

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	Etude d'Identification et d'Evaluation des Technologies et Procédés Industriels utilisées dans les industries productrices de ciment au Congo
Technical assistance reference number	2020000039
Country / countries	Republic of Congo (Brazzaville)
NDE focal point and organisation	Mr. Madzou Moukili Email : madzou14@gmail.com Ministère du Tourisme et de l'Environnement Tour Nabemba, 22e étage, Brazzaville, Congo, BP 2499 Brazzaville, Congo
Proponent focal point and organisation	Claude François Itsouhou Email : oubiladjo@gmail.com , claudef44@hotmail.com Chef de file du Groupes des experts des inventaires de gaz à effet de serre (IGES) du secteur procédés industriels et Utilisation des produits (PIUP)
Designer of the response plan	CTCN
Implementer(s) of technical assistance	<i>Instruction: Implementers and other partner organisations are defined as the people and institutions engaged in the implementation of the TA</i> Cementis International Glärnischstrasse 1, CH-8118 Pfaffhausen, Switzerland

	Cemcon Engineering and Consulting Effingerstrasse 1, 3011 Bern, Switzerland
Beneficiaries	<i>Instruction: Beneficiaries are defined as people and institutions benefitting from the TA</i> Government of the Republic of Congo
Sector(s) addressed	Industry, infrastructure
Technologies supported	<i>Instruction: Please indicate the type of technologies supported by this assistance. Technologies may be identified from the CTCN taxonomy of climate sectors and technologies (download in pdf format and choose from column C): https://www.ctc-n.org/resources/ctcn-taxonomy</i> <i>If technologies supported are not found in the taxonomy, please suggest.</i> The project aimed at a transfer of know of know-how rather than technologies on the following items: <ul style="list-style-type: none"> • Execution of a thermal and electrical energy audit of a cement plant • Production of low CO2 cement • Use of low CO2 combustible
Implementation period and total duration in months	April 1st, 2021 to June 30th 2022 (15 months)
Total budget for implementation	<i>Instruction: In addition to financial value of the technical assistance, please also include if any pro bono or in-kind support has been provided by either the implementer and/or the national counterparts.</i> USD 228,425
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	The project has delivered the following outputs/products: <ul style="list-style-type: none"> - Thermal and energy audit of cement plants in Congo Brazzaville - Audit manuals and guidelines - GHG emissions calculation methodologies and evaluation of GHG emissions levels
Methodologies applied to produce outputs and products	<i>Instruction: Examples of methodologies: E.g. cost-benefit analysis; surveys and structured interviews with key stakeholders etc.</i> Surveys and structured interviews with key stakeholders, consultants own expertise and data base
Deviations	<i>Instruction: Please describe any deviations from the response plan against the actual implemented activities, outputs and products</i> It was initially planned to decide on two cement production units to be audited out of all cement plants in Congo. However, once the project has started we realise that: <ul style="list-style-type: none"> • two plants were definitely closed, • one was temporarily closed, and

	<ul style="list-style-type: none"> • one didn't want to collaborate with the project. <p>Therefore the choice of the two plants for reference was dictated by the lack of other option. This didn't affect the outcome of the project since the two reference plants were the largest and represented more than 2/3 of the total GHG emissions from the Congolese cement industry</p>
Anticipated follow-up activities and next steps	<p><i>Instruction: Please describe planned follow-up activities after completion of technical assistance, including information on involved stakeholders and anticipated timelines.</i></p> <ul style="list-style-type: none"> • Undertake a Low CO2 Roadmap for the Congolese cement industry aiming at agreeing on mitigation levers, emission targets, and policy asks needed to achieve the targets • Adaptation of regulatory framework to allow for the production and use of Low CO2 cement

2. Lessons learned

	Lessons learned	Recommendations
Lessons learned from the CTCN TA process	<p><i>Describe lessons learned from following the steps of the TA process and interacting with the CTCN Secretariat. What were the challenges and essential factors contributing to successful implementation</i></p> <p>Main obstacles were:-</p> <ol style="list-style-type: none"> 1. Lack of collaboration between the Minister of Environment and the Minister of Industry that induced significant delays in the project start 2. Lack of communication / agreement between the Authorities and the cement industry before the launch of the project 	<p><i>Recommendations include</i></p> <ul style="list-style-type: none"> • Steps which could be taken to improve the CTCN TA process <p>CTCN should make sure that the main stakeholders agree on what the project execution require from each of them</p> <ul style="list-style-type: none"> • Considerations for increased success of similar efforts (i.e. regulatory, legal, stakeholders, communication, etc.)
Lessons learned related to climate technology transfer	<p><i>Describe lessons learned, opportunities, and barriers for the use and deployment of the technology or technologies supported by the TA. The objective is to identify specific</i></p>	<p><i>Recommendations include</i></p> <ul style="list-style-type: none"> • Risk mitigation measures • Identified opportunities for over-coming barriers • Long-term sustainability (e.g. building endogenous

	<p><i>success factors for technology transfer</i></p> <p>The particular nature of this project (upgrade from IPCC Tier 1 to Tier 2 & 3) if not a technology transfer per say but rather the transfer of know how in terms of emission reporting.</p>	<p><i>capacities, funding opportunities, etc.)</i></p> <p>Definitely the economic factor is key in any project involving the private sector. In other words, being able to offer grants and subsidies to cement plants willing to invest into climate change when such investment doesn't generate acceptable return is a must.</p>
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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.

TV Broadcasts of the final presentation:

<https://www.linkedin.com/feed/update/urn:li:activity:6948871608270745600/>

Audit énergétique et feuilles de calcul d'usines sélectionnées (Del. 2.4)

Balance Thermique standard d'un four

Entrées	Non3h	Non3h	°C	kJ/kg cl
	Ag/h	Ag/kg cl		
Alimentation du four	202680	649	15	60.6
Carbone organique total de l'alimentation four	852	0.001	-	28.8
-----	-----	-----	-----	-----
Valeur thermique sensible totale du combustible	26.600	0.020	48	3.9
Valeur calorifique totale du combustible	26.600	0.020	-	2928.5
Valeur thermique sensible totale air primaire et de transport	4.574	0.003	48	3.3
Air froid vers refroidisseur	24.773	1.910	48	44.7
Air parasite total du système	25.623	0.773	28	1.1
Total				3078.4
Sorties				
Chaleur de la constitution du clinker	-	-	-	1.988
Gas de sortie du préchauffeur (humide)	164.011	1.014	220	546.9
Perte de possession du préchauffeur (sec)	12.800	0.006	220	31.9
Evaporation de l'alimentation four	1.200	0.001	-	24.4
CO dans le gaz de sortie du préchauffeur	33	0.001	-	3.3
Air séché	199.216	0.954	220	383.3
Clinker après refroidisseur broyeur	125.658	1.900	100	44.7
Perte totale de rayonnement et de convection	-	-	-	228.7
Erreur balance thermique	0.2%			7.3
Total				3078.4

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- **Del. 2.4** – Audit énergétique pour une usine standard intégrée de 3'000 t/j de clinker en utilisant la feuille de calcul du délivrable 3.1 t
- "Plus " - Fiche et manuel sur le bilan énergétique et gazeux des systèmes de four et de broyeur

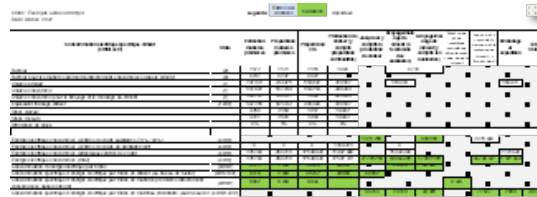
Les producteurs de ciment sont encouragés à utiliser l'outil de modélisation énergétique des fours et des broyeurs pour réduire de manière proactive la consommation d'énergie et l'empreinte carbone de leurs installations.

Développement des outils permettant les audits énergétiques avec feuilles de calcul et manuel (Del. 3.1 & 3.2)

Resume énergétique thermique (STEC)



Resume énergétique électrique (SEEC)



- **Del. 3.1** - calcul audit énergétique électrique et thermique spécifique (STEC et SEEC)
- **Del. 3.2** - Manuel d'audit énergétique électrique et thermique

Feuilles de calcul STEC et SEEC pour le processus d'autoaudit annuel.



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CLIMATE TECHNOLOGY CENTRE & NETWORK

2

C	E	M
C	O	N

Développement et mise en place d'une méthodologie pour le calcul des GES (Del.4.1& 4.2)

Niveaux de Production Réel

555,586 t-CO₂ / a à ~709,000 tpa clinker

t CO ₂ /year	Niveau 1: Production Réel (t CO ₂ /year)						Niveau 2: Production Réel (t CO ₂ /year)					
	Calculé	Ex. scope	Total	Calculé	Ex. scope	Total	Calculé	Ex. scope	Total	Calculé	Ex. scope	Total
CEMEX	10000	0	10000	10000	0	10000	10000	0	10000	10000	0	10000
CEMEX	10000	0	10000	10000	0	10000	10000	0	10000	10000	0	10000
CEMEX	10000	0	10000	10000	0	10000	10000	0	10000	10000	0	10000
CEMEX	10000	0	10000	10000	0	10000	10000	0	10000	10000	0	10000
Total	40000	0	40000	40000	0	40000	40000	0	40000	40000	0	40000

t CO ₂ /t clinker	Niveau 1: Production Réel (t CO ₂ /t clinker)						Niveau 2: Production Réel (t CO ₂ /t clinker)					
	Calculé	Ex. scope	Total	Calculé	Ex. scope	Total	Calculé	Ex. scope	Total	Calculé	Ex. scope	Total
CEMEX	0.025	0	0.025	0.025	0	0.025	0.025	0	0.025	0.025	0	0.025
CEMEX	0.025	0	0.025	0.025	0	0.025	0.025	0	0.025	0.025	0	0.025
CEMEX	0.025	0	0.025	0.025	0	0.025	0.025	0	0.025	0.025	0	0.025
CEMEX	0.025	0	0.025	0.025	0	0.025	0.025	0	0.025	0.025	0	0.025
Total	0.100	0	0.100	0.100	0	0.100	0.100	0	0.100	0.100	0	0.100

- **Del. 4.1** - Méthodologie pour le calcul des GES
- **Del 4.2** - Calcul des GES pour le Congo

Niveaux de Production Nominal

1,041,496 t-CO₂ / a à ~1,319,320 tpa clinker

t CO ₂ /an	Niveau 1: Production Nominal (t CO ₂ /an)						Niveau 2: Production Nominal (t CO ₂ /an)					
	Calculé	Ex. scope	Total	Calculé	Ex. scope	Total	Calculé	Ex. scope	Total	Calculé	Ex. scope	Total
CEMEX	10000	0	10000	10000	0	10000	10000	0	10000	10000	0	10000
CEMEX	10000	0	10000	10000	0	10000	10000	0	10000	10000	0	10000
CEMEX	10000	0	10000	10000	0	10000	10000	0	10000	10000	0	10000
CEMEX	10000	0	10000	10000	0	10000	10000	0	10000	10000	0	10000
Total	40000	0	40000	40000	0	40000	40000	0	40000	40000	0	40000

t CO ₂ /t clinker	Niveau 1: Production Nominal (t CO ₂ /t clinker)						Niveau 2: Production Nominal (t CO ₂ /t clinker)					
	Calculé	Ex. scope	Total	Calculé	Ex. scope	Total	Calculé	Ex. scope	Total	Calculé	Ex. scope	Total
CEMEX	0.025	0	0.025	0.025	0	0.025	0.025	0	0.025	0.025	0	0.025
CEMEX	0.025	0	0.025	0.025	0	0.025	0.025	0	0.025	0.025	0	0.025
CEMEX	0.025	0	0.025	0.025	0	0.025	0.025	0	0.025	0.025	0	0.025
CEMEX	0.025	0	0.025	0.025	0	0.025	0.025	0	0.025	0.025	0	0.025
Total	0.100	0	0.100	0.100	0	0.100	0.100	0	0.100	0.100	0	0.100

Inventaire national GES (CO₂) pour la production de ciment selon les méthodologies GIEC Niveau 1 (base ciment), Niveau 2 (base clinker) et Niveau 3 (base carbone)



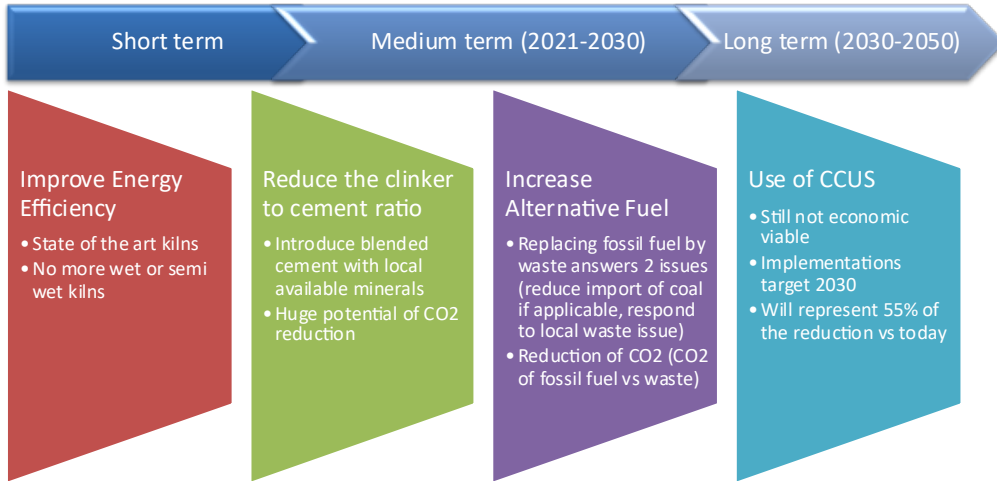
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3

C	E	M
C	O	N

Principaux leviers pour réduire les émissions de CO2



CEMENTIS



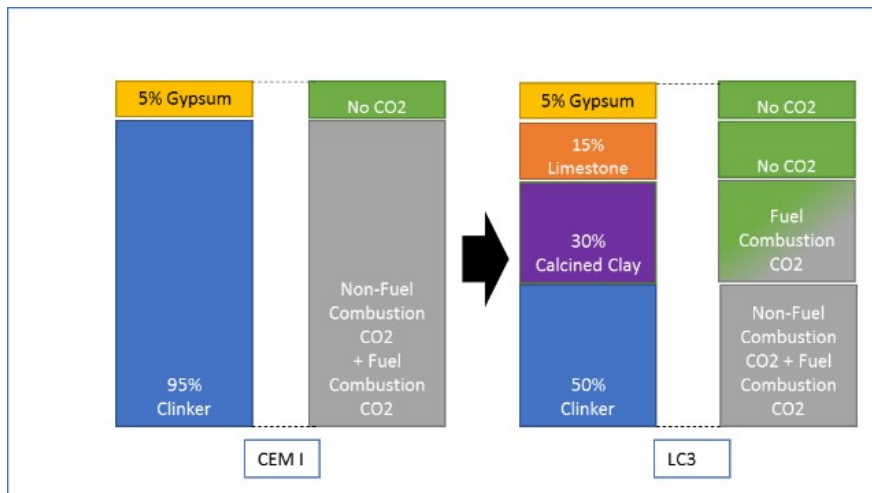
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4

C	E	M
C	O	N

Levier 1: Facteur clinker

Ciment à base d'argile calcinée: jusqu'à 39% de réduction de CO2



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5

C	E	M
C	O	N



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.

<p>Challenge</p>	<p>Approx. 500 characters with spaces</p> <p>The Cement industry is one of the main GHG emitters with 5-8% of the total man-made CO₂ emissions globally. But conversely to other GHG emitters like aviation which are global, cement production is local and thus mitigation actions have to be done locally. The cement production in the Republic of Congo has increased over the last decade due to a shift to local production in order to support the urbanization policies linked to population growth.</p> <p>Potential CO₂ emissions in the cement industry can be mitigated through several measures. But most importantly before proposing mitigation measures to reduce GHG (CO₂) emissions, was to get correct and accurate data from the industry not only to understand the current situation and the exact mitigation potential, needs and progress, but also to have the most accurate data available for Congo's next NDC revision. The move from Tier 1 methodology to tier 2 and 3 methodology is enabling this.</p>
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<p>CTCN Assistance</p>	<p><i>2 to 4 bullet points. Approximately 450 characters with spaces</i></p> <ul style="list-style-type: none"> • Evaluation of GHG (CO₂) emission levels of the Republic of Congo Heavy Industrial Manufacturing Cement sector based on 2006 IPCC Guidelines for National Greenhouse Gas Inventories (Tier 2 & Tier 3) mechanisms and to develop an industry technology development roadmap to mitigate such emissions • Provision of a potential basis for the development of The Republic of Congo 3rd National Communication report. • Deliverables forming part of CTCN TA • Energy and thermal audit of the Republic of Congo 's cement production plants • Development of specific energy audit manuals and monitoring plan • Development of GHG emissions calculation methodologies and evaluation of GHG emissions levels <p>The above deliverables strengthen national capacity to permit the assessment & development of emission objectives for cement industry in the Republic of Congo.</p>
<p>Anticipated impact</p>	<p><i>2 to 4 bullet points to summarise anticipated impact. Approximately 250 characters with spaces. As a minimum, please include at least one of the core impact indicators from the closure report Annex.</i></p> <p>Key outcomes through the project was to enable more precise calculation of the GHG (CO₂) emissions from the cement industry and thus a more accurate evaluation of the sector GHG (CO₂) emissions and possible mitigations through:</p> <ul style="list-style-type: none"> • GHG emissions reductions for the heavy industrial cement sector • People trained / impacted resulting in consistent

	<p>monitoring and reporting across the industry</p> <ul style="list-style-type: none"> • Transparency on GHG (CO₂) emissions achieved for the industry as a whole and the individual cement producers • Effective GHG (CO₂) emission management enabled • Audit manual clear and user friendly
<p>Co-benefits: Achieved or anticipated co-benefits from the TA</p>	<p><i>Instruction: Please indicate expected co-benefits as described in the response plan and in the relevant deliverables</i></p> <p>Some co-benefits will arise as soon as the technology recommendations are put in place:</p> <ul style="list-style-type: none"> • Improved efficiency of cement plants through modernization which goes hand-in-hand with GHG reduction and economic benefits • Increase of Alternative Fuel replacing coal and thus a reduction of waste through the adoption of circular models for resource usage • Reduction of pollution leading to health benefits of local communities • Increase of potential “green jobs” in the country through increase of waste utilization and thus waste companies. • An increase of waste would reduce the quantity needed of coal to import and thus the dependency of import and foreign currency. • Capacity building around Tier 1, 2 and 3 as well as available technologies to reduce GHG emissions in the cement industry of the Republic of Congo
<p>Gender aspects of the TA</p>	<p><i>Instruction: Please indicate if technical assistance was supported by a gender analysis. Describe gender aspects identified and additional considerations taken to mainstream gender (e.g. equal participation in trainings, gathering of gender-disaggregated data, etc.).</i></p>

	<p>Cement industry is generally a male industry. Female presence in meetings was higher due to the project guidelines. Stakeholders have been asked to integrate gender quota in their delegation to work on the project. The ambition was here to show that heavy industry can be an attractive sector to work for when being a woman.</p>
<p>Anticipated contribution to NDC</p>	<p><i>2 to 4 bullet points. Approximately 350 characters with spaces</i></p> <p>The NDC document which Congo submitted on August 2nd 2021 to UNFCCC contains Congo's commitment to reduce GHG emissions and hence combat climate change. Congo intends to reduce overall emissions by 69% - 85% from the base year of 2021 by 2050.</p>
<p>The narrative story</p>	<p><i>Approximately 1200 characters with spaces</i></p> <p><i>Please provide a brief description of the background and context for the technical assistance. Describe the main problems and barriers for climate change mitigation and/or adaptation in terms of climate technologies that the CTCN technical assistance will address</i></p> <p>Potential CO₂ emissions in the cement industry can be mitigated through several measures. But most importantly before proposing mitigation measures to reduce GHG (CO₂) emissions, correct and accurate data from the industry is needed not only to understand the current situation and the exact mitigation potential, needs and progress, but also to have the most accurate data available for Congo's next NDC revision. The move from Tier 1 methodology to "tier 2 and 3" methodology enables this. The CTCN assistance enabled the following:</p> <ul style="list-style-type: none"> • Evaluation of Congo cement GHG (CO₂) emission levels according to Tier 2 & Tier 3 mechanisms and the industry roadmap to mitigate such emissions • Provision of a potential basis for the development of The

	<p>Republic of Congo 3rd National Communication report.</p> <ul style="list-style-type: none"> • Energy and thermal audit of the Republic of Congo 's cement production plants • Development of specific energy audit manuals and monitoring plan • Development of GHG emissions calculation methodologies and evaluation of GHG emissions levels <p>Key outcomes through the project was to enable more precise calculation of the GHG (CO₂) emissions from the cement industry and thus a more accurate evaluation of the sector GHG (CO₂) emissions and possible mitigations through:</p> <ul style="list-style-type: none"> • GHG emissions reductions for the heavy industrial cement sector • People trained / impacted resulting in consistent monitoring and reporting across the industry • Transparency on GHG (CO₂) emissions achieved for the industry as a whole and the individual cement producers • Effective GHG (CO₂) emission management enabled • Audit manual clear and user friendly
<p>Contribution to SDGs</p> <p>A complete list of SDGs and their targets is available here: https://sustainabledevelopment.un.org/partnership/register/</p>	<p><i>To the extent possible, please describe contribution to approximately 3 SDGs, including SDG13, with a few sentences for each SDG concerned.</i></p> <ul style="list-style-type: none"> • SDG 13: Take urgent action to combat climate change and its impacts • SDG 5: Achieve gender equality and empower all women and girls • SDG 9: Build resilient infrastructure, promote sustainable industrialization and foster innovation • SDG 11: Make cities inclusive, safe, resilient and sustainable • SDG 12: Ensure sustainable consumption and production patterns

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	Quantitative value Value and unit	Qualitative description List the various elements corresponding to the quantitative value as well as timelines and responsible institutions
Please note indicators below highlighted as anticipated Number of communication and outreach activities conducted by proponents and implementing partners to showcase CTCN support		<i>Events (titles):</i> Mid project information meeting for Governmental Representatives <i>News release:</i> <i>Newsletter:</i> <i>Articles:</i> Presentations on the results of the TA: Presentation of the results to the main project stakeholders. The event was covered by the medias and a reportage was presented at the Congolese evening news on TV (video can be provided) <i>Social media postings:</i> <i>Etc.</i>
Number of participants in the events above	35	
a) Number of men	24	
b) Number of women	11	
Number of training sessions and capacity strengthening activities		
Number of people who received the training		It is estimated that an average of 5 to 10 people will work on the Audit manual and therefore be trained to do so. This represents a range of 10 to 15 people in total for the 3 plants currently in operation.
a) Number of men		
b) Number of women		
Total number of institutions trained		

a) Number of research organisations, laboratories and universities		
b) Number of private companies		
c) Number of cities and local government		
d) Number of communities		
e) Number of ministries		
f) Number of specialised governmental institutions		
g) Number of non-profit organisations		
Percentage of participants reporting satisfaction with CTCN training (from CTCN training feedback form)		
Percentage of participants reporting increased knowledge, capacity and/or understanding as a result of CTCN training (from CTCN training feedback form)		
a) Number of men		
b) Number of women		
Total number of deliverables produced during the assistance (excluding mission, progress and internal reports)	6	
a) Number of tools and technical documents strengthened, revised or developed	3	<p><i>List the name of the documents</i></p> <ol style="list-style-type: none"> 1. Detailed audit manual with worksheets 2. Development of a plan and reporting templates on specific energy consumption 3. Development of a methodology for calculating GHG emissions from cement plants
b) Number of other information materials strengthened, revised or created (For example training and workshop reports, Power Points, exercise docs etc.)	3	<p><i>List the name of the documents</i></p> <ol style="list-style-type: none"> 4. Detailed energy and thermal audit of the two priority cement plants and a specialist grinding plant 5. Identification of technologies and best practices for GHG reduction 6. Calculation of GHG emissions and emission factors from domestic cement production
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		
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		
Number of South-South collaborations enabled during or through CTCN TA support		
Number of climate technology RD&D related outreach activities		
Number of participants in climate technology RD&D related workshops and events		
a) Number of men		
b) Number of women		
Anticipated number of cooperative research, development, and demonstration programmes facilitated as a result of CTCN TA		
Number of countries with strengthened National System of Innovation as a result of CTCN support		
Number of organisations engaged through CTCN support		
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 ₂ e) emissions reduced or avoided as a result of CTCN TA	
	Anticipated metric tons of CO ₂ , equivalent emissions reduced or avoided as a result of the TA on annual basis	Anticipated metric tons of CO ₂ , equivalent emissions reduced or avoided as a result of the TA in total
Quantitative value	122'000 to 166'000	
Unit	T CO2e	
Methodology Explain the method or process of verifying the indicator and how data was gathered		Mc Kinsey estimates that by 2050 7 to 10% of the CO₂ emissions could be avoided by reducing the clinker factor and from 15 to 20% by optimising the energy like for example alternative fuels from biomass. Those % have then been applied to the actual CO₂

		emissions from the Congolese cement plants.
<p>GHG assessment boundary</p> <p>Identify expected post-TA activities, associated effects and assess boundary for quantification of GHG emission reductions</p>	Boundary is the cement plant.	
<p>Baseline candidates</p> <p>Define alternative technologies or practises used in baseline calculation to represent possible alternatives to the project activities</p>		
<p>Baseline emissions</p> <p>Describe baseline scenario and emissions calculated</p>		
<p>Assumptions</p> <p>Describe assumptions made during calculation and quantification of GHG reductions</p>		

Core indicator 2	<p>Anticipated increased economic, health, well-being, infrastructure and built environment, and ecosystems resilience to climate change impacts as a result of technical assistance</p> <p><i>Please provide a qualitative description of the anticipated impacts on the categories below</i></p>
<p>Infrastructure and built environment</p> <p>Anticipated increased infrastructure resilience (avoided/mitigated climate induced damages and strengthened physical assets)</p>	
<p>Ecosystems and biodiversity</p> <p>Anticipated increased ecosystem resilience (areas with increased resistance to climate-induced disturbances and with improved recovery rates)</p>	
<p>Economic</p> <p>Anticipated increased economic resilience (e.g. less reliance on</p>	

vulnerable economic sectors or diversification of livelihood)	
Health and wellbeing Anticipated increased health and wellbeing of target group (e.g. improved basic health, water and food security)	

Core indicator 3	Anticipated number of direct and indirect beneficiaries as a result of the TA		
	Direct beneficiaries	Indirect beneficiaries	Means of verification
Adaptation related			
Mitigation related			
Both adaptation-and mitigation related			

Core indicator 4	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 Value and currency	Qualitative description List the various elements corresponding to the quantitative value as well as expected timelines and responsible institutions	Methods Describe method use for quantification of funds leveraged including assumptions made and attention paid to causality, attribution and avoidance of double-counting
Total anticipated amount of funding/investment mobilised or leveraged (USD) as a result of the TA	25 million USD Clinker factor: 10 million USD for one clay calcination equipment to supply all 3 factories. Energy (mainly use of alternative fuels). 5 million USD per cement	Main equipment needed will be a clay calciner. Other option could be to use an existing old kiln not anymore in operation to calcine the clay. In such case investment cost shall not exceed 5 million USD. Main equipment needed are pre-processing installations to prepare the waste (generally located at the waste generation) plus co-processing installation (at the cement plant) to	CAPEX are estimated by the consultant based on real cases outside Congo.

	plant for both co-and pre-processing. Thus 15 million USD for the 3 cement plants.	bring the waste into the burning process at the cement plant.	
Anticipated amount of public funding mobilised from national sources (USD)			
Anticipated amount of public funding mobilised from international and regional sources as a result of the TA			
Anticipated amount of private investment mobilised (in USD) from national sources as a result of the TA			
Anticipated amount of private investment mobilised (in USD) from international and regional sources as a result of the TA	All the amounts above are assumed to be mobilised by the private sector.		

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.

