

CHAPTER 10

STUDY FINDINGS

The Proposed Green Paper Industry Park Development will be developed on **Lot 441, Mukim Padang Meha, District Of Kulim, Kedah Darul Aman**. The Project area of 300 acres is owned and to be developed by XSD International Paper Sdn. Bhd. The locality of the Project Site falls under the jurisdiction of Majlis Perbandaran Kulim (MPKK).

In the course of carrying out this report, various studies were conducted to ascertain the environmental elements that could be potentially affected due to the proposed paper mill development. The report has assessed the three (3) main facets of environmental entities i.e. physical, biological and socio-economics of the human settlements with the integration of the proposed paper mill. Studies were carried out within the project site itself and its surrounding areas.

The existing biological environment at the Project Site is limited to the flora and fauna composition of an oil palm estate in Peninsular Malaysia. Based on Local Plan of Majlis Daerah Kulim 2004-2020 and Draft Local Plan of Majlis Daerah Kulim 2035, the Proposed Project Site itself is not located within any Proposed Environmental Sensitive Areas (ESA). Majority part of the biological environment will be lost during site clearing and construction activities. However, this can be mitigated via the various practical and cost effective remedial measures recommended in this report to minimize adverse environmental impacts.

Project Development activities must take into the considerations of the nearest receptors which is the Kg. Padang Meha, located at the eastern boundary with existing primary buffer 3m (existing Jalan Kg. Padang Meha) to ensure there are minimal disruptors to their well being. In terms of socio-economics and human settlements within the project site, there was no human settlement observed within the project site. Therefore, no socio-economics activity that shall be affected by this proposed development.

In reviewing the proposed Project and its' anticipated integration with the existing environment of the Project Site, the main concerns are the process employed, the potential contamination (i.e. water, air and noise pollution) on the physical environmental and aspects of health and safety upon human during the operation phases

of the proposed Green Paper Industry Park (paper mill).

During the earthwork stage, earthworks will be carried out at the Project Site for Phase 1 (Year 2019), Phase 2 (Year 2023) and Phase 3 (Year 2028) and the Project Site should not commence without the implementation of the LD-P2M2 control. The appointed contractor should strictly adhere to the approved earthworks engineering plan and LD-P2M2 during the construction phase. In addition, based on the assessment carried out, it is recommended that the proposal of one (1) sediment basin for the development must be carried out in order to ensure that the surface run off is at a manageable level to ensure compliance to limits on surface quality control. Erosion control measures must be instituted as per the recommendations of the Land Disturbing Pollution Prevention and Mitigation Measures (LDP2M2).

During the operational phase, the total water abstraction from Sg. Karangan will amount to 66 MLD with 95 % of the water used will be discharged back to Sg Karangan as treated effluent discharge. Therefore, the nett river abstraction will amount to 3.3 MLD (5% consumptive use) when the 3 phases of the development are in operation. With the minimum nett abstraction by the Project, the water availability remains at the same percentile of time in a year for each phase. This shows that with the abstraction by the Project, there is no impact on the flow availability to the downstream user of Titi Karangan Irrigation Scheme.

For groundwater assessment, the permeability of the layer should be decreased in the same value as during construction in the factory. The simulation result shows there is no changes in general pressure head and flow pattern in the factory area except in the pond area. The pressure head in the pond area is calculated at the same as estimated pond water level. The calibrated groundwater flow model has simulated the Chloride was spread with the lowest contamination limit and moved toward Sungai Karangan and there is no sign of the contaminant Lead (Pb) entering in layer 3 and bedrock.

For water quality modelling during low flow condition, the critical parameters are BOD and AN as BOD will elevate to upper range of Class IV under Phase 1 operation and further elevate to Class V when Phase 1 & 2 operation. AN will elevate to Class V from the Project site until Sg. Karangan river reach @ Titi Karangan irrigation scheme under the Phase 1 operation. Thus, the final discharge result of the IETS has to comply with Standard A limit of Environmental Quality (Industrial Effluent) Regulations 2009 or even better result to maintain water quality for Sg. Karangan.

To prevent IETS failure, it is important to conduct regular system checks to detect early sign of failure and the Emergency Response Plan (ERP) shall also be in-place. It is proposed that water level and/or flow meter to be installed at Sg. Karangan intake to monitor the water level fluctuation. When the water level fall below ± 13.2 mRL (~ 0.35 m depth) or flow ± 0.5 m³/s, water abstraction shall be stopped so that to maintain sufficient water to dilute the effluent released from the plant. In such situation, the required water for processing shall be sourced from other alternatives, like additional water from storage pond within the plant premise and if still insufficient, to be topped up with water supplied from Syarikat Air Darul Aman Sdn Bhd (SADA).

In terms of industrial wastes, there will be sludge generation from the Water Treatment Plant (WTP) and Industrial Effluent Treatment System (IETS). As the water treatment residue (WTR) and sludge from IETS is classified as scheduled waste SW204, the Project Proponent will need to apply special management of scheduled waste approval from DOE Malaysia during the operational stage prior to disposal.

In terms of Air Pollution control within the paper plant, the flue of the boiler to be treated with high-efficiency electrostatic precipitator (ESP) and the boiler adopts low-nitrogen combustion technology to ensure that the outlet flue of the boilers meet the related requirements under the Environmental Quality (Clean Air) Regulation 2014. The Project Proponent will also apply a special management of scheduled waste from DOE Malaysia for fly ash and slag (bottom ash) generated during the operational stage.

For Air Quality modelling, during Normal Operation, the calculated Ground level Concentration (GLCs) for identified criteria pollutants at the identified off-site ASRs i.e. **ASR1**, **ASR2**, **ASR3** and **ASR4** met the Malaysian Ambient Air Quality Standards 2013 at 2020 except for the calculated of PM_{2.5} at ASR2 (Adjacent with Kg. Padang Meha on the Northeast) for Phase 1 and 2 (36.9 µg/m³) and Phase 1, 2 and 3 (37.7 µg/m³) which had slightly exceeded the prescribed limit. During Abnormal Situation, the predicted 1-hour averaging time for PM₁₀ and PM_{2.5} is assessed to have impact to the surrounding areas.

The sewage from the paper plant area (i.e., dormitory and office) will be later discharged at the proposed sewerage treatment plant (STP) or small sewerage treatment system (SSTS), located at northeastern of the Project Site. The final discharge result of the STP/SSTS shall comply with Standard A limit of Environmental Quality (Sewage) Regulations 2009.

The project proponent shall be responsible for all aspects related to the development of the project including the environmental planning of the project and its associated cost. The major roles and responsibilities of the proponent shall be the following:

- Allocating sufficient funds for implementation of Environmental Management Plan (EMP) including temporary pollution prevention and mitigation measures (P2M2)
- Ensuring the EMP including temporary and permanent pollution prevention and mitigation measures (P2M2) are implemented and maintained.
- Appointing an Environmental Officer during construction stage
- Appointing competent persons for the paper plant during operation stage

Based on the findings of the study and the deliberations put forth in mitigating any identified impacts, it can be concluded that the proposed Green Paper Industry Park development can be carried out within the context of a carefully planned and managed project that will be ultimately beneficial to contribute towards the social acceptability and job opportunity to the Kulim, Kedah.