

**Clean Technology Fund (CTF) Investment Planning for Thailand
Joint ADB and IFC Mission to Thailand: 15 – 19 August 2011**

Draft: 5 August 2011

1. Introduction

In a letter dated 24 June 2011, the Government of Thailand (GoT) notified the CTF Trust Fund Committee of its interest in reallocating funds in the CTF Country Investment Plan (CIP) which was endorsed in December 2009. The reallocation would shift CTF resources from public sector projects to private sector investments. To this end, GoT has requested a joint mission comprised of representatives of the Asian Development Bank (ADB) and the International Finance Corporation (IFC) to prepare an update of the CIP.

The CIF Administrative Unit replied to the GoT on 27 July 2011, advising that should the government wish to have a revised investment plan considered at the next meeting of the Trust Fund Committee in November, the revised plan would need to be prepared by early October.

2. Country and Sector Context

Thailand has experienced continued economic growth since 2009, weathering the global financial and economic downturn fairly well. Gross domestic product is projected to continue growing at 3-4% or more per year through the year 2030. Public financing is now available at historically low rates, obviating the need for external concessional financing of public sector GHG reduction projects.

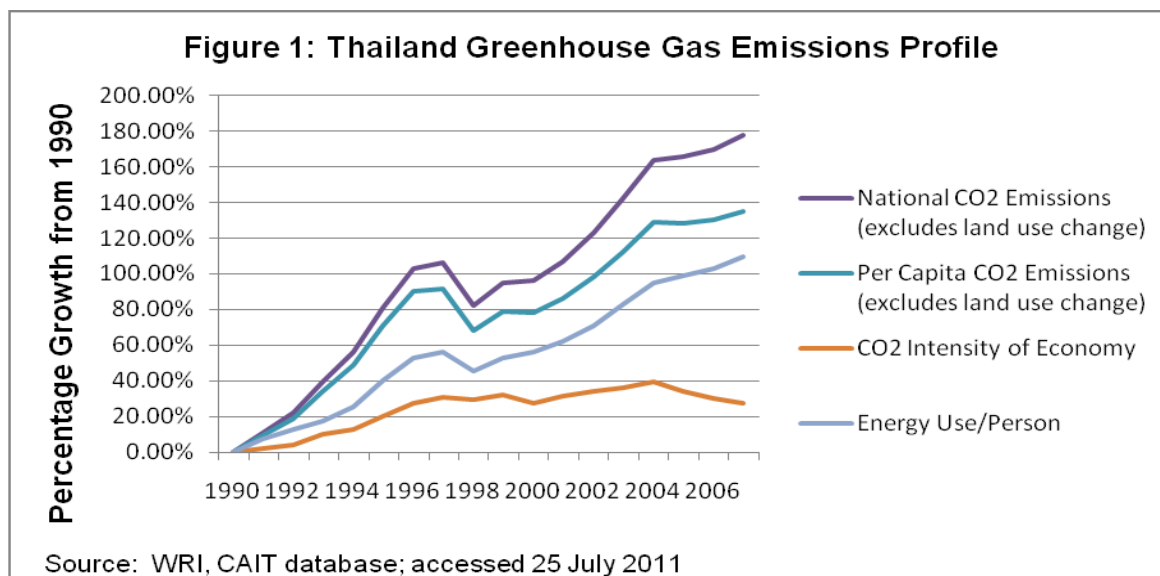
The GoT remains fully committed to its development policy framework for energy security, climate change, environmental management, and public health. The general approach and overall objectives for low-carbon development presented in the original CIP remain the same. GoT is committed to reducing energy intensity and greenhouse gas (GHG) reductions through a comprehensive policy framework (as described in the original CIP). Energy security is a high priority, as Thailand relies heavily on natural gas from the Gulf of Thailand and imported gas from Myanmar for power generation.

Energy use and industrial processes are still the largest sources of GHG emissions, with electricity generation accounting for about 38% of emissions. Total emissions, per capita emissions, and per capita energy use grew from 1990 through 2007; the CO₂ intensity of the economy declined slightly from the mid-2000s (see Figure 1). GHG emissions are projected to continue increasing for the foreseeable future. Energy demand is projected to increase from 146,182 gigawatt-hours (GWh) in 2009 to 347,947 GWh in 2030, an average of about 4.2% per year.¹

In order to enhance energy security, control pollution from fossil fuels, and mitigate long-term GHG impacts, domestic resources will be further utilized to expand supply of renewable electricity and transport fuels. Expanding the use of non-tradable domestic resources such as solar and wind power will improve energy security by offsetting demand for imported natural gas and imported hydropower. The EGAT *Power Development Plan 2010 – 2030* calls for electricity supplies to be progressively decarbonized, which will require continued addition of clean energy

¹ EGAT. 2010. *Summary of Thailand Power Development Plan 2010 – 2030*. EGAT System Planning Division, Report No. 912000-5305, April 2010.

to the generation mix, complemented by conservation and efficiency gains. This decarbonization objective is consistent with energy security objectives. In order to meet the combined energy security and decarbonization objectives, all of the existing and future coal-fired power capacity – comprising at least 10,000 MW of baseload generating capacity -- will need to be offset with low-carbon energy (or carbon sequestration technology which has yet to be commercialized).



3. CTF: Rationale for Update and Opportunities

The energy policy framework discussed in the original CIP, including the Alternative Energy Development Plan, remain in effect. The Government of Thailand (GoT) remains fully committed to its development policy framework for energy security, climate change, environmental management, and public health. The general approach and overall objectives for low-carbon development presented in the CTF Country Investment Plan remain the same.

The rationale for CTF intervention in the energy sector remains unchanged. Thailand's energy generation is highly dependent on imported fuels, which makes the country vulnerable to energy supply disruptions and global price fluctuations. Thailand is endowed with abundant renewable energy resources—biomass/biogas, small-scale hydropower, solar, and waste-to-energy (WTE)—with estimated total potential of 57,000 MW. Less than 3% of this potential has been developed. Tapping the RE potential will increase Thailand's energy security, save foreign exchange, and protect against global price fluctuations by using non-tradable domestic energy sources.

Circumstances guiding the financing approaches have changed sufficiently to warrant a revision to the Investment Plan. The two major issues highlighted in the GoT's request for reallocation include availability of public financing at low rates,² obviating the need for concessional funds for public sector projects in the near term and the long duration of 1 to 2 years needed to complete

² Recently, GoT issued 50-year bonds at 4.8% and 10-year bonds at 3.7%.

the review and approval procedures for sovereign borrowing. Besides, full government approvals are not guaranteed given these circumstances³.

There are immediate opportunities for utility-scale RE projects which face additional cost and risks that could be supported by CTF. Utility-scale WTE using municipal solid waste (MSW) and wind power are at the “pioneer” stage and face additional costs and risks which are not being covered by commercial financing. Utility-scale solar projects are also at an early commercial scale, with only a few large projects under construction.⁴ While some biomass potential is being successfully developed, there are still substantial resources which remain untapped, including MSW. CTF can provide a catalytic role in reducing the first mover risk and accelerating replication and scale-up in the near term. The replication potential for biomass, solar, WTE, and wind is more than 10 to 1.

The major change proposed is to reallocate CTF funds from public sector to private sector investments, including candidate projects being considered by the ADB Private Sector Operations Department (ADB-PSOD). ADB-PSOD is currently engaged with sponsors who are developing several waste-to-energy (WTE) projects with total capacity of about 50 MW, and several wind power projects with total capacity of about 350 MW. ADB is also working with sponsors to develop solar power projects with total capacity of about 100 MW. As of June 2011, ADB has closed financing for two utility-scale solar projects which are now under construction, and additional investments in similar projects are under consideration. These “pioneer” projects face (i) additional costs associated with state-of-the-art RE technologies and systems, and (ii) first-mover risk associated with deployment of these RE systems in Thailand which will not be mitigated by conventional financing. The replication and scale-up potential is at least 10 to 1.

These prospective investments are appropriate for CTF support given the transformational nature of the projects and the replication and scale-up potential. Opening a second window for private sector access to CTF with ADB-PSOD expertise and resources will add substantial value to the CTF Investment Plan.

4. Joint Mission Logistics

This MDB joint mission is proposed for 15-19 August 2011. The objectives of the mission are to: (i) agree on reallocation for the CIP Update which is in line with the GoT national climate change and overall development objectives; (ii) agree on the types of priority projects to be included in the Investment Plan submitted for CTF financing; and (iii) agree on roles, responsibilities and timeline for finalization of the CIP Update. A follow-up mission is not considered to be necessary. GoT wishes to finalize the CIP Update by early October, for consideration by the CTF Trust Fund Committee in November 2011.

The joint mission will discuss the proposed CIP Update with the relevant government Ministries and stakeholders including the key ministries of Finance (MOF), and the Ministry of Energy (MOE). The mission will also exchange information and coordinate with other donors engaged in climate change mitigation strategies and implementation.

The GoT contact point for the mission is Mr. Chakkrit Parapuntakul, Director General, Public Debt Management Office, Ministry of Finance (juk@mof.go.th or chakkrit@pdmo.mof.go.th).

³ More details are included in the proposal from GoT for reallocation in the request letter (Appendix 1)

⁴ These include the Bangchak 34.5 MW and 10 MW plants, and the NED 73 MW plant supported by ADB PSOD.

Contact persons at the MDBs are:

- ADB: Craig Steffenson, Country Director for Thailand. csteffenson@adb.org
- IFC: Simon Andrews, Regional Manager. SAndrews2@ifc.org

The Terms of Reference for the joint mission and the composition of the team are given in Annex 1 and 2.

Annex 1

Terms of Reference for Joint MDB mission to Support Update of Thailand CTF Investment Plan

Pre-mission activities, ongoing or completed

The country teams of ADB and IFC have conducted preliminary desk studies and have confirmed that the energy sector in Thailand continues to meet CTF requirements for investment.

Mission objectives, outputs, dates, and composition

The proposed mission dates are 15 – 19 August 2011 with the following objectives:

- (i) Agree on reallocation for the CTF investment which is in line with the GoT national climate change and overall development objectives;
- (ii) Agree on the types of priority projects to be included in the Investment Plan submitted for CTF financing; and
- (iii) Agree on roles, responsibilities and timeline for finalization of the CIP Update, to be submitted to the CTF trust fund committee in November, 2011.

Specific mission details

Objectives	Outputs	Dates	Compositions
1. Discussions on the opportunities of scaling-up low-carbon activities with: (a) GoT; (b) Private sector representatives; (c) Development partners	Meetings for clarification of GoT investment priorities	15 - 17 August	MDB joint mission team, GoT representatives, private sector representatives, bilateral donors and UN agencies
2. Review of the MDBs portfolio and pipeline projects that meet CTF criteria	Discussions with potential project sponsors, financiers, and other key stakeholders	15 – 17 August	MDB mission team, project stakeholders
3. Discussions to finalize CTF Country Investment Plan Update	MDB joint mission Aide-Memoire	18 – 19 August	MDB mission team, GoT representatives
4. Review of Aide Memoire by GoT and Discussion with MDB joint mission on Aide Memoire	Wrap-up meeting	18 – 19 August	MDB mission team, GoT representatives

Post mission activities (summary of tasks and timing)

- (i) Finalization of Investment Plan Update by end September 2011
- (ii) Submission of Investment Plan Update to the Trust Fund Committee by early October 2011

Country institutions involved

Below is the list of key institutions that can be involved in the mission:

- Ministry of Finance
- Ministry of Energy

MDB Team Members:

ADB: Mr. Daniel Wiedmer (Team leader), Mr. Jiwan Acharya (ADB CTF Coordinator), Mr. Craig Steffensen (Thailand Country Director), Ms. Oranuch Jetwattana, Senior Economist (Infrastructure / Private Sector; Thailand Resident Mission); Mr. Dan Millison (CTF Senior Advisor / Consultant); Mr. J. Frazier Gomez (CTF Consultant)

IFC: Mr. Simon Andrews (Regional Manager), Ms. Helen Han (Investment Officer), Mr. Navneet Chadha (Principal Operations Officer), Mr. Haru Ohtsuka (Investment Officer)

Status of coordination with UN Agencies and other development partners.

Meetings with development partners with active programs in climate change, including the UN agencies, will be convened during the mission. Bilateral meetings may be scheduled as necessary.

Annex - 2

CTF Joint Mission Composition and Assignments

Mission member	Agency	Assignment	Expected contribution to mission outputs
1. Mr. Daniel Wiedmer, Private Sector Operations Department	ADB	Team Leader	Ensure alignment of CIP Update with Country Partnership Strategy for the private sector, and aligning CTF activities to national energy development priorities.
2. Jiwan Acharya, Regional and Sustainable Development Department	ADB	CTF Coordinator	Ensure completeness and quality of CIP Update, and consistency with CTF requirements, criteria and modalities.
3. Craig Steffensen, Thailand Resident Mission	ADB	Thailand Country Director	Coordination with GoT agencies, MDBs, donors and other stakeholders
4. Oranuch Jetwattana,; Thailand Resident Mission)	ADB	Senior Economist (Infrastructure / Private Sector)	Coordination with GoT agencies, MDBs, donors and other stakeholders
5. Dan Millison (Consultant)	ADB	CTF Senior Advisor	Assist in preparation of concept papers and provide other inputs to CTF Investment Plan Update.
6. J. Frazier Gomez (Consultant)	ADB	Energy Project Specialist	Assist in preparation of concept papers and provide other inputs to CTF Investment Plan Update
7. Simon Andrews	IFC	Regional Manager	Review IFC sections of IP
8. Helen Han	IFC	Investment Officer	Contribute to IFC program annex
9. Navneet Chadha	IFC	Principal Operations Officer	Contribute to IFC program annex
10. Haru Ohtsuka	IFC	Investment Officer	Contribute to IFC program annex and ensure consistency with CTF private sector guidelines