (2 MW / 4 MWh battery, 1 MWp solar PV) at Laxmi Steel Factory, providing 100% generator-free backup for critical systems.
- The Microgrid Management System (MMS) will optimize battery and solar performance, ensuring reliable power without diesel and preparing the site for future grid services.
- Showcasing the viability of smart solar storage microgrids, setting the stage for wider adoption in Nepal and South Asia's industrial sectors.

## PROJECT KEY INFORMATION

### LEAD ORGANIZATION

Practical Action

### CONSORTIUM PARTNERS

- Gham Power Private Limited Nepal
- Swanbarton Private Limited UK

### DURATION

01 Feb 2025 - 01 Mar 2028

### LOCATION

Nepal

### THEMATIC AREA



### STAGE

Initiated

### WEBSITE

### CALL

1st Call for Proposals

# Smart Energy: Grid Resilience through Intelligent PV and Storage in Nepal

## Expected Impacts

- **Environmental:**
  - The microgrid will cut industrial emissions by displacing diesel, reducing CO<sub>2</sub>, and improving local air quality.
- **Social:**
  - The provision of clean, stable energy improves workplace safety and community health. Solar training and safety protocols support workforce development and career advancement.
- **Economic:**
  - Clean energy lowers operational costs and stabilises energy supply. The ESS plan supports sustainability through risk mitigation, monitoring, and CSR activities such as biodiversity conservation, waste management, and community engagement.
- **Inclusion:**
  - The GESI plan supports inclusive employment by assessing workforce dynamics and establishing a policy framework. A dedicated steering committee will oversee implementation, track KPIs, and ensure active community participation – especially for women and marginalised groups.





# Smart Energy: Smart Grid Scale-Up in Nigeria

## Objectives

- The project will distribute power from an anchor site to up to 20 consumers, electrifying 10,000 to 40,000 homes and businesses, especially in underserved rural and urban areas.
- It will reduce diesel consumption and carbon emissions while improving energy access and supporting livelihoods, with a focus on marginalized women and children.
- The model transforms solar PV owners into prosumers, encouraging clean energy investment, while data collected will help inform policy and infrastructure planning for scalable electrification.

## Transformational Project

- Deployment of smart distribution hardware, low-loss AC grids, and energy trading software to automate energy distribution and enable remote monitoring and control.
- The system allows independent solar PV owners to trade energy with their communities, reducing payback time and attracting private investment in solar energy.
- Electrification of up to 40,000 households and businesses, using machine learning for generation and demand prediction, to democratize power generation and drive mass electrification in Africa.

## PROJECT KEY INFORMATION

### LEAD ORGANIZATION

Greenage Technologies Power Systems Ltd.

### CONSORTIUM PARTNERS

- Nithio Inc
- SolarGis
- Eauxwell Nigeria Ltd

### DURATION

01 Feb 2025 - 01 Mar 2028

### LOCATION

Nigeria

### THEMATIC AREA



### STAGE

Initiated

### WEBSITE

### CALL

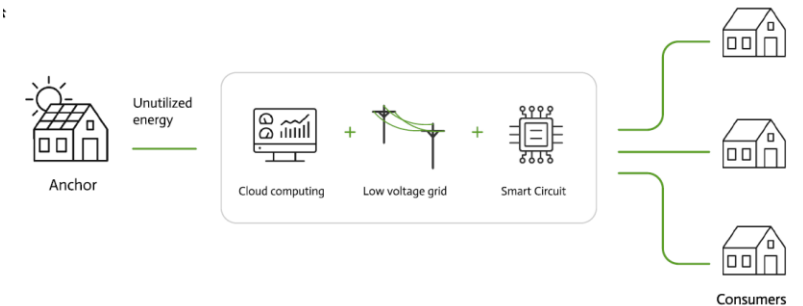
1st Call for Proposals



## Smart Energy: Smart Grid Scale-Up in Nigeria

### Expected Impacts

- **Environmental:**
  - Diesel generators will be replaced, and emissions reduced, by scaling solar PV utilization. This is especially important as Nigeria's population is projected to reach 500 million by the end of the century, driving energy demand that must be met sustainably.
- **Social:**
  - Small businesses, many of them run by women, face challenges in accessing reliable energy. Clean energy alternatives will empower these communities. In addition, improved electricity access supports access to information and education.
- **Economic:**
  - Replacing costly diesel with solar energy will lead to direct cost savings and reduce energy expenses for underserved communities.
- **Technological:**
  - The deployment of new technologies will contribute to continued innovation in Africa's energy landscape.





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# Questions & Answers



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# **Designing and Implementing Demonstration Projects: Monitoring, Reporting and Dissemination**

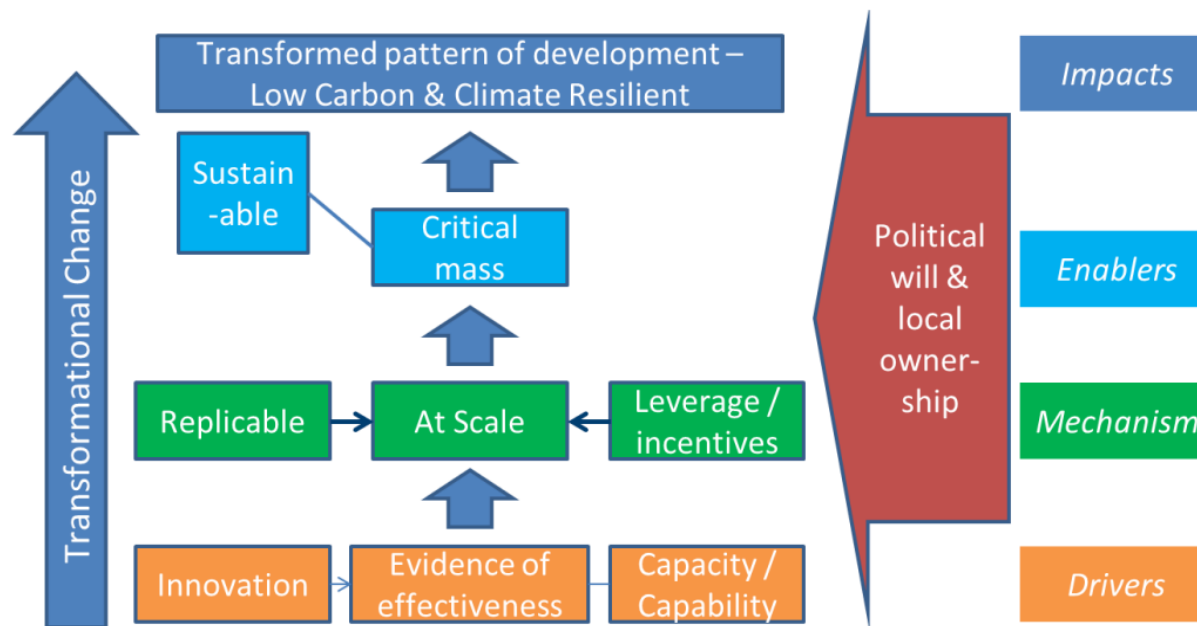
## Discussion Questions

- If you are currently working on an innovative project, what are you doing to facilitate a catalytic and transformational impact?
- How are you overcoming any barriers faced?

### Definition:

The transformational impact ([KPI-15](#)) indicator tracks early signs of transformation in projects, or the extent to which key activities either are being, or have a good likelihood of being, transformational.

### Theory of Change for Transformational Change:



# Monitoring

- ❖ Continuous examination of progress achieved during the implementation of a project to track compliance with the plan and to take necessary decisions to improve performance.
- ❖ UNIDO monitors all projects through a Logical Framework (“Logframe”).
- ❖ Performance and payments linked to meeting agreed milestones, deliverables and results.



Reference: UNIDO (2021) “UNIDO Monitoring and Reporting Policy” (document DGB/2021/14)



## A2D Facility Logframe

IMPACT	OUTCOMES	OUTPUTS
Shaping a <b>sustainable shift in local markets</b> by enabling clean energy technology solutions that are ready for wider uptake, catalysing increased climate ambition and transformational change	Innovative clean energy technology <b>solutions are ready for wider uptake</b> , while creating confidence in wider stakeholders and market players to adopt, replicate and scale clean technology solutions.	Innovative clean energy <b>technology solutions show signs of progression</b> towards real world application.
	Demonstration <b>projects successfully demonstrate the benefits and feasibility of alternative clean energy technology</b> solutions, generating high quality learning and creating a 'lighthouse' effect.	<b>Increased knowledge</b> of, and demand for, innovative clean energy technologies.
	<b>Enhanced knowledge</b> , understanding, data and networks.	<b>Enhanced capacity, capability, resources and infrastructure</b> that enable clean energy innovation for sustainable long-term development.



## A2D Facility Logframe

IMPACT indicators	OUTCOMES indicators	OUTPUTS indicators
<ul style="list-style-type: none"><li>Estimated greenhouse gas emissions reduced or avoided.</li></ul>	<ul style="list-style-type: none"><li>Domestic and/or international attention.</li><li>Solutions increased in maturity and operational capability.</li><li>Public and private finance leveraged.</li></ul>	<ul style="list-style-type: none"><li>Barriers addressed in the adoption of innovative technology solutions.</li><li>Relationships formed to accelerate market readiness of innovative clean technologies.</li><li>Knowledge sharing and dissemination activities.</li><li>Capacity building activities.</li><li>Contribution to SDGs achievement.</li><li>Demonstration project meets the criteria in the OECD DAC Gender marker.</li></ul>





# Enhancing Transformational Potential through Dissemination and Knowledge-Sharing

- Study tours and site visits to build the capacity of stakeholders that would enable the scalability and replicability of the demonstration project.
- Capacity building activities to share learnings, knowledge and skills from the supported demonstration project, such as in the planning, implementation and/or operation of the demonstration project.
- Knowledge-sharing and dissemination activities in local, regional and international events, workshops or equivalent on learnings and impacts from the supported demonstration project.



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# Questions & Answers



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# Lunch



13:00 – 14:30



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# **Market Assessments: Landscape of Innovators, Technologies, Existing Projects and Financing Mechanisms for Climate Innovation**

# Outcomes from the Market Assessments

- ❖ x3 market assessments commissioned and completed in 2024 and published at COP29: Clean Hydrogen, Critical Minerals, and Smart Energy and Industrial Decarbonization.
- ❖ Focused on the landscape of technologies, stakeholders, innovators, initiatives, existing projects and delivery mechanisms in developing countries.



A2D Facility Market Assessments: [Access the reports here](#)

# Landscape of Innovators

**Critical Minerals:** A key takeaway from the assessment is that technological innovation in the mid- and downstream segments of the value chain in developing countries relies primarily on technology transfer from developed countries. With that said, homegrown technological innovation in the mid- and downstream segments of the critical minerals sector is slowly emerging in developing countries.



## LAC

- Tech for extracting and refining lithium from salar brines and producing battery-grade lithium carbonate (M)
- Tech for extracting and refining lithium from clay deposits and producing battery-grade lithium carbonate (M)
- Tech for producing lithium-ion batteries using lithium carbonate (D)

## AFRICA

- Modular tech for recycling lithium-ion batteries using safer chemicals and environmentally sound processes (D)

## ASP

- Tech for processing nickel laterites (U/M)
- Tech for producing battery raw materials and battery-grade products (M)
- Tech for producing high-purity silicon ingot for silicon wafers, and solar cells, for solar panel manufacturing (D)
- Tech for recovering energy-critical metals (e.g. nickel hydroxide) from recycled lithium-ion batteries (D)

U = upstream

M = midstream

D = downstream



# Landscape of Innovators

**Clean Hydrogen:** Over 200 innovators were identified in developing countries, with 69 of them in China (27.6%) and 43 of them in India (17.4%), both countries leading the way, largely due to strong governmental support. 75 of these innovators are universities (33.9%), 29 are research institutions (13.4%), 20 pure-play clean hydrogen developers (8.9%), and 16 energy companies (8.0%). Despite the presence of innovators, they are currently found in 42 of the 141 developing countries (29.7%). In regions such as Africa, where industrialization is generally still in earlier stages, clean hydrogen innovation remains limited as energy generation and electricity access take priority.

Table 4-1. Categories and sub-categories of Innovators

Research and Education	Energy Sector	Hydrogen Start-ups	Hydrogen Industry Players	Off-takers
Universities	Renewable energy companies	Start-ups	Pure-play clean hydrogen developers	Oil & gas companies
Research institutions	Electric power utilities and generators		Hydrogen technology equipment or component manufacturers	Automotive and transport companies
			Industrial gas companies	Chemical and fertiliser companies
				Other companies in hydrogen end-use applications

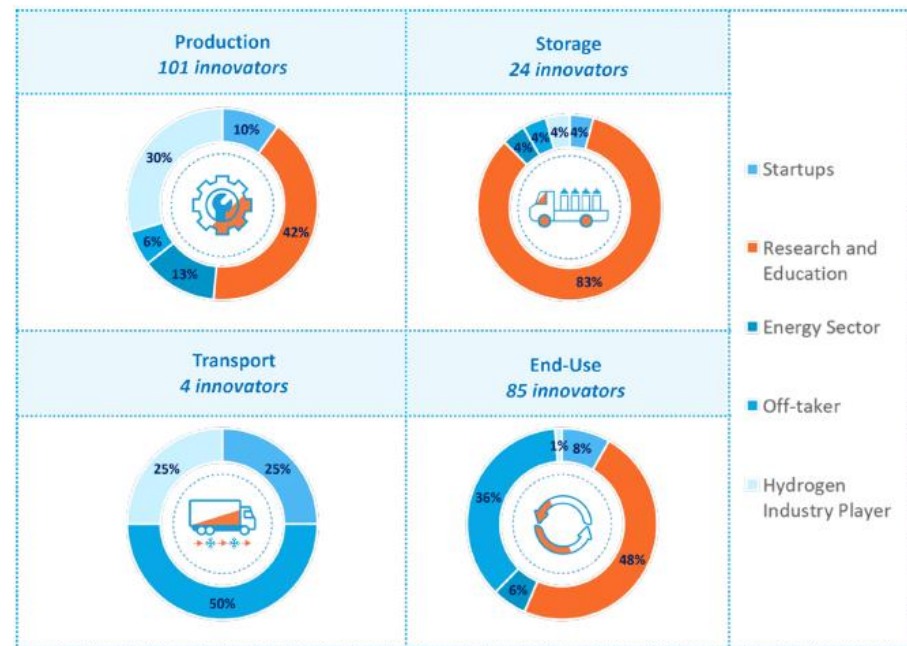


Figure 4. Number of innovators by segment of the clean hydrogen value chain.



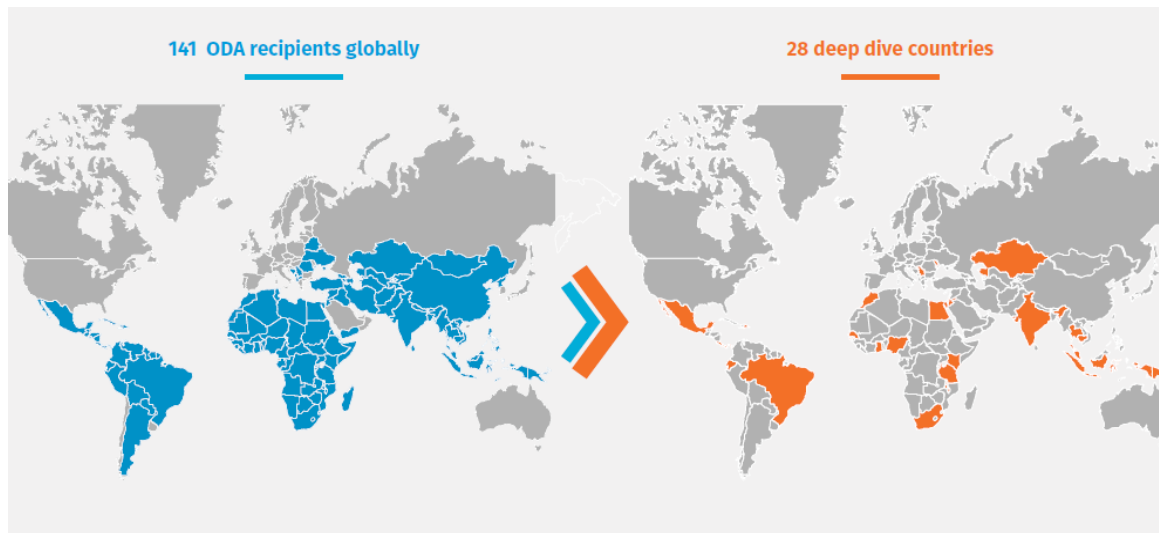


# Landscape of Innovators

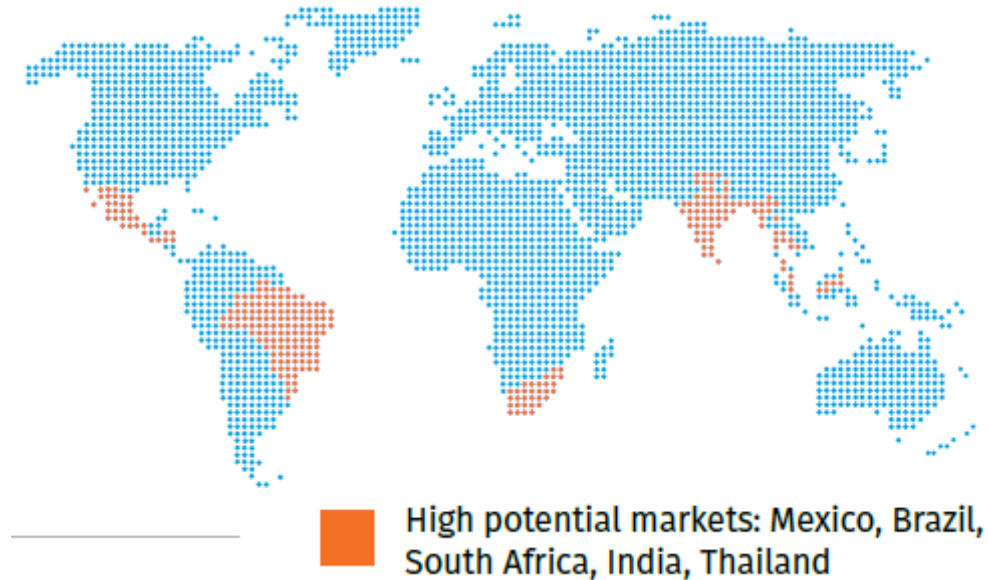
## Smart Energy and Industrial Decarbonization:

The assessment found high-potential markets to include India, Brazil, Thailand, South Africa and Mexico due to stronger enabling environments and policy frameworks, which advance the continued reduction in the costs of renewable energy technologies, making them more accessible.

Adoption of innovative technologies in both smart energy and industrial decarbonization fall into four main categories: 1) political and legal, 2) economic, 3) technological and environmental, and 4) social.



A2D Facility Smart Energy and Industrial Decarbonization MA deep dive countries



# Landscape of Technologies

## Critical Minerals:

- **Midstream:** encompasses the processing and refining of critical minerals into usable forms as well as the recovery of resources from mining by-products such as process tailings, electrorefining sludge, and pyrometallurgical slag.
- **Downstream:** extends beyond the manufacturing, assembly, and distribution of final products, and also covers the recovery, repurposing, and recycling of valuable materials from secondary resources, such as end-of-life manufactured goods.

 List of Critical minerals analysed
<ul style="list-style-type: none"> <li>• Lithium</li> <li>• Nickel</li> <li>• Manganese</li> <li>• Cobalt</li> <li>• Graphite</li> <li>• Rare Earth Elements (REEs)</li> <li>• Copper</li> <li>• Platinum Group Metals (PGMs)</li> </ul>

The technologies analysed in the assessment can be grouped into five major categories:

### Physical-mechanical

- Sorting, flotation, magnetic separation, gravity separation, electrostatic, triboelectric, eddy current separation

### Hydrometallurgy

- Leaching: Inorganic acids, organic acids, inorganic bases, oxidising and reducing agents, inorganic compounds, complexing agents, water, microbes
- Leach solution concentration and metal extraction

### Pyrometallurgy

- Roasting, calcining, sintering, pelleting and briquetting, smelting, volatilisation (retorting), refining, segregation

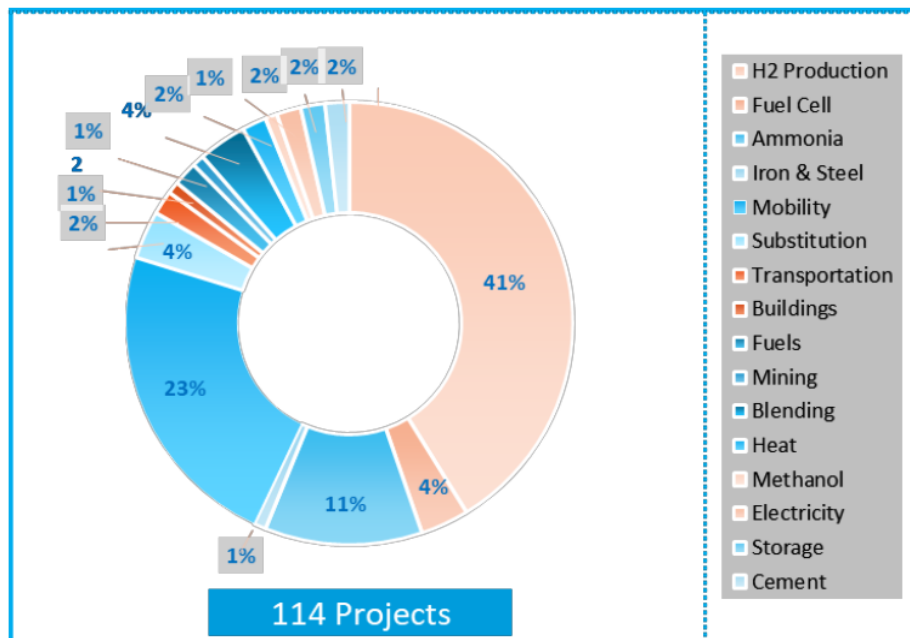
### Electrometallurgy

- Electrowinning, electrorefining, molten salt electrolysis, electrochemical separations

### Bio-based

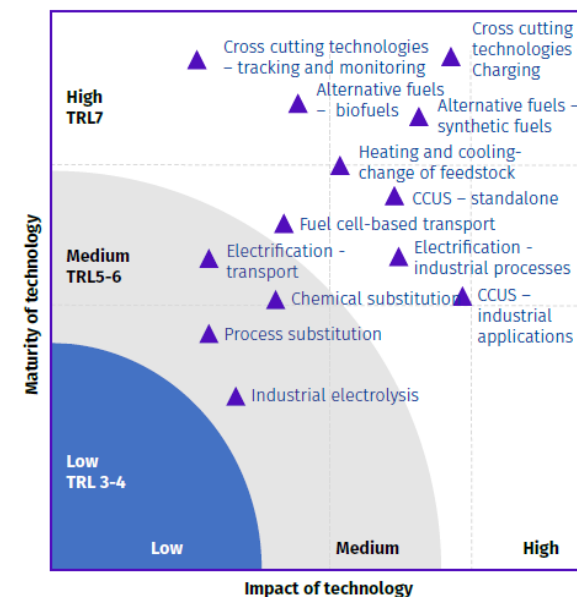
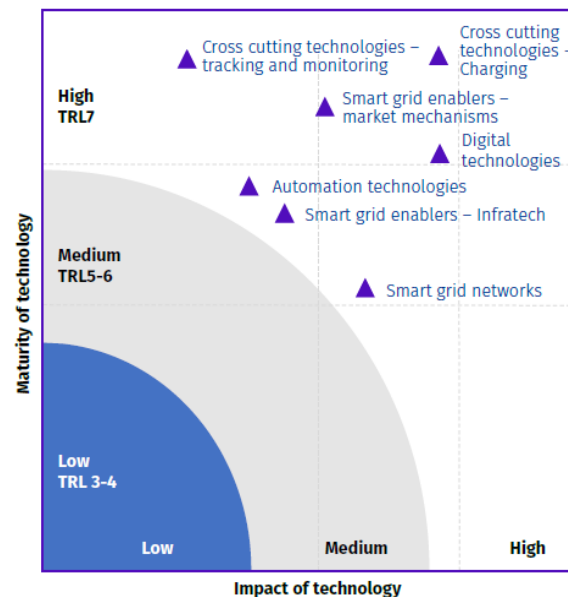
- Biomining (biometallurgy), bioleaching, biosorption, phytomining.

# Landscape of Technologies



**Clean Hydrogen:** 110 hydrogen projects with technologies in TRLs 6 to 9, in late-stage planning, were mapped across over 40 developing countries. Out of this 41% of the projects focus on hydrogen production, followed by 23% on mobility. For regional context: LAC hosts 41 projects, Africa has 28 and in Asia, India and China are more dominant in this regard.

**Smart Energy:** Approximately 50 relevant smart energy technologies within the Technology Readiness Level (TRL) range 3 to 7 were identified and assessed. Most of these technologies are currently in the post-conception phase, with nearly 50% at the prototype or pilot testing stages.



**Industrial Decarbonization:** In the area of industrial decarbonization approximately 200 technologies across TRLs 3-7 were identified and assessed. Most of these technologies are in the post-conception phase, with nearly 50% at the prototype or pilot testing stages.

# Landscape of Stakeholders

## Critical Minerals:









The role of industry associations is a more high-level version of the mining companies that they represent. Organizations such as ICMM (an industry association of mining companies with the objective of improving sustainable development outcomes in the mining and metals industry) influence the direction that sustainable development in mining and mineral value chains may take.

# Landscape of Stakeholders

## Smart Energy and Industrial Decarbonization:

Six critical stakeholder groups have been identified, including innovators, adopters, controllers, funders, advisors and influencers, all of whom play essential roles in advancing technology innovation in both the two thematic areas of smart energy and industrial decarbonization.

TABLE 3: Stakeholder groups						
Stakeholder Groups	Innovators	Adopters	Controllers	Funders	Advisors	Influencers
						
Role	Develop new technologies, perform data analysis and provide technical expertise	Bring innovations to market, invest in technology development and scale up solutions	Set policies and regulatory frameworks, provide initial funding and facilitate demo projects	Provide capital for R&D and technologies deployment, and mitigate risks	Engage communities, provide on-the-ground support and share best practices	Raise awareness, facilitate collaboration and driving engagement through their platforms
TRL 3-4	High	Limited	High	High	High	Low
TRL 5-6	High	Limited	Limited	High	High	Limited
TRL 7-8	High	High	High	High	High	High

High

Limited

Low

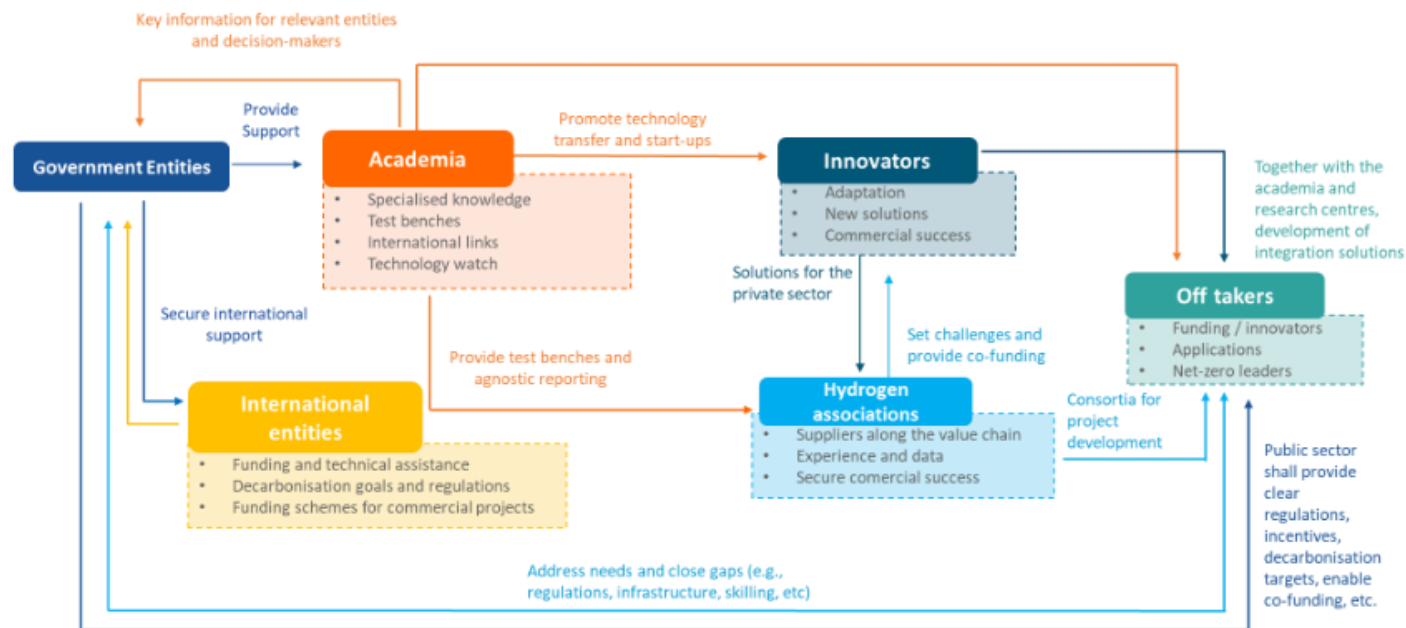


# Landscape of Stakeholders:

## Clean Hydrogen:

Each stakeholder group contributes in different ways to the innovation process:

- **Innovators** such as think tanks, academia, research organizations, startups, and tech companies are pivotal in developing new technologies, performing data analysis, and providing technical expertise.
- **Adopters**, including end users, SMEs, large users, service companies, and the private sector, are responsible for bringing innovations to market, investing in technology development, and scaling up solutions.
- **Controllers**, such as government bodies, regulatory bodies, and certification bodies, set policies and regulatory frameworks, provide initial funding, and facilitate demonstration projects.
- **Funders**, including banks, donors, financial bodies, and investment funds, provide capital for R&D and technology deployment and mitigate risks.
- **Advisors**, such as NGOs, energy associations, industrial associations, and consultants, engage communities, provide on-the-ground support, and share best practices.
- **Influencers**, including media, social media influencers, and associations, raise awareness, facilitate collaboration, and drive engagement through their platforms.



**In all thematic areas the relationship between innovators and adopters is marked by a collaborative approach. There is significant collaboration between controllers (government), adopters (private sector), and advisors (NGOs) to implement and scale up clean energy end solutions through public-private partnerships (PPPs).**





# Landscape of Initiatives

## Critical Minerals:

TABLE. Landscape of initiatives (Phase 1)

Initiative	Type	Key technologies involved	Key stakeholders involved	Geographic focus
World Economic Forum's UpLink	Platform for innovators to present their solutions to global challenges	<ul style="list-style-type: none"> <li>• Waste management systems</li> <li>• Greenhouse gas emission reduction innovations</li> <li>• Resource efficiency technologies</li> </ul>	<ul style="list-style-type: none"> <li>• Startups</li> <li>• Academic institutions</li> <li>• Industry</li> </ul>	<ul style="list-style-type: none"> <li>• Global</li> </ul>
Prospect Innovation	Accelerator for technological innovation in the mining sector	<ul style="list-style-type: none"> <li>• Energy generation and storage</li> <li>• Recycling and recovery</li> <li>• Robotics, mobility, and hardware</li> <li>• Data capture, analytics, and AI</li> <li>• Carbon capture</li> <li>• Synthetic Biology</li> </ul>	<ul style="list-style-type: none"> <li>• Research institutions</li> <li>• Mining companies</li> <li>• Venture capital firms</li> </ul>	<ul style="list-style-type: none"> <li>• Americas</li> <li>• ASP</li> <li>• Europe</li> </ul>
Global Battery Alliance (GBA)	Public-private partnership that promotes sustainable battery value chains	<ul style="list-style-type: none"> <li>• Battery recycling</li> <li>• Tracking methods for batteries in the value chain ("Battery Passport")</li> </ul>	<ul style="list-style-type: none"> <li>• Government</li> <li>• Civil society</li> <li>• Industry</li> </ul>	<ul style="list-style-type: none"> <li>• Africa</li> <li>• Asia</li> <li>• Europe</li> </ul>
World Bank Group's Climate Smart Mining (CSM) Initiative	Initiative to provide guidance and technical support on decarbonisation and sustainability in mineral value chains in developing countries	<ul style="list-style-type: none"> <li>• Critical minerals recycling</li> <li>• Reusing and repurposing EOL materials</li> </ul>	<ul style="list-style-type: none"> <li>• Government</li> <li>• International organizations</li> <li>• Local communities</li> </ul>	<ul style="list-style-type: none"> <li>• Developing countries</li> </ul>
Activate.org	Fellowship that supports entrepreneurial scientists and engineers in developing technologies for global challenges	<ul style="list-style-type: none"> <li>• Broad; supports original ideas of its fellows</li> </ul>	<ul style="list-style-type: none"> <li>• Academia</li> <li>• Government</li> <li>• Corporations</li> <li>• Philanthropic foundations</li> </ul>	<ul style="list-style-type: none"> <li>• United States</li> </ul>

# Landscape of Initiatives

## Clean Hydrogen:

- **National initiatives:** Country wide and it was one of the criteria for evaluating the 141 ODA eligible countries (8 in LAC, 8 in Africa and 9 in APAC).
- **Regional initiatives:** Regional initiatives enhance knowledge exchange, shared investments, and infrastructure to accelerate clean hydrogen innovation and reduce costs. They also bring countries together to advance towards a clean hydrogen economy. Such initiatives allow developing countries that have not developed roadmaps or policies. E.g. the LAC Clean Hydrogen Action, Africa Green Hydrogen Alliance and Asia Pacific Green Hydrogen Alliance.
- **International Initiatives:** Only 37 of 141 (26.2%) of developing countries are currently involved in the international initiatives mapped. Brazil, China, India, Morocco, and South Africa are currently the main recipients of international cooperation.

## Smart Energy and Industrial Decarbonization:

- **National Initiatives in Americas:** 13 identified with RELAC being the most prominent one "REnovables in Latin America and the Caribbean (RELAC)." In Africa and Europe: 32, such as "African Circular Economy Alliance (ACEA)". Asia and Oceania: 27 initiatives identified, such as "Asia-Pacific Economic Cooperation (APEC) Smart Grid Initiative".
- **Smart Energy:** Smart grids Sustainable fuels Energy storage systems Circular economy Integrating renewable energy (RE) sources, Energy efficiency, Big Data.
- **Industrial Decarbonization:** Sustainable fuels, Circular economy, Energy efficiency, CCUS.

# Landscape of Financial Delivery Mechanisms

**Clean hydrogen:** Governments and development organizations providing concessional financing, grants and technical assistance to support the first movers in the industry. At present, funding initiatives and partnerships for R&D projects in developing countries are primarily focused on improving the cost and technical efficiency of clean hydrogen production technologies, particularly electrolysis.

TABLE. Landscape of financial delivery mechanisms (Phase 1)

Public Sources	Private Sources
<ul style="list-style-type: none"> <li>• Multilateral Development Banks (MDBs)</li> <li>• Multilateral Climate Finance Funds</li> <li>• National Development Banks</li> <li>• Bilateral Development Agencies</li> <li>• Government Grants and Subsidies</li> <li>• Sovereign Wealth Funds (SWFs)</li> </ul>	<ul style="list-style-type: none"> <li>• Venture Capital</li> <li>• Corporate Venture Capital</li> <li>• Private Equity</li> <li>• Accelerators and Incubators</li> <li>• Private Banks</li> <li>• Impact Investment Funds</li> </ul>

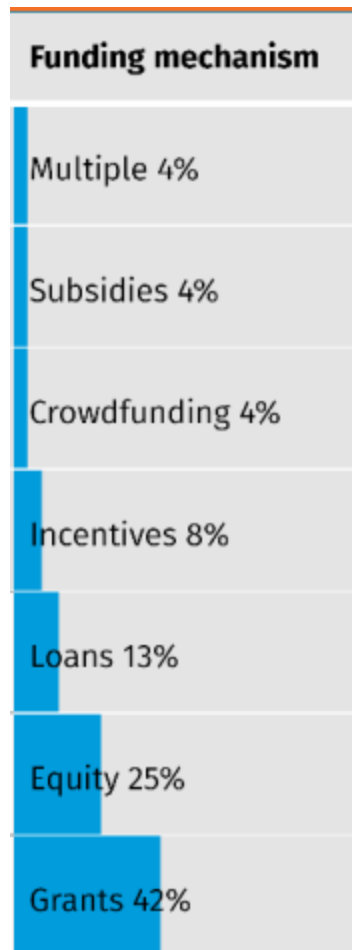
**Critical minerals:** The preliminary mapping categorized them according to the predominant public or private nature of their funding source, to help guide stakeholders in identifying financing opportunities and gaps and evaluating the potential roles of various financing sources and models in supporting technological innovation.



# Landscape of Financial Delivery Mechanisms

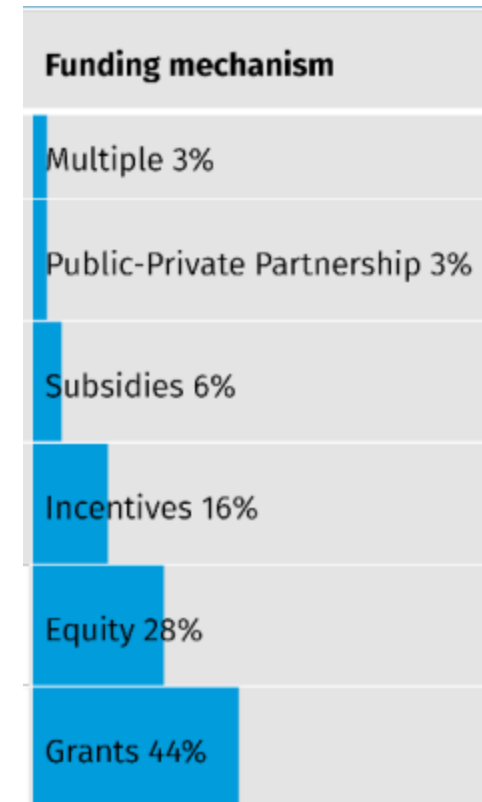
## Smart energy:

The majority of smart energy projects are buoyed by government grants, as governments aim to foster projects that will catalyze further interest and investment from various stakeholders.



## Industrial decarbonization:

These projects are principally supported by government or multilateral grants that help bridge the financial gaps associated with these advanced technologies.





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# Market Assessment Findings: Indonesia

# Critical Minerals – Regional Landscape

	STRENGTHS	AREAS FOR IMPROVEMENT
<p>ASP</p> <div>  India   Indonesia   Türkiye         </div>	<ul style="list-style-type: none"> <li>• Circular economy, recycling, and waste management policies   </li> <li>• Tax incentives for technology development   </li> <li>• Special Economic Zones (SEZs) for industrialisation and downstream activities   </li> <li>• Cooperation with developed countries: Minerals Security Partnership  </li> <li>• National financial mechanisms (e.g. Make in India; Indonesia Battery Corporation; Turkish Growth and Innovation Fund [USD 218 million])</li> <li>• Policies advancing SDGs  </li> </ul>	<ul style="list-style-type: none"> <li>• Regional cooperation and initiatives</li> <li>• Reliance on imported fossil fuel-based energy</li> <li>• Policies advancing SDGs  </li> </ul>





# Clean Hydrogen – Country Landscape

**Region:** Asia | **Population:** 275.6 M | **Electricity mix:** 18.0% renewables

**Clean Hydrogen Landscape:** Geothermal and hydropower potential, existing ammonia production plants, and the development of CCUS projects support the country's plans to accelerate clean hydrogen production. The country is expected to focus on exporting to Asian markets and domestic demand. State-owned Pertamina oil and gas company is investing \$11 billion in renewable energy projects.

## KEY FINDINGS

- Competitive advantages:** High potential for renewable electricity (wind, solar, geothermal), ammonia production infrastructure, significant CO2 storage capacity, marine export infrastructure, and potential for hydrogen-based micro grids on islands and in isolated areas.
- Barriers:** Energy transmission lines are difficult to build. Sites with potential for renewable energy are located mostly in the East, while demand is in the Western region.
- Strategies:** International cooperation and targeting Asian premium off-take markets (Japan, South Korea, Singapore).
- Financing mechanisms:** The Government of Indonesia has projected the need for up to \$25.2 billion in private investments to accelerate the development of the clean hydrogen industry from 2031 to 2060. Pertamina oil & gas company is investing \$11 billion to enhance renewable energy capacity.

## POTENTIAL HYDROGEN APPLICATION



Refining & Petrochemicals

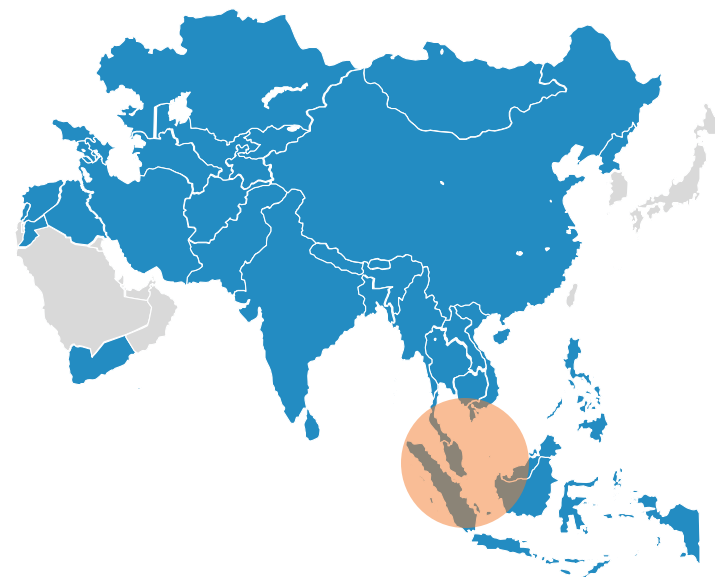


Clean hydrogen & derivatives exports



Fertilisers

## Potential Regional Hubs



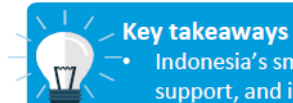
- Southeast Asian countries as [Indonesia](#), [VietNam](#) and [Malaysia](#). Singapore can be part of this hub to act as off taker and export point of developing countries hydrogen-based solutions.

## Indonesia's policy and infrastructure climate is well placed to support investments across smart energy technologies and projects...



Indonesia

Policy		Key Policies and Regulations	
Policy	Incentives	Smart Grid Roadmap (RUPTL 2021 – 2030)	<ul style="list-style-type: none"> <li>This initiative, led by PT PLN (Persero), aims to revolutionize Indonesia's electricity distribution by integrating smart grid technology and renewable energy sources over the next decade. The focus is on enhancing efficiency and reliability in the power grid.</li> </ul>
<ul style="list-style-type: none"> <li>The country has well laid down policies regarding key smart energy elements such as smart grid, EV, Energy efficiency, etc.</li> </ul>	<ul style="list-style-type: none"> <li>There are numerous incentives that adopters of smart energy technologies in Indonesia can avail – ranging from tax breaks / subsidies to affordable financing (low interest rates)</li> </ul>	Regulation No. 79 / 2014 - National Energy Policy	<ul style="list-style-type: none"> <li>The National Energy Policy of Indonesia (Government Regulation No. 79 / 2014) aims to achieve energy independence and security by 2050. It focuses on increasing the share of renewable energy to 23% by 2025 and 31% by 2050, enhancing energy efficiency, and developing smart grids and electric vehicle (EV) infrastructure.</li> </ul>
		Regulation No. 22 / 2017 - National Energy Policy	<ul style="list-style-type: none"> <li>The President Regulation No. 55 / 2019 lays down Indonesia's EV regulations focus on accelerating the adoption of battery electric vehicles (BEVs) through incentives, local manufacturing requirements, and the development of charging infrastructure.</li> </ul>
Infrastructure		Key Initiatives and collaborations	
Infrastructure	Financing	KEPCO, Siemens and PT PLN Collaboration	<ul style="list-style-type: none"> <li>KEPCO signed an MoU with Indonesia's PT Perusahaan Listrik Negara (Persero) and Siemens for joint promotion of new technologies and businesses. This includes a high voltage direct current project to connect Java and Sumatra Islands in Indonesia.</li> </ul>
<ul style="list-style-type: none"> <li>Indonesia has a wide range of smart energy projects – particularly around smart grid as it is an island nation</li> </ul>	<ul style="list-style-type: none"> <li>While there is a lack of direct government funding – other funds make up for the lack of the same (Example – Green Climate Fund)</li> </ul>	Net Zero World Initiative	<ul style="list-style-type: none"> <li>Led by the US DOE, The Net Zero World Initiative brings capabilities to help Indonesia's national and city governments accelerate the transition to low-carbon, sustainable mobility. Their goals are to build government capacity and enable policy reform in addition to boost access to decarbonization finance.</li> </ul>
		Smart Meter Retrofitting	<ul style="list-style-type: none"> <li>The project is led by Sindcon, a smart meter provider, in collaboration with ST Microelectronics involves retrofitting over 50,000 smart meters with LoRaWAN wireless microcontrollers, enabling remote meter reading for electricity, gas, and water meters.</li> </ul>



### Key takeaways

- Indonesia's smart energy ecosystem is built on strong policies and infrastructure, promoting investments in renewable energy technologies. The framework includes strategic planning, financial support, and international collaborations to enhance the country's energy efficiency and sustainability.



## Indonesia has the right environment in place to accelerate industrial decarbonization...



Indonesia

Key Policies and Regulations	
Policy	Incentives
<ul style="list-style-type: none"><li>Indonesia has numerous policies that promote use of biofuels in the country. In addition to this, there are regulations to promote adoption of CCUS across industries</li></ul>	<ul style="list-style-type: none"><li>The country has incentives in place to support the adoption of green technologies across industries</li></ul>
<div>Blending Mandate Support (B35)</div> <ul style="list-style-type: none"><li>Indonesia's B35 mandate, implemented in February 2023, requires a 35% biodiesel blend in road transport fuel, significantly increasing palm oil use for fuel. This initiative aims to enhance energy security and boost renewable energy usage.</li></ul>	
<div>Organization of CCS Activities (PR 14 / 2024)</div> <ul style="list-style-type: none"><li>This regulation outlines the framework for Carbon Capture and Storage (CCS) activities, focusing on reducing carbon emissions and mitigating climate change impacts.</li></ul>	
<div>National Action Plan for reducing GHG Emissions</div> <ul style="list-style-type: none"><li>This plan sets out strategies and measures to lower greenhouse gas emissions across various sectors, contributing to Indonesia's commitment to global climate goals.</li></ul>	
Key Initiatives and collaborations	
Infrastructure	Financing
<ul style="list-style-type: none"><li>Indonesia has enabling infrastructure in the form of a plethora of pilot projects across decarbonization themes – companies like Pertamina are leading the charge.</li></ul>	<ul style="list-style-type: none"><li>While there is a lack of direct government funding – other funds make up for the lack of the same (Example – Green Climate Fund)</li></ul>
<div>Tangguh CCUS R&amp;D Initiative</div> <ul style="list-style-type: none"><li>This initiative focuses on research and development in Carbon Capture, Utilization, and Storage (CCUS) at the Tangguh gas field, aiming to reduce carbon emissions and enhance sustainable energy practices.</li></ul>	
<div>Pertamina &amp; Honeywell UOP Biofuel Production Project</div> <ul style="list-style-type: none"><li>A collaborative project between Pertamina and Honeywell UOP to produce biofuels, which aims to create cleaner energy alternatives and reduce reliance on fossil fuels.</li></ul>	
<div>KADIN Net Zero Hub</div> <ul style="list-style-type: none"><li>An initiative by the Indonesian Chamber of Commerce and Industry (KADIN) to support businesses in achieving net-zero emissions, promoting sustainable practices and environmental responsibility.</li></ul>	



### Key takeaways

- Indonesia has a comprehensive ecosystem supporting industrial decarbonization. Key policies and initiatives promote biofuels, carbon capture, and sustainable practices. Collaborative projects enhance innovation and environmental responsibility, driving the country's commitment to reducing greenhouse gas emissions and fostering a sustainable future.

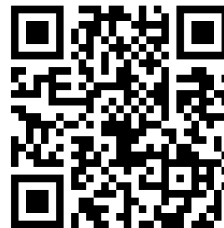
# A2D Facility Market Assessments



Market Assessment on  
Accelerating Innovation in Critical  
Minerals



Market Assessment on  
Accelerating Innovation in Clean  
Hydrogen



Market Assessment on Accelerating  
Innovation in Industrial  
Decarbonization



Market Assessment on  
Accelerating Innovation in Smart  
Energy





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# Questions & Answers



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# Coffee Break



15:30 - 16:00





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# Gender Equality, Social Inclusion and Environmental Safeguards

## Gender Equality and Social Inclusion (GESI)

- **Gender Equality:** Gender equality means **equal rights, responsibilities, and opportunities** for everyone, **regardless of gender**. It values the needs and priorities of all genders equally, aiming to eliminate barriers that uphold unequal power relations.
- **Social Inclusion:** Social inclusion involves **removing barriers** that prevent marginalized groups—based on gender, ethnicity, age, disability, or other factors – from full participation in society. It ensures these groups are not left behind, particularly in economic, social, and political spheres, by **promoting equal access to resources and decision-making**.

### Foundations – GESI

- ✓ Do No Harm (DNH)
- ✓ Empowerment
- ✓ Just transition
- ✓ Leave no one behind principle



## 1. Do No Harm

- ❖ A principle recognizing that **no action is neutral**.
- ❖ Applies a “**Do No Harm**” **approach** to ensure projects create **safe, equitable working conditions**.
- ❖ Focus on **empowering women** in leadership roles within clean energy transitions.
- ❖ Improves outcomes for **vulnerable groups** and supports a **fair, inclusive, and sustainable** shift to a low-carbon future.

## 2. Empowerment

- ❖ Building **assets and capabilities** so individuals and groups can **participate and engage**.
- ❖ Enables them to **influence decisions** and **hold institutions accountable**.
- ❖ Happens at both **individual and group level**.
- ❖ Strengthens **agency** and **collective power** for action and change.

### 3. Just and Equitable Transition

- ❖ A fair shift to low-carbon economies **must benefit all**, especially the most vulnerable. **Marginalized groups** (e.g. women, Indigenous peoples, low-income communities) face greater energy poverty and climate risks. These groups must be **prioritized and included** to ensure access to clean energy and avoid being left behind.
- ❖ **Women's insights** into household and community energy needs are essential, their **leadership and participation** improve energy system design and fairness.



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**How much do you know about GESI in the context of demonstration projects?**



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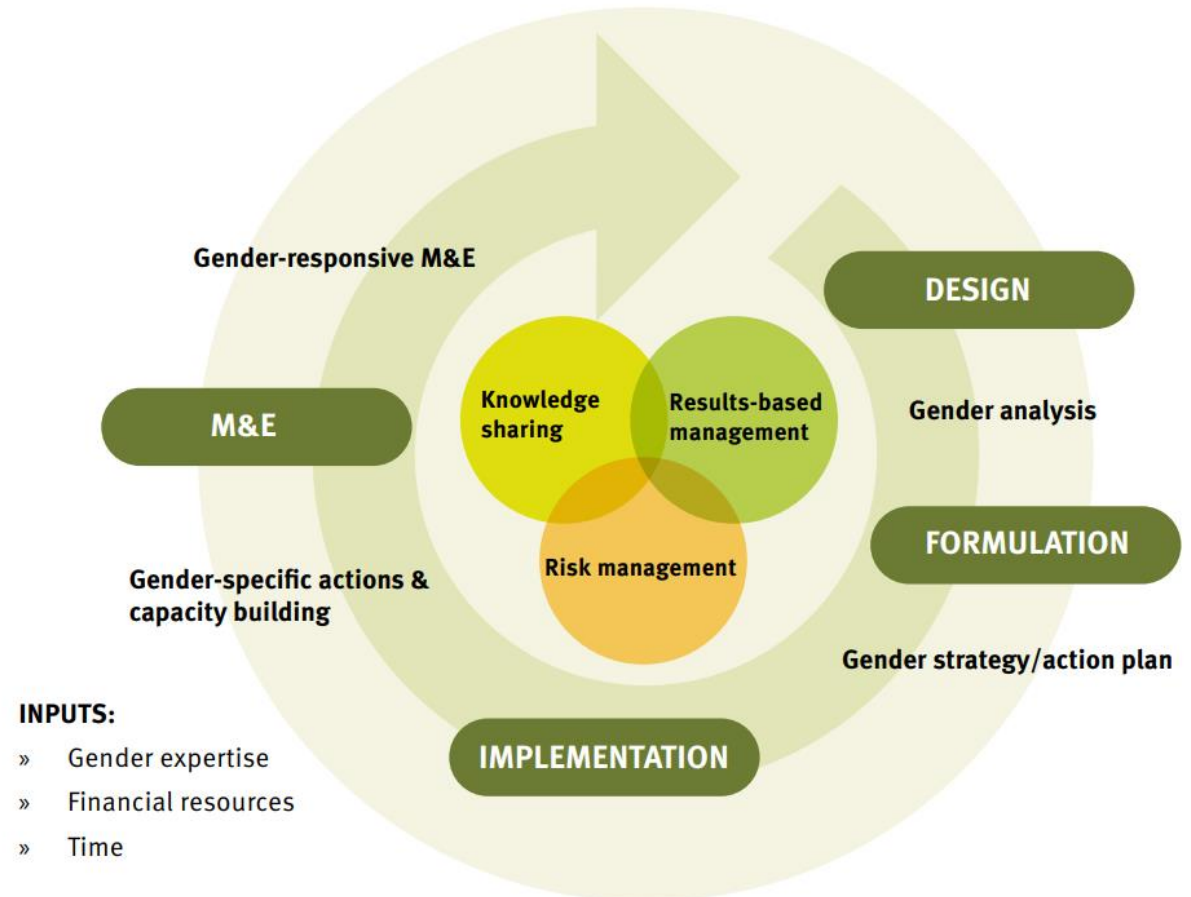


# Mainstreaming gender issues at different stages of the project cycle

[UNIDO Guide to Gender Analysis and Gender Mainstreaming the Project Cycle](#)

Find Tool Step by Step [here](#)

1. **Project Formulation** – Identify gender and inclusion gaps and design gender- and-social responsive activities
2. **Project Implementation** – Ensure equal participation and benefits for everyone
3. **Monitoring & Evaluation** – Track gender and social impacts and adjust strategies as needed





# GESI action plan at the project level

Ensuring that action plans include:

1. **Gender Analysis:** Identifying gender disparities and specific needs within the project context.
2. **Action Plan:** Defining clear activities and timelines to address gender equality and social inclusion goals.
3. **Monitoring & Evaluation:** Setting indicators to measure progress and assessing the impact of GESI interventions.

## GESI Action Plan Outline

- **Introduction:** GESI Background, Purpose-Objectives
- **Project Background:** entry points for gender-mainstreaming
- **Policy, Legal Administrative Framework:** compliance with national and international legal framework and standards, international best practices
- **GESI Tools and Procedures:** screening of projects, action steps , Capacity development planning.
- **Communication and Stakeholder Engagement Plan**
- **GESI Draft Implementation Action Plan and M&E Plan**

# Considerations for a GESI Analysis

## 01 GESI ANALYSIS

A gender analysis should investigate the following questions:

- What are the key gender and social issues in the sector/region?
- How might the project affect women and men differently?
- How are other marginalized communities impacted?"

## 02 Understanding the Political/Country Context

## 03 Considering of the needs, rights, capabilities and priorities

## 05 Gender - Age disaggregation data

## 04 Ensuring participation of diverse social groups in decision-making





## Why GESI matters?

- It reduces inequalities
- It improves economic growth
- It makes communities stronger

*When everyone has a fair chance to succeed, societies become more sustainable and resilient.*



## GESI: Monitoring and Reporting

A2D Facility: gender output indicator focused on compliance with [OECD-DAC gender equality policy marker](#) score 1 throughout the project cycle.

Code	Value	Explanation	Minimum Criteria (should be met in full)
2A	Significant expected contribution to gender equality	Gender issues are not the main objective of the project or programme but are significantly reflected and integrated (mainstreamed) in all relevant dimensions: results, activities, M&E framework.	There is at least one explicit gender equality related output backed by at least one gender-specific indicator. A gender analysis of the project has been conducted and the findings inform project design. Data and indicators are disaggregated by gender, where applicable. The M&E component of the project is designed to report on the expected gender equality results. The logframe/results framework measures progress towards the project's gender-related output(s) through gender-specific indicators to track outcomes/impact.
3.3	A2D Project Monitoring Tool: Output Indicator 3.3	Demonstration project meets the criteria in the OECD DAC Gender Marker	A positive impact on advancing gender equality and/or the empowerment of women and girls, reducing gender discrimination or inequalities, or meeting gender-specific needs (OECD marker 1)

## Key Points on GESI in Projects

- ❖ GESI Mainstreaming makes projects **more inclusive, effective, and impactful**.  
UNIDO provides **tools and guidance** to help project developers integrate gender and social inclusion considerations.
- ❖ **Apply gender and inclusion lens at all project phases.**
- ❖ Monitoring and Reporting: Ensure **gender-disaggregated data collection**.
- ❖ Partner with **gender-social focused organizations** to enhance impact.



# Environmental and Social Safeguards (ESS)

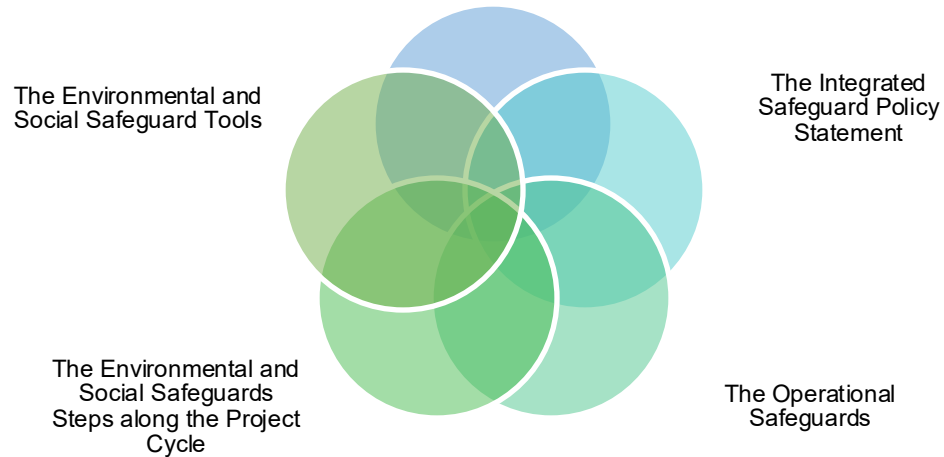
## UNIDO Environmental and Social Safeguards Policies and Procedures (ESSPP)

- ❖ Defines **UNIDO's commitment** to responsible project implementation.
- ❖ Ensures **compliance with International Laws and Best Practices**.
- ❖ Provides **guidelines for assessing environmental and social risks**.
- ❖ Ensures projects contribute to **Inclusive and Sustainable Development (ISID)**.



# UNIDO ESSPP

## UNIDO's ESSPP



## UNIDO's Operational Safeguards

OS 1: Environmental and Social Assessment

OS 2: Protection of Natural Habitats and Biodiversity

OS 3: Involuntary Resettlement and Land Acquisition

OS 4: Indigenous People

OS 5: Pest Management

OS 6: Cultural Heritage

OS 7: Safety of Dams

OS 8: Labor and Working Conditions

OS 9: Resource Efficiency and Pollution Prevent and Control

OS 10: Community, Health, Safety and Security

OS 11: Information Disclosure and Stakeholder Engagement

OS 12: Accountability and Grievance System

## Additional relevant safeguards

- Gender Equality and Prevention of Gender-Based Violence
- Children and People with Disabilities
- Youth groups and constituencies of MEAs/Conventions
- Fragile and Conflict-Affected Situations

# Example of ESSPP Application in UNIDO Projects

PROCACAO II: helps cocoa producers and cooperatives comply with quality standards and implement good agricultural practice to increase their productivity by promoting the cultivation of cocoa under agroforestry systems in Nicaragua.

## Potential ESS risks



Proximity to  
protected areas



Soil degradation  
and erosion



Contamination  
from wastewater



Occupational  
health and safety



Child labor on  
family farms



Indiscriminate  
crop expansion

## ESS measures undertaken to maximize the overall positive impact of the project



Two national experts were hired to develop an E&S study (ESMP) and a validation process was undertaken with the project team and the ESS Unit.



Measures outlined in the ESMP were included in the budget and work plan, and implemented in collaboration with national counterparts and stakeholders.



Mitigation strategies included:

- Capacity-building for the project team, cooperatives and producers on agroforestry, biodiversity conservation and agrochemical use
- Handout of personal protective equipment
- Production of an easy-to-use checklist for farmers on conservation



Lessons learned were incorporated into the design of the project's next phase - NICACAO.

## ESS-related lessons learned during ESMP development and implementation



Continued engagement with ESS experts facilitated the implementation of effective mitigation measures and capacitation of project counterparts and beneficiaries.



The ESMP validation process and additional stakeholder engagement addressed key ESS risks using available project resources and enhanced the project team's understanding and ownership of the document.



This process generated further insights on site selection, climate change impacts, legal protection, communication strategies and resource allocation.



ESS measures do not need to be costly, many measures can be easily implemented within the existing action zone of the project

# Potential Risks related to Demonstration Projects



Sector	Risk	Description
Critical Minerals	Biodiversity Loss & Land Degradation	Loss of vegetation and land degradation from midstream and downstream processing.
	Soil Contamination	Industrial discharge affecting soil fertility and agricultural productivity.
	Climate Change Impact	High GHG emissions from processing and transportation.
	Waste Management Issues	Improper disposal of industrial waste leading to contamination.
	Labor Conditions	Poor working conditions and unsafe practices.
Clean Hydrogen	Community Displacement	Disruptions due to facility development.



Clean Hydrogen	Water Scarcity	High water demand for electrolysis processes.
	Land Acquisition Issues	Conflicts over land use due to facility development.



Smart Energy	Cybersecurity & Privacy Risks	Cybersecurity vulnerabilities in smart grids.
	Land Use Conflicts	Infrastructure projects impacting local communities.



Industrial Decarbonization	Job Displacement	Increased automation reducing traditional labor needs.
	CCUS Site Leakage	Potential CO2 leakage affecting groundwater quality.



# ESS Steps required along the Project Cycle

## 1. Screening of projects for **Potential E&S risks**

- Policies, standards and operational procedures that seek to **prevent and mitigate unintended harm** to People and Environment
- Identify and manage **E&S risks**, maximizing **positive outcomes and co-benefits** for ecosystems and local communities.
- Going beyond a **“do no harm”** approach, including key **human rights-based** approach which prioritizes the protection of both the environment and the well-being of communities

## 2. Preparing E&S Assessments depending on Categorization received.

- Either Environmental and Social Impact Assessment ([ESIA](#)), Environmental and Social Management Plan ([ESMP](#)), or Environmental and Social Management Framework ([ESMF](#)) to be submitted **after project implementation starts**.

## 3. Monitoring, Reporting and Evaluation on E&S issues throughout the project cycle.

- Ensuring ESS management commitments and the materialization of E&S risks reflected upon in: Quarterly reporting, Annual Reporting, Mid-Term Evaluation.
1. Compliance Verification System

Screening of projects with a **"Screening Template"**

→ **Category A:** likely to induce significant/irreversible adverse E&S impacts. Projects are required to prepare an ESIA and an ESMP or ESMF

→ **Category B:** less adverse effects and reversible. Projects do not require an ESIA but an ESMP or ESMF needs to be developed.

→ **Category C:** minimal or no adverse effects. Projects usually require no further assessments. Additional requirements may, however, still apply.

→ **Category NO PROJECT:** non-compliant with OS2-8



## ESS Monitoring and Reporting

All supported projects report against an ESS output indicator in the project's Logframe, which complies with **UNIDO'S Environmental and Social Safeguards Policies and Procedures** throughout the project cycle

Code	Value	Explanation	Minimum Criteria (should be met in full)
3.4	A2D Project Monitoring Tool: Output Indicator 3.4	Demonstration project aligns with UNIDO's ESSPP and its Operational Safeguards (9) meeting as well criteria outline in GEF-GCF ESS Indicators	<p>A positive impact on environmental sustainability and social inclusion, including the protection of biodiversity, sustainable land and water management, climate change mitigation and pollution reduction:</p> <p><b>Programmatic OS</b> OS 1: Environmental and Social Assessment OS2: Protection of Natural Habitats OS3: Involuntary Resettlement OS4: Indigenous People OS5: Pest Management OS6: Physical Cultural Resources OS7: Safety of Dams</p> <p><b>Framework Operational Safeguards</b> OS8: Information Disclosure OS9: Accountability and Grievance Systems</p> <p>The project ensures equitable benefits, particularly for marginalized groups such as women and indigenous peoples and local communities (ILPs), and adheres to the criteria outlined in both UNIDO's Operational Safeguards in addition to GCF and GEF's Environmental and Social Indicators (particularly on social inclusion <a href="#">68th GEF Council Meeting</a>)</p>



## Further Resources

- Interactive map to screen for presence of Indigenous People, protected areas, information on land cover and environmental pressures (e.g. mining and forest concessions, major dams, etc.) in the project area: [Land Mark Interactive Online Map](#)
- Free online Biodiversity Risk Filter and Water Risk Filter for project area and sector: [WWF Biodiversity & Water Risk Filter](#)
- Online Toolbox for Climate Risk Analysis: [FAO Climate Risk Toolbox](#)
- Further guidance on p. 33 of [UNIDO ESSPP](#) under *3.1 Project Identification, Screening and Categorization*



## UNIDO Policy Frameworks

- UNIDO Policy on Gender Equality and the Empowerment of Women (2019)
  - UNIDO Strategy for Gender Equality and Empowerment of Women (GEEW) (2020-2023)
  - UNIDO Guide to Gender Analysis and Gender Mainstreaming the Project Cycle
  - UNIDO's Medium-term Programme Framework 2022-2025 highlights that achieving gender equality and empowering women yields substantial positive effects on sustainable economic growth and inclusive industrial development.
- UNIDO's Environmental and Social Safeguards Policies and Procedures (ESSPP)
  - **The Operational Safeguards (OSs)** consists of a set of seven programmatic and two framework safeguards requirements for each project when addressing social and environmental impacts and risks.
  - **+ International frameworks: WB, GCF, GEF, FAO**



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# A2D Facility Workshop Feedback Form



## Your Feedback Matters!



Please take a few minutes to fill out the A2D Facility Workshop Feedback Form.

Your input will help us improve future events, workshops and training sessions.



Time to complete: ~5- minutes



Your responses will remain confidential and will be used to enhance future engagements.

Thank you for your valuable feedback.

Scaling Innovation Through Demonstration Projects: A2D Facility Workshop - Feedback form





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# Questions & Answers



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## Workshop Wrap-Up

## Evening Reception



## Further Information

- **A2D Facility Website:** [Visit the website here](#)
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- **A2D Facility Year 1 Annual Report:** [Access the Annual Report here](#)
- **A2D Facility Market Assessments:** [Access the reports here](#)