2026 ASIA: CAPACITY BUILDING ON INTEGRATING ENERGY TECHNOLOGIES AND NDE-NDA COORDINATION MEETING

WORKBOOK

DAYS 2-4.

UN environment programme

CTCN UN Climate Technology Centre & Network

Overall overview

Purpose
To strengthen your understanding of Asia's energy transition and the integration of emerging energy technologies within national systems. You will explore emerging technologies, financing approaches, AI-enabled opportunities, and institutional coordination required to accelerate climate technology deployment. Together with National Designated Entities (NDEs) and National Designated Authorities (NDAs), this programme aims to support laying the foundation of translating technology priorities into scalable implementation.

Structure
The programme combines plenary presentations, country experiences, facilitated discussions, and interactive exercises.

Session	Thought provoking	Expected Outputs
Opening	Overview of the programme with a live survey on system transformation	Reflect on what integrated energy systems mean for your country and identify expectations for the programme.
	Information Sharing and Participatory	**Expected Outputs**
1	Asia's Energy Transition and Emerging Energy Technologies	Understand regional energy transition trends and identify emerging technologies relevant to national climate priorities.
2	Integrating Energy Technologies for System Transformation	Explore how technologies interact across energy systems and reflect on opportunities and barriers within national contexts.
3	Financing Pathways for Technology Deployment	Translate technology needs into financing needs by identifying financing instruments, sequencing activities, institutional roles, and implementation bottlenecks.
4	NDE-NDA Coordination for Scalable Climate Action	Strengthen coordination between NDEs and NDAs by identifying practical pathways to develop technology ideas into bankable climate initiatives supported by CTCN, GCF, and other partners.

Day 2 Key structure of Energy in Asia

Asia's energy systems are undergoing one of the world's fastest and most complex transitions. Rapid economic growth, urbanization, increasing electricity demand, and commitments under the Paris Agreement require countries to simultaneously expand energy access, strengthen energy security, and reduce greenhouse gas emissions.

Despite these shared ambitions, the region is highly diverse. Countries differ in their resource endowments, levels of industrialization, grid maturity, policy environments, and investment capacity. As a result, there is no single pathway to energy transition.

Notes.

Day 3 Overview

The day consists of four sequential sessions combining technical presentations, facilitated discussions, networking, and participatory exercises. Each session builds on the previous one, guiding participants from understanding regional energy transition challenges to identifying technologies, financing pathways, and institutional actions needed for implementation.

Session 1 Asia's Energy Transition

- Review the current status of energy transition in Asia.
- Reflect on policy, technological, institutional, and regulatory barriers affecting renewable energy deployment.
- Participate in individual reflection and group discussions to identify system-level bottlenecks and decision-making challenges.

Session 2 Network Fair

- Meet CTC Network members showcasing emerging energy technologies, including AI-enabled solutions.
- Discuss country needs, technology applications, financing opportunities, and potential collaborations.
- Exchange contacts and record technologies and partners of interest for future follow-up.

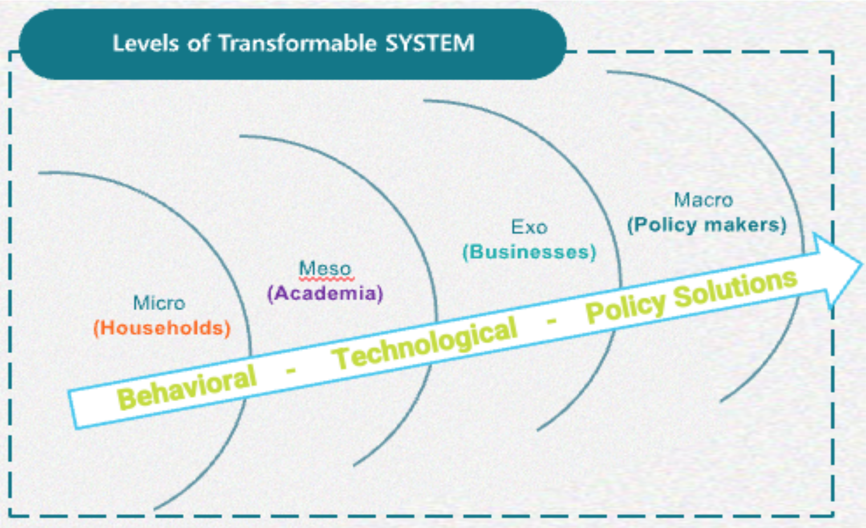
Session 3 Technology Discussion on Emerging Energy Technologies

- Explore Technology Executive Committee (TEC)-identified emerging energy technologies.
- Compare how NDEs and NDAs may prioritise technologies differently based on their mandates and responsibilities.
- Work in groups to select a technology for further analysis.

Session 4 Financing Emerging Energy Technologies

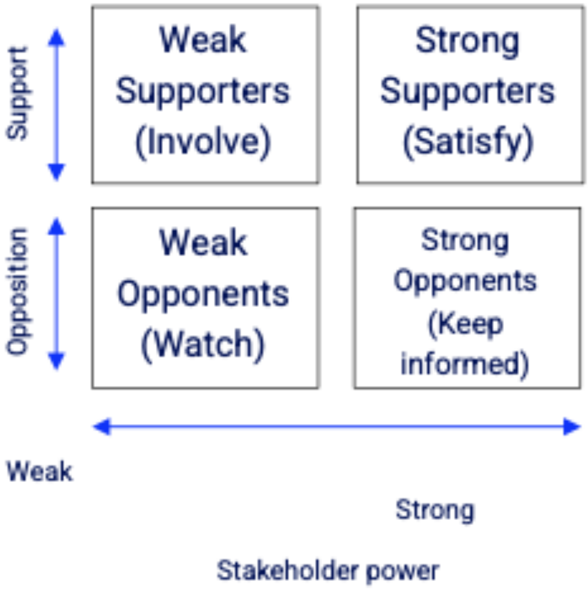
- Apply a systems approach to climate finance using the technology selected in Session 3.
- Identify implementation activities, financing instruments, stakeholder roles, and sequencing of support.
- Analyse institutional frictions and discuss how coordination between NDEs and NDAs can help overcome implementation barriers.

Session 1: Reflection on the System Transformation



Impact is the cumulative effect that can be directly attributed to a project. From a systems value exchange perspective, meaningful impact can only occur when the right stakeholders—those who are most affected by or critical to the project—change what they think (cognition), feel (sensation), and do (behaviour) in response to engaging with the project's activities.

In other words, the overall quality of a project's deliverables depends on **the people we engage with** during its implementation.



People we engage with can be categorized into **segments** -- refers to groups of stakeholders who share similar characteristics, roles, interests, levels of influence, or needs related to the project. Instead of treating every stakeholder individually, you cluster them into segments for more efficient analysis and engagement.

Since each stakeholder segment represents different interests and holds varying levels of influence, segments can be categorized not only by type (e.g., government, industry, consumers) but also by their orientation—such as their stance toward the project, level of engagement, or potential to ***support*** or ***oppose*** it.

Session 2: Network Fair

These guiding sheets are intended to support structured exchanges during the CTC Network Fair and help participants capture key takeaways, level of interest, and potential follow-up opportunities.

Suggested guidance for NDEs:

- Note technologies, expertise, or services relevant to your country priorities.
- Capture ideas for future collaboration, technical assistance, or knowledge exchange.
- Indicate your level of interest to support potential follow-up after the Forum.

NDE Meeting Notes & Interest Tracking Sheet

Organization 1		Organization 2	
Organization met	Technologies / Expertise Discussed	Organization met	Technologies / Expertise Discussed
Relevant National Priorities or Needs	Potential Follow-Up Opportunity	Relevant National Priorities or Needs	Potential Follow-Up Opportunity
Level of Interest *High / Medium / Low*	Follow-Up Needed? *Yes / No*	Level of Interest *High / Medium / Low*	Follow-Up Needed? *Yes / No*

Organization 3		Organization 4	
Organization met	Technologies / Expertise Discussed	Organization met	Technologies / Expertise Discussed
Relevant National Priorities or Needs	Potential Follow-Up Opportunity	Relevant National Priorities or Needs	Potential Follow-Up Opportunity
Level of Interest *High / Medium / Low*	Follow-Up Needed? *Yes / No*	Level of Interest *High / Medium / Low*	Follow-Up Needed? *Yes / No*

Organization 5		Organization 6	
Organization met	Technologies / Expertise Discussed	Organization met	Technologies / Expertise Discussed
Relevant National Priorities or Needs	Potential Follow-Up Opportunity	Relevant National Priorities or Needs	Potential Follow-Up Opportunity
Level of Interest *High / Medium / Low*	Follow-Up Needed? *Yes / No*	Level of Interest *High / Medium / Low*	Follow-Up Needed? *Yes / No*

Organization 7		Organization 8	
Organization met	Technologies / Expertise Discussed	Organization met	Technologies / Expertise Discussed
Relevant National Priorities or Needs	Potential Follow-Up Opportunity	Relevant National Priorities or Needs	Potential Follow-Up Opportunity
Level of Interest *High / Medium / Low*	Follow-Up Needed? *Yes / No*	Level of Interest *High / Medium / Low*	Follow-Up Needed? *Yes / No*

Organization 9		Organization 10	
Organization met	Technologies / Expertise Discussed	Organization met	Technologies / Expertise Discussed
Relevant National Priorities or Needs	Potential Follow-Up Opportunity	Relevant National Priorities or Needs	Potential Follow-Up Opportunity
Level of Interest *High / Medium / Low*	Follow-Up Needed? *Yes / No*	Level of Interest *High / Medium / Low*	Follow-Up Needed? *Yes / No*

Session 3: Learning Energy System Transformative Technologies

Achieving net-zero emissions requires more than selecting the right technologies. While renewable energy technologies such as solar, wind, hydropower, biomass, geothermal, marine energy, battery storage, green hydrogen, and pumped hydro are becoming increasingly mature and cost-competitive, their successful deployment depends on a broader enabling environment.

Drawing on the Technology Executive Committee (TEC) brief *Technologies for Climate Change Mitigation in Developing Countries: Renewable Energy* [1], this session explores the strengths, costs, and limitations of key renewable energy and energy storage technologies while examining the policy, regulatory, financial, institutional, and infrastructure barriers that often constrain their adoption.

Participants will reflect on renewable energy challenges within their own countries and identify where technology solutions alone may be insufficient. Through individual and group exercises, NDEs and NDAs will discuss how climate technology support, stakeholder coordination, policy interventions, and financing mechanisms can accelerate renewable energy deployment and support system-wide energy transformation.

By the end of the session, participants will have a stronger understanding of the trade-offs associated with different renewable energy technologies and be better positioned to identify potential CTCN technical assistance opportunities that address both technological and systemic barriers to implementation.

[1] https://unfccc.int/ttclear/misc_/StaticFiles/gnwoerk_static/energysupplysector/2e9fbc9d6ea144aabfb089c7728d9dcc/a5171ba2bceb448085cd72b6c849bfb3.pdf

Energy Supply Technologies

- **Solar Photovoltaic (PV):**

Solar PV converts sunlight directly into electricity using semiconducting materials, typically stacked layers of silicon that release electrons when hit by sunlight.

Advantage	Costs	Weakness
It is highly modular, making it suitable for both massive utility-scale farms and isolated off-grid mini-grids. It generates the most jobs out of all renewable energy technologies, related to the engineering, procurement and construction (EPC) as well as to its operation and maintenance.	Utility-scale projects have experienced a dramatic 90% cost decline since 2010, saving billions in fossil fuel costs. It is predicted to become the most affordable energy source in all countries by 2030. However, developing countries often face higher upfront financing costs compared to developed nations due to relatively high capital cost.	Its intermittent nature requires robust grid flexibility and energy storage. Large-scale solar requires vast amounts of land and significant water for cleaning, and its supply chain is highly geographically concentrated. It often faces regulatory and financial barriers, highlighting the need for supportive financing and policy measures

- **Wind Energy:**

Wind turns large blades on a rotor, which is connected to a generator via internal gears or a direct-drive system to produce electricity. Wind farms can be installed onshore or offshore

Advantage	Costs	Weakness
Wind power provides extremely low lifecycle carbon emissions and perfectly complements solar energy seasonally, especially offshore wind which blows stronger at night. Wind turbines have carbon payback periods of only a few months to a couple of years, much shorter than their 25-year lifespan and those of solar panels.	Onshore wind is currently the cheapest mature source of renewable energy, following a 70% cost reduction since 2010, while offshore wind costs dropped by 63 %. Geopolitical tensions may increase wind turbine costs by disrupting rare earth mineral supply chains.	Like solar, wind is intermittent. Onshore turbines require large amounts of space and pose collision risks to birds and bats, while offshore turbines suffer from high maintenance costs due to saltwater corrosion and harsh marine environments.

Energy Supply Technologies (Cont.)

- **Hydropower**

This mature technology generates electricity by passing flowing water through a turbine, using either large dams with artificial basins or "run-of-river" systems.

Advantage	Costs	Weakness
It is excellent for balancing the grid and regulating power frequency, stepping in quickly when variable solar and wind sources fluctuate. It provides important ancillary services, such as working as a source for irrigation and other industrial activity requiring water in its production phases. Small-scale hydro can significantly boost local employment.	Unlike wind and solar, hydropower costs have risen, with levelized costs being 33% higher in 2023 than in 2010. Projects require immense upfront capital and lead times of up to 10 years, vulnerable to supply chain price fluctuations.	Large dams disrupt local ecosystems and can displace communities. Additionally, changing rainfall patterns and droughts due to climate change increasingly threaten its reliability. Its systems are complex engineering projects that often require large infrastructure and may be difficult to build and finance.

- **Biomass**

Biomass involves burning organic materials—like wood pellets, agricultural residues, or municipal waste—to heat a boiler and spin a steam turbine. It can also be decomposed in pressurized chambers to create biogases.

Advantage	Costs	Weakness
It provides stable baseload power and can be co-fired in existing fossil fuel plants to smooth the transition. When paired with Carbon Capture and Storage (BECCS), it can deliver negative emissions.	Feedstock makes up 20% to 50% of total costs, making the price highly variable depending on local resource availability. Because of the high variability of feedstock that can be used in a bioenergy electrical plant, costs can vary substantially and are very site-specific.	Poorly managed biomass can drive deforestation and create “carbon debt.” It competes with agricultural land and threatens "food security." Transporting feedstock over long distances also adds indirect carbon emissions, complicating its "carbon-neutral" status.

Energy Supply Technologies (Cont.)

- **Geothermal**

Geothermal harnesses heat from beneath the Earth's crust by forcing pressurized steam or hot water to the surface to spin a turbine.

Advantage	Costs	Weakness
It provides reliable, continuous 24/7 power suitable for baseload electricity. It can also be co-located with critical mineral extraction operations like lithium. It is highly suitable for producing green hydrogen.	While its overall levelized costs are comparable to offshore wind (USD 0.071/kWh), predicting exploration and drilling costs is notoriously difficult and risky.	Traditionally limited to areas with high tectonic activity, expanding its reach requires technologies like fracking, which can induce earthquakes. It is also difficult to quickly ramp up or down to balance the grid. Its operations can release harmful gases.

- **Marine Energy (Tidal and Wave)**

This nascent technology harnesses the gravitational rise and falls of tides, or the kinetic motion of ocean waves, to generate power.

Advantage	Costs	Weakness
Tidal energy is highly predictable, making it a valuable resource for grid stability and wave energy pairs exceptionally well with offshore wind farms, sharing infrastructure and maintenance costs.	It is currently highly expensive compared to other mature renewables and uncompetitive, though costs are expected to drop with further development, mirroring the cost reduction in solar and wind technologies.	The technology, especially wave energy, is still in the prototype phase. The harsh marine environment causes rapid wear and tear from storms, saltwater corrosion, and biofouling, leading to high maintenance costs.

Energy Storage Technologies

- **Battery Storage (Lithium-ion)**

Mostly utilizing lithium-ion technology, these batteries can be deployed at utility scale or for individual mini-grids

Advantage	Costs	Weakness
Batteries offer split-second responsiveness, making them perfect for frequency regulation and replacing fossil fuel peaking plants. It is geographically flexible and scalable and can be co-located with power plants.	Costs plummeted 89% since 2010 driven by technological advance. Despite the dramatic price drops, the initial capital required for utility-scale battery storage remains prohibitive in many settings.	Upfront costs can still be a barrier, and the technology faces critical mineral supply chain constraints, degradation over time, and fire hazard risks.

Energy Storage Technologies (Cont.)

- **Thermal, geothermal Storage (Concentrated Solar Power)**

CSP uses mirrors to focus sunlight onto a central tower filled with molten salt, which retains heat to boil water and spin a steam turbine long after sunset.

Advantage	Costs	Weakness
It offers a longer lifespan than batteries, lower degradation, and the potential for seasonal storage. Decommissioned coal power plants can be repurposed into thermal storage facilities	Levelized costs for Concentrated Solar Power (Thermal energy storage (systems) fell 70% since 2010 (down to USD 0.117/kWh).	The molten salts are corrosive and require backup energy to prevent them from freezing. The technology generally suffers from a lack of commercial maturity

- **Green Hydrogen**

Using a process called electrolysis, renewable electricity splits water into hydrogen and oxygen. The hydrogen is stored and later burned in fuel cells to generate power.

Advantage	Costs	Weakness
It can store renewable electricity for weeks or months, bridging seasonal energy gaps and decarbonizing heavy industry. When used in fuel cells to produce electricity, it produces only water vapor, making it a completely clean fuel during its operation.	It remains highly expensive to produce (USD 4.5 to 12/kg) due to the high cost of electrolyzers and the massive amounts of renewable electricity required. It also has high supply chain costs.	The process suffers from significant energy losses, with electrolyzers operating at only about 66% efficiency. Hydrogen molecules are extremely small and highly flammable and difficult to store.

- **Pumped Hydro**

This system connects two water basins at different altitudes, using excess power to pump water uphill and releasing it downhill to spin a turbine when electricity is needed.

Advantage	Costs	Weakness
It provides long-duration storage and is highly nimble at covering gaps in the grid. Floating solar panels can be installed on the reservoirs, which reduces water evaporation, improves solar panel efficiency through water cooling, and optimally uses the same space. It can provide freshwater storage for irrigation and agriculture.	It is currently the most cost-effective and affordable large-scale energy storage option available. (USD 148/kWh) but the initial installation is highly expensive due to massive infrastructure requirements like dams, tunnels, turbines, and land acquisition.	It is geographically constrained to specific topographies, and it often has a long project lead time. Building reservoirs often involves submerging large tracts of land, displacing local communities. It is also vulnerable to climate-induced droughts.

Energy Transmission and Distribution

Transmission: Several key technologies improve the efficiency and capacity of electricity transmission networks, however challenges include high costs, data accuracy issues and increased system complexity.

- **Dynamic line ratings (DLR)**

DLR usually consists of a set of sensors, a communication system to relay information back to the control room, and a DLR analytics engine to analyse weather and temperature data.

Advantages	Challenges
Optimise grid capacity by adjusting transmission line ampacity in real time based on weather conditions, increasing efficiency by 10–25%.	Installation costs, data accuracy as well as installation and operation may be potential bottle neck.

- **Topology optimisation Distribution**

Topology optimisation uses digital twin simulations and AI-driven analytics to manage grid congestion dynamically

Advantages	Challenges
Reduces infrastructure costs and improves reliability	Relies on real-time simulations and adjustments, and its implementation is not straightforward, requiring advanced software tools. Requires an in-depth understanding of the constraints affecting the grid system and will require high levels of coordination.

Energy Transmission and Distribution (Cont.)

- **Power flow controllers (PFC)**

Advantages	Challenges
Optimise the distribution of electricity across the network, improving stability and efficiency.	Generally more capital intensive than sensor and software solutions

- **Advanced Distribution Management Systems (ADMS)**

ADMS use smart equipment like sensors, automated switches and controllers that can detect problems at the distribution level and automatically reroute electricity in order to reduce the amount of people losing power.

Advantages	Challenges
Automatically adjust network configuration and volt age minimise energy losses and optimise system performance. Allow for fewer field dispatches reducing costs, and allow for a better integration of renewables such as distributed PV and wind turbines.	Require extensive modelling and data requirements, and specialised training for personnel such as operators or planners.

- **Conservation voltage reduction (CVR)**

In CVR, electricity is delivered to end consumers within an acceptable voltage range.

Advantages	Challenges
Energy savings for the consumers and reduced carbon footprint from less fuel burned in power plants	Require advanced equipment and resource-intensive for utilities

Energy Transmission and Distribution (Cont.)

- **Voltage/VAR optimisation (VVO)**

Sensors and smart metres track power quality at different points in the feeder, and cut down excessive reactive power flow, increasing the carrying capacity of distribution lines and therefore cutting down on wasted energy and keeping voltages consistent across the network.

Advantages	Challenges
Reduced energy losses, enhanced power quality by regulating voltage and avoiding flickering or dips, and lowering operating costs by postponing necessary upgrades on infrastructure.	A lack of coordination between voltage and VAR control systems can reduce the effectiveness of these tools

- **Mini-grids**

Mini-grids are small-scale electrical systems that can operate either connected to the main grid, or independently.

Advantages	Challenges
Operate disconnected from the main grid, allowing for electricity generation during major outages. Facilitate and accelerate the adoption of local renewable energy sources. Create economic opportunities for local communities.	Clear regulations must be put in place to protect mini-grid investments. Serving low-income rural customers with variable incomes poses risks to revenue collection.

Individual Exercise: Silent Thinking (10-minute)

For NDEs, based on the gaps/challenges identified in the morning session, what do you need to overcome those gaps/challenges to deploy renewable energy in your country? What kind of CTCN TA projects are needed to promote renewable energy deployment?

Write a chosen technology:

For NDAs, based on the gaps/challenges identified in the morning session, how can NDA coordinate with NDE to overcome gaps/challenges, and deploy renewable energy?

Group Exercise (30-minute)

Notes.

Reflection: Circle the group summary that resonated most with you and briefly explain why.

Group A (NDE / NDA)

Group B (NDE / NDA)

Group C (NDE / NDA)

Group D (NDE / NDA)

Group E (NDE / NDA)

Session 4: Financing Energy Transition

Renewable energy deployment is often discussed in terms of technology performance or financing availability. In practice, however, successful implementation depends on the interaction of multiple actors, institutions, policies, financing mechanisms, and market conditions operating within a broader system.

Building on the technologies and deployment challenges explored in Session 3, this session introduces a systems approach to climate financing pathways. Participants will examine how renewable energy projects progress from identified technology needs to implementation and scale-up, and how technical assistance, policy support, stakeholder engagement, risk reduction measures, and financing instruments contribute to creating investable opportunities.

The session will begin with a plenary presentation by GCF, highlighting financing opportunities and common barriers faced by developing countries in mobilizing climate finance.

Reflection:
Write down key messages that captured your attention during the GCF presentation.

Using the renewable energy technologies discussed in Session 3, participants will then engage in a series of practical exercises to explore how technology support, project preparation, financing readiness, and institutional coordination can work together to accelerate energy transition efforts in their countries.

By the end of the session, participants will have a clearer understanding of how renewable energy technologies move from concepts and technical needs into financeable and implementable projects.

Phase 1 – Financing Matchmaking (15min)

Objective: Translate technology deployment barriers into financing requirements.

Using the technology discussed during the previous session, identify:

1. What activities are needed to move the technology forward?
2. What financing instruments may support these activities?
3. Which institutions would need to participate?

Step 1. What must happen first?

Select up to three priority actions.

◻ Resource assessment	◻ Pilot demonstration
◻ Feasibility study	◻ Investment preparation
◻ Policy or regulatory development	◻ Grid integration study
◻ Capacity building	◻ Market assessment
◻ Business model design	◻ Other _______________

Step 2. Match Financing Instruments

Choose:

Primary Financing Instrument

____

Supporting Instruments

Domestic / Local Financing Modality

Step 3. Identify Key Institutions

Which institutions would need to be involved?

Institution	Expected role to play
NDE	
NDA	
Ministry	
Utility	
Development Bank	
Commercial Banks	
Private Sector	
Local Government	
Other	

Who would finance the earliest stage?

Would grant support alone solve the problem?

□ Yes

□ No

Why?

Phase 2 – Financing Sequencing Pathway (20min)

Objectives: Build a realistic pathway from technical assistance to scale-up. Arrange financing cards along the pathway below. Think about how risks evolve as the technology matures.

Technology-to-Finance Pathway

Stage	Activities	Financing Instrument	Lead Institution
Technical Assistance			
Project Preparation			
Demonstration / Pilot			
Investment/ Deployment			
Commercial Scale-Up			

Reflection Questions

At what stage does financing become possible?

What support is required before investors become interested?

At what stage can private finance participate?

Which actor assumes the greatest risk?

Phase 3 – Institutional Friction Analysis (10min)

Objective: Identify why technologies often fail to scale even when financing exists.

Discuss: What would most likely prevent implementation of this technology in your country?

Institutional Friction Assessment

Rate each challenge (1 = Low Barrier ~ 5 = Major Barrier)

Barrier	Score				
Weak project pipeline	1	2	3	4	5
Limited bankability	1	2	3	4	5
Policy uncertainty	1	2	3	4	5
Procurement barriers	1	2	3	4	5
Utility debt	1	2	3	4	5
Foreign exchange risk	1	2	3	4	5
Lack of investor confidence	1	2	3	4	5
Weak institutional coordination	1	2	3	4	5
Limited local financial capacity	1	2	3	4	5
Limited technical capacity	1	2	3	4	5

Key Insights

Technology deployment requires both:

Technology Mechanism Support

- technical assistance
- capacity development
- policy and regulatory support
- technology planning
- stakeholder coordination

Financial Mechanism Support

- project preparation
- risk reduction
- investment mobilization
- blended finance
- scale-up financing

Distinguish public and private finance

Public Finance	Private Finance
Market creation	Market participation
Policy reform	Business expansion
Capacity building	Commercial deployment
Risk reduction	Return generation

Strong TM-FM linkages help transform technology needs into investable opportunities.

Group Reporting

Technology Selected:

Most Important Barrier:

Critical Financing Instrument:

Most Important TM-FM Coordination Need (Theme, timing, mode, format)

TM-FM coordination checkpoints

What support could the NDE provide?

What support could the NDA provide?

Where is stronger coordination needed?

What support could climate technology mechanisms provide?

What support could climate finance mechanisms provide?

Day 4 Overview

Purpose

NDEs and NDAs hold complementary roles in advancing national climate technology priorities. Your mandates, responsibilities, and decision-making functions differ; both institutions contribute towards the same goal of achieving national climate ambitions under the NDCs. Through regional project experiences, engagement with implementation partners, and discussion of national project ideas, participants will identify practical next steps for coordinated implementation.

Common Challenges

- Climate risks
- Resource pressures
- Coordination gaps
- Competing priorities

Opportunities

- Stronger resilience
- Better resource efficiency
- Cross-sector benefits
- More impactful investments
- Scalable solutions

Role of country focal points to the UNFCCC

- Ensure global climate support aligns with national priorities

Role of NDEs

- **Lead integrated technology planning**
- Identify and endorse technical assistance (non-investment instrument) opportunities
- Connect sectors and institutions at the national and regional-level

Role of NDAs

- **Lead integrated finance planning**
- Identify and endorse investment opportunities
- Guide the distribution of climate investments at the national level

Notes.

Structure

The day consists of four sequential sessions combining project case presentations, partner dialogue, and country-led discussions.

Session 1 – Peer-to-peer learning

- Learn different models of TM-FM collaboration
- Understand the factors that contributed to successful technology deployment, financing, and stakeholder coordination.
- Reflect on lessons that may be applicable in your national context.

Session 2 – Scale-up opportunities

- Understand various support modalities available for project preparation, technical assistance, and climate finance.

Session 3 – Country Project Marketplace

- Present national climate technology ideas requiring technical or financial support.
- Clarify implementation challenges, partnership needs, and potential financing pathways with development partners.
- Exchange ideas and receive constructive feedback to strengthen project concepts.

Session 4 – Reflection and Closing

- Identify priority follow-up actions after the programme.
- Reflect on key lessons and commitments for strengthening technology deployment and national coordination.
- Share final observations and conclude the programme.

Notes.

Reflection on TM-FM collaboration

There is no single model for successful collaboration between the Technology Mechanism (TM) and the Financial Mechanism (FM). Depending on national circumstances, institutional arrangements, and project maturity, countries may adopt different approaches to coordinate technology development, financing, and implementation.

This session introduces three broad models of TM-FM collaboration observed across countries. While each follows a different pathway, all share the same objective: translating climate technology priorities into implementable actions that contribute to NDC implementation.

As you review each model, reflect on which approach most closely resembles your country's current practice, what strengths it offers, and what coordination gaps remain.

The three collaboration models are:

- **Country-led** – National institutions lead project identification, coordination, and implementation, engaging external partners where needed.
- **Network-supported** – Technical assistance is mobilised through external networks and support organisations to strengthen national capacity and prepare technologies for implementation.
- **Multi-stakeholder coordinated** – National institutions, technical partners, Accredited Entities, financiers, and other stakeholders work collaboratively throughout the project cycle to develop and implement climate technology initiatives.

Notes.

Scale-up opportunities

Not all technical assistance ends with project completion. Many successful interventions create new opportunities for investment, policy development, or additional technical support. This session explores how countries can build on completed technical assistance to mobilise partners, strengthen implementation, and advance climate technologies towards larger-scale deployment.

Building on the technology, climate finance, and NDE–NDA coordination discussions from Day 3, this session highlights opportunities to scale up climate technology implementation through the complementary support of financing institutions. Participants will explore different financing modalities, funding schemes, and institutional priorities to better understand how national climate technology initiatives can progress from technical assistance to investment and implementation.

Notes.

Climate Project Marketplace

As a platform for countries to present climate technology ideas that require technical, financial, or implementation support, building on the knowledge gained throughout the programme, participants will share directly with Accredited Entities, development partners, CTCN Network members, and the CTCN and GCF Secretariats to discuss project concepts, identify potential partnerships, and receive practical feedback. The session aims to help countries strengthen project ideas, clarify next steps, and explore pathways to advance promising concepts towards implementation and investment.

Notes.

For further clarification on introduced concepts and activities, please direct your questions to Jeawon.kim@un.org.