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2003



**Statistics of Electricity Supply  
Industry in **Malaysia****  
Statistik Industri Bekalan Elektrik Malaysia

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- Profil Negara  
*Country Profile*



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Area	329,733 sq.km	% Change in Output	
Climate	<ul style="list-style-type: none"> <li>- Tropical Type</li> <li>- Average temperature between 20° C to 32° C</li> <li>- Average rainfall of about 3540 mm per annum</li> </ul>	Manufacturing	4.1% <sup>P</sup>
Population	24.5 <sup>P</sup> million with a multi racial community comprising Malays, Chinese, Indians, Kadazans, Bajaus, Muruts, Kelabits, Dayaks, Ibans and others	Agriculture	0.3% <sup>P</sup>
Labour force	10.2 million <sup>P</sup>	Mining & Quarrying	4.5% <sup>P</sup>
Real GDP	RM219.3 billion <sup>P</sup> (+4.2% <sup>P</sup> )	Construction	2.3% <sup>P</sup>
Nominal Per Capita Income	RM 13.716 <sup>P</sup>	Services	4.5% <sup>P</sup>
Real GNP	RM202.1 billion <sup>P</sup> (4.8% <sup>P</sup> )	Major Export Products	Manufactured goods
Nominal GNP	RM 336.4 billion <sup>P</sup> (+8.9% <sup>P</sup> )	CPI (2000 = 100)	1.8% <sup>P</sup>
Current Account Balance	27.4 billion <sup>P</sup> (+8.1% <sup>P</sup> of GNP)*	PPI (1989 = 100)	4.4% <sup>P</sup>
Foreign Reserves	RM 131.4 billion <sup>P</sup> (5.4 months of retained imports)*	Total Electricity Generation	80,880 GWh
Gross National savings	34.4 <sup>P</sup> (as % of GNP)*	Total Electricity Consumption	69,670 GWh
		Per Capita Electricity Consumption	2,844 kWh
		Average Price of Electricity:	
		Peninsular Malaysia	23.5 sen per kWh
		Sabah	24.0 sen per kWh
		Sarawak	27.0 sen per kWh
<i>P : Preliminary * At end of December 2002</i>			

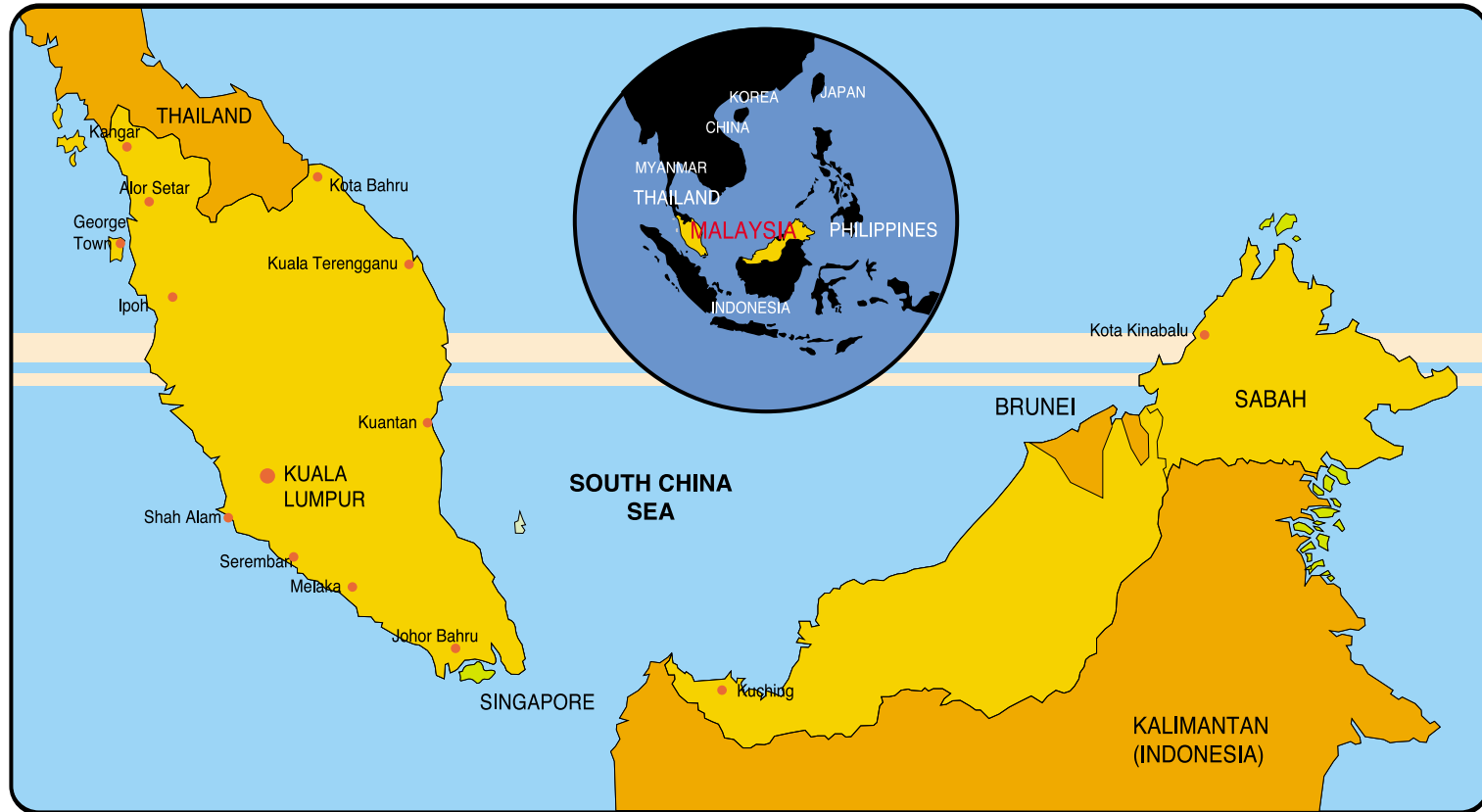


Peta Malaysia  
*Map of Malaysia*



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# MALAYSIA







- Tinjauan Ke Atas Industri Bekalan Elektrik Di Malaysia  
*Overview of the Electricity Supply Industry in Malaysia*

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## Overview of the Electricity Supply Industry in Malaysia

Privatisation and deregulation were two of the most talk about topics of the utility industries in the 1990s. In many countries, the vertically integrated electricity supply industries were unbundled into generation, transmission, distribution, and supply activities and power pools created for trading electricity. Malaysia has successfully privatized the electricity supply industry since early 1990s. However, after in depth studies, Malaysia did not join the other countries in the “dash for deregulation”. The power sector of Malaysia is likely to remain, in the near future, as regulated industry with vertically integrated utilities while the government is searching for an industry structure, which is suitable for the country.

The three main electricity utilities in Malaysia operate in three different territories, i.e. Tenaga Nasional Berhad (TNB) in Peninsula Malaysia, Sabah Electricity Supply Sendirian Berhad (SESB) in the State of Sabah and Sarawak Electricity Supply Corporation (SESCO) in the State of Sarawak.

They undertake generation, transmission, distribution and supply activities in the respective areas of supply. They are investor-owned entities with government as the major share holder.

However, the government has created competition, to a certain extent, in generation by licensing private sector to build, own and operate power generating plants as independent power producers (IPP) and supply electricity to the utilities through negotiated power purchase agreements (PPA). To date there are 23 IPP in the country. In the year 2002, the IPP contributed 6,031MW (40%) of the combined generation capacity of 15,121MW owned by the IPP and the three utilities and produced 34,547GWh (45%) of the total 76,696GWh of electricity generated.

This industry structure is believed, at least for the near future, to be most suitable in meeting the social-economic objectives of the country and the national interests. It has enabled Malaysia in maintaining stable, reasonable, affordable and competitive electricity prices, providing secure, reliable and quality supply and in securing optimum investment for the electricity supply industry.

In the year 2002, the sum of the maximum demands of the three utilities increased 7.0% from 11,055MW in the year 2001 to 11,834MW. The sales of energy increased 4.8% from 62,514GWh to 65,484GWh while the number of consumers increased 4.8% from 5,868,095 to 6,156,600. The generation mix of the three utilities and IPP was 75.0% gas, 11.0% coal, 7.1% hydro, 4.5% oil and the remaining others.

The grid connected capacity in Peninsula increased from 12,680MW in the year 2001 to 13,472MW with the addition of 3x143MW gas turbines from a new IPP, GB3, and another 2x230MW gas turbines from another new IPP, Pahlawan.

In 2002, the reliability and quality of supply continued to improve compared with the previous year. The SAIDI of TNB was 128 minutes/customer/year compared with 266 minutes in the year 2001. This figure is comparable with many developed countries.

In order to contribute to the reduction of green house gases, the government has embarked on programmes in promoting efficient use of energy as well as increasing the use of renewable energy, particularly biomass from the agriculture sector, for power generation. The Small Renewable Energy Program launched in 2001 is aiming at encouraging private sector to use renewable resources, especially oil palm waste from the palm oil industry, to generate electricity and supply to the local grids.

Given the uncertainties of the global economic environment, and particularly in this region, the electricity demand in Malaysia in the coming years is expected to increase moderately with a single digit rate of growth.

However, effort will be taken to further improve the performance of the electricity supply industry especially in the reliability and quality of supply and to maintain stable and competitive electricity prices. The generation projects which have been approved to be implemented in the next few years and those currently under construction will provide sufficient capacity to meet the increasing demand in the near future.



Kadar Tarif Di Malaysia  
*Tariff Rates in Malaysia*



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## TARIFF RATES OF TENAGA NASIONAL BERHAD

No	Tariff Category	Unit	Rates	Promotional Discount*
1.	<b>Tariff A – Domestic Tariff</b>			
	For the first 200 units per month	sen/kWh	21.80	Nil
	For the next 800 units per month	sen/kWh	25.80	Nil
	For additional units per month	sen/kWh	27.80	Nil
	Minimum monthly charge	RM	2.50	
2.	<b>Tariff B – Low Voltage Commercial Tariff</b>			
	For all units	sen/kWh	28.80	-4
	Minimum monthly charge	RM	6.00	
3.	<b>Tariff C1 – Medium Voltage General Commercial Tariff</b>			
	For each kilowatt of maximum demand per month	RM/kW	17.30	Nil
	For all units	sen/kWh	20.80	-4
	Minimum monthly charge	RM	500.00	
4.	<b>Tariff C2 – Medium Voltage Peak/Off-Peak Commercial Tariff</b>			
	For each kilowatt of maximum demand per month during the Peak Period	RM/kW	25.70	Nil
	For all units during the Peak Period	sen/kWh	20.80	-4
	For all units during the Off-Peak Period	sen/kWh	12.80	Nil
	Minimum monthly charge	RM	500.00	
5.	<b>Tariff D – Low Voltage Industrial Tariff</b>			
	For all units	sen/kWh	25.80	-4
	<i>Specially for customers who qualify</i>			
	For all units	sen/kWh	23.80	-4
	Minimum monthly charge	RM	6.00	

## TARIFF RATES OF TENAGA NASIONAL BERHAD

No	Tariff Category	Unit	Rates	Promotional Discount*
6.	<b>Tariff E1 – Medium Voltage General Industrial Tariff</b>			
	For each kilowatt of maximum demand per month	RM/kW	17.30	Nil
	For all units	sen/kWh	19.80	-4
	<i>Specially for customers who qualify</i>			
6.	For each kilowatt of maximum demand per month	RM/kW	3.20	Nil
	For all units	sen/kWh	18.80	-4
	Minimum monthly charges	RM	500.00	
7.	<b>Tariff E2 – Medium Voltage Peak / Off-Peak Industrial Tariff</b>			
	For each kilowatt of maximum demand per month during the Peak Period	RM/kW	21.70	Nil
	For all units during the Peak Period	sen/kWh	20.80	-4
	For all units during the Off-Peak Period	sen/kWh	12.80	Nil
	<i>Specially for customers who qualify</i>			
	For each kilowatt of maximum demand per month during the Peak Period	RM/kW	18.40	Nil
	For all units during the Peak Period	sen/kWh	18.80	
	For all units during the Off-Peak Period	sen/kWh	10.80	-4
	Minimum monthly charges	RM	500.00	Nil
8.	<b>Tariff E3 – High Voltage Peak / Off-Peak Industrial Tariff</b>			
	For each kilowatt of maximum demand per month during the Peak Period	RM/kW	20.80	Nil
	For all units during the Peak Period	sen/kWh	19.80	-4
	For all units during the Off-Peak Period	sen/kWh	11.80	Nil
	<i>Specially for customers who qualify</i>			
	For each kilowatt of maximum demand per month during the Peak Period	RM/kW	16.20	Nil
	For all units during the Peak Period	sen/kWh	17.80	-4
	For all units during the Off-Peak Period	sen/kWh	9.80	Nil
	Minimum monthly charges	RM	500.00	

## TARIFF RATES OF TENAGA NASIONAL BERHAD

No	Tariff Category	Unit	Rates	Promotional Discount*
9.	<b>Tariff F – Low Voltage Mining Tariff</b> For all units Minimum monthly charge	sen/kWh RM	21.80 100.00	-4
10.	<b>Tariff F1 – Medium Voltage General Mining Tariff</b> For each kilowatt of maximum demand per month For all units Minimum monthly charge	RM/kW sen/kWh RM	12.00 17.80 100.00	Nil -4
11.	<b>Tariff F2 – Medium Voltage Peak / Off-Peak Mining Tariff</b> For each kilowatt of maximum demand per month during the Peak Period For all units during the Peak Period For all units during the Off-Peak Period Minimum monthly charge	RM/kW sen/kWh sen/kWh RM	17.00 17.80 9.80 100.00	Nil -4 Nil
12.	<b>Tariff G – Public &amp; Street Lighting Tariff</b> For all units (including maintenance) For all units (excluding maintenance)	sen/kWh sen/kWh	17.30 10.80	Nil Nil
13.	<b>Tariff G1 – Neon Light &amp; Floodlight Tariff</b> For all units	sen/kWh	11.80	Nil

N.B

- Consumers, whose consumption for the month exceeds 10 percent of the average monthly consumptions over the previous 6 months, are eligible for the promotional discount for that particular months.
- 'Specially for consumers who qualify' means industrial customers with electricity cost exceeding 5% of the total cost of production of their products.
- Low Voltage : Below 6.6kV  
Medium Voltage : 6.6KV to 66kV  
High Voltage : Exceeding 66kV
- Peak Period : 0800 hours to 2200 hours  
Off-Peak Period : 2200 hours to 0800 hours

## TARIFF RATES OF TENAGA NASIONAL BERHAD

### Rates for Top Up and Standby Services

Tariff Class	Unit	Top up	Rates	
			Standby	
			Firm	Non-Firm
1. Tariff C1 - Medium Voltage General Commercial Tariff  Maximum Demand Charge For all Units	RM/kW/month sen/unit	17.30 20.80	25.00	9.30
2. Tariff C2 - Medium Voltage Peak/Off-Peak Commercial Tariff  Maximum Demand Charge For all units during the Peak Period For all units during the Off-Peak Period	RM/kW/month sen/unit sen/unit	25.70 20.80 12.80	25.00	10.50
3. Tariff E1 - Medium Voltage Peak/Off-Peak Industrial Tariff  Maximum Demand Charge For all Units  Special for customers who qualify Maximum Demand Charge For all Units	RM/kW/month sen/unit  RM/kW/month sen/unit	17.30 19.80  13.20 18.80	25.00  25.00	8.80  6.70
4. Tariff E2 - Medium Voltage Peak/Off-Peak Industrial Tariff  Maximum Demand Charge For all units during the Peak Period For all units during the Off-Peak Period  Special for customers who qualify Maximum Demand Charge For all units during the Peak Period For all units during the Off-Peak Period	RM/kW/month sen/unit sen/unit  RM/kW/month sen/unit sen/unit	21.70 20.80 12.80  18.40 18.80 10.80	25.00  25.00	8.70  7.30

Tariff Class	Unit	Top up	Rates	
			Standby	
			Firm	Non-Firm
5. Tariff E3 - High Voltage Peak/Off-Peak Industrial Tariff  Maximum Demand Charge For all units during the Peak Period For all units during the Off-Peak Period  Special for customers who Qualify Maximum Demand Charge For all units during the Peak Period For all units during the Off-Peak Period	RM/kW/month sen/unit sen/unit  RM/kW/month sen/unit sen/unit	20.80 19.80 11.80  16.20 17.80 9.80	25.00  25.00	7.60  5.90
6. Tariff F1 - Medium Voltage General Mining Tariff  Maximum Demand Charge For all Units	RM/kW/month sen/unit	12.00 17.80	25.00	4.80
7. Tariff F2 - Medium Voltage Peak/Off-Peak Mining Tariff  Maximum Demand Charge For all units during the Peak Period For all units during the Off-Peak Period	RM/kW/month sen/unit sen/unit	17.00 17.80 9.80	25.00	6.70



## TARIFF RATES FOR SABAH ELECTRICITY SENDIRIAN BERHAD (SESB)

No	Tariff Category	Unit	Rates
1.	<b>Domestic</b>		
	0-40 units per month	sen/kWh	24
	41-200 units per month	sen/kWh	16
	Above 200 units per month	sen/kWh	28
	Minimum monthly charge	RM	5.00
2.	<b>Commercial Class 1</b>		
	0-1,000 units per month	sen/kWh	32
	Above 1,000 units per month	sen/kWh	27
	Minimum monthly charge	RM	15.00
3.	<b>Commercial Class 2</b>		
	(For consumers with maximum demand above 500 kW)		
	Maximum demand charge per month	RM/kW	15.00
	All units per month	sen/kWh	25
	Minimum monthly charge	RM	1,000.00
4.	<b>Industrial Class 1</b>		
	0-2,000 units per month	sen/kWh	32
	Above 2,000 units per month	sen/kWh	26
	Minimum monthly charge	RM	15.00
5.	<b>Industrial Class 2</b>		
	(For consumers with maximum demand above 500 kW)		
	Maximum demand charge per month	RM/kW	15.00
	All units per month	sen/kWh	20
	Minimum monthly charge	RM	1,000.00
6.	<b>Public Lighting</b>		
	All units per month	sen/kWh	30

## TARIFF RATES FOR WILAYAH PERSEKUTUAN LABUAN

### Tariff Structure and Rates

No	Classifications	Unit	Rates
1.	<b>Domestic (DM)</b>		
	0-40 kWh per month	sen/kWh	24
	41-200 kWh per month	sen/kWh	16
	201- above kWh per month	sen/kWh	28
	Minimum charge	RM	5.00
2.	<b>Low Voltage Commercial (B)</b>		
	For all units	sen/kWh	24
	Minimum Charge	RM	6.00
3.	<b>Medium Voltage General Commercial (C1)</b>		
	For each kilowatt of maximum demand per month	RM/kW	12.00
	All units	sen/kWh	18
	Minimum charge	RM	500.00
4.	<b>Medium Voltage Peak/Off Peak Commercial (C2)</b>		
	For each kilowatt of maximum demand per month during the peak period	RM/kW	19.00
	All units during the peak period	sen/kWh	18
	All units during the off peak period	sen/kWh	8
	Minimum charge	RM	500.00
5.	<b>Low Voltage Industrial Tariff (D)</b>		
	For all units	sen/kWh	21
	Minimum charge	RM	6.00
6.	<b>Medium Voltage General industrial (E1)</b>		
	For each kilowatt of maximum demand per month	RM/kW	12.00
	All units	sen/kWh	16
	Minimum charge	RM	500.00

## TARIFF RATES FOR WILAYAH PERSEKUTUAN LABUAN

### Tariff Structure and Rates

No	Classifications	Unit	Rates
7.	<b>Medium Voltage Peak / Off Peak Industrial (E2)</b> For each kilowatt of maximum demand per month during the peak period All units during the peak period All units during the off peak period Minimum charge	RM/kW sen/kWh sen/kWh RM	17.00 16 8 500.00
8.	<b>Low Voltage Mining (F)</b> For all units Minimum charge	sen/kWh RM	19 100.00
9.	<b>Medium Voltage Mining (F1)</b> For each kilowatt of maximum demand per month All units Minimum charge	RM/kW sen/kWh RM	12.00 16 100.00
10.	<b>Public Lighting</b> All units	sen/kWh	30

## TARIFF RATES FOR SARAWAK ELECTRICTY SUPPLY CORPORATION (SESCO)

No	Tariff Category	Unit	Rates
	<b>COMMERCIAL</b>		
1.	<b>Tariff C1</b> (Applicable to consumer taking commercial supply whose estimated monthly consumption does not exceeds 100,000 kWh) 0-100 units per month 101-5000 units per month Above 5000 units per month Minimum monthly charge	sen/kWh sen/kWh sen/kWh RM	40 34 30 10.00
2.	<b>Tariff C2</b> (Generally available on application to consumer taking commercial supply whose estimated monthly consumption exceeds 100,000 kWh) Maximum demand price Energy Price Minimum monthly charge	RM/kW sen/kWh RM/kWh	12.00 25 12.00
3.	<b>Tariff C3</b> (Generally available on application to consumer taking commercial supply whose estimated monthly consumption exceeds 100,000 kWh)  PEAK PERIOD (0700 hours-2400 hours) Maximum demand price Energy Price  OFF-PEAK PERIOD (0000 hours-0700 hours) Energy Price Minimum monthly charge	  RM/kW sen/kWh  sen/kWh RM/kWh	  20.00 25  10 20.00

## TARIFF RATES FOR SARAWAK ELECTRICTY SUPPLY CORPORATION (SESCO)

No	Tariff Category	Unit	Rates
	<b>INDUSTRIAL</b>		
4.	<b>Tariff I1</b> (Applicable to consumer taking industrial supply whose estimated monthly consumption does not exceeds 100,000 kWh) 0-100 units per month 101-3000 units per month Above 3000 units per month Minimum monthly charge	sen/kWh sen/kWh sen/kWh RM	40 30 21 10.00
5.	<b>Tariff I2</b> (Industrial available on application to consumer taking industrial supply whose estimated monthly consumption exceeds 100,000 kWh) Maximum demand price Energy Price Minimum monthly charge	RM/kW sen/kWh RM/kW	12.00 17 12.00
6.	<b>Tariff I3</b> (Generally available on application to consumer taking industrial supply whose estimated monthly consumption exceeds 100,000 kWh)  PEAK PERIOD (0700 hours-2400 hours) Maximum demand price Energy Price  OFF PEAK PERIOD (0000 hours-0700 hours) Energy Price Minimum monthly charge	RM/kW sen/kWh  sen/kWh RM/kW	20.00 17  10 20.00

## TARIFF RATES FOR SARAWAK ELECTRICTY SUPPLY CORPORATION (SESCO)

No	Tariff Category	Unit	Rates
7.	<b>DOMESTIC</b>		
	<b>Tariff D</b> (Applicable to consumer taking domestic supply)		
	0-100 units per month	sen/kWh	34
	101-400 units per month	sen/kWh	29
	Above 400 units per month	sen/kWh	33
	Minimum monthly charge	RM	5.00
8.	<b>PUBLIC LIGHTING</b>		
	<b>Tariff PL</b> (Applicable to consumer taking lighting supply)		
	Energy price	sen/kWh	47
	Minimum monthly charge	RM	10.00

- Statistik Tenaga Nasional Berhad (TNB)  
*Statistics of Tenaga Nasional Berhad (TNB)*



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## Tenaga Nasional Berhad (TNB)

		1998	1999	2000	2001	2002
<b>A.</b>	<b>Jualan Tenaga (GWj) (Sales of Energy (GWh))</b>					
(1)	Domestik ( <i>Domestic</i> )	8,516	8,507	9,093	10,315	10,939
(2)	Komersial ( <i>Commercial</i> )	13,151	13,821	14,747	16,196	17,032
(3)	Industri ( <i>Industrial</i> )	24,447	27,051	29,818	30,754	31,371
(4)	Lampu Awam ( <i>Public Lighting</i> )	358	498	527	590	629
(5)	Perlombongan ( <i>Mining</i> )	68	64	69	67	64
(6)	Eksport ( <i>Export</i> )	26	11	7	5	19
(7)	Lain-lain ( <i>Others</i> )	-	-	-	-	-
	<b>Jumlah (Total)</b>	<b>46,566</b>	<b>49,940</b>	<b>54,254</b>	<b>57,442</b>	<b>60,054</b>

<b>B.</b>	<b>Campuran Penjanaan (GWj) (Generation Mix (GWh))</b>					
(1)	Hidro ( <i>Hydro</i> )	3,800	6,620	5,971	4,992	4,444
(2)	Gas ( <i>Gas</i> )	16,064	20,664	23,223	22,826	* 21,636
(3)	Arangbatu ( <i>Coal</i> )	3,655	4,522	4,038	6,238	8,953
(4)	Minyak ( <i>Oil</i> )	9,603	3,271	1,424	1,600	3,573
(5)	Distillate ( <i>Distillate</i> )	113	17	29	235	N/A
(6)	Disel ( <i>Diesel</i> )	-	-	-	-	-
(7)	Lain-lain ( <i>Others</i> )	-	-	-	-	-
	<b>Jumlah (Total)</b>	<b>33,235</b>	<b>35,095</b>	<b>34,685</b>	<b>35,891</b>	<b>38,606</b>

\* Termasuk penjanaan menggunakan distillate  
*Inclusion of generation using distillate*



## Tenaga Nasional Berhad (TNB)

		1998	1999	2000	2001	2002
C.	<b>Bilangan Pengguna</b> ( <i>No. of Consumers</i> )					
(1)	Domestik ( <i>Domestic</i> )	3,909,911	4,092,106	4,186,799	4,354,125	4,569,628
(2)	Komersial ( <i>Commercial</i> )	718,232	764,480	792,887	821,801	862,826
(3)	Industri ( <i>Industrial</i> )	18,689	20,584	21,235	21,483	21,382
(4)	Lampu Awam ( <i>Public Lighting</i> )	22,406	25,127	26,158	26,439	27,793
(5)	Perlombongan ( <i>Mining</i> )	51	49	49	42	45
(6)	Lain-lain ( <i>Others</i> )	-	16,547	-	-	-
	<b>Jumlah (Total)</b>	<b>4,669,289</b>	<b>4,918,893</b>	<b>5,027,128</b>	<b>5,223,890</b>	<b>5,481,674</b>

D.	<b>Kapasiti Penjanaan (MW)</b> ( <i>Generation Capacity (MW)</i> )					
(1)	Hidro ( <i>Hydro</i> )	1,811	1,890	1,891	1,874	1,910
(2)	Gas Turbine & Combined Cycle	3,869	4,296	3,202	4,390	3,243
(3)	Arangbatu ( <i>Coal</i> )	600	600	600	1,600	1,447
(4)	Conventional Thermal ( <i>Oil/Gas</i> )	1,739	553	1,426	302	1,396
(5)	Gas Turbine( <i>Distillate</i> )	178	187	64	64	59
(6)	Disel ( <i>Diesel</i> )	-	-	-	-	-
(7)	Lain-lain ( <i>Others</i> )	-	-	-	-	-
(8)	<b>Jumlah Penjanaan (Total Generation)</b>	<b>8,197</b>	<b>7,526</b>	<b>7,183</b>	<b>8,194</b>	<b>8,055</b>
(9)	Kebolehdapatan Keseluruhan ( <i>Overall Availability(%)</i> )	N/A	N/A	85.8	96.6	N/A
(10)	Kos Penjanaan(sen/kWj) ( <i>Cost Of Generation</i> )( <i>sen/kWh</i> )					
	a) Penjanaan Sendiri ( <i>Generation for own used</i> )	N/A	N/A	10.60	10.89	N/A
	b) Tenaga Dibeli ( <i>Energy Purchased</i> )	N/A	N/A	15.55	14.84	N/A
	c) Kos Keseluruhan - (a) & (b) ( <i>Overall Cost - (a) &amp; (b)</i> )	N/A	N/A	12.76	12.70	N/A

## Tenaga Nasional Berhad (TNB)

		1998	1999	2000	2001	2002
E.	<b>Keupayaan Sistem Penghantaran (<i>Transmission System Capacity</i>)</b>					
(1)	<b>Talian/Kabel Sistem Penghantaran (km)</b> <i>(Transmission System Lines/Cables (km))</i>					
	i. 500 KV	-	-	* 715	* 890	* 890
	ii. 275 KV	5,763	** 6072	5,425	5,574	5,736
	iii. 132 KV	8,343	8,296	8,420	9,576	9,164
	iv. 66 KV	367	367	316	346	346
(2)	<b>Pencawang Penghantaran (<i>Transmission Substations</i>)</b>					
	i. Bilangan ( <i>Number</i> )	333	341	366	374	349
	ii. Keupayaan (MVA) ( <i>Capacity (MVA)</i> )	42,280	44,722	48,973	51,033	56,673
(3)	<b>Prestasi (<i>Performance</i>)</b>					
	a) Sistem Minit ( <i>System Minutes</i> )	48	74	19	17	20
	b) Bilangan Kejadian Pelantikan ( <i>Number of Incidents of Trippings</i> )	264	238	176	117	118
	c) Tenaga Yang Tidak Dibekal ( <i>Unsupplied Energy (MWh)</i> )	6,834	10,720	3,129	2,789	3,662
F.	<b>Keupayaan Sistem Pengagihan (<i>Distribution System Capacity</i>)</b>					
(1)	<b>Talian/Kabel Sistem Pengagihan (km)</b> <i>(Distribution System Lines/Cables)</i>					
	i. Talian ( <i>Overhead Lines</i> )	# 10,139	# 7,256	# 6,371	174,479	359,920
	ii. Kabel ( <i>Underground Cables</i> )	92,872	142,869	175,762	220,536	228,804
(2)	<b>Pencawang Pengagihan (<i>Distribution Substations</i>)</b>					
	i. Bilangan ( <i>Number</i> )	47,521	44,563	45,948	45,987	47,483
	ii. Keupayaan (MVA) ( <i>Capacity (MVA)</i> )	36,152	44,697	35,083	38,191	41,231
(3)	<b>Prestasi (<i>Performance</i>)</b>					
	a) Bilangan Gangguan Bekalan ( <i>Number of Interruption of Supply</i> )	N/A	52,254	51,964	47,296	31,328
	b) SAIDI( <i>minutes/customer/year</i> )	600	364	330	266	128

## Tenaga Nasional Berhad (TNB)

		1998	1999	2000	2001	2002
G.	<b>Pencapaian Prestasi ( Performance Highlights)</b>					
(1)	<b>Kehendak Maksimum (MW)</b> ( <i>Maximum Demand (MW)</i> )	8,470	8,819	9,712	10,060	10,783
(2)	<b>Jumlah Unit Penjanaan (GWj)</b> ( <i>Total Units Generated (GWh)</i> )	33,235	35,095	34,685	35,891	38,606
(3)	<b>Jumlah Unit Jualan (GWj)</b> ( <i>Total Units Sold (GWh)</i> )	46,566	49,940	54,254	57,922	60,054
(4)	<b>Hasil Jualan Elektrik (RM Juta)</b> ( <i>Sales of Electricity (RM million)</i> )	11,001	11,778	12,751	13,453	14,097
(5)	<b>Kapasiti Penjanaan Terpasang (MW)***</b> ( <i>Installed Generation Capacity (MW)</i> )	8,197	8,526	7,147	8,194	8,055
(6)	<b>Jumlah Kakitangan</b> ( <i>Total Number of Employees</i> )	23,163	22,881	24,334	25,125	25,686
(7)	<b>Hasil Jualan Setiap Kakitangan (RM Juta)</b> ( <i>Revenue Per Employee (RM million)</i> )	0.47	0.51	0.52	0.54	0.55
(8)	<b>Unit Jualan Setiap Kakitangan (GWj)</b> ( <i>Units Sold Per Employee (GWh)</i> )	2.01	2.18	2.23	2.31	2.34
(9)	<b>Kapasiti Penjanaan Setiap Kakitangan (MW)</b> ( <i>Generation Capacity Per Employee (MW)</i> )	0.35	0.37	0.29	0.33	0.31
(10)	<b>Jumlah Unit Pembelian (GWj)</b> ( <i>Total Purchased Units (GWh)</i> )	24,133	22,264	27,740	28,817	31,391
(11)	<b>Jumlah Unit Eksport(GWj)</b> ( <i>Total Units Exported (GWh)</i> )	26	11	7	5	19
(12)	<b>Jumlah Unit Import(GWj)</b> ( <i>Total Units Imported(GWh)</i> )	-	-	13	5	9
(13)	<b>Overall System Average Interruption Duration Index (SAIDI)</b> ( <i>minutes/customer/year</i> )	600	364	330	266	128

- \* Daripada ini sepanjang 693.6km dikendalikan pada voltan 275kV**  
(*Of this 693.6km operated at 275kV*)
- \*\* Termasuk talian 500kV dikendalikan pada voltan 275kV**  
(*Including 500kV lines operated at 275kV*)
- \*\*\* Kapasiti penjanaan TNB Generation Sdn. Bhd. dan TNB Hidro Sdn. Bhd.**  
(*Generation capacity of TNB Generation Sdn. Bhd. and TNB Hidro Sdn. Bhd.*)
- # Tidak termasuk talian rendah atas**  
(*# Excluding LV overhead lines*)
- Tahun yang ditunjukkan adalah tahun kewangan**  
(*Years indicated are financial years*)



Statistik Sabah Electricity  
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*Statistics of Sabah Electricity  
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## Sabah Electricity Sdn. Bhd (SESB)

		1998	1999	2000	2001	2002
<b>A.</b>	<b>Jualan Tenaga (GWj) (Sales of Energy (GWh))</b>					
(1)	Domestik ( <i>Domestic</i> )	626	612	643	646	691
(2)	Komersial ( <i>Commercial</i> )	726	666	740	766	839
(3)	Industri ( <i>Industrial</i> )	505	472	499	564	622
(4)	Lampu Awam ( <i>Public Lighting</i> )	27	27	31	29	30
(5)	Perlombongan ( <i>Mining</i> )	-	-	-	-	-
(6)	Eksport ( <i>Export</i> )	-	-	-	-	-
(7)	Lain-lain ( <i>Others</i> )	-	-	-	-	-
	<b>Jumlah (Total)</b>	<b>1,884</b>	<b>1,778</b>	<b>1,913</b>	<b>2,005</b>	<b>2,182</b>

<b>B.</b>	<b>Campuran Penjanaan (GWj) (Generation Mix (GWh))</b>					
(1)	Hidro ( <i>Hydro</i> )	159	373	491	461	437
(2)	Gas ( <i>Gas</i> )	557	289	159	258	388
(3)	Arangbatu ( <i>Coal</i> )	-	-	-	-	-
(4)	Minyak ( <i>Oil</i> )	-	-	-	-	-
(5)	Distillate ( <i>Distillate</i> )	-	-	-	-	-
(6)	Disel ( <i>Diesel</i> )	710	649	414	420	427
(7)	Lain-lain ( <i>Others</i> )	-	-	-	-	-
	<b>Jumlah (Total)</b>	<b>1,426</b>	<b>1,311</b>	<b>1,064</b>	<b>1,139</b>	<b>1,252</b>

## Sabah Electricity Sdn. Bhd (SESB)

		1998	1999	2000	2001	2002
C.	<b>Bilangan Pengguna</b> ( <i>No. of Consumers</i> )					
(1)	Domestik ( <i>Domestic</i> )	218,695	224,098	242,309	252,869	261,447
(2)	Komersial ( <i>Commercial</i> )	38,914	41,556	43,198	45,142	46,797
(3)	Industri ( <i>Industrial</i> )	3,376	3,239	2,681	2,628	2,613
(4)	Lampu Awam ( <i>Public Lighting</i> )	1,711	1,779	2,224	2,342	2,524
(5)	Perlombongan ( <i>Mining</i> )	-	-	-	-	-
(6)	Lain-lain ( <i>Others</i> )	-	-	-	-	-
	<b>Jumlah (Total)</b>	<b>262,696</b>	<b>270,672</b>	<b>290,412</b>	<b>302,981</b>	<b>313,381</b>
D.	<b>Kapasiti Penjanaan (MW)</b> ( <i>Generation Capacity (MW)</i> )					
(1)	Hidro ( <i>Hydro</i> )	66	66	66	66	66
(2)	Gas ( <i>Gas</i> )	104	104	104	104	104
(3)	Arangbatu ( <i>Coal</i> )	-	-	-	-	-
(4)	Minyak ( <i>Oil</i> )	-	-	-	-	-
(5)	Distillate ( <i>Distillate</i> )	-	-	-	-	-
(6)	Disel ( <i>Diesel</i> )	293	300	300	311	302
(7)	Lain-lain[Bekalan Elektrik Luar Bandar-Disel & Hidro-Mini] ( <i>Others[Rural Electrifications - Diesel &amp; Mini-Hydro]</i> )	31	*2	*2	*6	*6
(8)	Jumlah Penjanaan ( <i>Total Generation</i> )	494	472	472	487	478
(9)	Kebolehdapatan Keseluruhan ( <i>Overall Availability (%)</i> )	N/A	N/A	N/A	N/A	82.32
(10)	Kos Penjanaan(sen/kWj) ( <i>Cost Of Generation) sen/kWh</i> )					
	a) Penjanaan Sendiri ( <i>Generation for own used</i> )	N/A	N/A	16.50	13.90	18.10
	b) Tenaga Dibeli ( <i>Energy Purchased</i> )	N/A	N/A	30.78	26.70	26.70
	c) Kos Keseluruhan- (a) & (b) ( <i>Overall Cost - (a) &amp; (b)</i> )	N/A	N/A	24.16	21.04	21.04

\* Hidro-mini (Mini-hydro)

## Sabah Electricity Sdn. Bhd (SESB)

		1998	1999	2000	2001	2002
<b>E.</b>	<b>Keupayaan Sistem Penghantaran</b> ( <i>Transmission System Capacity</i> )					
(1)	<b>Talian/Kabel Sistem Penghantaran (km)</b> ( <i>Transmission System Lines/Cables (km)</i> )					
	i. 500 KV	-	-	-	-	-
	ii. 275 KV	-	-	-	-	-
	iii. 132 KV	497	497	497	542	542
	iv. 66 KV	116	123	123	123	123
(2)	<b>Pencawang Penghantaran</b> ( <i>Transmission Substations</i> )					
	i. Bilangan ( <i>Number</i> )	18	17	17	17	17
	ii. Keupayaan (MVA) ( <i>Capacity (MVA)</i> )	1,200	1,005	1,005	1,005	1,005
(3)	<b>Prestasi</b> ( <i>Performance</i> )					
	a) Sistem Minit ( <i>System Minutes</i> )	460	109	209	N/A	122
	b) Bilangan Kejadian Pelantikan ( <i>Number of Incidents of Trippings</i> )	30	25	46	N/A	31
	c) Tenaga Yang Tidak Dibekal ( <i>Unsupplied Energy (MWh)</i> )	1,812	649	1,000	2,153	548
<b>F.</b>	<b>Keupayaan Sistem Pengagihan</b> ( <i>Distribution System Capacity</i> )					
(1)	<b>Talian/Kabel Sistem Pengagihan (km)</b> ( <i>Distribution System Lines/Cables</i> )					
	i. Talian ( <i>Overhead Lines</i> )	10,721	11,041	11,593	12,056	13,020
	ii. Kabel ( <i>Underground Cables</i> )	1,106	1,139	1,184	1,220	1,281
(2)	<b>Pencawang Pengagihan</b> ( <i>Distribution Substations</i> )					
	i. Bilangan ( <i>Number</i> )	3,714	3,821	4,012	4,411	4,453
	ii. Keupayaan (MVA) ( <i>Capacity (MVA)</i> )	1,387	1,425	1,496	1,433	2,296
(3)	<b>Prestasi</b> ( <i>Performance</i> )					
	a) Bilangan Gangguan Bekalan ( <i>Number of Interruption of Supply</i> )	N/A	11,826	10,361	10,442	9,457
	b) SAIDI ( <i>minutes/customer/year</i> )	N/A	3,008	2,048	2,279	1,779

## Sabah Electricity Sdn. Bhd (SESB)

		1998	1999	2000	2001	2002
G.	<b>Pencapaian Prestasi</b> ( <i>Performance Highlights</i> )					
(1)	<b>Kehendak Maksimum (MW)</b> ( <i>Maximum Demand (MW)</i> )	372	381	391	421	447
(2)	<b>Jumlah Unit Penjanaan (GWj)</b> ( <i>Total Units Generated (GWh)</i> )	1,426	1,311	1,064	1,139	1,252
(3)	<b>Jumlah Unit Jualan (GWj)</b> ( <i>Total Units Sold (GWh)</i> )	1,884	1,778	1,913	2,005	2,182
(4)	<b>Hasil Jualan Elektrik (RM Juta)</b> ( <i>Sales of Electricity (RM million)</i> )	467	431	474	496	598
(5)	<b>Kapasiti Penjanaan Terpasang (MW)</b> ( <i>Installed Generation Capacity (MW)</i> )	494	472	472	487	478
(6)	<b>Jumlah Kakitangan</b> ( <i>Total Number of Employees</i> )	2,126	2,093	2,033	2,062	2,097
(7)	<b>Hasil Jualan Setiap Kakitangan (RM Juta)</b> ( <i>Revenue Per Employee (RM million)</i> )	0.22	0.21	0.23	0.24	0.29
(8)	<b>Unit Jualan Setiap Kakitangan (GWj)</b> ( <i>Units Sold Per Employee (GWh)</i> )	0.89	0.85	0.94	1.49	1.04
(9)	<b>Kapasiti Penjanaan Setiap Kakitangan (MW)</b> ( <i>Generation Capacity Per Employee (MW)</i> )	0.23	0.23	0.23	0.24	0.23
(10)	<b>Jumlah Unit Pembelian (GWj)</b> ( <i>Total Purchased Units (GWh)</i> )	862	782	1,235	1,365	1,457
(11)	<b>Jumlah Unit Eksport (GWj)</b> ( <i>Total Units Exported (GWh)</i> )	-	-	-	-	-
(12)	<b>Jumlah Unit Import (GWj)</b> ( <i>Total Units Imported (GWh)</i> )	-	-	-	-	-
(13)	<b>Overall System Average Interruption Duration Index (SAIDI)</b>	N/A	3,008	2,048	2,279	1,779



- Statistik Perbadanan  
Pembekalan Letrik Sarawak  
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Perbadanan Pembekalan Letrik Sarawak / Sarawak Electricity Supply Corporation (SESCO)

		1998	1999	2000	2001	2002
<b>A.</b>	<b>Jualan Tenaga (GWj)</b> ( <i>Sales of Energy (GWh)</i> )					
(1)	Domestik ( <i>Domestic</i> )	605	617	669	742	805
(2)	Komersial ( <i>Commercial</i> )	842	844	918	972	1,025
(3)	Industri ( <i>Industrial</i> )	914	1,049	1,257	1,321	1,381
(4)	Lampu Awam ( <i>Public Lighting</i> )	25	28	30	32	37
(5)	Perlombongan ( <i>Mining</i> )	-	-	-	-	-
(6)	Eksport ( <i>Export</i> )	-	-	-	-	-
(7)	Lain-lain ( <i>Others</i> )	-	-	-	-	-
	<b>Jumlah (Total)</b>	<b>2,386</b>	<b>2,537</b>	<b>2,874</b>	<b>3,067</b>	<b>3,248</b>

<b>B.</b>	<b>Campuran Penjanaan (GWj)</b> ( <i>Generation Mix (GWh)</i> )					
(1)	Hidro ( <i>Hydro</i> )	454	502	479	503	388
(2)	Gas ( <i>Gas</i> )	1,408	1,481	1,249	1,175	1,460
(3)	Arangbatu ( <i>Coal</i> )	-	-	-	-	-
(4)	Minyak ( <i>Oil</i> )	291	207	266	249	124
(5)	Distillate ( <i>Distillate</i> )	-	-	-	-	-
(6)	Disel ( <i>Diesel</i> )	148	81	109	176	319
(7)	Lain-lain ( <i>Others</i> )	-	-	-	-	-
	<b>Jumlah (Total)</b>	<b>2,301</b>	<b>2,270</b>	<b>2,103</b>	<b>2,103</b>	<b>2,291</b>

N.B. Tahun yang ditunjukkan adalah tahun kewangan  
*Years indicated are financial years*

Perbadanan Pembekalan Letrik Sarawak / Sarawak Electricity Supply Corporation (SESCO)

		1998	1999	2000	2001	2002
<b>C.</b>	<b>Bilangan Pengguna</b> ( <i>No. of Consumers</i> )					
(1)	Domestik ( <i>Domestic</i> )	244,428	257,536	270,299	284,711	302,571
(2)	Komersial ( <i>Commercial</i> )	45,986	47,623	49,631	51,899	53,993
(3)	Industri ( <i>Industrial</i> )	724	743	775	814	831
(4)	Lampu Awam ( <i>Public Lighting</i> )	2,903	3,264	3,468	3,800	4,150
(5)	Perlombongan ( <i>Mining</i> )	-	-	-	-	-
(6)	Lain-lain ( <i>Others</i> )	-	-	-	-	-
	<b>Jumlah (Total)</b>	<b>294,041</b>	<b>309,166</b>	<b>324,173</b>	<b>341,224</b>	<b>361,545</b>
<b>D.</b>	<b>Kapasiti Penjanaan (MW)</b> ( <i>Generation Capacity (MW)</i> )					
(1)	Hidro ( <i>Hydro</i> )	97	97	101	101	101
(2)	Gas ( <i>Gas</i> )	299	299	291	291	289
(3)	Arangbatu ( <i>Coal</i> )	-	-	-	-	-
(4)	Minyak ( <i>Oil</i> )	175	132	68	75	50
(5)	Distillate ( <i>Distillate</i> )	-	-	-	-	-
(6)	Disel ( <i>Diesel</i> )	35	26	91	92	117
(7)	Lain-lain ( <i>Others</i> )	-	-	-	-	-
(8)	Jumlah Penjanaan ( <i>Total Generation</i> )	606	554	551	559	557
(9)	Kebolehdapatan Keseluruhan ( <i>Overall Availability (%)</i> )	N/A	N/A	N/A	N/A	N/A
(10)	Kos Penjanaan (sen/kWj) ( <i>Cost Of Generation (sen/kWh)</i> )					
	a) Penjanaan Sendiri ( <i>Generation for own used</i> )	N/A	N/A	7.6	7.7	8.2
	b) Tenaga Dibeli ( <i>Energy Purchased</i> )	N/A	N/A	4.8	5.0	5.0
	c) Kos Keseluruhan - (a) & (b) ( <i>Overall Cost - (a) &amp; (b)</i> )	N/A	N/A	12.4	12.7	13.2

Perbadanan Pembekalan Letrik Sarawak / *Sarawak Electricity Supply Corporation (SESCO)*

		1998	1999	2000	2001	2002
<b>E.</b>	<b>Keupayaan Sistem Penghantaran</b> ( <i>Transmission System Capacity</i> )					
(1)	<b>Talian/Kabel Sistem Penghantaran (km)</b> ( <i>Transmission System Lines/Cables (km)</i> )					
	i. 500 KV	-	-	-	-	-
	ii. 275 KV	765	765	765	765	765
	iii. 132 KV	128	128	128	135	135
	iv. 66 KV	-	-			-
(2)	<b>Pencawang Penghantaran</b> ( <i>Transmission Substations</i> )					
	i. Bilangan ( <i>Number</i> )	15	15	15	17	17
	ii. Keupayaan (MVA) ( <i>Capacity (MVA)</i> )	2,756	3,240	3,240	3,251	3,251
(3)	<b>Prestasi</b> ( <i>Performance</i> )					
	a) Sistem Minit ( <i>System Minutes</i> )	N/A	N/A	N/A	26	37
	b) Bilangan Kejadian Pelantikan ( <i>Number of Incidents of Trippings</i> )	19	17	53	30	34
	c) Tenaga Yang Tidak Dibekal ( <i>Unsupplied Energy (MWh)</i> )	N/A	N/A	N/A	225	517
<b>F.</b>	<b>Keupayaan Sistem Pengagihan</b> ( <i>Distribution System Capacity</i> )					
(1)	<b>Talian/Kabel Sistem Pengagihan (km)</b> ( <i>Distribution System Lines/Cables</i> )					
	i. Talian ( <i>Overhead Lines</i> )	12,233	13,425	13,958	14,525	15,208
	ii. Kabel ( <i>Underground Cables</i> )	2,727	2,920	3,111	3,353	3,553
(2)	<b>Pencawang Pengagihan</b> ( <i>Distribution Substations</i> )					
	i. Bilangan ( <i>Number</i> )	4,648	5,031	5,256	5,532	5,554
	ii. Keupayaan (MVA) ( <i>Capacity (MVA)</i> )	2,724	3,209	3,596	3,855	3,933
(3)	<b>Prestasi</b> ( <i>Performance</i> )					
	a) Bilangan Gangguan Bekalan ( <i>Number of Interruption of Supply</i> )	N/A	N/A	N/A	6,004	4,167
	b) SAIDI( <i>minutes/customer/year</i> )	N/A	291	859	731	611

Perbadanan Pembekalan Letrik Sarawak / Sarawak Electricity Supply Corporation (SESCO)

		1998	1999	2000	2001	2002
G.	<b>Pencapaian Prestasi</b> ( <i>Performance Highlights</i> )					
(1)	<b>Kehendak Maksimum (MW)</b> ( <i>Maximum Demand (MW)</i> )	462	490	554	574	604
(2)	<b>Jumlah Unit Penjanaan (GWj)</b> ( <i>Total Units Generated (GWh)</i> )	2,781	2,270	2,103	2,103	2,291
(3)	<b>Jumlah Unit Jualan (GWj)</b> ( <i>Total Units Sold (GWh)</i> )	2,386	2,537	2,874	3,067	3,248
(4)	<b>Hasil Jualan Elektrik (RM Juta)</b> ( <i>Sales of Electricity (RM million)</i> )	645	675	759	812	864
(5)	<b>Kapasiti Penjanaan Terpasang (MW)</b> ( <i>Installed Generation Capacity (MW)</i> )	606	554	551	559	557
(6)	<b>Jumlah Kakitangan</b> ( <i>Total Number of Employees</i> )	2,038	2,039	2,046	2,029	2,025
(7)	<b>Hasil Jualan Setiap Kakitangan (RM Juta)</b> ( <i>Revenue Per Employee (RM million)</i> )	0.32	0.33	0.37	0.40	0.43
(8)	<b>Unit Jualan Setiap Kakitangan (GWj)</b> ( <i>Units Sold Per Employee (GWh)</i> )	1.17	1.24	1.4	1.51	1.60
(9)	<b>Kapasiti Penjanaan Setiap Kakitangan (MW)</b> ( <i>Generation Capacity Per Employee (MW)</i> )	0.30	0.27	0.27	0.28	0.28
(10)	<b>Jumlah Unit Pembelian (GWj)</b> ( <i>Total Purchased Units (GWh)</i> )	-	689	1,245	1,451	1,506
(11)	<b>Jumlah Unit Eksport(GWj)</b> ( <i>Total Units Exported (GWh)</i> )	-	-	-	-	-
(12)	<b>Jumlah Unit Import(GWj)</b> ( <i>Total Units Imported(GWh)</i> )	-	-	-	-	-
(13)	<i>Overall System Average Interruption Duration Index (SAIDI)</i>	N/A	291	859	731	611



Senarai Penjana Kuasa Bebas  
*List of Independent Power Producers  
(IPPs)*



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## Penjana Kuasa Bebas / Independent Power Producers (IPPs)

Bil (No.)	Nama Pelesen (Licensee)	Kapasiti Berlesen (MW) (Licensed Capacity (MW))	Kapasiti Dalam Operasi (MW) (Capacity in Operation (MW))	Unit Jualan (GWj) (Units Sold (GWh))	Unit Penjanaan (GWj) (Units Generated (GWh))	Tarikh Lesen Dikeluarkan (Date of Issue of Licence)
(1)	<b>YTL Power Generation Sdn. Bhd.</b> (a) Paka, Terengganu (b) Pasir Gudang, Johor	808 404	808 404	9,058	9,234	7-4-1993
(2)	<b>Genting Sanyen Power Sdn. Bhd.</b> Kuala Langat, Selangor	762	762	4,627	4,906	1-7-1993
(3)	<b>Segari Energy Ventures Sdn. Bhd.</b> Lumut, Perak	1,303	1,303	9,942	10,042	15-7-1993
(4)	<b>Powertek Bhd.</b> Alor Gajah, Melaka	440	440	1,076	1,084	1-12-1993
(5)	<b>Port Dickson Power Bhd.</b> Tanjung Gemuk, Port Dickson	440	440	1,071	1,076	1-12-1993
(6)	<b>Projass Engineering Sdn. Bhd.</b>	17	17	31	32	1-4-1994
(7)	<b>ARL Tenaga Sdn. Bhd.</b> Melawa, Sabah	50	50	95	101	14-6-1994
(8)	<b>Musteq Hydro Sdn. Bhd.</b> Sg. Kenerong, Kelantan	20	20	114	114	18-11-1994
(9)	<b>Serudong Power Sdn. Bhd.</b> Tawau, Sabah	36	36	241	251	31-3-1995
(10)	<b>Stratavest Sdn. Bhd.</b> Sandakan, Sabah	64.4	64.4	278	290	1-10-1996

**Penjana Kuasa Bebas / Independent Power Producers (IPPs)**

Bil (No.)	Nama Pelesen (Licensee)	Kapasiti Berlesen (MW) (Licensed Capacity (MW))	Kapasiti Dalam Operasi (MW) (Capacity in Operation (MW))	Unit Jualan (GWj) (Units Sold (GWh))	Unit Penjanaan (GWj) (Units Generated (GWh))	Tarikh Lesen Dikeluarkan (Date of Issue of Licence)
(11)	<b>Powertron Resources Sdn. Bhd.</b> Karambunai, Sabah	120	120	719	727	6-2-1997
(12)	<b>TNB Generation Sdn. Bhd.</b> **	6,145	6,145	33,112	34,162	1-9-1997
(13)	<b>Sandakan Power Corporation Sdn. Bhd.</b> Sandakan, Sabah	34	34	120	126	29-11-1997
(14)	<b>TNB Janamanjung Sdn. Bhd.</b> **	2,100	*	*	*	21-5-1998
(15)	<b>Teknologi Tenaga Perlis Consortium Sdn. Bhd.</b> Kuala Sungai Baru, Perlis	650	*	*	*	26-8-1998
(16)	<b>Nur Generation Sdn. Bhd.</b> Kulim High-Tech Industrial Park, Kedah	440	*	*	*	17-9-1998
(17)	<b>Pahlawan Power Sdn. Bhd.</b> Stesen Janakuasa Melaka, Tanjung Keling, Melaka.	334	334	2,505	2,532	26-5-1999
(18)	<b>TNB Hidro Sdn. Bhd.</b> **	1,910	1,910	4,398	4,444	1-9-2000
(19)	<b>Prai Power Sdn. Bhd.</b> Daerah Seberang Perai Tengah, Pulau Pinang	350	*	*	*	19-2-2001



## Penjana Kuasa Bebas / Independent Power Producers (IPPs)

Bil (No.)	Nama Pelesen (Licensee)	Kapasiti Berlesen (MW) (Licensed Capacity (MW))	Kapasiti Dalam Operasi (MW) (Capacity in Operation (MW))	Unit Jualan (GWj) (Units Sold (GWh))	Unit Penjanaan (GWj) (Units Generated (GWh))	Tarikh Lesen Dikeluarkan (Date of Issue of Licence)
(20)	<b>GB3 Sdn. Bhd.</b> <b>Lumut, Perak</b>	640 *	429	1,042	1,068	7-08-2001
(21)	<b>Panglima Power Sdn. Bhd.</b> <b>Alor Gajah, Melaka</b>	720 *	460	1,448	1,458	7-08-2001
(22)	<b>Sejingkat Power Corporation Sdn Bhd</b> <b>Kuching, Sarawak</b>	100 ***	100	N/A	606	N/A
(23)	<b>Sarawak Power Generation Sdn Bhd</b> <b>Bintulu, Sarawak</b>	210 ***	210	N/A	900	N/A

\* Dalam Pembinaan (*Under Construction*)

\*\* Anak Syarikat TNB (*Wholly Owned Subsidiaries of TNB*)

\*\*\* Anak Syarikat SESCO (*Wholly Owned Subsidiaries of SESCO*)



Senarai Pengagih Elektrik  
*List of Electricity Distributors*



[www.st.gov.my](http://www.st.gov.my)

## Senarai Pengagih Elektrik / *List of Electricity Distributors*

Bil (No.)	Nama Pelesen (Licensee)	Kapasiti Dileesen (MW) (Licensed Capacity (MW))	Tarikh Lesen Dikeluarkan (Date of Issue of Licence)
(1)	<b>Tioman Island Resort Sdn. Bhd.</b> Pulau Tioman, Pahang.	3.20	7-1-1983
(2)	<b>Gopeng Berhad</b> Kawasan Perlombongan Gopeng Bhd. Gopeng, Perak.	1.20	1-1-1984
(3)	<b>Syarikat Elektrik Pulau Ketam</b> Pulau Ketam, Selangor.	1.20	30-10-1985
(4)	<b>Genting Utilities &amp; Services Sdn. Bhd.</b> Tingkat 24, Wisma Genting, Jalan Sultan Ismail, 50250 Kuala Lumpur.	48	17-10-2000
(5)	<b>Sabah Forest Industries Sdn. Bhd.</b> W.D.T. 31, Sipitang, Sabah.	57.70	12-5-1993
(6)	<b>Bandar Utama City Corporation Sdn. Bhd.</b> 1, Persiaran Bandar Utama, 47800 Petaling Jaya, Selangor.	100	19-1-1994
(7)	<b>Redang Island Resort Sdn. Bhd.</b> 15th. Floor Shahzan, Prudential Tower, Jalan Sultan Ismail, 50250 Kuala Lumpur.	3.20	10-6-1994
(8)	<b>C3Power Sdn. Bhd.</b> Lot U0052, Tingkat 1, Jln. Bunga Mawar, Peti Surat No. 80871, 87018 W.P. Labuan, Malaysia.	5.85	18-5-1995
(9)	<b>MTBE Malaysia Sdn. Bhd.</b> Lot 111, Kawasan Perindustrial Gebeng, Peti Surat 1, Balok, 26080 Kuantan, Pahang.	5.60	14-6-1995
(10)	<b>Berjantai Tin Dredging Berhad</b> Tingkat 32, Menara PNB, 201A Jalan Tun Razak, 50400 Kuala Lumpur.	5.60	14-6-1995
(11)	<b>Seseni Energy Services Sdn. Bhd.</b> Plaza Merdeka, Jalan Stadium, Kuala Lumpur.	40	1-11-1995
(12)	<b>Sunway Pyramid Sdn. Bhd.</b> Plaza Merdeka, Jalan Stadium, Kuala Lumpur.	9.53	1-12-1995

## Senarai Pengagih Elektrik / *List of Electricity Distributors*

Bil (No.)	Nama Pelesen (Licensee)	Kapasiti Dileesen (MW) (Licensed Capacity (MW))	Tarikh Lesen Dikeluarkan (Date of Issue of Licence)
(13)	<b>EPE Distribution Sdn. Bhd.</b> No. 8, Jalan Bangsar Utama 9, Bangsar Utama, Kuala Lumpur.	100	1-4-1996
(14)	<b>Kuantan Port Consortium Sdn. Bhd.</b> Tanjung Gelang, Peti Surat 161, 25720 Kuantan, Pahang.	3.50	1-10-1996
(15)	<b>Profound Heritage Sdn. Bhd.</b> Sutera Harbour Resort, Kota Kinabalu, Sabah.	19	1-10-1996
(16)	<b>Wirazone Sdn. Bhd.</b> Kawasan Kuala Lumpur Sentral Development, Brickfields, Kuala Lumpur.	60	9-10-1996
(17)	<b>Kelang Port Authority</b> Kelang Port Authority Premis, Jalan Pelabuhan, 42005 Port Klang, Selangor.	5.80	25-3-1997
(18)	<b>Jaya Jusco Stores Bhd.</b> Lot 51105, Mukim Ulu Kinta, Daerah Kinta, Perak.	2	1-8-1997
(19)	<b>Pengkalan Bekalan Kemaman</b> Kawasan Pengkalan Bekalan Kemaman, Kemaman Terengganu.	0.35	4-12-1997
20)	<b>Cryovac (M) Sdn. Bhd.</b> Lot 114 & 115, Gebeng Industrial Estate, Balok, Kuantan, Pahang. Kemaman, Terengganu.	3.50	15-2-1998
(21)	<b>Malaysia Airports (Sepang) Sdn. Bhd.</b> Kuala Lumpur International Airport, Sepang, Selangor.	46	14-3-1998
(22)	<b>Petronas Gas Bhd.- CUF Gebeng</b> Gebeng, Kuantan, Pahang.	105	18-5-1998

## Senarai Pengagih Elektrik / *List of Electricity Distributors*

Bil (No.)	Nama Pelesen (Licensee)	Kapasiti Dileesen (MW) (Licensed Capacity (MW))	Tarikh Lesen Dikeluarkan (Date of Issue of Licence)
(23)	<b>Petronas Gas Bhd.- CUF Kerteh</b> Kertih, Terengganu.	210	28-5-1998
(24)	<b>K.K.I.P. Power Sdn. Bhd.</b> Kota Kinabalu Industrial Park, Jalan Sepangar, Menggatal, Kota Kinabalu, Sabah.	210	15-6-1998
(25)	<b>Nur Distribution Sdn. Bhd.</b> Kulim Hi-Tech Industrial Park, Kulim, Kedah.	440	17-9-1998
(26)	<b>Jaya Jusco Stores Bhd.</b> Taman Maluri Cheras, 56100 Cheras, Kuala Lumpur.	3.4	2-10-2000
(27) (* )	<b>Gas District Cooling (M) Sdn. Bhd</b> Universiti Teknologi Petronas Tronoh, Perak.	8.4	10-3-2001

\* **Dalam Pembinaan ( Under Construction)**

- Senarai Cogeneration Utama  
*List of Major Cogeneration*



[www.st.gov.my](http://www.st.gov.my)

## Senarai Co-Generators Utama / List of Major Licensed Co-Generators

Bil (No.)	Nama Pelesen (Licensee)	Kapasiti (MW) (Capacity (MW))	Jenis Penjanaaan (Type of Generation)	Bahan api (MWh) (Fuels)	Top up (MW) (Top Up (MW))	Tunggu-Sedia (MW) (Standby (MW))	Penjanaaan (MWj) (Generation (MWh))
(1)	<b>Sabah Forest Industries Sdn. Bhd.</b> Sipitang, Sabah.	57.7	Awam (Public)	Sisa Kayu/Disel (Wood/Diesel)	-	-	323,908
(2)	<b>Perwaja Steel Sdn. Bhd.</b> Tanjung Berhala, Kemaman, Terengganu.	9.5	Persendirian (Private)	Haba Buangan Proses Perindustrian (Waste Heat From Industrial Process)	169	-	19,261
(3)	<b>Lembaga Padi Dan Beras Negara</b> Sekinchan, Selangor.	0.2	Persendirian (Private)	Bahan Buangan Pertanian (Agriculture Waste)	0.5	-	8
(4)	<b>Lembaga Padi Dan Beras Negara</b> Ulu Dedap, Kg. Gajah, Perak.	0.6	Persendirian (Private)	Bahan Buangan Pertanian (Agriculture Waste)	2.3	-	862
(5)	<b>Lembaga Padi Dan Beras Negara</b> Changkat Lada, Kg. Gajah, Perak.	0.6	Persendirian (Private)	Bahan Buangan Pertanian (Agriculture Waste)	2.3	-	1,514
(6)	<b>Ban Heng Bee Rice Mill Sdn. Bhd.</b> Lot 2171, Jalan Bukit Rajah, Pendang, Kedah.	0.5	Persendirian (Private)	Bahan Buangan Pertanian (Agriculture Waste)	-	-	3,346

## Senarai Co-Generators Utama / List of Major Licensed Co-Generators

Bil (No.)	Nama Pelesen (Licensee)	Kapasiti (MW) (Capacity (MW))	Jenis Penjanaan (Type of Generation)	Bahan api (MWh) (Fuels)	Top up (MW) (Top Up (MW))	Tunggu-Sedia (MW) (Standby (MW))	Penjanaan (MWj) (Generation (MWh))
(7)	<b>Consolidated Plantations Bhd.</b> Tennamaran, Batang Berjuntai, Selangor.	2.0	Persendirian (Private)	Bahan Buangan Pertanian (Agriculture Waste)	-	-	3,918
(8)	<b>Consolidated Plantations Bhd.</b> Nova Scotia Palm Oil Mill, Batu 5, Jalan Maharaja Lela, 36009 Teluk Intan, Perak.	3.4	Persendirian (Private)	Bahan Buangan Pertanian (Agriculture Waste)	-	-	2,826
(9)	<b>Gas District Cooling (M) Sdn. Bhd.</b> Kuala Lumpur City Centre (KLCC).	40	Awam (Public)	Gas Asli (Natural Gas)	-	-	130,773
(10)	<b>Gas District Cooling (KLIA) Sdn. Bhd.</b> Kuala Lumpur International Airport, Sepang, Selangor.	60	Awam (Public)	Gas Asli (Natural Gas)	-	-	222,487
(11)	<b>See Sen Chemical Bhd.</b> Kawasan Perindustrian Telok Kalong, Kemaman, Terengganu.	6	Awam (Public)	Haba Buangan Proses Perindustrian (Waste Heat from Industrial Process)	-	2.4	18,725
(12)	<b>Public Holdings Sdn. Bhd.</b> Jalan Ayer Hitam, Mukim Dengkil, Sepang, Selangor.	1.8	Persendirian (Private)	Gas Asli (Natural Gas)	1.0	-	5,136
(13)	<b>Tractors Malaysia (1982) Sdn. Bhd.</b> Kampung Puchong, Daerah Petaling, Selangor.	1.2	Persendirian (Private)	Gas Asli (Natural Gas)	0.9	-	2,476



## Senarai Co-Generators Utama / List of Major Licensed Co-Generators

Bil (No.)	Nama Pelesen (Licensee)	Kapasiti (MW) (Capacity (MW))	Jenis Penjanaaan (Type of Generation)	Bahan api (MWh) (Fuels)	Top up (MW) (Top Up (MW))	Tunggu-Sedia (MW) (Standby (MW))	Penjanaaan (MWj) (Generation (MWh))
(14)	<b>Profound Heritage Sdn. Bhd.</b> Sutera Harbour Resort, Kota Kinabalu, Sabah.	38	Awam (Public)	Disel/Gas Asli (Diesel/Natural Gas)	-	-	41,382
(15)	<b>TCL Industries (M) Sdn. Bhd.</b> Telok Kalong Industrial Area, Kemaman, Terengganu.	7	Persendirian (Private)	Haba Buangan Proses Perindustrian (Waste Heat from Industrial Process)	-	-	84,154
(16)	<b>Malaysian Mosaics Bhd.</b> Batu 3, Mukim Kluang, Jalan Batu Pahat, Kluang, Johor.	4.2	Persendirian (Private)	Gas Asli (Natural Gas)	1.5	4.2	76
(17)	<b>Malaysian Newsprint Industries Sdn. Bhd.</b> Lot 3771, Jalan Lencongan Mentakab-Temerloh 28400 Mentakab, Pahang.	79.2	Persendirian (Private)	Minyak (Oil)	-	-	296,097
(18)	<b>Titan Petrochemicals (M) Sdn. Bhd.</b> Plo 312, Jalan Tembaga 4, Pasir Gudang Industrial Estate, Pasir Gudang, Johor.	56	Persendirian (Private)	Gas Buangan Proses Perindustrian (Waste Gas from Industrial Process)	6	10	283,426
(19)	<b>Titan Petrochemicals (M) Sdn. Bhd.</b> PLO 8, Tanjung Langsung Industrial Park, Mukim Sg. Tiram, Johor Bharu, Johor.	42.6	Persendirian (Private)	Gas Asli (Natural Gas)	6.0	31	179,738
(20)	<b>Shell Refining Company (FOM) Bhd.</b> Batu 1, Jalan Pantai, Port Dickson, Negeri Sembilan.	35	Awam (Public)	Gas Buangan Proses Perindustrian (Waste Gas from Industrial Process)	-	17.5	84,154

Senarai Co-Generators Utama / List of Major Licensed Co-Generators

Bil (No.)	Nama Pelesen (Licensee)	Kapasiti (MW) (Capacity (MW))	Jenis Penjanaaan (Type of Generation)	Bahan api (MWh) (Fuels)	Top up (MW) (Top Up (MW))	Tunggu-Sedia (MW) (Standby (MW))	Penjanaaan (MWj) (Generation (MWh))
(21) (*)	<b>Bandar Utama City Corp. Sdn. Bhd.</b> No. 1, Pesiaran Bandar Utama, Petaling Jaya.	50	Awam (Public)	Gas Asli (Natural Gas)	50	-	-
(22) (*)	<b>Wirazone Sdn. Bhd.</b> Kuala Lumpur Sentral Development, Brickfields, Kuala Lumpur.	12	Awam (Public)	Gas Asli (Natural Gas)	55	-	-
(23) (*)	<b>CCM Chemicals Sdn. Bhd.</b> Pasir Gudang Works, Plot 411, Kaw. 4, Jalan Perak Satu, Pasir Gudang, Johor.	15	Persendirian (Private)	Gas Asli (Natural Gas)	2	6.5	-
(24) (*)	<b>Amoco Chemical (Malaysia) Sdn. Bhd.</b> Lot 116, Gebeng Industrial Estate, P.O. Box 11, Balok, 26080 Kuantan, Pahang.	21.6	Persendirian (Private)	Gas Asli (Natural Gas)	2.4	27	-
(25) (*)	<b>Seseni Energy Services Sdn. Bhd.</b> Plaza Merdeka, Jalan Stadium, Kuala Lumpur.	8.8	Awam (Public)	Gas Asli (Natural Gas)	35	-	-
(26)	<b>Petronas Methanol (Labuan) Sdn. Bhd.</b> Kompleks Petronas Methanol (Labuan), Kawasan Perindustrian Ranca-Ranca.	12.8	Awam (Public)	Gas Asli (Natural Gas)	-	-	34,813
(27)	<b>Petronas Gas Bhd.</b> Kertih, Terengganu.	210	Awam (Public)	Gas Asli (Natural Gas)	-	-	1,112,737

## Senarai Co-Generators Utama / List of Major Licensed Co-Generators

Bil (No.)	Nama Pelesen (Licensee)	Kapasiti (MW) (Capacity (MW))	Jenis Penjanaan (Type of Generation)	Bahan api (MWh) (Fuels)	Top up (MW) (Top Up (MW))	Tunggu-Sedia (MW) (Standby (MW))	Penjanaan (MWj) (Generation (MWh))
(28)	<b>Petronas Gas Bhd.</b> Gebeng, Kuantan, Pahang.	105	Awam (Public)	Gas Asli (Natural Gas)	-	-	548,997
(29)	<b>Tian Siang Oil Mill (Perak) Sdn. Bhd.</b> Lot 2161, Batu 21, Jalan Beruas, Padang Gajah, 32700 Beruas, Perak.	1.8	Persendirian (Private)	Bahan Buangan Pertanian (Agriculture Waste)	-	-	283
(30)	<b>Central Sugars Refinery Sdn. Bhd.</b> Batu Tiga, 40000 Shah Alam, Selangor	9.23	Persendirian (Private)	Disel/MFO (Diesel/MFO)	-	-	31,384
(31) (*)	<b>Samsung SDI (M) Sdn. Bhd.</b> Lot 635 & 660 Kaw. Perindustrian Tuanku Jaafar 70450 Sg. Gadut, Negeri Sembilan	22.8	Persendirian (Private)	Gas Asli (Natural Gas)	17.2	11.5	-
(32) (*)	<b>BASF-Petronas Chemicals Sdn. Bhd.</b> Lot 139, Kawasan Perindustrian Gebeng, 26080 Kuantan, Pahang.	12.5	Persendirian (Private)	Gas Asli (Natural Gas)	27.5	-	-
(33) (*)	<b>Gas District Cooling (M) Sdn. Bhd.</b> Universiti Teknologi Petronas, Tronoh, Perak.	8.4	Awam (Public)	Gas Asli (Natural Gas)	1.0	4.0	-
(34) (*)	<b>Penfibre Sdn. Bhd.</b> Lot 109-114, Kawasan Perindustrian Bebas Prai Zon 1, 13600 Prai, Pulau Pinang.	35.4	Persendirian (Private)	Gas Asli (Natural Gas)	1.4	2.5	-

**Jumlah kapasiti projek utama dilesen** = **971 MW**  
(Total capacity of main projects licensed)

**Jumlah kapasiti projek utama dalam operasi** = **784 MW**  
(Total capacity in operation)

**Jumlah tenaga dijana** = **3432.5 GWh**  
(Total energy generation)

\* **Belum beroperasi** (Not in operation yet)



Senarai Penghantar Elektrik  
*List of Electricity Transmitters*



[www.st.gov.my](http://www.st.gov.my)

## Senarai Penghantar Elektrik / *List of Electricity Transmitters*

Bil (No.)	Nama Pelesen (Licensee)	Kapasiti (MW) (Capacity (MW))	Tarikh Lesen Dikeluarkan (Date of Issue of Licence)
(1)	<b>Labuan Beaufort Interconnection Sdn. Bhd.</b> Lantai 37, Bangunan Tabung Haji 201, Jalan Tun Razak, 50400 Kuala Lumpur.	60	13-3-1990

- Statistik Penjanaan  
Persendirian  
*Statistics of Private Generation*



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## Statistik Penjanaaan Persendirian / *Statistics of Private Generation*

Bilangan Lesen Penjanaaan Persendirian (No. Private Generation Licences)	Kapasiti Janakuasa Mengikut Jenis Loji (MW) (Generation Plant Mix (MW))						Penjanaaan (Gwj) (Generation (Gwh))
	Hidro (Hydro)	Gas (Gas)	Disel (Diesel)	Biomass (Biomass)	Lain-lain (Others)	Jumlah (Total)	
767	0	8	622	32	170	832	750

- Statistik Dan Maklumat Lain Yang Penting Untuk Industri Bekalan Elektrik  
*Other Important Statistics and Information of the Electricity Supply Industry*



[www.st.gov.my](http://www.st.gov.my)



## Statistik Gangguan Bekalan Pada Sistem Bekalan Elektrik TNB / *Statistics of Supply Interruptions in TNB's Supply System*

Bil (No)	Jenis Gangguan <i>Type of Interruption</i>	Bilangan Gangguan <i>No. of Interruptions</i>						Tempoh (Jam) <i>Duration (H)</i>						Peratus (Mengikut Bilangan) (%) <i>Percentage (Based on Number) (%)</i>					
		1997	1998	1999	2000	2001	2002	1997	1998	1999	2000	2001	2002	1997	1998	1999	2000	2001	2002
(1)	Gangguan Tidak Berjadual Sistem Pengagihan <i>Unscheduled Interruptions on Distribution System</i>	108,445	84,161	37,625	48,486	36,047	24,896	176,984	174,054	84,155	100,878	93,196	48,267	87.36	86.64	85.81	88.62	87.06	90.21
(2)	Gangguan Tidak Berjadual Sistem Penghantaran <i>Unscheduled Interruptions on Transmission System</i>	126	163	136	80	84	64	278	296	324	220	197	157	0.10	0.17	0.31	0.15	0.21	0.23
(3)	Gangguan Berjadual <i>Scheduled Interruptions</i>	15,560	12,817	6,085	6,149	5,272	2,637	81,275	70,047	36,256	31,230	21,820	8,793	12.54	13.19	13.88	11.23	12.73	9.56
	<b>Jumlah</b> <i>Total</i>	<b>124,131</b>	<b>97,141</b>	<b>43,846</b>	<b>54,715</b>	<b>41,403</b>	<b>27,597</b>	<b>258,537</b>	<b>244,397</b>	<b>120,735</b>	<b>132,328</b>	<b>115,213</b>	<b>57,217</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

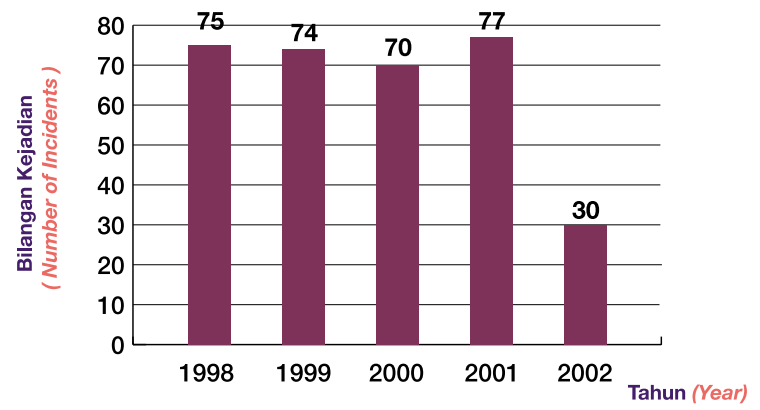
## Statistik Gangguan Bekalan Pada Sistem Bekalan SESB / *Statistics of Supply Interruptions in SESB's Supply System*

Bil (No)	Jenis Gangguan <i>Type of Interruption</i>	Bilangan Gangguan <i>No. of Interruptions</i>				Tempoh (Jam) <i>Duration (Hour)</i>			
		1999	2000	2001	2002	1999	2000	2001	2002
(1)	Gangguan Tidak Berjadual <i>Unscheduled Interruptions</i>	10,540	9,167	9,214	8,423	16,274	11,216	13,183	11,568
(2)	Gangguan Berjadual <i>Scheduled Interruptions</i>	1,286	1,194	1,228	1,034	4,316	3,596	3,613	3,122
	<b>Jumlah</b> <i>Total</i>	<b>11,826</b>	<b>10,361</b>	<b>10,442</b>	<b>9,457</b>	<b>20,590</b>	<b>14,812</b>	<b>16,796</b>	<b>14,690</b>

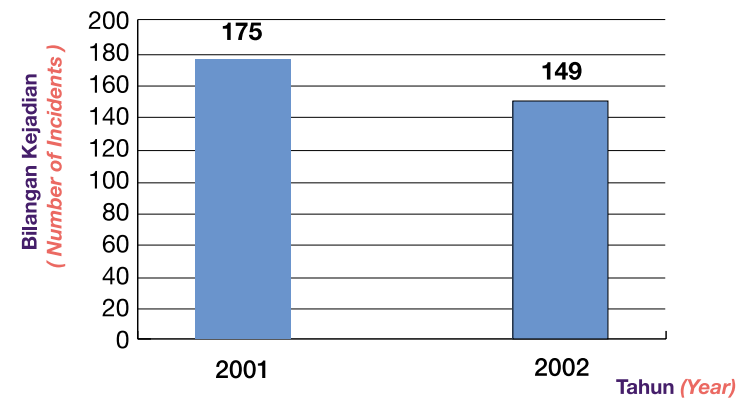
## Statistik Aduan Pengguna Yang Diterima / *Statistics of Consumer Complaints Received*

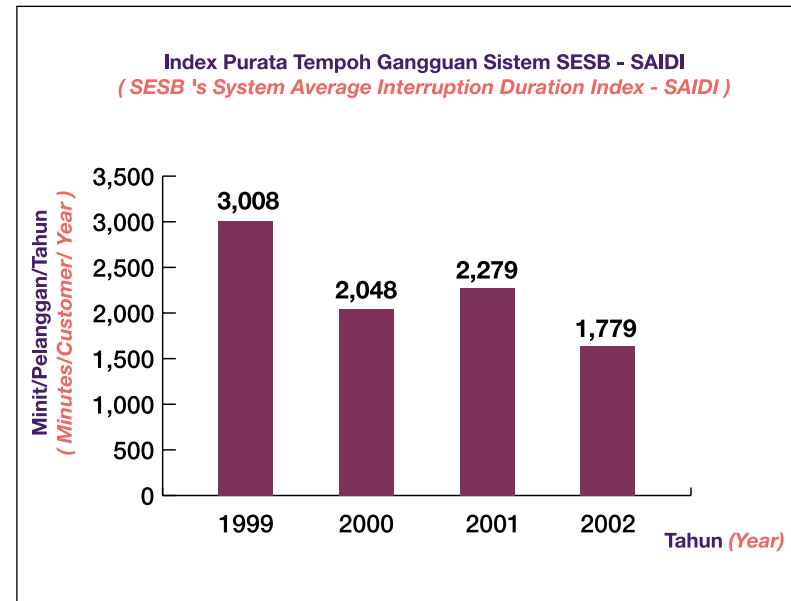
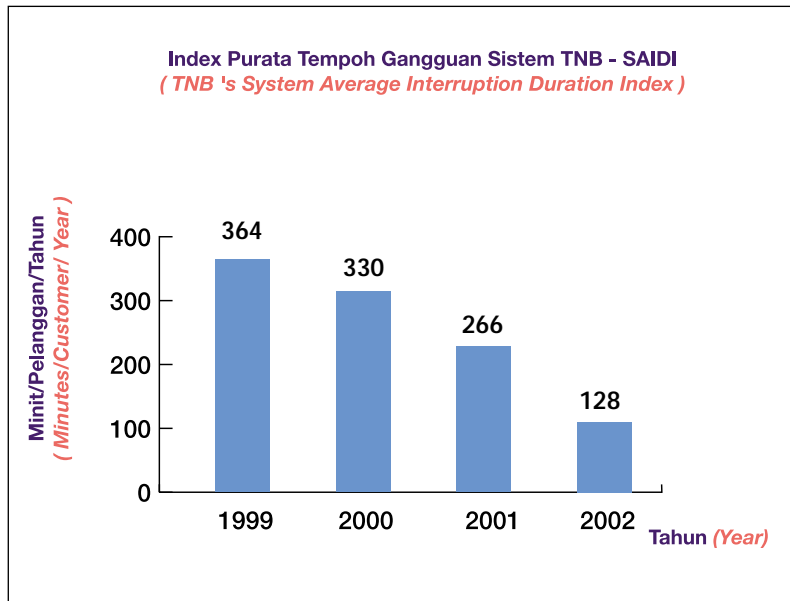
Bil No.	Jenis Aduan (Type of Complaints)	Bilangan Aduan (No. of Complaints)					
		1997	1998	1999	2000	2001	2002
1.	Gangguan Bekalan Elektrik ( <i>Supply Interruptions</i> )	67	33	32	42	10	13
2.	Bil Elektrik ( <i>Electricity Bill</i> )	13	2	49	5	16	6
3.	Tarif ( <i>Tariff</i> )	4	-	7	5	2	0
4.	Caj Sambungan/Caj Lain-Lain ( <i>Connection Charge/Other Charges</i> )	6	6	9	6	10	7
5.	Perkhidmatan Pengguna ( <i>Consumer Services</i> )	5	1	7	6	6	2
6.	Kualiti Bekalan Elektrik ( <i>Quality of Electrical Supply</i> )	7	7	11	8	1	2
7.	Permohonan/Pemotongan Bekalan Elektrik ( <i>Applications/Disconnections of Electricity Supply</i> )	21	15	23	12	9	6
8.	Hal-Hal Lain Berkenaan Dengan TNB ( <i>Other Issues Concerning TNB</i> )	46	11	11	10	11	8
9.	Kerosakan Pemasangan TNB Disebabkan Oleh Pihak Ketiga ( <i>TNB's Installations Damaged by Third Party</i> )	15	5	8	5	1	1
10.	Kontraktor ( <i>Contractors</i> )	3	4	4	6	1	-
11.	Orang Kompeten ( <i>Competent Persons</i> )	3	3	3	3	3	-
12.	Pengurus/Pemilik Pemasangan ( <i>Manager/Owner of Installations</i> )	9	1	1	1	6	-
13.	Peralatan Elektrik ( <i>Electrical Equipment</i> )	6	0	0	4	-	-
14.	Kecurian Elektrik ( <i>Dishonest Use of Electricity</i> )	-	6	-	-	-	-
15.	Lain-Lain ( <i>Others</i> )	22	24	9	17	11	2
	<b>Jumlah (Total)</b>	<b>227</b>	<b>118</b>	<b>174</b>	<b>130</b>	<b>87</b>	<b>47</b>

**Kejadian Voltan Luarbiasa Yang Dilaporkan**  
*(Incidents of Voltage Violation Reported)*

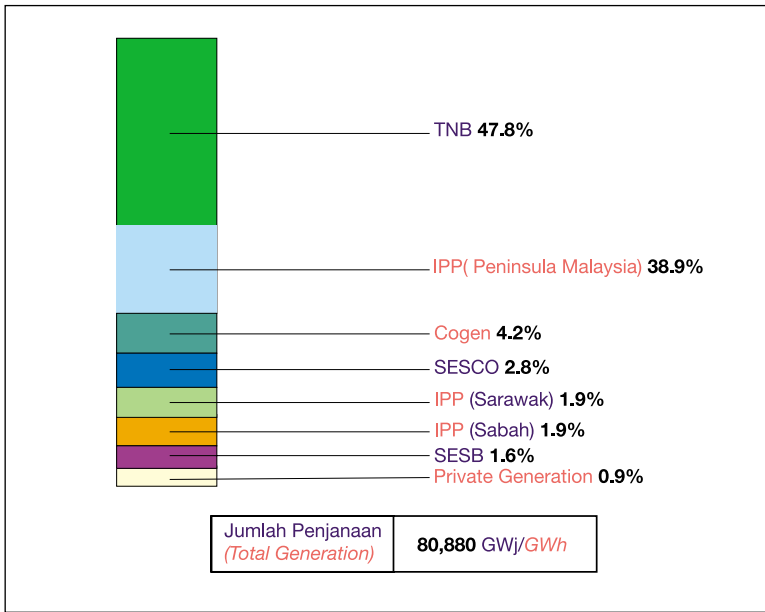


**Kejadian Voltage Dips Yang Dilaporkan Di Kawasan Perindustrian, Semenanjung Malaysia**  
*(Incidents of Reported Voltage Dips in Industrial Areas, Peninsular Malaysia)*

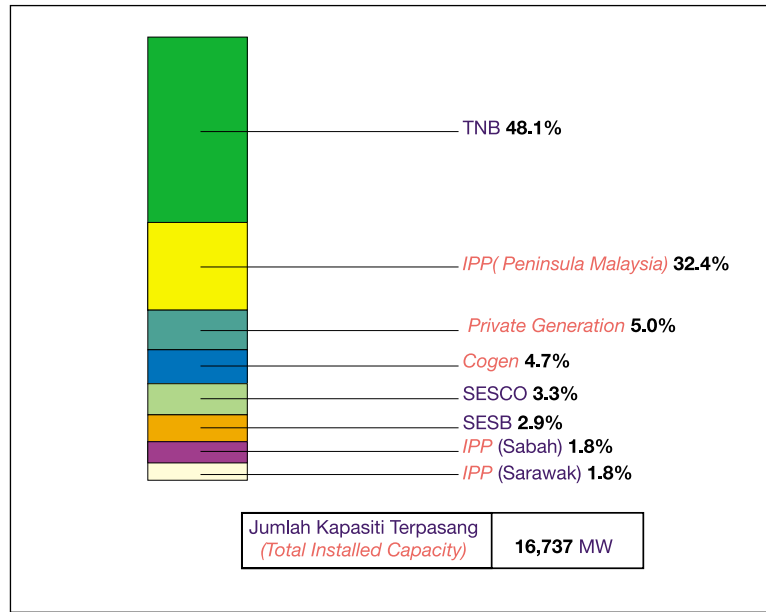




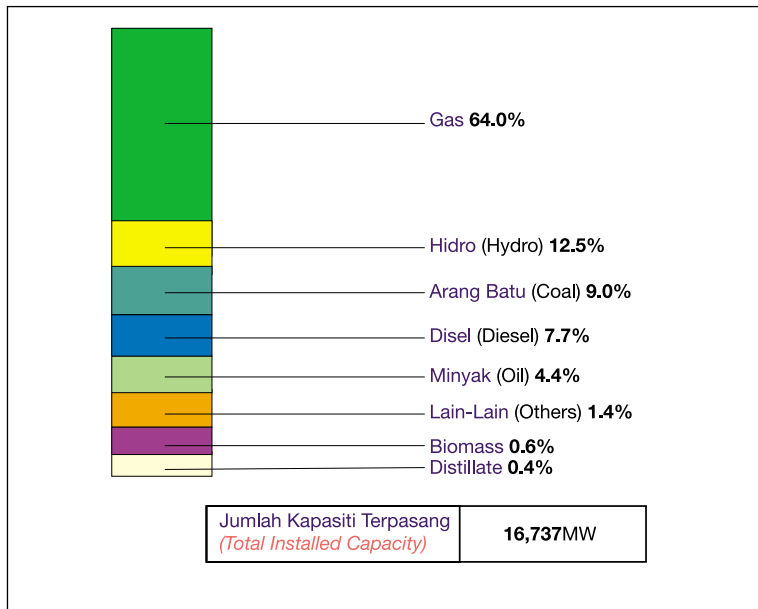
**TENAGA PENJANAAN OLEH PENJANA - PENJANA BESAR DI MALAYSIA**  
**SHARE OF ENERGY GENERATION BY MAJOR POWER PRODUCERS IN MALAYSIA**



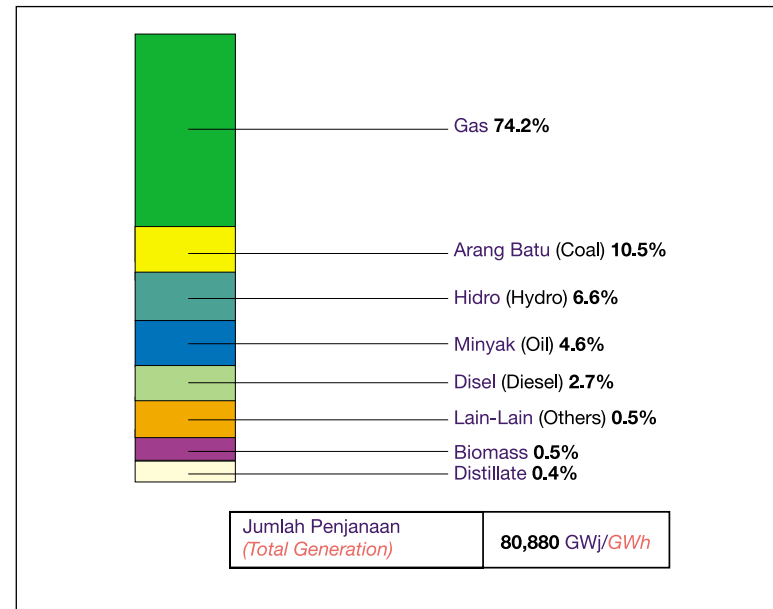
**CAMPURAN KAPASITI TERPASANG OLEH PENJANA - PENJANA BESAR DI MALAYSIA**  
**SHARE OF INSTALLED CAPACITY BY MAJOR POWER PRODUCERS IN MALAYSIA**



**CAMPURAN KAPASITI TERPASANG MENGIKUT JENIS LOJI  
PENJANAAN DI MALAYSIA**  
*GENERATION PLANT MIX IN MALAYSIA*



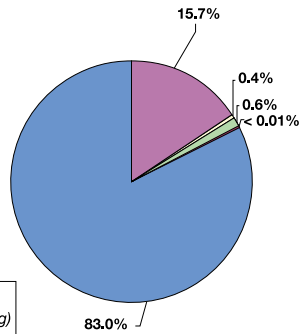
**TENAGA PENJANAAN MENGIKUT SUMBER BAHANAPI DI MALAYSIA**  
*ENERGY GENERATION ACCORDING TO FUEL MIX IN MALAYSIA*



**Kategori Pengguna Elektrik TNB, SESB dan SESCO**  
*(Electricity Consumers of TNB, SESB and SESCO According to Categories)*

Jumlah Pengguna Elektrik  
*(Total Number of Electricity Consumers)* : 6,158,000

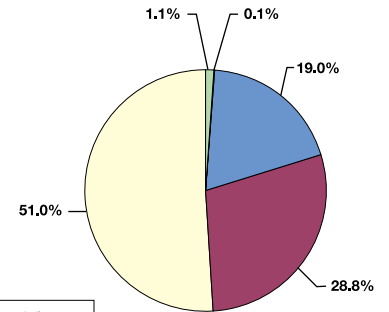
- Domestik (*Domestic*)
- Industri (*Industry*)
- Perombongan (*Mining*)
- Komersial (*Commercial*)
- Lampu Awam (*Public Lighting*)



**Jualan Tenaga TNB, SESB dan SESCO Mengikut Sektor**  
*(Sales of Electricity of TNB, SESB and SESCO According to Sectors)*

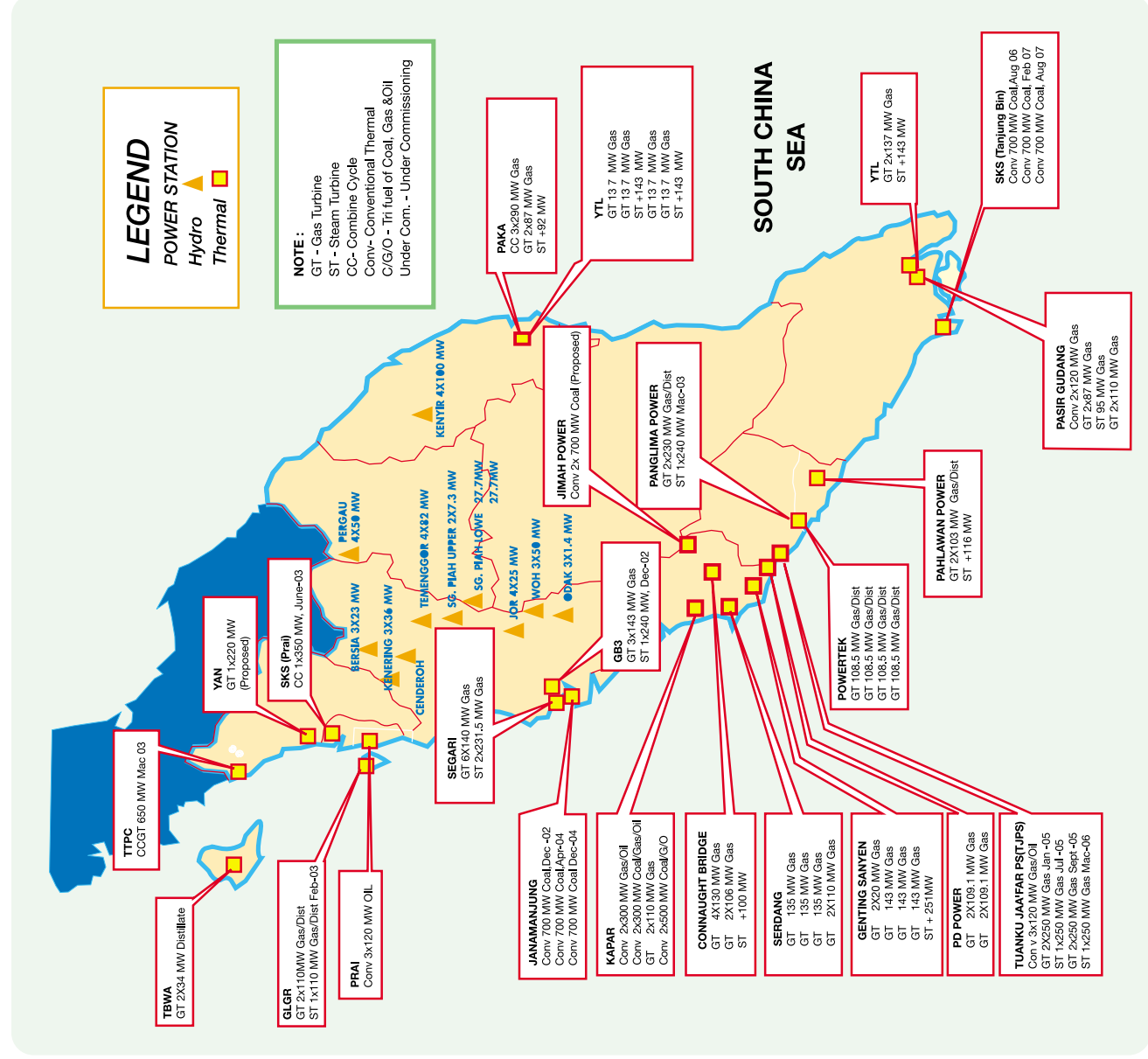
Jumlah Penggunaan Tenaga  
*(Total Electricity Consumption)* : 69,670 GWJ/GWh

- Domestik (*Domestic*)
- Industri (*Industry*)
- Perombongan (*Mining*)
- Komersial (*Commercial*)
- Lampu Awam (*Public Lighting*)



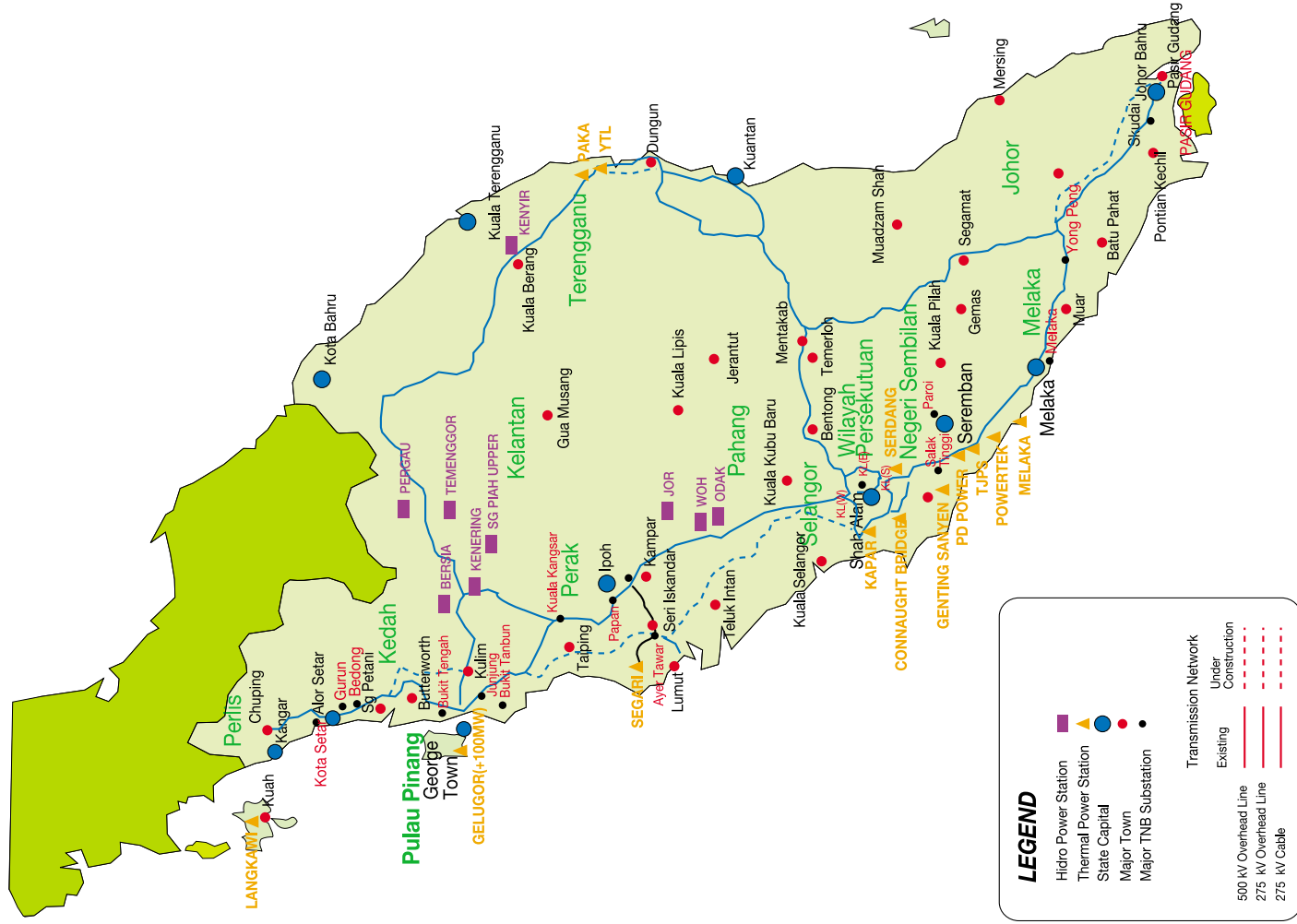
# STESEN JANAKUASA UTAMA DI SEMENANJUNG MALAYSIA

## MAJOR GENERATION STATIONS IN PENINSULAR MALAYSIA

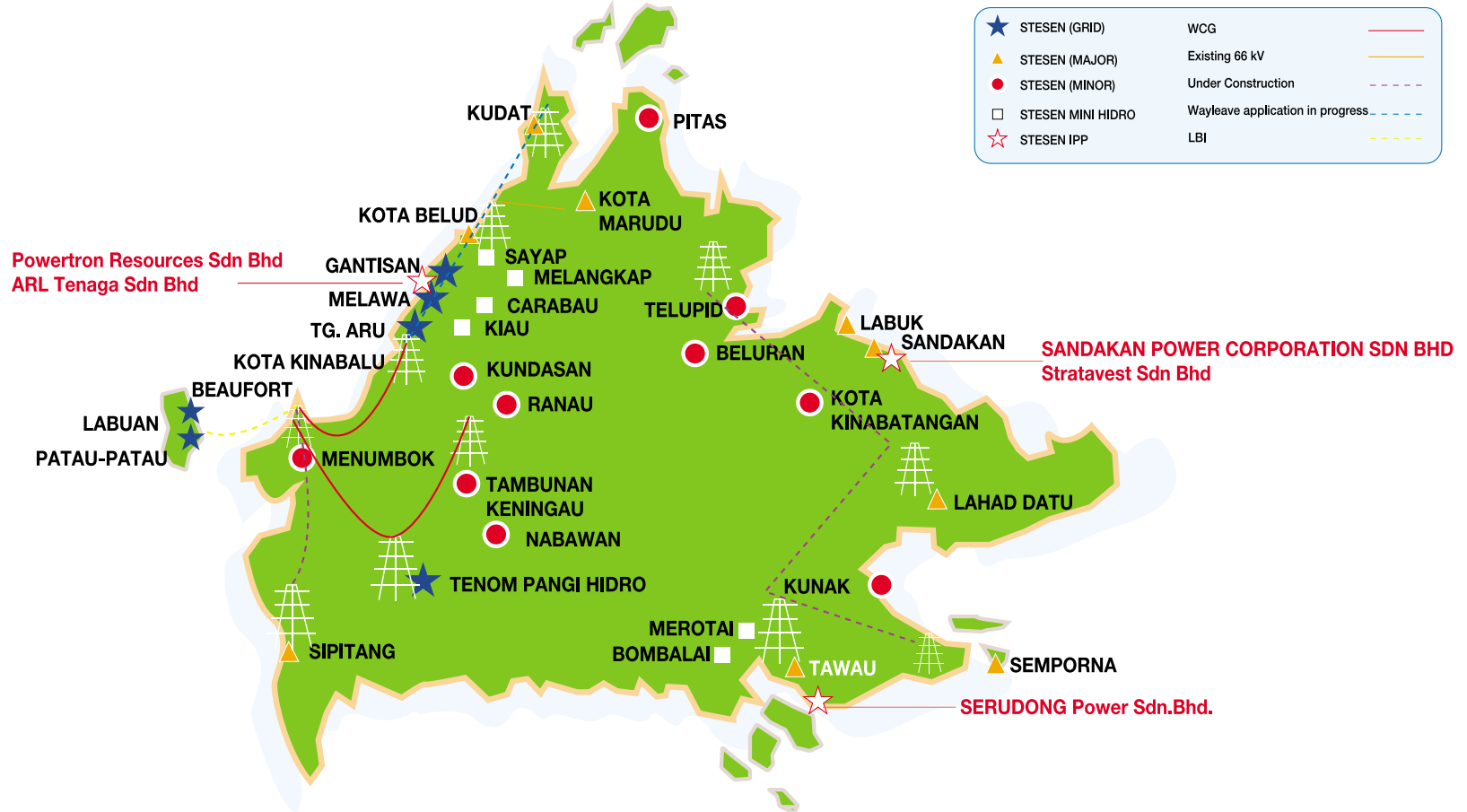




## STESEN GRID DI SEMENANJUNG MALAYSIA GRID SYSTEM IN PENINSULAR MALAYSIA

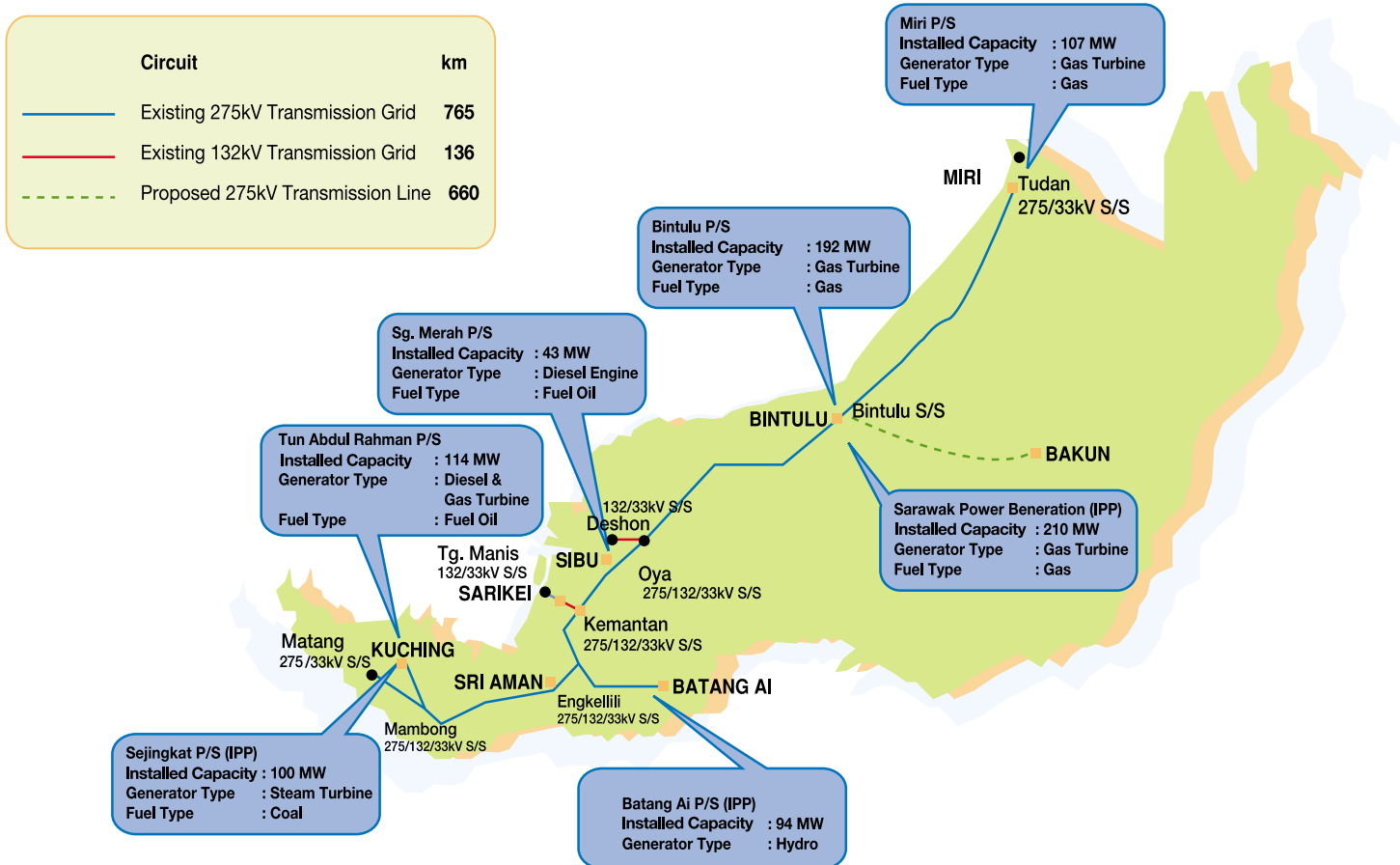


## STESEN GRID DAN SISTEM JANAKUASA UTAMA DI SABAH GRID SYSTEM AND MAJOR GENERATION STATIONS IN SABAH



# STESEN GRID DAN SISTEM JANAKUASA UTAMA DI SARAWAK

## GRID SYSTEM AND MAJOR GENERATION STATIONS IN SARAWAK





Alamat Perhubungan  
*Key Contacts*



[www.st.gov.my](http://www.st.gov.my)

## KEY CONTACTS

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Fax : 03-6201 2337

#### MINISTRY OF FINANCE

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Federal Government Administrative Centre  
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Fax : 03-8882 3893

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#### MINISTRY OF ENTREPRENEUR DEVELOPMENT

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#### ENERGY COMMISSION

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46050 Petaling Jaya  
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**SARAWAK ELECTRICITY SUPPLY CORPORATION**

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Fax : 082-444 433

**SABAH ELECTRICITY SDN. BHD.**

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88673 Kota Kinabalu  
Sabah  
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Fax : 088-223 320

**PORT DICKSON POWER BHD.**

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50200 Kuala Lumpur  
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Fax : 03-2732 0560

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Fax : 03-2263 3322

## KEY CONTACTS UTILITIES AND MAJOR POWER PRODUCERS

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### MUSTEQ HYDRO SDN. BHD

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Selangor  
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Fax : 03-5632 2466

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Fax : 03-2072 3600

### POWERTRON RESOURCES SDN. BHD

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59100 Kuala Lumpur  
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Fax : 03-2282 0763

### STRATAVEST SDN. BHD.

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Selangor  
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Fax : 03-7805 4793

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Fax : 03-5512 2408

### NUR GENERATION SDN. BHD.

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Fax : 03-2026 4373

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Fax : 088-267517

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No. 17, Jalan Yong Shook Lin  
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Fax : 03-7625 6900

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## KEY CONTACTS

### UTILITIES AND MAJOR POWER PRODUCERS

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33300 Gerik, Perak  
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Fax : 05-791 1315

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Fax : 03-2381 6677

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Fax : 03-5518 5264

#### **PRAI POWER SDN. BHD.**

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#### **SKS VENTURES SDN. BHD**

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Fax : 03-2300 2309