Technical Assistance Closure Report Template

Objective of the technical assistance (TA) Closure Report:

- To communicate publicly in one document a summary of progress made and lessons learned during the TA towards the anticipated impact (sections 1-4).
- To document qualitative and quantitative data collected during TA, for use in donor and UN reporting (Annex 1).

Steps for completing the TA closure report:

1. The lead TA implementer submits the closure report at the end of the technical assistance as a final deliverable. The TA closure report will capture outputs, outcomes and impacts of all activities conducted under the TA. Please copy and summarise relevant material from previous TA outputs/deliverables and the Response Plan, as relevant.
2. A CTCN Manager will review and revise the closure report before final approval by the CTCN Deputy Director.

Important note on public and internal use of the closure report:
Once approved by the CTCN Deputy Director, the TA closure report will be a public document available on the CTCN website www.ctc-n.org. Selected content will be used for targeted communication activities. Annex 2 is for internal use only and will not be publicly available.

Closure Report for CTCN Technical Assistance

1. Basic information

Title of response plan	*Support for capacity building for solar technicians – installation, maintenance, and upkeep of solar equipment*
Technical assistance reference number	*2019000022*
Country / countries	*Burundi*
NDE organisation	*Geographic Institute of Burundi (IGEBU)*
NDE focal point	*Astere Nindamutsa*
NDE contact information	*rntiharirizwa@gmail.com*
Proponent focal point and organisation	*Mr. Ciza Willy* *Directeur des Energies Renouvelables et Efficacité Energétique; cizwilly@yahoo.fr*
Designer of the response plan	*Jal Desai, NREL*
Implementer(s) of technical assistance	*National Renewable Energy Laboratory (NREL)*
Beneficiaries	*Solar Technicians/Trainers* *Burundi Government*
Sector(s) addressed	*Renewable Energy*
Technologies supported	*Solar Photovoltaics (PV)*
Implementation start date	*(24.03.2021)*
Implementation end date	*(29.04.2021)*
Total budget for implementation	$150,000

Description of delivered outputs and products as well as the activities undertaken to achieve them. In doing so, review the log frame of the original response plan and refer to it as appropriate	**Output 1:** **Development of implementation planning, communication documents, and training materials** Deliverable 1.1 a. Detailed Workplan b. Monitoring and Evaluation plan c. CTCN Impact Description d. Closure Report Deliverable 1.2 a.List of Training Participants Deliverable 1.3 a. Draft Training Plan and Materials Deliverable 1.4 a.Final Training Plan and Materials (English) Deliverable 1.5 a.Translated Training Plan and Materials to French **Output 2: Conduct Training** Deliverable 2.1: Detailed training itinerary Deliverable 2.2: Conduct Training Deliverable 3: Training Participants Feedback **Output 3:** **Development of a strategy and plan for a renewable energy promotion center** Deliverable 3.2 Strategy and plan for renewable energy promotion center
Methodologies applied to produce outputs and products	• Consulted with GLICE (local non-profit) to get feedback on Training Materials and conducted the training workshop • Coordination with NDE and project proponent to validate participants and organize training logistics • Hands-on training for the participants • For Deliverable 3.2, information was collected based available online resources through desktop research and from past international project experiences.

Reference to knowledge resources	Enabling Environments and Challenges to Technology Development and Transfer report was referred. https://unfccc.int/ttclear/tec/enablingenvironments.html
Deviations	*Output 2* *Deliverable 2.2: NREL experts did not travel to Burundi due to COVID-19 travel restrictions to conduct training. NREL partnered with a local non-profit organization, GLICE to deliver in-person training. GLICE has conducted several solar PV trainings in the past. NREL trained GLICE trainers virtually on the materials (theory and practical) that NREL had prepared.* *Output 3* *NREL did not receive required data/information from the project proponent after several outreach efforts by NREL and CTCN. NREL based on limited data available online and through previous experiences gathered relevant information on this topic and wrote the report.*
Anticipated follow-up activities and next steps	While there are no specific activities planned at this stage the following next steps are suggested: 1. *Follow up with the participants (trainers) after a couple of months to see how they have utilized the training materials and training and have seen any improvements in the installation of solar PV* 2. *Continued training of solar PV engineers* 3. *Continued improvement of training materials as solar PV equipment evolves* 4. *Implementation of the Renewable Energy Promotion Centre*

2. Lessons learned

	Lessons learned	**Recommendations**
Lessons learned from the CTCN TA process	Transparent and continuous communications with the CTCN was essential to ensure a mutual understanding of CTCN expectations and the challenges the TA faced in delivering the assignment.	Project Proponent's buy-in and active participation and engagement would have helped a lot.
Lessons learned related to climate technology transfer	Successful training on solar PV was carried out which improved the knowledge and understanding of the participants on how to effectively install and maintain the PV systems. Participants concerns were addressed. Capacity building is a big component. One of the	To ensure the knowledge and know-how transfer necessary for successful technology transfer and implementation, it is important to promote local climate change councils, at school/college level as part of curriculum, and similar programs that can accelerate planning process if strongly supported by government officials.

	common feedback results was to extend the training duration from 5 days to 8-10 days. Assuring quality of PV modules, both imported and manufactured domestically, will enable an uptake in solar PV projects, and assure project developers and investors that the life of the system is reliable to achieve ROI. Also, quality systems that are properly installed significantly reduce O&M costs. These factors are important to assuring successful technology transfer.	Promote the national or regional structures such as renewable energy promotion centres that can serve as various functions for e.g. (workforce development/capacity building, can attract financing opportunities, training centre, etc.) On-going trainings as system components and technologies, such as PV modules, quickly evolve. Maintain awareness of improvements so quality standards are adjusted to match improvements and capacity building on new evolving technologies.

3. Illustration of the TA and photos

For communication purposes, please provide 2-4 Power Point slides, including illustrations or charts, describing barriers, opportunities, methodology, activities, outputs and achieved results. The illustrations must be copied into the TA Closure report but must also be delivered as power point files. Also, please provide at least five high-resolution pictures in jpg format, capturing technical assistance. The pictures should illustrate how the TA has impacted the lives of the beneficiaries in particular and the communities in general.

Les énergies renouvelables au Burundi : Défis et opportunités, enseignements issus des meilleures pratiques internationales

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CTCN
CLIMATE TECHNOLOGY CENTRE & NETWORK

UN environment
United Nations Environment Programme

UNIDO

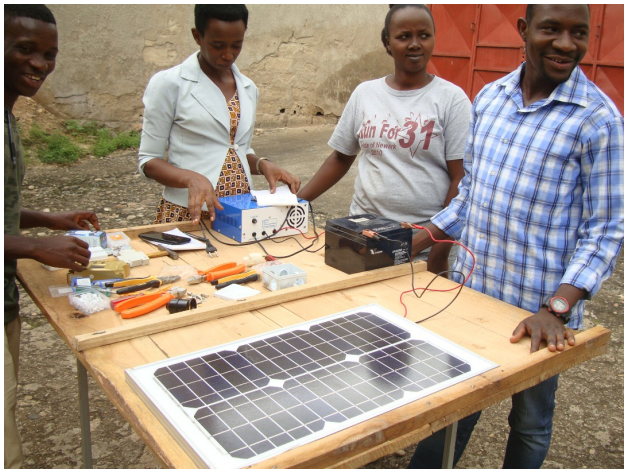
Programme de formation des techniciens en solaires photovoltaïques (PV)

Renforcement de capacités des techniciens solaires: installation, maintenance et entretien de équipements solaires

Bujumbura, Burundi
6-10 décembre 2021

CTCN NREL

CTCN
CLIMATE TECHNOLOGY CENTRE & NETWORK



4. Impact Statement

The information in the table below will be used to communicate results and anticipated impacts of this technical assistance publicly. Please copy information from impact statement developed in the M&E Plan and update as relevant.

Challenge	A low percentage of Burundi's population has electricity access, particularly in rural areas. Burundi has embarked on a national solar PV-based rural electrification program. But the program has difficulties related to a shortage of trained technicians capable of properly installing & maintaining solar PV systems & installed solar PV facilities are often out of order or not performing according to their designed output, which contributes to creating negative perception of solar PV as an energy solution.
CTCN Assistance	The CTCN technical assistance focused on the following outputs: • Develop training methodology and materials in French language for a 5-day workshop. • Manage and deliver PV Installer training the trainer program at in-country location. • Support development of a strategy and plan for a renewable energy promotion centre in Burundi that is designed to support innovation, build awareness, and increase adoption and deployment of renewable energy technologies.
Anticipated impact	• Increased amount of trained solar PV technicians • Restoration of existing & defunct installations. (Indicator 2) • Higher employment & more products would be available in the market which would increase their income. (Indicators 2&3) • Greater interest in solar energy will reduce deforestation & address health problems linked to air pollution. (Indicator 2)
Co-benefits: Achieved or anticipated co-benefits from the TA	• Solar PV energy can reduce the need for other energy sources, such as firewood. • Solar PV can reduce pollution from other energy sources (e.g., wood burning and charcoal). • Solar PV can provide cost-effective energy for the energy impoverished.

	• Solar PV can be used for irrigation and water pumping. • Access to solar energy can enhance gender equality by removing or reducing the need to gather other energy sources and by enabling new entrepreneurial endeavors. • Solar PV can provide energy for lighting, enabling studying after dark enhancing education. • Will contribute to achieve this nation goal of providing modern energy especially in rural areas. • Increased and targeted financing of renewable energy projects.
Gender aspects of the TA	Women were represented equally compared to men in all training activities carried out during the implementation of this response plan. Women were included in the development of training materials and women's interests and perspectives were considered Furthermore, it was ensured that the intended role of the trained female experts in the team will be strengthened to ensure equal opportunities.
Anticipated contribution to NDC	Burundi's updated NDCs from 2021 prioritize the increase of solar power capacity (Accroitre la capacité de production de l'énergie par le système photovoltaïque) as a key mitigation action. This technical assistance has supported these ambitions by focusing on increasing awareness and strengthening managerial and technical capacities around solar PV system installation & maintenance.
The narrative story	A low percentage of Burundi's population has electricity access, particularly in rural areas. Furthermore, the country relies on fossil fuels for energy generation, increasing GHG emissions of the country. Burundi has set a goal of diversifying its primary energy mix to take advantage of favourable indigenous renewable energy resources. One key source of diversification will be electricity generated by solar photovoltaic (PV) technologies, which will help to reduce carbon emissions and dependency on imported fuel, address adaptive capacity to climate change, improve

	energy access, & increase national generating capacity. Therefore, Burundi has embarked on a national solar PV-based rural electrification program. But the program has difficulties related to a shortage of trained technicians capable of properly installing & maintaining solar PV systems & installed solar PV facilities are often out of order or not performing according to their designed output, which contributes to creating negative perception of solar PV as an energy solution. In this context, Burundi has requested CTCN's technical assistance to develop and deliver a Solar PV training the trainers programme, and to develop a strategy and plan for the implementation of renewable energy promotion centre. The anticipated outcome of this project was to establish a technically competent local solar PV trainer & installer workforce in Burundi, trained to install, operate, & maintain solar PV systems as well as to replicate training. The assistance helped to prepare the creation of a renewable energy promotion centre in Burundi, by sharing knowledge, best practices, & examples for devising strategies to set up groups to promote research & innovation in solar energy. Through the capacitation of the renewable energy promotion centre for technicians and innovation groups, the continuity of optimally designed, correctly installed, & properly maintained PV systems will be insured, thus helping to deliver a sustainable low-carbon energy future for Burundi.
Contribution to SDGs A complete list of SDGs and their targets is available here: https://sustainabledevelopment.un.org/partnership/register/	*https://sustainabledevelopment.un.org/partnership/register/.* *SDG1: End poverty in all its forms everywhere* • *Solar PV can provide lost-cost energy and job opportunities.* *SDG5: Achieve gender equality and empower all women and girls.* • *Access to solar energy can enhance gender equality by removing or reducing the need to gather other energy sources and by enabling new entrepreneurial endeavours.* *SDG13: Take urgent action to combat climate change and its impacts.* • *Supports Burundi to mitigate GHG emissions from the electricity sector by scaling up electricity generated from renewable energy resources. This TA aligns with the Point 7 of the National Strategy on Climate Change which*

	emphasizes capacity building (training, awareness-raising etc.)

Annex 1 Technical assistance data collection

Please add quantitative and qualitative values for the indicators selected in the M&E plan and monitored throughout the technical assistance in the tables below. Indicators which have been monitored in addition to the proposed indicators below may be added at the end of table A. Non-relevant indicators should be left blank.

A. Output and outcome indicators

Indicator Please note indicators below highlighted as **anticipated**	**Quantitative value** *Numerals only; disaggregates must sum to the total*	**Qualitative description** *List the various elements corresponding to the quantitative value as well as timelines and responsible institutions*
Total number of events organized by proponents and implementing partners	*1*	*1 training of 5 days long. Not including the weekly regular scheduled meetings with the GLICE and Project Proponent*
Number of participants in events organized by proponents and implementing partners	*22*	
a) Number of men	*10*	*Plus 3 Trainer (Male)*
b) Number of women	*8*	*Plus 1 Trainer (Female)*
Number of climate technology RD&D related events	*n/a*	
Number of participants in climate technology RD&D events	*n/a*	
a) Number of men		
b) Number of women		
Number of training organized by proponents and implementing partners	*1*	*Climate Technology Centre & Network (CTCN)* *Capacity Building for Solar Technicians: Installation, Maintenance, and Upkeep Of Solar Equipment* *Bujumbura, Burundi* *December 6th- 10th, 2021*
Number of participants in trainings organized by proponents and implementing partners	*22*	
a) Number of men	*10*	*3 Trainer (Male)*
b) Number of women	8	*1 Trainer (Female)*
Total number of institutions trained	*7*	
a) Governmental (national or subnational)	2	*Geographic Institute of Burundi (IGEBU)* *National Energy Office (DGE)*
b) Private sector (bank, corporation, etc.)	4	ICTS-Group AEMS

		BAC H C Lake
c) Nongovernmental (NGO, University, etc.)	1	*GLICE*
Percentage of participants reporting satisfaction with CTCN training (from CTCN training feedback form)	75%	
Percentage of participants reporting increased knowledge, capacity and/or understanding as a result of CTCN training (from CTCN training feedback form)	75%	*Survey results were anonymized to get "true: feedback.*
a) Percentage of men		
b) Percentage of women		
Total number of deliverables produced during the assistance (excluding mission, progress and internal reports)	*8*	• *5-day long training material package (theory and practical)* • *Training Report* • *Survey Results* • *Renewable Energy in Burundi Report*
a) Number of communication materials, including news releases, newsletters, articles, presentations, social media postings, etc.	5	*5- day training package (426 pdf pages plus other references). The training was divided into theoretical and practical.* *A 30-minute program on Radio NDERAGAKURA in French in Kirundi* *A report during the evening news on BN-P TV* *An infomercial by ARGOS TV* *On Twitter account of an online magazine Jimbere*
b) Number of tools and technical documents strengthened, revised or developed	1	*Renewable Energy in Burundi: Challenges and Opportunities, Learning from International Best Practices*
c) Number of other information materials strengthened, revised or created (For example training and workshop reports, Power Points, exercise docs etc.)	2	*Workshop Reports* *Survey Results*
Total number of policies, strategies, plans, laws, agreements or regulations supported by the assistance		
a) Adaptation related		
b) Mitigation related		
c) Both adaptation- and mitigation related		
Anticipated number of policies, strategies, plans, laws, agreements or regulations proposed, adopted or implemented as a result of the TA	*n/a*	*n/a*
a) Adaptation related		

b) Mitigation related		
c) Both adaptation- and mitigation related		
Anticipated number of technologies transferred or deployed as a result of CTCN support	*1*	*Solar Photovoltaics (PV)*
Anticipated number of collaborations facilitated or enabled as a result of technical assistance	*2*	
a) Number of South-South collaborations	-	*List the names of the organisations (excluding the CTCN or TA implementers)*
b) Number of RD&D collaborations	-	*List the names of the organisations (excluding the CTCN or TA implementers)*
c) Number of private sector collaborations	2	*ITCO Company (Solar PV company)* *RenewGenz IZUBA (Solar PV company)*
Number of countries with strengthened National System of Innovation as a result of CTCN support	n/a	
Insert any additional indicators here		

B. Core impact indicators

Please fill in the tables for anticipated impacts of the CTCN assistance. Every technical assistance should contribute to at least one of the indicators below. For guidance on how to report on core indicators see the '[M&E Guidance Document for TA Implementers]'.

Core indicator 1	**Anticipated metric tons of CO_2 equivalent (CO_2e) emissions reduced or avoided as a result of CTCN TA** *Please add your calculations in word or excel format as an Annex to this Closure Report, where applicable.*	
	Anticipated metric tons of CO_2e reduced or avoided as a result of the TA **on annual basis**	Anticipated metric tons of CO_2e reduced or avoided as a result of the TA **in total**
Quantitative value *(emissions reductions)*	*Total number (numerals only, no rounding or abbreviations)*	*Total number (numerals only, no rounding or abbreviations)*
Unit	tCO_2e	tCO_2e
GHG assessment boundary (project emissions) Identify expected post-TA activities, associated effects and assess boundary for quantification of GHG emission reductions	*Not Calculated*	*Not Calculated*
Baseline emissions	*Not Calculated*	*Not Calculated*

Describe baseline scenario, baseline candidates, emission factors and emissions calculated		
Methodology Explain the method or process of verifying the indicator and how data was gathered	*N/A*	*N/A*
Assumptions Describe assumptions made during calculation and quantification of GHG reductions	*N/A*	*N/A*

Core indicator 2	**Anticipated increased economic, health, well-being, infrastructure and built environment, and ecosystems resilience to climate change impacts as a result of technical assistance** *Please provide a **qualitative** description of the anticipated impacts on the categories below*
Infrastructure and built environment Anticipated increased infrastructure resilience (avoided/mitigated climate induced damages and strengthened physical assets)	*Increased number of installed and operational PV systems to reduce dependence on fossil fuels & accelerate decarbonization. Increase energy resilience & security.* *Anticipated new solar installations which would increase the total installed kW capacity. (Need proponent input for this metric)* *Anticipated increased number of installers with increased skills and support work force development.*
Ecosystems and biodiversity Anticipated increased ecosystem resilience (areas with increased resistance to climate-induced disturbances and with improved recovery rates)	-
Economic Anticipated increased economic resilience (e.g. less reliance on vulnerable economic sectors or diversification of livelihood)	*Supports job creation, economic growth, and improved livelihood as more adoption of RE occurs and jobs are created.* *Delivers economic resilience through reduction in dependence on fossil fuels.*
Health and wellbeing Anticipated increased health and wellbeing of target group (e.g. improved basic health, water and food security)	*Access to solar energy can enhance gender equality by removing or reducing the need to gather other energy sources and by enabling new entrepreneurial endeavours.*

Core indicator 3	Anticipated number of direct and indirect beneficiaries as a result of the TA	
	Quantitative value	**Means of verification**
Total beneficiaries	*132*	
Number of adaptation beneficiaries	-	
Number of mitigation beneficiaries	-	
Number of adaptation-and mitigation beneficiaries	22 direct beneficiaries 110 indirect beneficiaries	Direct beneficiaries: 100% of participants and trainers in the training conducted. Indirect beneficiaries: each participant (direct beneficiary) is assumed to train or transfer its knowledge at least to 5 other people (indirect beneficiaries) on the lessons and topics learned in the solar PV training.

Core indicator 4	Anticipated amount of funding/investment leveraged (USD) as a result of TA (disaggregated by public, private, national, and international sources, as well as between anticipated/confirmed funding)			
	Quantitative value confirmed *in USD*	**Quantitative value anticipated** *in USD*	**Qualitative description** *List the institutions, timelines, and description or title of the investment*	**Methods** *Describe methods used for quantification of funds leveraged*
Total funding	-	-	-	-
Anticipated amount of public funding mobilised from national/domestic sources	-	-	-	-
Anticipated amount of public funding mobilised from international/ regional sources	-	-	-	-
Anticipated amount of private funding mobilised from national/domestic sources	-	-	-	-
Anticipated amount of private funds mobilised from international/regional sources	-	-	-	-

Annex 2 (for internal use – to be filled in by the CTCN)

CTCN evaluation

This section will be completed by the relevant CTCN Technology Manager.

- Evaluation of the timeliness of the TA implementation as measured against the timeline included in the response plan;
- Evaluation of TA quality as defined in the response plan;
- Overall performance of the Implementers;
- Overall engagement of the NDE and Proponent;
- Lessons learned on the CTCN process and steps taken by the CTCN to improve.