CTCN
CLIMATE TECHNOLOGY CENTRE & NETWORK

CTCN Technical Assistance
Request Submission Form

Please fill in the form in the grey spaces, by following the instructions in italic.

Requesting country:	*Vietnam*

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

Contact information:

{Please fill in the table below with the requested information. The request proponent is the organization that the request originates from, if different from the National Designated Entity (NDE).}

	National Designated Entity	**Request Applicant**
Contact person:	*Mr. Pham Van Tan*	*Dr Le Trung Thanh*
Position:	Deputy Director - General	*Director General – Department of Science, Technology and Environment*
Organization:	*Department of Meteorology, Hydrology and Climate Change (DMHCC), Ministry of Natural Resources and Environment of Viet Nam (MONRE)*	*Ministry of Construction (MOC)*
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Technology Needs Assessment (TNA):

{Select one of the three boxes below:}

☒ *The requesting country has conducted a TNA in June 2012*

☐ *The requesting country is currently conducting a TNA*

☐ *The requesting country has never conducted a TNA*

{If the requesting country has completed a TNA, please indicate what climate technology priority this request directly relates to. Please indicate reference in TNA/TAP/Project Ideas.}

The Technology Needs Assessment of Vietnam was developed in 2012, identifying priority sectors for TNA for GHG mitigation, which include energy, agriculture and LULUCF sectors. According to the Multi Criteria Decision Analysis (MCDA), high priority GHG mitigation technologies were identified for energy,based on their costs and benefits. Relating to the energy demand side, reducing fossil fuel uses and improving energy efficiency, are the key low carbon options, which have been identified as mitigation measures for the NAMA cement

sector. However, there are many technology, financial and technical barriers for the implementation of these measures.

CTCN Request Incubator Programme:

{Please indicate if this request was developed with support from the Request Incubator Programme:}

☐ *Yes*
☒ *No*

Geographical focus:

{Select below the most relevant geographical level for this request:}

☐ *Community-based*
☐ *Sub-national*
☒ *National*
☐ *Multi-country*

{If the request is related to the sub-national or multi-country level, please indicate here the areas concerned (provinces, states, countries, regions, etc.)}

Theme:

{Select below the most relevant theme(s) for this request:}

☐ *Adaptation to climate change*
☒ *Mitigation to climate change*
☐ *Combination of adaptation and mitigation to climate change*

Sectors:

{Please indicate here the main sectors related to the request. e.g. energy, industry, transport, waste, agriculture/fisheries, forestry, water, ecosystem/biodiversity, coastal zones, health, education, infrastructure/human settlement, tourism, businesses, early warning/disaster reduction, institutional design and mandates, cross-sectorial}

Cement Industry

Problem statement *(up to one page):*

{Please describe here the difficulties and specific gaps of the country in relation to climate change, for which the country is seeking support from the CTCN. Please only provide information directly relevant to this request, and that justifies the need for CTCN technical assistance.}

Vietnam Intended Nationally Determined Contribution

Viet Nam commits to reduce 8% of KNK emission by 2030, compared to the Business-as-usual (KNK emission under BAU: 246.8 million tCO2e). With international support, the reduction can reach 25%.

The Government of Vietnam also sets a strategy towards a low carbon economy and sustainable development, through the Green Growth Strategy and Green Growth Action Plan. One of the main objectives is to reduce 8-10% of KNK emission by 2020. So far, the Government of Vietnam has been building and implementing a variety of initiatives to archive these ambitious objectives. Mitigation of GHG emissions in line with national conditionsAction Plan is one of those important initiatives,which shall be built, managed and implemented by line ministries.

The cement sector –one of the most energy and CO2 emission intensive sectors in Viet Nam

Viet Nam's rapid economic growth and urbanization has led to increased demand for cement used for the construction and the infrastructure sectors. Until 2008-2009 Viet Nam was a net importer of cement, but large-scale investment in new production line, has led to rapid growth in the sector and excess domestic supply. Viet Nam is one of the principal cement consumers in Southeast Asia.Production increased by an average annual rate of around 18%between 1995 and 2005, and an additional 11% between 2005 and 2011. Although, therecent economic downturn has led to reduce the production growth to around 6% in 2010- 2011.

Cement production is a highly energy intensive production process. The energy consumption by thecement industry is estimated at about 2% of the global primary energy consumption, or almost 5% of the total global industrial energy consumption. Due to the dominant use of carbon intensive fuels, e.g. coal, in clinker making, the cement industry is also a major emitter of CO2 emissions. BesidesEnergy consumption, the clinker making process also emits CO2 due to the calcining process. Thecement industry contributes 5% of total global carbon dioxide emissions.

The current Master Plan for the cement sector,is still projecting a high production capacity of 1'200 kg/capita/year. Looking from the perspective of the added value of energy consumption-, CO2 emission-, environment-, employment- and economic, this scenario is not an attractive draft. This is due to the Master Plan was built before Vietnam release legal frameworks in climate changes, energy efficiency and green growth.

The clinker and cement production are both energy consumption and CO2emissionactivities.The estimated historical CO2 emissions for the Viet Nam cement sector amounts to approx. 4.6 MtCO2 in 1995 and 46.2 MtCO2 in 2013. The average CO2 emission of the cement sector in Viet Nam is estimated to be about 15% higher than the global average. This is due to relatively high thermal energy intensity and CO2 intensive fuels, such as coal.

To comply with national strategies, international obligation for climate change, the line ministry of cement sector – Ministry of Construction – has considered a sustainable and low carbon development of the cement sector as high priority. NAMA in the cement sector has been built under this context. It's expected that when NAMA is fully operating, then around 9 MtCO2/year of CO2 emissions can be reduced. In order to manage, operate, supervise and implement MRV effectively, a NAMA Operating Unit shall be needed. This entity will represent MOC in dealing with all NAMAs related issues, including financing and operation.However, it's important to point out that so far, there has been no NAMA in Viet Nam in an operating stage, as NAMA is a new concept in Viet Nam, and thus, related issues including institution, MRV and finance are still in the readiness development phase.Hence, no procedure and knowledge in either establishing or operating such organization has been experienced in Viet Nam.

Past and ongoing efforts *(up to half a page):*

{Please describe here past and on-going processes, projects and initiatives implemented in the country to tackle the difficulties and gaps explained above. Explain why CTCN technical assistance is needed to complement these efforts, and how the assistance can link or build on this previous work.}

Ministry of Construction (MOC) has previously gained support from the Nordic Development Fund (NDF), under the framework of the Nordic Partnership Initiative with the project "Pilot Programme for Supporting Up-scaled Climate Change Mitigation Action in Vietnam's Cement Sector". The project was initiated in 2014 and it will be finalized in 2016. For the Nordic Council of Ministers (2015), the objective of the Readiness Plan is 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 draft Readiness Plan has been developed in close co-operation with the involved stakeholders and under the overall coordination of MOC. A final version of the Readiness Plan is expected to complete in the middle ofthe year 2016.

The draft Readiness Plan for the Cement Sector has concluded that there are a lot of CO2 reduction efforts which have the economic efficiency, that can be taken by cement plants, but yet many of them are still not implemented for various reasons. Therefore the Readiness Plan also defines the enabling activities in order to eliminate or overcome the existing barriers to implementthe appropriate mitigation in the cement production sector.

MOC doesn't have any funds to implement the proposed enabling activities, proposed in the Readiness Plan, and the international support has not been identified yet, hence, the support from CTCN is crucial and could link the solid preparatory work, in the on-going and close to finalized project, to real implementation.

Assistance requested *(up to one page):*

{Please describe here the scope and nature of the technical assistance requested from the CTCN and how this could help address the problem stated above and add value vis-à-vis the past and on-going efforts. Please note that the CTCN facilitates technical assistance and is not a project financing mechanism.}

Support to key tasks for implementation the NAMA cement sector. The proposal includes thetechnical assistance for research and demonstration of ESCO model in the cement production sector.

ESCO is based on the model of Energy PerformanceContract (EPC). ESCO's services providemainly the technology for energy efficiency projects, GHG emissions reduction and to ensure that the energy savings involved will be able to cover the project cost in the certain time. Sometimes, ESCO requires financing for the implementation of the project but this becomes less common. The ESCO basically differs from other energy efficiency service providers, such as energy efficiency consultancy firms or energy efficiency equipment providers, is that their revenue is always partial with a part or all of the savings from energy

efficiency and emission reduction of the project. In Vietnam, the ESCO model is still in the initial stage, even not yet available.

ESCO is the solution to remove the technology, financial and technical barriers from the implementation of emissions reductionmeasures.

Based on the results of NAMA cement project chaired by Ministry of Construction, the development of ESCO model has been identified as the driving force for private investment in energy efficiency measures.

The demonstration of the pilot ESCO model will not only has direct benefits in terms ofGHG emission reduction but also help the Ministry of the Construction and the local enterprises totestthe international-standard MRV system. Based on that,the model will be for replicatation in the whole sector and for sectoral MRV.

Technical support of CTCN includes the following activities:

- Review and selection of pilot sitefor ESCO model.
- Development of feasibility study and investment report, including investment grade audit. MOC will demonstrate this case as an activity in NAMA framework. Therefore, the technical assistance should include the support MOC and the pilot site performing this task.
- Technical assistance for technology transfer.
- Demonstration of MRV for GHG emissions and energy efficiency.
- Evaluation and introduction of the model among the whole sector.

Total budget is approximately **USD 240,000**

Expected benefits *(up to half a page):*

{Please outline here the medium and long-term impacts that will result from the CTCN technical assistance, including how the assistance will contribute to mitigate and/or adapt to climate change.}

- Technical assistance from CTCN will help to reduce GHG emission reduction through the implementation of energy saving solution. The ESCO model will be fully demonstrated with the tools in order to remove barriers, including energy performance contracts, baseline development and M&V.
- Capacity buildingfor potential ESCO companies.
- Capacity building on MRV activities for both the cement sector andMinistry of Construction.

Post-technical assistance plans *(up to half a page):*

{Please describe here how the results of the CTCN technical assistance will be concretely used by the applicant and national stakeholders, to pursue their efforts of resolving the problems stated above after the completion of the CTCN intervention (list specific follow-up actions that will be undertaken).}

As stated above, the NAMA Operating Unit established under a line ministry, to operate and supervise all sectoral NAMAs. It can be used as a model for other NAMAs deployment under the other ministries management in Viet Nam, namely Ministry of Industry and Trade; Ministry of Transport; Ministry of Agriculture and Rural development, etc.

NAMA Operating Unit will introduce the ESCO model in the entire cement sectorthrough continuous training, raising awareness for the ESCO business and Vietnam's cement enterprises.

The MRV system compliant with the international standard will be also deployed for whole cement sector after the pilot phase.

Key stakeholders:

{Please list in the table below the main stakeholders who will be involved in the implementation of the requested CTCN technical assistance, and what their role will be in supporting the assistance (for example, government agencies and ministries, academic institutions and universities, private sector, community organizations, civil society, etc.). Please indicate what organization(s) will be the main/lead counterpart(s) of CTCN experts at national level, in addition to the NDE.}

Stakeholder	Role to support the implementation of the assistance
Department of Science, Technology and Environment , Ministry of Construction (MOC)	Main counterpart – line ministry of cement sector: overall management and coordination , technical inputs for project activities
Building Materials Department, MOC	Support with technical assistance for technology transfer, demonstration of MRV
Vietnam Institute for Building Materials	Support with technical assistance for technology transfer
Vietnam Cement Industry Corporation	Review and selection of pilot site for ESCO model

Alignment with national priorities *(up to half a page):*

{Please demonstrate here that the technical assistance requested is consistent with documented national priorities (examples of relevant national priorities include: national development plans, poverty reduction plans, technology needs assessments (TNAs), LEDS, NAMAs, TAPs, NAPs, sectorial strategies and plans, etc.). For each document mentioned, please indicate where the priorities specifically relevant to this request can be found (chapter, page number, etc.).}

The Vietnam Green Growth Strategy (VGGS) and Vietnam Green Growth Action Plan (VGGAP) have been approved by the Prime Minister respectably on September 25, 2012, by decisions 1393/QD-TTg and October 5,2012, by decision 1474/QD-TTg. The strategic task of this document includes reducing the intensity of GHG emissions and promoting the use of clean

and renewable energies. Following the national action plan, each line ministry needs to develop their own action plan.

The purpose of Solution No 14" Human resource training and development" is to provide training, knowledge enhancement, as well as governance and management skills on green economy, green production sectors for government staff, starting with leaders, policy makers and those involved in the formulation process of socio-economic development strategies, master plans and plans.

In the draft climate change mittigation action plan for Vietnam's cement sector chaired by the Ministry of Construction, ESCO has been identified as the driving force forenergy saving investments in private sector for GHG emissions and as one of the priority actions in the action plan for the period 2016-2020.

Development of the request *(up to half a page):*

{Please explain here how the request was developed at the national level and the process used by the NDE to approve the request before submitting it (who initiated the process, who were the stakeholders involved and what were their roles, and describe any consultations or other meetings that took place to develop and select this request, etc.)}

The request has been proposed by the Ministry of Construction (MOC) following the results of Draft Readiness Plan for NAMA in the cement sector of Viet Nam. The proposed technical assistance belongs to the promoting activity group of reducing emissions choices in the cement sector.

The proposal has been consulted twice with the National Designated Entity (NDE). NDE has supported the Ministry of Construction in reviewing the proposal per CTCN's criteria and suggestions to develop this proposal as a national request.

Expected timeframe:

{Please propose here a duration period for the assistance requested.}

~~1~~212 months from time of commencement

Background documents:

{Please list here relevant documents that will help the CTCN understand the context of the request and national priorities. For each document, provide weblinks if available, to attach to the submission form while submitting the request. Please note that all documents listed/provided should be mentioned in this request in the relevant question(s), and that their linkages with the request should be clearly indicated.}

Executive summary of Technical report can be downloaded via NDF website:
http://ndf.fi/project/nordic-partnership-initiative-pilot-programme-ndf-c34

Monitoring and impact of the assistance:

{Read carefully and tick the boxes below.}

☒By signing this request, I affirm that processes are in place in the country to monitor and evaluate the assistance provided by the CTCN. I understand that these processes will be explicitly identified in the Response Plan in collaboration with the CTC, and that they will be used in the country to monitor the implementation of the CTCN assistance.

☒ I understand that, after the completion of the requested assistance, I shall support CTCN efforts to measure the success and effects of the support provided, including its short, medium and long-term impacts in the country.

Signature:

NDE name: Pham Van Tan

Date: 1 August 2016

Signature:

THE COMPLETED FORM SHALL BE SENT TO THE CTCN@UNEP.ORG

Need help? The CTCN team is available to answer questions and guide you through the process of submitting a request. The CTCN team welcomes suggestions to improve this form.

>>> Contact the CTCN team at ctcn@unep.org