

**MELAKA – PEKANBARU POWER INTERCONNECTION  
INDONESIA-MALAYSIA-THAILAND GROWTH TRIANGLE (IMT-GT)****PROJECT DESCRIPTION**

Recognising the critical role of an efficient, reliable and resilient electricity infrastructure for stimulating regional economic growth and development, ASEAN is poised to build the ASEAN Power Grid (APG), a 600-MW joint electricity network which connects Peninsula Malaysia and Sumatra, Indonesia under the Indonesia-Malaysia-Thailand Growth Triangle (IMT-GT) sub-regional arrangement. Enhancing electricity trade / exchange across borders through integrating the national power grids of the ASEAN Member States is expected to provide benefits of meeting the rising electricity demand and improving access to energy services. The Melaka-Pekanbaru Interconnection project is part of the APG for ensuring regional energy security while promoting the efficient utilisation and sharing of resources as well as narrowing the development gap amongst ASEAN Member States. The ASEAN Leaders adopted the Master Plan on ASEAN Connectivity in October 2010 which identified the Melaka-Pekanbaru Interconnection as one of the prioritised projects.

**MAIN OBJECTIVES, OUTPUTS AND ACTIVITIES**

The Melaka-Pekanbaru Interconnection project aims to support investment in strategic transmission assets that connects regions or countries across to optimise power networks by reducing the overall need for reserve capacity, improving system reliability, removing transmission bottlenecks, and transmitting cheaper power from one area to the other, addressing overall regional socio-economic and environmental improvement. In this project, each country will exchange peaking capacity and spinning reserve due to differences in peak hours and load curves as well as the one hour time difference between the two countries.

This project will involve construction of a 500 kV high voltage direct current (HVDC) power transmission line between Melaka and Pekanbaru. It foresees the construction of a 600 MV  $\pm 250$ kV HVDC transmission line from Sumatra to Peninsular Malaysia plus converter stations and other transmission facilities.

**PROJECT STATUS**

Seeking financial resources for the whole project. Detailed Terms of Reference (TOR) prepared for the under-sea submarine cable survey. Contract to be awarded soon and survey would be completed by the end of first quarter of 2012.

**TARGET COMPLETION DATE**

December 2015

**IMPLEMENTING BODIES**

PT PLN (Persero) of Indonesia, and Tenaga Nasional Berhad (TNB) of Malaysia

**COORDINATING COUNTRIES**

Indonesia and Malaysia

**MODALITY & SOURCE OF FUNDING**

Assets will be constructed by contractors engaged by PLN and TNB

**BUDGET**

Total project cost is US\$ 500 million: PLN's share of the cost is US\$ 300 million and TNB's share is US \$ 200 million.

The routing consists of:

- Submarine cable (52 km) through the Straits of Malacca from Telok Gong in Malaysia to the Island of Rupert in Indonesia;
- Overhead transmission lines (30 km) crossing the Rupert Island;
- Submarine cable (5 km) crossing the Rupert Straits up to Dumai in Sumatera
- 275 kV overhead transmission lines (200 km) from Dumai to Garuda Sakti in Central Sumatra (Riau Province) to be built by Indonesia's state electricity firm - Perusahaan Listrik Negara (PLN); and,
- Converter stations in Telok Gong and Garuda Sakti including harmonic filters and other necessary transmission facilities.

The project will be implemented in two phases. The first phase consists of establishment of a 300 MW single pole configuration. Establishment of the second 300 MW pole will be carried out in the second phase, allowing for the interconnection to operate on a bipolar configuration.

PT PLN Persero of Indonesia and Tenaga Nasional Berhad (TNB) of Malaysia agreed that a detailed feasibility study needs to be carried out before the project can be financed. Both parties will also undertake detailed engineering study of this project. The interconnection is illustrated in Annex 1

#### **BENEFICIARIES**

The project is expected to bring benefits to both public and private sectors in the involved countries, which can be classified as follow:

- Strategic benefits from security of supply and improved technical and commercial cooperation between the parties;
- Supply benefits of improved reliability and stability of supply together with spinning reserve savings;
- Investment benefits of a high IRR (Internal Rate of Return) yielding project in the base case and a higher upside sensitivity on a firm basis; and
- Financing benefits from healthy free cash flows that can help fund future PLN and TNB investments.

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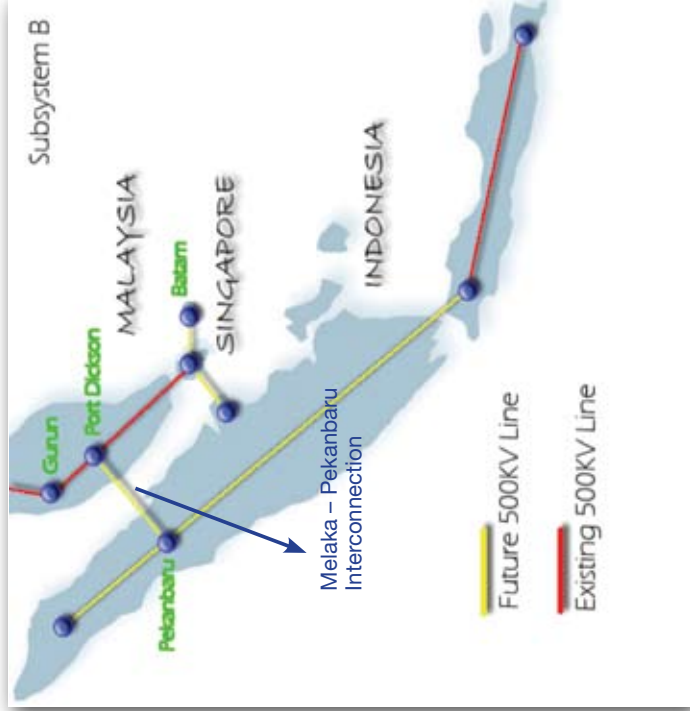
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ANNEX 1:



Melaka - Pekanbaru Interconnection project is one of the power grid networks under the ASEAN Power Grid (APG) programme. It is categorised in Subsystem B: Indonesia, Peninsular Malaysia, and Singapore (IMS).