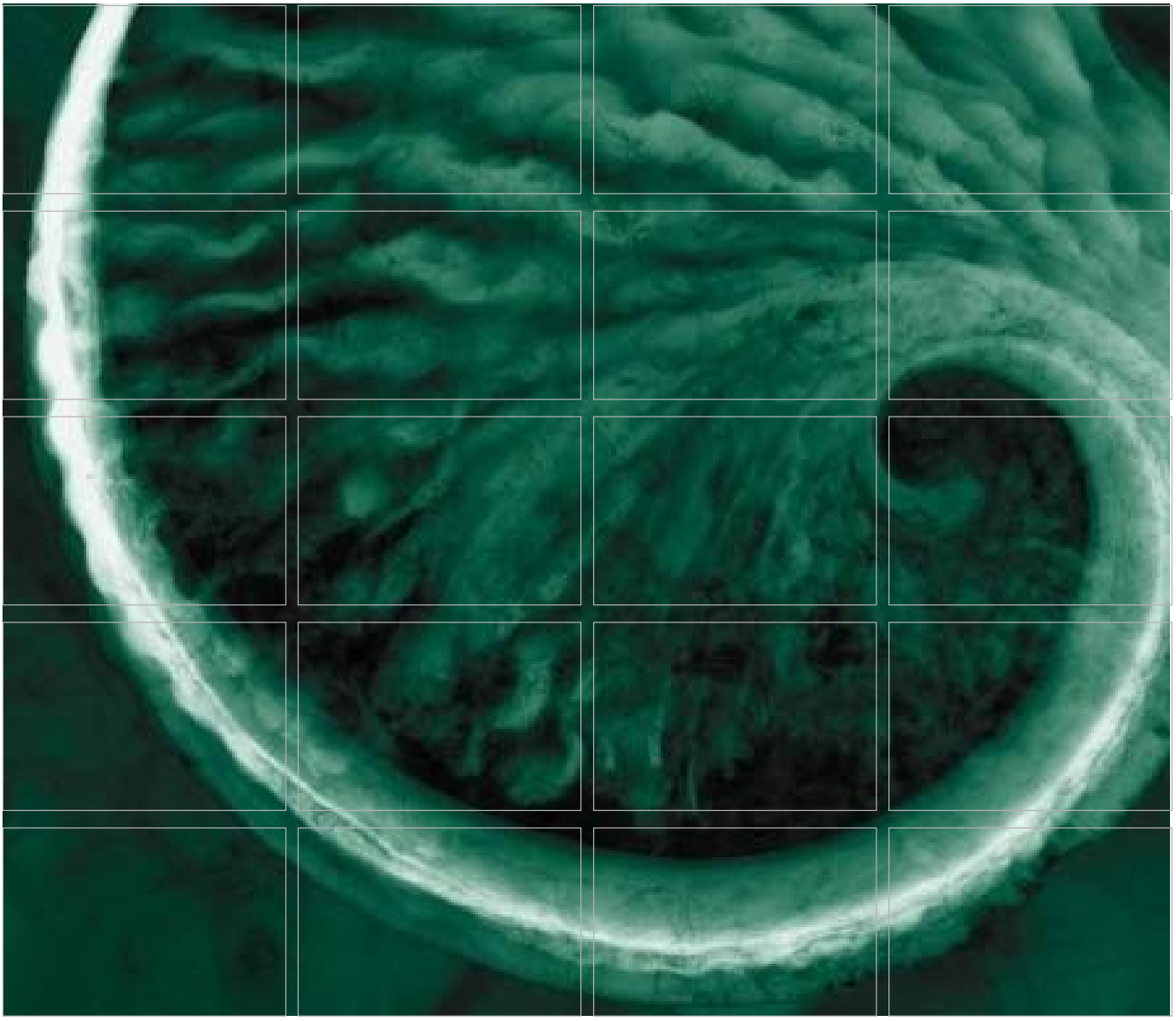

Environmental and Social Due Diligence - Long Phu 1 Thermal Power Plant

Final Report

HSBC and LP1 PP PMU

9 December 2016

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FINAL REPORT

HSBC and LP1 PP PMU

Environmental and Social Due Diligence – Long Phu 1 Thermal Power Plant

For and on behalf of
ERM Vietnam Company Limited
Approved by: Hai Pham
Signed:

Position: General Director
Date: 9 December 2016

1 INTRODUCTION

1.1 BACKGROUND

PetroVietnam (PVN) is constructing Long Phu 1 Thermal Power Plant, a 1,200MW coal-fired power plant ("the Project" or "LP1"). The Project includes 2 x 600MW power generating units. The Project covers a total area of 115 ha and is one of three thermal power projects (TPP) to be developed within Long Phu Power Complex (LPPC) of 386.88 ha located in Thanh Duc and Loi Duc hamlets, Long Duc commune, Long Phu district of Soc Trang province, Vietnam.

In order to facilitate the Project's development, '*LPPC Shared Infrastructure Construction Project*' (LPPC Shared Infrastructure- Phase 1 Project), which covers the land acquisition phase, has been implemented by PVN. There are two existing regulatory Environmental Impact Assessments (EIAs) related to the LP1 project, including i) an EIA of LP1 approved by Ministry of Natural Resources and Environment (MoNRE) in November 2009 and ii) an EIA of Long Phu Power Complex (LPPC) approved by MoNRE in the same year.

PVN has established Long Phu 1 Petroleum Power Project Management Unit (LP1 PP PMU or LP1) to directly manage LP1 project development. The construction phase commenced in January 2015. Consortium of Power Machines (Russia) and PetroVietnam Technical Services Corporation (Vietnam) was selected as the EPC contractor for the Project's development. LP1 PP PMU has contracted the consortium of Fitchner - PVE to provide consultancy on project management.

LP1 PP PMU is seeking USD 1.12 billion in financing from a mix of Export Credit Agencies (the "ECAs" or "Lenders") supported financing and commercial funding with an availability period of up to 41 months, including a facility covered by the Export Insurance Agency of Russia ("EXIAR") and related commercial facility will be set up and separately financed by Russian banks.

The Hongkong and Shanghai Banking Corporation ("HSBC"), are acting as proposed Global Coordinator (the "Global Coordinator") for the financing of the Project, together with the Bank of Tokyo-Mitsubishi UFJ, Ltd. ("BTMU"), Cathay United Bank ("CUB"), JPMorgan Chase Bank and National Association ("JPMorgan") (together the "Mandated Lead Arrangers" or "MLAs").

State Corporation "Bank for Development and Foreign Economic Affairs (Vnesheconombank)" ("VEB") is acting as arranger (the "Russian Lead Arranger") of Russian sources for the financing of the Project.

ERM Vietnam Co. Ltd (ERM) was commissioned by HSBC and LP1 PP PMU (together referred to as "the Client") to conduct an Environmental and Social Due Diligence Review (hereafter referred to as "the Review" or "the ESDD") of the Project. The Client has requested ERM to act as an environmental and social consultant to ensure that the MLAs' requirements are met with respect to the Equator Principles, International Finance Corporation (IFC) Performance Standards (PSs) and Environmental, Health and Safety (EHS) Guidelines, World Bank Safeguard Policies (Operational Policies), OECD Council's Recommendation of the Council on Common Approaches for Officially Supported Export Credits and Environmental and Social Due Diligence, Environmental and Social Policies of ECAs and local Vietnamese social and environmental regulations applicable to the Project (together referred to as "the Applicable Standards"). All work undertaken as part of this Report and the resulting recommendations are made to reflect the Lenders' perspective.

The Client has the right to share the Report with other lenders of the Project.

1.2 OBJECTIVES

The objectives of the Review are to:

- Provide an independent professional environmental and social (E&S) assessment of the Project against the Applicable Standards. As part of this review, technical insight of the impact assessment outlined in the local EIA and other associated Project documents will be undertaken, including:
    - the Project's emissions and ambient air quality (specifically NOx, SO_2, CO_2 and overall GHG emissions), wastewater discharge and thermal discharge; aquatic ecology/biodiversity, noise and vibration and waste management (with particular attention to ash control);
    - the design of the Project incorporating Flue Gas Desulphurisation ("FGD") technology as well as NOx reduction and dust collector technologies; and
    - the greenhouse gas (GHG) assessment report issued by Fitchner GmbH &Co.KG in 2015.
- For material gaps against the Applicable Standards, recommendations for those environmental and social measures which ERM considers should be documented and agreed as essential pre-conditions for the MLAs, EXIAR and EXIAR lenders, and the ECAs to support the Project on environmental and social grounds;
- Develop an Environmental and Social Action Plan (ESAP) that sets out how identified issues can be addressed, and assist the Global Coordinator,

the MLAs, EXIAR and EXIAR lenders, and the ECAs in negotiating and reaching agreement on the ESAP with PetroVietnam;

- Develop a Scoping report for conducting an Environmental, Social and Health Impact Assessment (ESHIA) and Environmental and Social Management Plan (ESMP), and regular reporting regime for implementation of the ESAP; and

- Providing the Global Coordinator, the MLAs, EXIAR and EXIAR lenders, and the ECAs with all deliverables of this Contract and any additional information as may be required from time to time after financial close.

In the context of this engagement, ERM's focus will be on identifying material issues and is proposing to define a material finding as an Environmental & Social issue that:

- Would require more than US$250,000 to rectify;

- May potentially result in significant business interruption;

- May result in criminal proceedings or a major environmental incident;

- May reasonably result in a regulatory non-compliance or non-compliance with Central Government policies and decisions; and

- Has resulted in regulatory non-compliance, community or NGO protest (as identified through an internet search); and/or could result in a risk of multiple serious injuries or fatalities.

1.3 APPLICABLE STANDARDS

Considering the corporate environmental and social standards adopted by the Global Coordinator, the MLAs and the ECAs, Applicable Standards include:

(1) International Standards

- The Equator Principles (2013 version);

- International Finance Corporation (IFC) Performance Standards on Social and Environmental Sustainability (2012 version);

- IFC General EHS Guidelines (EHS), 2007;

- IFC EHS Guidelines for Thermal Power Plants, 2008;

- IFC EHS Guidelines for Ports, Harbors and Terminals, 2008;

- IFC Guidance Note on Workers' Accommodation, 2009;

- IFC EHS Guidelines for Waste Management Facilities, 2007;

- World Bank Safeguard Policies (Operational Policies);
- OECD Council's Recommendation of the Council on Common Approaches for Officially Supported Export Credits and Environmental and Social Due Diligence (referred to as "the Common Approaches") and notably the updated *ANNEX VI* related to the coal-fired power plants valid as of 1st January 2017; and
- Environmental and Social Policies of ECAs.

(2) Vietnamese Regulations

Key local Vietnamese environmental and social regulations applicable to the Project, including but not limited to:

Environmental regulations

- *Law on Environment Protection 2005* (LEP 2005);
- *Law on Environment Protection 2014* (LEP 2014, superseding LEP 2005 since 2015); and
- *Law on Water Resources 2012.*

Environmental Impact Assessment (EIA) and post EIA process

- *Decree No. 80/2006/ND-CP* dated 9 August 2006 of the Government on detailing and guiding the implementation of a number of articles of the LEP 2005;
- *Decree No. 21/2008/ND-CP* dated 28 February 2008 of the Government on amending and supplementing a number of articles of the Government's Decree No. 80/2006/ND-CP;
- *Decree No.18/2015/ND-CP* dated 14 February 2015 of the Government on regulating environmental planning, strategic environmental assessment (SEA), EIA and Environmental Protection Plan (EPP) (in effect since 2015);
- *Circular No. 05/2008/TT-BTNMT* dated 8 December 2008 of MoNRE guiding strategic environmental assessment, environmental impact assessment and environmental protection commitment; and
- *Circular No.27/2015/TT-BTNMT* dated 29 May 2015 of MoNRE on SEA, EIA and EPP (in effect since 2015)

Water Use and Wastewater Management

- *Decree No. 201/2013/ND-CP* dated 27 November 2013 of the Government on detailing and guiding the implementation of a number of articles of Law on Water Resources 2012; and

- *Circular 27/2014/TT-BTNMT* dated 30 May 2014 of MoNRE on permitting process for water use and wastewater discharge.

Waste Management

- *Decree No. 38/2015/ND-CP* dated 24 April 2015 of the Government on Waste and Scrap Management;

- *Circular No. 36/2015/TT-BTNMT* dated 30 June 2015 of MoNRE on Hazardous Waste Management;

- *Decision No. 1696/QD-TTg* dated 23 September 2014 of the Prime Minister on solutions for recycling/ reuse combustion ash and gypsum generated from thermal power plants and fertilizer plants for producing construction materials; and

- *Notification No. 279/TB-VPCP* dated 17 August 2015 of the Governmental Office on the Deputy Prime Minister Hoang Trung Hai's conclusion at the meeting discussing solutions for recycling/ reuse combustion ash generated from thermal power plants.

Land Acquisition, Compensation and Resettlement

- *Land Law (2003);*

- *Decree No. 197/2004/ND*-CP dated 3 December 2004 of the Government on compensation, support and resettlement;

- *Decree No.181/2004/ND-CP* dated 29 October 2004 on the implementation of the Land Law;

- *Decree No. 69/2009/ND-CP* dated 13 August 2009 of the Government on additionally providing for land use planning, land prices, land recovery, compensation, support and resettlement; and

- *Circular No. 14/2009/TT-BTNMT* dated 01 October 2009 detailing the compensation, support and resettlement and order of and procedures for land recovery, allocation and lease.

Grievance Management

- *Land on Grievance 2011.*

Labour, Health and Safety Management

- *Labour Code 2012;*

- *Decree No. 44/2013/ND-CP* Detailing and implementation a number of articles of Labour code on labour contract;

- *Decree No. 45/2013/ND-CP* Regulation a number of articles of Labour Code on working time, resting time, and occupational health and safety;
- *Circular No. 26/2013/TT-BLDTBXH* Promulgating a list of jobs in which employment of female labourers is prohibited;
- *Decree No. 49/2013/ND-CP* Guiding the Labour Code on wage;
- *Decree No. 11/2016/ND-CP* Regulating in details the implementation of some articles of the Labour Code regarding foreign employees in Vietnam;
- *Law on Trade Union, 2012;*
- *Law on Social Insurance, 2006.*
- *Circular No. 07/2016/TT-BLDTBXH* Regulating the implementation of health and safety works in production, commercial businesses;
- *Decree No. 39/2016/ND-CP* Detailing the implementation of some articles of Law on Health and Safety;
- *Circular No. 08/2016/TT-BLDTBXH* Guiding the collection, storage, compilation, provision, disclosure, and assessment of work-related accident and serious technical incident situation;
- *Circular No. 27/2013/TT-BLDTBXH* Regulation on occupational health and safety training;
- *Circular No. 13/2016/TT-BLDTBXH* Promulgating a list of works subject to strict health and safety requirements;
- *Decree No. 37/2016/ND-CP* Detailing and guiding the implementation of some articles of Law on Health and Safety regarding compulsory insurance for work-related accidents and occupational diseases;
- *Decree No. 79/2014/ND-CP* Guidelines for the law on fire safety and firefighting and the law on amendments to the law on fire safety and firefighting;
- *Decision No. 02/2013/QD-TTg* Regulation on oil spill response; and
- *Decree No. 26/2011/ND-CP* Amending and supplementing a number of articles of the Government's Decree No. 108/2008/ ND-CP of October 7, 2008, detailing and guiding a number of articles of the Chemical Law.

1.4 APPROACH TO THE ESDD

ERM undertook work in five tasks as follows:

- *Task 1* – Document review;
- *Task 2* – Site visit;
- *Task 3* – Reporting;
- *Task 4* – Review the Project Emission Control Systems;
- *Task 5* – Review the Project Greenhouse Gas (GHG) Assessment Report.

ERM understands that the EIA Report and associated documentation have been established by LP1 PP PMU for the Project. As such, ERM was not required to undertake any physical monitoring such as sampling and analysis of environmental quality.

1.4.1 Document Review

ERM reviewed relevant EHS and social documents provided by the Project (in response to an information request list issued by ERM before the site visit) to identify key issues exceeding or likely to exceed the level of materiality. The list of reviewed documents is provided in *Annex A*. It should be noted that in addition to the EIA report of the Project, ERM also took into consideration the assessment and mitigation measures provided in the EIA of the LPPC Shared Infrastructure – Phase 1 project in order to ensure the Review covered (1) full development cycle of LP1 from land acquisition to operation, and (2) the Project's associated facilities (i.e. LPPC shared infrastructure) as required by IFC PSs.

For completion of *Task 4*, ERM engaged our Air Quality Expert, Mr. Ian Cowan who is based in Australia, to review the Project detailed design, including the stack emission control systems such as flue gas desulfurisation (FGD), selective NOx reduction (SCR) and electrostatic precipitator (ESP) technologies. The purpose of this review is to verify if the technologies selected are technically feasible to ensure the Project emission to be in full compliance with the Applicable Standards, particularly:

- Vietnamese technical regulation on emission from thermal power plant (QCVN 22:2009/BTNMT);
- IFC General EHS Guidelines (EHS) – Air Emissions and Ambient Air Quality, 2007; and
- IFC EHS Guidelines for Thermal Power Plants.

With regards to *Task 5*, ERM (Mr. Toan Vo and Mr. Phong Pham) conducted a detailed review of the GHG Emission Study Report for LP1 prepared and issued by Fichtner GmbH & Co KG in August 2015 regarding the following aspects:

- The appropriateness of the methodology and assumptions used for calculation. The review of the methodology will be conducted based on the *2006 IPCC Guidelines for National Greenhouse Gas Inventories ('2006 IPCC Guidelines')* published by the Intergovernmental Panel on Climate Change (IPCC) in 2006. The 2006 IPCC Guidelines provide internationally agreed methodologies intended to assist countries to estimate greenhouse gas (GHG) emissions to fulfil their obligations under the Kyoto Protocol; and

- Reliability of the GHG assessment result (CO_2 emissions intensity level).

ERM also reviewed publicly available information and any information made available during the course of the review on any NGO attention that may be directed at the existing operations or the Project.

1.4.2 Site Visit

A site visit to the Project area was conducted by an ERM team, including Ms. Hanh Pham and Ms. Tram Le, environmental and social consultants, on 15 – 17 August 2016. They were accompanied by:

LP1 PP PMU

- Mr. Nguyen Xuan Truong – Deputy Head of LP1 PP PMU;

- Mr. Truong Tran Van Dung – Head of Construction Department;

- Mr. Hoang Minh Hai – Deputy Head of Technical Design Department;

- Mr. Huynh Thanh Duy – Deputy Head of Finance and Accounting Department;

- Ms. Ninh Thi Diem Hang– Environment, Health and Safety Team Leader of the Construction Department;

It is noted that this site visit did not extend to a full environmental and social compliance audit of the Project. The site visit served several purposes as follows:

- Enable ERM to undertake physical inspections of the Project area and current activities onsite;

- Enable ERM to cross-check the information provided in the EIA reports, including identification of sensitive environmental and social receptors;

- Identify social issues related to the Project's activities through conducting the meetings with local authorities; and

- Enable ERM to discuss any related issues with the project staff.

During the site visit, the following activities were carried out by ERM team:

Site Tour

A site walkover was conducted by Ms Hanh Pham, who was accompanied by personnel of LP1 PP PMU and PM-PTSC. The Site walkover covered the power plant construction site and locations of its associated facilities provided or to be provided by LPPC. A visit to the subcontractors' worker accommodation sites was also conducted by Ms. Tram Le.

Site Personnel Interview

During the site visit, ERM team interviewed the following site management and personnel of LP1 PP PMU and the EPC Contractor – PM-PTSC, including:

LP1 PP PMU

- Ms. Ninh Thi Diem Hang– Environment, Health and Safety Team Leader of the Construction Department;
- Mr. Huynh Thanh Duy – Deputy Head of Finance and Accounting Department;
- Ms. Dang Thi Hoang Yen – Officer of Human Resources Department;
- Ms. Mai Cong Thang – Officer of Administration Department;
- Mr. To Quang Duy Cuong –Deputy Head of Finance and Accounting Department;
- Mr. Nhu Van Kien – Officer of Construction Department;
- Mr. Nguyen Hong Phong – Head of Administration Department; and
- Mr. Hoang Minh Hai – Deputy Head of Technical Design Department.

PM-PTSC and subcontractors

- Ms Than Thi Cam – Secretary of Owner Consultant (Fichtner);
- Mr. Vu Tuan Dat – Head of Administration and Human Resources Department of PTSC;
- Mr. Phan Van Thong – Health, Safety and Environmental Officer of PTSC;
- Mr. Han Cong Thanh – Safety Supervisor of Lilama; and
- Mr. Le Quang Trung – Safety Coordinator of Lilama.

Workers Interview

Eleven construction workers were randomly selected for interview, including six from Lilama sub-contractor, and five from Bach Dang sub-contractor.

Local Authorities Meetings

Two meetings were held with local authorities, including the People's Committee (PC) of Long Phu District and the PC of Long Duc Commune, to obtain information on the land acquisition, compensation and resettlement process conducted for the Project, the current socio-economic and livelihood restoration status of affected community, community grievances and to understand any environmental and social concerns they may have with the Project. These meetings were attended by ERM consultants Ms. Hanh Pham and Ms. Tram Le, PVN and LP1 PP PMU personnel. The meeting attendees were as follows:

1. *The PC of Long Phu district, 16 August 2016*

- Mr. Nguyen Thanh Hung - Long Phu District Party Committee Secretary;
- Mr. Huynh Tan Thanh - Head of Natural Resources and Environment Division;
- Mr. Dang Van Huan - Vice Head of Natural Resources and Environment Division;
- Mr. Nguyen Chi Thien - Vice Chairman of Committee of Fatherland Font of Long Phu District;
- Ms. Bui Thi Thu Nga - Head of the district Women's Union;
- Mr. Ngo Minh Dung - Head of the district Invalid's Union;
- Ms. Tran Thi Thanh Hang - Head of Administration of the district PC;
- Mr. Ho Quoc Hung - Vice Head of the district Culture and Information Division;
- Mr. Tran Van Tuan - Vice Head of the district Economic and Infrastructure division;
- Mr. Ha Phuong Dong - Vice Head of the district Labour – Invalids and Social Affairs Division;
- Mr. Nguyen Thanh Cong - Vice Head of the district Police;
- Mr. Nguyen Van Minh - Director of the Vocational Training Center of Long Phu District; and
- Mr. Nguyen Thai Nhan - Director of the district Land Management Division.

2. *The PC of Long Duc Commune, 16 August 2016*

- Mr. Tran Van Thien – Chairman of Long Duc Commune PC;
- Mr. Tran Minh Hien – Officer of Land Management Division of Long Duc Commune;
- Mr. Le Thanh Tam – Officer of the commune Culture and Social Division; and
- Mr. Ngo Hoang Luc - Head of Thanh Duc Hamlet.

Affected Community Visit

A walkthrough of the communities in the Project vicinity was performed by the ERM team to observe and assess the Project's potential impacts on the communities, which is the remaining residential area of Thanh Duc Hamlet of Long Duc Commune (after resettlement) located immediately to the southeast boundary of the Project site.

A visit to the resettlement site (RS) serving the Project, which is also located in Long Duc Commune of Long Phu district, was also conducted. With the support of an officer of Long Duc Commune and the Head of Thanh Duc Hamlet, ERM was taken to meet three displaced households, including Ms. Huynh Thi Cam, Mr. Nguyen Van Ben and Mr. Huynh Van Man at their new homes located in the RS to conduct an interview. ERM consultant also carried out an interview with the Head of Thanh Duc Hamlet to gain an understanding about the land acquisition, resettlement process of the Project as well as the socio-economic condition of local people before and after the Project development.

1.4.3 Reporting

Based on the document review and observations, and further information gained from the site visit, ERM developed this ESDD Report that summarises the specific areas where the Project and/or documentation does not align with the Applicable Standards, including the applicable emission/discharge standards (in a tabular format for this last element only). Detailed findings against each clause of the PSs and Equator Principles are presented in a tabular format. The Report provides an Environmental and Social Action Plan (ESAP), as appropriate, for additional work to bring the Project into conformance with the Applicable Standards. Refer to *Section 1.6* below for the structure of this report. It should be noted that the scoping report for Environmental, Social and Health Impact Assessment (ESHIA) is only developed upon finalisation of and as such is not included in this ESDD report.

The draft ESDD report (including a draft ESAP) was submitted to Lenders and PVN/ LP1 PP PMU on 13 September 2016. In addition to addressing several rounds of comments from the Lenders and PVN/ LP1 PP PMU, ERM was also requested to review additional documentations either newly developed or updated by the Project and from external sources in order to finalise the ESAP.

This supplemental documentation review was authorised through a Variation Order No. 01 (VO 01) dated 4 November 2016. According to the VO01, a Summary Report or a Supplemental Environmental and Social Document Review Report (including the final ESAP) has been developed as an outcome of this review and considered as an Addendum of the ESDD report (hereafter referred to as the 'ESDD Addendum' or 'Annex H') and no further update was made to the ESDD report. The ESDD Addendum (including the final ESAP) was finalised and submitted to all parties on 28 November 2016.

This ESDD report is finalised by (1) directly addressing comments from Lenders and PVN/LP1 PP PMU; (2) reference to updated findings and recommendations made in the ESDD Addendum (Annex H) based on the supplemental documentation review; and (3) incorporation of the final ESAP.

1.5 LIMITATIONS

The work was undertaken through a review of the documents listed in *Annex A* of this Report and information obtained during the site visit only. We cannot guarantee that these activities necessarily yielded complete information. To the extent that the services require judgement, there can be no assurance that fully definitive or desired results are obtained, or if any results are obtained, that they are supportive of any given course of action. The services may include the application of judgement to scientific principles, to that extent, certain results of this work may also be based on subjective interpretation.

ERM is not engaged in environmental consulting for the purpose of advertising, sales promotion, or endorsement of any of the Client's interests, including raising capital or recommending investment decisions or other publicity purposes. All reports will be prepared and made exclusively for the Lenders and ERM will accept no liability of whatsoever nature for claims from other third parties to whom the contents of such reports, surveys, etc. are made known directly or indirectly by the Lenders, in respect of which claims the Lenders shall indemnify ERM against any loss, damage, costs or expenses of whatsoever nature suffered by ERM in connection with any reliance placed on its work product by those other third parties.

Nothing contained in the report of ERM shall be construed as a warranty or affirmation by ERM that the site and property described in the report are suitable collateral for any loan or that acquisition of such property by any lender through foreclosure proceedings or otherwise will pose no risk of potential environmental liability on the part of such a lender. The Lenders also agrees that none of its advertising, sales promotion, or other publicity matter containing information obtained from these audits and reports will make reference to ERM's trade name without ERM's written approval. The information to be provided under this proposal is not to be construed as legal advice.

1.6 STRUCTURE OF THE REPORT

The remainder of the report is structured as follows:

- *Section 2* presents a description of the Project including overview of the Project key components and status;
- *Section 3* presents ERM's findings with regards to the Project's environmental and social performance and management against the requirements of the IFC PSs;
- *Section 4* presents the environmental and social assessment against *Equator Principles; and*
- *Section 5* presents a summary of ERM's conclusions and the Environmental and Social Action Plan (ESAP).

ERM detailed gap analysis is presented in *Annex C.* The review of the Project emission control systems design and the GHG emission assessment report are detailed in *Annex E* and *Annex F*, respectively. The final supplemental environmental and social document review report is attached to this ESDD report in *Annex H*.

2 PROJECT DESCRIPTION

2.1 INTRODUCTION

LP1 PP PMU is constructing LP1, a 1,200MW coal-fired power plant. The Project includes 2 x 600MW power generating units conventional technology. Associated with the main generating plant it is also understood that there will be associated infrastructure including power sub-stations, a coal storage yard and other auxiliary items.

2.2 PROJECT SETTING

Location

The Project (with a total area of 115 ha) is located within LPPC. The LPPC has a total area of 386.88 ha, which includes LP1, LP2 of 2,400 MW and LP3 of 1,800 MW plants. The LPPC which contains LP1 is situated in Thanh Duc and Loi Duc hamlets, of Long Duc commune, Long Phu District, Soc Trang Province in South Vietnam (see *Figure 2.1*).

Environmental and Social Settings

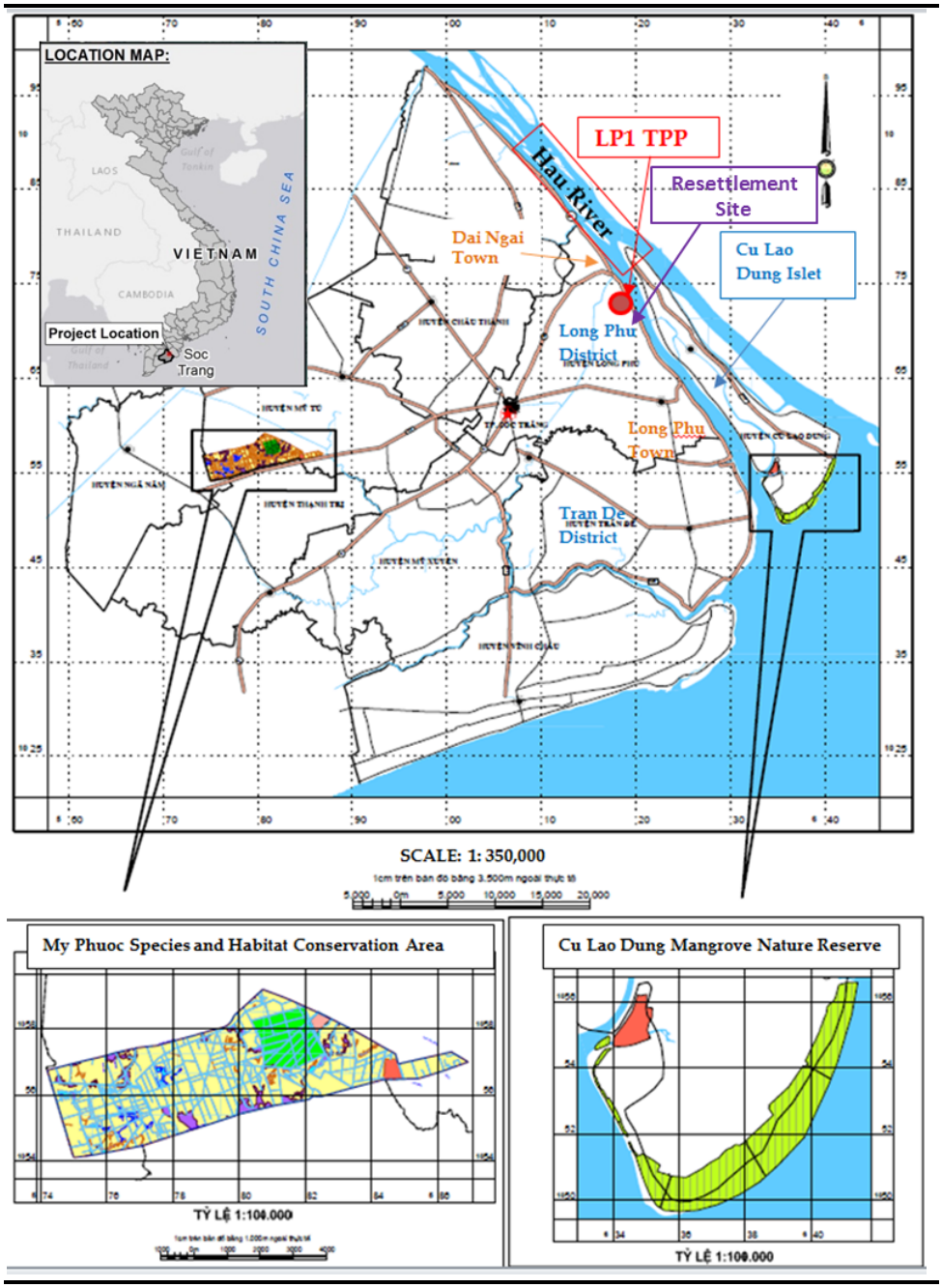
The Project is located on the right shore of Hau river within a thinly populated area. Nearest residential houses are in Thanh Duc, Loi Duc and Hoa Hung hamlets which are to the north, the south and the west of the Project site. It should be noted that the communities in Thanh Duc and Loi Duc will be relocated for development of LP2 and LP3 in the future. Meanwhile, the community in Hoa Hung hamlet which is separated with LPPC by Ba Sam channel and Nam Song Hau road (national highway 19C) will remain.

The two most populated urban areas, including Dai Ngai town and Long Phu Town are about 1.6 km upstream and 9 km downstream of LP1, respectively. Although the main land use in the Project area (Long Duc commune) is agriculture (rice, crop cultivation), as reported by the People's Committee (PC) of Long Phu district, there are approximately 100 ha of aquaculture farms in Long Phu Town. As observed on Google Earth, numerous aquaculture ponds exist along Hau river shore in Long Phu Town and Cu Lao Dung Islet and the closest pond is around 6 km downstream of LP1.

According to the Project Technical Design report in 2010, the water flow rate in Hau river is about 7,000 – 8,000 m^3/s in rainy season and 2,000 – 3,000 m^3/s in dry season. The river section in the Project area is commonly affected by seawater invasion during dry season, particularly in May and June. At the mouth of Hau river around 25 km downstream of LP1, there exists wide mudflat areas and a mangrove belt functioning as coastal protection forest.

Although most of the mangrove is reforested, an area of natural mangrove remains at the river mouth on Cu Lao Dung islet. This natural mangrove habitat is highly valued in terms of biodiversity and is planned to be recognised as a Provincial Mangrove Nature Reserve (see *Figure 2.1*).

Figure 2.1 Location of Long Phu 1 Thermal Power Project



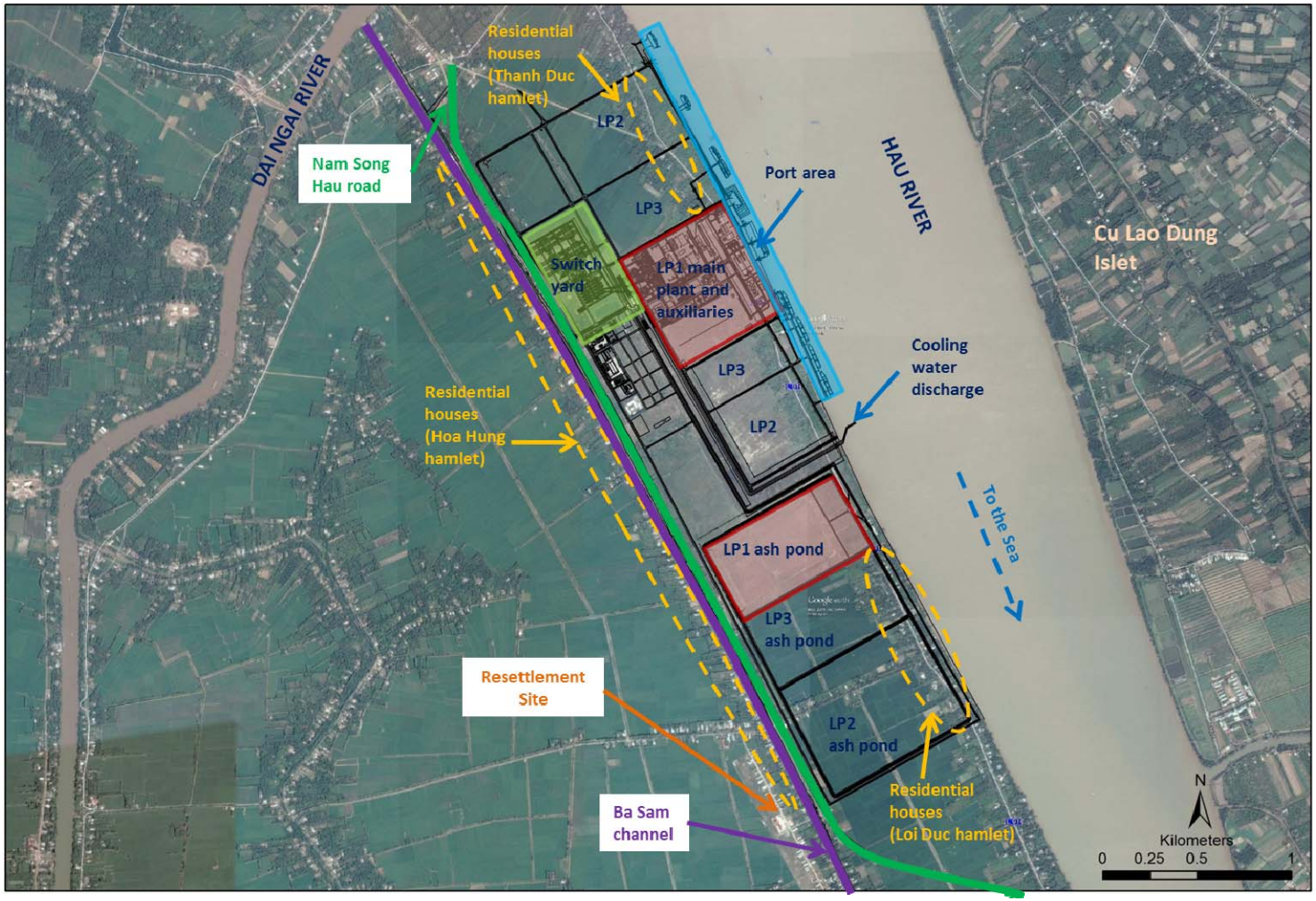
(Source: Master Plan Map of Biodiversity Conservation Areas in Soc Trang Province, 2013[1])

[1] Official portal of Soc Trang Province:
http://www.soctrang.gov.vn/wps/portal/sotnmt/!ut/p/c5/04_SB8K8xLLM9MSSzPy8xBz9CP0os3gLR1dvZ09LYwMDCw9zA0-TUD-TMG_3ID8LU6B8JC55Jz8zExTdFobuQFlfz2AvE18LY_8gE7y6ndzMCdgdDnItftvxyIPNB8kb4ACOBvp-Hvm5qfoFuaERBpkB6QBTzwjq/dl3/d3/L0lDU0lKSWdra0EhIS9JTlJBQUlpQ2dBek15cUEhL1lCSlAxTkMxTktfMjd3lSEvN

The Project's location, including the ash pond in relation to surrounding sensitive receptors is presented in *Figure 2.2*.

184QUVLQ0k5MzAwOEg3MEk0VU40VktHUk5PMg!!/?PC_7_8AEKCI93008H70I4UN4VKGRNO2_WCM_CONTEXT=/wps/wcm/connect/sotnmt/sotnmt/quyhoachtnmt/quyhoachdadangsinhoc/qhtongthe2013

Figure 2.2 Environmental and Social Settings in Close Proximity to LP1 Project



2.3 *PROJECT ORGANISATION STRUCTURE*

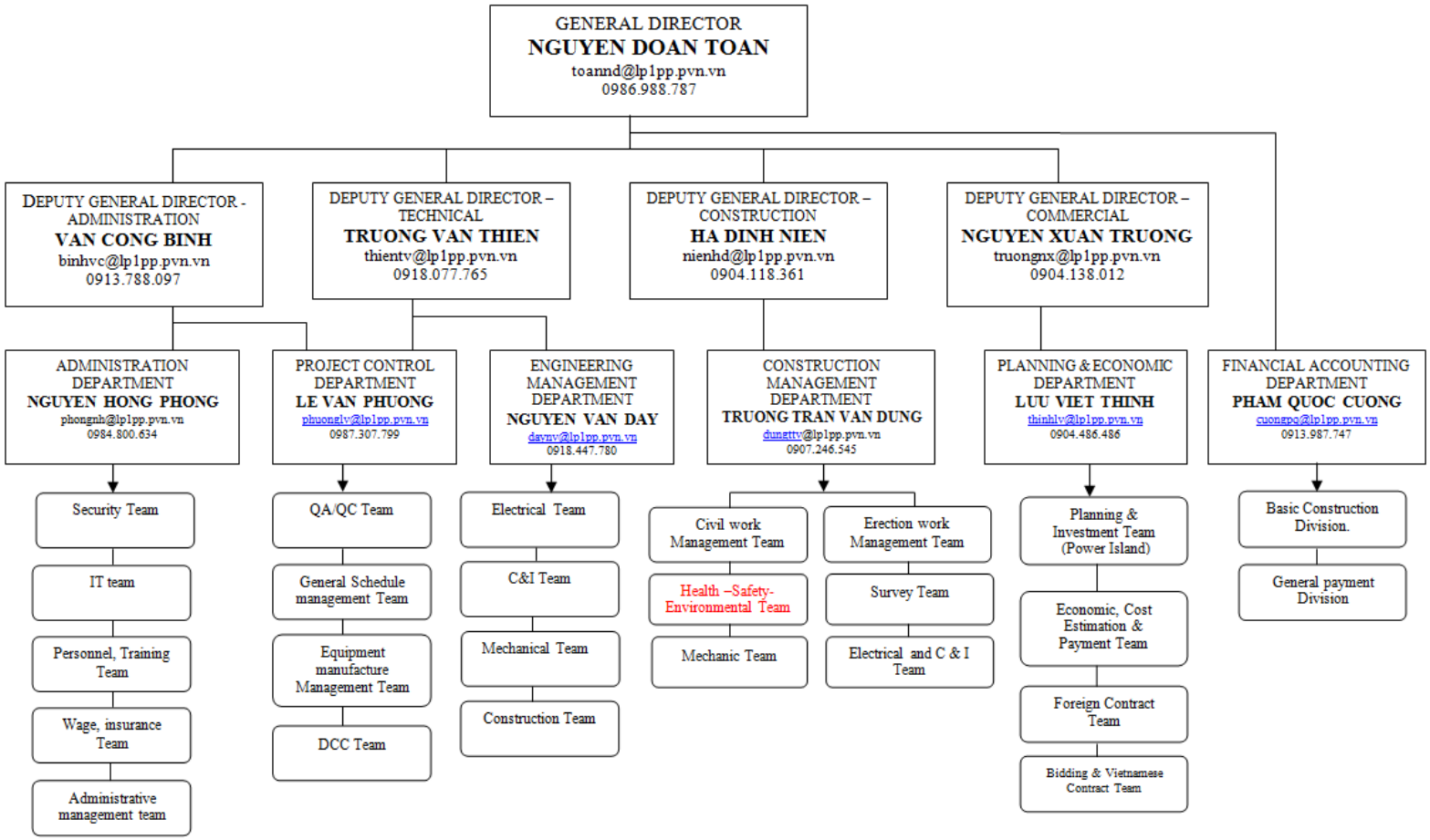
The organisational structure of LP1 PP PMU is illustrated in *Figure 2.3* below. A Health, Safety and Environment (HSE) Management Team has been established under LP1 PP PMU's construction management department) to be in charge of oversight of the EPC contractor's performance, including HSE.

The EPC contract of LP1 was signed in 2014 and a consortium of Power Machines (Russia) and Petrovietnam Technical Services Corporation (Vietnam) was selected as the Project EPC contractor. As specified in the EPC contract, PM-PTSC is fully liable for HSE control during construction.

A consortium of Fitchner GmbH &Co.KG (Germany) and Petro Vietnam Engineering Corporation (PVE) has been selected as the Project Management Consultant for LP1 PP PMU since 2010. According to the scope of work specified in the consultant service contract between LP1 PP PMU and Fitchner- PVE, the consortium is responsible for:

- Review technical design –total cost estimate and EPC RfP document;
- EPC contract negotiation;
- Engineering management;
- Procurement and materials management;
- Construction management (supervising construction quality, contractors' performance, including EHS, construction progress, etc.);
- Project control (oversight of cost, schedule, status, etc.);
- Project administration (assisting on project management organisational structure, project planning, documentation control, etc.);
- QA/QC management;
- Commissioning (reviewing commissioning procedures, operation and maintenance procedures submitted by EPC contractor, supervising commissioning activities, assisting training for LP1 operation staff, etc.); and
- Know-how transfer and training to be provided for LP1 PP PMU throughout service implementation.

Figure 2.3 LP1 PP PMU Organisational Structure



(Source: LP1 PP PMU)

2.4 *PROJECT ELEMENTS*

The Project elements include the thermal power house and its associated facilities/infrastructures which include those that will be directly developed within the scope of the Project as well as those have been provided as shared infrastructure/facilities (in phase 1) by LPPC.

2.4.1 *Technology Selection for the Project*

The Project uses supercritical pressure (258 bar), coal-fired steam power generation technology. The boiler type selected is a once though boiler. The gross thermal generating efficiency (HHV) of the applied technology is designed to be 42.22% at a minimum. Coal will be used as the main fuel for combustion, although diesel oil will also be used to start the process.

2.4.2 *Key Components*

Project Key Components

Within the scope of the Project, the following key facilities and auxiliaries will be developed:

- The power house containing 2x600MW turbine generator units including stack emission treatment systems (27 ha);
- Coal storage yard (27 ha);
- Electric system and 220kV/500kV switchyard system and auxiliary facilities: cooling water system, supply water treatment, waste water treatment system, etc. (26 ha);
- Ash pond (35 ha); and
- Specialized port for importing materials and exporting by-products of the project, including equipment berth (1,000 DWT), coal berth (10,000 DWT), oil berth (1,000 DWT), limestone, ash and gypsum loading berths (expected 3,000 DWT each).

LPPC Shared Infrastructure/Facilities

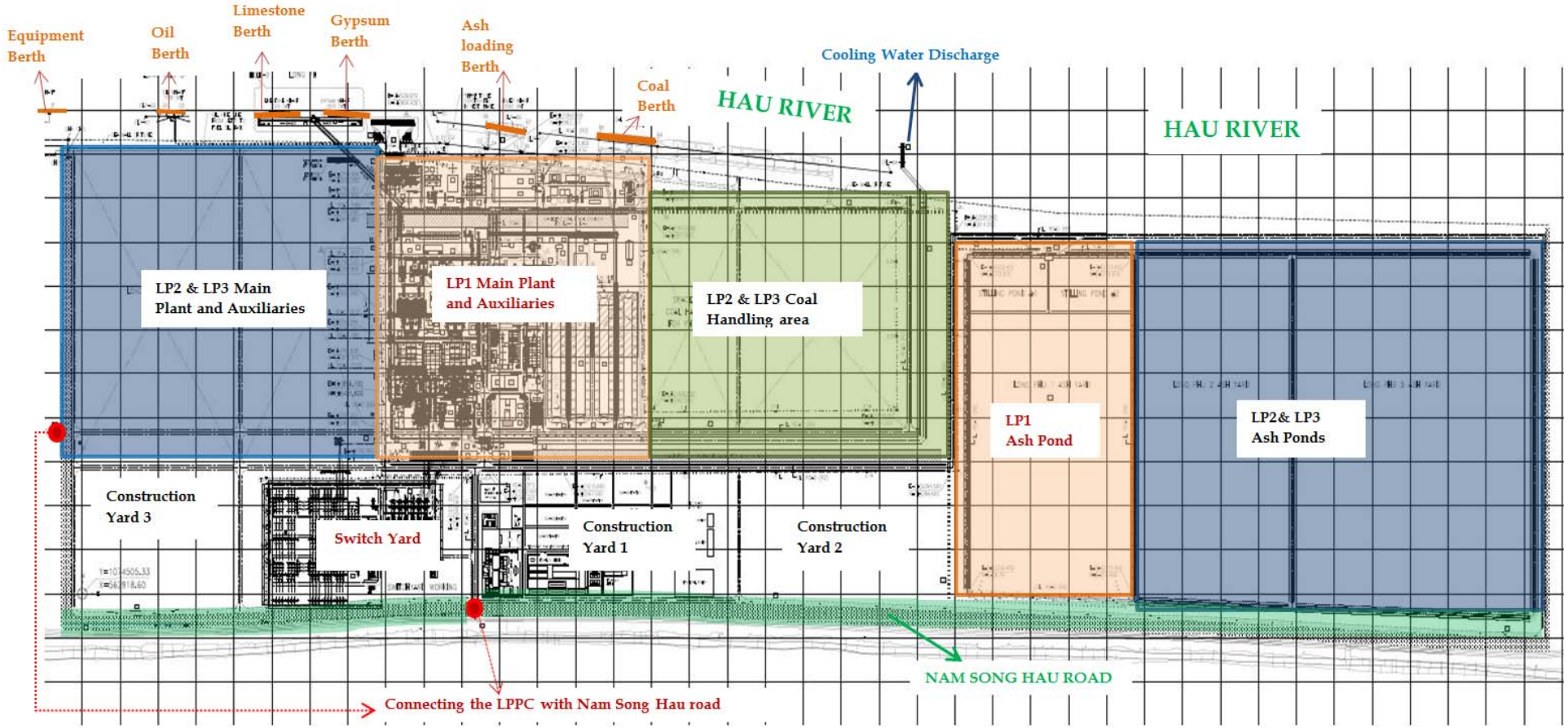
As mentioned in *Section 1.1*, the LPPC shared infrastructure development – Project has been implemented since 2009 to facilitate the construction of the Project. Key activities conducted and facilities constructed by this project include:

- Land acquisition, land clearance, UXO clearance and land levelling and fencing;

- Office area, including office building, staff accommodation, sports yard, canteen and other auxiliaries;
- Embankment along Hau River;
- Power and water supply serving for LP1, LP2 and LP3 construction;
- Access road to LPPC from Nam Song Hau national road;
- Rerouting of Nam Song Hau road; and
- Ash pond area of 120 ha, including 35 ha ash pond serving for LP1. It is noted that development of LP1 ash pond is under a different EPC Contractor (i.e. a consortium of PECC3- Song Da 9 – Thanh Nam).

The Project site layout illustrating both LP1's key facilities and LPPC shared infrastructure is shown in *Figure 2.4* below.

Figure 2.4 The Project Site Layout



2.4.3 *Fuel and Input Materials for LP1 Operation*

The key fuel, coal, for LP1 operation is planned to be imported from Australia or Indonesia. According to *Official Letter 3508/VPCP-KTN* dated 15 May 2015, PVN is designated by the Vice Prime Minister to directly and actively import coal serving for PVN's thermal power projects. PV Power Coal as a member company of PVN is directly in charge of this business. It is estimated about 3.2 million tons of sub-bituminous coal and/ or bituminous to be imported per year.

Water supplied for the Project will be extracted from Hau River and then treated for different uses depending on the purpose (i.e. domestic, other industrial processes) with estimated capacity of 971 m^3/hr. Cooling water will be also sourced from Hau river with an average flow rate of 46.6 m^3/s which is lower than the flow used for impact assessment in the local EIA in 2009 (56 m^3/s). Given Hau river section in the Project area is commonly affected by groundwater during dry season, desalination is needed in the Project water treatment system during this period of a year.

LP1 will also maintain demand for other fuels and materials such as diesel oil and lime stone, etc.

2.4.4 *Environmental In-Place Control Facilities*

As indicated in the Project EIA, the following key facilities are included in the Project design in order to mitigate its potential environmental impacts:

Stack Emission Control

The stack height of stack is 200m. Additional in place controls for the Project stack emissions for SO_2, NOx and particulate matters (PM) include:

- Electro-Static Precipitation (ESP) system with particulate matter removal efficiency of 99%;
- Flue gas desulfurization (FGD) system with SO_2 removal efficiency of at least 85% as committed in the EIA ; and
- Low NOx burners combined with selective catalytic reduction (SCR) that can ensure the NOx concentrations in emission are always $\leq$ 450 mg/m^3.

Refer to *Annex E* for detailed review of these systems of LP1.

Wastewater Control

Different wastewater effluents will be generated from the Project operation, including domestic (sanitary) activities and manufacturing process. Domestic wastewater is treated by a sewage water treatment system before being drained to the Central Wastewater Treatment System (CWTS) for

further treatment together with various process wastewater effluents, excepting wastewater in the ash pond which will be recirculated.

According to PM-PTSC's Specification for Effluent and Sewage Coveyance and Treatment System (Document No. LP1-TKC-10RU-M-M27-SPC-2039, dated 28 July 2016) and the Wastewater Management Scheme (drawing No. LP1-TKC-M-M227-PFD-1078, dated 30 June 2016), the total wastewater estimated to be generated from different process effluents may range from 200 to 500[1] m^3/hour (including 170 -380 m^3/hour occurring continuously, 30 m^3/hour intermittently, and 100 m^3/hour occasionally) but the volume of wastewater (after passing the CWTS) to be discharged to Hau river is only 168.8 m^3/hour. Therefore, the wastewater discharged out from LP1 may likely exceed the volume committed in the local EIA (71 m^3/s) from 2.4 times.

Combustion Ash Control

As stated in the local EIA, combustion ash generated from LP1 operation will be recycled by transporting to cement factories. In case that ash cannot be fully consumed by these factories, it will be disposed of at the Project ash pond of 35 ha which can accommodate ash generated in 30 years if 70% of combustion ash can be consumed or approximately 5 years in case of no ash consumption in equivalent. The volume of combustion ash (including fly ash and bottom ash) is estimated as nearly 600,000 tons/year.

As recently directed by the Prime Minister in *Decision No. 1696/QD-Ttg* in 2014, LP1 is among thermal power projects that must reduce the ash pond storage capacity down to 2 years in case of no ash consumption and to have in place an ash reuse/ recycle plan for implementation before 2020. The ash pond design is currently being modified by the EPC contractor to meet this requirement although the total area of the ash pond will remain nearly the same. LP1 has officially notified this change to MoNRE, the EIA approval body, in *Letter No. 633/LP1-TCXL* dated 8 July 2016 as legally required. MoNRE has officially accepted this change in *Letter No. 3536/BTNMT-TCMT* dated 23 August 2016.

2.5 PROJECT STATUS

Environmental Impact Assessment

As aforementioned in *Section 1.1*, the local EIAs of the LPPC Shared Infrastructure Project and LP1 were approved in 2009. The LP1 EIA was developed based on the Project FS and Basic Design report in 2009. As noted in *Section2.4.3,* there are some changes found in the recent detailed design submitted by the EPC contractor compared to the approved EIA.

[1] When the run-off water from the coal yard is largest in rainy season (200 m^3 per hour)

It should be noted that, according to the MoNRE's official letter of the Project EIA approval issued in 2009, in case there are changes during the Project implementation compared to the content of the approved EIA report, LP1 PP PMU is required to inform MoNRE in writing and only follow the changes once accepted in writing by MoNRE. This obligation is also currently required by *Decree No.18/2015/ND-CP*.

Land Acquisition and Compensation

The land acquisition process was commenced in 2009 and completed in 2012 as a component of the LPPC Shared Infrastructure project in order to prepare land for development of LP1 and the shared infrastructure of SHPC (LP1 associated facilities). The Land acquisition, Compensation, Support and Resettlement (CSR) for LP1 and its associated facilities was conducted in five packages, i.e. (1) LP 1 TPP; (2) Nam Song Hau road ; (3) transmission lines; (4) resettlement site and cemetery; and (5) 500, 220 kV transformer station. There are five general CSR Plans approved by the PC of Soc Trang province or PC of Long Phu district to cover relevant packages. The total number of displaced households by all packages is 824. These include:

- 319 households that were physically and economically displaced; and
- 505 households that were only economically displaced.

According to the CSR records provided to ERM and as confirmed by LP1 PP PMU and the local authorities, the CSR process has been completed in accordance with applicable local regulations.

Project Current Status and Timeline

At the time of writing, construction of the equipment berth (including access road to the berth) and foundation of turbine houses have been completed. According to the PM-PTSC's Monthly Progress Report in July 2016, about 14.55% of the construction workload has been completed. Detailed designs of the port (remaining berths), the ash pond and wastewater treatment systems and other auxiliaries are still being progressed by PM-PTSC. The operation of the first turbine unit and the second one is expected to be in the end of 2018 and 2019, respectively.

Currently, 12 construction subcontractors have been selected and working on site. As of July 2016, the total staff and workers employed by LP1 PP PMU, PM-PTSC and the subcontractors was 698 of which 319 are from Soc Trang province. As reported by LP1 PP PMU, it is expected that about 3,000 workers to be on site during the peak time of construction.

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ERM has reviewed the local EIA done to Vietnamese standards, and other Project documentation (see *Annex A* for full list of reviewed documents) against the IFC PSs and EHS Guidelines and local Vietnam environmental and social regulations relevant to the Project.

Table 3.2 provides the material findings of environmental risks and impacts identified through evaluating the relevant documents (as mentioned above) and comparing them against the Applicable Standards and recommendations based on these findings. A detailed gap analysis against the IFC Standards is attached in *Annex C*. It is noted that there are no indigenous people affected by the Project, so IFC PS7 has been excluded from the assessment as not applicable.

To facilitate a focused summary of the gaps against the IFC PSs and EHS Guidelines and proposed mitigation measures relating to the Project, the qualitative ranking scheme provided in *Table 3.1* has been adopted. Where one or more aspects at risk correspond to the definitions below, a Risk Level of H (High), M (Medium), or L (Low) is provided.

Table 3.1 Project Risk Level Against the IFC Performance Standards and EHS Guidelines Definitions

Risk Level	Risk Group(s)	Definition
H	Legal Non-compliance	Non-compliance with local or national legislation.
	Cost to Address Gap	High / material estimated cost (>US$250,000) to address gap and / or addressing gap is considered likely.
	Project Schedule / Delay	Potential to significantly affect project schedule if unresolved (>1 year delay).
M	Cost to Address Gap	Moderate cost (US$100,000 – US$250,000) to address gap.
	Project Schedule / Delay	Potential to moderately affect project schedule if unresolved (6 months to 1 year delay).
L	Cost to Address Gap	Low cost (<US$100,000) to address gap.
	Project Schedule / Delay	Minor impact on project schedule if unresolved (<6 months delay).

Table 3.2 IFC Performance Standard Summary Gap Analysis and Risk Assessment

Gap No.	PS Item Ref. No.	Risk Group: Legal Non-compliance	Risk Group: Cost (Time and Expense)	Risk Group: Project Schedule/ Delay	Findings	Recommendations
Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts						
Policy						
1.1	6	n/a	n/a	✓	An environmental, health, safety and social (EHSS) policy has been newly developed and approved by LP1 director as of August 2016. The EHSS policy content is considered consistent with the principles of IFC PSs. As observed by ERM, the policy has been posted at the entrance to the LP1 office. It was verbally reported by LP1 that this new policy will soon be communicated to all employees, contractors and other relevant stakeholders. However, given a Stakeholder Engagement Plan (SEP), including a stakeholder analysis, has not been developed (see *Gaps 1.15, 1.16*) , there is a high chance that the EHSS policy may not be systematically communicated to all relevant stakeholders, particularly, local affected communities and authorities. Refer *to Item 12 of Table 1* in Annex H for the updated finding based on review of supplemental/ updated documents.	Communicate the EHSS policy to all levels of LP1 (including employees and workers), third parties such as the EPC contractor and subcontractors, and other relevant stakeholders as identified in the Stakeholder Engagement Plan (SEP) once available (see *Gaps 1.15, 1.16*). Refer *to Item 12 of Table 1* in Annex H regarding removal of this recommendation.
Identification of Risks and Impacts						
1.2	7, 8	n/a	✓	✓	There are 2 existing regulatory Environmental Impact Assessments (EIAs) related to LP1 project, including: • An EIA of LP1 approved by Ministry of Natural Resources and Environment (MoNRE) in November 2009. This EIA covers all key components of LP1 such as the power plant, the port (coal, oil, gypsum, limestone berths which can accommodate vessels up to 10,000 DWT), transmission line and switch yard, supply water treatment, cooling water, wastewater, emission treatment and ash handling and treatment systems (including ash pond of LP1); • An EIA of Long Phu Power Complex (LPPC) which provide shared infrastructures serving for LP1 (1,200 MW), LP2 (1,200 MW) and LP3 (1,800 MW) thermal power plants development, such as land preparation (including land acquisition and UXO clearance), embankment, fencing, water and	Define the Project AoI based on the local EIAs and additional survey and studies as recommended in *Gaps 3.5, 3.6 (air quality), 3.9 (wastewater), 3.14 (noise), 3.18 (dredging waste), 5.1 (socio-economic conditions of displaced people), 6.1 and 6.3 (biodiversity)*. Refer to *Item 10 of Table 1* in Annex H regarding

Gap No.	PS Item Ref. No.	Risk Group: Legal Non-compliance	Risk Group: Cost (Time and Expense)	Risk Group: Project Schedule/ Delay	Findings	Recommendations
					electricity supply for construction, access road to LPPC, relocation of a section Nam Song Hau road (the main public road in front of the LPPC), relocation of an existing Dai Ngai – Tran De transmission line and ash ponds of LP1, LP2 and LP3. This EIA was approved by MoNRE in 2008. The two EIAs do not sufficiently cover the following key risks and impacts as required by IFC PSs and EHS guidelines: • Emission of greenhouse gases (GHG); however this assessment was separately completed in August 2015. Refer to *Gaps 3.1* and *3.2* for detailed findings on the GHG assessment; • Gaps of baseline and/or impact assessment (including cumulative impacts) as identified in *Gaps 3.5, 3.6 (air quality), 3.9 (wastewater), 3.14 (noise), 3.18 (dredging waste), 5.1 (socio-economic conditions of displaced people), 6.1 and 6.3 (biodiversity)*. The two local EIAs did not clearly identify the Project's area of influence (AoI). Based on the baseline collection and impact assessment provided in both local EIAs, the impact assessment mainly focused on the Project site and surrounding area within Long Duc commune, although some impacts were discussed more generally at a broader spatial scale such as air emission/ air quality and impacts on downstream ecosystems and biodiversity.	removal of this recommendation as agreed by Lenders and LP1 PP PMU.
Management Programs						
1.3	13, 14, 15, 16	n/a	✓	✓	<u>*Construction phase*</u> Environmental Management Plans (EMP), including a monitoring plan, for both the construction and operation phases of the Project and its associated facilities within SHPC are included in the two EIAs. The EMPs set out the controls and mitigation measures to be implemented and include a cost estimate, timeline and implementation and supervision responsibilities for environmental impacts only.	Update the existing Environmental, Health, Safety and Social Management Plan (EHSS MPs) for construction phase and develop full EHSS MPs for operation phases of the Project by incorporating all of the requirements of the local EIA, applicable regulations and IFC PSs. The

Gap No.	PS Item Ref. No.	Risk Group: Legal Non-compliance	Risk Group: Cost (Time and Expense)	Risk Group: Project Schedule/ Delay	Findings	Recommendations
					LP1 and PM-PTSC are in the process of finalizing 31 HSSE management plans/ procedures/ programs for the construction phase. Refer to *Gap 1.7* regarding detailed gap analysis of LP1 HSSE training programs. Refer to *Gap 1.8, 1.9 and 1.0* regarding findings on Emergency Preparedness and Response Plan (EPRP). Refer to *Gaps 1.15 and 1.16* regarding the lack of a Stakeholder Engagement Plan. Refer to *PS2, PS3, PS4, PS5* regarding detailed gap analysis of the existing occupational health and safety (OHS) and other ESSH management plans/ procedures and the need for additional ones in order to be in line with the Applicable Standards. An EHSS management plan should include necessary elements such as scope of applicability, roles and responsibilities, procedures/ instructions, monitoring and reporting and periodic management review. However, ERM's review shows that majority of these ESSH management plans/ procedures (including Occupational EHS Plans/ Procedures – See *Gap 2.5* and Emergency Preparedness and Response Plan - See *Gap 1.8*): • do not cover monitoring and reporting schemes, and management reviews; and • are not scaled to the Project real context and characteristics (excepting Occupational EHS Plans/ Procedures). Refer *to Item 13 of Table 1* in Annex H for the updated finding on this matter. <u>*Operation phase*</u> As reported by LP1, development of the ESSH management plans for the operation phase of the Project will start one year before Project operation commences and will be based on: • The technical design and operational manuals of the plant provided by PM-PTSC; • Reference to ESSH procedures already applied at other power projects of PVN.	ESMPs should be sufficient to manage all environmental and social impacts potentially generated from the Project such as, but not limited to water consumption and discharges, air emissions, noise, waste generation, community and occupational health and safety, resettlement, other community impacts, etc. Ensure all EHSS management plans/ procedures developed during construction phase and operation phase: • include all necessary elements such as scope of applicability, roles and responsibilities, procedures/ instructions, monitoring and reporting and periodic management review; and • fit with the project context and characteristics (particularly the EPRP, the waste management plan, hazardous material management plan, worker accommodation management plan, influx management plan, health management plan, etc.). Refer *to Item 13 of Table 1* in Annex H for the updated recommendation.

Gap No.	PS Item Ref. No.	Risk Group			Findings	Recommendations
		Legal Non-compliance	Cost (Time and Expense)	Project Schedule/ Delay		
					Refer to *PS2, PS3, PS4, and PS5 in Annex C* regarding detailed gap analysis of the ESSH management plans / procedures during operation phase in order to be in line with the Applicable Standards.	
1.4	15	n/a	✓	✓	As verbally reported by LP1, the HSE management team, under the construction management department of LP1 is in charge of ensuring all activities conducted at the Project in full compliance with applicable ESSH regulations and requirements in the EPC contract. The Project has not established an official legal register to ensure continuous compliance with applicable HSSE regulations and international standard requirements (i.e. IFC, EP, etc.). Refer to *Item 15* of *Table 1* in Annex H for the updated finding on this matter.	LP1 should establish a legal register to manage and continuously update applicable HSSE regulations and international standards (i.e. IFC, EP, etc.) for the Project. Any legal update/ changes identified should be communicated to the EPC contractor and subcontractors if relevant and the related ESSH management plans/procedures should be updated/ revised accordingly. Refer *to Item 15 of Table 1* in Annex H regarding removal of this recommendation.
Organisational Capacity and Competency						
1.5	17, 18	n/a	n/a	✓	LP1, as the Project owner, has officially established a HSE management team within the construction management department of LP1 with 1 leader and 3 additional team members. The HSE management team is in charge of oversight for the HSE performance of the EPC contractor and subcontractors. These team members have appropriate HSE and construction background. There is no assignment of personnel in charge of community liaison and management of social issues at LP1. Refer to *Item 17* of *Table 1* in Annex H for the updated finding based on the review of supplemental/ updated documents.	Assign a team in charge of social issues associated with stakeholder engagement and community grievance management (See *Gaps 1.15 – 1.18*), worker influx/ community health and safety management (See *Gaps 2.1-2.4, 2.7, 4.1 -4.6*), involuntary resettlement management (See *Gaps 5.1 -5.4*). Refer to *Item 17* of *Table 1* in Annex H regarding the removal of this recommendation.

Gap No.	PS Item Ref. No.	Risk Group			Findings	Recommendations
		Legal Non-compliance	Cost (Time and Expense)	Project Schedule/ Delay		
1.6	17, 18	n/a	n/a	✓	According to the EPC contract, the EPC contractor, PM-PTSC, is fully responsible for all environmental, health, safety and social performance related to construction activities at the site. PM-PTSC has developed an official document to prescribe the EPC contractor's HSSE organization structure to manage the HSSE performance onsite, including a flowchart (including 1 HSE managers, 4 HSE leaders, 4 HSE supervisors, 1 doctor and 1 nurse (for the site clinic)) with a detailed description of roles and responsibilities. This organizational structure is considered capable to manage HSE performance at the construction site as compared to those of other thermal power projects in Vietnam. However, certain inconsistencies have been identified between the flow chart and the roles and responsibility descriptions. For example, the flowchart does not indicate the site manager, discipline supervisors and security manager, as is seen in the description. In addition, there is no assignment of personnel in charge of social issue (i.e. community/ authority relation, community grievance management) at PM-PTSC. Refer to *Item 18 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents. Reportedly, there are currently 9 HSE personnel of PM-PTSC and more recruitment/ assignment is in progress in order to fulfill the planned HSSE organization structure (i.e. HSE manager, HSE leaders, HSE supervisors, a doctor). An HSE instruction to subcontractor procedure has been issued by PM-PSTC. The subcontractors are required by this procedure to ensure a specific ratio of HSE officers to the number of workers onsite (the ratio of 1:50, 1:100 and 1:150 if the number of workers is 1- 1000, 1001 -5,000 and more than 5,000 respectively). The required ratio is considered acceptable as per common good practice. Currently, each subcontractor has assigned at least 1 HSE manager and 1 HSE supervisor on site that can ensure the ratio as required above.	PM-PTSC should update the HSSE organisational structure document to ensure: • Consistency between the organisational flow chart and detailed description of roles and responsibilities; and • Addition of social management roles and responsibilities in charge of social issues associated with stakeholder engagement and community grievance management (See *Gaps 1.15 – 1.18*),) and worker influx/ community health and safety management ((See *Gaps 2.1- 2.4, 2.7, 4.1 -4.6*). Refer to *Item 18 of Table 1* in Annex H for the updated recommendation.

Gap No.	PS Item Ref. No.	Risk Group			Findings	Recommendations
		Legal Non-compliance	Cost (Time and Expense)	Project Schedule/ Delay		
1.7	17, 18	n/a	✓	✓	<u>*Construction phase*</u> New construction workers are required to be provided ESSH induction training by PM-PTSC in order to obtain the site entry card for working. Workers engaged in specialized works as specified in the Permit to Work Procedure will undergo specific training in order to obtain a Permit to Work before working. This fact was confirmed by the interviewed workers. Given the ESSH management plans for the construction phase are required to be updated (See *Gap 1.3*), The ESSH training programs may need to be updated (i.e. requirements on ensuring community health and safety, worker influx management, chance finds management, etc.). Refer to *Item 19 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents. <u>*Operation phase*</u> LP1 has prepared and submitted to PVN for approval a training plan for 468 personnel in the operation phase of Song Hau 1 and Long Phu 1 TPPs in July 2016. The total personnel to be trained for LP1 operation are 215, including 40 operational engineers, 45 maintenance engineers and 130 operational workers. The training program will include: • Theory training provided by Petroleum vocational college; • On the job training at Vung Ang 1 TPP; • Training provided by EPC contractor during commissioning phase at LP1. The purpose of training is to provide knowledge on operation and maintenance of equipment/ facilities and process in a coal fire power plant. Additionally, training on HSE associated with the coal fire power plant will be also provided including electricity safety, occupational safety and sanitation, fire prevention	Ensure the ESSH training program for the construction phase to be updated in line with the ESSH management plans/ procedures for the construction phase (i.e. requirements on ensuring community health and safety, worker influx management, chance finds management). Ensure the HSSE training program for operational staff to be developed and updated in line with the HSSE management plans/ procedures of the construction and operation phase (see *Gap 1.3*).

Gap No.	PS Item Ref. No.	Risk Group: Legal Non-compliance	Risk Group: Cost (Time and Expense)	Risk Group: Project Schedule/ Delay	Findings	Recommendations
					and safety, emergency response (i.e. plant shut down when there is an emergency), etc. The training program as proposed will start in the 4th quarter of 2016 and finish in the 3th quarter 2018, well before the operation.	
Emergency Preparedness and Response						
1.8	20	✓	✓	✓	<u>*EPRP during construction*</u> The EIA of LP1 project includes outlined provisions for emergency prevention and response in the event of Fire and explosion and occupational accident during construction phase. However, only precaution measures are mentioned. As such, it is not considered as a formal EPRP and therefore not able to be implemented. Nevertheless, an Emergency Preparedness and Response Plan (EPRP) for the Project's construction phase has been prepared by PM and PTSC and is currently under review by LP1PP before approval for full implementation. This EPRP is a component of the HSSE Procedures (for the construction phase) which is being reviewed by LP1PP. In order to implement the EPRP, an emergency response team has been assigned by LP1, including 01 leader, 04 deputy-leaders, and 39 team members from departments in charge of project safety and security. ERM's review of this EPRP and observation on site shows that: • The EPRP does not cover the event of an accidental release of liquid chemical/toxic substances at the construction site and incidents related to vessel collision (i.e. fire and explosion, oil and chemical spill) at the port area. Additionally, according to chemical/oil used survey form provided by LP1, diesel is reportedly being stored on site; nonetheless, a regulatory chemical incident response measure and oil spill response plan has not been developed or approved by the government as required by *Decree No. 26/2011/ND-CP* and *Decision No. 02/2013/QD-Ttg*. • Likewise, the event of work-related accident with regards to falling accidents and adverse weather	PM-PTSC should: • Develop an Oil and Chemical Spill Contingency Plan for the construction phase that covers all spill events on land and water; • Consult with Department of Natural Resources and Environment (DoNRE) of Soc Trang province to verify whether LP1 needs to develop a regulatory Oil Spill Response Plan and get approval from DoNRE given Soc Trang Province has not promulgated a detailed guidance on developing an Oil Spill Response Plan following *Decision No. 02/2013/QD-Ttg* yet. Refer to to *Item 23 of Table 1* in Annex H regarding removal of this recommendation;. • Develop a Chemical Incident Response Measure and getting approval from the provincial Department of Industry and Trade (DoIT) following *Decree No.*

Gap No.	PS Item Ref. No.	Risk Group: Legal Non-compliance	Risk Group: Cost (Time and Expense)	Risk Group: Project Schedule/ Delay	Findings	Recommendations
					conditions has been identified in the EPRP; however, no response procedure and measures have been developed for such emergencies. • Provisions for periodic management review of the EPRP have not been included in the plan. Refer to *Items 21 and 23 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	*26/2011/ND-CP*; • Include response procedure and measures for the event of falling accidents and adverse weather conditions in the EPRP; and • Update the existing EPRP to include provisions for management review. Refer to *Gap 1.3* for further details. Refer to *Items 21 and 23 of Table 1* in Annex H for the updated recommendation.
1.9	20	n/a	✓	✓	<u>*EPRP during construction*</u> According to a notification letter No. LP1-PTSC-LP/LP1PP-L- 04-4 from PTSC (dated December 25, 2015), fire drill was arranged to be carried out on December 28, 2015, and this was confirmed by ERM's document review and observation on site. As reported by LP1, no other emergency events as identified in the EPRP have been carried out on site. Refer to *Item 26 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	Carry out emergency drills of other scenarios as identified in the EPRP of the construction phase on a regular basis (at least once a year) rather than only fire drill. Refer to *Item 26 of Table 1* in Annex H regarding removal of this recommendation.
1.10	20	✓	✓	✓	<u>*EPRP during Operation*</u> <u>T</u>he local EIA of LP1 project includes outlined provisions for emergency prevention and response for the Project during operation. Preventive and mitigation measures are outlined for the following scenarios: • Vessel collision; • Fire and explosion; • Subsidence and erosion;	LP1 should develop an EPRP for the operation phase to cover: • An assessment to identify all the potential emergency events associated with the Project's plant and its associated facilities (i.e. emergency events related to ash pond,

Gap No.	PS Item Ref. No.	Risk Group: Legal Non-compliance	Risk Group: Cost (Time and Expense)	Risk Group: Project Schedule/ Delay	Findings	Recommendations
					• Occupational illness; • Oil spill prevention and response for port and plant; • Damage of oil piping system; • Incidents related to containers at storage areas; • Incidents related to leakage and evaporation from oil containers; • Failure of ash pond embankment; • Electrical and lightning incidents; • Occupational accidents; and • Failure of wastewater treatment system; However, the risks identification and assessment is at a relatively high level and does not include formal procedures for such emergencies' prevention and response. In particular, only general protection measures were included in the local EIA, while core elements of a proper procedure such as responsibilities, implementation resources, management review, and provision of training have not been mentioned in the EIA. Therefore, it is not sufficient for implementation. A formal EPRP for the Project's operation phase has yet to be developed. However, it was verbally reported by the LP1's representatives that such a plan should be developed within three months before the Project commences operation. As required by Vietnamese regulations[1], projects containing a port facility shall develop an Oil Spill Response Plan and submit it to competent authorities (provincial People's Committee) for approval prior	wastewater, emission, fire and explosion, etc.) in consideration of community health and safety risk; • Detailed structure for emergency preparedness and response with specific roles and responsibilities; • Provisions of necessary facilities and equipment for emergency preparedness and response; • Detailed procedures for responding to each emergency scenario; and • Emergency communication plan. The followings should also be implemented to achieve full compliance with laws: • Developing an Oil and Chemical Spill Contingency Plan for operation phase of the Project that includes the regulatory oil spill response plan and other hazardous chemical spills; and • Obtaining the necessary approval for the applicable components and a fire fighting plan, in accordance with the regulatory

[1] Decision 02/2013/QD-TTg dated 14 January 2013 of the Prime Minister on Oil Spill Response regulation. And Decision No. 63/2014/QĐ-TTg dated 11 November 2014 of the Prime Minister on amendment and supplement of some articles of Decision 02/2013/QD-Ttg.

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					to operation. As reported by LP1, this Plan will be developed and approved before the project operation. A Fire Prevention and Fighting Plan for the operation phase is required to be developed, submitted and certified by the provincial Fire Prevention and Fire Fighting Police. As reported by LP1, this obligation will be completed before Plant operation.	requirements.
1.11	21	n/a	✓	✓	PM-PTSC has disclosed the Project Emergency Preparedness and Response Plan of the construction phase to LP1, Long Phu district hospital, provincial firefighting police, provincial/district/ commune polices, and provincial electricity company, and requested collaboration in case of emergency via official Letter No. 0351/ PTSC-LP-ATCL in May 2016. However, there was no request in the letter for providing feedback/opinions on the EPRP plan in order to ensure their preparations to respond effectively to emergency situations as identified in the EPRP. No disclosure and consultation with potentially affected communities on the Project EPRP of the construction phase. Refer to *Item 27 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	LP1 and PM-PTSC should disclose the draft EPRP and other contingency plans applicable for the construction phase to potentially affected communities and relevant government agencies (as identified in the SEP and the EPRP) and consult for their opinions and recommendations. LP1 and PM-PTSC should finalise the EPRP and any other contingency plans of the construction phase taking into account the consultation outcomes and disclose relevant contents of the final EPRP and other contingency plans to potentially affected communities and relevant government agencies for collaboration. The same disclosure and consultation practice should be implemented for the EPRP of the operation phase.

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Monitoring and Review						
1.12	22	✓	✓	✓	The Environmental Management Plans (EMPs) in the two local EIAs include an environmental monitoring program for both the construction and operation phases. It includes monitoring of specific parameters of ambient air quality, noise, groundwater quality, surface water quality, wastewater and air emission quality, and solid waste generation at specific locations and frequencies for both phases. According to ERM's review of some environmental monitoring reports during construction, the monitoring was conducted in line with the monitoring program committed in the EIA once every six months. Additionally, the followings are also included in the LP1 EIA monitoring program (but specific indicators and frequencies are not specified): • solid waste, occupational safety and erosion at the construction site; • soil quality, electro-magnetic field (within the Project site in in nearby community), staff health check, local socio-economic conditions, firefighting and other safety system during operation phase. The current monitoring program is considered insufficient to measure the effectiveness of the management program/ measures as well as compliance with the Applicable Standards (as detailed from PS1 to PS6). The gaps include: <u>*Biodiversity monitoring*</u> • Refer to *Gap 6.3*, regarding the lack of aquatic ecology (particularly fish) monitoring in the local EIA. <u>*Solid waste monitoring*</u> • Lack of solid waste (both hazardous and non-hazardous waste) volume and performance monitoring requirement during operation in the local EIA. This monitoring on a biannual basis will be legally	Develop a comprehensive environmental monitoring and reporting program for the Project that achieves the following: • Cover the regulatory EIA monitoring programs, monitoring and reporting requirements of applicable local and international standards (i.e. IFC, EP) <u>*Biodiversity*</u> • Additional monitor aquatic ecology (including fish) once per year in May or June when the river flow rate is at its lowest and thus the impacts of cooling water and wastewater discharges on aquatic ecology are expected to be most significant. Compare the results with the baseline data and previous monitoring results in order to track the Project impact (including thermal discharge impact) on fish and aquatic life. <u>*Air emission, air quality and noise monitoring*</u> • Update the monitoring program (locations, parameters) if necessary when there are relevant changes in legal requirements;

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					required as part of the Hazardous Waste Generator Registration in the operation phase. <u>*Air emission, air quality and noise monitoring*</u> • Refer to *Gap 3.5* (air quality) regarding the need for re-conducting air quality modelling. There may be a potential need to update air quality monitoring locations based on the new modelling results (i.e. changes of locations that are significantly impacted by the Project/ cumulative stack emissions). • As recently required by Vietnamese environmental regulations, big scale air emission sources (applicable to coal fired thermal power plants) shall install an online continuous monitoring system connected with the server at competent authorities (i.e. DoNRE). As committed in LP1 Project EIA, stack emissions (SO_2, NOx, CO, PM, temperature) will be monitored continuously by OZSAT system and the temperature of discharged cooling water will be measured continuously. No issue is identified. • During the operation phase monitoring of ambient air quality is planned to be conducted quarterly. It should be noted that the IFC EHS Guidelines for Thermal Power Plants recommends that for TPPs with a capacity of ≥1,200 MWth, ambient air quality should be monitored by continuous ambient air quality monitoring systems (at least two systems at the predicted maximum ground concentration point/sensitive receptor/background point). The parameters to be monitored should at least include PM_{10}, $PM_{2.5}$, SO_2, NO_x. It is noted that PM_{10} and $PM_{2.5}$ measurements were not required in the ambient air quality monitoring program in the LP1 Project EIA. • Refer to *Gap 3.11* regarding the lack of noise monitoring in the nearest communities during operation phase. • No air quality monitoring points in the residential areas adjacent to the ash pond (Loi Duc and Hoa Hung hamlets) were set up in the local EIA to ensure the effectiveness of dust mitigation measures implemented in the ash pond; • Refer to *Gap 3.2* regarding the lack of GHG emission monitoring and reporting.	• Update the monitoring program (i.e. locations) if necessary based on the outcomes of the modelling/ studies to be re-conducted such as air quality and cooling water, wastewater; • Install at least two continuous ambient air quality monitoring systems to cover predicted ground level concentration points/ sensitive receptors (impacted by stack emissions) and background points in the operational phase as required by IFC. The parameters to be monitored should include at least PM_{10}, $PM_{2.5}$, SO_2, NO_x; • Install a further three noise monitoring points at the nearest houses in Thanh Duc, Loi Duc, and particularly in Hoa Hung. Conduct noise monitoring at these points on a quarterly basis during commissioning and operation. Reduce the monitoring frequency to biannually if monitoring results in the first year of operation show compliance with IFC's EHS Guidelines. Remove the monitoring points in Thanh Duc and Loi Duc hamlets when the communities are relocated for LP2 and LP3 development;

Gap No.	PS Item Ref. No.	Risk Group: Legal Non-compliance	Risk Group: Cost (Time and Expense)	Risk Group: Project Schedule/ Delay	Findings	Recommendations
					Wastewater and water environment monitoring • The environmental monitoring program for industrial wastewater quality (from the central waste water treatment system - CWTS) in the LP1 EIA only requires monitoring and reporting for pH, temperature, turbidity, BOD_5, COD, oil and grease and coliforms, whereas residual chlorine, TSS and certain heavy metals (Cr, Cu, Fe, Zn, Pb, Cd, Hg and As) have not been included as required by IFC. • Monitoring of the wastewater quality (before and after being treated) is only required once per 3 months as per the local EIA. The new regulation, *Decree No. 38/2015/ND-CP* (Article 39), however requires all wastewater sources of 1,000 m^3/day and above (except cooling water) to install a continuous monitoring system and directly transmit the monitoring data to the local DoNRE (i.e. DoNRE of Soc Trang province). • There is no monitoring of residual chlorine in discharged cooling water specified in the EIA. However, Monitoring the temperature of the cooling water discharged is only required in the first month of operation (once per day). However, According to the Specification for Steam and Water Analysis System (Document No: LP1-TKC-10XXX-I-I1-SPC-0002), an analyser system will be installed to continuously monitor residue chlorine levels and temperature in discharge cooling water for the operation phase. No issue identified. • Refer to *Gap 3.9 (Wastewater)* regarding the need for conducting impact assessment studies of the increasing wastewater volume. There may be potential need to update the surface water quality monitoring locations based on the assessment results (i.e. changes/ additions of receptors that would be significantly impacted by the Project/ cumulative wastewater). • According to the local EIA monitoring program, there is no surface water monitoring point set up on Hau river downstream of LP1 ash pond. Additionally, given there exists a number of aquaculture ponds along Hau river shore in Long Phu town, just about 6 km downstream of LP1, there is a need of adding at least one surface water quality monitoring point at this area.	• Add two manual ambient air monitoring points at the communities located closest to the ash pond (Loi Duc and Hoa Hung hamlets) with a monitoring frequency of once every six months (at least one monitoring session must be conducted during the dry season) during construction of ash pond and operation phase in order to ensure in–place controls to minimize dust impacts (wet ash, green buffer zone) on the community are effective. During the operation phase, if the monitoring results show that dust levels exceed the applicable standards and/ or there are significant grievances from this community, the monitoring frequency should be increased to quarterly for a minimum of one year until monitoring results and numbers of grievances confirm that the dust levels are under control. • Refer to *Gap 3.2* regarding development of a monitoring and reporting scheme for GHG emission and carbon intensity during operation phase *Wastewater and water environment monitoring*

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					• According to IFC EHS Guidelines for Thermal Power Plants, waste generated from the Project (Hg deposition from air emission, wastewater, cooling water, ash) during operation may contain heavy metals (Cr, Cu, Fe, Zn, Pb, Cd, Hg, As) and residue chlorine. However, no monitoring of such parameters in the receiving environment, including groundwater and surface water is required by the local EIAs to demonstrate the effectiveness of the Project control measures. • In order to ensure good environment for maintaining aquatic life and due to deposition characteristics of heavy metals, monitoring of sediment quality should be also conducted as recommended by the national technical regulation on sediment quality QCVN 43: 2012/BTNMT. No such monitoring is included in the Project local EIA monitoring program. • According to *IFC Guidelines for Waste Management Facilities*, at least one monitoring well located upgradient of the landfill and two wells downgradient should be installed. The local EIAs do not require monitoring of groundwater downstream of the ash pond, although it has been found that groundwater sampling is being conducted by LP1 at two existing household wells downstream of the ash pond (Loi Duc hamlet). Refer to *Item 28 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	• Add residue chlorine level, TSS and heavy metals parameters (Cr, Cu, Fe, Zn, Pb, Cd, Hg and As) into the monitoring and reporting program for industrial wastewater discharged from the CWTS (in operation phase); • Install continuous monitoring system for wastewater quality at the CWTS and work with DoNRE of Soc Trang province on transmission of the monitoring data following requirement of *Decree No. 38/2015/ND-CP* during operation phase. Parameters selected to be continuously monitored are based on MoNRE's requirement in the wastewater discharge permit; • Add one surface groundwater monitoring point on Hau river section downstream of LP1 ash pond and at least another one on the section where there exist aquaculture ponds (in Long Phu town, about 6 km downstream of LP1) (applicable for both construction and operation); • Add residue chlorine level and heavy metals parameters (Cr, Cu, Fe, Zn, Pb, Cd, Hg and As) into the monitoring and

Gap No.	PS Item Ref. No.	Risk Group: Legal Non-compliance	Risk Group: Cost (Time and Expense)	Risk Group: Project Schedule/ Delay	Findings	Recommendations
						reporting program for groundwater and surface water during construction and operation phase; • Also monitor sediment quality (Hydrocarbon, Cr, Cu, Fe, Zn, Pb, Cd, Hg and As) at the surface water monitoring points during both construction and operation; and • Ensure to continue groundwater monitoring at the two existing household wells in locations downstream of LP1 ash pond in Loi Duc hamlet. Once the residential houses in downstream of LP1 ash pond are relocated for LP2 and/or LP3 development and thus the current water wells used for LP1 groundwater monitoring are removed, LP1 should install 2 new groundwater monitoring stations in locations downstream of LP1 ash pond. Refer to *Item 28 of Table 1* in Annex H for the updated recommendation. Update the monitoring program (i.e. locations, parameters) if there is a need based on inputs from:

Gap No.	PS Item Ref. No.	Risk Group: Legal Non-compliance	Risk Group: Cost (Time and Expense)	Risk Group: Project Schedule/ Delay	Findings	Recommendations
						• Results from re-conducted modelling/ impact assessment studies such as air quality, noise, wastewater and dredging (See *Gaps 3.5, 3.9, 3.14 and 3.18*). • Applicable changes of ESSH regulations • Applicable monitoring requirements from ESSH permits for the Project in operation phase (i.e. water use permit, wastewater discharge permit, hazardous waste generator registration, etc.).
1.13	22, 23, 24	n/a	✓	✓	Refer to *Gap 1.3* regarding the lack of monitoring and reporting scheme and management review in most of the existing ESSH management plans for construction phase. Refer to *Item 30 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	Ensure the monitoring and management schemes in the ESMPs (for the construction phase and later for the operation phase) detail monitoring indicators (i.e. indicators/ parameters for evaluating occupational safety, erosion, social economic conditions, etc.) and frequencies. Develop a detailed plan for periodic performance reviews of the effectiveness of the ESMPs by senior management. Refer to *Item 30 of Table 1* in Annex H for the updated recommendation.

Gap No.	PS Item Ref. No.	Risk Group			Findings	Recommendations
		Legal Non-compliance	Cost (Time and Expense)	Project Schedule/ Delay		
1.14	22, 23	n/a	✓	✓	The environmental monitoring results are legally required to be reported to competent authorities (DoNRE, MoNRE) biannually. The monitoring results are required to be benchmarked against Vietnamese regulations and standards to allow tracking of their compliance status. A Collaboration Procedure (between LP1 and PM-PTSC) within ESSH oversight has been drafted. Regarding the monitoring/ inspection of the ESSH performance, which is the responsibility of PM-PTSC and its subcontractors, the following measures are currently being conducted: • ESSH issues are discussed and associated corrective actions (with committed timelines) are included as the first agenda item in daily toolbox meetings (between site managers and workers) and weekly meetings (among PM-PTSC and subcontractors). Some minutes of the weekly meetings were provided for ERM review. This was also confirmed by the workers interviewed by ERM; • Regular site walkdowns are conducted by LP1 accompanied by PM-PTSC to check the construction quality and ESSH performance; • The EPC contractor is required to submit a monthly report on construction progress, including labor and ESSH status, to LP1. No independent external audit scheme has been developed.	An independent social and environmental external audit should be conducted on a biannual basis throughout construction and commissioning, and on an annual basis throughout operation.- Refer to *Item 34 of Table 1* in Annex H for regarding removal of this recommendation as agreed by Lenders.
Stakeholder Engagement						
1.15	26	n/a	✓	✓	Stakeholder identification and mapping activities have not been conducted by LP1 PP PMU and as such the range of stakeholders who are interested and may have an influence upon the Project's actions has not yet been identified. There has been no documented plan to conduct external communication with all stakeholders.	Conduct stakeholder identification and mapping activities. The activities should include: • Identification of Project-affected areas/communities; • Identification of other potential key stakeholders; • Categorization of stakeholders: to include

Gap No.	PS Item Ref. No.	Risk Group			Findings	Recommendations
		Legal Non-compliance	Cost (Time and Expense)	Project Schedule/ Delay		
						government officers, civilian organization, local communities, grievants, etc.; Stakeholder mapping based on degree of interest and influence in the Project.
1.16	27, 29, 30, 31, 33	n/a	✓	✓	No Stakeholder Engagement Plan (SEP) has been developed and implemented for the Project. During the current review process, this gap was tabled with LP1PP who recognised and accepted it. They are now planning to develop a SEP in compliance with IFC PS1.	Based on the Stakeholder identification and Mapping, collaborate with the local authority to develop and implement a Stakeholder Engagement Plan (SEP) for the Project. The SEP should be developed and implemented and should include programs for (1) information disclosure, (2) public consultation and (3) a community grievance mechanism. Refer to *Gap 1.5* regrading recommendation on assigning a team/ personnel to be responsible for community liaison. The SEP should be designed to: • Cover all issues related to the Project and should be designed to be implemented throughout the Project life (with updates as the Project progresses); • Describe regulatory (i.e. during land acquisition, post EIA and other EHS permitting processes), lender (i.e. IFC, EP),

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						company (i.e. PVN, LP1), and/or other requirements for consultation and information disclosure; • Identify and prioritize key stakeholder groups; • Provide a strategy and timetable for information disclosure and public consultation with each of these groups; • Describe resources and responsibilities for implementing stakeholder engagement activities; and • Describe how stakeholder engagement activities will be incorporated into a company's management system. A plan for on-going community engagement throughout the Project life should be developed and implemented as a component of the SEP. This should include a provision stating the time when a public consultation is necessary/ required to be conducted (e.g. any change in the project development that is likely to impact the community and the environment). Information disclosure to the affected communities should be conducted to provide

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						all updated information about the Project, including its design, related environmental and social impacts, and associated mitigation measures proposed. It is recommended that all future consultation activities conducted by LP1 PP PMU adopt an Informed Consultation and Participation (ICP) process in order to consider the range of aspects including age and gender. The views and concerns of all potentially Affected Communities should be fully captured, documented and addressed.
External Communication						
1.17	34, 36	n/a	n/a	✓	LP1 PP PMU submits a monthly Project status report to the People's Committee of Soc Trang Province as well as a biannually investment monitoring and assessment report to the Ministry of Industry and Trade. The Project has produced environmental monitoring reports every 6 months from 2014 to 2016, but these have not been disclosed to the community. Moreover, there is no plan for them to be disclosed to the affected communities in future. Refer to *Item 39 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	Disclose to Project Affected People the Project information/ status and performance of the Project against the ESMP in a non-technical and understandable manner. Consider the concerns of the Project Affected People to adjust the frequency and information to be disclosed. The frequency of these reports will be proportionate to the concerns of Affected Communities but not less than annually. Refer to *Item 39 of Table 1* in Annex H for

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						regarding removal of this recommendation
Grievance Mechanism						
1.18	35	n/a	n/a	✓	In Vietnam, conflict and grievance resolution is generally controlled by the People's Committees of different government levels and is prescribed by Vietnam Grievance Law (No. 02/2011/QH13). Local people normally follow this government-controlled grievance mechanism to raise their concerns or file grievances. As reported by LP1 PP PMU personnel, upon receiving grievances relating to the Project, the local authority will inform LP1 PP PMU and the relevant involved contractor/subcontractors and ask for their cooperation. Local government, LP1PP PMU and contractor/subcontractors then cooperate to investigate the case. A meeting is then organised normally at the government office with the participation of the grievant, the Project's representatives and local authority for discussion and resolution. In the case that a resolution cannot be reached, the local authority will escalate the case to higher governmental levels (district, province people committee or industrial zone authority) or finally a court case. As confirmed by LP1 PP PMU and People Committees of Long Phu district and Long Duc Commune, there have been no grievances logged from local people up to now. According to LP1PP PMU and the PC of Long Phu District, LP1PP PMU generally uses this mechanism to receive grievances from the community. Moreover, according to the People's Committee of Long Phu District, this grievance mechanism controlled by the government has been disclosed to the community through the local authority. Refer to *Item 40 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	Establish a community grievance mechanism specifically for LP1 to enable affected communities to communicate their grievances/concerns on the Project (including land acquisition, compensation, resettlement and support issues – refer to *Gap 5.3*) directly to the Project, and have them promptly addressed. This mechanism should be run in line with the grievance mechanism established by the local authorities to ensure that all grievances are recorded and solved appropriately and in a timely manner. The community grievance mechanism needs to be fully disclosed to local community through a meeting with local authorities and a public announcement system such as loud speaker, community notice board at cultural house, etc. Refer to *Item 40 of Table 1* in Annex H for the updated recommendation.
Performance Standard 2: Labour and Working Conditions						
Working Conditions and Management of Worker Relationship						
2.1	8	✓	✓	✓	Reportedly, there are currently 19 foreign experts of Fichtner (6 foreign experts) and Power Machines (13	Collaborate with contractors who have foreign

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					foreign experts) working in the Project site. However, only 3 foreign experts of Fichtner have already obtained the work permits as legally required. Reportedly LP1 PP PMU only plays a support role to certify the application dossiers for contractors during obtaining work permits. An inspection of the foreign expert management of LP1 PP was conducted by Soc Trang Provincial Department of Labor, Invalid and Social Affairs and Police Department of Soc Trang Province in March 2016. Such non-compliances including lack of work permits was identified at the time of inspection. LP1 PP PMU and contractors were requested to obtain the work permits for foreign experts within 45 working days. However, at the time of ERM's site visit, this process has not been completed. Migrant workers of sub-contractors are reportedly required to complete temporary residence registration with the local authority; and registration is to be managed by the sub-contractors. Reportedly, for migrant workers living in worker accommodations in the Project Site, the contractors will register the temporary residence with local authority. However, no record of sub-contractors' temporary residence registration for their migrant workers was able to be provided to ERM for review. For migrant workers living in rental houses in surrounding areas, the owners of rental houses would typically be required to complete temporary residence registration. Refer to *Item 41 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	experts to obtain all required working permits. Regularly monitor the temporary residence registration for local migrant workers with local authority and keep records accordingly. Include management and monitoring measures for ensuring full compliance if working permitting and temporary residence registration for migrant labours (foreign and Vietnamese) of contractors performance in controlling temporary residence registration in the existing Influx Management Plan. . Refer to *Item 41 of Table 1* in Annex H for the updated recommendation.
2.2	12	n/a	✓	✓	Currently, the Project is at the early stage of construction. As of July 2016, there were 698 workers/employees (including employees of LP1 PP PMU), of which 379 were migrants, based on the LP1 PP PMU's record. There are four accommodation facilities provided for project workers, which are as follows:	Update the existing Worker Accommodation Management Plan: (1) Fully align with requirements of IFC PS2

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					• 83 LP1 PP PMU staff living at Long Phu 1 Power Management Board premises; • 95 PTSC staffs living at PTSC's accommodation area; • Approximately 60 workers of Bach Dang sub-contractor living in Bach Dang's worker accommodation located in the Project Site; and • Around 72 workers of Sicco sub-contractor living in Sicco's worker accommodation located in the Project Site. Other migrant workers are currently living in private rental houses in the surrounding areas. PM-PTSC has prepared a Worker Camp Management Plan. The Plan is a master plan that includes general high-level requirements for worker accommodation. There are only a few specific guidance parameters for accommodation design, and a number of these are not in line with IFC standards; for examples: • Where shared accommodation is necessary, rooms should accommodate 2-15 persons. IFC standard is 2-8 workers per room to ensure some level of privacy; and • The Worker Accommodation Management Plan does not mention the minimum floor surface for one person. IFC standard recommends a minimum 4.0 - 5.5m² floor surface per person. ERM visited two worker accommodations during the site visit; Sicco and Bach Dang sub-contractors. As observed, there are a number of non-compliance issues with IFC's accommodation requirements, such as: • No mobile partitions or curtains to ensure privacy in rooms of both worker accommodations; • 'Hot-bedding' practice (multi-people sharing one big bed) was observed in Sicco worker accommodation; • Number of sanitary and toilet facilities (around 5) in Sicco is not sufficient for the number of workers (around 100 workers) ;	and IFC Worker Accommodation Standard[1]. Acceptable requirements for worker accommodation would include a minimum 4m² of floor area per worker and a maximum of 10 workers per shared room. These include requirements on the quality and management of the accommodation and provision of basic service as well as the principles of non-discrimination and equal opportunity, and should not restrict workers' freedom of movement or of association; (2) Comply with legal requirements that are likely applicable for worker accommodation facilities (particularly those to be constructed outside of LPPC) such as (but not limited to): • An EIA or Environmental Protection Plan for each worker accommodation prepared and approved according to *Decree No. 18/2015/NĐ-CP*; • Temporary construction permitting; and • Groundwater use permitting.

(1) [1] http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/learning+and+adapting/knowledge+products/publications/publications_gpn_workersaccommodation

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					• Some toilets in Sicco have no doors and/ or unable to be locked; • Groundwater is used for cooking in the Sicco accommodation, but testing result of water quality was not provided during ERM's review to ensure compliance with national regulations on drinking water quality; • Fire protection and firefighting systems were not available in both accommodation sites. According to LP1 PP PMU, there will be one more accommodation facility developed in the next six months, to accommodate an additional 600 staff and workers of Lilama - a subcontractor of PM-PTSC. It is noted that the existing camps and the upcoming camp of Lilama are sited within LPPC. Therefore, there are not subject to any applicable EHS permits such as EIA, groundwater use permit and temporary construction permit. Other worker accommodation facilities for other subcontractors had not been planned at the time of ERM's site visit. However, given the number of workers at peak time of construction may reach 4,000, more accommodations may need to be installed and they are expected to be located outside LPPC. In that case, EIA (or Environmental Protection Plan –EPP), groundwater use permit (if use groundwater) and temporary construction permit may trigger for each camp. Refer to *Item 42 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	• Temporary residence registration for workers (See *Gap 2.1*). (3) Ensure all elements of a ESSH management plan (see *Gap 1.3*), including inspection and monitoring scheme to be covered. Monitor the PM-PTSC and its subcontractors' performance in implementation of the updated Worker Accommodation Management Plan. Refer to *Item 42 of Table 1* in Annex H for the updated recommendation.
2.3	18	n/a	✓	✓	Regarding construction workers, following a review of a number of labor contracts and interviews with subcontractor workers, it was found that the period of contract normally ranges from six months to a year. Skilled professionals and sometimes semi-skilled workers are employed directly by the EPC contractor and its subcontractors, and usually work for the company on different projects around the country. Eight in-migrant workers of Lilama and Bach Dang who have one year contracts on the Project confirmed this fact during the interview. Based on ERM's experience from other projects, the workers of this type commonly	Conduct an analysis of the Project construction labor force to identify viable alternatives for those workers subject to retrenchment. Develop and implement a retrenchment plan to reduce the adverse impacts of retrenchment on

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					account for up to 50% of the total construction workforce, while the remaining 50% who are typically unskilled workers and some semi-skilled workers may be subject to retrenchment, particularly in the later phase of construction when the works become more technically complicated. As reported by LP1, the number of construction workers on site at peak time is about 3,000. Hence, it is estimated approximately 1,500 -2,000 workers will likely lose their jobs when the Project construction is finished. There is no evidence that LP1 and PM-PTSC has carried out an analysis of alternatives to retrenchment or developed a retrenchment plan. Refer to *Item 43 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	workers, in line with this IFC PS requirement. Refer to *Item 43 of Table 1* in Annex H regarding removal of this recommendation.
2.4	20	n/a	n/a	✓	As reported by LP1, if the staff of LP1 haves any grievance (including anonymous complaints) they can report it to the trade unions of LP1 (of which everyone in LP1 is a member) and the trade unions will work with LP1 management on the staff's behalf to achieve resolution in accordance with the Labour Code. No formal grievance mechanism for LP1 staff has been prepared. So far there have not been any grievances raised from LP1 staff so it is not possible to verify if this process can allow convenient logging of grievances and timely response. Regarding construction workers of PM-PTSC and its contractors; there has been no official grievance mechanism for workers documented. However, as verbally reported by PM-PTSC and confirmed by workers interviewed, workers' grievances can be logged to assigned site managers who have the ability to either resolve directly or report to PTSC/ subcontractors management for resolution. The hotline number (i.e. mobile phone number of the Human Resource personnel of PM-PTSC) was reportedly provided to all workers of PM-PTSC and subcontractors and posted publicly at the security gates.	A formal employee grievance mechanism should be developed in line with IFC PS2 and communicated to all employees, and to all new starters upon joining the company. The mechanism should be an understandable and transparent process that provides feedback to those concerned without any retribution. It should also allow for anonymous complaints to be raised and addressed, for example through use of a commenting box. The process should allow for timely responses, with grievances logged and feedback tracked until resolution. Refer to *Item 44 of Table 1* in Annex H for the

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					Refer to *Item 44 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	updated recommendation.
Occupational Health and Safety						
2.5	23	n/a	✓	✓	The two EIAs contain high-level occupational safety measures for the construction phase and operation phase. Those are considered not sufficient to fully manage occupational health and safety risks during construction and operation of the Project. Twenty six (26) occupational HSE plan/procedures with detailed responsibilities, arrangements, training requirements have been prepared by PM-PTSC, and most of them are currently under review by LP1 before approval, including: 1. Hazardous Material Management Plan; 2. Waste Management Plan; 3. Job Safety Analysis (JSA) and Safe Work Method Statement Procedure; 4. Health Management Plan; 5. Permit to Work Procedure; 6. Working at height Procedure; 7. Occupational Health and Safety Management Plan; 8. Lifting Equipment Inspection and Operation Procedure; 9. Environmental, Health and Safety and Social Training Plan; 10. Workplace HSE Inspection Procedure; 11. Health, Safety and Environment Instructions to Sub-Contractors Procedure; 12. Electrical Safety Procedure; 13. Reporting and Investigating Procedure; 14. Personal Protective Equipment Procedure; 15. Site Traffic Management Procedure; 16. First Aid Procedure;	Given the construction has already commenced, as soon as possible make the HSSE procedures/ plans finalised for implementation. PM-PTSC should ensure: • An accident/incident log book should be made available to record all accidents/ incidents occurred as required by *Circular No. 08/2016/TT-BLĐTBXH* on the guidelines for compiling, archiving, summarizing, apprising, announcing and assessing of occupational accidents and technical incidents resulting in serious risk of occupational safety and hygiene; • Include update on status of closing corrective actions in weekly and monthly meetings for tracking and follow up works; and • Refer to *Gap 1.3* regarding development of ESSH plans/procedures for operation phase. Refer to *Items 31 and 32 of Table 1* in Annex H for

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					17. Site Barricades Procedure; 18. Excavation Procedure; 19. Mobile Work Equipment Procedure; 20. Gas Cylinder Use and Storage Procedure; 21. Scaffolding Procedure; 22. Method Statement for 50 Ton Tower Crane Erection; 23. Project Site Health Safety Environment Plan; 24. Project Signboards; and 25. Emergency Preparedness and Response Plan In these procedures, the EPC contractor and sub-contractor are required to follow to ensure they are implemented. However, such procedures have not included requirements for a management review to update and revise as necessary. Refer to *Gap 1.13* regarding discussion on monitoring and inspection of HSSE performance. Through daily site inspection and application of JSA, ESSH issues on site have been identified (e.g. PPE, labour health check, electrical safety, equipment safety, working at height, chemical safety, fire safety, flooding and erosion) and corrective actions are required to be implemented by a certain timeline during weekly and monthly meetings. However, records for tracking whether corrective actions have been closed timely were not available. New construction workers are required to be provided ESSH induction training by PM-PTSC prior to any field work in order to obtain the site entry card for working. Workers engaged in specialized works as specified in the Permit to Work Procedure (e.g. working at height, electrical work, confined space entry, lifting operation, and hot work) will undergo specific training in order to obtain a Permit to Work before working. Workers working on site also undergo thirty-minute daily toolbox meeting, and training	the updated recommendation.

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					arranged by PM-PTSC as necessary as part of health and safety programmes. These facts were confirmed by the interviewed workers and site management. According to the official letter No. 75/LP-TCXL (dated January 27th, 2016) prepared by LP1PP, the EPC and its subcontractors are required to report monthly on health and safety management, including work-related accidents, occupational diseases, by using a standardised template provided by LP1PP. Reportedly, no work-related accidents and occupational diseases have occurred and all accidents are required to be recorded. However, no accident and incident log book was provided for review. Refer to *Items 31 and 32 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	
2.6	23	n/a	✓	✓	As reported by LP1, development of ESSH management plans/ procedures, including occupational HSE plan/procedures for the operation phase of the Project will be completed before the Plant operation. Refer to *Item 13 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	LP1 should: • Develop and ensure HSSE procedures for operation phase are available before project operation. • Core component of a procedure (e.g. responsibilities, arrangements for communication, provision of equipment, training, inspection, management review) should be included in HSSE procedures; • Refer to *Gap 1.10* regarding EPRP development for operation phase. Refer to *Item 13 of Table 1* in Annex H for the updated recommendation.

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Workers Engaged by Third Parties						
2.7	25	n/a	✓	✓	According to the EPC contract, the EPC contractor, PM-PTSC, is fully responsible for all environmental, health, safety and social performance related to construction activities at the site. LP1 and PM-PTSC supervise the labour recruitment at the construction site. Recruitment/ labour records (including a copy of identity card, labour contract, medical health check, insurance, training registration) of subcontractors is required to be reported to PM-PTSC and then LP1. Also refer to *Gap 1.14* Regarding discussion on the current monitoring/ inspection of the ESMPs (of the construction phase) implementation of the EPC contractor and subcontractors. However, LP1 has no policies and procedures in place to monitor the EPC contractor and its subcontractors' on-going performance on ensuring their workers' rights related to hours of work, wages, overtime, compensation, and other benefits as specified in the labour contracts and in compliance with the Labor Code and this performance standard (PS2). Refer to *Item 45 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	Develop policies and procedures for managing and monitoring on-going performance of the EPC Contractor and its subcontractors in ensuring their labor rights related to hours of work, wages, overtime, compensation, and other benefits as specified in the labor contract and in compliance with the Labor Code and this performance standard (PS2). Refer to *Item 45 of Table 1* in Annex H for the updated recommendation.
Supply Chain						
2.8	27, 28, 29	n/a	n/a	✓	According to *Official Letter 3508/VPCP-KTN* dated 15 May 2015, PVN is designated by the Vice Prime Minister to directly and actively import coal to serve PVN's thermal power projects. PV Power Coal, as a member company of PVN, is directly in charge of this business. According to article '*Optimum coal import option for PVN's thermal power projects*' (including LP1) published on Petro Journal[1], Petro Power focuses	Work with PV Power Coal to develop a supply chain management policy and procedure to allow controlling and monitoring of child labor, forced labor and labor safety issues in the coal

(1) [1] PVN website: http://www.vpi.pvn.vn/upload/file/TCDK/2014/Thang%203/NTLuan%20so%202-2014-3.pdf

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					on importing from Australia and Indonesia based on the criteria of stable politics, acceptable coal price and coal transport infrastructure. A direct contract with coal mines is preferable but importing through an intermediary may be considered depending on real conditions. According to various Long term Coal Offtake Frame Agreements (COFAs) signed between PV Power Coal and a number of potential coal suppliers provided for ERM review, suppliers' obligation in management of child labour, forced labour and labour safety issues is not specified in these COFAs. Refer to *Item 46 of Table 1* in Annex H for the updated finding on this matter.	supply chain. Refer to *Item 46 of Table 1* in Annex H for the updated recommendation.
Performance Standard 3: Resource Efficiency and Pollution Prevention						
Resource Efficiency and Greenhouse Gas Emissions						
3.1	7	n/a	✓	✓	LP1 applied the supercritical technology, which results in higher turbine efficiency and better heat rate, which ultimately leads to lower fuel consumption and reduced emissions of CO_2 and other pollutants for the same amount of power generated. A Greenhouse Gas Emission Study for LP1 was conducted by Fichtner GmbH & Co KG in 2015. The report calculated the GHG emission from all sources including fuel combustion (coal and oil), refrigerants and sulfur hexa fluoride from different phases of the project, particularly in the commissioning and operation phases. According to the report, in the operation phase, the project will have total annual GHG emission of 6,278,000 tons/year and CO_2 intensity of 805.61 g CO_2/kWh. This carbon intensity result is higher than the typical value of 774 g CO_2/kWh for such a thermal power plant (supercritical, coal fired) stated in the *IFC EHS Guidelines for Thermal Power Plants*. There were also limited details regarding how the data and methodology for the calculation had been derived. Therefore, it is difficult to justify the GHG emission results. Based on a calculation by ERM (see *Annex F*), the carbon intensity level of the Project calculated using the IPCC method is 698 g CO_2/kWh, which is less than the typical value of 774 g CO_2/kWh for such a thermal power plant (supercritical, coal fired) stated in the *IFC EHS Guidelines for Thermal Power Plants*. Moreover,	An evaluation of the options to reduce or offset GHG emissions should be conducted. Develop and implement an energy efficiency programme to be implemented during operation that will result in annual improvements. See also *Gap 3.2* below.

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					though LP1 uses supercritical technology, it is expected that the carbon intensity of LP1 reaches the expected carbon intensity level of ultra-supercritical thermal power plants (<750 g CO_2/kWh) as referred to in Chapter II, Annex VI of the UECD common approaches. Based on the carbon intensity level and the capacity of the plant, it has been estimated that 5,444,755 tons/year of CO_2 (using the IPCC methodology) will be generated by the Project. No plans are provided in the EIA to conduct monitoring of the Project's GHG emissions, nor to reduce or offset these emissions. Refer to *Item 47 of Table 1* in Annex H for the updated finding on this matter.	
3.2	8	n/a	n/a	✓	It is expected that the carbon intensity and energy efficiency of LP1 are in compliance with *IFC EHS Guidelines for Thermal Power Plants*, the European Industrial Emission Directive (2010/75/EU) and OECD common approaches. However, based on the carbon intensity level calculation, it is expected that the Project will produce more than 25,000 tonnes of CO_2-equivalent annually. In the EIA there is no plan for annual quantification of GHG emissions.	A procedure should be developed and implemented to annually monitor and calculate GHG emissions for the operation phase using internationally recognised methodologies appropriate for the concerned sectors, such as those found in the *2006 IPCC Guidelines for National Greenhouse Gas Inventories* published by the Intergovernmental Panel on Climate Change (IPCC) in 2006. The following activities are recommended (refer to details in *Annex F*): 1. Verify and confirm the Project's data (e.g. the annual coal consumption rate and the heating value of the coal to be used by the Project);

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						2. Calculate GHG intensity using 2006 IPCC Guidelines Tier 2 or Tier 3 approaches for greater accuracy in reflecting the reality of GHG intensity. 3. Develop and implement a procedure to calculate the Project's GHG emissions. Preparation of a monitoring plan for the GHG emissions and track carbon intensity as a key performance index during operation phase, monitoring and reporting to continuously improve the performance. 4. Apply best technology and management practices to keep improving thermal efficiency of the boilers. 5. Review internal processes to find opportunities to reduce the self-consumption rate.
Water consumption						
3.3	9	✓	n/a	✓	According to the two local EIAs, the supply of water for construction is sourced from both ground water and/or purchasing from a local water supply station (i.e. Dai Ngai). In current practice, the water supply for construction within LPPC is sourced groundwater only with total exploitation capacity permitted by DoNRE in 2011 of 1,200 m^3/day. Consideration of groundwater reserve and impacts on other users is normally included as part of this permitting process. According to EIA baseline, the groundwater resource in the local area is abundant and local households use this as their main water supply source given the	LP1 should conduct a comprehensive impact assessment of Project water usage during construction, including estimation of water use for all activities (i.e. construction, water serving for workers while on site and at their camps), in consultation with the local authorities (i.e.

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					water supply network has not yet been available. It should be noted that this groundwater permit is for the construction site only, while additional water demands from numerous migrant workers (around 3,000 – 4,000 at peak time) living outside the construction site in numerous of temporary camps (i.e. Long Duc commune) have not yet been evaluated. As verbally reported by LP1 and PM-PTSC, water supply for these camps will also be taken from groundwater. This may significantly increase the groundwater use in the locality and may impose pressure on the local users. The draft Worker Accommodation Management Plan generally requires subcontractors to develop a program for provision of drinking water for their worker camps. Refer to *Item 50 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	DoNRE) to determine if groundwater reserves in the locality can accommodate the total demand of the Project with consideration of other exiting users (i.e. local households). If it is not the case, LP1 and PM-PTSC should work with the local authorities to find a water supply alternative for the excess demand (which is likely given need for additional subcontractors' worker camps to be constructed). Based on the water use impact assessment, there is a need to provide more detailed guidance for subcontractors on water sourcing (i.e. groundwater or other sources) for their camps. In case groundwater is allowed to be used at the camps, groundwater exploitation permit shall be obtained. These should be presented as part of the Worker Accommodation Management Plan (*See Gap 2.2*). Refer to *Item 50 of Table 1* in Annex H for regarding removal of this recommendation
Pollution Prevention						
3.4	10	n/a	✓	✓	*Air quality*	

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					The stack height of LP1 is 200m, which meets the Good International Industry Practice (GIIP) for stack height recommended by IFC's EHS Guidelines for Thermal Power Plant. The EIA commits to complying with the applicable Vietnamese standards for stack emissions levels only. However, according to the EPC contract amendment in December 2014 (*Document No.6. Plant Performance Guarantees*), the thermal power plant including the air emission treatment systems shall be designed to ensure the stack emission levels as follows: • NOx ≤ 450 mg.m^3; • SO_2 ≤ 300 mg/m^3; and • Dust or particulate matter (PM) ≤ 50 mg/m^3. These committed emission levels are in conformance with the standards required by IFC EHS guidelines for Thermal Power Plants (NOx ~ 510 -mg/m^3, SO_2 ~200 – 850 mg/m^3, and PM ≤ 50 mg/m^3). Based on the commitment in the EPC contract, PM-PTSC has developed design/ technical specifications for the stack emission control systems, including Electro-Static Precipitation (ESP) dated 10 November 2015, Selective Catalytic Reduction (SCR) dated 29 December 2015 and Flue Gas Desulfurization (FGD) dated 19 February 2016. ERM has conducted a technical review of data of coal quality and these documents and subsequent review shows that these control systems are generally considered good practices, However, their designs, particularly for the SCR and FGD systems, may be over-specified (i.e. for SCR) and under-designed (i.e. for FGD) and may not be capable of ensuring emission levels as committed in the EPC contract or there is a risk of ammonium slippage, IFC EHS guidelines for Thermal Power Plants. Also refer to *Annex E* for detailed review. Refer to *Item 52 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	Specified inlet concentrations of SO_2 and NOx should be checked to ensure that the FGD and SCR design is sufficient to treat the stack emission to meet the levels required by IFC EHS guidelines for Thermal Power Plants. Refer to *Item 52 of Table 1* in Annex H for the updated recommendation.

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3.5	10	n/a	✓	✓	*Air quality* According to the local EIA for LP 1, baseline air quality monitoring was undertaken in four locations in December 2007 (KK1 to KK4) and five different locations in March 2008 (KK5 to KK9). However, no discussion is given within the local EIA of LP1 to the duration of the baseline air quality monitoring within the periods (i.e. December 2007 and March 2008) or the monitoring technique used. It is highly likely that the duration of monitoring is insufficient to fully understand ambient air quality and longer term monitoring is required to determine whether this is a degraded or non-degraded airshed under the IFC guidelines. It is typical that collection needs to be undertaken by continuous automatic sampling for a minimum period of 3 months, and preferably 6 or more for covering seasonal variations due to the monsoon and dry season. However, given the local context of the site (i.e. rural area) and as an experience in Vietnam, it is typical to have baseline air monitoring by continuous automatic sampling for a period of 48 hours, which is generally accepted by lenders. Air quality modelling was conducted as part of the local EIA without consideration of cumulative emission impacts from LP2 and LP3. Also refer to *Annex E* regarding insufficient baseline collection leading to uncertain results for air quality modelling in the local EIA. Given the possibility that there is a requirement to change the applicable emission standards (from national standard to IFC) the modelling result in the local EIA may no longer suitable for assessment the projects impact on air quality. Refer to *Item 3 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	Re-conduct the air quality modelling study based on applicable emission standard options for LP1 (IFC EHS guidelines for Thermal Power Plants). The study should also include modelling of cumulative impacts with LP2 and LP3 based on the information/ assumptions available. The air modelling should be conducted based on (refer to *Annex E*): • A newly collected ambient air baseline by continuous automatic sampling for a period of 48 hours; • At least one-year, and preferably five years of representative meteorological data; and • Inclusion of emissions from fugitive dust sources including the handling of coal and wind blow emissions from coal storage.
3.6	10	n/a	✓	✓	*Air quality* According to the air baseline provided in the local EIAs (indicating that the ambient air quality standard	Based on the air quality modelling study,

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					was attained) and the fact that the Project is located in a remote rural area, the airshed can be determined 'non-degraded'. As recommended in the IFC's General EHS Guidelines and IFC EHS Guidelines for Thermal Power Plants, emissions from a single project should not contribute more than 25% of the applicable ambient air quality standards, to allow additional future sustainable development in the same (non-degraded) airshed. Only when a more sufficient air quality modelling study is re-conducted, can the Project's conformance with IFC requirement on emission contribution to the airshed be confirmed.	determine if incremental impacts from LP1 emission (with consideration of in-place control) are small (i.e. contribution of 25% of the national ambient air quality standard, QCVN 05:2013/BTNMT). Modify the emission levels, if needed, to achieve requirement on incremental impact.
3.7	10	n/a	✓	✓	<u>*Cooling Water Thermal Discharge*</u> LP1 Project uses a once-through cooling system with capacity of 56 m^3/s as committed in the EIA and 46.6 m^3/s as being amended in the current design of the EPC contractor. A thermal discharge simulation study using FAST2D SW software (Surface Water Flow and Solute Transport in 2 Dimensions) was conducted as part of the LP1 local EIA. The modelling result of cumulative thermal discharge impacts with LP2 and LP3 is presented in Annex 6 of LP1 EIA although interpretation of this modelling result for the cumulative impact assessment was not made in the EIA report. Additionally, it is recognized that the simulation study was performed based on hydrological data of 5 consecutive days in April only (with no specific year indicated) which is considered insufficient to ensure a trusted simulation result. It is common best practice that hydrological data for a whole month (i.e. representing different seasons or the driest time) are used for running thermal discharge modelling. This study referred to a secondary report "*Master plan of Cuu Long River Delta Project*" to indicate that April is the driest month in a year. It is contrary to the baseline provided in the LP1 EIA which shows the average water level in Hau river was lowest and the ambient temperature was highest in May every year during the period from 1997 – 2007. Because of the above facts, the thermal discharge simulation and impact assessment, including cumulative impacts with LP2 and LP3 conducted in the local EIA is considered not qualified. However, Refer to *Item 4 of Table 1* in Annex H for the updated finding on this matter based on the review	Re- conduct cooling water thermal discharge simulation and impact assessment, including assessment of cumulative impacts with LP2 and LP3. Refer to *Item 4 of Table 1* in Annex H regarding removal of this recommendation based on the review of supplemental/ updated documents (LP2's thermal discharge modelling study).

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					of supplemental/ updated documents (LP2's thermal discharge modelling study).	
3.8	10	✓	✓	✓	<u>*Wastewater*</u> According to the Design Basic Report for Wastewater Treatment System (Document No: LP1-TKC-10XXX-M-M3-CRT-0019), level of pollutants in process wastewater effluents is committed to be compliant with IFC's EHS Guideline for thermal power plants. According to PM-PTSC's Specification for Effluent and Sewage Conveyance and Treatment System (Document No. LP1-TKC-10RU-M-M27-SPC-2039, dated 28 July 2016) and the Wastewater Management Scheme (drawing No. LP1-TKC-M-M227-PFD-1078, dated 30 June 2016), the total wastewater estimated to be generated from different process effluents may range from 200 to 500[1] m^3/hour (including 170 -380 m^3/hour occurring continuously, 30 m^3/hour intermittently, and 100 m^3/hour occasionally) but the volume of wastewater (after passing the CWTS) to be discharged to Hau river is only 168.8 m^3/hour. Therefore, the wastewater discharged out from LP1 may likely exceed the volume committed in the local EIA (71 m^3/s) from 2.4 times. There is a need to inform MoNRE of the increase in wastewater volume and the CWTS design for their opinion in accordance with the EIA's approval letter and Decree 18/2015/ND-CP. Due to the potentially increase of wastewater volume compared to the local EIA, the local EIA may be required to be re-conducted given concerns regarding a potential increase in the associated significance of impact.	Inform MoNRE in writing all the changes related to wastewater and control measures to be made in the EPC contractor's final design compared with the local EIA content as required by the EIA's approval letter and *Decree 18/2015/ND-CP*. Re-conduct the local EIA for LP1 if required by MoNRE.
3.9	10	✓	✓	✓	<u>*Wastewater*</u> As required in *Decree No. 201/2013/ND-CP* and *Circular No. 27/2014/TT-BTNMT* (Form 35 – Content of wastewater discharge permitting report), designated receiving water use purposes, assimilative capacity of	Commission a competent consultant to conduct all required studies/ surveys (i.e. assimilative

[1] When the run-off water from the coal yard is largest in rainy season (200 m^3 per hour)

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					the receiving water body (at driest time, using assessment model/ methodology provided in *Circular No. 02/2009/TT-BTNMT*), identification of water users and other emission sources in the watershed (within 5 km radius) must be undertaken in the water use permitting process. These requirements are in line with IFC General EHS Guidelines. However, the requirements for assessment of assimilative capacity and identification of water users and other emission sources in the watershed are insufficiently considered as per common practice.	capacity, identification of water users and other emission sources in the watershed, etc.) and develop a wastewater discharge permitting report following guidelines of *Decree No. 201/2013/ND-CP* and *Circular No. 27/2014/TT-BTNMT* (Form 35 in particular). This report should be presented to the lenders for review to ensure the assessment of assimilative capacity of the receiving water body (Hau river), the Project's wastewater impacts on other water users and cumulative impacts with other wastewater sources in the watershed are sufficiently assessed. Submit this report and other dossiers as required by *Circular No. 27/2014/TT-BTNMT* to MoNRE in order to have the wastewater discharge permit granted before commissioning of the CWTP at the latest.
3.10	10	n/a	✓	✓	<u>*Ash pond siting*</u> As indicated in the detailed design report for the modified ash pond recently prepared by the EPC contractor (and its sub-consultant –PECC3) in 2016, the national standard on Hazardous Waste Landfill Design TCXDVN 320-2004 and a number of other Vietnam construction standards were used for designing the ash pond. According to TCXDVN 320-2004, the LP1 ash pond is classified as a large scale landfill (> 3ha) with associated criteria for siting (as detailed in Annex E). With regard to this matter, the IFC EHS	If the land acquisition and resettlement for LP2 and/or LP3 development has not been conducted within one year before operation of LP1 should conduct a survey of the water supply status of the remaining community

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					Guidelines for Thermal Power Plants refers to the IFC EHS Guidelines for Waste Management Facilities which also has a number of criteria for siting a landfill. *Annex D* presents the compliance status of the LP1 ash pond location against the requirement of TCXDVN 320-2004 and IFC Guidelines for Waste Management Facilities. In summary, the ash pond siting does not comply with national standard requirements on distance to residential area and nearby road. However, it should be noted that the Project location and layout has been approved by the government so it can be implied that the ash pond location has already been legitimised. With regards to the IFC Guidelines for Waste Management Facilities, the ash pond of LP1 is not in line with IFC criteria in terms of proximity to the residential area (less than 250m as required, to the west and the southeast of the ash pond), perennial streams such as Hau River (less than 300 m as required), and possibly drinking water wells in downstream (less than 500 m as required, to southeast of the ash pond). According to the socio economic report of Long Duc commune in 2015, only a small part of Loi Duc commune (downstream of LP1 ash pond) has been connected to the local water supply network). It should be noted that residents who may use water wells within 1.1 km distance to the southeast of LP1 ash pond boundary (Loi Duc hamlet) will be relocated during development of LP2 (420 m) and LP3 (650m) ash ponds. However, the development plans of LP2 and LP3 are currently unclear. Considering potential high risk of dust and leachate on nearby residential areas and water resources due to close proximity, the ash pond should be properly designed and operated. This can only be verified by an independent experienced construction/ landfill expert through a detailed technical review. The ash pond design and construction is not under the scope of work of PM-PTSC. Instead, this work is being performed by a consortium of PECC3- Song Da 9 – Thanh Nam. An independent consultant is being selected to supervise the quality of the ash pond design and construction in accordance with the Vietnam Bidding Law 2013. As required by Clause 6 of the Bidding Law, the selected contractor/ consultant shall be legally and financially independent from the project owner.	within 500 m downgradient of LP1 ash pond in Loi Duc hamlet. If the local community continue to use groundwater for drinking and irrigation purposes, an alternative fresh water supply system should be provided, in collaboration with local authorities.

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3.11	10	✓	✓	✓	*Ash Pond Dust Control* Ash will be mixed with water to form an ash slurry which will be pumped to the ash pond through slurry pipelines. A make-up water system is included in the design to supplement water loss due to evaporation in the ash pond and thus preventing the risk of the ash drying and becoming airborne through wind entrainment. Although the ash is maintained in wet form at the ash pond, there is still potential for dust dissemination during ash handling or in case of ash pond operation failure. As required by TCXDVN 320 -2004, a green buffer zone of 10m width shall be established around the landfill in order to minimise wind flow and dust dissemination to the surroundings. However, no such specification is included in the detailed design (2016) of the ash pond. As shown in *Figure 3.3*, residential houses (Loi Duc and Hoa Hung hamlets) and an inter-provincial public road (Nam Song Hau) are located within 250m of the ash pond and thus are considered sensitive to dust dissemination from the ash pond. Refer to *Gap 1.12* regarding the lack of air quality monitoring points in the residential areas adjacent to the ash pond (Loi Duc and Hoa Hung hamlets) to ensure effectiveness of dust mitigation measures implemented in the ash pond.	Work with the EPC contractor to add a green buffer zone of a minimum width of 10 m at the sides where communities are located facing into the ash pond design and implement accordingly. Refer to *Gap 1.12* regarding recommendation on addition of air quality monitoring points in the
3.12	10	✓	✓	✓	*Ash Pond Leachate Monitoring* Refer to *Gap 1.12* regarding the lack of groundwater monitoring downstream of the ash pond in accordance with IFC Guidelines for Waste Management Facilities.	Refer to *Gap 1.12* regarding recommendation on groundwater monitoring in locations downstream of the ash pond.

Gap No.	PS Item Ref. No.	Risk Group			Findings	Recommendations
		Legal Non-compliance	Cost (Time and Expense)	Project Schedule/ Delay		
3.13	10	n/a	✓	✓	<u>*Noise (construction phase)*</u> According to the local EIA, the noise baseline measured at nearby residential areas ranged from 40 -45 dBA. The noise impact during the construction phase at sensitive receptors (residential areas) was calculated using a fundamental and widely used equation for noise transmission simulation in the local EIA. Based on this simulation, the predicted maximum noise level at the nearest residential area (65.5– 79.5 dBA) is to be recorded during day time. The periodic monitoring showed the actual noise level measured at the residential areas during construction in the second half of 2015 was from 57 - 65 dBA. The levels were in compliance with the existing national standard (QCVN 26:2010/BTNMT, 70 dBA in day time) but exceeded the level recommended by IFC's general EHS Guidelines (55 dBA, in daytime). Construction noise management was included in the scope of the Project Site Health, Safety and Environment Management Plan developed by PM-PTSC and now under LP1's review before finalisation. However, the measures proposed are focussed on mitigation of noise impact on workers such as provision of PPE (ear protection), using low noise level equipment, and using silencer for equipment. Refer to *Item 14 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	Update the noise management section in the Project Site Health, Safety and Environment Management Plan in order to provide more appropriate measures to ensure noise level at the nearest communities during construction phase in line with IFC EHS Guidelines (55 dBA and 45 dBA during day and night time, respectively). Closely monitor the noise level at the nearest communities during construction. If the noise level exceeds the recommended level of IFC's EHS Guidelines, noise mitigation measures should be implemented. Refer to *Item 14 of Table 1* in Annex H for regarding removal of this recommendation
3.14	10	n/a	✓	✓	<u>*Noise (operation phase)*</u> The local EIA refers to actual noise measurement at a thermal power project in the north of Vietnam (Pha Lai TPP) during operation and using the same simulation equation for construction phase to estimate noise level in 500m distance of about 57 dbA. A number of mitigation measures in the operation phase are proposed in the EIA for noise impact such as insulation, closed housing of turbines, and tree planting. According to the EPC contract, the EPC contractor is required to guarantee the noise level at the project	Conduct quantitative modelling to assess the noise impact of operation of LP1 and its associated facilities (including port with all in place control measures) on the nearest communities.

Gap No.	PS Item Ref. No.	Risk Group: Legal Non-compliance	Risk Group: Cost (Time and Expense)	Risk Group: Project Schedule/ Delay	Findings	Recommendations
					boundary during operation to comply with TCVN 5949:1998 (75 dBA during day time and 70 dBA during night time) and any statutory changes in stipulations regarding noise limit during tenure of the contract. That means the EPC contractor is now required to ensure the Project operation noise at the boundary complies with existing national noise standard, QCVN 26:2010/BTNMT (70 dBA during day time and 55 dBA during nigh time). These committed noise levels are not up to the level of IFC's EHS Guidelines which requires noise level at the nearest sensitive receptor to not exceed 55 dBA and 45 dBA during day and night time, respectively. It is standard practice that remodelling be conducted as part of the impact assessment to confirm that these standards are achieved by applying the suggested mitigation measure; however such an assessment was not conducted in the EIA. Refer to *Item 9 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	
3.15	10				<u>*Noise (operation phase)*</u> According to the local EIA, there are no noise monitoring locations set up at the nearest communities in Hoa Hung hamlet during operation phase, including those in Thanh Duc, Loi Duc, and particularly in Hoa Hung hamlets. It is noted that the houses in Thanh Duc and Loi Duc hamlets will be relocated for LP2 and LP3 development but communities located in Hoa Hung and An Hung hamlets to the west of LP1, just across Nam Song Hau road will still remain. However, development plan of LP2 and LP3 are still unknown.	Add two noise monitoring points during commissioning and operation phase at the nearest communities (Thanh Duc, Loi Duc, and particularly in Hoa Hung). Closely monitor the noise level at the nearest communities during commissioning of LP1 (also refer to *Gap 1.12*). If the noise level at the communities exceeds the recommended level of IFC's EHS Guidelines, noise mitigation measures should be implemented to ensure full compliance in operation phase.

Gap No.	PS Item Ref. No.	Risk Group: Legal Non-compliance	Risk Group: Cost (Time and Expense)	Risk Group: Project Schedule/ Delay	Findings	Recommendations
Waste						
3.16	12	n/a	✓	✓	*Waste (Construction phase)* A Waste Management Plan (WMP) for the construction phase has been developed by PM-PTSC and was reportedly under LP1's review for approval at the time of the site visit. The draft WMP, which was available for ERM's review, covers both hazardous waste and non-hazardous waste control (including handling safe management, transport, storage, handling and disposal) at the office, worker camps and construction site, and is applicable to the EPC contractor and its subcontractors. This draft WMP is generally in line with this IFC PS requirement and Vietnamese regulations as follows: • PM-PTSC and its subcontractor are required to minimise their waste generation as far as possible. When waste is generated, they shall be classified (into non-hazardous or hazardous), stored, transported and treated in conformance with Vietnamese regulations; • PM-PTSC shall enter into a contract/ agreement with a licenced waste contractor for waste treatment off-site as committed in the EIA. PM-PTSC shall assure that the waste is disposed of at an identified and licensed (or controlled) waste disposal site and shall be required to carry out an audit trail on its waste disposal process. • PM-PTSC shall inspect the waste storage on-site, monitor and report the quantity of waste generated and handle all kinds and waste related issues/incidents to LP1 on a monthly basis. However, management of dredging waste is not included in the scope of the draft Waste Management Plan. Also refer to *Gap 3.17* below. Waste bins of different colours are provided at construction sites of each subcontractor, allowing waste segregation and temporary storage. Mobile toilets are also arranged on site. A temporary hazardous waste storage facility is constructed properly in line with Vietnamese regulation (*Circular No. 36/2015/BTNMT –Item 1, 2 and 3 of Annex 2A*) and IFC requirement with roof, signal and secondary	Ensure the Waste Management Plan for the construction phase complies with applicable Vietnamese and IFC requirements before approval and is implemented accordingly. Refer to recommendations in Gap 3.*17* below. When external environmental and social monitoring audit identifies the need of expansion, expand area of temporary hazardous waste storage facility to ensure sufficient and

Gap No.	PS Item Ref. No.	Risk Group: Legal Non-compliance	Risk Group: Cost (Time and Expense)	Risk Group: Project Schedule/ Delay	Findings	Recommendations
					containment, etc. However, the storage facility is considered too small to accommodate hazardous waste for the increased amount expected when the construction load increases. Refer to *Item 59 of Table 1* in Annex H for the updated finding on this matter. Hazardous Waste Generator Registration for construction phase was obtained as legally required. PM-PTSC has signed contracts with licenced waste contractors to collect, transport and treat non-hazardous and hazardous wastes in accordance with Vietnamese regulations. It was verbally reported by PM-PTSC that some inspection visits to the waste contractors had been conducted but no evidences in writing was available for ERM review (i.e. inspection/audit reports). It is noted that audit of waste disposal/ treatment process (including disposal site) is required in draft WMP and IFC requirements. Given a number of cases found in Vietnam highlighting that that licensed contractors do not dispose/ treat the waste properly, this issue is potentially material. Refer to *Item 60 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	proper storage of the largest amount of hazardous waste to be generated at peak time during construction. The expanded facility should be designed in line with *Circular No. 36/2015/BTNMT –Item 1, 2 and 3 of Annex 2A* which is considered also in line with IFC requirement. Conduct an audit of the waste disposal process as carried out by waste contractors to ensure waste is transported and treated properly at licensed facilities, and ascertain whether licensed disposal sites/ treatment facilities are being operated to acceptable standards. In case the audit result shows incompliance of waste contractors and their waste treatment facility, PM-PTSC should change the waste contractors and a similar audit should be conducted before entering into contract.
3.17	12	✓	✓	✓	<u>*Dredging waste (construction phase)*</u> Within the EIA of LP1 it is estimated that around 500,000 m^3 of dredge materials would be generated from dredging activity for the port construction and the spoil will be used for land levelling at the Project resettlement site and two other development projects in Long Phu town. However, the current practice of dredging at the equipment berth shows that the spoil (about 15,000 m^3) as permitted by the authorities is	Formally inform MoNRE on the changes of dredging material disposal locations once allocated by the provincial authorities.

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					being disposed within Con Cat prison on Cu Lao Dung islet, which is around 4.2 km from the dredging site. Other disposal locations for further dredging are currently under consideration by the local authorities according to official notification No. 738/UBND-TH dated 3 June 2016. LP1 is required under the terms of this notification to inform MoNRE of changes of dredging material disposal locations if they differ from that detailed in the local EIA. Refer to *Item 1 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	Refer to *Item 1 of Table 1* in Annex H regarding removal of this recommendation.
3.18	12	n/a	✓	✓	<u>*Dredging waste (construction phase)*</u> As required by Vietnamese regulation, an Environmental Protection Plan (EPP- a simplified EIA applicable for small scale projects/ activities) for dredging at the equipment berth has been developed by LP1 and certified by DoNRE in late July 2016. A Maritime Safety Plan (MSP) was also approved in the same month for this dredging, to ensure waterway traffic safety during dredging period. As reported by the LP1, other separate EPPs and MSPs will be developed for dredging at each berth to be constructed (i.e. coal, oil, limestone ash, gypsum). The assessment provided in the local EIA of LP1, the EPP and MSP for dredging at the equipment berth is considered insufficient compared to the requirements of IFC EHS Guidelines for Ports, Habours and Terminals for the following aspects: • Prior to initiation of dredging activities, dredging materials has not been evaluated/ tested for their physical, chemical, biological, and engineering properties and is insufficient to effectively inform the evaluation of disposal options (i.e. if the materials are contaminated by historical deposition and accumulation of hazardous materials). According to the EPP and MSP approved for dredging at equipment berth, dredging waste cannot be used for land reclamation in areas where surrounding land is agriculture without first providing evidence if the materials are contaminated (by historical deposition and accumulation of hazardous materials); and	Conduct a comprehensive dredging impact assessment and develop a Dredging Management Plan in line with relevant Vietnamese regulations and provincial requirements and IFC EHS Guidelines for Ports, Habours and Terminals. Refer to *Item 6 of Table 1* in Annex H for the updated recommendation.

Gap No.	PS Item Ref. No.	Risk Group: Legal Non-compliance	Risk Group: Cost (Time and Expense)	Risk Group: Project Schedule/ Delay	Findings	Recommendations
					• There is insufficient evidence to demonstrate efforts to mitigate negative impacts on aquatic life (including lack of suitable dredging methods/techniques to avoid impacts on timing of fish migration or spawning seasons, routes, and grounds and related impacts due to sediments). As reported by LP1, designs of other berths are still being developed by the EPC contractor. As such the exact dredging scale and associated impacts can only be assessed when the final design is available. No comprehensive dredging management plan in line with IFC requirements has been developed.	
3.19	12	✓	✓	✓	<u>*Combustion Ash (Operation phase)*</u> The local EIAs have approved development of an ash pond of 35 ha that can accommodate ash generated from LP1 in situations where 30% of ash generated cannot be reused/ recycled within 30 years (or no ash consumption within 5 years in equivalent). As recently directed by the Prime Minister in *Decision No. 1696/QD-Ttg* in 2014, LP1 is among thermal power projects that must reduce the ash pond storage capacity to a level of no ash consumption within 2 years and to have in place an ash reuse/ recycle plan for implementation before 2020. The ash pond design is currently being modified by the EPC contractor to meet this requirement although the total area of the ash pond will remain largely the same. LP1 has officially notified MoNRE, the EIA approval body, of this change in *Letter No. 633/LP1-TCXL* dated 8 July 2016 as legally required. MoNRE has officially accepted this change in *Letter No. 3536/BTNMT-TCMT* dated 23 August 2016. Some construction material manufactures already proposed an ash recycle plan to LP1 for consideration. However, this planning process is currently facing difficulties and suspended due to a new regulation on scrap and waste management issued in 2015 by MoNRE (*Decree No. 38/2015/ND-CP*). According to this regulation, when receiving ash for recycling the construction material manufacturers are considered as an industrial waste treatment facility. As such they are required to comply with a number of environmental	Collaborate with relevant authorities (i.e. MoIT, local authorities) and potential contractors (construction material manufactures) to develop a detailed ash and gypsum reuse/ recycle plan and have this plan in place for implementation by 2020 at the latest as legally required by *Decision No. 1696/QD-Ttg* dated 23 September 2014 of the Prime Minister.

Gap No.	PS Item Ref. No.	Risk Group: Legal Non-compliance	Risk Group: Cost (Time and Expense)	Risk Group: Project Schedule/ Delay	Findings	Recommendations
					protection requirements in the waste treatment process and to obtain a certification on compliance with such requirements. Nevertheless, detailed guidelines on these requirements and the process to obtain the certification have not yet been issued by MoNRE. As such the ash recycling plan for LP1 is currently still unclear.	
3.20	12	n/a	✓	✓	<u>*Other Hazardous and Non-Hazardous Waste (Operation phase)*</u> According to the LP1 Project EIA, a hazardous waste storage facility will be constructed to temporarily store hazardous waste generated during the operation phase in compliance with Vietnamese regulations. As reported by LP1, development of the ESMPs for the operation phase of the Project will start one year before the Project operation commences and will be based on the Project characteristics and with reference to ESMPs already applied at other power projects of PVN.	A Waste Management Plan for operation phase should be developed before commissioning and should be in line with Vietnamese regulations and IFC requirements and should take into consideration of the recommendations for waste impact as above (ash management).
Hazardous Materials Management						
3.21	13	n/a	n/a	✓	The two EIAs of the Project do not include an assessment of hazardous material storage and usage during the construction phase. However, a Hazardous Materials Management Plan (HMMP) for construction phase has been developed by PM-PTSC and is now reportedly under LP1's review for approval. The draft HMMP, which was available for ERM's review, requires all chemicals and hazardous materials supplied to the worksite to be accompanied by a Materials Safety Data Sheet (MSDS) and provide guidance on inventory, labelling, safe storage and transporting to avoid, minimise and control the release of such materials. Spill management measures are provided at high level in the HMMP and only limited to spill events on land while the risk of oil spills at the port construction site (on water) has not been considered. Refer to the	Ensure that a Hazardous Material Management Plan or equivalent procedures in construction phase are in place and fit to the Project characteristics, and are in line with Vietnamese regulations and IFC requirement for Hazardous Material Management. Also refer to *Gap 1.8* regarding recommendation on development of an Oil and Chemical Spill

Gap No.	PS Item Ref. No.	Risk Group			Findings	Recommendations
		Legal Non-compliance	Cost (Time and Expense)	Project Schedule/ Delay		
					Emergency Preparedness and Response Plan during construction in *Gap 1.8*. Refer to *Items 21 and 22 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	Contingency Plan for the construction phase that covers all spill events on land and water. Refer to *Items 21 and 22 of Table 1* in Annex H for the updated recommendation.
3.22	13	n/a	✓	✓	The LP1 Project EIA states that diesel oil will be delivered by waterway to the oil port of LPPC and then transferred by pipeline to and stored in tanks with bunds on the plant site. The tanks will be made from steel and equipped with fire prevention and fighting equipment. That EIA also contains a high-level Oil Spill Prevention and Response Plan for the port area, the oil tanks area and the oil pipeline. As reported by LP1, development of the ESMPs for the operation phase of the Project will start at least one year before the Project operation commences and will be based on the Project characteristics and with reference to ESMPs already applied at other power projects of PVN. As such documents have not yet available for review, and ERM is unable to conduct gap analysis on this matter for the operation phase.	Ensure that a Hazardous Material Management Plan or equivalent procedures in operation phase are in place and fit to the Project characteristics, and are in line with Vietnamese regulations and IFC requirement for Hazardous Material Management.
Pesticide Use and Management						
3.23	14	n/a	n/a	✓	The EIA does not provide any information on the method of pest management. Within the draft Project Site HSE Management Plan, general good housekeeping would be required to avoid presence of pests. As stated in the draft Worker Accommodation Management Plan and Influx Management Plan, a Pest Control Management Procedure should be developed by the Subcontractors, which includes a contract with a specialist pest control company to implement pest control measures on a routine basis and the Procedure should meet the requirements of National Law on prevention and control of infectious disease (*Law No. 03/2007/QH12*). Specific consideration on development of a mosquito eradication program is indicated in the draft Worker Accommodation Management Plan. There is no indication that the Project will consider integrated coordinated use of pest and environmental	Develop a Pest Control Management Plan that integrates coordinated use of pest and environmental information along with available pest control methods, including cultural practices, biological, genetic, and, as a last resort, chemical means to prevent economically significant pest damage and/or disease transmission to humans and animals. Refer to *Item 63 of Table 1* in Annex H for

Gap No.	PS Item Ref. No.	Risk Group: Legal Non-compliance	Risk Group: Cost (Time and Expense)	Risk Group: Project Schedule/ Delay	Findings	Recommendations
					information along with available pest control methods. If followed these would typically include cultural practices, biological, genetic, and, as a last resort, chemical means to prevent economically significant pest damage and/or disease transmission to humans and animals.	regarding removal of this recommendation as agreed by both Lenders and LP1 PP PMU.
3.24	14	n/a	n/a	✓	The draft HMMP for the construction phase provides a list of prohibited materials, including: • Asbestos and asbestos containing materials; • Ozone depleting substances (CFCs, Halons); • Persistent Organic Pollutants as listed in Annex A Stockholm Convention (specific pesticides, PCBs); and • Grit blasting material containing any form of silica. There is no indication that the Project will use pesticides with consideration of prohibition of ones listed in WHO Recommended Classification of Pesticides by Hazard.	Extend the list of prohibited pesticides in the Pest Control Management Plan and the Hazardous Material Management Plan to those listed in WHO Recommended Classification of Pesticides by Hazard Class Ia, Ib and Class II pesticides. Refer to *Item 62 of Table 1* in Annex H for regarding removal of this recommendation as agreed by both Lenders and LP1 PP PMU.
Performance Standard 4: Community Health, Safety and Security						
Community Health and Safety						
4.1	5	n/a	✓	✓	The mitigation measures for Project induced immigration and associated impacts have been generally provided in the LP1 EIA and focus on those that can be applied to the workforce. These provide a general outline of possible actions. These are considered insufficient to fully mitigate the impact from the Project as there was no detailed action plan (i.e. possible programs/initiatives and schedule, etc.) to mitigate the impacts on community health and safety. Though some management plans have been developed, including worker accommodation management plan, health management plan, and occupational health management plan, the focus should be on ensuring worker health. An influx management plan was developed to mitigate the impacts related to immigration. However, no specific action plan to mitigate impacts on community health and safety was provided as part of this influx management plan. Therefore,	Develop a Community Health and Safety Management Plan and ensure the Plan implemented accordingly. Refer to *Items 66 of Table 1* in Annex H for the updated recommendation.

Gap No.	PS Item Ref. No.	Risk Group: Legal Non-compliance	Risk Group: Cost (Time and Expense)	Risk Group: Project Schedule/ Delay	Findings	Recommendations
					it is necessary to develop a more detailed community health and safety action plan. In addition, there is no provision for the monitoring, audit and reporting requirements of the influx management plan to ensure this management plan is implemented effectively. Refer to *Items 66 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	
4.2	6	n/a	✓	✓	Although the majority of transportation activities are along the waterways of Hau River, high density of construction workers (around 3,000 workers at the peak time) would impose pressure on the road traffic safety on nearby community roads, including Nam Song Hau National Road. A Site Traffic Management Plan was developed by PM-PTSC but the scope only cover internal traffic management within the construction site. The Project will develop a port including 6 berths (coal berth 10,000 DWT, limestone berth 3,000 DWT, gypsum berth 3,000 DWT, a berth 3,000 DWT, equipment berth 10,000 DWT and oil berth 1,000 DWT). According to the Project EIA and as confirmed by LP1 PP PMU, the majority of transportation activities are associated with the waterways the Hau River. Therefore, there is a potential risk (previously recorded as Low Risk in the EIA) for vessel collision. LP1 PP PMU has coordinated with Vietnam Maritime Administration and Can Tho Port Authority to develop and approve a Maritime Safety Management Plan for the equipment berth construction (dredging). As this current practice shows that it other Maritime Safety Management Plans will be likely prepared and submitted for approval for construction of other berths. It should be noted that the Marine Safety Management Plan is only effective during the port's construction period. Some berths will be operated in the Project's construction phase such as equipment berth and temporary construction berth (for loading construction material).	Revise the scope of the existing Site Traffic Safety Management Plan (for construction phase) or develop separate Management Plans (for construction phase) to cover (1) traffic safety on external community roads; and (2) waterway for road traffic and outside the Project site. Refer to *Items 64 of Table 1* in Annex H for the updated recommendation on this matter. Develop a comprehensive waterway traffic safety management plan for operation phase when the full port is in use for import and export materials/ fuels and wastes (i.e. ash, gypsum).

Gap No.	PS Item Ref. No.	Risk Group			Findings	Recommendations
		Legal Non-compliance	Cost (Time and Expense)	Project Schedule/ Delay		
					Refer to *Items 64 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	
4.3	9, 10	n/a	✓	✓	The EIA identified the potential for the occurrence of epidemic diseases as a result of immigration of a large number of construction workers during the construction phase (i.e. around 3,000 workers as reported by LP1 PP PMU), as well as domestic wastewater and waste storage/disposal for both the construction and operation phase of the Project. The EIA includes mitigation measures to manage this through: • Provide discipline measures for all workers; • Inform and cooperate with local authorities to manage all employees of the Project in order to avoid social evils (i.e. drug addiction, prostitution, etc.) and mitigate conflicts between workers and local people; and • Proper wastewater treatment and waste storage and disposal management. These mitigation measures are considered insufficient to minimize the potential for community exposure to water-borne, water-based, water-related, vector-borne, and communicable diseases. An Influx Management Plan was developed by PTSC and approved by LP1 PP PMU. Some mitigation measures were provided such as providing campaigns to improve community awareness on dangers of alcohol, drug addiction and sexually transmitted diseases, as well as awareness programs on community hygiene, water borne disease, vector borne diseases and communicable diseases, etc. However, there is no provision for assignment of responsible parties or monitoring, audit and reporting requirements to ensure such initiatives will be implemented. . There was no evidence during the interview of the LP1PP PMU and PTSC that there was a specific plan to implement the Influx Management Plan to mitigate community health impacts from the Project.	Update the Influx Management Plan to include missing sections (e.g. roadway safety, security, monitoring, audit and reporting, etc.). Collaborate with EPC Contractor and local authorities to implement initiatives/ mitigation measures provided in the Influx Management Plan. Refer to *Gap 4.1* regarding development of a Community Health and Safety Management Plan. Cooperate with the local authorities and clinics to study the endemic diseases/ communicable diseases, and publicise public health and sanitary protection; i.e. posters for knowledge of communicable diseases, etc. Refer to *Items 41 and 66 of Table 1* in Annex H for the updated recommendations.

Gap No.	PS Item Ref. No.	Risk Group: Legal Non-compliance	Risk Group: Cost (Time and Expense)	Risk Group: Project Schedule/ Delay	Findings	Recommendations
					The local EIA does not include an assessment of endemic diseases in the local communities. As such, there is no related plans for LP1 PP PMU to explore opportunities to improve environmental conditions that could help minimize the chance of occurrence of endemic diseases. Refer to *Items 41 and 66 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	
Security Personnel						
4.4	12	n/a	n/a	✓	In order to provide security for the LP1 PP PMU office complex, LP1 has hired six security personnel (provided by a third party, i.e. Huy's Can Tho Security Service Ltd. Company). Huy's Can Tho Security Service Ltd. Company is a professional security service provider, which was certified by Can Tho Police in accordance with *Decree No. 52/2008/ND-CP*. The training program is in accordance with requirement of *Circular No. 45/2009/TT-BCA* of the Vietnam Ministry of Public Security, which is considered to be in line with IFC PS4 requirements. In order to ensure security for the Project site, the LP1 PP PMU has signed a contract with Binh An Security Service JSC (BAS). BAS is a professional security service provider, which has been certified by the Investigation Police Department on Social Order Related Crimes, in accordance to *Decree No. 52/2008/ND-CP*. BAS is also one of 12 well-known security companies under the police department C64 – Ministry of Public Security. BAS is currently providing security services for many thermal power plants, including Vung Ang 1 PP, Thai Binh PP, Nhon Trach PP, Long Phu PP, Duyen Hai PP, Vinh Tan PP and others. There has been no security incident relating to BAS documented with public media. Regarding security measures for LP1 PP Project, an Internal Security and Safety Management Collaboration Procedure (Internal SSMCP) was developed by PTSC and approved by LP1 PP PMU. The Internal SSMCP specifies requirements on entry and exit for workers and vehicles in LP1 PP. In addition, LP1 PP PMU developed an External Security and Safety Management Collaboration, which has been submitted to Police Department of Soc Trang Province to review and collaborate in the implementation.	Manage potential impacts of the Project's security arrangement on the local communities and associated mitigation measures through development and implementation of a Security Management Plan. Refer to *Items 67 of Table 1* in Annex H for the updated recommendation.

Gap No.	PS Item Ref. No.	Risk Group			Findings	Recommendations
		Legal Non-compliance	Cost (Time and Expense)	Project Schedule/ Delay		
					BAS personnel are extensively trained to ensure professional service, including the training on roles and responsibility, legal knowledge, communication skills, self-defense techniques, fire-fighting techniques, and special skills, i.e. evacuation, emergency and rescues skills, etc. To date, there has been no incident relating to the security forces. Refer to *Items 67 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	
4.5	13	n/a	n/a	✓	A collaboration plan with local authorities in Security Management (dated March 24, 2015) and a Security Collaboration Procedure (LPI-PTSC- 10XXX-HS-Gl-PRO-0013) for the Project have been developed. As reported by LP1 and local authorities and observed on site, a police station, including security, traffic and firefighting police forces, has been established in front of the main gate in order to specifically oversee and respond to security and safety issues at the Project site. As observed on site, the police station does not directly interact with local communities. With reference to the collaboration plan with local authorities in Security Management, there is no provision to ensure the government security personnel will act in a manner consistent with the above requirement. In addition, there is no assessment and document risks arising from the project's use of government security personnel conducted by the LP1. No disclosure of the government security arrangements for LP1 PP PMU to the public was conducted as required by this PS. Refer to *Items 68 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	LP1 should collaborate with local authorities to disclose the government security arrangement in LP1 to the local communities through the SEP which is recommended in PS1. LP1 should communicate with the government security provider to encourage those forces to behave consistently with the requirements and principles set out above for private security personnel in order to promote and maintain good relations with the community. Refer to *Items 68 of Table 1* in Annex H for the updated recommendation.

Gap No.	PS Item Ref. No.	Risk Group			Findings	Recommendations
		Legal Non-compliance	Cost (Time and Expense)	Project Schedule/ Delay		
4.6	14	n/a	n/a	✓	Currently, there is no monitoring program to monitor the acts, or to investigate, take action or report to local authorities on unlawful or abusive acts (if such incident occurs) of security personnel. Refer to *Items 68 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	A monitoring program on security performance should be developed and implemented when a security team has been established for the Site. This program should include investigations and reports on all allegations of unlawful or abusive acts of security personnel. Action plans for solving and prevention of such issues should be included in the program. Refer to *Items 68 of Table 1* in Annex H for the updated recommendation.
Performance Standards 5: Land Acquisition and Involuntary Resettlement						
5.1	9, 12, 13,	n/a	✓	✓	There were 824 households have been economically displaced by the SHPC Shared Infrastructure –Phase 1 project, of which 319 were also physically displaced cases. The census was conducted as the basis for the Project land Compensation, Support and Resettlement (CSR) Plan development as required by Land Law 2003. According to census minutes, the socio-economic baseline data collected included land and assets on land inventory, identification of eligibility for compensation and assistance, the number of household members, the number of members of working age, the number of families in the household and vulnerability (e.g. poor household, etc.). A cut-off date was considered in determining the eligibility for compensation of assets on land (physical structures and crops). According to the general CSR Plan and a number of the detailed CSR Plans, displaced households are entitled to receive compensation for land value, assets on land (physical structures, crops) and some assistance in accordance with national and provincial policies. The agricultural land pricing was generally based on the unit rates in *Decision No. 12/2009/QD-UBND* as promulgated by the PC of Soc Trang province dated 01 April 2009 on adjustment of agricultural land rate of the acquired area for Long Phu Power	In order to determine if the compensation was provided at 'full replacement cost', a land acquisition audit should be conducted by an independent competent party. A socio-economic survey can be conducted as part of this independent audit to clarify the current status of living conditions and livelihoods of affected peoples after being displaced (as a key benchmark of 'full replacement cost' performance). The most critical requirements of IFC PS5 is the need to collaborate with local authorities to locate as many displaced people as possible in

Gap No.	PS Item Ref. No.	Risk Group: Legal Non-compliance	Risk Group: Cost (Time and Expense)	Risk Group: Project Schedule/ Delay	Findings	Recommendations
					Complex development. In comparison with the annual land rate promulgated by the PC of Soc Trang province, the compensation land rate for agricultural land is higher than the annual land price (from 10% to 175%). However, the methodology for defining the compensation land rate was not available, and ERM was unable to assess whether the compensation land rate is equal to the market land rate. In addition, affected assets on land were compensated based on the provincial regulated rate, which is considered lower than the market rate as per common practice. The provision for compensation and assistances is normally provided in cash only. No land-based compensation has been offered to economically displaced households. As reported by the local authorities, the compensation payment was sufficient for people who chose self-resettlement (bought houses and lands in other locations outside of the designated resettlement site to continue their farming livelihoods). The interviews conducted by ERM of three displaced households aligned with this fact, although it is noted that the status of three interviewed households does not represent the entire displaced community. Compliance with IFC requirement for full replacement cost cannot be determined at this time given the lack of socio-economic baseline data of the displaced community (i.e. unable to determine if compensation amount is sufficient to buy a new house and land).	order to facilitate this audit and related socio economic survey to ensure 'full replacement cost' and 'sufficient livelihood restoration' for all displaced people. Based on the land acquisition audit, including the socio-economic survey, determine the need of development a Livelihood Restoration Plan (LRP) in order to align the Project with this IFC requirement on ensuring 'full replacement cost'. Implement the LRP accordingly.
5.2	10	n/a	n/a	✓	Public consultation on the CSR Plans is required to follow Vietnamese regulations and the authorities play a key role in this activity (refer to *Section 2.2.2 -Subsection CSR Process*). As reported by local authorities and the displaced households interviewed, the public consultation for the Project CSR Plans was carried out accordingly. Refer to *Gap 5.1* regarding the need of a socio-economic survey to clarify the current status of living conditions and livelihoods of affected peoples after being displaced. In case the SEP and/or LRP are considered to be required, consultation and information disclosure with relevant stakeholders (i.e.	Refer to *Gap 5.1* regarding the need of a socio-economic survey of affected communities. In case the LRP are considered to be required, conduct consultation and information disclosure with relevant stakeholders (i.e. authorities, affected communities) following the guidelines of SEP (refer to *Gap 1.16*).

Gap No.	PS Item Ref. No.	Risk Group			Findings	Recommendations
		Legal Non-compliance	Cost (Time and Expense)	Project Schedule/ Delay		
					authorities, affected communities) during development and monitoring and evaluation of the plans implementation should be carried out.	
5.3	11	n/a	n/a	✓	As confirmed with local authorities and LP1, no grievance mechanism specifically regarding CSR issues has been developed and documented, given grievances from the community (including those related to the CSR process) must be logged and addressed by local authorities (from commune to provincial level) following guidance of the national Grievance Law (No. 02/2011/QH13) as stated in *Gap 1.19,* Long Phu 1 only plays a role in collaborating with the authorities in addressing the grievances when requested. This regulatory mechanism is widely and effectively applied in Vietnam as per ERM's experience with other projects. Local people are normally found to be aware of the hierarchy / process for logging grievance (i.e. firstly to commune PC, then district PC and finally provincial PC/ court). There is no pending grievances related to land acquisition and compensation process. Refer to *Items 40 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	The Grievance Mechanism as recommended in *Gap 1.18* should cover the CSR grievances that may be raised during implementation of the SRAP and/ or LRP (if there is a need) as recommended in *Gap 5.1*. The grievances and resolution status should be documented and recorded. Refer to *Items 40 of Table 1* in Annex H for the updated recommendation.
5.4	14, 15	n/a	✓	✓	As reported by both LP1 and the local authorities, there is no program in place to monitor and evaluate the implementation of the CSR Plans and livelihood status of affected households after being displaced, except for tracking the amount of compensation made. This is common practice in Vietnam given the lack of legal requirement to do so. As such, the current status of resettlement and livelihood of displaced households are unknown by both the local authorities and LP1.	Refer to *Gap 5.1* for the requirement for a socio-economic survey as part of the land acquisition audit in order to determine need for a a Livelihood Restoration Plan (LRP). In case the LRP are required, a monitoring and evaluation mechanism should be established as part of these plans. Competent resettlement professionals should be engaged to conduct

Gap No.	PS Item Ref. No.	Risk Group: Legal Non-compliance	Risk Group: Cost (Time and Expense)	Risk Group: Project Schedule/ Delay	Findings	Recommendations
						periodic external audits of the progress and the effectiveness of LRP implementation. The completion audit is only undertaken once all mitigation measures proposed in the LRP have been substantially completed and once displaced persons are deemed to have been provided with adequate opportunity and assistance to sustainably restore their livelihoods.
Performance Standards 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources						
General						
6.1	6, 7, 8	n/a	✓	✓	The Project location is within a thinly populated residential area which has been heavily impacted by human activities. According to the EIA, the terrestrial biodiversity values in the vicinity of the Project site are low. The aquatic biodiversity quality was assessed as medium for phytoplankton, zooplankton and zoobenthos. However, during the baseline survey in December 2007 the fish community was assessed as being diverse with 37 species of fish found of which 11 species are economically valued. As emphasized by the EIA the fish species in the Project area change seasonally because of seasonal change of the water regime (blackish/ fresh). The EIA suggests that a fish survey in the Project area should be conducted during both the dry and rainy (flooding) seasons when the water regime is changed resulting in changes in fish presence and migration. Refer to *Items 7 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	A field survey should be conducted to collect primary data on fish in different seasons to the timing of the EIA baseline. The additional fish data should be specific to the Project area and comprehensive to allow definition of the aquatic ecology in the Project area as either modified natural or critical habitat according to IFC Criteria. Based on the additional fish baseline data, re-conduct the assessment of the Project impact on fish community and develop a Biodiversity Management Plan (if the impact is determined as significant) in accordance with IFC PS1 and PS6.

Gap No.	PS Item Ref. No.	Risk Group			Findings	Recommendations
		Legal Non-compliance	Cost (Time and Expense)	Project Schedule/ Delay		
						Refer to *Items 7 of Table 1* in Annex H for the updated recommendation.
6.2	6, 7, 8	n/a	✓	✓	The monitoring program in the EIA does not include aquatic ecology monitoring (particularly fish). Also refer to *Gap 1.12*.	Aquatic ecology (including fish) monitoring should be conducted once per year in May or June when the river flow rate is at its lowest and thus the impacts of cooling water and wastewater discharges on aquatic ecology are expected to be most significant (also refer to *Gap 1.12*).
6.3	20, 24	n/a	✓	✓	The Project site is not located within any legally protected area. The impact assessment on the downstream fishery and aquaculture activities and the ecology (mangrove and aquatic) at Hau river mouth, which is around 25 km downstream of LP1 has been presented in the local EIA in a general manner. The aquatic ecology survey collected samples of phytoplankton, zooplankton, zoobenthos and fish at 10 locations from Hau river and surrounding channels. The farthest sample location is about 1km from the Project site both upstream and downstream of Hau river. As noted by the PCs of Long Phu district and Long Duc commune during meetings with ERM, there is around 100 ha of shrimp farm in Long Phu Town of Long Phu district several kilometres downstream of LP1. Fishing and aquaculture also exist downstream of Hau river and particularly at the river mouth[1]. At the river mouth (Cu Lao Dung and Tran De districts) there exists wide mudflat areas which provide important	Consult with relevant research institutes and local authorities (I.e. DoNRE, DARD[3] of Soc Trang province, commune/ district PCs in downstream of the Project site) and downstream communities to collect baseline data on (1) the terrestrial and aquatic ecology and (2) eco-services (i.e. aquaculture, fishing) in downstream of the Project site to Hau river mouth and particularly the mangrove area to be legally protected in Cu Lao Dung islet.

(1) The PC of Soc Trang province (2014). Report of Fisheries planning of Soc Trang province toward 2020 and with a vision to 2030.

Gap No.	PS Item Ref. No.	Risk Group: Legal Non-compliance	Risk Group: Cost (Time and Expense)	Risk Group: Project Schedule/ Delay	Findings	Recommendations
					nursery functions for juvenile fish, shrimp and clam, as well as a mangrove belt serving a function as a coastal protection forest[1]. Although most of the mangrove is reforested, an area of natural mangrove still remains at the river mouth on Cu Lao Dung islet. This natural mangrove habitat is highly valued in terms of biodiversity and now in the process of being recognized as a Provincial Nature Reserve[2]. Any assessment of potential Projects' impacts (wastewater, cooling water, air emission) and related consideration of importance of this potentially sensitive downstream receptor was not specifically presented in the local EIAs, particularly in the context of significant increase of the Project wastewater volume to be discharged. Refer to *Items 7 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	Conduct the assessment of the Project impact on the biodiversity and ecosystem services on downstream section of Hau river towards the river mouth and particularly the mangrove area to be legally protected in Cu Lao Dung islet. If the impact is defined as being of medium to high significance, propose mitigation and monitoring measures at this area as part of the Biodiversity Management Plan (see *Gap 6.1*) and the monitoring program as recommended in *Gap 1.12* above. Refer to *Items 7 of Table 1* in Annex H for the updated recommendation.
Supply Chain						
6.4	30	n/a	n/a	✓	According to Official Letter 3508/VPCP-KTN dated 15 May 2015, PVN is designated by the Vice Prime Minister to directly and actively import coal to serve for PVN's thermal power projects. PV Power as a	Work with PV Power to develop a supply chain management policy and procedure to allow

(4) [3] Department of Agriculture and Rural Development.

(2) The PC of Soc Trang province (2016). Environmental Status Report of Soc Trang province in the period 2011 -2015.

(3) The People's Council of Soc Trang province (2012). Resolution No. 28/2012/NQ-HDND on the Provincial Biodiversity Conservation Planning toward 2020. Accessed on 24 August 2016 at http://thuvienphapluat.vn/van-ban/Linh-vuc-khac/Nghi-quyet-28-2012-NQ-HDND-Quy-hoach-bao-ton-da-dang-sinh-hoc-tinh-Soc-Trang-164073.aspx

Gap No.	PS Item Ref. No.	Risk Group: Legal Non-compliance	Risk Group: Cost (Time and Expense)	Risk Group: Project Schedule/ Delay	Findings	Recommendations
					member company of PVN is directly in charge of this business. According to article '*Optimum coal import option for PVN's thermal power projects*' (including LP1) published in Petro Journal[1], Petro Power focuses on importing from Australia and Indonesia based on criteria of stable politics, acceptable coal price and coal transport infrastructure. Direct contracts with coal mines are preferable but importing through an intermediary may be considered depending on real conditions. According to various Long term Coal Offtake Frame Agreements (COFAs) signed between PV Power Coal and a number of potential coal suppliers provided for ERM review, suppliers' obligation in biodiversity conservation is not specified in these COFAs.	controlling and monitoring of biodiversity conservation practice in the coal supply chain.
Performance Standards 8: Culture Heritage						
Chance Find Procedures						
8.1	8	✓	n/a	✓	As systematic evaluation of the cultural heritage potential of the site have not yet been undertaken, there have been no direct measures taken with regards to siting and designing of the Project A chance finds procedure has not yet been developed, however as both Vietnamese regulations and international best practice require this, one will need to be developed and implemented. According to *Item 4.24* in the EPC contract, there is a requirement that in case any fossil, coins, articles of value or antiquity and structures and other remains or items of geological or archaeological interest found on the Project Site shall be placed under the care and authority of the LP1 PP PMU. The EPC contractor will take reasonable precautions to prevent Contractor's personnel or other persons from removing or damaging any of these findings. Upon discovery of any such finding, the EPC contractor is required to promptly give notice to the LP1 PP PMU to issue instruction for dealing with it.	A chance finds procedure should be developed and implemented by the EPC contractor and subcontractors involved in surface disturbing work and dredging. Refer to *Items 72 of Table 1* in Annex H for the updated recommendation.

(2) [1] PVN website: http://www.vpi.pvn.vn/upload/file/TCDK/2014/Thang%203/NTLuan%20so%202-2014-3.pdf

Gap No.	PS Item Ref. No.	Risk Group			Findings	Recommendations
		Legal Non-compliance	Cost (Time and Expense)	Project Schedule/ Delay		
					Such requirements provided in the EPC contract are not considered sufficient to manage chance finds to be in line with legal regulations and IFC PS8. Refer to *Items 72 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	

Table 4.1 provides an overview of the Project with respect to requirements of the Equator Principles (EP), excepting EP1 and EP8 since these are requirements from Lenders only.

Table 4.1 Overview of Equator Principles Alignment Assessment

No.	Principle	Comment	Recommendations
2	**Environmental and Social Assessment**		
	For all Category A and Category B Projects, the EPFI will require the client to conduct an Assessment process to address, to the EPFI's satisfaction, the relevant environmental and social risks and impacts of the proposed Project. The Assessment Documentation should propose measures to minimise, mitigate, and offset adverse impacts in a manner relevant and appropriate to the nature and scale of the proposed Project.	The EIA for LP1 Project was approved by MoNRE in November 2009, covering the following assets specifically used for the Project: • Power Plant with 2 x 600 MW turbine units; • Auxiliary facilities: port (coal, oil, gypsum, limestone berths which can accommodate vessels up to 10,000 DWT), transmission line and switch yard, supply water treatment, cooling water, wastewater, emission treatment and ash handling and treatment systems (including ash pond of LP1). In order to facilitate LP1 Project development, the Phase 1- Shared Infrastructure Development for Long Phu Power Complex –LPPC (where the Project is located within) has been invested in by PVN. Facilities provided within this project are considered associated facilities of LP1 Project by PS1. The EIA of this Project was approved by the MoNRE in 2008 and covers assessment of the following activities: • Land acquisition, land clearance and UXO clearance; • Land levelling, fencing; • Embankment along Hau river; • Water and electricity supply for construction; • Access road to LPPC; • Relocation of a section Nam Song Hau road (the main public road in front of the LPPC); • Relocation of an existing Dai Ngai – Tran De transmission line; and • Ash ponds of LP1, LP2 and LP3 The two EIAs follow the format and content compliant with Vietnamese requirements for an EIA.	

No.	Principle	Comment	Recommendations
		The two local EIAs did not clearly identify the Project's area of influence (AoI). Based on the baseline collection and impact assessment provided in both local EIAs, the impact assessment mainly focused on the Project site and surrounding area within Long Duc commune, although some impacts were discussed more generally at a broader spatial scale such as air emission/ air quality and impacts on downstream ecosystems and biodiversity.	Recommendations are provided in *Table 3.2, Gaps 1.2*. Refer to *Item 10 of Table 1* in Annex H regarding removal of this recommendation as agreed by Lenders and LP1 PP PMU.
	For all Projects, in all locations, when combined Scope 1 and Scope 2 Emissions are expected to be more than 100,000 tonnes of CO_2 equivalent annually, an alternatives analysis will be conducted to evaluate less Greenhouse Gas (GHG) intensive alternatives.	Based on the carbon intensity level calculation presented in *Annex F* and the capacity of the plant, it has been estimated that 5,444,755 tons/year of CO_2 (using the IPCC methodology) will be generated by the Project. No alternative analysis has been performed to evaluate less GHG intensive alternatives. For details of the assessment on greenhouse gas emission of the LP1, see *Gap 3.1* in *Table 3.2*. Refer to *Item 47 of Table 1* in Annex H for the updated finding on this matter.	Recommendations are provided in *Table 3.2, Gap 3.1*.
3	**Applicable Environmental and Social Standards**		
	The Assessment process should, in the first instance, address compliance with relevant host country laws, regulations and permits that pertain to environmental and social issues. For Projects located in Non-Designated Countries, the Assessment process evaluates compliance with the then applicable IFC Performance Standards on Environmental and Social Sustainability (Performance Standards) and the World Bank Group Environmental, Health and Safety Guidelines (EHS Guidelines). The Assessment process will establish to the EPFI's satisfaction the Project's overall compliance with, or justified deviation from, the applicable standards. The applicable standards (as described above) represent the minimum standards adopted by the EPFI.	Vietnam is a Non-Designated Country. Therefore, this Principle requires that projects in Vietnam refer to the IFC Performance Standards and the applicable IFC EHS Guidelines in undertaking the Assessment. For this Project, the applicable IFC EHS Guidelines are the General EHS Guidelines 2007, the EHS Guidelines for Thermal Power Plants 2008 and the EHS Guidelines for Ports, Habors and Terminals 2007. The EIA conducted for the Project assessed the potential impacts against the Vietnamese standards. A full assessment against this Principle is presented in *Table 3.2, Gaps 3.3* to *3.24*. Of the gaps identified, the most significant are: • Air quality modelling was conducted as part of the local EIA without consideration of cumulative emission impacts from LP2 and LP3. Also refer to *Annex E* regarding insufficient baseline collection leading to	Recommendations are provided in *Table 3.2, Gaps 3.3* to *3.24*.

No.	Principle	Comment	Recommendations
		uncertain results for air quality modelling in the local EIA. Given the possibility that there is a requirement to change the applicable emission standards (from national standard to IFC guidelines) the modelling result in the local EIA may no longer suitable for assessing the projects impact on air quality. Refer to *Item 3 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents. • The thermal discharge simulation study was conducted as part of the local EIA in 2009. The modelling result of cumulative thermal discharge impacts with LP2 and LP3 is presented in Annex 6 of the EIA although interpretation of this modelling result for the cumulative impact assessment was not made in the EIA report. This modelling study is considered insufficiently conducted. Refer to *Item 4 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents (LP2's thermal discharge modelling study). • The wastewater volume to be treated and discharged out from LP1 will likely exceed the volume committed in the local EIA (71 m^3/s) around 2.4 times. There is a need to inform MoNRE of the increase in wastewater volume and the CWTS design for their opinion in accordance with the EIA's approval letter and *Decree No. 18/2015/ND-CP*. Due to the potentially increase of wastewater volume compared to the local EIA, the local EIA may be required to be re-conducted. In addition, a water discharge permit will need to be obtained from MoNRE before commissioning of the CWTP. Refer to *Items 25 and 38 of Table 1* in Annex H for the updated finding on this matter. • The ash pond siting does not comply with national standard requirements on distance to residential area and nearby road. However, it should be noted that the Project location and layout has been approved by the government so it can be implied that the ash pond location has already been legitimised. With regards to the IFC Guidelines for Waste Management Facilities, the ash pond of LP1 is not	

No.	Principle	Comment	Recommendations
		in line with IFC criteria in terms of proximity to the residential area (less than 250m as required, to the west and the southeast of the ash pond), perennial streams such as Hau River (less than 300 m as required), and possibly drinking water wells in downstream (less than 500 m as required, to southeast of the ash pond). • Ash will be mixed with water to form an ash slurry which will be pumped to the ash pond through slurry pipelines. Although the ash is maintained in wet form at the ash pond, there is still potential for dust dissemination during ash handling or in case of ash pond operation failure. A green buffer zone of 10m width shall be established around the landfill in order to minimise wind flow and dust dissemination to the surroundings. However, no such specification is included in the detailed design (2016) of the ash pond. As shown in *Figure 3.3* of the main report, residential houses (Loi Duc and Hoa Hung hamlets) and an inter-provincial public road (Nam Song Hau) are located within 250m of the ash pond and thus are considered sensitive to dust dissemination from the ash pond. • The EPC contractor is now required to ensure the Project operation noise at the boundary complies with existing national noise standard, QCVN 26:2010/BTNMT (70 dBA during day time and 55 dBA during night time). These committed noise levels are not up to the level of IFC's EHS Guidelines which requires noise level at the nearest sensitive receptor to not exceed 55 dBA and 45 dBA during day and night time, respectively. It is standard practice that remodelling be conducted as part of the impact assessment to confirm that these standards are achieved by applying suggested mitigation measure; however such an assessment was not conducted in the EIA. Refer to *Item 9 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents; • A non-compliance of the noise level during construction at the residential areas against the IFC noise standard is 57- 65 dBA (while the IFC's EHS Guidelines recommend that the noise level at a residential	

No.	Principle	Comment	Recommendations
		does not exceed 55 and 45 dBA during day and night time, respectively). Refer to *Item 58 of Table 1* in Annex H for the updated finding on this matter; • Within the EIA of LP1 it is estimated that around 500,000 m^3 of dredge materials would be generated from dredging activity for the port construction and the spoil will be used for land levelling at the Project resettlement site and two other development projects in Long Phu town. However, the current practice of dredging at the equipment berth shows that the spoil (about 15,000 m^3) as permitted by the authorities is being disposed within Con Cat prison on Cu Lao Dung islet, which is around 4.2 km from the dredging site. Other disposal locations for further dredging are currently under consideration by the local authorities. LP1 is required under the terms of this notification to inform MoNRE of changes of dredging material disposal locations if they differ from that detailed in the local EIA. Refer to *Item 1 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents. • The local EIAs have approved development of an ash pond of 35 ha that can accommodate ash generated from LP1 in situations where 30% of ash generated cannot be reused/ recycled within 30 years (or no ash consumption within 5 years in equivalent). As a recent direction from the Prime Minister, LP1 is among thermal power projects that must reduce the ash pond storage capacity to a level of no ash consumption within 2 years and to have in place an ash reuse/ recycle plan for implementation before 2020. The ash pond design is currently being modified by the EPC contractor to meet this requirement although the total area of the ash pond will remain largely the same. Some construction material manufactures already proposed an ash recycle plan to LP1 for consideration. However, this planning process is currently facing difficulties and suspended due to a new regulation on scrap and waste management issued in 2015 by MoNRE which has not provided detailed guidelines.	

No.	Principle	Comment	Recommendations
4	**Environmental and Social Management System and Equator Principles Action Plan** For all Category A and Category B Projects, the EPFI will require the client to develop or maintain an Environmental and Social Management System (ESMS). Further, an Environmental and Social Management Plan (ESMP) will be prepared by the client to address issues raised in the Assessment process and incorporate actions required to comply with the applicable standards. Where the applicable standards are not met to the EPFI's satisfaction, the client and the EPFI will agree an Equator Principles Action Plan (EPAP). The EPAP is intended to outline gaps and commitments to meet EPFI requirements in line with the applicable standards.	Environmental Management Plans (EMP), including a monitoring plan, for both the construction and operation phases of the Project and its associated facilities within LPPC are included in the two EIAs. The EMPs set out the controls and mitigation measures to be implemented and include a cost estimate, timeline and implementation and supervision responsibilities for environmental impacts only. LP1 and PM-PTSC are in the process of finalizing 31 HSSE management plans/ procedures/ programs for the construction phase. Refer to *Gap 1.7* regarding detailed gap analysis of LP1 HSSE training programs. Refer to *Gap 1.8, 1.9 and 1.10* regarding findings on EPRP. Refer to *Gaps 1.15 and 1.16* regarding the lack of a stakeholder engagement plan. Refer to *PS2, PS3, PS4, PS5* of Annex C regarding detailed gap analysis of the existing occupational health and safety (OHS) and other ESSH management plans/ procedures and the need for additional ones in order to be in line with the Applicable Standards. An assessment of the ESMPs can be found in *Table 3.2, Gap 1.3*. An EHSS management plan should include necessary elements such as scope of applicability, roles and responsibilities, procedures/ instructions, monitoring and reporting and periodic management review. However, ERM's review shows that most of these ESSH management plans/ procedures do not cover monitoring and reporting schemes, and management reviews have not been covered in most of the existing ESSH management plans. Refer *to Item 13 of Table 1* in Annex H for the updated finding. The outcome of this independent review (see EP7) is an ESAP provided in *Section 4*.	Recommendations are provided in *Table 3.2, Gap 1.3*.

No.	Principle	Comment	Recommendations
5	**Stakeholder Engagement**		
	For all Category A and Category B Projects, the EPFI will require the client to demonstrate effective Stakeholder Engagement as an ongoing process in a structured and culturally appropriate manner with Affected Communities and, where relevant, Other Stakeholders. For Projects with potentially significant adverse impacts on Affected Communities, the client will conduct an Informed Consultation and Participation process. The client will tailor its consultation process to: the risks and impacts of the Project; the Project's phase of development; the language preferences of the Affected Communities; their decision-making processes; and the needs of disadvantaged and vulnerable groups. This process should be free from external manipulation, interference, coercion and intimidation. To facilitate Stakeholder Engagement, the client will, commensurate to the Project's risks and impacts, make the appropriate Assessment Documentation readily available to the Affected Communities, and where relevant Other Stakeholders, in the local language and in a culturally appropriate manner. The client will take account of, and document, the results of the Stakeholder Engagement process, including any actions agreed resulting from such process. For Projects with environmental or social risks and adverse impacts, disclosure should occur early in the Assessment process, in any event before the Project construction commences, and on an ongoing basis. EPFIs recognise that indigenous peoples may represent vulnerable segments of project-affected communities.	Stakeholder engagement, including information disclosure and public consultation has been conducted as part of the EIA process. Apart from this, no stakeholder engagement plan, including consultation and disclosure schedules or a grievance mechanism, has been developed and implemented. An assessment of the stakeholder engagement plan can be found in *Table 3.2, Gaps 1.15* and *1.16*.	Recommendations are provided in *Table 3.2, Gaps 1.15* and *1.16*.
	Projects affecting indigenous peoples will be subject to a process of Informed Consultation and Participation, and will need to comply with the rights and protections for indigenous peoples contained in relevant national law, including those laws implementing host	There are no Indigenous Peoples affected by the Project.	

No.	Principle	Comment	Recommendations
	country obligations under international law. Consistent with the special circumstances described in IFC Performance Standard 7 (when relevant as defined in Principle 3), Projects with adverse impacts on indigenous people will require their Free, Prior and Informed Consent (FPIC).		
6	**Grievance Mechanism**		
	For all Category A and, as appropriate, Category B Projects, the EPFI will require the client, as part of the ESMS, to establish a grievance mechanism designed to receive and facilitate resolution of concerns and grievances about the Project's environmental and social performance. The grievance mechanism is required to be scaled to the risks and impacts of the Project and have Affected Communities as its primary user. It will seek to resolve concerns promptly, using an understandable and transparent consultative process that is culturally appropriate, readily accessible, at no cost, and without retribution to the party that originated the issue or concern. The mechanism should not impede access to judicial or administrative remedies. The client will inform the Affected Communities about the mechanism in the course of the Stakeholder Engagement process.	In Vietnam, conflict and grievance resolution is generally controlled by the People's Committees of different government levels and is prescribed by Vietnam Grievance Law (No. 02/2011/QH13). Local people normally follow this government-controlled grievance mechanism to raise their concerns or file grievances. According to LP1PP PMU and the PC of Long Phu District, LP1PP PMU generally uses this mechanism to receive grievances from the community. Moreover, according to the People's Committee of Long Phu District, this grievance mechanism controlled by the government has been disclosed to the community through the local authority. Refer to *Item 40 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	Recommendations are provided in *Table 3.2, Gap 1.18*. Refer to *Item 40 of Table 1* in Annex H for the updated recommendation.

No.	Principle	Comment	Recommendations
7	**Independent Review**		
	For all Category A and, as appropriate, Category B Projects, an Independent Environmental and Social Consultant, not directly associated with the client, will carry out an Independent Review of the Assessment Documentation including the ESMPs, the ESMS, and the Stakeholder Engagement process documentation in order to assist the EPFI's due diligence, and assess Equator Principles compliance. The Independent Environmental and Social Consultant will also propose or opine on a suitable EPAP capable of bringing the Project into compliance with the Equator Principles, or indicate when compliance is not possible.	ERM has reviewed LP1 Project documentation to assist in the Lenders' due diligence and assess EP compliance. This process and the resulting report (this Report) forms the conclusions of this Independent Review. The outcome of this independent review is an EPAP which is integrated in the ESAP provided as a separate document.	No further action required.
9	**Independent Monitoring and Reporting**		
	To assess Project compliance with the Equator Principles and ensure ongoing monitoring and reporting after Financial Close and over the life of the loan, the EPFI will, for all Category A and, as appropriate, Category B Projects, require the appointment of an Independent Environmental and Social Consultant, or require that the client retain qualified and experienced external experts to verify its monitoring information which would be shared with the EPFI.	ERM assumes that this Project would be a Category A. All Category A projects (while not formally categorised (see Principle 1) are required to have independent monitoring and reporting under this Principle. The Project should have independent monitoring and reporting by a consultant to be appointed by the Lenders. No such arrangements have been made by PVN/LP1 PP PMU currently.	ERM recommends that the implementation of the EPAP be confirmed through independent review. This could be achieved through periodic EHS reviews of the Project during construction, during commissioning and again after operations commence. These reviews should include site visits and desktop reviews of EHS documentation and monitoring data produced by, or on behalf of, PVN/LP1 PP PMU. During construction and commissioning, it is recommended that such reviews be undertaken biannually. During operation, the reviews should be conducted at least annually.

No.	Principle	Comment	Recommendations
			Refer to *Item 34 of Table 1* in Annex H for regarding removal of this recommendation as agreed by Lenders because this will be a requirement of the loan agreement.
10	**Reporting and Transparency**		
	For all Category A and, as appropriate, Category B Projects: The client will ensure that, at a minimum, a summary of the ESIA is accessible and available online.	The local EIA has not been published online. Refer to *Item 35 of Table 1* in Annex H for the updated finding on this matter based on the review of supplemental/ updated documents.	PVN/LP1 PP PMU should publish the executive summary of the local EIA online for a minimum of 30 days. Refer to *Item 35 of Table 1* in Annex H for the updated recommendation.
	The client will publicly report GHG emission levels (combined Scope 1 and Scope 2 Emissions) during the operational phase for Projects emitting over 100,000 tonnes of CO_2 equivalent annually.	Currently, PVN/LP1 PP PMU has no plan in place to publicly report their GHG emission levels annually. An assessment of GHG emissions monitoring and calculating requirements is can be found in *Table 3.2*, *Gap 3.2*.	PVN/LP1 PP PMU should include a commitment to and plan to publicly report their GHG emission levels annually in the procedure to monitor and calculate GHG emissions for the operation phase recommended in *Table 3.2*, *Gap 3.2*.

5 CONCLUSION

The review process conducted by ERM found that, given the current Project context and the conclusions reached from the EIA and additional documents, gaps in the social and environmental assessment and current management of the Project have been identified. However, the Project would be able to reach operational compliance with the Applicable Standards if the significant gaps are addressed.

Of the gaps identified, the most significant are:

- The Project committed emission levels are in conformance with the standards required by IFC EHS guidelines for Thermal Power Plants (NOx ~ 510 -mg/m^3, SO_2 ~200 – 850 mg/m^3, and PM ≤ 50 mg/m^3). However, the current design of the emission control system, particularly for the SCR and FGD, may be over-specified (i.e. for SCR) and under-designed (i.e. for FGD) and may not be capable of ensuring emission levels as committed.

- Changes in detailed design made by the EPC contractor compared to the basic design which was used for developing the local EIA; particularly the potentially significant wastewater volume increase may affect the validity of the approved EIA.

- The ash pond storage capacity is legally required to be reduced to a level of no ash consumption within 2 years and ash reuse/ recycle plan shall be developed for implementation before 2020 as directed by the Prime Minister. The ash pond design is currently being modified by to meet this requirement although the total area of the ash pond will remain largely the same. However, the ash reuse/ recycle plan is still unclear which may impose a material risk on the Project operation (i.e suspension and surrounding environment and community health after 2 years of operation.

- The ash pond siting is not in line with IFC criteria in terms of proximity to the residential areas – Loi Duc and Hoa Hung hamlets (less than 250m as required), the close proximity of perennial streams such as Hau River and Ba Xam Channel (less than 300 m as required), and possibly drinking water wells located downstream (in Loi Duc channel, less than 500 m as required).

- Insufficient baseline and impact assessments made in the local EIA compared to requirements of IFC PSs and international best practice,

particularly air quality (modelling), wastewater, dredging impacts and impacts on biodiversity and ecosystem services in downstream. Cumulative impacts (with LP2 and LP3) were insufficiently assessed.

- LP1 PP PMU and PM-PTSC has developed a number of ESSH Management Plans (including Occupational EHS Plans/ Procedures and EPRP) for implementation in the operation phase. However, majority of these ESSH management plans do not contain all necessary elements of an effective management plan, such as monitoring and reporting schemes, management reviews, and appropriate scale for the Project real context and characteristics (excepting Occupational EHS Plans/ Procedures). Certain additional ESSH management plans are needed to be developed to sufficiently cover all risks and impacts of the Project.

- The committed environmental monitoring program in the EIA is considered not sufficient to identify and track the occurrence of environmental and social impacts of the Project.

- A Stakeholder Engagement Plan, including information disclosure, public consultation and grievance mechanism have not been developed and implemented.

- There is no program in place to monitor and evaluate the implementation of the compensation and resettlement plans (implemented by the government) and livelihood status of affected households after being displaced, except for tracking the amount of the compensation made. As such, the current resettlement and livelihood status of displaced households is unknown.

Following a review of the supplemental environmental and social documents provided by LP1 PP PMU, the ESAP summarising the actions necessary to ensure overall and continued compliance with the Applicable Standards was finalised and presented in Table 2 of Annex H, such ESAP is also presented in *Table 5.1* below.

Table 5.1 Long Phu 1 Thermal Power Project Environmental and Social Action Plan (ESAP)

No.	Recommended Action	Risk Ranking	Involved Parties	Objectives and Deliverables	Timeframe for Completion
	Environmental and Social Impact Assessment				
1	Notify MoNRE in writing that there will be changes in the project detailed design compared to the EIA content, including but not limited to potential increase of wastewater volume. Detailed changes will be officially reported to MoNRE in details before the commissioning phase. Prior to the commissioning phase, report to MoNRE in writing all revisions compared to the EIA content for MoNRE's decision (whether the EIA needs to be re-conducted).	High	LP1 PP PMU	Notification letters from LP1 PP PMU Letter reporting detailed revisions in design of the Project from PVN/LP1 Revised EIA and approval letter (if required)	Prior to financial signing Prior to commissioning Prior to commissioning commencing
2	Commission a competent consultant to re-conduct the air quality modelling study based on applicable emission standard options for LP1 (IFC EHS guidelines for Thermal Power Plants Guidelines). The study should also include modelling of cumulative impacts with LP2 and LP3 based on the information/ assumptions available. The air modelling should be conducted based on: • A newly collected ambient air baseline by continuous automatic sampling for a period of 48 hours; • be re-completed using at least one-year, and preferably five years of representative meteorological data; and • inclusion of emissions from fugitive dust sources including the handling of coal and wind blow emissions from coal storage. Based on the air quality modelling study, determine if incremental impacts from LP1 emission (with consideration of in-place control) are	High	LP1 PP PMU	Air quality modelling and impact assessment report.	The earlier of i) one month prior to the first disbursement and ii) end of September 2017.

No.	Recommended Action	Risk Ranking	Involved Parties	Objectives and Deliverables	Timeframe for Completion
	small (i.e. contribution of 25% of the national ambient air quality standard, QCVN 05:2013/BTNMT) to allow additional future sustainable development in the same (non-degraded) airshed.				
3	Commission a competent consultant to conduct all required studies/ surveys (i.e. assimilative capacity, identification of water users and other emission sources in the watershed, etc.) and develop a wastewater discharge permitting report following guidelines of *Decree No. 201/2013/ND-CP* and *Circular No. 27/2014/TT-BTNMT* (Form 35 in particular). This report should be presented to the lenders for review to ensure the assessment of assimilative capacity of the receiving water body (Hau river), the Project's wastewater impacts on other water users and cumulative impacts with other wastewater sources in the watershed are sufficiently assessed. Submit this report and other dossiers as required by *Circular No. 27/2014/TT-BTNMT* to MoNRE in order to have the wastewater discharge permit granted before commissioning of the CWTP at the latest.	High	LP1 PP PMU	A wastewater discharge permitting report, with all studies/surveys conducted fully in line with the guidelines of *Decree No. 201/2013/ND-CP* and *Circular No. 27/2014/TT-BTNMT* (Form 35 in particular) submitted to Lenders Wastewater discharge permit	Prior to commissioning commencing. Prior to commissioning commencing.
4	Conduct a comprehensive Dredging Impact Assessment and develop a Dredging Management Plan in line with relevant Vietnamese regulations and provincial requirements and IFC EHS Guidelines for Ports, Habours and Terminals. The Dredging Impact Assessment should take into account the aquatic biodiversity baseline provided in the LP1 local EIA and supplemental biodiversity baseline study as recommended in *Action 5* below".	Medium	LP1 PP PMU	Dredging Impact Assessment Dredging Management Plan	Three months before next dredging activities take place
5	Commission a competent consultant to prepare a supplementary biodiversity baseline report covering: (1) fish in different seasons in Hau river; (2) terrestrial and aquatic ecology downstream of Hau river, particularly the mangrove area to be legally protected in Cu Lao Dung islet; and	Medium	LP1 PP PMU	Supplemental biodiversity baseline report (including consultation records).	Two months post financial signing.

No.	Recommended Action	Risk Ranking	Involved Parties	Objectives and Deliverables	Timeframe for Completion
	(3) ecosystem services (i.e. aquaculture, fishing) downstream of the Project site to Hau river mouth, particularly the aquaculture activities at Long Phu Town and Cu lao Dung Islet. Available secondary data can be used for items (1) and (2) to allow definition of the aquatic ecology in the Project area as either modified natural or critical habitat according to IFC Criteria. Meanwhile, consultation with relevant local authorities (i.e. DoNRE, DARD of Soc Trang province, commune/ district PCs in downstream of the Project site) should be conducted to provide the input for item (3)".				
6	Based on the supplemental biodiversity baseline report (*Action No.7*), baseline data in the local EIA report, commission a competent consultant to conduct the assessment of the Project impacts on aquatic ecology (including fish), the biodiversity and eco-services on downstream section of Hau river towards the river mouth and particularly the mangrove area to be legally protected in Cu Lao Dung islet.	Medium	LP1 PP PMU	Supplemental Biodiversity and Ecosystem Services Impact Assessment report	Two months following the availability of supplemental biodiversity baseline report
	If the impact is defined as being of medium to high significance, propose mitigation and monitoring measures at this area as part of the Biodiversity Management Plan in accordance with IFC PS1 and PS6.			Biodiversity and Ecosystem Services Management Plan (if necessary)	At least 3 months prior to operations commencing
7	Conduct quantitative modelling to assess the noise impact of operation of LP1 and its associated facilities (including port with all in place control measures) to demonstrate noise levels at the nearest communities do not exceed 55 dBA and 45 dBA during day and night time, respectively as required by IFC General EHS Guidelines.	Low	LP1 PP PMU	Operational noise modelling report	Six months post financial signing
	Environmental and Social Management System				
8	Update the existing Environmental, Health, Safety and Social (EHSS) Management Plans (including Occupational Health and Safety	Medium	LP1 PP PMU	EHSS Management Plans for Construction	End of April 2017 and be updated when there is a

No.	Recommended Action	Risk Ranking	Involved Parties	Objectives and Deliverables	Timeframe for Completion
	Management Plans) for construction phase of the Project by incorporating all of the requirements of the local EIA, applicable regulations, IFC PSs and other international standards required by lenders. Ensure all EHSS management plans/ procedures (including Occupational EHS Plans/ Procedures and EPRP) developed during construction phase to: • be sufficient to manage all environmental and social impacts potentially generated from the Project such as, but not limited to water consumption and discharges, air emissions, noise, waste generation, community and occupational health and safety, resettlement, other community impacts, etc.; • include all necessary elements such as scope of application, roles and responsibilities, procedures/ instructions, monitoring and reporting program, resource arrangements and periodic management review (including but not limited to the Road Traffic and Waterway Traffic Management Plans, Community Health and Safety Management Plan, Influx Management Plan); and • fit with the project real context and characteristics (particularly the EPRP, the waste management plan, hazardous material management plan, worker accommodation management plan, influx management plan, health management plan, etc.). Ensure the monitoring and reporting schemes in the EHSS MPs cover all the monitoring requirements in the EIA, with additional detail for monitoring indicators (i.e. indicators/ parameters for evaluating occupational safety, erosion, social economic conditions, etc.) and frequencies (given monitoring of these risks are required in the EIA but indicators and frequencies used of monitoring and evaluation are not clearly specified).		PM-PTSC		need.

No.	Recommended Action	Risk Ranking	Involved Parties	Objectives and Deliverables	Timeframe for Completion
9	Develop full EHSS Management Plans for the operation phases of the Project by incorporating all of the requirements of the local EIA, applicable regulations, IFC PSs and other international standards required by lenders. Ensure all EHSS management plans/ procedures (including Occupational EHS Plans/ Procedures and EPRP) developed during operation phase to: • be sufficient to manage all environmental and social impacts potentially generated from the Project such as, but not limited to water consumption and discharges, air emissions, noise, waste generation, community and occupational health and safety, resettlement, other community impacts, etc.; • include all necessary elements such as scope of application, roles and responsibilities, procedures/ instructions, monitoring and reporting program, resource arrangements and periodic management review; and • fit with the project real context and characteristics. Ensure the monitoring and reporting schemes in the EHSS MPs cover all the monitoring requirements in the EIA, with additional detail for monitoring indicators (i.e. indicators/ parameters for evaluating occupational safety, erosion, social economic conditions, etc.) and frequencies (given monitoring of these risks are required in the EIA but indicators and frequencies used of monitoring and evaluation are not clearly specified).	Medium	LP1 PP PMU	EHSS Management Plans for Operation	Within 3 months prior to commissioning commencing and be updated when there is a need.
	Organisational Capacity and Competency				
10	Update the PM-PTSC's HSSE organisational structure document to ensure consistency between the organisational flow chart and detailed description of roles and responsibilities.	Medium	PM-PTSC LP1 PP PMU	Updated PM-PTSC's HSSE organisational structure document ((Document No: LP1-PTSC-10XXX-HS-GI-	Prior to financial signing.

No.	Recommended Action	Risk Ranking	Involved Parties	Objectives and Deliverables	Timeframe for Completion
				PRO-0025)	
11	Ensure the ESSH training program for the construction phase to be updated in line with the updated ESSH management plans/ procedures for the construction phase (i.e. requirements on ensuring community health and safety, worker influx management, chance finds management – see *Action 8*).	Low	PM-PTSC LP1 PP PMU	Updated HSSE training program for construction phase.	End of April 2017 and be updated when there is a need.
12	Ensure the HSSE training program for the Project operation phase be developed and updated in line with the HSSE management plans/ procedures of the operation phase.	Low	LP1 PP PMU	HSSE training program for operation phase	Within 3 months prior to commissioning commencing and be updated when there is a need.
	Emergency Preparedness and Response				
13	Update the existing Emergency Preparedness and Response Plan (EPRP) for the construction phase to: • Include response procedure and measures in the event of accidents due to falling from height; • Include a section which provide provisions on the process of identification of emergency events; • Further update the provisions on emergency response facilities and equipment (i.e. to indicate all the items and how they are maintained); • Include detailed decontamination and remediation procedures; • Provide clear instruction (including evacuation maps) for evacuation routes and muster points for both office area and construction site; and • Ensure compliance with all applicable legal requirements on Emergency Preparedness and Response (e.g. consult with the local Fire Police Department for preparing and obtaining approval for a	Medium	PM-PTSC LP1 PP PMU	Updated EPRP for the construction phase	End of April 2017 and be updated when there is a need.

No.	Recommended Action	Risk Ranking	Involved Parties	Objectives and Deliverables	Timeframe for Completion
	Fire Fighting Plan, with Soc Trang's Department of Industry and Trade (DoIT) for preparing and obtaining certification for a Chemical Incident Response Measure for the construction phase). Follow up with consulted authorities (i.e. Long Phu district hospital, provincial firefighting police, provincial/district/ commune polices, provincial electricity company, and DoNRE) to receive their feedback/ opinions on the updated EPRP.			Records of disclosure and consultation for updated EPRP and other contingency plans (both before and after finalization of the plans).	
14	Consult with the Soc Trang's Department of Industry and Trade (DoIT) to ensure a legally required Chemical Incident Response Measure is prepared and certified by the authority (if required).	Medium	PM-PTSC LP1 PP PMU	Authority certified Chemical Incident Response Measure for Construction	End of April 2017

No.	Recommended Action	Risk Ranking	Involved Parties	Objectives and Deliverables	Timeframe for Completion
15	Develop an EPRP for the operation phase to cover: • An assessment of all potential emergency events associated with the Project's plant and associated facilities (i.e. emergency events related to ash pond, wastewater, emission, fire and explosion, oil and chemical spill events on land and water, etc.) with consideration of community health and safety risk; • Detail the structure for emergency preparedness and response with specific roles and responsibilities; • Provisions of necessary facilities and equipment for emergency preparedness and response; • Detailed procedures for responding to each emergency scenario; and • Emergency communication plan. The EPRP for the operation phase should: • Include all elements required for ESSH management plans as recommended in *Action 8*; and • Be in line with all applicable legal requirements on Emergency Preparedness and Response such as fire prevention and fighting, oil spill response, chemical incident response, wastewater discharge contingency, etc. Follow up with consulted authorities (i.e. Long Phu district hospital, provincial firefighting police, provincial/district/ commune polices, provincial electricity company, and DoNRE) to receive their feedback/ opinions on the EPRP for the operation phase.	Medium	LP1 PP PMU	EPRP for the operation phase Records of disclosure and consultation for updated EPRP and other contingency plans (both before and after finalization of the plans).	Within 3 months before operation and be updated when there is a need.
16	Ensure to have in place key regulatory EPRPs applicable for the Project's operation, including but not limited to: • Certification of the Fire Prevention and Fighting Design and	High	LP1 PP PMU	Regulatory EPRPs applicable for the Project's operation	One month before Operation commencing at the latest.

No.	Recommended Action	Risk Ranking	Involved Parties	Objectives and Deliverables	Timeframe for Completion
	Acceptance of the Fire Prevention and Fighting System *(Decree No. 79/2014/ND-CP)*; • Approved Oil Spill Response Plan (*Decision No. 02/2013/QD-Ttg* and specific guideline from Soc Trang province when available); and • Approved Chemical Incident Response Measure (*Decree No. 26/2011/ND-CP).*				
	Monitoring and Review				
17	Develop a comprehensive environmental monitoring and reporting program for the Project that achieves the following: *General* • Cover the regulatory EIA monitoring programs, monitoring and reporting requirements of applicable local regulations and international standards (i.e. IFC, EP) *Biodiversity* • Additional monitoring of aquatic ecology (including fish) once per year (during construction and operation) in May or June when the river flow rate is at its lowest and thus the impacts of cooling water and wastewater discharges on aquatic ecology are expected to be most significant . Compare the results with the baseline data and previous monitoring results in order to track the Project impact (including thermal discharge impact) on fish and aquatic life. *Air emission, air quality and noise monitoring* • Update the monitoring program (locations, parameters) if necessary when there are relevant changes in legal requirements; • Update the monitoring program (i.e. locations) if necessary based on the outcomes of the modelling / studies to be re-conducted such as air quality and wastewater; • Install at least two continuous ambient air quality monitoring	High	LP1 PP PMU LP1 PP PMU	Environmental monitoring and reporting program for construction Environmental monitoring and reporting program for operation	Construction: End of April 2017 Operation: 3 months prior to operation commencing

No.	Recommended Action	Risk Ranking	Involved Parties	Objectives and Deliverables	Timeframe for Completion
	systems to cover predicted ground level concentration points/ sensitive receptors (impacted by stack emissions during operation) and background points in the operational phase as required by IFC. The parameters to be monitored should include at least PM_{10}, $PM_{2.5}$, SO_2, NO_x; • Install a further three noise monitoring points at the nearest houses in Thanh Duc, Loi Duc, and particularly Hoa Hung. Conduct noise monitoring at these points on a quarterly basis during commissioning and operation. Reduce the monitoring frequency to biannually if monitoring results in the first year of operation show compliance with IFC's EHS Guidelines. Remove the monitoring points in Thanh Duc and Loi Duc hamlets when the communities are relocated for LP2 and LP3 development; • Add two manual ambient air monitoring points at the communities located closest to the ash pond (Loi Duc and Hoa Hung hamlets) with a monitoring frequency of once every six months (at least one monitoring session must be conducted during the dry season) during construction and operation phase in order to ensure in–place controls to minimize dust impacts (wet ash, green buffer zone) on the community are effective. During the operation phase, if the monitoring results show that dust levels exceed the applicable standards and/ or there are significant grievances from this community, the monitoring frequency should be increased to quarterly for a minimum of one year until monitoring results and numbers of grievances confirm that the dust levels are under control; • Refer to *Action 31* regarding development of a monitoring and reporting scheme for GHG emission and carbon intensity during operation phase. *Wastewater and water environment monitoring* • Add residue chlorine level, TSS and heavy metals parameters (Cr, Cu, Fe, Zn, Pb, Cd, Hg and As) into the monitoring and reporting				

No.	Recommended Action	Risk Ranking	Involved Parties	Objectives and Deliverables	Timeframe for Completion
	program for industrial wastewater discharged from the CWTS (in operation phase); • Install continuous monitoring system for wastewater quality at the CWTS and work with DoNRE of Soc Trang province on transmission of the monitoring data following requirement of *Decree No. 38/2015/ND-CP* during operation phase. Parameters selected to be continuously monitored are based on MoNRE's requirement in the wastewater discharge permit; • Add one surface groundwater monitoring point on Hau river section downstream of LP1 ash pond and at least another one on the section where there exist aquaculture ponds (in Long Phu town, about 6 km downstream of LP1) (applicable for both construction and operation); • Add residue chlorine level and heavy metals parameters (Cr, Cu, Fe, Zn, Pb, Cd, Hg and As) into the monitoring and reporting program for groundwater and surface water during construction and operation phase; • Also monitor sediment quality (Hydrocarbon, Cr, Cu, Fe, Zn, Pb, Cd, Hg and As) at the surface water monitoring points during both construction and operation; • Ensure to continue groundwater monitoring at the two existing household wells in locations downstream of LP1 ash pond in Loi Duc hamlet. Once the residential houses in downstream of LP1 ash pond are relocated for LP2 and/or LP3 development and thus the current water wells used for LP1 groundwater monitoring are removed, LP1 should install 2 new groundwater monitoring stations in locations downstream of LP1 ash pond.				
18	Update the monitoring and reporting program (i.e. locations, parameters) if there is a need based on inputs from: • Results from re-conducted modelling/ impact assessment studies such as air quality, wastewater, dredging, noise;	Medium	LP1 PP PMU	Updated the monitoring and reporting program	When there is a need.

No.	Recommended Action	Risk Ranking	Involved Parties	Objectives and Deliverables	Timeframe for Completion
	• Changes of applicable ESSH regulations; and • Applicable monitoring requirements from ESSH permits for the Project in operation phase (i.e. water use permit, wastewater discharge permit, hazardous waste generator registration, etc.).				
19	Update the existing incident management program to employ necessary international good practices regarding incident/accident investigation, reporting and statistic ensuring fully compliance with the regulatory requirements and IFC's guidelines.	Medium	LP1 PP PMU PM-PTSC	Accident/incident log book as required by *Circular No. 08/2016/TT-BLĐTBXH* indicating that all the incidents/acidents are appropriately recorded.	End of April 2017
20	Include updates on status of closing corrective actions for ESSH findings in weekly and monthly meeting minutes for tracking and follow up works.	Low	LP1 PP PMU PM-PTSC	Minutes of weekly and monthly meetings including status of closing corrective actions.	Prior to financial signing
	Stakeholder Engagement				
21	Publish supplemental impact identification and assessment studies (i.e. air modelling, operational noise modelling, biodiversity impact assessment, dredging impact assessment, etc.) online for a minimum of 30 days.	High	PVN LP1 PP PMU	A link to the website where the summary of supplemental impact assessment studies is posted.	Upon completion of each study.
22	Conduct stakeholder identification and mapping activities. The activities includes: • Identification of Project-affected areas/community; • Identification of other potential key stakeholders; • Categorization of stakeholders: governmental officers, civilian organization, grievants, etc.; and • Stakeholder mapping based on the degree of interest and influence in the Project.	Medium	LP1 PP PMU	Stakeholder mapping report	Three months post to financial signing

No.	Recommended Action	Risk Ranking	Involved Parties	Objectives and Deliverables	Timeframe for Completion
23	Based on the Stakeholder identification and mapping, collaborate with the local authority to develop and implement a Stakeholder Engagement Plan (SEP) for the Project in line with the requirements of PS1. The SEP should include programs for information disclosure, public consultation and a community grievance mechanism. Furthermore, engagement activities should be conducted with various identified stakeholder categories. It is noted that this Plan should cover all issues related to the Project and should be designed to be implemented throughout the Project life (with updates as the Project progresses). The SEP should: • Cover all issues related to the Project and should be designed to be implemented throughout the Project life (with updates as the Project progresses); • Describe regulatory (i.e. during land acquisition, post EIA and other EHS permitting processes), lender (i.e. IFC, EP), company (i.e. PVN, LP1), and/or other requirements for consultation and information disclosure; • Identify and prioritize key stakeholder groups; • Provide a strategy and timetable for information disclosure and public consultation with each of these groups; • Describe resources and responsibilities for implementing stakeholder engagement activities; and • Describe how stakeholder engagement activities will be incorporated into a company's management system. A plan for on-going community engagement throughout the Project life should be developed and implemented as a component of the SEP. This should include a provision stating the time when a public consultation is	Medium	LP1 PP PMU	Stakeholder Engagement Plan including: • Information disclosure plan • Public consultation schedule • Grievance mechanism • External communication system	Five months post financial signing and be updated when there is a need.

No.	Recommended Action	Risk Ranking	Involved Parties	Objectives and Deliverables	Timeframe for Completion
	necessary/ required to be conducted (e.g. any change in project development that is likely to impact the community and the environment). Information disclosure to the affected communities should be conducted to provide all updated information about the Project, including its design, related environmental and social impacts, and associated mitigation measures proposed. It is recommended that all informed consultation activities conducted by LP1 PP PMU considers a range of aspects including age, gender. Their views and concerns should be fully captured, documented and addressed.				
24	Fully disclose the community grievance mechanism to local authorities through a meeting and communities through public consultation meetings and public announcement system such as loud speaker, community notice board at cultural house, etc. Public consultation meetings time should be chosen the most appropriate time to encourage participation. Invitations should be sent to the local communities in advance at least three days before the meeting for their participation. Disclosure material should be developed to include full community grievance mechanism in a manner of understandable for all community.	Low	LP1 PP PMU	Record of disclosure of the CGM	End of April 2017

No.	Recommended Action	Risk Ranking	Involved Parties	Objectives and Deliverables	Timeframe for Completion
	Labour and Working Conditions				
25	Ensure foreign experts/ workers to obtain all required working permits. Regularly monitor the temporary residence registration and working permit (foreign labourers only) for migrant labours with local authority and keep records accordingly. Update the Influx Management Plan to include monitoring frequency and responsibility (i.e. LP1PPU or EPC Contractor).	High	LP1 PP PMU PM-PTSC	Record of regular monitoring of working permits and temporary residence registration for migrant laborers. Updated Worker Influx Management Plan	End of April 2017
26	Update the existing Worker Accommodation Management Plan to comply with legal requirements that are likely applicable for worker accommodation facilities (particularly for the camps constructed outside of LPPC) such as: • An EIA or Environmental Protection Plan for each worker accommodation prepared and approved according to *Decree No. 18/2015/NĐ-CP*; • Temporary construction permitting; • Groundwater use permitting (if groundwater is used); and • Temporary residence registration (See *Action No. 25*) for migrant workers. Monitor the PM-PTSC and its subcontractors' performance in implementation of the updated Worker Accommodation Management Plan.	High	PM PTSC LP1 PP PMU	Updated Worker Accommodation Management Plan Records of all required EHS permits (EIA, groundwater use permit, temporary construction permit) obtained for each camp. Records of inspection and monitoring of PM-PTSC and its subcontractors' performance in worker accommodation management.	End of April 2017. Prior to construction commencing of each camp. Ongoing, frequency as defined in the updated Worker Accommodation Management Plan
27	Update the existing employee grievance mechanism for the following items to be more practical: (1) The Project personnel in charge should be matched with the EHSS organization structures of LP1 PP PMU and PM –PTSC. For	Low	LP1 PP PMU, PM-PTSC (construction	Updated Employee grievance mechanism Record of disclosure	Construction: End of April 2017.

No.	Recommended Action	Risk Ranking	Involved Parties	Objectives and Deliverables	Timeframe for Completion
	instance, a social manager of Contractor is mentioned in EGM with his/ her responsibility; however, according to the updated organisational structure of the EHSS & Community Liaison Team, there is no social manager. (2) Specific assignment throughout the employee grievance management process (from the receipt moment to the grievance closure). For instance, "responsible grievance personnel" term was used in the EGM but there is no definition / assignment of such position in the EGM. (3) Specific steps which employees need to follow to log grievances. (4) Specific response timelines required from LP1 PP PMU and Contractor (5) Grievance log; (6) Monitoring frequency; (7) Training need for workers; and (8) Documents to be kept record. Broadly disclose the updated Employee Grievance Mechanism to all employees working for LP1 PP PMU, EPC Contractors and subcontractors.		) LP1 PP PMU (operation)	Log of grievances received and tracking	Operation: One month prior to operation commencing for all items.
28	Update the Labour and Working Condition Management Plan to include the specific frequency for monitoring and reporting. Monitor on-going performance of the EPC Contractor and subcontractors on the Labour and Working Condition Management Plan.	Medium	LP1 PP PMU, PM-PTSC	Updated Labor and Working Condition Management Plan Monitoring reports on workers' working conditions, health and safety, and welfare.	End of April 2017. Quarterly since the update of the Labor and Working Condition Management Plan.
29	Work with PV Power Coal to include a requirement for compliance with IFC PS2 regarding child labour, forced labour and labour safety issues in	Low	LP1 PP PMU	Supply chain management policy for coal covering	Prior to coal source contract signing.

No.	Recommended Action	Risk Ranking	Involved Parties	Objectives and Deliverables	Timeframe for Completion
	the coal supply chain within the coal purchasing contracts.			labour issues as required by IFC PS2.	
	Resource Efficiency and Greenhouse Gases				
30	Verify and confirm the Project's data (e.g. the annual coal consumption rate and the heating value of the coal to be used by the Project). Re-calculate GHG intensity using 2006 IPCC Guidelines Tier 2 or Tier 3 approaches for greater accuracy in reflecting the reality of GHG intensity.	Medium	LP1 PP PMU	GHG assessment report	Within 6 months prior to operation.
31	Develop and implement an energy efficiency programme to be implemented during operation that aims at annual improvements. This may include an evaluation of the options to reduce or offset GHG emissions should be conducted. Some options to reduce and offset for GHG emissions may include: • Develop and implement a procedure to calculate the Project's GHG emissions. Preparation of a monitoring plan for the GHG emissions and track carbon intensity as a key performance index during the operation phase, monitoring and reporting would be helpful to continuously improve the performance. • Apply best technical, management practices to keep improving thermal efficiency of the boilers, e.g. continuously monitoring and combustion control optimization, conduct burner/ boiler modelling to reduce unburned carbon loss, eliminate boiler air infiltration and etc.; • Review internal processes to find opportunities to reduce the self-consumption rate, e.g. Energy efficiency measures in Draft System, Coal Handling Plant, Cooling Water System and etc.	Medium	LP1 PP PMU	Annual energy efficiency programme	Annually during operations
32	Develop and implement a procedure to annually monitor and calculate GHG emissions for the operation phase using internationally recognised methodologies appropriate for the concerned sectors, such as those found	Low	LP1 PP PMU	GHG monitoring and reporting procedure	Within 3 months prior to operations commencing.

No.	Recommended Action	Risk Ranking	Involved Parties	Objectives and Deliverables	Timeframe for Completion
	in the *2006 IPCC Guidelines for National Greenhouse Gas Inventories* published by the Intergovernmental Panel on Climate Change (IPCC) in 2006. Included in this procedure should be a commitment and plan to publicly report their GHG emission levels annually.			Publicly disclose GHG emission report on the Project/or PVN website and concerned stakeholders as identified in the SEP (See *Action 23*).	Annually during operations.
	Air Pollution Control				
33	In case the emission standards in the IFC EHS guidelines for Thermal Power Plants is accepted by the Lenders, specified inlet concentrations of SO_2 should be checked to ensure that the FGD design is sufficient to treat the stack emission to meet standards required.	High	LP1 PP PMU PM PTSC	Confirmation on inlet concentrations of SO_2 with solid evidence.	31 December 2016
	Ash Pond-related Pollution Control				
34	If the land acquisition and resettlement for LP2 and/or LP3 development has not been conducted within one year before operation of LP1 ash pond, LP1 should conduct a survey of the water supply status of the remaining community within 500 m downgradient of LP1 ash pond in Loi Duc hamlet. If the local community continue to use groundwater for drinking and irrigation purposes, an alternative fresh water supply system should be provided, in collaboration with local authorities.	High	LP1 PP PMU	Water supply status supply report Evidence of providing alternative fresh water supply system to households currently using groundwater (if any).	One year prior to operation commencing Prior to commissioning.
35	Work with the EPC contractor to add a green buffer zone with a minimum width of 10 m at the sides where communities are located facing the ash pond, and design and implement accordingly.	High	LP1 PP PMU	EPC contractor's commitment on addition of a green buffer zone of a minimum width of 10 m at the sides where communities are located	After completion of the Ash Pond construction.

No.	Recommended Action	Risk Ranking	Involved Parties	Objectives and Deliverables	Timeframe for Completion
				facing into the ash pond.	
	Waste Management				
36	Expand area of temporary hazardous waste storage facility to ensure sufficient and proper storage of the largest amount of hazardous waste to be generated at peak time during construction. The expanded facility should be designed in line with *Circular No. 36/2015/BTNMT* –Item 1, 2 and 3 of Annex 2A which is considered also in line with IFC requirement.	Medium	PM-PTSC LP1 PP PMU	Presence of the Expanded Hazardous Waste	When the external environmental and social monitoring audit indentifies the need of expansion
37	Conduct pre-audits/custody audits of the waste disposal process carried out by the waste contractors to ensure all waste is transported and treated properly at licensed facilities, and ascertain whether licensed disposal sites/ treatment facilities are being operated to acceptable standards and where they are located. In case the audit result shows non-compliance of the waste contractors and their waste treatment facility, PM-PTSC should change waste contractors and a similar audit should be conducted before entering into a contract.	Medium	PM-PTSC LP1 PP PMU	a) Waste management facility suitability audit reports prior to final selection b) Periodic audit reports	Prior to signing a contract with new waste management contractors Within one month after financial signing for all existing waste contracts Annually thereafter throughout the contract life
38	Collaborate with relevant authorities (i.e. MoIT, local authorities) and potential contractors (construction material manufactures) to develop a detailed ash and gypsum reuse/ recycle plan and have this plan in place for implementation by 2020 at the latest as legally required by *Decision No. 1696/QD-Ttg* dated 23 September 2014 of the Prime Minister.	High	LP1 PP PMU Relevant authorities	Ash and gypsum reuse/ recycle plan Implementation of the plan	By 2020 (at the latest) From 2020 (at the latest)
	Community Health and Safety				
39	Develop a Waterway Traffic Safety Management Plan for operation phase when the port is in use. The waterway traffic management plan(s) should be aligned with both Vietnamese regulations (road traffic and	Low	LP1 PP PMU	Waterway Traffic Safety Management Plan	At least one month prior to operations commencing

No.	Recommended Action	Risk Ranking	Involved Parties	Objectives and Deliverables	Timeframe for Completion
	maritime management) and IFC PS4. Also refer to *Action 9* when developing this plan.				
	Security Management				
40	Update the Security Management Plan for the construction phase to include following items: • Provisions for how LP1 PP PMU and the EPC Contractor manage Government Security force performance to ensure they act in compliance with IFC's requirements.	Low	LP1 PP PMU PM-PTSC	Updated Security Management Plan for Construction	Construction: End April 2017.
41	Develop a Security Management Plan for the operation phase.	Low	LP1 PP PMU	Security Management Plan for Operation, including monitoring program.	At least one month prior to operation commencing
42	Collaborate with local authorities to disclose the government security arrangement in LP1 to the local communities through the SEP which is recommended in *Action 23* above. Communicate with the government security provider to encourage those forces to behave consistently with the requirements and principles set out above for private security personnel in order to promote and maintain good relations with the community and keep all communication records. .	Low	LP1 PP PMU	Record of disclosure and communication	End of April 2017.
	Compensation, Resettlement and Livelihood Restoration				
43	In order to determine if the compensation was provided at 'full replacement cost', a land acquisition audit should be conducted by an independent competent party. A socio-economic survey can be conducted as part of this independent audit to clarify the current status of living conditions and livelihoods of affected peoples after being displaced (as a key benchmark of 'full replacement cost' performance). The most critical requirements of IFC PS5 is the need to collaborate with	Medium	LP1 PP PMU	Land acquisition audit report (including socio-economic survey results)	The earlier of i) one month prior to the first disbursement and ii) end of September 2017.

No.	Recommended Action	Risk Ranking	Involved Parties	Objectives and Deliverables	Timeframe for Completion
	local authorities to locate as many displaced people as possible in order to facilitate this audit and related socio economic survey to ensure 'full replacement cost' and 'sufficient livelihood restoration' for all displaced people. Based on the land acquisition audit, including the socio-economic survey, determine the need of development of a Livelihood Restoration Plan (LRP) in order to align the Project with this IFC requirement on ensuring 'full replacement cost'. Implement the LRP accordingly.				
44	Based on the results of the independent land acquisition audit and socio-economic survey (as part of the audit) recommended above, if necessary develop and implement a Livelihood Restoration Plan (LRP) in accordance to IFC PS5 requirement. A monitoring and evaluation mechanism should be established as part of these plans.	Medium	LP1 PP PMU	Livelihood Restoration Plan	Within 3 months of completing the land acquisition audit report
	Commission competent resettlement professionals to conduct periodic external audits of the progress and the effectiveness of LRP implementation.			Periodic external audit reports	Six monthly from finalisation of the LRP
	Commission an independent competent party to conduct a completion audit.			Completion audit report	When monitoring indicates that major implementation items are substantially completed, and once displaced persons are deemed to have been provided with adequate opportunity and assistance to sustainably restore their livelihoods.

No.	Recommended Action	Risk Ranking	Involved Parties	Objectives and Deliverables	Timeframe for Completion
	Biodiversity				
45	Work with PV Power Coal to develop a supply chain management policy and procedure to allow controlling and monitoring of biodiversity conservation practice in the coal supply chain.	Low	LP1 PP PMU	Supply chain management policy for coal covering biodiversity issues	Prior to coal source contract signing
	Culture Heritage				
46	Update the existing Chance Find Procedure to improve application by inclusion of the following items: (1) Assessment of the chance find potential (terrestrial and underwater) within the Project site; (2) Recognition of all potential chance finds within the Project site (terrestrial/ underwater). The Project CFP is currently limited to isolated bones/ fossils without any rationale provided; (3) Ensure a requirement for specific authorities (i.e. commune PC, district PC or Department of Culture, Sport and Tourism) to be involved and provide contact details following a chance find event; (4) The Project personnel in charge should be matched with the EHSS organization structures of LP1 PP PMU and PM –PTSC. For instance, a social manager of LP1 is mentioned in CFP with his/ her responsibility; however, according to the updated organisational structure of the EHSS & Community Liaison Team, there is no social manager. (5) Specific response timelines required from both the project personnel and the authorities; (6) Financial liability for archaeological excavations (LP1 PP PMU and/or authorities) and for work suspension (LP1 PP PMU and/or its contractor); (7) Training need for workers; and (8) Documents records to be kept. It should be noted that information related to items (1), (2), (3), (5), (6) can	Low	PM-PTSC LP1 PP PMU	Updated Chance finds Procedure	End of April 2017.

No.	Recommended Action	Risk Ranking	Involved Parties	Objectives and Deliverables	Timeframe for Completion
	be only obtained through a meaningful consultation with local authorities in charge of cultural heritage and through review of cultural heritage regulations.				

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