INTEGRATED SAFEGUARDS DATA SHEET
APPRAISAL STAGE

Report No.: ISDSA4030

Date ISDS Prepared/Updated: 05-Aug-2013

Date ISDS Approved/Disclosed: 10-Aug-2013

I. BASIC INFORMATION

1. Basic Project Data

Country:	Myanmar	**Project ID:**	P143988
Project Name:	Electric Power Project (P143988)		
Task Team Leader:	Dejan R. Ostojic		
Estimated Appraisal Date:	23-Jul-2013	**Estimated Board Date:**	26-Sep-2013
Managing Unit:	EASTS	**Lending Instrument:**	Investment Project Financing
Sector(s):	Thermal Power Generation (100%)		
Theme(s):	Rural services and infrastructure (100%)		
Is this project processed under OP 8.50 (Emergency Recovery) or OP 8.00 (Rapid Response to Crises and Emergencies)?	No		
Financing (In USD Million)			
Total Project Cost:	140.00	Total Bank Financing:	140.00
Total Cofinancing:		Financing Gap:	0.00

Financing Source	Amount
BORROWER/RECIPIENT	0.00
International Development Association (IDA)	140.00
Total	140.00

Environmental Category:	B - Partial Assessment
Is this a Repeater project?	No

2. Project Development Objective(s)

The project development objective is to increase capacity and efficiency of gas-fired power generation and strengthen the institutional capacity of the Ministry of Electric Power and the Myanmar Electric Power Enterprise.

3. Project Description

Myanmar is facing large electricity shortages (about 20% of current demand) and high risk of

blackouts. The expansion of existing Gas Turbine (GT) stations through the installation of Combined Cycle Gas Turbines (CCGTs) has been identified as the fastest and least costly way to increase efficiency of gas utilization, increase generating capacity and reduce emissions. Myanmar Electric Power Enterprise (MEPE) operates ten GT stations, including the Thaton GT station in Mon State which was chosen as the best candidate for the expansion of generating capacity with modern, high-efficiency, low-emissions Combined Cycle Gas Turbine (CCGT) plant.

The project consists of two components: (a) CCGT power plant at the existing Thaton GT station, and (b) technical assistance component focused on institutional and capacity building support to the Ministry of Electric Power (MOEP) and MEPE.

Component 1: CCGT Power Plant (US$ 130 million).
The main component of the proposed project is the expansion of the Thaton gas turbine station capacity into a new CCGT power plant. A modern, high-efficiency CCGT power plant, comprising two 40 MW gas turbines with inlet air chillers, and one steam turbine of 26 MW, a heat recovery steam generator (HRSG) and air-cooled steam condenser will be installed in the existing Thaton GT station which currently has a nominal capacity of 50 MW. The selection of the 106 MW CCGT in Thaton is based on two main considerations: (a) the severely constrained availability of gas supply allocation in the domestic gas market; and (b) the age and condition of existing GT stations.

The existing Thaton GT station is located near the country's main gas-pipeline, which runs through the Mon State, and the reliability record of gas supply in Thaton is significantly better than in other GT stations considered as alternative project locations. Also, the existing GTs in Thaton are among the oldest in the country, experiencing increased number of forced outages and very low thermal efficiency (on average below 20 percent). Furthermore, the Thaton station has a relatively strong connection to the 230 kV power transmission network and it provides electricity to both the national grid and local communities in Mon State. Finally, the proposed project will support WBG's efforts by complementing IPP projects located near major urban areas (such as Yangon and Mandalay), by focusing on mostly rural areas and parts of the country with higher poverty levels and electricity shortages incidence.

The power plant component will be implemented as a "turn-key" contract including engineering and project management services, supply of equipment, construction, testing, commissioning, and maintenance support. Due to the urgent needs of power supply in Myanmar to reduce load shedding and power shortages, the project is designed to provide electricity as fast as possible through a phased approach. To achieve this, the project will start construction of the first phase (gas cycle) and begin generation one year after the contract signing. The second phase (steam cycle) will follow immediately and will be completed about 15 months after the first phase is commissioned.

Component 2: Technical Assistance and Advisory Services (US$10 million).
This component will provide technical assistance (TA) and advisory services to MOEP and MEPE in two main areas. The first area of support is related to the capacity building for policy making and regulation in the power sector including, but not limited to: (a) development of National Electrification Program; (b) financial analysis and forecasting for power enterprises; (c) economic valuation of natural gas in the domestic market; and (d) review of electricity tariffs and subsidy mechanisms. The second area of support is related to the capacity building for project implementation including: (a) owners engineer for the implementation of CCGT plant; (b) strengthening of procurement capacity and training on international procurement practices; and (c) improvement of financial management (FM) capacity and training in international FM standards and

procedures; (d) environmental and social safeguards; and (e) implementation of the Environmental and Social Management Plan (ESMP) at the project site.

Further TA activities, which are not yet fully identified, and require further discussion and study, may be included at later stages of the project. The details of the scope of these activities will be agreed with the government during project implementation, in consultation with other development partners, to ensure a coordinated approach in technical assistance and capacity building support. The Project implementation activities will include close collaboration with RSS in implementing the TA activities.

4. Project location and salient physical characteristics relevant to the safeguard analysis (if known)

The Thaton GT station is located in a rural area approximately 5 km northeast of the township of Thaton which is the administrative center for Thaton District, Mon State. Physically the land is a relatively flat coastal plain. Flooding of the site is not reported as an issue; open drains carry away excess water to the surrounding terrain with a seasonal water creek in the rainy season. Although water discharges (run-off water as well as domestic wastewater and water used for site cleaning) should not be a significant source of pollution, the current poor state of control to prevent contamination is likely to cause contamination levels that should be prevented. The Environmental and Social Management Plan (ESMP) includes measures for this during project implementation. Land use surrounding the GT station is agricultural (rubber tree plantations, no other crops have been identified near the GT station) with the exception of a tire factory adjacent to the east side of the site. A national road runs along the Project site at short distance (some 1,500m) and is an important contributor to local noise levels. Both the proposed and the current plant operations do not use water for cooling purposes and there are no perennial streams or rivers running through the site or close to the immediate perimeter. All activities related to modernization and expansion will take place within the power plant compound ('brownfield development') which is situated on government owned land. This site has been in use for power generation since 1975 when the first two gas turbines were commissioned at the Thaton GT station.

5. Environmental and Social Safeguards Specialists

Knut Opsal (AFTCS)

Frank Van Woerden (EASER)

6. Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/ BP 4.01	Yes	The proposed project has been classified as category 'B' because the impacts that may occur during construction or operation of the project investment are limited, site-specific and mitigation measures can be readily designed. All the physical work will take place within the existing brownfield location. The project will increase existing power generation capacity, and will have positive impacts by substantially increasing generation efficiency and by substantially reducing emissions and noise levels, while improving reliability and quality of electricity supply in Thaton. The existing turbines

		will be used less than two weeks per year for maintenance and exceptionally during emergency situations. The project will have limited negative impacts on the environment. Many of the impacts are related to the existing operations. An Environment and Social Assessment (ESA) has been prepared including an Environment and Social Management Plan (ESMP) to mitigate any potential impacts during construction and operation. Lack of institutional capacity for environmental and social protection will be addressed through the technical assistance (TA) component under the project. This TA will include support to develop and implement a certified Environment, Health & Safety Management System under the Project for the existing and new facilities of the Thaton GT power station to address environment, health and safety considerations of future operations.
Natural Habitats OP/BP 4.04	No	The Project site is in at an industrial (brownfield) site with that land use purpose for at least the last 30 years.
Forests OP/BP 4.36	No	The Project site is in at an industrial (brownfield) site with that land use purpose for at least the last 30 years.
Pest Management OP 4.09	No	There will be no procurement of pesticides or fertilizers, or any works within the project which would lead to the use or the increased use of pesticides.
Physical Cultural Resources OP/ BP 4.11	No	All construction and project activities will be within existing site. The Project site is in an industrial (brownfield) site with that land use purpose for at least the last 30 years.
Indigenous Peoples OP/BP 4.10	Yes	The policy is triggered because of the presence of IPs within the project's area of influence. Since IPs represent the overwhelming majority of the potential beneficiaries and affected population in the Project influence area, no separate Indigenous People Plan was prepared. The relevant elements of the policy have been directly integrated into project design and summarized in the PAD. Broad community support (BCS) based on a process of free, prior and informed consultation has been documented in the Social Assessment

		(SA) during project preparation and public consultations. Access to electricity is one of the main priorities of local IPs, as 85 percent of households are not electrified, 73 percent of which cannot afford the connection fee. There are expectations that the project will help increase access to electricity in the three villages within the area of influence of the project. The Bank will provide technical assistance and support to the government to prepare and accelerate rural electrification in the s 3three IP villages in the Project's area of influence. Furthermore, the affected communities will benefit from significantly reduced noise and pollution in the project area. Also, communal facilities, such as schools and hospitals which are connected to the grid, will be provided with more reliable power supply. The improved power supply in the region will result in considerable indirect benefits, which will include increased economic activities and job creation. These measures will be included in the ESMP. The findings of the SA as well as the issues raised in the subsequent stakeholder workshop have been summarized in the section II of ISDS.
Involuntary Resettlement OP/BP 4.12	No	The SA has confirmed that there will be no physical resettlement, land acquisition or loss of income associated with the project, and all construction-related activities will take place within the existing site. No other entity except the existing power plant is currently using the project land. The existing plant has been in operation since 1975. The due diligence review during Project preparation did not identify any legacy issues related to prior land use, and no issues were raised during the consultations.
Safety of Dams OP/BP 4.37	No	The Project will not finance construction or rehabilitation of any dams, nor will it rely on the performance of an existing dam or a dam under construction, as defined in this Policy.
Projects on International Waterways OP/BP 7.50	No	The Project site is not adjacent to any international waterway, including any transboundary aquifer.

Projects in Disputed Areas OP/BP 7.60	No	The project is not in a disputed area.

II. Key Safeguard Policy Issues and Their Management

A. Summary of Key Safeguard Issues

1. Describe any safeguard issues and impacts associated with the Restructured project. Identify and describe any potential large scale, significant and/or irreversible impacts:

Environment: In accordance with the requirement of a Category B project, an Environmental and Social Assessment (ESA) was carried out for the proposed project components, and an environmental and social management plan (ESMP) will be prepared to determine the mitigation measures, monitoring program and necessary institutional arrangements as well as capacity development. The documents will be revised and prepared by an internationally reputable consultancy firm on the basis of good international practices as well as applicable Bank safeguard policies including for WBG General EHS Guidelines and WBG EHS Guidelines for Thermal Power Generation.

The Project's investment will take over power production from the old gas turbines at the Thaton power stations and the old facilities, which will not be dismantled under the Project. The old facilities will only be used in emergency situations or during periods of maintenance of the new equipment. Typically, downtime of the new turbines for maintenance or disruptions, and hence the possibility that the old turbines will be used, is around two weeks per year. With the substantially higher efficiency and environmental performance standards of the new equipment (lower emissions to air, less waste consumption, much lower noise generation levels) and the introduction of a certified Environmental, Health, Safety Management System, the investment will reduce environmental impacts and is considered to be on benefit to the surrounding environment and the local population. Natural gas fired power plant have low emissions of PM10/2.5 and hydrocarbons. With the natural gas's sulfur contents of 0.002% or less also sulfur dioxide emissions are very low. The main air pollutant from natural gas is NOx and emission levels are expected to be around 70% less after the new turbines become operational. The level of carbon dioxide emissions will be substantially reduced per unit of electricity produced, but the total CO2 emissions will roughly remain at the existing level because the plant will continue to use the same amount of natural gas. Noise levels at the fence surrounding the site currently reach levels of 60-70 dB(A) and at places (main entrance) levels up to 80 dB(A). The noise levels from the new turbines, in compliance with international standards, are expected to be reduced to between 50 (nighttime) and 55 dB(A) (daytime) at the fence of the site.

Due to lack of adequate national environmental standards, the World Bank Group Environmental Health and Ssafety General Guidelines (WBG EHS Guidelines) and the World Bank Group Guidelines for Thermal Power Generation will apply to the project, and, where applicable, other international good standards such as relevant EU Directives, or US-EPA standards.

All investments and other project interventions will occur at the existing site within its perimeter and there are no associated investments (such as transmission and distribution network, water supply, road works).

Construction activities with the installation of the CCGT units would cause emissions from construction equipment, airborne dust and noise, as well as small amounts of wastewater (washing

water) and solid waste (inert construction waste). During the operational phase air emissions and noise levels will be determined by the specifications of the installed equipment, in compliance with WBG EHS Guidelines and international standards, which represent a substantial improvement in comparison to the current situation. Wastewater and waste generation are limited and largely unrelated to the core power generation process (cleaning and runoff water, wastewater, etc). Mitigation measures will be included in the ESMP. Potential measures include sorting of waste and collection under municipal services (although these are limited) and basic wastewater control (through retention pond and/or septic tank).

An environmental and social management plan (ESMP) will be developed. The ESMP will comply with applicable Bank Safeguard Policies requirements' and applicable environmental, health, safety, and social standards. The ESMP will include mitigation measures, monitoring plans, institutional arrangements, capacity building and estimated costs for the mitigation measures and monitoring programs for both the construction and operation phases. The ESMP will also include the Environment Health and Safety Management System, to be developed during Project implementation.
The due diligence review that was undertaken as part of the ESA showed a lack of safeguards and operation procedures for workers' health an d safety and environmental good practices. The Environment Health and Safety Management System will include health and safety measures that will substantially improve standards and practices to deal with these issues for both the new and existing facilities in an adequate manner.

The Safeguard Policy on Pest Management (OP/BP 4.09) has not been triggered because there wil be no procurement of pesticides or fertilizers, or any works within the Project which would lead to the use or increased use of pesticides. The power generation facilities will use air cooling, therefore there are no discharges of cooling water (and therefore no possibility of cooling water discharge containing pesticides).

The Safeguard Policy on Safety of Dams (OP/BP 4.37) has not been triggered because the project will not finance the construction or rehabilitation of any dam, nor will it rely on the performance of an existing dam or a dam under construction, as defined in this Policy. The project site and its functional linkages (connection to the power grid, water supply) as well as the investments under the Project do not include any dams or impoundments.

Social: Indigenous Peoples (OP 4.10). A Social Assessment (SA) was carried out as part of the ESA process. The closest habitation is some 500m from the site perimeter fence, and there are three villages surrounding the proposed project site. Two of these, Than Ban, and Kyar Pan are located about 1.5 km from the project site. Than Ban has a total household population of 150 (400 persons) while Kyar Pan consists of 330 households (1500 persons). A third village, Nyaun Wyne, is located 2 km from the project site and is comprised of 252 households. In addition 120 staff households are located next to the plant. The majority of the inhabitants in the three villages are ethnic minorities. In Than Ban, the Keren represent 90% of the population, while there is almost an even distribution among Keren (45%) and Pao (40%) in Kyar Pan. In Nyaun Wyne 80% belong to the Keren group.

The Indigenous Peoples policy is triggered because of the presence of Indigenous Peoples (IPs) within the project's area of influence. The overwhelming majority (over 90 percent) of the beneficiaries and affected peoples in the Project influence area are IPs and, therefore, a separate

Indigenous Peoples Plan (IPP) has not been prepared, but relevant elements of the policy have been integrated into project design and summarized in the PAD. In line with OP 4.10 requirements, this includes continued consultation to be carried out during the project implementation , including the technical assistance and support for the rural electrification program in the 3 IP villages in the Project's area of influence.

Broad community support (BCS) based on a process of free, prior and informed consultation has been documented in the SA. Access to electricity is one of the main priorities of local IPs, as 85 percent of households are not electrified, 73 percent of which cannot afford the connection fee. There are expectations that the project will help increase access to electricity in the three villages considered to be within the zone of influence of the project.

The Bank will provide technical assistance and support to the government to prepare and accelerate rural electrification in the three IP villages in the Project area of influence. Furthermore, the affected communities will benefit from significantly reduced noise and pollution in the project area. Also, communal facilities, such as schools and hospitals which are connected to the grid, will be provided with more reliable power supply. The improved power supply in the region will result in considerable indirect benefits, which will include increased economic activities and job creation.
These measures will be included in the ESMP.

A culturally appropriate grievance redress mechanism will be established in consultation with potentially affected IPs to address grievances by the affected Indigenous Peoples' communities and to ensure that any project related complaints are promptly addressed. A first instance of dispute handling where IPs are represented will be set up with the aim of settling any disputes amicably. If necessary, the project will establish a committee which will include IP representatives and project management. Court cases will be time consuming and expensive and are likely to be beyond the reach of local IP stakeholders and should be considered a last resort. It is therefore critical to establish first and second tier grievance management mechanisms. Each case should be carefully documented and the nature of grievance, agreed actions to be taken and subsequent monitoring recorded.

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:

No irreversible and long term adverse indirect impacts are anticipated from the project activities. The control measures that will be developed and implemented under the proposed certified Environmental, Health and Safety Management System will support proper management of waste and wastewater, as well as workers health and safety (including the introduction and routine application of safety working procedures; inspection; training; emergency plan; and personal protection equipment to prevent injuries, hearing damage, etc.).

3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.

The choice of this project was based on minimizing environmental and social impacts. Different sites were considered and reviewed.

The operational replacement of the existing gas turbines with modern equipment will substantially reduce noise generation and air emission levels. During project preparation and in addition to the impacts directly related to the investments, the current poor management of non-production waste,

wastewater and workers' health and safety were reviewed. The ESMP will include measures for substantial improvements to these issues.

4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.

International reputable consultants have supported the client with the preparation of the ESA and will support the client in the preparation of the ESMP.

The ESMP will include environmental monitoring programs for both construction and operation phases.

The implementation of the mitigation measures, including environmental, health and safety obligations during construction, will be monitored in accordance with a program of monitoring activities that will developed as part of the ESMP. Control and mitigating measures and monitoring tasks of the ESMP related to the new investments during construction will be the responsibility of the contractor for the new CCGT installations and will be made part of the Engineering-Procurement-Construction (EPC) contract for these services.

A substantial part of the operational measures in the ESMP will be incorporated into the certified Environmental, Health and Safety Management System and will be under the responsibility of the plant management after commissioning of the new facilities. The EPC contractor will support the development of the Environmental, Health and Safety Management System , which will be certified and audited by an independent and internationally authorized certifying agency. The Project under its TA Component will also support the development of environment, health and safety system at the site and at MEPE to build capacities in this field and support monitoring of ESMP implementation, also beyond project closing, and the development and functioning of the Environmental, Health and Safety Management System at the Thaton location. The project progress reports furnished by MEPE will include a section for ESMP implementation and related environmental monitoring reports.

Environmental and social safeguards capacities and regulations in Myanmar does not meet international good practice. This applies to screening and reviewing of economic activities and new investments for potential environmental and social adverse impacts as well as regulating, monitoring and enforcing compliance to adequate standards. Technical assistance related to the capacity building for project implementation includes environmental and social safeguards and the implementation of environmental and social management plan at the project site.

5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.

The key Project beneficiaries and potentially affected peoples in the Project influence area are the three IP villages that are located in the project influence area, and the project beneficiaries at the Mon State and national level.

Public consultations for the project affected area took place throughout the project preparation. The ESA, which includes the SA, contains the details of this process, concerns expressed by the affected people and how they were taken into account during the project preparation. This includes a stakeholder workshop following the completion of the social assessment a stakeholder workshop with about 50 participants was convened in Thaton. Participants included representatives from government, civil society and local stakeholders.

For national stakeholder an NGO meeting took place in Yangon in May 2013. Also, several

government entities were consulted throughout the project preparation.

During the public hearing in Thaton and the NGO meeting in Yangon in May 2013 the Project interventions and the results of the impact analysis of the ESA were presented and discussed. The Executive Summary of the ESA was disclosed in local language to the NGOs and the local stakeholders including the local communities in the Project area in July 2013 and published on MEPE's website on July 9, 2013. The integrated ESA report was published in the Infoshop on July 10, 2013.

B. Disclosure Requirements

Environmental Assessment/Audit/Management Plan/Other	
Date of receipt by the Bank	13-Jun-2013
Date of submission to InfoShop	10-Jul-2013
For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors	
"In country" Disclosure	
Myanmar	09-Jul-2013
Comments:	
Indigenous Peoples Development Plan/Framework	
Date of receipt by the Bank	10-Jul-2013
Date of submission to InfoShop	10-Jul-2013
"In country" Disclosure	
Myanmar	09-Jul-2013
Comments:	
If the project triggers the Pest Management and/or Physical Cultural Resources policies, the respective issues are to be addressed and disclosed as part of the Environmental Assessment/ Audit/or EMP.	
If in-country disclosure of any of the above documents is not expected, please explain why:	

C. Compliance Monitoring Indicators at the Corporate Level

OP/BP/GP 4.01 - Environment Assessment	
Does the project require a stand-alone EA (including EMP) report?	Yes [×] No [ ] NA [ ]
If yes, then did the Regional Environment Unit or Sector Manager (SM) review and approve the EA report?	Yes [×] No [ ] NA [ ]
Are the cost and the accountabilities for the EMP incorporated in the credit/loan?	Yes [×] No [ ] NA [ ]
OP/BP 4.10 - Indigenous Peoples	
Has a separate Indigenous Peoples Plan/Planning Framework (as appropriate) been prepared in consultation with affected Indigenous Peoples?	Yes [ ] No [ ] NA [×]
If yes, then did the Regional unit responsible for safeguards or Sector Manager review the plan?	Yes [ ] No [ ] NA [ ]

If the whole project is designed to benefit IP, has the design been reviewed and approved by the Regional Social Development Unit or Sector Manager?	Yes [ ] No [ ] NA [ ]
The World Bank Policy on Disclosure of Information	
Have relevant safeguard policies documents been sent to the World Bank's Infoshop?	Yes [×] No [ ] NA [ ]
Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?	Yes [×] No [ ] NA [ ]
All Safeguard Policies	
Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?	Yes [×] No [ ] NA [ ]
Have costs related to safeguard policy measures been included in the project cost?	Yes [×] No [ ] NA [ ]
Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?	Yes [×] No [ ] NA [ ]
Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?	Yes [×] No [ ] NA [ ]

III. APPROVALS

Task Team Leader:	Dejan R. Ostojic	
Approved By		
Regional Safeguards Advisor:	Name: Peter Leonard (RSA)	Date: 05-Aug-2013
Sector Manager:	Name: Julia M. Fraser (SM)	Date: 10-Aug-2013