

BRUNEI DARUSSALAM

Country Report

On

“Encouraging Clean Energy Initiatives”

1. INTRODUCTION

Brunei Darussalam, a small country with area of 5,765 sq. km and a population of about 406,200 in 2009. Brunei Darussalam is endowed with rich resources of fossil fuels. Crude oil and natural gas industries are the dominant industry in Brunei Darussalam. Brunei Darussalam's gross domestic product (GDP) in 2008 was estimated at B\$20,397.9 million.

Brunei Darussalam is currently embarking on its long-term development plan called Wawasan 2035 to achieve its industrialization and economic diversification aspirations. Energy, a crucial necessity in the sustainable development of Brunei Darussalam, must meet the needs of today and the future without adverse effects to the environment.

2. ENERGY AUTHORITIES

The Ministerial post on Energy at the Prime Minister's Office was first created in May 2005 by the Government of His Majesty The Sultan and Yang Di-Pertuan of Brunei Darussalam. Subsequent to the creation of the Energy Ministerial post, an Energy Division at the Prime Minister's Office was established to advise the Minister of Energy on matters concerning energy and its administration. Under the purview of the Minister of Energy are the Petroleum Unit and the Department of Electrical Services.

The Petroleum Unit oversees exploitation of Brunei's reserves, monitors the development of downstream activities, regulates domestic oil/gas matters and ensures that internationally acceptable standards on technical, accounting, health and safety and environmental grounds are adhered to.

The Department of Electrical Services (DES) is a government authority and utility mandated to look after and responsible for the operation and development of the electricity sector. As a utility, it is responsible for management and administration of generation, transmission, distribution and retailing of electricity; while as a service provider it sets the necessary standards for the usage of electricity by the public and private sectors.

3. CLEAN ENERGY INITIATIVES

Brunei Darussalam recognizes the importance in ensuring energy security and environmental sustainability in fueling the economic growth. Environmental policy directions are embedded in the 2035 Long Term Development Plans, which includes amongst others:

- Implementing the highest environmental standards for existing and new industries in accordance with established international standard and practices.
- Strictly enforcing appropriate regulations regarding the maintenance of environment that affect public health and safety.
- Supporting global and regional efforts to address trans-border and regional environmental concerns.

The Brunei Darussalam Centre for Strategic and Policy Studies has recently just commissioned teams of consultant to conduct studies on “An Energy Efficiency and Conservation Plan or Roadmap for Negara Brunei Darussalam” and “Nationwide Feasibility Study on Alternative Energy Sources and to Formulate a Roadmap Towards Achieving Energy Security and Sustainability for Brunei Darussalam”.

Towards these objectives, various initiatives are being undertaken:

a) Energy Efficiencies

Brunei Darussalam basically depends totally on fossil fuels for its energy needs. The efficient use of fossil fuel has been recognized as the most cost-effective measure in mitigating emissions of greenhouse gas and to prolong the fossil fuel reserve. Increasing energy efficiency also contributes towards better air quality, reduction in energy costs, and moderating the growth in energy consumption.

Brunei Darussalam has a national target on the reduction of national energy intensity at 25 per cent by 2030 (with 2005 as the base year), which is inline with the pledges by APEC leaders in the 2007 Sydney Declaration.

EE&C initiatives have been developed in Brunei Darussalam to:

- Promote public awareness and encourage the adoption of energy efficient technologies and best practices;
- Establish and develop Energy Efficiency & Conservation regulations and guidelines to encourage energy efficiency and conservation practices;
- Improve energy efficiency in the supply, transportation and utilization of energy;
- Develop energy efficiency labelling and standards to encourage procurement of energy efficient appliances; and
- Strengthen collaborations with local and international institutions to develop and enhance human capacity building to sustain energy efficiency efforts.

Bukit Panggal Power Station

The Bukit Panggal Power Station was a project under the Eighth National Development Plan with a budget of about B\$170 million. Construction works began in 2005 and the plant was operational by January 2008 where it uses the 'Combined Cycle' concept which is the first of its kind owned by the Department of Electrical Services (DES).

Bukit Panggal Power Plant has a designed thermal efficiency of 47 per cent where-as the designed efficiency of existing generators using the 'Simple Cycle' is only at 28 per cent.

The Bukit Panggal Power Station is based on a 140 hectare wide piece of land where 75 hectares have been developed for phase one of its long term planning with a capacity of 500MW.

i. Electrical Energy Consumption

The recorded average usage of electricity for the past five years has shown that 48 per cent are consumed by the domestic sector, 25 per cent for commercial sector, 17 per cent for government sector and 10 per cent for the Oil and Gas Sector.

Brunei Darussalam through the Energy Division at Prime Minister's Office is actively promoting energy efficiency & conservation in various sectors in the economy, including nationwide public education awareness campaigns, briefings, publications as well as voluntary energy labeling scheme for air-conditioners.

On enhancing human capacity development, seminar-workshops on energy management and energy audit were organized in collaboration with local and international institutions. Energy clubs in schools were launched in 2009 so as to inculcate an energy efficient culture from the grass-root level.

24th May was declared in 2007 as the Energy Day of Brunei Darussalam with the aims to inculcate a more energy-conscious mindset both in the young and old and encourage them to adopt more environmental sustainable lifestyle choices.

ii. Petroleum Product Quality

The transport sector is the dominant sector in the Final Energy Consumption. The 2007 Brunei Darussalam Energy in Brief 2007's indicated that the transport sector alone is responsible for more than 50% of the total energy consumption in the country between the years 2000 and 2006.

Brunei's sole local refinery, with a production capacity of around 12,000 barrels per day, was built in Seria in 1983. It is able to produce among other grades, motor gasoline quality standard equivalent to Euro II to cater for domestic demand for petroleum products.

Most ASEAN countries including Brunei Darussalam follows the European Union product specification standard (Euro I, II, III, IV and V) for the vehicle emission standards. ASEAN is planning to move towards cleaner fuels i.e. Euro 5 vehicle emission standard by 2015. Brunei Darussalam is also currently studying into upgrading the existing refinery to meet the higher EURO standard requirement.

b) Renewable Energies

Brunei started looking into the potential of renewable in 1994 when a pre-feasibility study was carried out in the Temburong District to identify its hydro potential. The project was however not pursued due to the environmental concerns at the time. Other than hydro, Brunei Darussalam also has looked into potential of solar energy as Brunei Darussalam is located in the tropical region with plenty of solar radiation. A solar diesel hybrid electric power system with a 2.4kW solar array and 80kVA

diesel generator was installed in 2000 at Ulu Belalong National Park in the Temburong district.

In August 2008, a Memorandum of Understanding (MoU) was signed between Energy Division at the Prime Minister's Office (EDPMO) and Mitsubishi Corporation (MC) to construct a 1.2 MW PV power generation demonstration project, Tenaga Suria Brunei (TSB), for evaluating the performance of six types of photovoltaic panels. TSB is expected to be completed in July 2010.

On the research and development of clean and renewable energies, Brunei Darussalam will continue to facilitate and encourage the research and development of clean and renewable sources of energy. Local higher institutions are encouraged to carry out research works and collaborations with international institutions on information sharing, capacity building and transfer of technologies.

c) Fostering International Co-operations

In August 2007, Brunei Darussalam ratified the United Nation Framework Convention on Climate Change (UNFCCC) and subsequently ratified its Kyoto Protocol on 20th August 2009.

On 23 June 2009 Brunei Darussalam also become a Signatory State of International Renewable Agency (IRENA).

4. CONCLUSION

Through technology advances and its growing wide applications, the clean energy initiatives are hope to become more technologically viable and affordable. Brunei Darussalam will continue its efforts in its clean energy initiatives. This is seen as part of the drive to sustain the country's socio-economic development now and for the generations to come.