

ESS WORKSHOP & LEARNING VISIT

IDEA NOTE DEVELOPMENT WORKBOOK

For Nationally Designated Entities (NDEs) and NDE-nominated energy experts

Programme output

A technically reviewed, country-owned project idea note sufficiently developed for post-programme translation into a CTCN Technical Assistance Request Form.

Jeju, Republic of Korea | 1-4 September 2026



Overview

This workbook is designed to turn the learning visit into a practical country-owned Technical Assistance (TA) idea. It is not intended to complete every field of the official CTCN Request Submission Form during the programme.

Start from the problem - not from ESS

This is an ESS learning visit, but your TA idea does not need to begin with Energy Storage Systems. Begin with a priority climate and energy-system challenge. ESS may emerge as part of the response only if it is appropriate to the problem and national context.

Purpose

- Translate one priority national climate and energy-system challenge into a clear TA concept.
- Combine the NDE's national and institutional perspective with the nominated expert's technical perspective.
- Use the technical sessions, laboratory visit, field trip and finance discussions to test assumptions - not to add technologies for their own sake.
- Define what CTCN support should produce, who will use it, what decision it should enable, and what should happen next.

Three sequential workshops

Workshop	Core question	Live output
Workshop 1 - From challenge to TA idea	What exactly are we asking CTCN to support?	Problem -> unresolved barrier -> TA objective -> activities/products
Workshop 2 - Technical reality check	Is the proposed intervention technically credible and implementable?	A technically stress-tested TA scope
Workshop 3 - From TA output to the next decision	What will this assistance make possible?	Priority outcomes, next-step pathway and peer-reviewed concept

Working as an NDE-expert Pair

NDE perspective	Energy expert perspective	Joint responsibility
Country need, climate/NDC relevance, policy and institutional mandates, national coordination, country ownership.	Energy-system function, technology options, technical constraints, data, feasibility, performance and operating conditions.	Agree the problem and TA scope; identify uncertainties; define activities, products and outcomes; identify evidence and next decisions.

When you disagree

Do not average the two views. Record the different assumptions and ask: What evidence would allow us to make a better decision?

Country information

Field	Your entry
Country	
NDE / organization	
NDE-nominated energy expert / organization	
Potential request applicant	
Working title of project idea	

Learning Capture - Days 1 and 2

Record only insights that may change how you define the problem, the technical question, or the type of TA your country needs.

Learning source	What changed or confirmed our thinking?	Possible implication for our TA
NSI / enabling environment discussion		
Country peer exchange		
ESS / grid integration lectures		
KIER lab tour / field visit		

WORKSHOP 1 | DAY 3 | 14:30-16:30

From Country Challenge to a Climate Project Idea

Core question: What exactly are we asking CTCN to support?

The aim is not to complete the Request Form. The aim is to leave this session with a project logic that another person can follow: Why the problem matters, What remains unresolved, and What CTCN support should do about it.

Time	Activity	Decision / output
10 min	Set-up	Agree one challenge to work on.
15 min	Silent thinking: NDE + expert	Compare country/institutional and technical perspectives.
25 min	Problem tree	Define the core problem and 3-4 underlying barriers.
20 min	Select project entry point	Choose the barrier CTCN can realistically help reduce.
30 min	Build the project logic	Barrier -> activity -> product -> decision/action enabled.
15 min	Peer challenge	Test clarity, fit and scope.
5 min	Revise one sentence	State the TA request in one sentence.

Activity 1: Silent Thinking - Two Views of the Same Challenge (15 min.)

Before discussing, the NDE and expert each write independently. Then compare. Do you see the same problem, or different parts of it?

NDE: country / institutional lens	Energy expert: technical / system lens
What climate or energy-system problem is most important to address?	What technical or operational problem is preventing better system performance?
What has already been attempted?	What evidence, data or technical work already exists?
What still prevents progress?	What technical uncertainty still prevents the next decision?

Activity 2: Build a Small Problem Tree (25 min.)

Keep the tree deliberately small. The purpose is to define the project boundary, not to explain the entire national energy system.

Hint 1 A technology is not the problem. "We do not have batteries" is not yet a climate problem.	Hint 2 Ask "Why?" until you reach specific technical, data, policy, institutional or capacity barriers.	Hint 3 If the tree becomes too large, draw the boundary: what can this TA influence?
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ROOT CAUSES / BARRIERS	CORE CLIMATE & ENERGY PROBLEM	EFFECTS / CONSEQUENCES
1.		1.
2.		2.
3.		3.
4.		4.
5.		5.

Check what is already being done

Before selecting the project entry point, note the most relevant existing effort. This prevents duplication and reveals what has not yet moved.

☑ If you'd like to cross-check your country status, refer to the country card prepared by CTCN (Annex A).

Existing policy / study / project / pilot	What has it achieved?	What remains unresolved?

Harder question

If a strategy, assessment or pilot already exists, why has it not yet led to the next decision or deployment step?

Activity 3: Select the TA Entry Point (20 min.)

Several barriers may exist. Choose the one barrier that gives this project a centre of gravity. Other barriers can be acknowledged without becoming separate projects.

Possible TA entry point	Is this our primary barrier?	What exactly is missing?
Technology assessment / comparison	[]	
Pre-feasibility / feasibility evidence	[]	
Data / modelling / system planning	[]	
Institutional coordination / operating procedure	[]	
Policy / regulation / standards	[]	
Human capacity / operational skills	[]	
Demonstration / cRD&D design, where appropriate	[]	
Other	[]	

Our primary barrier is:

Scope test

Can CTCN TA realistically reduce this barrier by producing evidence, analysis, design, capability, coordination or a demonstration-related output? If not, narrow the barrier or redefine the project.

Activity 4: Build the First Project Logic (5 min.)

Move from diagnosis to action. Keep the chain short. Every activity should produce something that a real user needs for a real decision or action.

Objective	Product	Use
Prefer verbs such as assess, validate, design, establish, strengthen or enable.	Make it tangible: assessment, model, design, protocol, dataset, roadmap, training package, pilot design.	Ask who will use the product and what decision or action it should enable.

Overall TA objective:

Barrier to address	TA activity / workstream	Product / deliverable	Decision or action enabled

Do not add an activity just because it sounds useful

If an activity does not reduce the primary barrier or contribute to a product needed for the next decision, remove it.

Activity 5: Peer Challenge - Can Another Country Follow the Logic? (15 min.)

Exchange with another NDE-expert pair. The peer does not redesign your TA. They only test whether the logic is understandable and whether the scope is realistic.

Peer question	Yes	Not yet	Peer comment
Is the climate / energy-system problem clear without knowing the preferred technology?	[]	[]	
Is it clear what has already been attempted and what remains unresolved?	[]	[]	
Does the proposed TA directly address the selected barrier?	[]	[]	
Is the TA scope realistic and sufficiently focused?	[]	[]	

The one question our peer thinks we still need to answer:

Final 5 minutes: Write the Request in One Sentence

Sentence starter

We request CTCN TA to _____ so that _____.

Our sentence:

Finance-partner, who are they? (25 minutes)

Private-sector entity type	Potential role in an ESS project	Primary motivation/incentive sought	What may prevent engagement	What the DAE/GCF structure could offer
Commercial banks	Provide loans to ESS developers, businesses or households; aggregate smaller transactions	Bankable pipeline, interest income, new green-finance products, low default risk and reputational value	Unfamiliar technology risk, limited borrower creditworthiness, uncertain cash flows and small transaction sizes	Credit guarantees, concessional credit lines, first-loss protection, technical due diligence and project aggregation
Independent power producers and renewable-energy developers	Develop and operate renewable energy–storage projects	Higher project returns, reduced curtailment, ability to sell power during higher-value periods and improved project dispatchability	Unclear tariffs, weak power-purchase agreements, grid-connection delays and uncertain storage revenues	Blended finance, longer-tenor debt, viability-gap funding, stronger contractual structures and support for regulatory clarification
Electric utilities and grid operators	Deploy grid-scale storage; manage frequency, peak demand and renewable-energy variability	Grid stability, avoided infrastructure investment, lower balancing costs and improved service reliability	High upfront cost, lack of cost-recovery mechanisms and uncertainty over asset ownership	Concessional capital, results-based financing, technical studies and development of storage procurement or cost-recovery models
Industrial and commercial energy users	Install behind-the-meter ESS in factories, hotels, logistics centres, data centres and commercial buildings	Lower electricity bills, peak-demand management, reliable operations, reduced outage losses and progress toward corporate climate targets	Long payback periods, competing capital priorities and uncertainty about system performance	Energy-service financing, leasing, guarantees, concessional loans and standardized performance contracts
Energy service companies and ESS aggregators	Finance, install and operate distributed systems; combine multiple systems into a virtual power plant	Recurring service revenue, customer acquisition, portfolio scale and access to flexibility markets	Limited access to working capital, immature aggregation rules and customer payment risk	Working-capital facilities, portfolio guarantees, results-based payments and support for standardized contracts
ESS manufacturers and technology suppliers	Supply batteries, control systems, inverters and energy-management platforms	Market entry, sales volume, demonstration value, long-term service contracts and local partnerships	Small or fragmented markets, import costs, uncertain demand and limited after-sales capacity	Demand aggregation, transparent procurement, demonstration projects, supplier-finance arrangements and local capacity-building partnerships
Engineering, procurement and construction companies	Design and construct ESS installations	Contract revenue, project pipeline, market positioning and repeat business	Weak project preparation, unclear technical specifications and payment risk	Project-development support, standardized technical requirements, competitive procurement and payment-risk mitigation

Telecommunications companies and digital infrastructure operators	Use ESS for mobile towers, data centres and remote facilities	Reduced diesel consumption, higher network uptime, lower operating costs and service continuity	Upfront investment, uncertainty about asset maintenance and technology integration	Asset leasing, energy-as-a-service models, concessional finance and performance guarantees
Mining, tourism, agriculture and other remote-site businesses	Use ESS in mini-grids or hybrid renewable systems	Lower fuel and logistics costs, energy security, productive-use expansion and reduced operational disruption	Seasonal revenue, remote maintenance requirements and uncertain load demand	Tailored repayment schedules, risk-sharing facilities, bundled technical services and productive-use financing
Real-estate developers and building owners	Integrate ESS with rooftop solar, electric-vehicle charging and building energy management	Higher property value, lower common-area costs, green-building certification and tenant attraction	Split incentives between owners and tenants, space constraints and fire-safety concerns	Green-building credit lines, developer incentives, standardized safety requirements and performance-based finance
Electric-mobility and charging companies	Combine batteries, charging infrastructure and renewable energy; potentially reuse EV batteries	Charging revenue, lower peak-demand charges, improved charger reliability and new battery-service models	Uncertain EV demand, grid-upgrade costs and unclear second-life battery standards	Concessional infrastructure finance, demand-risk sharing, technical standards and support for integrated charging–storage business models
Battery recycling and circular-economy companies	Collect, repurpose and recycle batteries; develop second-life applications	Access to recoverable materials, supply security, service revenue and compliance opportunities	Insufficient battery volumes, unclear ownership, weak collection systems and liability risks	Extended-producer-responsibility frameworks, collection guarantees, demonstration finance and traceability systems
Local SMEs and community enterprises	Operate mini-grids, productive-use equipment or local energy services	New income streams, reliable energy, reduced operating costs and local market development	Limited collateral, weak technical capacity and inability to absorb foreign-currency risk	Local-currency finance, grants for early-stage development, partial guarantees, incubation and simplified application processes
Institutional investors and infrastructure funds	Provide long-term capital to larger ESS portfolios	Stable risk-adjusted returns, portfolio diversification, ESG performance and scalable investment opportunities	Projects are too small, insufficient operating history and regulatory uncertainty	Aggregated portfolios, junior or first-loss capital, standardized contracts and credible performance data
Insurance and reinsurance companies	Insure ESS assets, performance, construction and business interruption	Premium income, new climate-related products and portfolio diversification	Limited loss data, fire and safety concerns and difficulty pricing technology risk	Common technical standards, independent certification, pooled risk data and public risk-sharing mechanisms

Who would you make a first contact with to align your TA idea?

Private-sector entity type

Potential role in an ESS project

Primary motivation/incentive sought

What may prevent engagement

What the DAE/GCF structure could offer

Workshop 1 checkpoint

You should now have: one problem, one primary barrier, one TA objective, 2-3 workstreams/products, and the decision or action those products should enable.

Technical Reality Check

Core question: Is the proposed intervention technically credible and implementable?

Forty minutes is not enough to redesign the concept. Discuss with the nominated expert and available technical advisers to stress-test the question you are asking, the evidence required, and whether the final technical product will actually support a country decision.

Time	Action
5 min	Reopen yesterday's concept. Do not expand the problem.
20 min	Complete one technical stress-test sheet.
10 min	Bring one unresolved technical question to KIER / CTCN / available experts.
5 min	Revise the TA activities and products.

ESS is a means of implementation

If the required energy-system function can be achieved more appropriately through grid upgrades, demand management, operating practices, policy changes or another technology, record that finding. The purpose is a better TA concept - not an ESS project at any cost.

Activity 6: Technical Stress Test (20 min.)

Check	Question	Our answer
Technology / system	What ESS and/or energy-system application are we assessing, improving or demonstrating?	
Function	What job must the technology or system perform?	
Evidence	What is already known, and what still needs to be assessed or validated?	
Data	What information will the TA need, and is it available?	
Context	What local conditions could make the approach succeed or fail?	
People	Which institutions must participate for the technical work to be usable?	
Deliverable	What tangible technical product must exist by the end of the TA?	

Activity 7: Expert Consultation - One Unresolved Question (20 min.)

Do not ask the adviser to review your entire concept. Bring the single uncertainty that most affects your scope or technical credibility.
Our unresolved technical question:

What we heard from the expert:

Final 5 minutes: Revise

What will we change?	Before (without our TA)	After (with our TA)
TA activity / workstream		
Product / deliverable		
Technical assumption or data need		

Workshop 2 checkpoint

You should now be able to explain what technical uncertainty the TA will reduce, what evidence/data it needs, and what tangible product will be technically credible enough to inform the next decision.

From TA Output to the Next Decision

Core question: What will this assistance make possible?

Outputs are what the TA produces. Outcomes are what changes because those products are used. Do not promise downstream investment, deployment or emissions reductions that depend on decisions outside the TA. Instead, show the pathway and the evidence needed for the next step.

Time	Activity	Output
15 min	Define priority outcomes	TA product -> user -> decision/action -> indicator
15 min	Map what happens after CTCN	TA -> national decision -> next-stage project -> potential partner/finance
15 min	Peer review	Another NDE checks whether the logic is understandable and credible.
15 min	Final revision	Prepare the one-page idea for presentation.

Activity 8: Define Only the Outcomes That Matter (15 min.)

Choose only the outcome categories relevant to your TA. One credible measurable outcome is stronger than a long list of aspirational impacts.

TA product / output	Who will use it?	What decision / action should follow?	Indicator / evidence

Relevant outcome category/categories: ☐ Technical ☐ Social / institutional ☐ Economic / finance ☐ Mitigation / adaptation

Activity 9: What Happens After the TA? (15 min.)

Map the hand-off. This is where the policy and finance sessions should influence your idea: what must be true before a later pilot, investment or scale-up can happen?

Stage	What should happen?	Lead actor / decision-maker	Evidence / decision gate
During CTCN TA			
Immediately after TA - uptake / decision			
Next pilot / investment / deployment step			
Replication / scale-up / institutionalization			

Potential financing or implementation linkage (revisit your responses in page 11)

Potential actor / mechanism	What could they support later?	What must this TA provide first?

Finance language check

Avoid writing "secure funding" unless the TA itself can credibly deliver that result. More often, the TA should produce the evidence, design, validation, safeguards, business case or institutional readiness needed for a later financing decision.

Activity 10: Peer Review - Can Another NDE Follow the Logic? (15 min.)

Ask your peer to read the idea as if they had not attended the technical sessions.

Peer sentence	Peer response
I understand the problem as...	
I understand CTCN will support...	
The most convincing expected outcome is...	
One thing that remains unclear is...	

Activity 11: Final Revision (15 min.)

Final element	Our concise statement
Climate / energy-system problem	
What has already been attempted	
Primary unresolved barrier	
Overall TA objective	
2-3 activities / workstreams	
Key products / deliverables	
Primary users and decisions enabled	
Priority measurable outcome(s)	
What should happen next after TA	

Workshop 3 checkpoint

Your concept is now ready to be presented and challenged. It is not yet the final official Request Form. National consultation, references, supporting evidence and formal NDE approval can be completed after the programme.

Idea Note Presentation | Day 4 | 15:30-17:00

Use the presentation to test the idea, not to defend it. Keep the emphasis on the problem, the TA logic and the next decision you want the TA to enable.

Pitch element	Your key message
1. Problem - What climate / energy-system challenge needs to change?	
2. Existing effort + gap - What has been attempted, and what remains unresolved?	
3. TA - What do you want CTCN support to do?	
4. Products - What concrete technical outputs will be delivered?	
5. Outcomes - What changes when the products are used?	
6. Next decision - What should happen after the TA?	

Suggested 5-minute structure

Problem + gap (1 min.) | TA objective + activities (1.5 min.) | Products + outcomes (1 min.) | Next decision / pathway (1 min.) | Closing ask or unresolved question (0.5 min.)

Questions / feedback to capture

Additional Information I

Translate the Idea Note into the Official CTCN TA Request Submission Form

The workbook is intentionally more exploratory than the official form. After the programme, use the strongest statements from the exercises above and rewrite them into the relevant form fields.

Official CTCN form field	Where to take it from in this workbook
Requesting country / title / NDE / applicant	Country information + final revision
Climate objective / geographical scope	Workshop 1 - challenge definition
Problem statement related to climate change	Workshop 1 - silent thinking + problem tree
Past and ongoing efforts	Workshop 1 - existing effort check
Specific technology barriers	Workshop 1 - selected TA entry point
Technical assistance requested: objective, activities, products	Workshop 1 - first TA logic + Workshop 2 revisions
Expected timeframe	Confirm post-programme once scope is stable
Gender and other co-benefits	Add through national consultation / safeguards review
Key stakeholders and roles	Workshop 2 - people check + post-programme consultation
Alignment with national priorities / NDC	NDE to verify and cite relevant national documents
Development of the request	Document consultation and NDE approval process after the programme
Monitoring and impact	Workshop 3 outcomes + later Response Plan development

Important boundary

CTCN facilitates technical assistance; it is not a project financing mechanism. Frame the TA around the evidence, design, capability, coordination, validation or other technical work needed to enable a later decision or investment.

Additional Information II

Outcome Menu for ESS / Energy TA Concepts

Use these examples as a menu, not a checklist. Select only outcomes that logically follow from the proposed TA. Every selected outcome should have a credible indicator and supporting evidence.

1. Technical outcomes

- R&D / co-development: FEED or engineering design completed; prototype or pilot module developed; defined performance specification achieved; material or component optimized; patent or peer-reviewed publication where relevant.
- Pre-feasibility: comparative assessment of candidate technologies; LCOE / efficiency / durability / local applicability analysis; prioritized technology or site matrix; GIS or resource database; standards review and standardization items.
- Technology transfer: operating procedure, design package, technical manual, validated deployment package, licensing or knowledge-transfer arrangement, local technical capability.

Outcome description	Quantitative indicator / achievement	Supporting document

2. Social / institutional outcomes

- Policy proposal or technical recommendation formally taken up by a ministry, regulator, utility or other partner institution.
- Local capacity building with named institutions, date, venue, participant numbers, satisfaction / learning evidence and operational effect.
- Institutional coordination mechanism, operating procedure, MoU, community engagement outcome, local expert capability or jobs - only where directly relevant to the TA.

Outcome description	Recipient / date / scope	Count / scale	Evidence

3. Economic outcomes

- Follow-up project linked to GCF, ADB or another financing source: record the project, status and amount only when evidence exists.
- Private investment leveraged, cost savings, energy-cost reductions, LCOE improvement, revenue or export effects - only when attributable and measurable.

Outcome description	Funding source / project / date	Count	Amount / effect

4. GHG mitigation / climate adaptation effects, if applicable

Where quantitative climate effects are estimated, state the calculation method and assumptions. Distinguish direct TA effects from effects that depend on a later investment or deployment project.

Category	Details and calculation basis	Quantitative indicator
GHG mitigation		tCO2e/year
Renewable energy generation		MWh/year
Climate adaptation effects		Beneficiaries / area / service continuity
Other environmental effects		

Evidence rule

Do not create a number because the template contains a box. Use a quantitative indicator only when it can be measured or reasonably estimated, and keep the underlying calculation or source as supporting evidence.

Additional Information III

Post-programme Completion Checklist

The live workshops deliberately stop before full form completion. After Jeju, the NDE and request applicant can use the checklist below to mature the concept into a formal submission.

Post-programme task	Status / notes
Confirm request applicant and national ownership / approval process	
Verify NDC and other national policy alignment with exact references	
Consult the institutions that must implement or use TA outputs	
Confirm data access and technical assumptions	
Refine activities, products, duration and achievable indicators	
Identify gender, social, environmental and other co-benefits / safeguards considerations	
Clarify potential follow-up implementation / finance pathway without overpromising	
Gather supporting documents and evidence	
Translate the idea note into the official CTCN TA Request Submission Form	
NDE review, approval and signature	

Supporting documents to retain

Document	File name / notes
☐ Project proposal / plan	
☐ Existing feasibility / technical study	
☐ Policy / strategy / standard / NDC extract	
☐ Relevant data / modelling source	
☐ Training or consultation records	
☐ Evidence of follow-up interest or financing, where applicable	
☐ Other supporting documents	

Final programme outcome

A technically reviewed, country-owned project idea note sufficiently developed for post-programme translation into a CTCN Technical Assistance Request Form.

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