Country	**The Kingdom of Cambodia**
Request ID#	2024000042
Title	Development of National Green Hydrogen Roadmap for Accelerating Carbon Neutrality
NDE	Organization: The General Directorate of Policy and Strategy/Ministry of Environment Name: Mr. Ou Chanthearith, Director of Department of Science and Technology Email: ou.chanthearith@moe.gov.kh; chanthearithdst2023@gmail.com Address: 3rd floor, Morodok Techo Building, Lot 503, Tonle Bassac, Chamkarmon, Phnom Penh, Cambodia
Proponent	Organization: The General Directorate of Policy and Strategy/Ministry of Environment Name: H.E. Sum Thy, Director General of General Directorate of Policy and Strategy Email: sum.thy@moe.gov.kh, sumthy@yahoo.com Address: Morodok Techo Building (Lot 503) Tonle Bassac, Chamkarmorn, Phnom Penh, Cambodia

Summary of the CTCN technical assistance

The summary should provide a brief description of the problem (barrier to climate technology deployment) and how the technical assistance will address it (brief summary of outputs and activities). Please also briefly indicate national actors involved and the anticipated timeline. Please note this summary will be used for public communication purposes so it is important that it is well written. (maximum 1250 characters including spaces)

Cambodia faces rising energy demand, heavy reliance on coal and imported electricity, and rapid growth in transport emissions, yet lacks a national strategy to harness its abundant renewable resources for green hydrogen. These barriers limit progress toward its NDC 3.0 target of a 55 % and 16% emissions reduction under the respectively conditional and unconditional scenarios by 2035 and its long-term carbon neutrality goal. This technical assistance will support the government in developing a National Green Hydrogen Roadmap that identifies production potential, sectoral applications, and investment pathways for hydrogen, while strengthening institutional and technical capacity. Activities include baseline assessments, scenario analysis, stakeholder consultations, roadmap drafting, and targeted training programs. The work will be implemented in close collaboration with the Ministry of Environment (NDE), Ministry of Mines and Energy, Ministry of Industry, Science, Technology and Innovation, Ministry of Public Works and Transport, and national research institutions. The project will run for 12 months (Sept 2025–Jun 2026), delivering a roadmap to guide Cambodia's energy transition, enhance energy security, and unlock opportunities for green growth.

Agreement:

(If possible, please use electronic signatures in Microsoft Word file format)

National Designated Entity to the UNFCCC Technology Mechanism
Name: Mr. Ou Chanthearith
Title: Director of Department of Science and Technology
The General Directorate of Policy and Strategy/Ministry of Environment

Date: 16-10-2025

Signature:

Proponent (signature of the Proponent is optional)
Name: H.E. Sum Thy
Title: Director General
The General Directorate of Policy and Strategy/Ministry of Environment

Date: 21-10-2025

Signature:

UNFCCC Climate Technology Centre and Network (CTCN)
Name: Ariesta Ningrum
Title: Director, CTCN

Date:

Signature:

CTCN AFRICA REGIONAL MANAGER
Digitally signed by Robinson Mugo
Date: 2025.10.21 14:16:08 +03'00'

OiC, for Director

1. Background and context

Please provide a brief description of the background and context for the CTCN Response Plan. Please include national and sectoral information using recognized and publicly available sources. (maximum 2500 characters including spaces).

Cambodia is increasingly vulnerable to climate change, with energy and transport as its fastest-growing emission sources. Energy demand almost tripled between 2000 and 2020 and is projected to double again by 2040. In 2023, installed capacity reached 4,649 MW (46% hydropower, 33% coal, 11% solar, 10% HFO), but ~14% of supply was still imported, raising both security and decarbonization concerns. Vehicle registrations surpassed 5.8 million in 2020, with annual growth of ~7.4% in Phnom Penh since 2007, exacerbating fossil fuel dependence and urban air pollution.

Global trends underline the urgency of a strategic response. Hydrogen demand reached ~97 Mt in 2023 and is expected to exceed 100 Mt in 2024 (IEA, 2024). In the Net Zero Scenario, demand could rise to 150 Mt by 2030 and over 500 Mt by 2050. IRENA projects that hydrogen could provide 14% of final energy consumption by mid-century, expanding from current uses in refining and chemicals to heavy industry, transport, and energy storage. By May 2024, 61 countries had adopted national hydrogen strategies or roadmaps, with 55 explicitly prioritizing electrolysis-based green hydrogen linked to wind and solar (CGEP, 2024; IRENA, 2023).

Cambodia, despite abundant resources—over 10 GW hydropower potential (1.3 GW developed), excellent solar radiation (~5 kWh/m²/day, ~500 MW deployed), and agricultural biomass—still lacks a national hydrogen policy. Meanwhile, electricity consumption grew by 11.97% in 2023, with coal dependence at 33% and 13% of supply imported. Without a clear roadmap, Cambodia risks missing opportunities to integrate renewables, stabilize its power system, and reduce emissions.

Korea's experience demonstrates possible pathways: it has enacted the Hydrogen Economy Roadmap (2019), Hydrogen Law (2021), and a Clean Hydrogen Power Scheme (2024), alongside strong technology capabilities in fuel cells, hydrogen vehicles, and power generation. Cambodia, rich in resources but at an early policy stage, and Korea, with advanced technology and hydrogen demand, are thus highly complementary partners.

In this context, Cambodia's NDE has requested CTCN support to develop a National Green Hydrogen Roadmap. Building on lessons from Thailand's CTCN hydrogen strategy case, this assistance will provide Cambodia with a tailored framework aligned with its NDC, LTS for Carbon Neutrality, and Pentagonal Strategy, while enabling international cooperation and long-term supply chain partnerships

(1) "Cambodia Climate Change Strategic Plan" (National Climate Change Committee, 2013)
(2) "Energy Efficiency and Conservation Master Plan" (Ministry of Mines and Energy, ERIA, 2020)
(3) "Cambodia Basic Energy Plan" (Economic Research Institute for ASEAN and East Asia (ERIA). 2019). https://www.eria.org/uploads/media/CAMBODIA_BEP_Fullreport_1.pdf
(4) "Cambodia's Updated Nationally Determined Contribution" (GSNCSD, Ministry of Environment, 2020) https://unfccc.int/sites/default/files/NDC/2022-06/20201231_NDC_Update_Cambodia.pdf
(5) "Features of Power Development in the Kingdom of Cambodia until December 2023" (MME, 2023)

(6) "Traffic Safety in Cambodia" (Ministry of Public Works and Transport, 2021)
(7) IEA, 2024, Global Hydrogen Review 2024, IEA, Paris
(8) IRENA, WTO, 2023, International trade and green hydrogen: Supporting the global transition to a low-carbon economy. Tech. rep., International Renewable Energy Agency (IRENA).
(9) CGEP, 2025, National Hydrogen Strategies and Roadmap Tracker. https://www.energypolicy.columbia.edu/publications/national-hydrogen-strategies-and-roadmap-tracker/ (accessed May 16, 2025)

2. Problem statement

Founded on the national and sectoral context as detailed in the section above, please include a brief problem statement clarifying the main problems and barriers for climate change mitigation and/or adaptation in terms of climate technologies that the CTCN Response Plan will address and overcome. (maximum 1250 characters including spaces).

Cambodia's energy and transport sectors are simultaneously the largest contributors to greenhouse gas emissions and among the most vulnerable to climate impacts. Energy demand has tripled since 2000 and is expected to double again by 2040, while electricity consumption continues to grow at >11% annually. In 2023, generation remained heavily reliant on coal (33%) and imports (14%), exposing the country to supply insecurity, rising costs, and increased emissions. Transport emissions are also rising sharply, with over 5.8 million registered vehicles in 2020 and annual fleet growth of ~7.4% in Phnom Penh, worsening air pollution and public health risks.

Structural barriers hinder a low-carbon transition: ~30% of electricity is imported, domestic oil production has ceased, and renewable resources such as >10 GW hydropower potential and high solar irradiation remain underutilized (only 1.3 GW hydro and 500 MW solar developed). Geopolitical sensitivities around Mekong hydropower and limited national innovation capacity further constrain technology deployment (UNSD, STIMSON, WIPO 2024). Without targeted interventions, Cambodia risks deepening fossil fuel dependence and missing its 55% and 16% GHG reduction conditional and unconditional targets respectively by 2035. The absence of a hydrogen policy or roadmap leaves the country ill-equipped to mobilize its renewable endowments for energy security and decarbonization.

(10) "National Strategic Plan on Green Growth 2013-2030" (National Council on Green Growth, 2013)
(11) "Industrial Development Policy (IDP) 2015-2025, Market Orientation and Enabling Environment for Industrial Development" (Council of Ministers at its plenary meeting, 2015) https://www.eurochamcambodia.org/uploads/97dae-idp_19may15_com_official.pdf
(12) "National Policy, Strategy and Action Plan on Energy Efficiency in Cambodia" (Ministry of Industry, Mine and Energy, 2013) https://policy.asiapacificenergy.org/sites/default/files/National%20Policy%2C%20Strategy%20and%20Action%20Plan%20on%20Energy%20Efficiency%20in%20Cambodia.pdf
(13) "Cambodia Energy Sector Assessment, Strategy, and Road map" (ADB, 2018)

3. Logical Framework for the CTCN Technical Assistance:

(Guidance: Please note that multiple activities lead to one Output, and multiple Outputs lead to one Outcome. There can be several Outputs, but only one Outcome description capturing the CTCN technical assistance. Deliverables are the products or services to be delivered to the NDE/Proponent/CTCN based on the Activities and the Outputs.)

***Objective**: Please provide a one sentence description of the Objective of the technical assistance. The objective of the CTCN technical assistance reflects what the assistance aims to produce and impact.* To establish a comprehensive National Green Hydrogen Roadmap that guides Cambodia's low-carbon development, supports national climate commitments, and unlocks opportunities for sustainable economic growth
Outcome: *(Guidance: The Outcome articulates changes in the institutional and behavioural capacities for climate technology development or deployment. Activities and Outputs contribute to the Outcome but the Outcome is not within the direct control of the CTCN activities). (maximum 400 characters including spaces)* Strengthened national capacity to plan, coordinate, and implement green hydrogen policies, enabling Cambodia to integrate hydrogen into its energy transition and climate strategies.

	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Mandatory Output: Project management *All implementers must undertake the following project management activities at the beginning of, during and at the end of the CTCN technical assistance.*												
Activity A: Beginning of implementation A detailed work plan of all activities, deliveries, outputs, deadlines and responsible persons/organisations and detailed budget to implement the Response Plan. The detailed work plan and budget must be based directly on this Response Plan, and a local kickoff meeting (inception workshop) with the NDE is planned to share and agree upon these details; Based on the work plan, a monitoring and evaluation (M&E) plan with specific, measurable, achievable, relevant, and time-bound indicators used to monitor and evaluate the timeliness and appropriateness of the implementation. The monitoring and evaluation plan should apply selected indicators from the Closure and Data Collection report template and enable the lead implementer to complete the CTCN Closure and Data collection report at the end of the assignment (please refer to item iv below and section 14 in the Response Plan). This M&E plan also includes a CTCN Impact Description formulated											

in the beginning of the technical assistance which will be revised in the Closure and Data Collection report once the technical assistance is fully delivered (templates will be provided). Other additional monitoring and evaluation indicators or templates may be required depending on the donor that is funding the technical assistance. Furthermore, a gender evaluation and gender action plan (GAP) will be prepared and followed throughout the technical assistance (a template will be provided).[1]												
Activity B: Implementation A project steering committee will be formed, consisting of the implementing team (international and local consultants), the NDE, the project proponent(s), relevant ministries, academia, the private sector, and CTCN. The objective of this steering committee is for the implementing partner to report on progress, and to guide the implementation of the project at a high level. It is recommended that this steering committee meet virtually on a quarterly basis.												
Activity C: End of implementation A Closure and Data Collection report completed at the end of the technical assistance (a template will be provided). Potential project-end communication and dissemination activities (such as knowledge sharing webinar, dialogue with financial institutions, press release) may be conducted in collaboration with the CTCN Secretariat, subject to appropriateness.												
Mandatory deliverables: Deliverable A: Detailed work plan; M&E plan; gender assessment and gender action plan Deliverable B: Project Steering Committee meeting reports Deliverable C: Closure and Data Collection report; press release, webinar, dialogue with financial institutions	X		X			X			X			X X

[1] Additional information is available under Section 10 of the response plan.

Output 1: Analysis of the current status and feasibility study on green hydrogen technology													
Activity 1.1: Baseline assessment of hydrogen utilization in Cambodia This activity will establish baseline conditions for hydrogen utilization in Cambodia by reviewing the country's energy mix, GHG emission profile, and relevant national strategies. Global hydrogen strategies will be benchmarked to identify best references for utilization, ensuring that Cambodia's analysis is aligned with international trends while grounded in its domestic context.													
Activity 1.2: Sectoral analysis and feasibility assessment of hydrogen utilization This activity will identify and assess priority end-use sectors such as transport, industry, and power through criteria including policy alignment, economic significance, technical feasibility, and energy demand. Cost-benefit or climate benefit analyses will be conducted to support the selection of one to two key sectors.													
Activity 1.3: Assessment of hydrogen supply potential and technology options This activity will review Cambodia's renewable resource base and energy structure to assess the feasibility of green hydrogen production. It will analyze applicable production technologies, as well as storage and transportation options, to recommend feasible pathways that can inform future roadmap development													
Deliverable 1: *Green Hydrogen Analysis Report*						X							
Output 2: Development of a green hydrogen roadmap concept and stakeholder consultation workshop													
Activity 2.1: Preparation of a concept of Green Hydrogen Roadmap This activity will develop a conceptual outline for Cambodia's Green Hydrogen Roadmap. The outline will define the roadmap's objectives, direction, scope, and indicative structure, while aligning with Cambodia's expressed needs (including inputs from the TA request paper and feedback from the kickoff meeting) as well as higher-level strategies and national priorities. Lessons from international roadmap practices will also be incorporated to strengthen relevance and applicability.													
Activity 2.2: Organization of a stakeholder consultation workshop													

This activity will convene a two-day workshop in Cambodia to share the green hydrogen technology assessment results (from Activity 1) and the proposed roadmap concept. The workshop will gather diverse stakeholder feedback, strengthen consensus on priorities, and build a cooperative network to support future roadmap development and implementation.												
Deliverable 2: *Consultation Workshop Report*							X					
Output 3: Development of the National Green Hydrogen Roadmap for Cambodia												
Activity 3.1: Formulation of vision, goals, and strategic framework This activity will define Cambodia's long-term vision for a green hydrogen economy and establish national goals to realize that vision. Drawing on higher-level strategies and the results of the stakeholder consultation workshop, a strategic framework will be developed covering key areas such as hydrogen production, storage and transport, utilization, and enabling conditions (e.g., technology development regulatory incentives, and workforce capacity building).												
Activity 3.2: Identification of sectoral strategies and detailed action areas This activity will derive sector-specific strategies and actionable measures by benchmarking leading hydrogen policies from advanced economies and relevant initiatives from developing countries. Particular emphasis will be placed on renewable energy integration, foreign investment mobilization, technology transfer, and opportunities for Cambodia's participation in the global hydrogen supply chain. Expert consultations will be used to ensure feasibility and alignment with Cambodia's national circumstances.												
Activity 3.3: Establishment of phased targets, responsibilities, and monitoring mechanisms This activity will define phased targets for each action area and assign institutional responsibilities for implementation. Inputs from surveys of Cambodian experts across government, industry, and academia will guide bottom-up target setting. A governance framework will be proposed, including the designation of a lead coordinating body and mechanisms for periodic monitoring to track progress and adjust strategies as needed.												
Deliverable 3: *National Green Hydrogen Roadmap for Cambodia*											X	
Output 4: Implementation of a capacity building program												
Activity 4.1: Design of the capacity building program												

This activity will be developed in consultation with the NDE to ensure relevance and effectiveness. The design process will determine the program format, duration, and participant composition, with attention to gender balance. The program agenda will be structured to provide policymakers, technical experts, and industry stakeholders with knowledge on green hydrogen technologies, policies, and roadmap development.												
Activity 4.2: Delivery of the capacity building program This activity will implement a two-day program in Cambodia, combining plenary sessions, stakeholder-focused discussions, and practical site visits. Day 1 will provide policymakers and experts with the latest information on hydrogen policies, technology trends, and roadmap development. Day 2 will focus on, e.g., financing opportunities, international project experiences, and business linkage discussions. The program will enhance stakeholder understanding, strengthen networks, and support roadmap implementation.												
Deliverable 4: *Capacity Building Program Report*												X
(Additional) Output 5: Development of follow-up project linkage strategies for sustainability												
Activity 5.1: Establishment of a stakeholder coordination platform This activity will form a coordination platform consisting of key Cambodian ministries, local universities and research institutes, international organizations with offices in Cambodia, and KOICA representatives. The platform will build on the networks established in earlier project steps and serve as a forum for sharing results, validating priorities, and ensuring national ownership of follow-up initiatives.												
Activity 5.2: Identification of follow-up projects and financing opportunities This activity will extract actionable follow-up projects from the National Green Hydrogen Roadmap (from Activity 3) and match them with relevant domestic and international climate finance resources. Potential pathways include technology transfer projects, support for the overseas expansion of Korean hydrogen technology, package-type projects combining infrastructure and capacity building, and pilot initiatives for bilateral hydrogen trade. The analysis will emphasize practical opportunities where Korea's expertise and resources can contribute to Cambodia's green hydrogen transition.												
Activity 5.3: Preparation of a follow-up project concept note This activity will develop concept notes for selected follow-up projects, with a particular focus on GCF Readiness and other climate finance programs. Draft concept note will outline objectives, scope,												

financing structures, and implementation arrangements to facilitate resource mobilization and project approval.												
Deliverables 5.1: *Follow-up Project Linkage Strategy Report* **Deliverables 5.2:** *Draft concept note(s) for financing institutions*												X X

4. Resources required and itemized budget:

Please provide an indicative overview of the resources required and itemized budget required to implement the CTCN technical assistance, including for M&E-related activities, using the table below. Important to note that minimum 5% of the budget should explicitly target gender specific activities related to the technical assistance (please see section 10 for further information on gender). A maximum of 20% of the budget can be allocated to procurement (e.g. infrastructure purchase, technology piloting), Once the Response Plan is completed, a Response Implementation partner(s) will be selected by the Climate Technology Centre (CTC). A detailed activity-based budget for the CTCN assistance will be finalized by the CTCN and selected Implementer.

Activities and Outputs	**Input: Human Resources** *(Title, role, estimated number of days)*	**Input: Travel**[2] *(Purpose, national vs. international, number of days)*	**Inputs: Meetings/events**[3] *(Meeting title, number of participants, number of days)*	**Input: Equipment/Material** *(Item, purpose, buy/rent, quantity)*	**Estimated cost** *Please accumulate the costing (USD) at Activity and Output level and provide an estimated costing range for each activity and the total Response Plan*	
					Minimum	**Maximum**
Mandatory Output: Project management	***IE1: 10 days*** ***IE2: 5 days*** ***IE3: 5 days*** ***IE4: 5 days*** ***IE5: 5 days***	***1 International travel (3 days)***	***Kick-off meeting (5 ppl, 1 day)***		***USD 19,000***	***USD 21,000***
Mandatory Activities: A: Beginning of implementation	*IE1: 10 days* *IE2: 5 days* *IE3: 5 days*	*1 International travel (3 days)*	*Kick-off meeting (5 ppl, 1 day)*		*USD 19,000*	*USD 21,000*

[2] All budget values related to Daily Subsistence Allowance or logistical support for local participants shall remain as indicated.
[3] All budget values related to the organization of meetings and events shall remain as indicated.

B: Implementation C : End of implementation	*IE4: 5 days* *IE5: 5 days*					
Output 1: *Analysis of the current status and feasibility study on green hydrogen technology*	***IE1: 20 days*** ***IE2: 20 days*** ***IE3: 20 days*** ***IE4: 20 days*** ***NE1: 40 days*** ***NE2: 20 days***		***Technical consultation (5 ppl, 1 day)***	***Database license (1)***	***USD 42,000***	***USD 47,000***
Activity 1.1: *Baseline assessment of hydrogen utilization in Cambodia*	*IE1: 5 days* *IE3: 10 days* *NE1: 20 days* *NE2: 10 days*			*Database license (1)*	*USD 14,000*	*USD 16,000*
Activity 1.2: *Sectoral analysis and feasibility assessment of hydrogen utilization*	*IE1: 10 days* *IE2: 10 days* *IE4: 10 days* *NE1: 10 days*				*USD 14,000*	*USD 15,000*
Activity 1.3: *Assessment of hydrogen supply potential and technology options*	*IE1: 5 days* *IE2: 10 days* *IE3: 10 days* *IE4: 10 days* *NE1: 10 days* *NE2: 10 days*		*Technical consultation (5 ppl, 1day)*		*USD 14,000*	*USD 16,000*
Output 2: *Development of a green hydrogen roadmap concept and stakeholder consultation workshop*	***IE1: 10 days*** ***IE2: 10 days*** ***IE3: 10 days*** ***IE5: 10 days*** ***NE1: 20 days*** ***NE2: 10 days***		***Internal review (10 ppl, 1 day)*** ***Consultation workshop (40 ppl, 2 days)***	***Printing (40 sets)***	***USD 48,000***	***USD 55,000***

Activity 2.1: *Preparation of a concept of Green Hydrogen Roadmap*	*IE1: 7 days* *IE2: 10 days* *NE1: 10 days*		*Internal review (10 ppl, 1 day)*		*USD 16,000*	*USD 20,000*
Activity 2.2: *Organization of stakeholder consultation workshop*	*IE1: 3 days* *IE3: 10 days* *IE5: 10 days* *NE1: 10 days* *NE2: 10 days*	*1 International travel (4 days)*	*Consultation workshop (40 ppl, 2 days)*	*Printing (40 sets)*	*USD 32,000*	*USD 35,000*
Output 3: *Development of the National Green Hydrogen Roadmap for Cambodia*	***IE1: 12 days*** ***IE2: 12 days*** ***IE3: 20 days*** ***IE4: 20 days*** ***NE1: 50 days*** ***NE2: 20 days***		***Technical consultation (10 ppl, 1 day)***	***Graphic/layout design (1)***	***USD 36,000***	***USD 40,000***
Activity 3.1: *Formulation of vision, goals, and strategic framework*	*IE1: 12 days* *NE1: 10 days* *NE2: 10 days*				*USD 10,000*	*USD 11,000*
Activity 3.2: *Identification of sectoral strategies and detailed action areas*	*IE2: 12 days* *IE3: 20 days* *NE1: 20 days* *NE2: 5 days*				*USD 12,000*	*USD 14,000*
Activity 3.3: *Establishment of phased targets, responsibilities, and monitoring mechanisms*	*IE4: 20 days* *NE1: 20 days* *NE2: 5 days*		*Technical consultation (10ppl, 1 day)*	*Graphic/layout design (1)*	*USD 14,000*	*USD 15,000*

Output 4: ***Implementation of a capacity building program***	***IE1: 10 days*** ***IE2: 4 days*** ***IE3: 4 days*** ***IE4: 4 days*** ***IE5: 10 days*** ***NE1: 20 days*** ***NE2: 10 days***	***1 International travel (4 days)***	***Capacity building workshop (40 ppl, 2 days)***	***Printing (40 sets)***	***USD 40,000***	***USD 44,000***
Activity 4.1: *Design of the capacity building program*	*IE1: 10 days* *IE5: 5 days* *NE1: 10 days* *NE2: 5 days*				*USD 8,000*	*USD 9,000*
Activity 4.2: *Delivery of the capacity building program*	*IE2: 4 days* *IE3: 4 days* *IE4: 4 days* *IE5: 5 days* *NE1: 10 days* *NE2: 5 days*	*1 International travel (4 days)*	*Capacity building workshop (40 ppl, 2 days)*	*Printing (40 sets)*	*USD 32,000*	*USD 35,000*
Output 5: ***Development of follow-up project linkage strategies for sustainability***	***IE1: 3 days*** ***IE2: 5 days*** ***IE3: 8 days*** ***IE4: 10 days*** ***NE1: 20 days*** ***NE2: 10 days***		***Financing meeting (5 ppl, 1 day)***	***Graphic/layout design (1)***	***USD 25,000***	***USD 33,000***
Activity 5.1: *Establishment of a stakeholder coordination platform*	*IE1: 3 days* *NE1: 10 days*				*USD 5,000*	*USD 9,000*
Activity 5.2: *Identification of follow-up projects and*	*IE2: 5 days* *IE3: 4 days* *NE1: 5 days*		*Financing meeting (5 ppl, 1 day)*		*USD 10,000*	*USD 12,000*

financing opportunities	*NE2: 5 days*					
Activity 5.3: *Preparation of a follow-up project concept note*	*IE3: 5 days* *IE4: 10 days* *NE1: 5 days* *NE2: 5 days*			*Graphic/layout design (1)*	*USD 10,000*	*USD 12,000*
Estimated range of costing for the entire Response Plan					***USD 210,000***	***USD 240,000***

5. Profile and experience of experts

Based on the required Human Resources identified in section 4 (Resources required and itemized budget) please provide a description of the required profile of all involved experts for the implementation of the CTCN Response Plan.

Experts required	Brief description of required profile
International Experts (IE)	
Lead Hydrogen Policy Expert (Team Leader) (IE1)	PhD in energy systems, climate policy, etc., with 5+ years of professional experience in related fields. Strong expertise in hydrogen sector planning, national strategy development, and policy analysis for energy transition. Demonstrated leadership in technical assistance projects supporting governments to design hydrogen roadmaps, technology strategies, and climate action frameworks. Skilled in coordinating multi-stakeholder processes, integrating hydrogen policies with national climate strategies, and delivering actionable recommendations. Fluency in English required; experience in Southeast Asia preferred.
Senior Hydrogen Technology & Industry Expert (IE2)	Advanced degree in engineering, energy technology, or economics with at least 7–10 years of relevant experience. Specialized in hydrogen production, storage, distribution, and industrial applications. Proven experience in conducting policy-oriented research and technical studies on hydrogen value chains, innovation strategies, and regulatory frameworks. Strong background in techno-economic analysis and industry engagement to align technology adoption with national climate and energy goals. Fluency in English required.
Climate Technology & International Cooperation Expert (IE3)	Background in climate change policy, international cooperation, and technology transfer with 7+ years of experience. Expertise in supporting governments to design and implement technology roadmaps, climate finance access strategies, and readiness programs. Practical experience engaging with UNFCCC mechanisms, regional forums, and

	multi-stakeholder partnerships. Skilled in linking technical assistance outputs with follow-up opportunities, financing, and capacity building. Fluency in English required; familiarity with Cambodian institutional context is an asset.
Data, Innovation & Knowledge Management Expert (IE4)	At least 5–7 years of experience in climate technology data analysis, innovation systems, and knowledge management. Demonstrated ability to collect, analyze, and synthesize data for technology roadmaps, innovation strategies, and global cooperation studies. Skilled in managing climate technology knowledge platforms and producing evidence-based policy recommendations. Experience in supporting developing countries with data-driven decision-making for energy and climate strategies. English fluency required.
Capacity Building & Stakeholder Engagement Expert (IE5)	Degree in social sciences, environmental policy, or related field with 5+ years of experience in training, facilitation, and stakeholder engagement. Expertise in designing and delivering capacity-building programs on climate and energy technologies, with emphasis on inclusive and gender-responsive approaches. Skilled in organizing and facilitating stakeholder workshops, technical training sessions, and policy dialogues. Experience working with diverse stakeholders including government, academia, and private sector. English fluency required; strong facilitation skills in cross-cultural settings preferred.
National Experts (NE)	
Local Consultant (NE1)	At least master's degree in mechanical/chemical engineering, energy technology, climate change, environmental policy, public policy, social sciences or relevant disciplines with 2+ years of experience. Specialized in hydrogen production, storage, distribution, and industrial applications. Proven experience in conducting technical research in energy or related industries will be valued. Proven working experience and presence in Cambodia are required. Proficiency in written and communication skills with English.
Local Technical/Policy Expert (NE2)	At least Master's degree or PhD in mechanical/chemical engineering, energy technologies, economics of energy system, climate change, environmental policy, public policy, social sciences or relevant disciplines. Specialized in hydrogen production, storage, distribution, and industrial applications. Proven experience in technical research, policy-oriented research, international cooperation studies, gender studies, or relevant fields will be valued. Proven working experience and presence in Cambodia are required. Proficiency in written and communication skills with English.

6. Intended contribution to impact over time

Please provide a brief description of the intended contribution to impact over time of the outcome and outputs provided by this technical assistance on resilience to climate change and/or carbon abatement. To the extent possible, please quantify the intended impact contribution, for example by indicated estimated number of people potentially impacted over time, GDP contribution of the focus sector, carbon emissions by the focus sector, etc. This intended contribution to impact is what will happen if the objective (as articulated in section 3) is met. Please ensure relevant complementarity with text in sections 7 to 12. (maximum 1250 characters including spaces)

The National Green Hydrogen Roadmap will help Cambodia transition toward a low-carbon, resilient energy system. By identifying optimal hydrogen production pathways, sectoral applications, and investment needs, the roadmap is expected to reduce dependence on coal and imported power, which currently supply nearly half of Cambodia's electricity. Over time, the roadmap will support achievement of Cambodia's target of a 55% and 16% reduction in emissions for conditional and unconditional scenarios respectively by 2035, with the potential to avoid more than 36.5 $MtCO_2e$ annually and 22.2 $MtCO_2e$ annually respectively for conditional target and unconditional target in the energy and transport sectors by 2035. It will also lay the groundwork for scaling renewable resources—over 10 GW hydropower potential and strong solar resources—into hydrogen production, enhancing energy security and industrial competitiveness. Co-benefits include green job creation, improved air quality, and strengthened public awareness of clean energy, fostering a just and inclusive energy transition.

7. Relevance to NDCs and other national priorities

Please identify relevance and contribution from the technical assistance to the Nationally Intended Contributions (NDC) and other relevant national prioritized efforts (TNAs, TAPs, NAPs, NAMAs, etc.). (maximum 2500 characters including spaces)

This technical assistance is directly aligned with Cambodia's Updated Nationally Determined Contribution 3.0 (2025), which commits to reducing greenhouse gas emissions by 55% and 16% for conditional and unconditional targets respectively by 2035 compared to business-as-usual. The energy and transport sectors are identified as priority mitigation areas, yet both continue to show rapid growth: energy demand tripled from 3.42 Mtoe in 2000 to 8.94 Mtoe in 2020 and is expected to double again by 2040, while registered vehicles reached 5.85 million in 2020, growing by 7.4% annually in Phnom Penh. Without intervention, energy sector emissions are projected to increase from 16.1 $MtCO_2e$ in 2020 to 45.5 $MtCO_2e$ in 2035.

The technical assistance also contributes to Cambodia's Long-Term Strategy for Carbon Neutrality (2021), which targets increased shares of renewable electricity (up to ~35% by 2050), alongside efficiency improvements and diversification of the power mix. By mapping hydrogen demand scenarios, production potential, and technology options, the roadmap will provide the missing policy framework to link renewable resources with low-carbon fuels, thereby supporting implementation of the LTS.

At the sectoral level, the project complements the Energy Efficiency and Conservation Master Plan (2020), which highlights the need to reduce energy intensity while meeting rapid demand growth, and supports the government's recognition that large-scale reliance on coal and fossil fuels threatens energy security and climate resilience. For the transport sector, the roadmap will help identify long-term options to reduce reliance on fossil fuel vehicles, consistent with Cambodia's goal to decarbonize transport in future national strategies.

Beyond climate strategies, the assistance also supports Cambodia's broader policy frameworks, including the Circular Strategy on Environment (2023–2028) and the Pentagonal Strategy (2023), both of which emphasize sustainable development, energy security, and pollution control. By providing a coherent framework for hydrogen, the roadmap will serve as a cross-cutting tool that links mitigation, adaptation, and green growth objectives, while also enabling Cambodia to position itself for future Technology Needs Assessments, Action Plans, and climate finance access.

8. Linkages to relevant parallel on-going activities:

Please identify relevant previous and ongoing public and private sector initiatives, projects or programmes that the CTCN assistance will specifically build on and contribute to. To the extent possible, please add practical and operational details on the linkages between existing activities and the CTCN assistance. (maximum 2500 characters including spaces)

The key deliverable of this technical assistance is the National Green Hydrogen Roadmap, which will establish a policy foundation to promote the hydrogen economy in Cambodia. Through this, it can contribute to the smooth implementation of Cambodia's plans as follows.

1. Draft Clean Energy Transition Roadmap towards Carbon Neutral Society in Cambodia, focus on three scenarios: Scenario 1 is Business as Usual (BAU) while Scenario 2 focuses on EVs, EE&C, RE, etc. The last scenario focuses on introduction of new technologies such as green hydrogen and Carbon Capture and Storage.

2. Methane Reduction Roadmap for Cambodia aims to strategically mitigate methane emissions to align with global climate targets and enhance national environmental, health and economic benefits. This roadmap supports the country's updated Nationally Determined Contribution (NDC 3.0) by outlining strategies to reduce methane, a potent greenhouse gas. The roadmap emphasizes reducing methane from key sectors including:

a. Agriculture: Focus on improving agricultural practices, particularly in rice paddy cultivation, through techniques like Alternate Wetting and Drying (AWD) to significantly cut methane emissions.

b. Waste management: address methane from solid and liquid waste.

c. Energy: transition from charcoal to renewable energy sources, improve energy efficiency, and promote electric vehicles.

3. National Energy Efficiency Policy 2022-2030 aims to reduce total energy consumption by at least 19% by 2030, with specific targets set for the residential (34% reduction), industrial (20% reduction), commercial and public building (25%), public services (29%), and transport (5%) sectors. The policy uses fiscal incentives, dedicated funds, and green financing to support energy efficiency measures across various sectors. Key initiatives include setting energy standards and labeling for appliances, developing Energy Service Companies (ESCOs), and public awareness campaigns to promote energy-saving habits and the transition from traditional biomass to modern energy sources.

4. Power Development Plan 2022-2040 is a long-term strategy to expand power generation and transmission, prioritizing renewable energy (RE) like solar and wind to meet growing demand and reduce environmental impact. The plan includes expanding solar PV and introducing wind power, halting new coal plant investments after 2024, enhancing the transmission grid to handle RE, and promoting energy efficiency to achieve energy security and carbon neutrality goals.

9. Anticipated follow up activities after this technical assistance is completed:

Please describe the expected future use of the outputs and deliveries produced by this technical assistance, after the CTCN implementation is completed, towards contributing to the anticipated impacts over time articulated in section 6. For example, what organizations or stakeholders will use the outputs of the technical assistance after it is completed, for what purpose, at what scale and scope the outputs and deliveries will be applied, when and what will be the next steps undertaken, etc. Please also describe the role of the NDE and project proponent(s) in post-implementation monitoring and reporting. (maximum 2500 characters including spaces)

The National Green Hydrogen Roadmap developed through this technical assistance will serve as a foundational reference for Cambodia's energy and climate policy beyond the duration of the project. The roadmap is expected to be formally taken up by the Ministry of Environment, the Ministry of Mines and Energy, and the Ministry of Industry, Science, Technology and Innovation as a guiding framework for integrating hydrogen into national development strategies and sectoral plans. It will inform government decisions on energy diversification, infrastructure investment, and emissions reduction, as well as support implementation of the NDC, Long-Term Strategy for Carbon Neutrality, and Circular Strategy on Environment.

Beyond government, the outputs will be used by universities, research institutes, and private sector actors as a technical basis for feasibility studies, site selection, and investment planning. The roadmap's data, demand forecasts, and technology scenarios will provide the foundation for pilot projects, R&D initiatives, and international cooperation. In particular, the roadmap is expected to underpin the preparation of concept notes and proposals to access international climate finance, including the Green Climate Fund, multilateral development banks, and bilateral donors.

The stakeholder consultations and capacity building activities carried out under this TA will establish a network of national experts and institutions capable of sustaining follow-up work. This network will play a central role in monitoring implementation of the roadmap, supporting policy refinement, and mobilizing new partnerships. Over time, the roadmap may also serve as a model for scaling hydrogen strategies to other ASEAN developing countries, positioning Cambodia as an early mover in the region.

The National Designated Entity (NDE) and the project proponent will remain central in the post-implementation phase. They will coordinate periodic reviews of roadmap progress, ensure monitoring and reporting on its application, and facilitate continued dialogue between government, private sector, and international partners. By doing so, they will safeguard the continuity of results, strengthen institutional ownership, and maintain momentum toward a low-carbon, resilient energy future.

10. Gender and co-benefits:

Each technical assistance must integrate gender mainstreaming activities and lead to gender and other co-benefits. At least 5% of the technical assistance budget need to be allocated to gender mainstreaming activities.

Gender benefits embedded in the implementation and as a result of activities:	*A gender mainstreaming analysis is mandatory to include for all technical assistances. A gender expert will be assigned to carry out an assessment and evaluation regarding gender mainstreaming and will develop the gender assessment action plan (GAAP) (a template will be provided). The GAAP will be followed throughout the implementation of the TA.* *The GAAP will include but not limited to the following components:* • *Analysis of gender disparities (assess the situation of gender disparities in the context of the project, including socio-economic, cultural and institutional factors. Identify areas where inequalities exist, etc.).* • *A monitoring tool to ensure 5 percent of the TA budget is allocated and used on gender mainstreaming activities.* • *Data collection (collect and analyze gender-disaggregated data to understand the specific needs and preferences of different genders).* • *Adaptive and gender-responsive design (evaluate the project design to ensure that it takes into account the different roles, responsibilities and interests of all genders. Analyze how the project can empower women and all other marginalized gender groups while promoting gender equality).* • *Gender and innovation ecosystem (evaluate how the proposed technologies could promote women as entrepreneurs).* • *Gender budgeting (budget allocation to guide gender mainstreaming activities. Also ensure that gender-specific needs are adequately funded).* *In addition, please describe all support to gender aspects and women's equality embedded into the Response Plan (please include a reference to the actual gender mainstreaming-related activities and outputs as described in section 3).* Stakeholder engagement activities (e.g. consultation workshops and capacity building sessions) will target gender-balanced participation and include sessions that specifically address opportunities for women in hydrogen-related industries, entrepreneurship, and policy-making. Training modules will be designed with a gender-responsive lens, enabling women professionals and young graduates to access knowledge on hydrogen technologies, project development, and financing mechanisms.
Other co-benefits embedded in the implementation and intended as result of the activities:	*Please describe any other co-benefits embedded in the implementation and as a result of the CTCN technical assistance (please include a reference to the actual activities and outputs as described in section 3).* Beyond gender, the TA will deliver broader co-benefits for Cambodian society. Transitioning toward clean hydrogen will reduce reliance on coal, leading to improved air quality and associated public health benefits.

	Increased use of domestic renewable resources for hydrogen production will strengthen energy security and resilience, while roadmap-guided investments are expected to stimulate green jobs, skills development, and technology transfer. Through awareness-raising and inclusive participation, the TA will also contribute to social acceptance of low-carbon infrastructure and a just energy transition.

11. Main in-country stakeholders in implementation of the technical assistance activities:

Using the table below, please list and describe the role of in-country stakeholders, participants and beneficiaries who will be involved in or directly consulted during implementation of the assistance.

In country stakeholder	Role in implementation of the technical assistance
National Designated Entity: Department of Science and Technology, General Directorate of Policy and Strategy, Ministry of Environment	– *Overall oversight of the TA* – *Day to day management and coordination of the TA, and communication with stakeholders* – *Provision of feedback (practical or technical issues) to the CTCN and the consultants during the implementation of the TA* – *Planning process/project management and co-organize consultation workshops and capacity building events* – *Support and guidance on data collection, survey, interview, bilateral meetings, etc.*
Ministry of Environment (MoE)	– *Lead drafting, revision, and finalization of the National Green Hydrogen Roadmap.* – *Ensure green hydrogen initiatives align with environmental protection goals.* – *Establish environmental standards and guidelines for hydrogen projects.* – *Conduct or oversee Environmental Impact Assessments (EIAs) for hydrogen projects.* – *Ensure hydrogen policies contribute to national and international commitments (e.g., Paris Agreement).* – *Provide inputs on biodiversity and ecosystem protection in roadmap development.*
Ministry of Mines and Energy (MME)	– *Ensure alignment of roadmap with national energy goals and climate commitments.* – *Establish regulations and standards for hydrogen production, storage, distribution, and use.* – *Oversee energy policies including renewable energy and hydrogen development.*
Ministry of Industry, Science, Technology and Innovation (MISTI)	– *Promote and support R&D on green hydrogen technologies (production, storage, utilization).* – *Support integration of hydrogen into industrial applications.* – *Provide technical and industrial insights for roadmap development.*

	– *Develop and implement training for engineers, technicians, and professionals.* – *Support implementation of regulations and standards for industrial hydrogen use.*
Ministry of Public Works and Transport (MPWT)	– *Participate in policy and regulation development on hydrogen in the transport sector.* – *Promote R&D for hydrogen applications in mobility.* – *Support utilization of hydrogen technologies in vehicles and transport systems.*
Research and Academic Institutions	– *Conduct applied research on hydrogen technologies and applications.* – *Provide technical training and capacity building.*
Private Sector and Utilities	– *Electricité du Cambodge (EDC), private renewable developers, and industry associations: Potential implementers of hydrogen projects; provide perspectives on investment feasibility, infrastructure needs, and market opportunities.*

12. SDG Contributions:

Instructions: Please complete the grey section below for ***a maximum of three SDGs*** *that will be advanced through this TA. A complete list of SDGs and their targets is available here: https://sustainabledevelopment.un.org/partnership/register/.*

Goal	Sustainable Development Goal	Direct contribution from CTCN TA (1 sentence for top 1-3 SDGs)
1	End poverty in all its forms everywhere	
2	End hunger, achieve food security and improved nutrition, and promote sustainable agriculture	
3	Ensure healthy lives and promote well-being for all at all ages	
4	Ensure inclusive and equitable quality education and promote life-long learning opportunities for all	
5	Achieve gender equality and empower all women and girls	
6	Ensure availability and sustainable management of water and sanitation for all	
7	Ensure access to affordable, reliable, sustainable, and modern energy for all (consider adding targets for 7)	
	7.1 - By 2030, ensure universal access to affordable, reliable and modern energy services	
	7.2 - By 2030, increase substantially the share of renewable energy in the global energy mix	The TA enables Cambodia to harness renewable resources for green hydrogen, diversifying its power mix and fostering international collaboration on sustainable energy
	7.3 - By 2030, double the global rate of improvement in energy efficiency	
	7.a - By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	
	7.b - By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support	
8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	
9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	The TA strengthens Cambodia's institutional and technical capacity to integrate hydrogen

		technologies into industry, promote R&D, and guide sustainable infrastructure development.
10	Reduce inequality within and among countries	
11	Make cities and human settlements inclusive, safe, resilient and sustainable	
12	Ensure sustainable consumption and production patterns	
13	Take urgent action to combat climate change and its impacts	
	13.1 - Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	
	13.2 - Integrate climate change measures into national policies, strategies and planning	The TA provides a National Green Hydrogen Roadmap that embeds climate measures into energy and transport strategies, while building awareness and institutional capacity to advance Cambodia's carbon neutrality goals.
	13.3 - Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	
	13.a - Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible	
	13.b - Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities	
14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	
15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	
16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	
17	Strengthen the means of implementation and revitalize the global partnership for sustainable development	

13. Classification of technical assistance:

Please indicate primary type of technical assistance. Optional: If desired, indicate secondary type of technical assistance.

Please tick off the relevant boxes below	*Primary*	*Secondary*
☐ 1. Decision-making tools and/or information provision	☐	☐
☐ 2. Sectoral roadmaps and strategies	■	☐
☐ 3. Recommendations for law, policy and regulations	☐	☐
☐ 4. Financing facilitation	☐	☐
☐ 5. Private sector engagement and market creation	☐	☐
☐ 6. Research and development of technologies	☐	☐
☐ 7. Feasibility of technology options	☐	☐
☐ 8. Piloting and deployment of technologies in local conditions	☐	☐
☐ 9. Technology identification and prioritisation	☐	■

Please note that all CTCN technical assistance contributes to strengthening the capacity of in country actors.

14. Monitoring and Evaluation process

Upon contracting of the implementing partners to implement this Response Plan, the lead implementer will produce a monitoring and evaluation plan for the technical assistance. The

monitoring and evaluation plan must include specific, measurable, achievable, relevant, and time-bound indicators that will be used to monitor and evaluate the timeliness and appropriateness of the implementation. The CTCN Technology Manager responsible for the technical assistance will monitor the timeliness and appropriateness of the Response Plan implementation. Upon completion of all activities and outputs, evaluation forms will be completed by the (i) NDE about overall satisfaction level with the technical assistance service provided; and (ii) the Lead Implementer about the knowledge and learning gained through delivery of technical assistance. Furthermore, the NDE together with the project proponent(s) will complete a periodic post-implementation form to track the impact of the activities beyond the technical assistance end date.

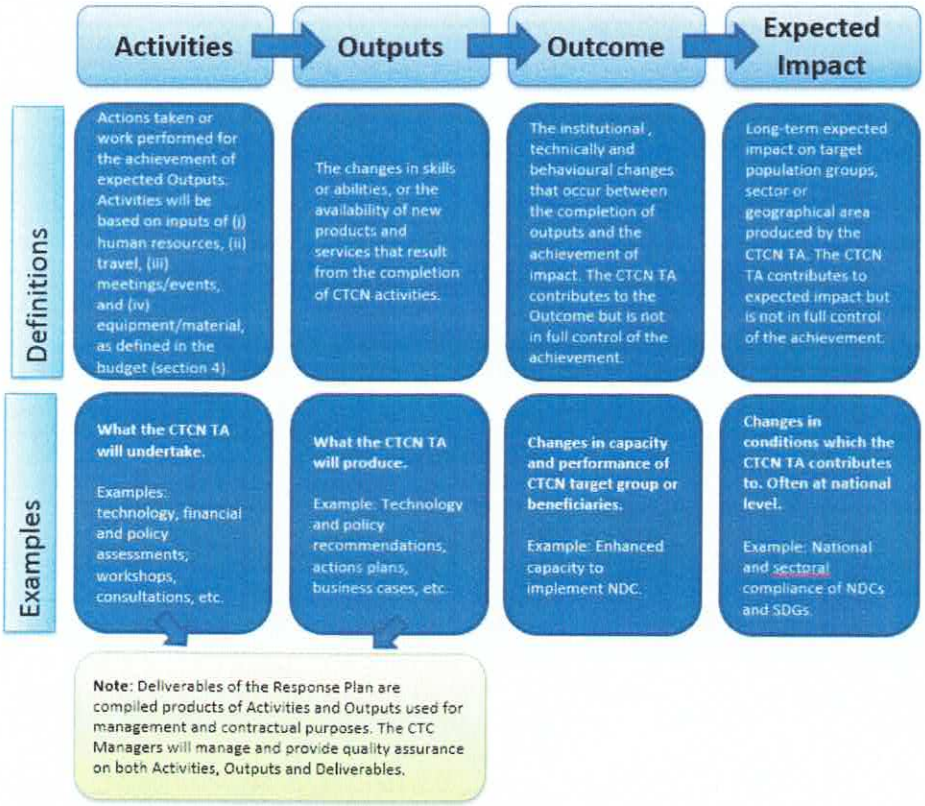
Annex 1: Guidance note for designing a Response Plan (to be deleted when submitting the Response Plan)

1. Objective of the Response Plan

The Response Plan is developed by CTCN specialists in response to a country request for technical assistance. It constitutes the Terms of Reference of the CTCN technical assistance that will be provided to the country and it provides the formulation of and subsequent basis for the monitoring and evaluation of the Response Plan implementation, as well as its expected outcomes and anticipated impacts.

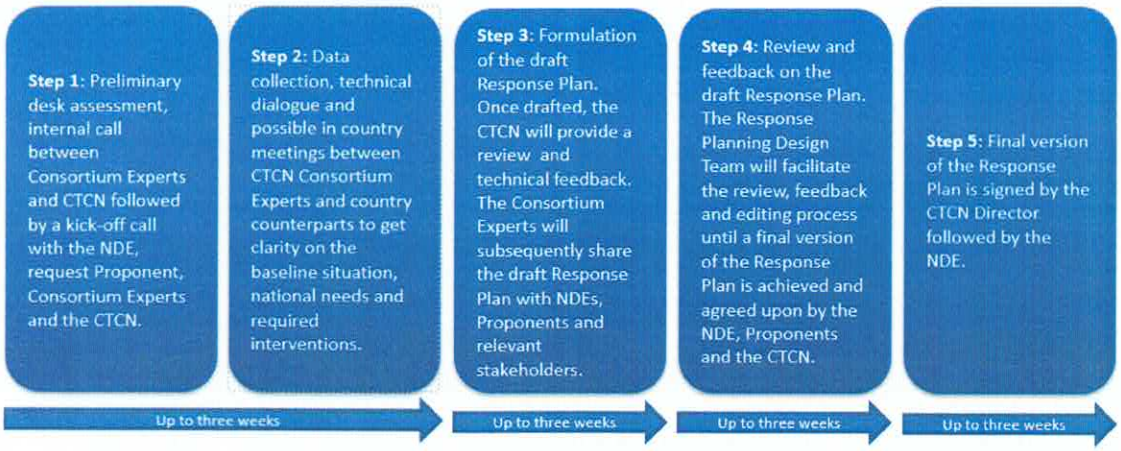
2. Results chain and Logical Framework Approach to be defined in the CTCN Response Plan

The result chain is the causal sequence that stipulates the necessary flow of actions and processes to achieve desired objectives and results – beginning with inputs, moving through activities and outputs, and culminating in individual outcomes. The outcome will contribute to the desired impact in the society. The Logical Framework Approach is an analytical process used to support objectives-oriented project planning and management. It provides a set of pre-defined concepts which are used as part of an iterative process to aid structured and systematic analysis and management of the CTCN technical assistance.



3. Process for designing the Response Plan

The Response Planning process should be completed over a period of up to 60 working days (12 weeks). Indicative steps and related timelines are laid out below:



4. Design Considerations

In order to maximize the impact of the technical assistance provided by the CTCN and provide an effective M&E process, the Response Plan should integrate as much as possible the considerations below:

Climate Technology focus: The Response Plan should have a clear focus on climate technologies, and identify activities that enable the identification, development, deployment or diffusion of one or several specific technologies (including equipment, techniques, knowledge and skills).

Barrier removal / Problem solving: The activities should contribute to address the specific problem statement identified in the Request. The barriers identified should be those hampering the identification, development, deployment or diffusion of one or several climate technologies or climate actions. Therefore, it may be necessary to limit the CTCN Response Plan to a set of activities for technical assistance commonly agreed with the NDE (and Proponent when needed) compared to the original request submitted. The CTCN will liaise with NDEs and Proponent in case the scope of the technical assistance deviates from the original request.

Use of the CTCN assistance by stakeholders: The Response Plan should identify clearly how the products of the CTCN assistance will be used in the short term once support is delivered, by who and when, to ensure it will lead to specific impacts in the country. The activities should engage the stakeholders that will use the concrete results of the assistance to deploy the technologies, including from the private sector, the public sector, research institutions, etc.

Within the scope of CTCN resources: The cost of the technical assistance provided by the CTCN cannot exceed USD 250,000 per Response Plan. Therefore, it may be necessary to prioritize activities and limit the CTCN Response Plan to a set of priority activities commonly agreed with the Proponent and the NDE to remain under this value. Under section 4 of the Response Plan template, an indicative activity based budget should be presented. The proposed budget is indicative and should present an estimated costing range per activity, output as well as a total costing range for the delivery of the

Response Plan. Once the Response Plan is finalised and published for tendering, interested parties will provide competitive offer against the indicative budget.

CTCN activities and outputs should be linkable to monitoring and evaluation indicators: All proposed activities and outputs must be linkable to monitoring and evaluation indicators that are specific, measurable, achievable, relevant, and time-bound. The monitoring and evaluation process and corresponding indicators will be developed by the Lead Implementer as part of the work plan and will allow the CTCN technology Manager to monitor the timeliness and appropriateness of the implementation.

Synergies with existing efforts: The Response Plan should focus on activities that are not already being fully supported or that are in the process of being fully supported by another national, regional or international organization. Synergies and complementarity also require that the CTCN assistance is not duplicating past activities. It is possible in the Response Plan to indicate co-financing from the government, the Proponent or another stakeholder, that will maximize the effectiveness of the CTCN assistance.

Gender mainstreaming: The CTCN mission is to build or strengthen developing countries' capacities to identify technology needs, to facilitate the preparation and implementation of technology projects and strategies taking into account gender considerations. The Response Plan must therefore describe how gender considerations will be included and monitored within the proposed activities, and any gender co-benefits that will be gained as a result of implementing the CTCN technical assistance. For that purpose, a Gender Assessment and Action Plan (GAAP) template has been designed to be followed by the implementation partner.