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:	Thailand

Request title:	Benchmarking Energy & GHGs Intensity in Metal Industry of Thailand

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. Surachai Sathitkunarat	Dr. Arunee Ewecharoen
Position:	Director of Energy and Environment Department	Project manager and Environmental Researcher
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Technology Needs Assessment (TNA):

{Select one of the three boxes below:}

☒ *The requesting country has conducted a TNA **in 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.}

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}

Industrial sector (Metal industry)

- Iron and Steel industry
- Aluminium industry
- Foundry industry

(Note: This group consumed high energy to melt metal)

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.}

Thailand as non-annex I country on United Nations Framework Convention on Climate Change (UNFCCC) which has not obligate to any GHGs emission reduction target but Thailand has been increasingly involved in Global activities aimed at tackling climate change. Presently Thailand Nationally Appropriate Mitigation Actions (NAMAs) pledge aim to reduce GHGs emissions in 7 – 20% by 2020 in comparison with 'BAU: business-as-usual'.

Iron and steel industry is the largest energy consuming industry, and one of the most prevalent sources of GHGs emissions. Therefore, the iron and steel industry is one of the target groups to reduce GHGs emission by following Thailand's NAMAs. In addition, the aluminium and foundry industry are target to reduce energy due to energy consumption are so high.

Although, the Thailand metal production slightly decrease due to dumping from China but steel demand increase. Then, entrepreneurs would like to complete by improving energy efficiency and quality of product. If the demand still growth, they requires large amount of energy in the form of oil, gas, coal and the amount of GHGs emissions increase accordingly. In developed countries (such as Europe, Japan) try to change the fuel type and technologies to reduce energy consumption and the GHGs emission.

Therefore, ISIT would like to study baseline of energy consumption and GHGs emission of each process to compare other countries as a benchmark to support Thailand's NAMAs which must be appropriate and achievable by Monitoring Report and Verification (MRV) system. Then, ISIT will suggest the techniques and technology improvement to reduce energy and GHGs emission.

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.}

In 2012 - 2015, Iron and Steel Institute of Thailand (ISIT) studied the projects on climate change such as (1) Estimated the emission factor of Electric Arc Furnace (EAF) process in energy and chemical reaction (2) Master plan on energy management of Iron and Steel in 2012 - 2032 (3) Short term on energy management in 2014 – 2019.

As already known, EAF and HR process are the most energy usage and main of GHGs emission. ISIT has been studied only on EAF process. Furthermore, ISIT will up-scale to others which related high energy consumer such as aluminium and foundry industry.

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.}

Methodology:

1. Questionnaire design
2. Questionnaire Gathering
3. Plant visit for verification
4. Analyze Energy Consumption and CO_2 emission
5. Comparative Analysis to benchmark
6. Audit Report for Action

This project cooperate with Iron and Steel Institute of Thailand (ISIT), South East Asia Iron and Steel Institute (SEAISI), Department of Industrial Works (DIW).

ISIT request the technical expert from the CTCN:

- GHGs calculation training.
- Set workshop about case study in steel industry to improve energy efficiency that related with GHGs reduction.
- Suggest the questionnaire design
- Create the SEC and GHGs guideline of metal industry (included downstream process)
- Develop technology list for iron and steel, aluminium and foundry industry for improvement energy efficiency and GHGs reduction from Worldwide.
- Suggest the techniques and technology improvement to reduce energy and GHGs emission.

All request will help us to understand our position (as GHGs emission) in the world and how to improve energy and GHGs reduction target in sustainable.

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.}

Medium-term impacts:

- To compare benchmark performance with the world best practice.
- To identify ways by which the energy and GHG can be reduced and by how much.

Long-term impacts:

- To improve energy efficiency and GHGs mitigation.

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).}

This study, iron and Steel industry know how to improve energy efficiency and GHGs mitigation compare with benchmark and how good we are.

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
Iron and Steel Institute of Thailand	Focal point of Thailand iron and steel industry, support iron and steel industry in many plays such as R&D, testing center, statistic information.
Iron and Steel industry	Data provider and key's improvement
Foundry industry	Data provider and key's improvement
Aluminium industry	Data provider and key's improvement
Thailand Greenhouse Gas Management Organization (Public Organization)	Designated national authority of CDM projects, set management actions and promotes GHGs emission reduction through various mean
Office of Natural Resources and Environmental Policy and Planning	National focal point of UNFCCC and responsible for policy development
Pollution Control Department	Pollution control at point sources including wastewater discharge, stack emission and solid waste
Office of Energy Policy and planning	National energy policy and planning: resolving energy issue under the National Energy Committee
Department of Alternative Energy Development and Efficiency	Develops and promotes renewable energies, bio-fuel, energy efficiency and energy saving strategies
Department of Industrial Works	Governs all kind of pollution control from factories, encourages GHGs emission reduction, promote clean technology, energy efficiency and waste minimization

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.).}

Thailand has submitted its Nationally Appropriate Mitigation Action plan to lower greenhouse gas emissions below business as usual by 2020. Thailand's National NAMA proposes action in the energy and transportation sectors to reduce emissions between 7 to 20% below business-as-usual (BAU) levels by 2020. The mitigations include energy efficiency improvements, renewable and alternative energy sources.

From pre-study on "Thailand's Intended nationally determined contributions (INDCs)" by Office of Natural Resources and Environmental Policy and Planning, present about the post-2020 actions on climate change, the mitigation potential is 20% from BAU base on 2005 . This action propose in the energy, industrial, domestic and transportation.

Industrial sector is one of main energy usage (11% from steel sector). Then, steel sector is one main of industry to reduce GHGs emission by improve energy efficiency. In addition, the melting process of melting industry should be improve themselves too. Therefore, this project will give knowledge and suggestions from expert about method and technology improvement.

Especially, government organizations need the data of steel sector to set pilot industry mitigation actions. This project will help them by giving the accurate data.

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.)}

ISIT team would like to study baseline of energy consumption and GHGs emission of each process to compare other countries as a benchmark to support Thailand's NAMAs. Presently, ISIT has been studied in EAF process. Therefore, ISIT would like to expand to HR process and others.

ISIT discussed with Iron and Steel club, Aluminium association and Foundry association to improve metal industry to be green industry. They request the suppcrting from government to study "Benchmarking Energy & GHGs Intensity in Metal Industry of Thailand".

Then, ISIT on behalf of Iron and steel center would like to submit this project to support private sectors.

Expected timeframe:

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

12 Months

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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.}

- *Walker Young, Thailand's national capacity self-assessment United Nations Framework Convention on Climate Change (2010)*
- *B. Limmeechokchai, S. Selvakkumaran and C. Nithitsuttibuta, Thailand NAMA Roadmap INDC and Peak CO2 Scenarios in 2050 (2013)*
- *ISIT, Benchmarking of Energy & GHGs Intensity in the ASEAN Iron and Steel Industry, SEAISI (2015)*
- *Office of Natural Resources and Environmental Policy and Planning, Thailand's Intended nationally determined contributions (INDCs) on September 28, 2015 (2015)*

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: *Mr. Surachai Sathitkunarat*

Date: Nov 25, 2015

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