1 EXECUTIVE SUMMARY

1.1 CONTEXT OF THE PROJECT

Myanmar UPA Company Limited ('MUPA' or 'the Project Sponsor' or 'the Project Proponent') intends to develop a 200MW Combined Cycle Power Plant (CCPP) to supply power to the Republic Union of Myanmar through a Power Purchase Agreement (PPA) with the Ministry of Electricity and Energy (MOEE) in Kanbauk, Tanin Tharyi Region, Myanmar ('the Project').

As per the New Environmental Impact Assessment (EIA) Procedure and the National Environmental Quality (Emission) (NEQ) Guidelines have been promulgated on 29th December 2015, it is understood that proposed Project requires the Scoping Study and the EIA Study (also referred to as 'Environmental and Social Impact Assessment (ESIA) Study') to be conducted and submitted to the Ministry of Natural Resources and Environmental Conservation (MONREC) in order to obtain an Environmental Compliance Certificate (ECC).

It is to be noted that the previous ESIA Study has been conducted by TEAM Consulting Engineering and Management Co., Ltd. ('TEAM') in October 2014. However, the Scoping Study has not been conducted at the time of preparing the previous ESIA Study.

Environmental Resources Management ('ERM') has been appointed by MUPA to upgrade the ESIA Study of the Project to satisfy the New EIA Procedure and other relevant requirements. In addition, an Environmental and Social Management Plan (ESMP) will also be prepared and formed part of the ESIA Study.

This **Scoping Report** is the means to ensure that there is a focus on the issues that are most important for Project planning, decision-making and stakeholder interests by mapping the potential interactions between Project activities and environmental and human receptors which have the potential to cause an impact.

1.2 POLICY LEGAL AND INSTITUTIONAL FRAMEWORK

Under Section 7 of the Environmental Conservation Law and Articles 52 and 53 of the Environmental Conservation Rules of the Republic of the Union of Myanmar, the Project Proponent is required to undertake an ESIA to obtain an Environmental Compliance Certificate (ECC) for the proposed Project.

The Project will be undertaken in line with a number of national laws and standards. Key local laws relating to ESIA include:

- Environmental Conservation Law (2012);
- Environmental Conservation Rules (2013);
- National Environmental Quality (NEQ) (Emission) Guidelines (2015); and
- Environmental Impact Assessment Procedure (2015).

1.3 PROJECT DESCRIPTION AND ALTERNATIVES

The Project Sponsor is planning to develop a 200 MW CCPP consisting of two (2) or three (3) gas turbines on one (1) steam turbine with associated Heat Recovery Steam Generator (HRSG).

It should be noted that the gas pipeline connection to the offshore gas source and overhead transmission line is outside the scope of this Scoping Study and therefore outside the scope of the ESIA Study. The gas reception facility (natural gas treatment plant) and the gas pipeline within the Project site boundary have been considered.

The proposed Project site is located in Kanbauk Township, Dawei District, Tanin Tharyi Region, Myanmar. A total 9.47 hectares (ha) of MOEE land has been allocated for the Project.

It shall be noted that the Project Sponsor has previously signed Gas Engine Rental Agreement with Tanin Tharyi Region Government to supply 6-20MW power to Dawei District. The gas engines power plant, located within the same Project boundary, already started its operation (as Phase 1) and provided electricity to Dawei District and nearby area since June 16th, 2015.

The Project Proponent has been developing, as part of their Feasibility Study, a number of technological options for the plant configuration. Of most relevance are the cooling systems options which have also considered the potential environmental impact. The options considered included associated wet, hybrid, dry/ wet parallel and dry cooling systems. An evaluation of the above options was undertaken based on set criteria including water consumption and environmental impact.

It shall be noted that the final plant configuration shall also be approved by Electric Power Generation Enterprise (EPGE), previously known as Myanmar Electric Power Enterprise (MEPE).

1.4 DESCRIPTION OF THE ENVIRONMENT

Scoping exercise has been conducted to identify the potential Area of Influence (AoI) for the Project (and thus the appropriate Project study area). An AoI of 500m from the Project site boundary has been established for air quality receptors and biodiversity impacts and an AoI of 300m from the Project site boundary has been established for noise receptors.

The AoI for this Project consists of the following aspects:

- Construction of power plant and associated infrastructure, switch yard and storage yards;
- Operation of the power plant and associated infrastructure; and
- Cooling water intake and discharge (and extent of impacts from the cooling water discharge).

A preliminary review of the environmental conditions within the Project study area has been undertaken based on existing data for the purposes of this Scoping Study.

1.4.1 *Air Quality*

The principal sources of emissions to the atmosphere in the immediate vicinity of the Project area are likely to be from agricultural open-air burning, wood burning for domestic purposes (i.e. heating and cooking), industrial fumes and exhaust emissions from road transportation. Air quality monitoring undertaken in June 2013 indicates that the baseline concentration of NO_2 in the study area is below the air quality standards set for the protection of human health. Further air quality monitoring undertaken in 2016/2017 will be used to inform the ESIA.

1.4.2 *Noise*

The Project is located in a rural area and the dominant source of noise is from human and livestock activities, including vehicle traffic from Maubin-Kyaiklat motorway and access roads to site, rice mills and farming tractors and equipment in the nearby villages. (It may be from other Project in that project area there is no Maubin-Kyaiklat motorway and rice mills) The baseline noise levels recorded in September 2016 indicate that levels during both daytime and nighttime periods are in exceedance of the Myanmar NEW (Emissions) guidelines.

1.4.3 *Surface Water Quality*

Baseline surface water quality sampling in 2016 was undertaken at two (2) locations in the Heinze Chaung River and a further four (4) locations in the Migyaung Aing Stream. The results indicate that the turbidity levels at all sites is low. At sites SW1, SW2 and SW3, the results indicate that the total dissolved solids (TDS) exceed the US EPA criteria of 250mg/l, while concentrations of salt at SW1 and SW2 are high. The metal concentrations at all sites were found to be generally low and compliant with USEPA criteria. The exception is SW4, where both lead and iron concentrations are found to be in exceedance of the Aquatic Life Criteria for freshwater.

1.4.4 *Groundwater Quality*

Baseline data on groundwater was collected at three (3) household wells at riparian communities in 2016 to characterise the project baseline. Parameters such as pH, temperature, dissolved oxygen (DO), electrical conductivity (EC) and total dissolved solids (TDS) were measured on site and a number of water samples were analysed for heavy metal content. The results indicate that the pH at all sites does not conform to the USEPA National Secondary Drinking Water Regulations standard. Other parameters including TDS and heavy metal content are compliant with the relevant USEPA and WHO standards.

1.4.5 *Ecological Habitat*

A terrestrial and freshwater ecology survey was undertaken to provide accurate and comprehensive information on the ecological baseline in the study area. The baseline was collected using publicly available sources of information and supported by a site investigation in September, 2016. The study area consists of four (4) major habitat types including patches of mixed vegetation with scattered trees, cultivated land, shrub land and human habitation area. The survey results indicate that 103 plant

species exists; eleven (11) species of mammal; seventeen (17) species of amphibian and reptiles; twenty-seven (27) butterflies; forty-nine (49) bird species; and twenty-nine (29) fish species. The survey found two globally threatened species of mammal including the Fishing Cat (Prionailurus viverrinus) and the Northern Pig tailed Macaque (Macaca leonine).

1.4.6 Project Area Occupancy and Human Use

The socio-economic survey is yet to be conducted. The study will be undertaken in early 2017 and the findings will be used to inform the ESIA.

1.5 KEY POTENTIAL IMPACTS AND MITIGATION MEASURES

The Scoping Study identified potential impacts and proposed mitigation to reduce the level of the impact. The potential impacts are summarized in ***Table 1.1***. The mitigation measures will be finalised following completion of the Impact Assessment (IA).

Table 1.1 Key Potential Impacts

Potential Impacts
• Air Quality impacts during construction and operation phase; • Noise during construction and operation phase; • Surface water quality impacts through cooling water discharge; • Soil and groundwater impacts through land excavation activities should the soil be contaminated through previous use; • Soil erosion and land degradation; • Generation of hazardous and non-hazardous waste and impacts on existing waste infrastructure to handle the waste appropriately; • Impacts on terrestrial ecology (flora, fauna) through land take, habitat loss and associated construction and operation activities; • Impacts on aquatic ecology (flora, fauna and fisheries); • Potential impacts on social and economic resources; o fisheries resources o economy and livelihoods o transportation o impacts to vulnerable groups o impacts on existing infrastructure through people influx to the area o education and skills (through relocation of school) o demographic patterns (including physical and economic displacement and compensation) o community health and safety • Landscape and Visual Impacts.

1.6 PUBLIC CONSULTATION AND DISCLOSURE

1.6.1 Public Consultation

Consultation meetings with Chief Minister of Tanintharyi Region, Provincial Governor of Dawei District, and Head of Yebyu Township were undertaken in 8-10 August 2016 to disclose the Project information; and understand the potential impacts in the Project area.

Further public consultation will be undertaken within communities residing in and around the Project area and interviews will be held with community leaders during the ESIA stage.

In addition, the consultation with the stakeholder groups will be undertaken during the ESIA for developing an understanding of the following:

- Demographic profile;
- Socio-economic profile;
- Ownership of land and assets;
- Cultural issues;
- Traditional usage of land not owned by individuals / communities in and around the Project site;
- Opinion about the Project;
- Perceptions about risks associated with the Project;
- Anticipation of benefits from the Project (both direct and indirect); and
- Concerns / apprehensions (if any) about the Project.

1.6.2 Disclosure of ESIA

The disclosure methods of the ESIA Study will be advertised in national papers. The ESIA Report will also be disclosed on the Project Proponents website which will include the ESIA Report executive summary in Myanmar and English language. The ESIA Report will also be disclosed to the Project relevant stakeholders on completion of the ESIA and hardcopies will be distributed to appropriate locations within the affected communities.

1.6.3 Terms of Reference for ESIA Study

Based on the information identified in this Scoping Study, the following studies are recommended for the ESIA (***Table 1.2***).

Table 1.2 Studies Recommended for the ESIA

Assessment Parameter	Scope and Justification
Ambient Air Quality	• Air dispersion modelling for operation phase to be conducted based on final Project design; emission rates of key pollutants, final site layout and emission control technologies and included in base and project model scenarios. All receptors within a 5 km radius of the Project site will be included in the air dispersion modelling study and will be extended if deemed to be required.; • Sensitivity analysis of stack height and emission rates for main stack to determine the optimal stack height.
Surface water quality	• Thermal discharge will be assessed for operation phase to assess cooling water discharge impacts; • Qualitative assessments to be conducted for drainage, surface run-off and erosion control.
Ambient Noise Levels	• Noise modelling for construction and operation phase to be updated based on final Project layout.
Soil	• Identification of potential sources and contamination pathways from historic records of brownfield site and proposed Project layout; • Soil sampling exercise within the Project site is to be undertaken.
Terrestrial , Aquatic Ecology and Fishermen Consultations	• Overall assessment combining wet and dry season baseline data to be conducted based on final Project layout, and inclusion of expansion areas if applicable. To include both daytime and nighttime surveys, with particular focus on species of conservation interest recorded either directly or from interview during scoping surveys; • Additional fishermen consultations to supplement socio-economic baseline if deemed necessary.
Socio-economic and Health	• Stakeholder identification shall be updated to include all Project affected people based on final Project layout (and inclusion of stakeholders within expansion areas if applicable); • Socio economic baseline information to be collected including: o Demographics o Incomes and livelihoods o Worker skills o Religions o Cultural traditions o Education o Health disease o Infrastructure and Services Information to be gathered from household surveys, interviews with key informants, stakeholder meetings and participatory workshops and secondary data sources. • Number of households to be physically displaced to be determined. It will also be important to investigate economic displacement, i.e. loss of farmland or access to river livelihood, around the Project site area in ESIA. Consultation and engagement with the Myanmar authorities will be required throughout this process to ensure that host country laws/practice are followed whilst taking into account all applicable standards. • Development of Stakeholder Engagement Plan, Resettlement Action Plan Framework and Livelihood Restoration Plan Framework as required.
Waste Management	• Hazardous substance identification and management to be assessed; • Disposal sites and methods to be determined for hazardous and non-hazardous waste. Details of locations of waste disposal facilities for general and hazardous waste and suitable transport companies should be confirmed. This information should be confirmed with local authorities.

Assessment Parameter	Scope and Justification
Infrastructure and Utilities	• Further details of the use of access roads during construction and operation to be included in assessing impacts to nearby sensitive receivers; • Access to amenities such as hospitals, education facilities to supplement baseline socio-economic surveys.
Health and Safety and Emergency Control	• Review of the Project Proponent Health and Safety Management Plan to assess its adequacy in meeting IFC Performance Standards and applicable guidelines; • Mitigation measures/ monitoring programme/incident response with regard to accidental events/ spills shall be communicated to the EPC Contractor at the early stage.
Landscape and Visual	• Sensitivity of the landscape and visual system within a 500m buffer and their ability to accommodate change will be assessed based on available sources such as land use and development plans if available
Cumulative Impact Assessment	• Evaluation of cumulative impacts taking into account various types of interactions such as: o a combination of different types of impact at a particular location; o the interaction of different impacts over time; o the interaction between impacts from the proposed development and other projects in close proximity to the scheme; and o a number of impacts of the same type at different locations, which are not necessarily significant individually, but which collectively, may constitute a significant impact. Prediction and evaluation of cumulative impacts is not straightforward since it is not always possible to directly combine different types of environmental impacts on an objective basis. This is recognised in international good practice guidance; nevertheless it is still important that consideration is given to the issue.