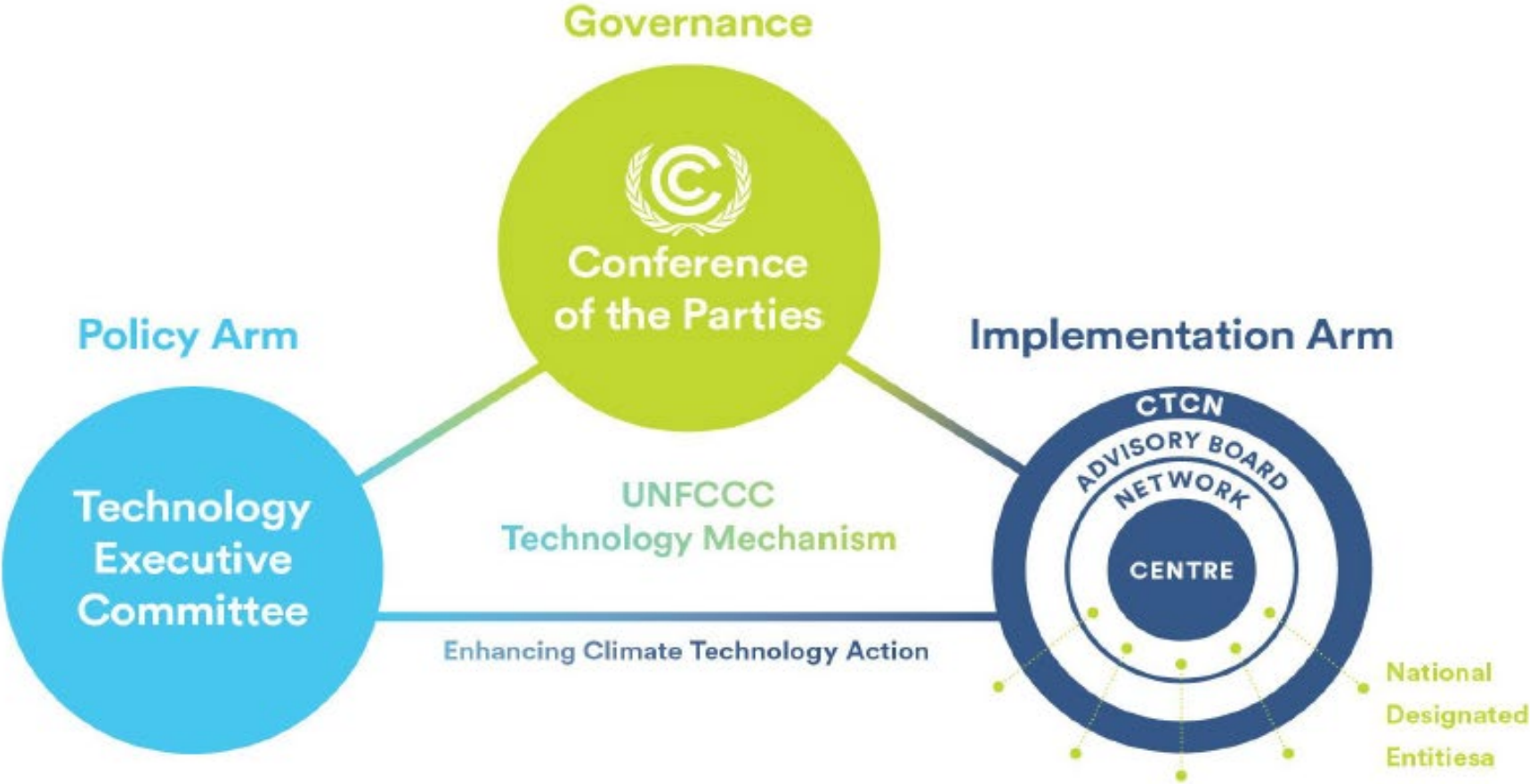


10 YEARS
2014
2024

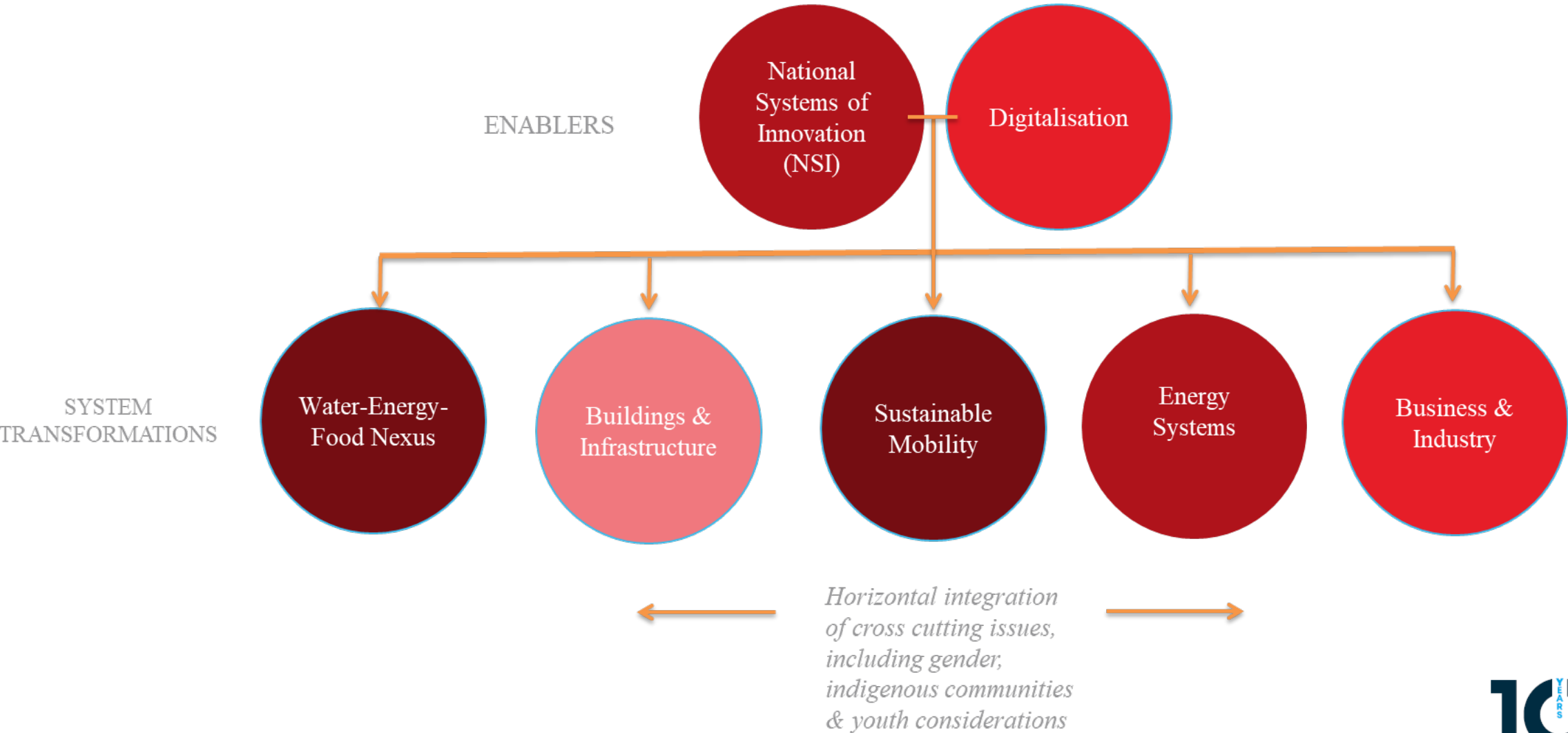
Unlocking climate innovation and technology for systems transformation in developing countries

Valentin Rudloff, Climate Technology Specialist
CTCN Secretariat
GCF Structured Dialogue MENA Region
24th June 2024

CTCN within the UNFCCC Technology Mechanism



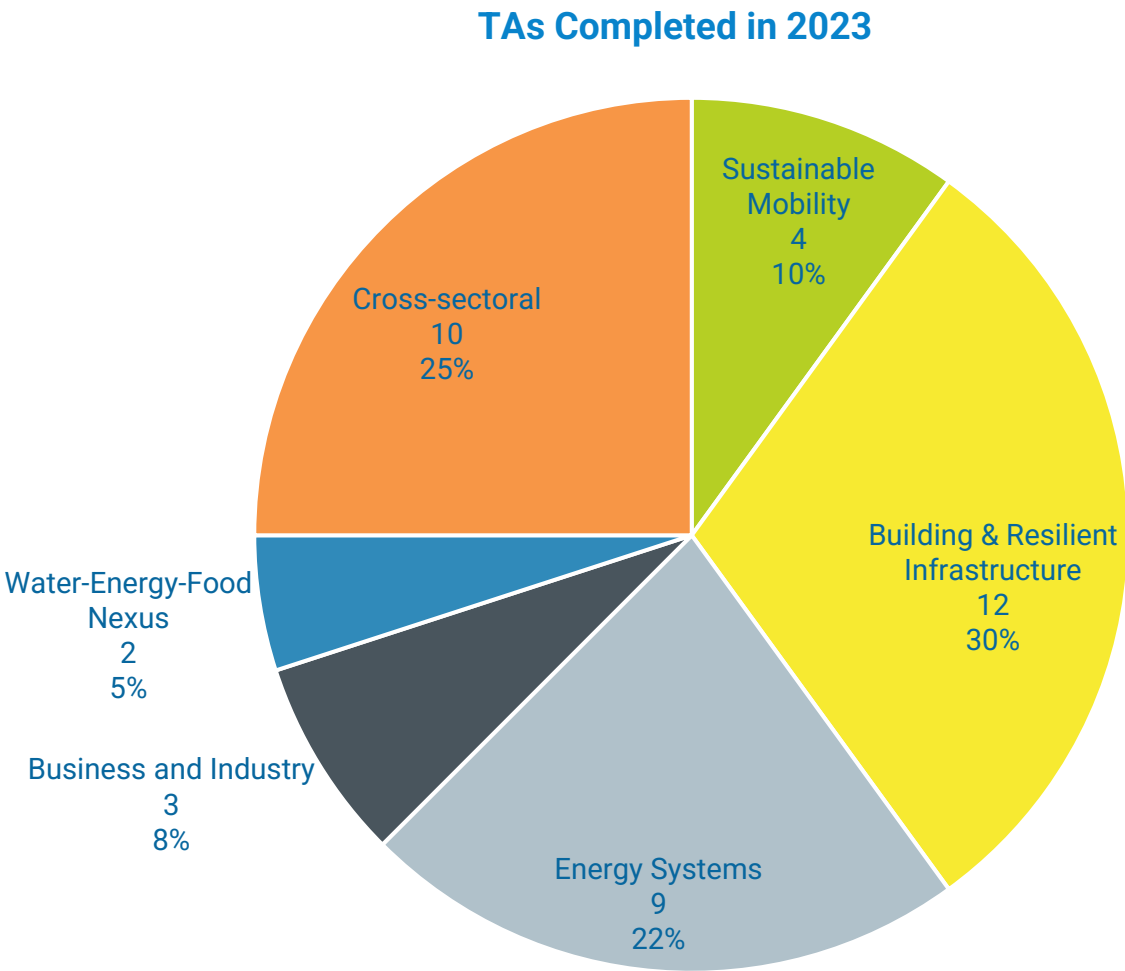
CTCN Programme of Work 2023 - 2027





CTCN Technical Assistances

- Between 2014 to 2023, the CTCN has received a total 401 requests from 110 country Parties.
- 40 technical assistance projects were completed in 2023.





CTCN in the MENA Region



Technical Assistances in the MENA Region



Country	Title	Status
Iraq	Technical guidance and support for conducting a Technology Needs Assessment (TNA) in Iraq	Completed in 2022
Jordan	Accreditation of Energy Efficiency Lighting Laboratory	Completed in 2017
Jordan	Strengthening capacity to access international financing for Jordan's climate technology priorities	Completed in 2016
Lebanon	Development and implementation of an efficient appliance strategy	Under implementation
Iran	Technology of Photovoltaic Solar Cell Design and Manufacturing	Completed in 2017
Morocco	Development of sectoral Technological Action Plans for the implementation of Morocco's long-term strategy for low GHG emissions	In preparation

Technical Assistances in the MENA Region



Country	Title	Status
Algeria	Establishment of a laboratory for accreditation and quality control of photovoltaic modules in Algeria	Completed in 2019
Algeria	Technical assistance on the design and construction of a ground-based photovoltaic plant of 1MW rated capacity	Completed in 2016
Algeria	Feasibility study and technical support for a pilot waste-to-energy project at a cement plant belonging to the Groupe Industriel des Ciments d'Algérie	In preparation
Sudan	Soil erosion valuation to support climate resilient agriculture and food security	Under implementation
Sudan	Developing methodology and capacity for monitoring climate change and its impacts on agriculture in Sudan	Completed in 2021

Technical Assistances in the MENA Region

Country	Title	Status
Tunisia	Smart drinking water network in Tunisia: first phase in Sousse and Monastir	Under implementation
Tunisia	Capacity building to gain expertise in efficient lighting systems	Completed

No technical assistances implemented in:

- Egypt
- Saudi Arabia
- UAE, Bahrain
- Kuwait
- Oman
- Qatar
- Yemen
- Syria



Linkages with the Financial Mechanism



Status of GCF-CTCN Projects as of Q1 2024



CTCN is the **largest provider of the GCF readiness programme services** to developing countries, with over 30 countries supported.

Completed

Bahamas, Botswana, Cameroon, Democratic, Equatorial Guinea, Eswatini, Gabon, Georgia, Ghana, Iraq, Kyrgyz Republic, Lesotho, Malawi, Mauritius, Myanmar, Namibia , Nigeria, Palestine, Paraguay, Thailand, Timor-Leste, Tonga, Zambia, Zimbabwe

Under Implementation

Côte d'Ivoire, Lebanon, Liberia, Tunisia

Under Approval

Nigeria

Cancelled

Tanzania

Collaboration with Multilateral Development Banks

CTCN also collaborates with Multilateral Development Banks (MDBs) for the **delivery of capacity building workshops and implementation and scale-up of technical assistances.**

Green Hydrogen Technology for System Transformation in Energy and Business & Industry Sectors

4th – 5th October 2023, Benin



- The workshop was jointly hosted with the West African Development Bank (BOAD)
- 16 NDEs from West Africa participated
- Objectives:
 - Learn about current and future green hydrogen technologies and applications in energy, industry and agricultural sectors in Africa and globally
 - Gain an understanding on the required enabling environment for green hydrogen uptake
 - Take into consideration possibilities of implementation and financing of green hydrogen activities.

Recommendations

- Joint country programming between national climate change focal points, e.g. CTCN NDE, GCF NDA, Adaptation Fund, GEF, etc.
- Scale-up of the results from CTCN technical assistances through GCF Project Preparation Facility
- Effective promotion of a platform by GCF and CTCN for the discussion between their respective focal points to increase Parties' national coherence on climate technology, capacity building and action plans.



Case Study: Algeria



CTCN Technical Assistance in Algeria: Review and Perspectives

1) Establishment of an accreditation and quality control laboratory for PV modules in Algeria

2) Design and construction of a ground-mounted PV plant with a capacity of 1 MWp

*Dr. MESRANE Abdelfettah
CEREFÉ, Services du Premier Ministre*

*Structured Dialogue Session with GCF NDAs
24-26 June. 2024, Rabat – Morocco*

TECHNICAL ASSISTANCE N°01

**ESTABLISHMENT OF AN ACCREDITATION AND QUALITY
CONTROL LABORATORY FOR PV MODULES IN ALGERIA**

01) ESTABLISHMENT OF AN ACCREDITATION AND QUALITY CONTROL LABORATORY FOR PV MODULES IN ALGERIA

GENERAL INFORMATION

- Submission date: February 2016
- Duration of technical assistance: 17 months (February 2018 – June 2019).
- Objective: Mitigation
- Sector: Renewable energy
- Applicant: Centre for the Development of Renewable Energies (CDER)
- Implementer: National Renewable Energy Laboratory (NREL)

01) ESTABLISHMENT OF AN ACCREDITATION AND QUALITY CONTROL LABORATORY FOR PV MODULES IN ALGERIA

CONTEXT

- ❑ Renewable energy development programme in Algeria: 15,000 MWp by 2035.
- ❑ This program faces the inherent risk to the quality of the solar equipment that will be used, due to the potential proliferation of substandard equipment in the market.
- ❑ The Center for the Development of Renewable Energies (CDER) has launched a project to set up a quality control infrastructure for equipment marketed on the Algerian market and protect the investments made as part of this development program.

Challenge: Acquiring the necessary know-how to carry out PV panel testing in accordance with international standards.

01) ESTABLISHMENT OF AN ACCREDITATION AND QUALITY CONTROL LABORATORY FOR PV MODULES IN ALGERIA

SOLUTION / TECHNICAL SUPPORT

- ❑ Technical support from CDER for the establishment of a solar panel certification laboratory.
- ❑ Training sessions and effective technical support were provided to ensure that the tests were mastered in accordance with IEC 61215.



01) ESTABLISHMENT OF AN ACCREDITATION AND QUALITY CONTROL LABORATORY FOR PV MODULES IN ALGERIA

RESULTS OF TECHNICAL ASSISTANCE

- ❑ Exceeding the objectives initially set, 12 tests were established and mastered at the end of the Technical Assistance (TA).
- ❑ Since then, several services have been provided on the basis of these 12 tests, the most notable of which is the execution of solar panel tests as well as the diagnosis of the solar power plant at Oran International Airport, with a capacity of 1.7 MWp.



01) ESTABLISHMENT OF AN ACCREDITATION AND QUALITY CONTROL LABORATORY FOR PV MODULES IN ALGERIA

POST - TECHNICAL ASSISTANCE

□CDER has undertaken a significant investment to establish a certification laboratory. This project involved the development of a specifically dedicated site and the acquisition of a substantial set of equipment, representing an investment of around (03) million euros.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

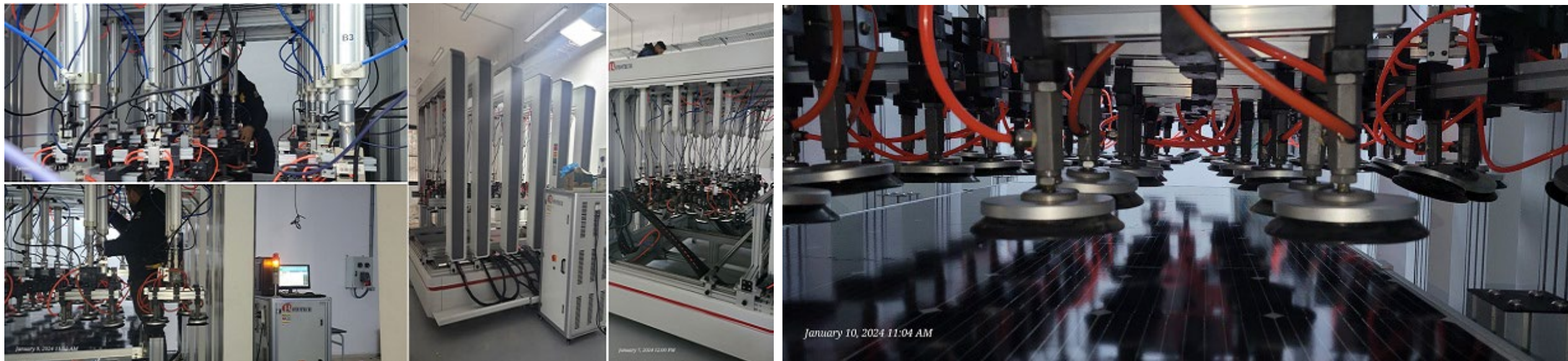
18

19

20

21

22



01) ESTABLISHMENT OF AN ACCREDITATION AND QUALITY CONTROL LABORATORY FOR PV MODULES IN ALGERIA

FUTURE AMBITIONS

❑ In the medium term:

- ✓ Complete the establishment of the three laboratories and obtain their accreditation.
- ✓ Establish an integrated infrastructure dedicated to the quality control of PV equipment for the Algerian and regional market.

❑ Long-term: Establish CDER as a regional leader in the field of PV equipment quality control.

The realization of this vision is currently underway, marked by the implementation of the photovoltaic test technology platform encompassing all PV equipment.

TECHNICAL ASSISTANCE N°02

**DESIGN AND CONSTRUCTION OF A GROUND-MOUNTED PV
PLANT WITH A CAPACITY OF 1 MW_p**

02) DESIGN AND CONSTRUCTION OF A GROUND-MOUNTED PV PLANT WITH A CAPACITY OF 1 MW_p

GENERAL INFORMATION

- ☐ Submission date: October 2015
- ☐ Duration of technical assistance: 12 months
- ☐ Objective: Mitigation
- ☐ Sector: Renewable energy
- ☐ Applicant: Centre for the Development of Renewable Energies (CDER)
- ☐ Implementer: Energy Research Centre of the Netherlands (ECN)

02) DESIGN AND CONSTRUCTION OF A GROUND-MOUNTED PV PLANT WITH A CAPACITY OF 1 MW_p

POST - TECHNICAL ASSISTANCE

- ❑ CDER has in turn become a credible provider of technical assistance for the conduct of similar projects.
- ❑ CDER has provided technical assistance for several similar projects. For example, the design and construction of a 1.7MW_p PV plant on the roof of Oran International Airport (largest rooftop PV installation of its kind in Africa).



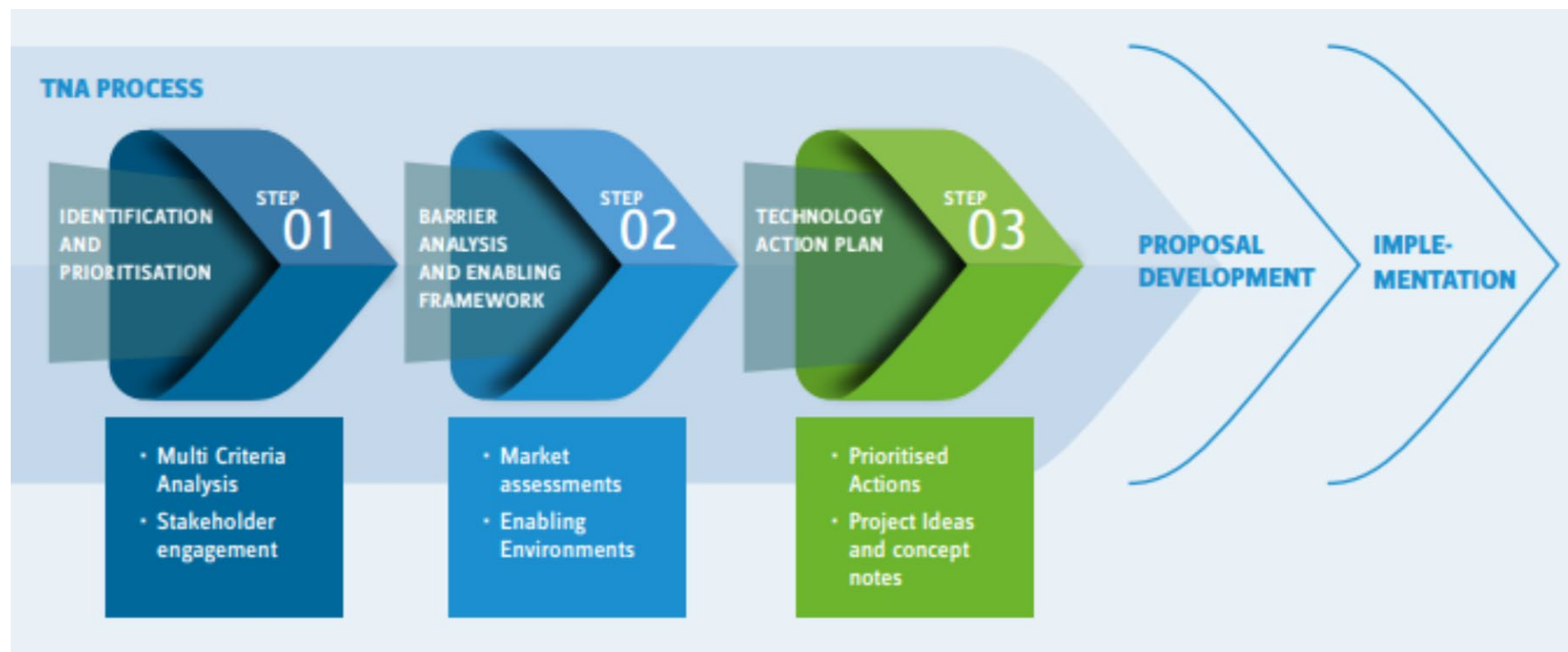
Case Study: Iraq

Context in Iraq

- The Republic of Iraq is regarded as one of the most vulnerable countries to the impacts of climate change in the Middle East and globally, particularly to decreased food and water availability.
- A recent increase in the frequency and intensity of extreme weather events, including drought, sand, and dust storms, have had a devastating impact on the agricultural sector and contributed to widespread desertification and environmental degradation.
- Other sectors – notably health, energy, and the economy – are also suffering the adverse effects of climate change.
- Iraq has requested the CTCN to provide a Technology Needs Assessment and Technology Action Plan to tackle above challenges through technology deployment. The project was implemented between 2020 – 2022 by Carbon Limits.

TNA Process

TNA is a **participatory process** undertaken within the context of a specific country, **to define and prioritise technology that both confronts the effects of climate change, through adaptation, and reduces greenhouse gas (GHG) emissions, through mitigation.**

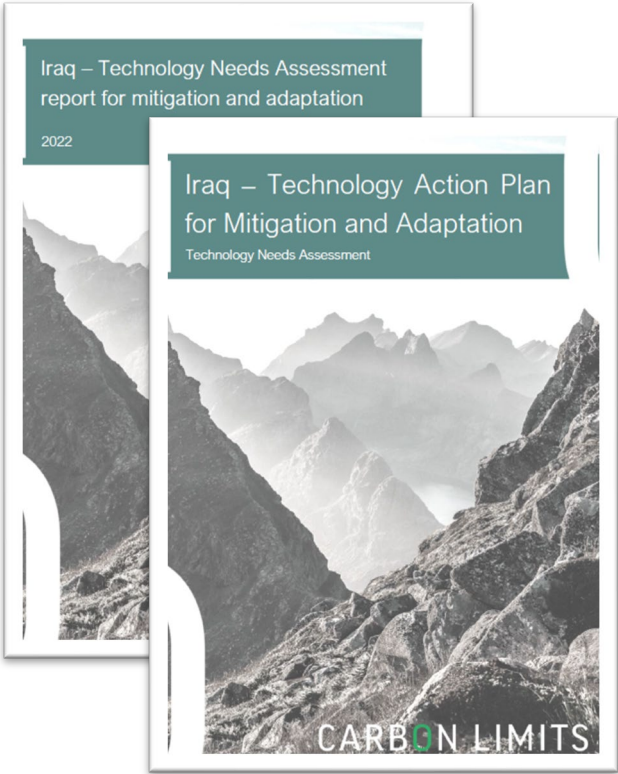




TNA Results

Mitigation technologies

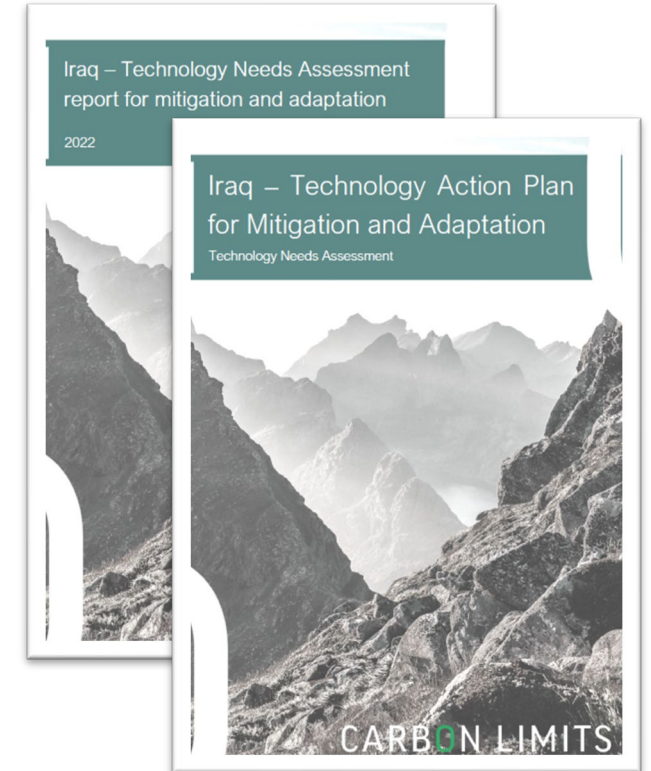
	Energy sector	Industry sector	Oil and gas sector
Technology	on/off-grid rooftop solar PV systems	heat recycling in cement power plants	vapor recovery units (VRU) for oil storage tanks + associated gas for power generation
Pilot project	On-grid solar system for primary public school in Baghdad	Mass Cement company waste heat recovery system	VRU on crude oil storage tanks



TNA Results

Adaptation technologies

	Agriculture sector	Water sector
Technology	<p>Agriculture water management – drought-resistant crop varieties</p> <p>Conservation-friendly agriculture – drip feed irrigation</p>	<p>Probabilistic flood forecasting technology</p> <p>Flood risk mapping technology</p>
Pilot project	<p>Water use efficiency in agricultural systems</p> <p>Drought resistant crop varieties</p>	<p>Establishing a flood forecasting and early warning system</p> <p>Improved flood risk management</p>



TNA Results

Cement power plants

- **Cement production is an energy-intensive process.** As part of this process, raw materials, such as limestone, are burned in kilns at temperatures of up to 1,450 °C to be formed into cement clinker
- The **adoption of heat recovery technology can boost the thermal efficiency** of the cement industry while reducing operating costs at the facility level. It has the potential to provide 20-30 % of energy required in the production process, leading to a net operations income improvement of 10-15 %
- Several **regulatory, technical, financial and social barriers** were identified as part of the TNA process.
- Action plan details **more than 13 action items related to policy, investment, infrastructure and capacity building** on a short-, medium- and long-term
- NDE and NDA have **expressed interest towards the CTCN for the implementation of a GCF Readiness project on cement decarbonization.**



CTCN Secretariat
UN City, Marmorvej 51
DK-2100 Copenhagen, Denmark
www.ctc-n.org
ctcn@un.org



Supported by

