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TERMS OF REFERENCE (TOR)

Pilot demonstration of Energy Service Company (ESCO) model for greenhouse gases emission reduction in the cement sector in Viet Nam

1 BACKGROUND INFORMATION

The Climate Technology Centre and Network (CTCN) is the operational arm of the United Nations Framework Convention on Climate Change (UNFCCC) Technology Mechanism and hosted by the United Nations Environment Programme (UNEP) in collaboration with the United Nations Industrial Development Organization (UNIDO) and supported by 11 partner institutions with expertise in climate technologies. The mission of the CTCN is to promote accelerated deployment and transfer of climate technologies at the request of developing countries for energy-efficient, low-carbon and climate-resilient development.

These requests for Technical Assistance (TA) are being submitted to the CTCN by the National Designated Entity (NDE) of the respective country. The scope of services under these Terms of Reference shall be executed based on a restricted solicitation process where only accepted Members of the CTC Network, are eligible to submit proposals. Should the bidder partner with another institution to deliver a minor part of the services described in these Terms of Reference, it is expected that the partner institution also joins the CTC Network.

The maximum budget for this contract is USD 250.000.

Important note: The bidders must quote for Activity 1 separately and for rest of the activities separately. This is to ensure that we can close the intervention after Activity 1 in case the proposed Response plan is not amenable to be implemented due to force majeure. However, the total value of the bid would be considered while awarding the contract.

2 CONTEXT OF THE ASSIGNMENT

The sustainable and low carbon development of the cement sector is a high priority for the Government of Viet Nam. The national ambitions for low carbon development are formulated in Viet Nam's Intended Nationally Determined Contribution (INDC), the National Climate Change Strategy and the Nation Green Growth Strategy. As described in the INDC, the Government of Viet Nam has made a commitment to reduce the country's greenhouse gas (GHG) emissions across the economy and provides a particular reference to select energy intensive manufacturing industries. The INDC also describes Viet Nam is developing and preparing for the implementation of Nationally Appropriate Mitigation Actions (NAMAs) in its efforts to materialize GHG mitigation actions.



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Ministry of Construction (MOC) gained support from the Nordic Development Fund (NDF) under the framework of the Nordic Partnership Initiative for the project “Pilot Programme for Supporting Up-scaled Climate Change Mitigation Action in Viet Nam’s Cement Sector” (will be named “MOC-NDF project” throughout this Terms of Reference). The project was initiated in 2014 and was finalized in May 2016.

A key outcome of the project is the “Readiness Plan for the Cement Sector in Viet Nam” which has the objective to strengthen Viet Nam’s ability to prepare, propose and implement a full-scale scheme of a clearly specified NAMA in the cement sector.

The Readiness Plan consists of key elements and recommendations structured in the following five building blocks: 1) Database and MRV, 2) Baseline and Mitigation Options, 3) Legal and Institutional Framework, 4) Financing Arrangements and 5) Stakeholder Engagement and Capacity Building.

The preparatory work for the Readiness Plan for the Cement Sector has concluded that there are a number of commercially viable and cost effective GHG reduction options available for the country’s cement plants, yet, many of these are not implemented due to technical and financial barriers. In order to overcome or mitigate the identified barriers, the Readiness Plan includes a number of incentivizing mechanisms and actions that can promote mitigation actions within the sector. One of the proposed incentivizing mechanisms which has received positive feedback from sectoral stakeholders is a model for Energy Service Companies (ESCO) which has the potential to attract financial resources for energy efficiency and climate change mitigation activities at the cement plants. An ESCO is a firm that provides integrated solutions for achieving energy cost reductions and whose payments are linked to the performance of the implemented solutions. The Readiness Plan for the Cement Sector underlines that ESCO markets in Viet Nam is still in its infancy and unlikely to develop without sustained government support.

Please find summaries for technical studies from MOC-NDF project and Readiness Plan at: <http://www.ndf.fi/project/nordic-partnership-initiative-pilot-programme-ndf-c34>

3 OBJECTIVE OF THE CONTRACT

The objective of the CTCN TA is to support the MOC and the cement sector in Viet Nam to **develop a pilot ESCO model using Energy Savings Performance Contracting (ESPC) as an integrated part of the overall NAMA design**. The pilot will include an identification and assessment of suitable plant sites for the ESCO model; within these sites to conduct a feasibility study, investment report and investment grade audit for selected technologies as identified in the Readiness Plan for the Cement Sector; to develop a monitoring and verification plan for the ESCO model which will fit into the NAMA framework; and finally to evaluate the pilot ESCO model and provide strategic and operational recommendations for up-scaling the ESCO model for the entire cement sector.



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Scope and Activities of the Proposed Contracted Services

The Contractor is expected to undertake the following line of activities:

Activity 1: CTCN Response Plan

The Contractor must undertake a detailed desk study of relevant existing studies, reports and other documents related to the cement sector focusing on mitigation options, NAMA development and ESCO modeling for Viet Nam and international best-practice. Based on the desk study and in direct collaboration with the NDE (The Ministry of National Resources and Environment), MOC and sectoral stakeholders, the Contractor will formulate a proposed CTCN technical assistance intervention in the form of a so-called Response Plan.

The CTCN Response Plan must include an assessment of the context, problem statement, detailed logical framework of activities and outputs and linkages to the national mitigation and/or sector priorities. It should also contain a detailed work plan of all activities, deliveries, outputs, deadlines and responsible persons/organizations to implement the Response Plan, as well as a monitoring and evaluation plan with specific, measurable, achievable, relevant, and time-bound indicators used to monitor and evaluate the timeliness and appropriateness of the implementation.

The CTCN Response Plan development must derive from the activity 2 to 6 outlined in this Terms of Reference, and be informed by consultations with key stakeholders in Viet Nam and the NDE notably, as well as done in close coordination with the CTCN Technology Manager. Please see the CTCN Response Plan template and guidance note in Annex 1.

On the basis of the studies conducted under the MOC-NDF project and based on guidance from Viet Nam Cement Industry Corporation, the Contractor must identify and engage with minimum two relevant cement plants where technical solutions for the ESCO model can be assessed. Preferably, the plants must have a medium size production capacity and a technology configuration that is representative and comparable with the overall cement sector in Viet Nam. With support from MOC and Viet Nam Cement Industry Corporation, the Contractor must establish a working relationship with the engaged cement plants whereby the team of experts can access and examine the production facilities and detailed production data will be shared by the plants.

Deliverable for Activity 1
- CTCN Response Plan for the technical assistance signed by NDE, proponent, and CTCN Director

All following activities under this contract and as described in these Terms of Reference are conditional to the approval and signing of the CTCN Response Plan by the NDE, MOC (as CTCN Request Proponent) and the CTCN Director.



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Activity 2: Inception workshop and development of feasibility study and investment report including investment grade audit

Based on the signed Response Plan, the Contractor must conduct an inception workshop with the objective to ensure a mutual understanding of proposed activities, method for implementation and expected outputs from the CTCN TA. Participants should include key stakeholders from both government and private sector engaged with the cement sector and underlying NAMA. Ideally, potential ESCO companies should also participate in the workshop.

The Readiness Plan for the Cement Sector in Viet Nam includes a desk assessment that identifies the most suitable technologies for energy efficiency and reduction of GHG emissions for the cement sector. Descriptions of technologies, technical values and suggested configurations originate from the Cement Sustainability Initiative of the World Business Council for Sustainable Development, European Cement Research Academy, European Union Best Available Techniques Reference document and UNEP Best Available Techniques Reference documents. Founded on above mentioned documents and related technology options, the Readiness Plan includes a Marginal Abatement Cost assessment which identifies the most cost efficient technologies for reduction of GHG emissions from the sector. As per the Readiness Plan, the GHG marginal abatement cost assessment was conducted in consultation with sector stakeholders but the presented technology configurations and presented values have not been cross-checked or verified at cement sites in Viet Nam¹.

Departing from the identified technologies for energy efficiency and GHG emission reduction, the Contractor must identify and assess five of the most promising technology improvements facilitated through ESCO. The technologies and areas of proposed interventions must be limited to clinker making processes only, and the technologies must be directly applicable at the selected cement plants and should include process optimization thereafter. The Contractor must undertake a technical and financial feasibility study and an investment report including investment grade audit of the identified technologies at the actual cement plants. The investment grade audit must include the following components: energy and GHG emission baseline for the specific plant and technology scope, scope of ESPC, pricing arrangement, financing plan, commissioning plan, measurement & verification plan.

Deliverables for Activity 2

- Inception workshop
- Technical and financial feasibility study (including investment grade report and investment grade audit) of five relevant technology options for the ESPC model

Activity 3: Design of pilot ESPC model

¹ Please see the following link for a summary for assessed technologies and MAC values from the assessment:
http://www.ndf.fi/sites/ndf.fi/files/attach/exs_report_i_5_2-4_low_carbon_options.pdf



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Based on the findings from previous Activities, the Contractor must design a conceptual and operational pilot ESCO model. The pilot ESCO model should fit within and be complementary to the overall NAMA framework for the cement sector. Furthermore, considering that ESCO models are at an infancy stage in Viet Nam, the Contractor must identify and analyse successful ESCO models implemented in the Asian region and incorporate key findings and features from these, and adapt them to fit the Vietnamese context.

Deliverable for Activity 3

- Conceptual and operational design for the pilot ESCO model

Activity 4: Demonstration of MRV for GHG emissions and energy efficiency.

Under the MOC-NDC project, a tool and manual to conduct NAMA MRV activities at plant level have been developed. The tool and manual cover both GHG and non-GHG parameters and fit into a proposed national database which constitutes the national foundation for monitoring the overall NAMA.²

Based on the proposed technology interventions for the ESCO model as identified in Activity 2, the Contractor must assess and develop a monitoring and verification plan for the ESCO model. The plan must include specific parameters to be monitored and verified for the ESCO model, including specific monitoring points and frequency of monitoring. The proposed monitoring and verification of the ESCO model must fit into the overall MRV framework for the NAMA. The assessment must be done in collaboration with the engaged cement plants and must include operational guidance and modalities for the monitoring and verification plan.

Deliverable for Activity 4

- A report demonstrating operational linkages between the measurement & verification plan for ESPC and the MRV framework of the NAMA
- Brief operational guidance note describing the monitoring & verification plan, parameters and workflows for ESPC model aimed for plant owners, managers and technical staff

Activity 5: Recommendations for up-scaling the ESCO model to the entire cement sector

Based on the findings from previous Activities, the Contractor must analyze the possibilities for up-scaling the pilot ESCO model to the entire cement sector in Viet Nam as a market based mechanism supporting the cement sector's mitigation efforts under the NAMA or as a standalone mechanism.

The analysis must include a set of strategic and operational recommendations for the cement sector, financial institutions and Vietnamese Government to widely disseminate the model within the sector.

² Please see the following link for more information on proposed MRV system for the NAMA
http://www.ndf.fi/sites/ndf.fi/files/attach/exs_report_i_2_5-i_2_6_data_collection_and_database_system_including_third_version_of_database.pdf



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Deliverable for Activity 5
- A report containing strategic and operational recommendations for creating an up-scaled national ESCO model for the cement sector in Viet Nam. Recommendations should address the legal and regulatory system, financial institutions and the cement sector.

Activity 6: Stakeholder workshop to consolidate findings and recommendation

The Contractor must prepare and host a stakeholder workshop where key findings and recommendations from previous Activities are presented and validated. The objective of the workshop is to receive stakeholder feedback and to consolidate findings and recommendations. The expected audience for the workshop is a limited number of key stakeholders from the cement sector and Vietnamese Government.

The Contractor must also under the guidance of CTCN staff contribute to a two-page CTCN Impact Description formulated in the beginning of the technical assistance and update/revised once the technical assistance is fully delivered (a template will be provided).

Deliverables for Activity 6
- Stakeholders workshop
- Two-page CTCN Impact Description formulated pre-implementation and updated post-implementation

4 GENERAL TIME SCHEDULE AND ACTIVITY/DELIVERY PLAN

The activities under this contract should be completed within a period of twelve (12) months from signing the contract.

Proposed plan for implementation of activities and deliveries:

Activities and Deliveries	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
Activity and Delivery 1:												
Activity and Delivery 2:												
Activity and Delivery 3:												
Activity and Delivery 4:												
Activity and Delivery 5:												
Activity and Delivery 6:												

All draft and final deliveries are subject to approval from CTCN Climate Technology Manager before these can be concluded.



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5 PERSONNEL IN THE FIELD (PROFESSIONAL EXPERIENCE AND QUALIFICATIONS)

The Contractor is expected to provide the services of a team that should ideally comprise the following competencies:

- Proven experiences on technical assessments of technology options for energy efficiency and GHG mitigation in the cement sector
- Proven competencies and experiences for conducting feasibility studies, investment report and invest grade audits for the cement sector
- Experiences with development and implementation of ESCO models and ESPC, monitoring & verification and contracting
- Experiences in providing strategic and operational recommendation to government and private sector entities in the context of creating market mechanisms for energy efficiency and climate change mitigation.

Working experiences from Viet Nam or Southeast Asian region are preferred for all of the above items. Furthermore, having national Vietnamese experts as part of the implementation team is required. The CVs of the respective experts assigned to this assignment by the Contractor must be provided.

6 QUALIFICATION REQUIREMENTS AND EVALUATION CRITERIA

- i) Proven experiences on technical assessments of technology options for energy efficiency and GHG mitigation in the cement sector
- ii) Proven competencies and experiences for conducting feasibility studies, investment report and invest grade audits for the cement sector
- iii) Experiences with development and implementation of ESCO models and ESPC, monitoring & verification and contracting
- iv) Experience in providing strategic and operational recommendation to government and private sector entities in the context of creating market mechanisms for energy efficiency and climate change mitigation.
- v) Conformity of the technical proposal to meet the requirements set forth in the ToR; adequacy of proposed means of implementation, including details on approaches and methodologies, workable timeline, and lean and efficient staffing
- vi) Demonstrated ability to manage similar activities, including cooperating with various stakeholders
- vii) Demonstrable availability of adequate human resources to fulfill the requirement of all expert and managerial functions



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- viii) Previous experience with multiple stakeholder consultations and workshop facilitation in Viet Nam or Southeast Asia or the region.
- ix) Evidence of established experience in providing technical assistance to government institutions at multiple levels.
- x) Compliance with the required expertise and skill sets according to ToR, incl. Language, Education, writing and networking skills

7 LANGUAGE REQUIREMENTS

The working language for the purposes of this assessment is English, thus an excellent command of English is required of the proposed personnel. Vietnamese language will also be required for the direct engagement with the cement plants and government entities. All final deliverables must be submitted in English and selected pieces subsequently translated to Vietnamese by the Contractor.

All delivered documents must be of sufficient enough quality so that no further editing shall be required.