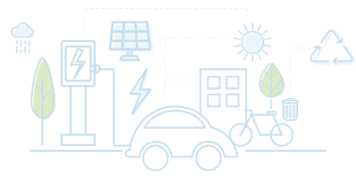




MALAYSIA
ENERGY STATISTICS
HANDBOOK
2022



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2022



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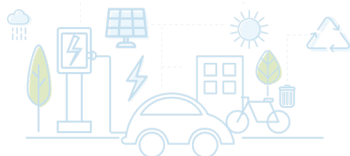


TABLE OF CONTENTS

ENERGY RESOURCES

Resources of Crude Oil and Condensates	10
Resources of Natural Gas	11
Resources of Coal as of 31 st December 2020	12
Installed Capacity as of 31 st December 2020	13
Available Capacity as of 31 st December 2020	14

KEY ECONOMIC AND ENERGY DATA

Key Economic and Energy Data	16
Key Economic and Energy Data by Region	17

ENERGY SUPPLY

Primary Production by Fuel Type	22
Import and Export of Crude Oil	24
Import and Export of Petroleum Products	26
Import and Export of Piped Natural Gas and Liquefied Natural Gas (LNG)	28
Import and Export of Coal and Coke	30
Total Primary Energy Supply by Fuel Type	32

ENERGY TRANSFORMATION

Fuel Input to Power Stations	36
Electricity Generation by Plant Type	38
Electricity Generation Mix	40
Input of Crude Oil in Refineries	42
Production of Petroleum Products from Refineries	44
Conversion in Gas Plants	46

ENERGY CONSUMPTION

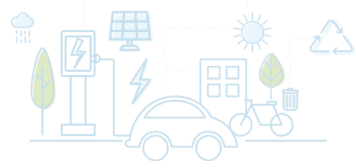
Final Energy Consumption by Fuel Type	50
Final Energy Consumption for Petroleum Products	52
Final Energy Consumption by Sector	54

ENERGY BALANCES

Energy Balance Table for 2020	58
Energy Flow Chart 2020	60

ENERGY INDICATORS

Average Annual Growth Rate	64
Per Capita	65
Energy Intensity	66
Energy Elasticity	67
Final Energy Consumption per Capita in ASEAN	68
Final Energy Intensity in ASEAN	70



ENERGY PRICES

Ex-Singapore Prices of Major Petroleum Products	72
Annual Liquefied Petroleum Gas (LPG) Contract Prices-Arab Gulf	73
Average Annual Prices of Natural Gas in Malaysia	74
Official Selling Prices of Malaysian Crude Oil	75
Average Selling Prices of TNB, SESB and SEB	77

ELECTRICITY SUPPLY PERFORMANCE

Number of Customers of TNB, SESB and SEB	80
Transmission System Capacity of TNB, SESB and SEB	81
Distribution System Capacity of TNB, SESB and SEB	82
Performance Highlights of TNB, SESB and SEB	83
Revenue, Asset Size, Employment and Annual Investment for TNB and SESB	84
Number of Electricity Supply Interruptions	85
Performance of Distribution System in Peninsular Malaysia	86
System Average Interruption Duration Index (SAIDI) by State in Peninsular Malaysia	86
System Average Interruption Frequency Index (SAIFI) by State in Peninsular Malaysia	87
Customer Average Interruption Duration Index (CAIDI) by State in Peninsular Malaysia	87
Performance of Distribution System in Sabah	88
Performance of Distribution System in Sarawak	88

PIPED GAS SUPPLY PERFORMANCE

Number of Natural Gas Customers by Sector	90
Natural Gas Consumption by Sector	91
Natural Gas Pipe Length	91
Performance Highlights	92
Number of Supply Interruptions in Peninsular Malaysia and Sabah	92
SAIDI, SAIFI & CAIDI, Network Integrity and Customer Service	93
Industrial Sales Volume by Industry Grouping	94

NOTES ON ENERGY BALANCE

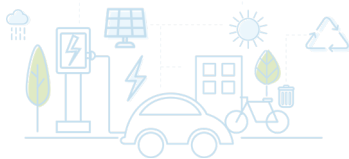
Notes on Energy Balance	96
Notes on Electricity	97
Notes on Coal	98
Conversion Coefficients and Equivalence	98
Conversion Coefficients for Crude Oil and Petroleum Products	99
Definition	100

ENERGY COMMISSION CONTACT INFORMATION

102

NOTES

103



PREFACE

The Energy Commission was established on the 1st of May 2001, under the Energy Commission Act 2001 and it became fully operational in January 2002. Our core function is to regulate electricity and piped gas supply in Peninsular Malaysia and the Federal Territory of Labuan, delicately balancing the priorities of energy providers and the needs of consumers. We are committed to ensuring reliable, safe and cost effective supply of electricity and piped gas to all of our consumers. On top of that, we are also responsible as being the hub for energy data and the focal point for matters related to energy data in Malaysia.

The Malaysia Energy Statistics Handbook is a pocket sized guide that displays the national key energy data. Our database is updated annually, and this handbook is published and distributed annually. The information in this handbook is also available in the MEIH (Malaysia Energy Information Hub) website (<https://meih.st.gov.my>) as well as in the 'MyEnergyStats' mobile application.

This handbook comprises of 10 main sections, whereby each section contains graphs and charts for users to visualize the energy trend and provides an overview of national energy supply and demand. This handbook displays data on Energy Supply, Energy Transformation, Energy Consumption, Energy Prices, Energy Indicators and Electricity and Piped Gas Performance.

The information presented in this handbook is a supplement to the following publications:

- i. National Energy Balance 2020, and
- ii. Performance and Statistical Information on the Malaysia Electricity Supply Industry 2021

Inquiries about figures and graphs in this handbook can be addressed to:

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ENERGY RESOURCES



RESOURCES OF CRUDE OIL AND CONDENSATES

Unit: Billion Barrels

YEAR	RESOURCES OF CRUDE OIL AND CONDENSATES BY REGION			
	PENINSULAR MALAYSIA	SARAWAK	SABAH	TOTAL
1990	2.943	0.000	0.000	2.943
1991	3.045	0.000	0.000	3.045
1992	3.743	0.604	1.267	5.614
1993	4.279	0.631	1.205	6.115
1994	2.500	0.600	1.200	4.300
1995	2.455	0.590	1.067	4.112
1996	2.500	0.600	0.900	4.000
1997	2.700	0.470	0.680	3.850
1998	2.440	0.580	0.860	3.880
1999	2.080	0.510	0.830	3.420
2000	1.920	0.620	0.850	3.390
2001	1.920	0.620	0.850	3.390
2002	2.110	0.780	1.340	4.230
2003	2.040	1.210	1.300	4.550
2004	1.980	1.430	1.420	4.830
2005	1.770	1.970	1.560	5.300
2006	1.791	2.129	1.334	5.254
2007	1.452	1.975	0.889	4.316
2008	1.719	2.424	1.315	5.458
2009	1.781	2.348	1.388	5.517
2010	2.061	2.376	1.362	5.799
2011	2.374	1.992	1.492	5.858
2012	2.413	1.941	1.600	5.954
2013	2.335	1.923	1.592	5.850
2014	2.341	1.855	1.566	5.762
2015	2.205	2.009	1.693	5.907
2016	1.735	1.925	1.370	5.030
2017	1.669	1.767	1.290	4.726
2018	1.612	1.637	1.304	4.553
2019	1.476	1.497	1.702	4.675
2020	1.306	1.451	1.770	4.527

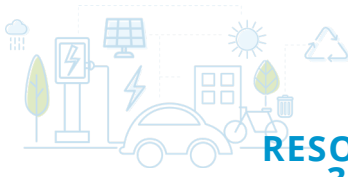
Source: PETRONAS

RESOURCES OF NATURAL GAS

Unit: Trillion Standard Cubic Feet (TSCF)

YEAR	RESOURCES OF NATURAL GAS BY REGION									
	PENINSULAR			SABAH			SARAWAK			GRAND TOTAL
	NON ASSOCIATED	ASSOCIATED	TOTAL	NON ASSOCIATED	ASSOCIATED	TOTAL	NON ASSOCIATED	ASSOCIATED	TOTAL	
1990	21.350	6.080	27.430	1.320	1.030	2.350	23.840	3.310	27.150	
1991	21.320	6.200	27.520	1.380	0.980	2.360	25.770	3.400	29.170	59.050
1992	22.500	6.700	29.200	1.800	1.100	2.900	31.900	3.800	35.700	67.800
1993	23.900	7.800	31.700	3.000	1.700	4.700	36.600	3.800	40.400	76.800
1994	26.600	7.900	34.500	2.900	1.200	4.100	37.900	4.200	42.100	80.700
1995	28.000	8.200	36.200	6.000	1.300	7.300	37.000	4.200	41.200	84.700
1996	28.300	8.300	36.600	4.900	1.200	6.100	33.200	4.300	37.500	80.200
1997	29.400	8.900	38.300	4.800	1.200	6.000	32.500	3.000	35.500	79.800
1998	27.700	8.900	36.600	4.900	1.200	6.100	40.600	3.700	44.300	87.000
1999	25.900	8.500	34.400	6.600	1.100	7.700	39.900	3.800	43.700	85.800
2000	25.300	8.400	33.700	6.700	1.300	8.000	37.400	3.400	40.800	82.500
2001	25.300	8.400	33.700	6.700	1.300	8.000	37.400	3.400	40.800	82.500
2002	24.900	8.400	33.300	6.800	1.200	8.000	42.600	3.400	46.000	87.300
2003	23.900	8.500	32.400	8.100	1.800	9.900	42.700	4.000	46.700	89.000
2004	21.740	9.520	31.260	7.750	1.880	9.630	42.750	3.380	46.130	87.020
2005	21.590	9.200	30.790	8.230	2.500	10.730	40.540	3.130	43.670	85.190
2006	23.170	9.650	32.820	8.210	2.750	10.960	41.240	2.930	44.170	87.950
2007	24.030	9.440	33.470	8.461	3.137	11.598	40.850	3.008	43.858	88.926
2008	24.190	9.269	33.459	9.132	3.584	12.716	38.974	2.861	41.835	88.010
2009	24.079	9.153	33.232	8.578	3.523	12.101	39.727	2.908	42.635	87.968
2010	25.139	9.280	34.419	8.681	3.787	12.468	39.187	2.513	41.700	88.587
2011	25.337	9.797	35.134	8.638	3.327	11.965	39.856	3.033	42.889	89.988
2012	26.144	9.594	35.738	9.801	3.502	13.303	39.901	3.180	43.081	92.122
2013	25.649	9.325	34.974	9.454	3.764	13.218	46.798	3.330	50.128	98.320
2014	25.242	9.688	34.930	10.029	3.724	13.753	48.955	3.024	51.979	100.662
2015	24.022	8.471	32.493	11.884	3.149	15.033	50.034	2.853	52.887	100.413
2016	20.428	6.793	27.221	10.915	2.521	13.436	45.336	1.770	47.106	87.763
2017	19.327	6.333	25.660	11.060	1.487	12.547	43.184	1.508	44.692	82.899
2018	17.266	6.422	23.688	10.504	2.078	12.582	41.754	1.507	43.261	79.531
2019	15.219	6.428	21.647	9.611	2.054	11.665	44.436	1.419	45.855	79.167
2020	14.612	5.701	20.313	8.945	1.605	10.550	43.248	1.151	44.399	75.262

Source: PETRONAS



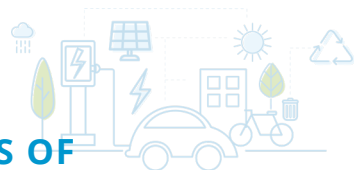
RESOURCES OF COAL AS OF 31ST DECEMBER 2020

Unit: Million Tonnes

LOCATION	RESOURCES	COAL TYPE
	MEASURED	
SARAWAK		
1. Abok & Silantek, Sri Aman	7.25	Coking Coal, Semi-Anthracite and Anthracite
2. Merit-Pila, Kapit	168.89	Sub-Bituminous
3. Bintulu	6.00	Bituminous (partly coking coal)
4. Mukah - Balingian	84.15	Lignite, Hydrous Lignite and Sub-Bituminous
5. Tutoh Area	5.58	Sub-Bituminous
Total	271.87	

Source: Department of Mineral and Geosciences Malaysia

INSTALLED CAPACITY AS OF 31ST DECEMBER 2020

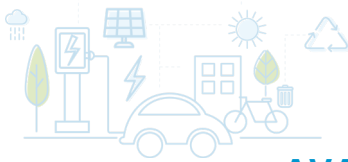


Unit: MW

		HYDRO	NATURAL GAS	COAL	DIESEL / MFO	BIOMASS	SOLAR	BIOGAS	OTHERS	TOTAL
PENINSULAR MALAYSIA	TNB	2,555.1	1,973.0	0.0	0.0	0.0	0.0	0.0	0.0	4,528.1
	IPPs	20.0	8,064.4	12,180.0	0.0	0.0	0.0	0.0	0.0	20,264.4
	Co-Generation	0.0	836.5	0.0	0.0	5.6	0.0	0.0	20.9	863.0
	Self-Generation	2.1	9.1	0.0	55.1	133.5	11.9	0.0	0.0	211.7
	FiT	63.8	0.0	0.0	0.0	44.9	288.3	101.0	0.0	498.0
	LSS	0.0	0.0	0.0	0.0	0.0	776.9	0.0	0.0	776.9
	NEM	0.0	0.0	0.0	0.0	0.0	227.5	0.0	0.0	227.5
	Subtotal	2,641.0	10,883.0	12,180.0	55.1	184.0	1,304.6	101.0	20.9	27,369.5
SABAH	SESB	81.1	112.0	0.0	236.4	0.0	29.9	0.0	0.0	459.3
	IPPs	0.0	1,012.6	0.0	0.0	0.0	0.0	0.0	0.0	1,012.6
	Co-Generation	0.0	65.0	0.0	0.0	36.7	0.0	0.0	0.0	101.7
	Self-Generation	0.0	4.4	0.0	124.6	113.9	0.0	4.6	0.0	247.5
	FiT	6.5	0.0	0.0	0.0	25.8	34.4	9.6	0.0	76.3
	LSS	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	50.0
	NEM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Subtotal	87.6	1,194.1	0.0	361.0	176.4	114.3	14.2	0.0	1,947.5
SARAWAK	SEB	3,459.8	584.0	1,104.0	102.5	0.0	0.1	0.0	0.0	5,250.4
	Co-Generation	0.0	397.0	0.0	0.0	0.0	0.0	0.0	0.0	397.0
	Self-Generation	0.0	0.0	0.0	14.7	52.2	0.0	0.5	5.1	72.5
	Subtotal	3,459.8	981.0	1,104.0	117.2	52.2	0.1	0.5	5.1	5,719.9
Total	6,188.4	13,058.1	13,284.0	533.3	412.6	1,418.9	115.7	26.0	35,036.9	
Share (%)	17.66%	37.27%	37.91%	1.52%	1.18%	4.05%	0.33%	0.07%	100%	

Notes: 1. Data exclude plants that are not in operation

Source: Energy Commission, Power Utilities and IPPs, SEDA Malaysia and Ministry Of Utility and Telecommunication Sarawak



AVAILABLE CAPACITY AS OF 31ST DECEMBER 2020

Unit: MW

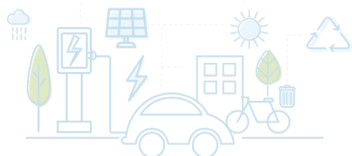
		HYDRO	NATURAL GAS	COAL	DIESEL / MFO	BIOMASS / BIOGAS	SOLAR	TOTAL
PENINSULAR MALAYSIA	TNB	2,532.0	1,970.0	0.0	0.0	0.0	0.0	4,502.0
	IPPs	0.0	7,922.0	12,054.0	0.0	0.0	0.0	19,976.0
	LSS	0.0	0.0	0.0	0.0	0.0	579.0	579.0
	Subtotal	2,532.0	9,892.0	12,054.0	0.0	0.0	579.0	25,058.0
SABAH	SESB	72.3	101.2	0.0	187.3	0.0	0.0	360.7
	IPPs	0.0	865.0	0.0	0.0	0.0	0.0	865.0
	FIT	6.5	0.0	0.0	0.0	35.4	34.4	76.3
	LSS	0.0	0.0	0.0	0.0	0.0	49.2	49.2
	Subtotal	78.8	966.2	0.0	187.3	35.4	83.6	1,351.2
SARAWAK	SEB	3,445.8	566.0	1,001.0	98.5	0.0	0.1	5,111.4
	Subtotal	3,445.8	566.0	1,001.0	98.5	0.0	0.1	5,111.4
Total		6,056.6	11,424.2	13,055.0	285.8	35.4	662.7	31,519.6
Share (%)		19.22%	36.24%	41.42%	0.91%	0.11%	2.10%	100%

- Notes: 1. Available Capacity for Peninsular Malaysia is based on Tested Annual Available Capacity (TAAC),
 2. Available Capacity for Sabah is based on Dependable Capacity
 3. Bakun hydro acquisition by SEB in Q3 2017

Source: Power Utilities and IPPs



KEY ECONOMIC AND ENERGY DATA

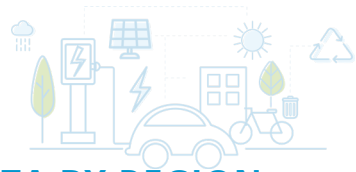


KEY ECONOMIC AND ENERGY DATA

	2020				
	Q1	Q2	Q3	Q4	Total
GDP at Current Prices (RM million)*	367,722	302,348	368,633	379,297	1,418,000
GDP at 2015 Prices (RM million)*	344,788	290,090	351,926	358,340	1,345,144
GNI at current prices (RM million)*	360,611	298,554	358,358	371,957	1,389,480
Population ('000 people)**	32,569	32,584	32,602	32,620	32,584
Primary Energy Supply (ktoe)	24,724	20,580	24,321	24,569	94,194
Final Energy Consumption (ktoe)	15,921	11,884	14,617	14,746	57,169
Electricity Consumption (ktoe)	3,395	3,021	3,328	3,356	13,100
Electricity Consumption (GWh)	39,452	35,108	38,682	39,008	152,250
Per Capita					
GDP at Current Prices (RM) per Capita*	45,163	37,116	45,228	46,511	43,518
Primary Energy Supply (toe) per Capita	0.759	0.632	0.746	0.753	2.891
Final Energy Consumption (toe) per Capita	0.489	0.365	0.448	0.452	1.755
Electricity Consumption (kWh) per Capita	1,211	1,077	1,186	1,196	4,673
Energy Intensity					
Primary Energy Intensity (toe/GDP at 2015 prices (RM million))	71.71	70.94	69.11	68.56	70.03
Final Energy Intensity (toe/GDP at 2015 prices (RM million))	46.2	41	41.5	41.2	42.5
Electricity Intensity (toe/GDP at 2015 prices (RM million))	9.8	10.4	9.5	9.4	9.7
Electricity Intensity (GWh/GDP at 2015 prices (RM million))	0.114	0.121	0.11	0.109	0.113

Notes (*): Quarterly data from Department of Statistics Malaysia

(**): Mid-year population from Department of Statistics Malaysia

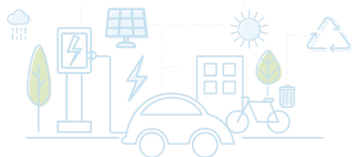


KEY ECONOMIC AND ENERGY DATA BY REGION

PENINSULAR MALAYSIA	2015	2016	2017	2018	2019	2020
GDP at Current Prices (RM million)*	975,581	1,038,585	1,131,602	1,193,460	1,255,700	1,188,837
GDP at 2015 Prices (RM million)*	975,581	1,020,869	1,080,017	1,138,500	1,193,928	1,132,257
Population ('000 people)**	24,669	24,995	25,303	25,593	25,713	26,480
Final Energy Consumption (ktoe)	43,011	45,872	46,520	47,446	48,085	41,313
Electricity Consumption (ktoe)	9,531	10,026	10,004	10,378	10,776	10,172
Electricity Consumption (GWh)	110,770	116,529	116,272	120,617	125,241	118,221
Per Capita						
GDP at Current Prices (RM) per Capita*	39,547	41,551	44,722	46,632	48,835	44,896
Final Energy Consumption (toe) per Capita	1.744	1.835	1.839	1.854	1.870	1.560
Electricity Consumption (kWh) per Capita	4,490	4,662	4,595	4,713	4,871	4,465
Energy Intensity						
Final Energy Intensity (toe/GDP at 2015 prices (RM million))	44.1	44.9	43.1	41.7	40.3	36.5
Electricity Intensity (toe/GDP at 2015 prices (RM million))	9.8	9.8	9.3	9.1	9.0	9.0
Electricity Intensity (GWh/GDP at 2015 prices (RM million))	0.114	0.114	0.108	0.106	0.105	0.104

Notes (*): 1. GDP data by State is from the Department of Statistics Malaysia
 2. GDP for Peninsular Malaysia includes Supra State (Supra State covers production activities that beyond the centre of predominant economic interest for any state)

(**): Mid-year population is from the Department of Statistics Malaysia

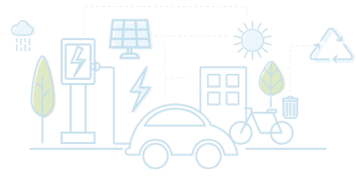


SABAH	2015	2016	2017	2018	2019	2020
GDP at Current Prices (RM million)*	79,775	86,924	101,904	108,053	106,773	91,928
GDP at 2015 prices (RM million)*	79,775	83,930	90,583	92,257	93,265	85,378
Population ('000 people)**	3,816	3,900	3,954	3,997	4,004	3,514
Final Energy Consumption (ktoe)	3,845	5,015	9,512	6,598	6,561	5,655
Electricity Consumption (ktoe)	499	487	477	484	514	505
Electricity Consumption (GWh)	5,805	5,665	5,545	5,630	5,974	5,869
Per Capita						
GDP at Current Prices (RM) per Capita*	20,908	22,291	25,776	27,031	26,669	26,161
Final Energy Consumption (toe) per Capita	1.008	1.286	2.406	1.651	1.639	1.609
Electricity Consumption (kWh) per Capita	1,521	1,453	1,402	1,408	1,492	1,670
Energy Intensity						
Final Energy Intensity (toe/GDP at 2015 prices (RM million))	48.19	59.75	105.01	71.52	70.35	66.24
Electricity Intensity (toe/GDP at 2015 prices (RM million))	6.26	5.81	5.27	5.25	5.51	5.91
Electricity Intensity (GWh/GDP at 2015 prices (RM million))	0.073	0.067	0.061	0.061	0.064	0.069

Notes (*): 1. GDP data by State is from the Department of Statistics Malaysia

2. GDP and population for Sabah includes WP Labuan

(**): Mid-year population is from the Department of Statistics Malaysia



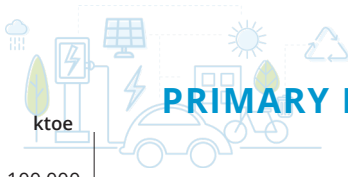
SARAWAK	2015	2016	2017	2018	2019	2020
GDP at Current Prices (RM million)*	121,585	124,189	138,804	146,246	150,265	137,235
GDP at 2015 prices (RM million)*	121,585	124,513	130,169	133,010	136,759	127,509
Population ('000 people)**	2,702	2,739	2,766	2,792	2,806	2,454
Final Energy Consumption (ktoe)	4,951	6,331	6,458	10,614	11,838	10,201
Electricity Consumption (ktoe)	1,344	1,878	2,126	2,290	2,356	2,423
Electricity Consumption (GWh)	15,624	21,831	24,703	26,618	27,382	28,161
Per Capita						
GDP at Current Prices (RM) per Capita*	45,007	45,464	47,055	47,645	48,738	51,966
Final Energy Consumption (toe) per Capita	1.833	2.312	2.335	3.802	4.219	4.157
Electricity Consumption (kWh) per Capita	5,784	7,971	8,930	9,535	9,758	11,477
Energy Intensity						
Final Energy Intensity (toe/GDP at 2015 prices (RM million))	40.72	50.85	49.61	79.80	86.56	80.00
Electricity Intensity (toe/GDP at 2015 prices (RM million))	11.06	15.09	16.33	17.22	17.23	19.00
Electricity Intensity (GWh/GDP at 2015 prices (RM million))	0.129	0.175	0.190	0.200	0.200	0.221

Note (*): GDP data by State is from the Department of Statistics Malaysia

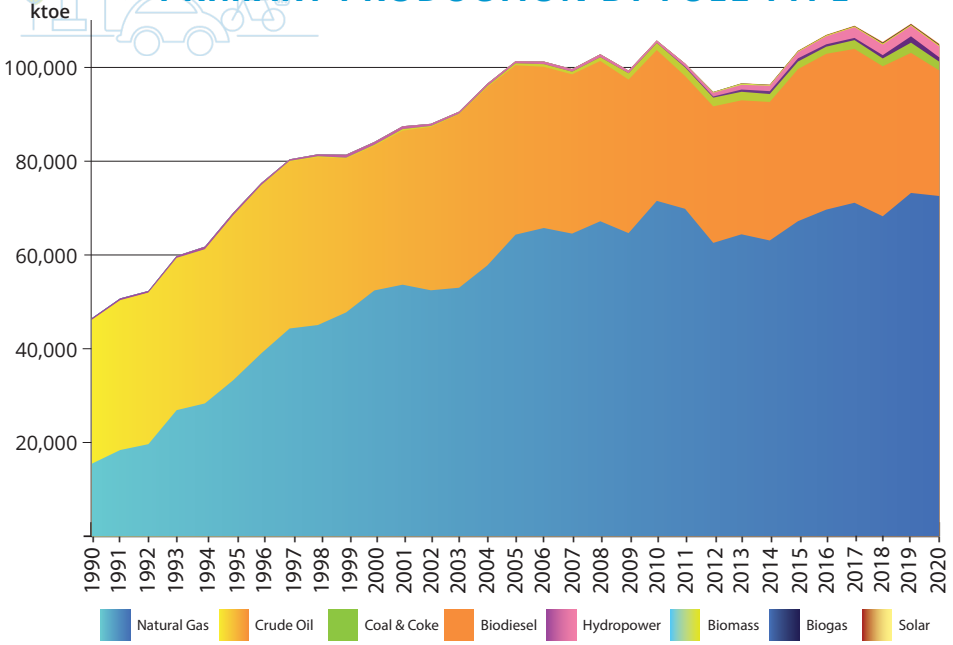
(**): Mid-year population is from the Department of Statistics Malaysia



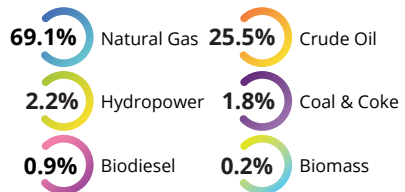
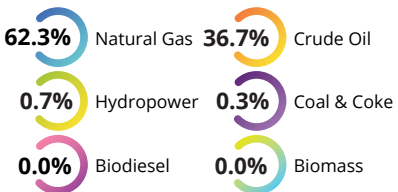
ENERGY SUPPLY

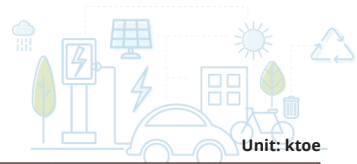


PRIMARY PRODUCTION BY FUEL TYPE

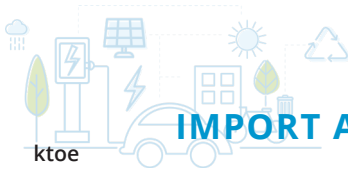


Source: National Energy Balance 2020



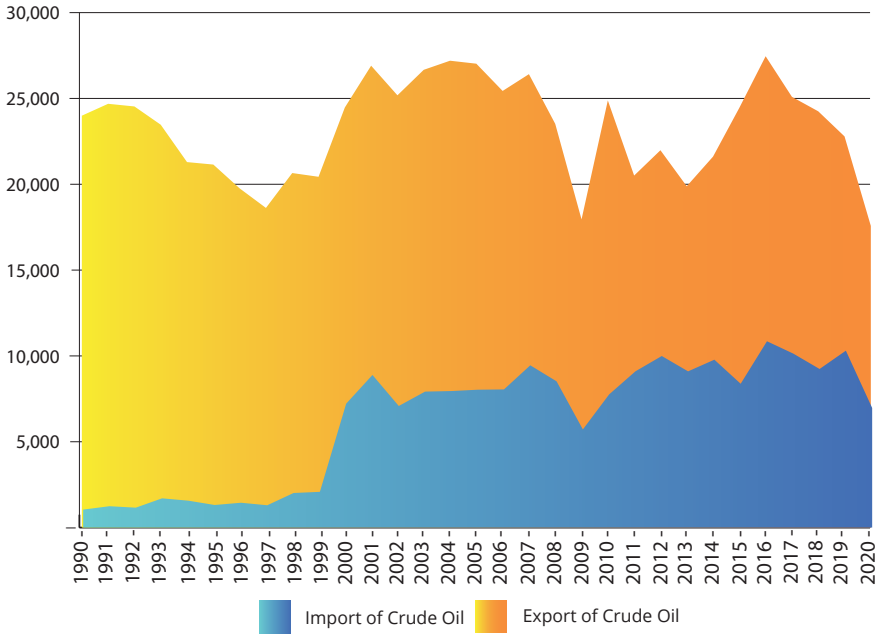


YEAR	PRIMARY PRODUCTION BY FUEL TYPE								
	Natural Gas	Crude Oil	Coal & Coke	Biodiesel	Hydropower	Biomass	Biogas	Solar	Total
1990	15,487	30,629	70	-	343	-	-	-	46,529
1991	18,390	31,843	126	-	379	-	-	-	50,738
1992	19,644	32,264	53	-	375	-	-	-	52,336
1993	26,898	32,218	264	-	419	-	-	-	59,799
1994	28,335	32,798	89	-	561	-	-	-	61,783
1995	33,268	35,090	85	-	535	-	-	-	68,978
1996	39,031	35,744	153	-	446	-	-	-	75,374
1997	44,318	35,600	153	-	333	-	-	-	80,404
1998	45,054	35,784	221	-	417	-	-	-	81,476
1999	47,746	32,835	174	-	647	-	-	-	81,402
2000	52,432	30,839	242	-	599	-	-	-	84,112
2001	53,659	32,851	344	-	607	-	-	-	87,461
2002	52,465	34,838	223	-	456	-	-	-	87,982
2003	53,010	37,026	107	-	435	-	-	-	90,578
2004	57,768	38,041	241	-	501	-	-	-	96,551
2005	64,337	36,127	430	-	446	-	-	-	101,340
2006	65,752	34,386	569	-	554	-	-	-	101,261
2007	64,559	33,967	576	-	558	-	-	-	99,660
2008	67,191	34,195	791	-	642	-	-	-	102,819
2009	64,661	32,747	1,348	-	574	-	-	-	99,330
2010	71,543	32,163	1,511	-	540	-	-	-	105,757
2011	69,849	28,325	1,838	176	656	-	-	-	100,844
2012	62,580	29,115	1,860	253	779	183	4	11	94,785
2013	64,406	28,576	1,824	480	1,003	297	6	38	96,630
2014	63,091	29,545	1,694	612	1,152	181	12	63	96,350
2015	67,209	32,440	1,614	684	1,346	189	18	75	103,575
2016	69,673	33,234	1,522	509	1,723	198	21	90	106,970
2017	71,140	32,807	1,884	467	2,287	194	41	93	108,913
2018	68,253	31,996	1,672	703	2,265	241	147	172	105,449
2019	73,230	29,878	2,181	1,351	2,251	204	118	128	109,341
2020	72,579	26,783	1,878	912	2,348	232	142	181	105,054



IMPORT AND EXPORT OF CRUDE OIL

ktoe

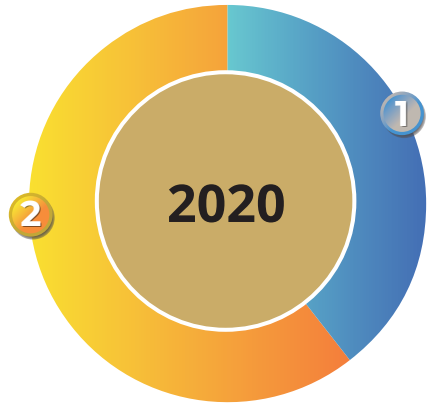


Source: National Energy Balance 2020



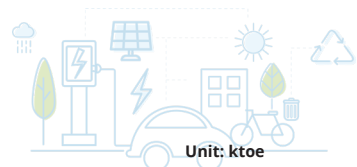
29.5% Import of Crude Oil

70.5% Export of Crude Oil

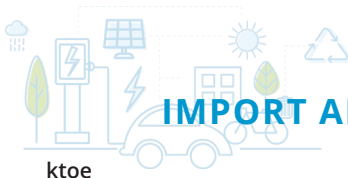


39.7% Import of Crude Oil

60.3% Export of Crude Oil

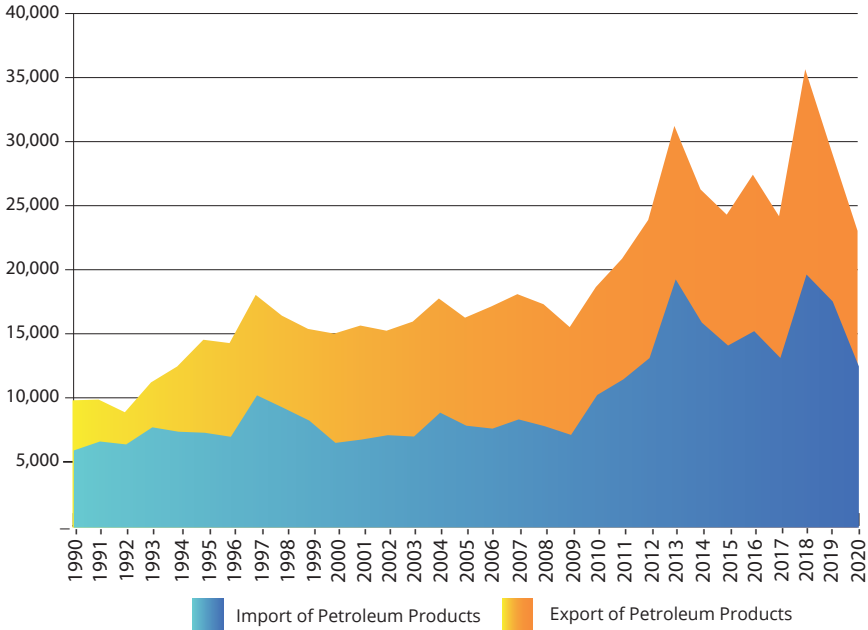


YEAR	IMPORT AND EXPORT OF CRUDE OIL	
	Import of Crude Oil	Export of Crude Oil
1990	1,047	22,949
1991	1,244	23,444
1992	1,159	23,374
1993	1,703	21,766
1994	1,566	19,726
1995	1,315	19,833
1996	1,446	18,315
1997	1,300	17,322
1998	2,014	18,640
1999	2,081	18,355
2000	7,218	17,254
2001	8,890	18,018
2002	7,083	18,100
2003	7,921	18,747
2004	7,953	19,245
2005	8,031	18,994
2006	8,048	17,389
2007	9,453	16,962
2008	8,519	15,001
2009	5,718	12,235
2010	7,760	17,125
2011	9,104	11,404
2012	9,995	11,988
2013	9,101	10,785
2014	9,780	11,831
2015	8,379	16,075
2016	10,854	16,605
2017	10,135	14,958
2018	9,239	15,012
2019	10,306	12,483
2020	6,969	10,604

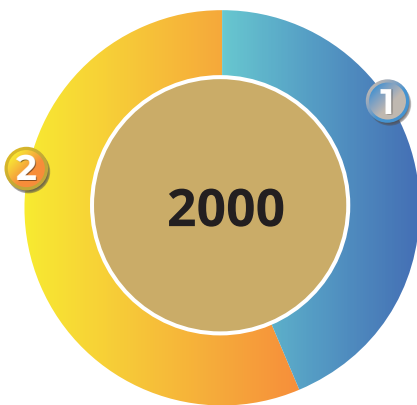


IMPORT AND EXPORT OF PETROLEUM PRODUCTS

ktoe

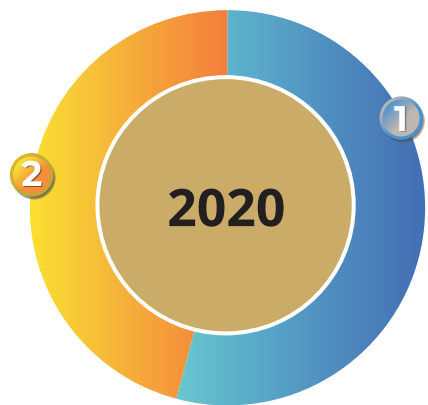


Source: National Energy Balance 2020



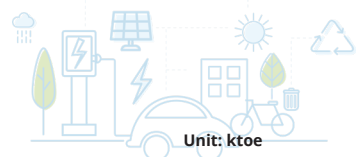
43.7% Import of Petroleum Products

56.3% Export of Petroleum Products



54.3% Import of Petroleum Products

45.7% Export of Petroleum Products

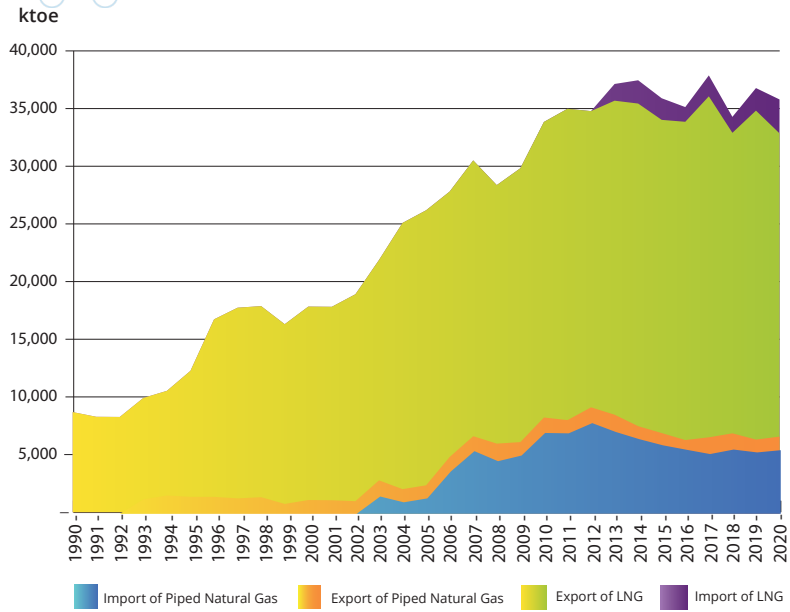


Unit: ktoe

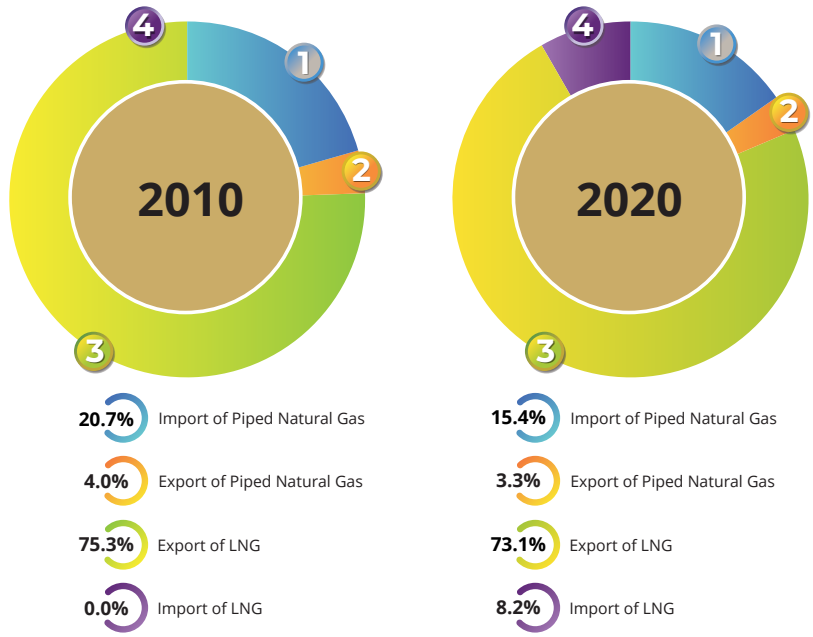
YEAR	IMPORT AND EXPORT OF PETROLEUM PRODUCTS	
	Import of Petroleum Products	Export of Petroleum Products
1990	6,031	3,913
1991	6,728	3,272
1992	6,499	2,513
1993	7,835	3,507
1994	7,492	5,094
1995	7,411	7,261
1996	7,095	7,317
1997	10,331	7,840
1998	9,360	7,194
1999	8,357	7,161
2000	6,619	8,533
2001	6,881	8,900
2002	7,220	8,158
2003	7,116	8,972
2004	8,980	8,912
2005	7,961	8,435
2006	7,734	9,535
2007	8,452	9,780
2008	7,376	9,527
2009	7,243	8,419
2010	10,359	8,431
2011	11,579	9,421
2012	13,243	10,785
2013	19,383	10,679
2014	16,009	10,399
2015	14,219	10,219
2016	15,342	12,214
2017	13,252	11,063
2018	19,763	16,028
2019	17,662	11,779
2020	12,586	10,590

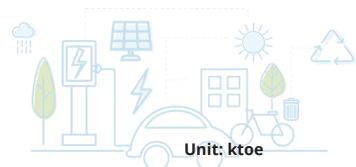


IMPORT AND EXPORT OF PIPED NATURAL GAS AND LIQUEFIED NATURAL GAS (LNG)



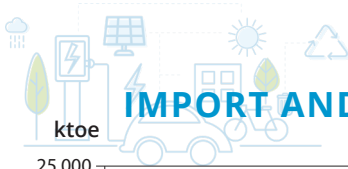
Source: National Energy Balance 2020



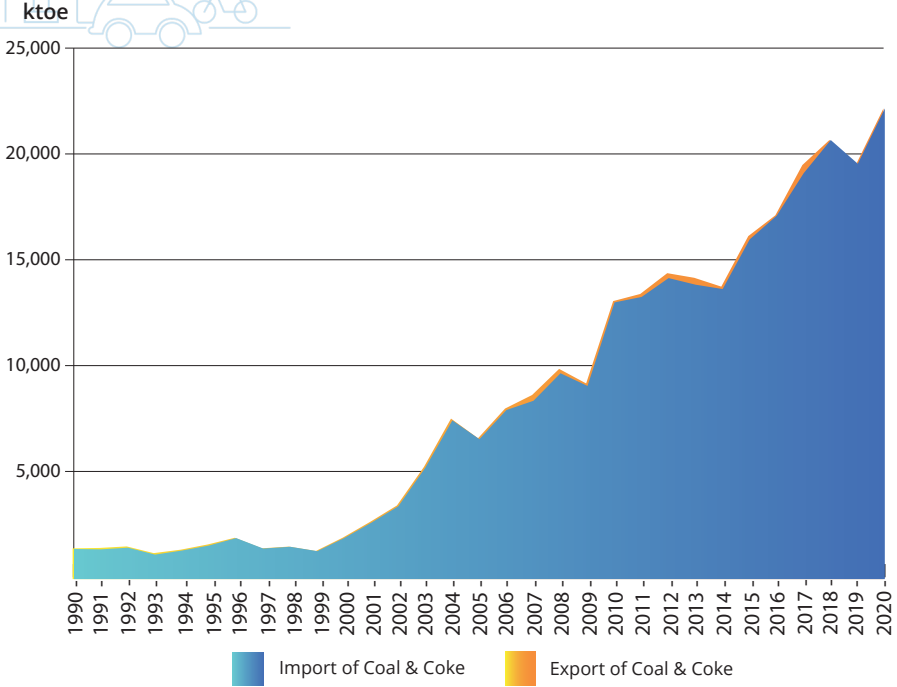


Unit: ktoe

YEAR	IMPORT AND EXPORT OF PIPED NATURAL GAS AND LIQUEFIED NATURAL GAS (LNG)			
	Import of Piped Natural Gas	Export of Piped Natural Gas	Export of LNG	Import of LNG
1990	-	-	8,686	-
1991	-	-	8,278	-
1992	-	1	8,262	-
1993	-	1,258	8,654	-
1994	-	1,589	8,938	-
1995	-	1,474	10,790	-
1996	-	1,474	15,251	-
1997	-	1,340	16,396	-
1998	-	1,444	16,429	-
1999	-	860	15,445	-
2000	-	1,198	16,633	-
2001	-	1,178	16,636	-
2002	-	1,098	17,803	-
2003	1,501	1,402	18,965	-
2004	999	1,143	22,944	-
2005	1,340	1,134	23,707	-
2006	3,313	1,257	22,874	-
2007	5,435	1,295	23,777	-
2008	4,565	1,524	22,277	-
2009	5,055	1,166	23,606	-
2010	7,013	1,340	25,487	-
2011	6,979	1,147	26,856	-
2012	7,866	1,368	25,547	-
2013	7,098	1,497	27,089	1,450
2014	6,472	1,129	27,835	2,019
2015	5,941	1,062	27,057	1,873
2016	5,557	841	27,457	1,275
2017	5,183	1,452	29,428	1,815
2018	5,573	1,407	25,920	1,383
2019	5,325	1,114	29,044	2,663
2020	5,519	1,179	26,155	2,939



IMPORT AND EXPORT OF COAL AND COKE



Source: National Energy Balance 2020



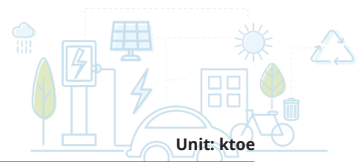
99.0% Import of Coal & Coke

1.0% Export of Coal & Coke



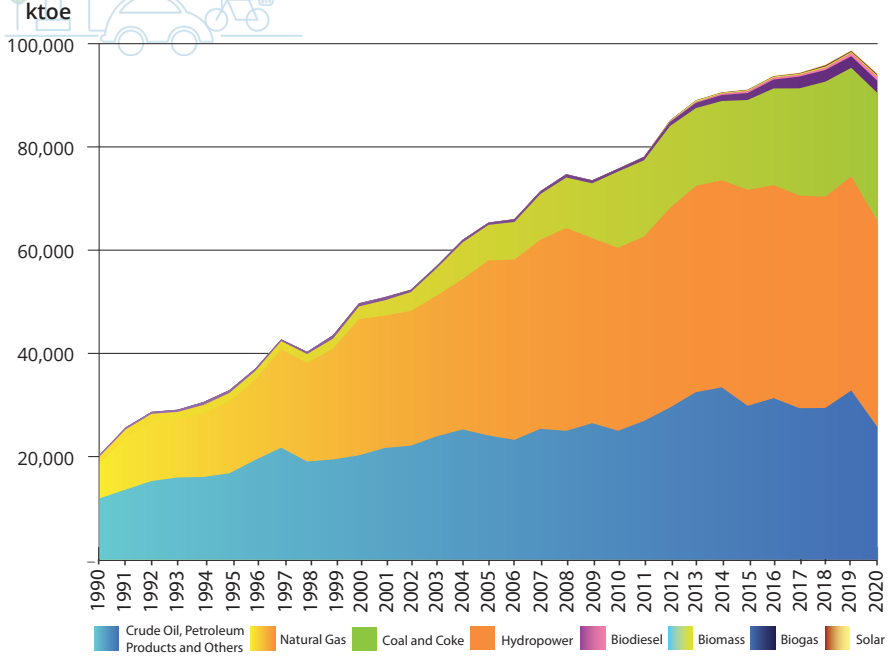
100.0% Import of Coal & Coke

0.0% Export of Coal & Coke

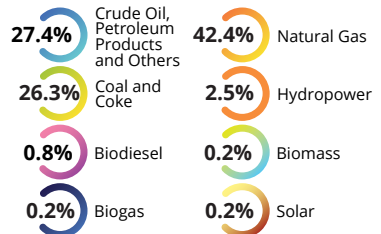
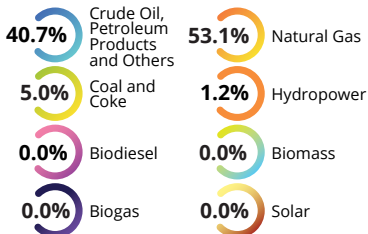


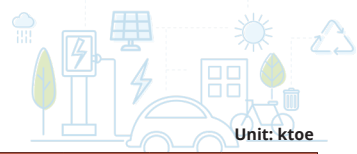
YEAR	IMPORT AND EXPORT OF COAL AND COKE	
	Import of Coal & Coke	Export of Coal & Coke
1990	1,424	28
1991	1,407	66
1992	1,485	60
1993	1,158	70
1994	1,351	40
1995	1,588	50
1996	1,938	15
1997	1,446	9
1998	1,529	7
1999	1,321	8
2000	1,943	19
2001	2,665	34
2002	3,442	37
2003	5,268	36
2004	7,498	85
2005	6,612	44
2006	7,988	71
2007	8,425	273
2008	9,725	206
2009	9,126	119
2010	13,073	62
2011	13,330	141
2012	14,221	233
2013	13,909	326
2014	13,704	114
2015	16,051	156
2016	17,171	15
2017	19,181	382
2018	20,743	-
2019	19,624	3
2020	22,235	-

TOTAL PRIMARY ENERGY SUPPLY BY FUEL TYPE



Source: National Energy Balance 2020

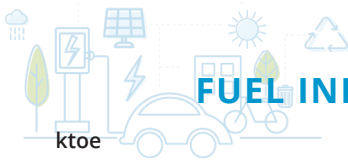




YEAR	TOTAL PRIMARY ENERGY SUPPLY BY FUEL TYPE								
	Crude Oil, Petroleum Products and Others	Natural Gas	Coal and Coke	Hydropower	Biodiesel	Biomass	Biogas	Solar	Total
1990	11,928	6,801	1,326	343	-	-	-	-	20,398
1991	13,606	10,112	1,564	379	-	-	-	-	25,661
1992	15,273	11,381	1,640	375	-	-	-	-	28,669
1993	15,951	11,360	1,352	419	-	-	-	-	29,082
1994	16,055	12,392	1,563	561	-	-	-	-	30,571
1995	16,767	13,960	1,612	535	-	-	-	-	32,874
1996	19,353	15,567	1,677	446	-	-	-	-	37,043
1997	21,720	19,041	1,622	333	-	-	-	-	42,716
1998	19,051	19,101	1,731	417	-	-	-	-	40,300
1999	19,450	21,476	1,940	647	-	-	-	-	43,513
2000	20,242	26,370	2,486	599	-	-	-	-	49,697
2001	21,673	25,649	2,970	607	-	-	-	-	50,899
2002	22,124	26,101	3,642	456	-	-	-	-	52,323
2003	23,936	27,257	5,316	435	-	-	-	-	56,944
2004	25,253	29,145	7,109	501	-	-	-	-	62,008
2005	24,096	33,913	6,889	446	-	-	-	-	65,344
2006	23,239	34,917	7,299	554	-	-	-	-	66,009
2007	25,381	36,639	8,848	558	-	-	-	-	71,426
2008	24,996	39,289	9,782	642	-	-	-	-	74,709
2009	26,482	35,851	10,623	574	-	-	-	-	73,530
2010	25,008	35,447	14,777	540	-	-	-	-	75,772
2011	26,903	35,740	14,772	656	24	-	-	-	78,095
2012	29,502	38,647	15,882	779	115	183	4	11	85,123
2013	32,474	39,973	15,067	1,003	188	297	6	38	89,046
2014	33,423	40,113	15,357	1,152	300	181	12	63	90,601
2015	29,836	41,853	17,406	1,346	389	189	18	75	91,112
2016	31,327	41,257	18,744	1,723	389	198	21	90	93,748
2017	29,380	41,200	20,771	2,287	379	194	41	93	94,345
2018	29,429	40,939	22,280	2,265	436	241	147	172	95,909
2019	32,813	41,461	21,057	2,251	648	204	118	128	98,681
2020	25,773	39,939	24,788	2,348	791	232	142	181	94,194

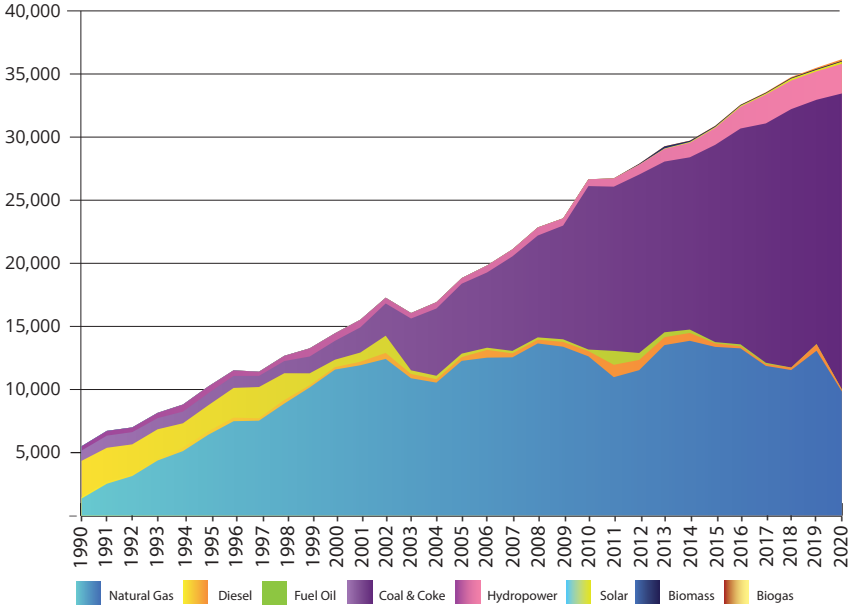


ENERGY TRANSFORMATION

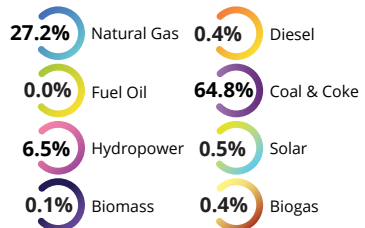
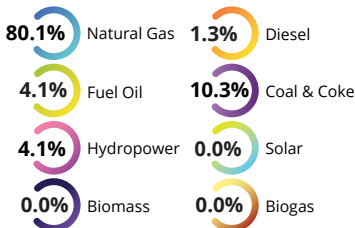


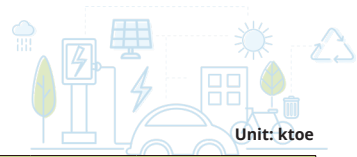
FUEL INPUT TO POWER STATIONS

ktoe



Source: National Energy Balance 2020

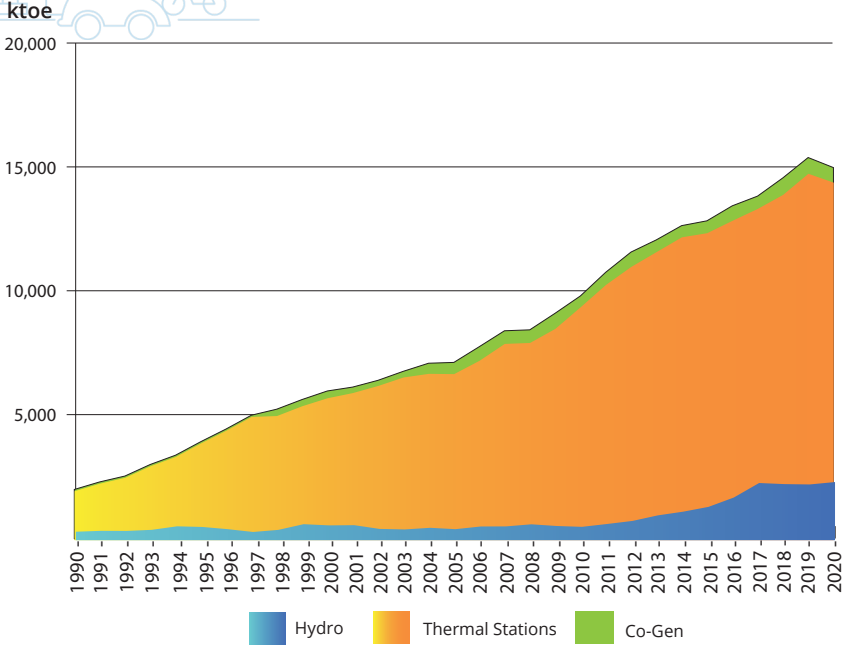




Unit: ktoe

YEAR	FUEL INPUT TO POWER STATIONS BY FUEL TYPE (ktoe)								
	Natural Gas	Diesel	Fuel Oil	Coal & Coke	Hydropower	Solar	Biomass	Biogas	Total
1990	1,361	116	2,873	813	343	0	0	0	5,506
1991	2,533	164	2,687	963	379	0	0	0	6,726
1992	3,144	160	2,352	968	375	0	0	0	6,999
1993	4,374	87	2,388	884	419	0	0	0	8,152
1994	5,119	249	1,957	925	561	0	0	0	8,811
1995	6,414	265	2,073	957	535	0	0	0	10,244
1996	7,489	284	2,354	950	446	0	0	0	11,523
1997	7,531	185	2,482	882	333	0	0	0	11,413
1998	8,886	275	2,130	964	417	0	0	0	12,672
1999	10,162	172	950	1,332	647	0	0	0	13,263
2000	11,580	191	592	1,495	599	0	0	0	14,457
2001	11,922	278	730	1,994	607	0	0	0	15,531
2002	12,424	476	1,363	2,556	456	0	0	0	17,275
2003	10,893	340	289	4,104	435	0	0	0	16,061
2004	10,545	272	274	5,327	501	0	0	0	16,919
2005	12,271	298	275	5,541	446	0	0	0	18,831
2006	12,524	617	171	5,964	554	0	0	0	19,830
2007	12,549	314	199	7,486	558	0	0	0	21,106
2008	13,651	299	181	8,069	642	0	0	0	22,842
2009	13,390	384	205	9,010	574	0	0	0	23,563
2010	12,628	415	125	12,951	540	0	0	0	26,659
2011	10,977	981	1,103	13,013	656	0	0	0	26,730
2012	11,533	811	550	14,138	779	11	65	4	27,891
2013	13,520	623	392	13,527	1,003	38	164	6	29,273
2014	13,860	622	269	13,648	1,152	63	96	12	29,722
2015	13,378	279	101	15,627	1,346	75	74	17	30,898
2016	13,260	165	155	17,101	1,723	90	57	18	32,569
2017	11,872	147	99	18,967	2,287	93	52	40	33,557
2018	11,542	187	17	20,472	2,265	155	57	64	34,759
2019	13,072	517	19	19,351	2,251	125	68	95	35,497
2020	9,841	154	12	23,451	2,348	176	54	137	36,172

ELECTRICITY GENERATION BY PLANT TYPE



Source: National Energy Balance 2020



10.1% Hydro

86.2% Thermal Stations

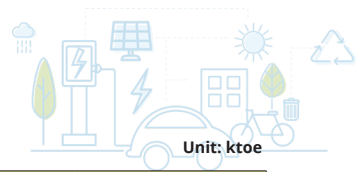
3.8% Co-Gen



15.7% Hydro

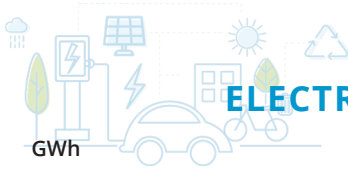
80.7% Thermal Stations

3.6% Co-Gen

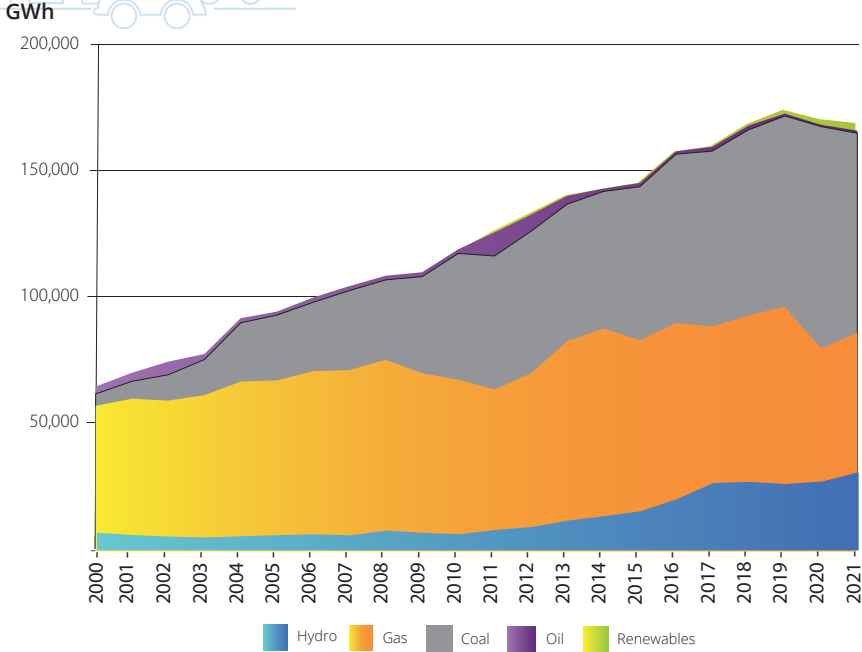


Unit: ktoe

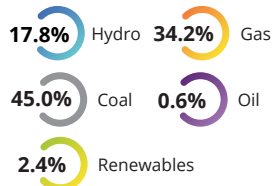
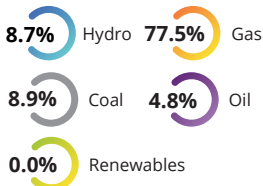
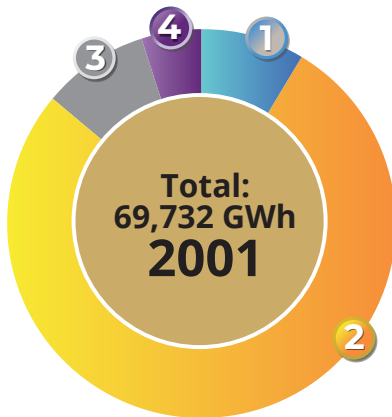
YEAR	ELECTRICITY GENERATION BY PLANT TYPE			
	Hydro	Thermal Stations	Co-Gen	Total
1990	343	1,636	-	1,979
1991	379	1,904	-	2,283
1992	375	2,146	-	2,521
1993	419	2,568	-	2,987
1994	561	2,801	-	3,362
1995	535	3,374	-	3,909
1996	446	3,975	-	4,421
1997	333	4,644	-	4,977
1998	417	4,596	207	5,220
1999	647	4,762	200	5,609
2000	599	5,132	224	5,955
2001	607	5,333	172	6,112
2002	456	5,771	157	6,384
2003	435	6,134	179	6,748
2004	501	6,215	359	7,075
2005	446	6,259	403	7,108
2006	554	6,687	499	7,740
2007	558	7,366	461	8,385
2008	642	7,321	460	8,423
2009	574	7,957	560	9,091
2010	540	8,864	387	9,791
2011	656	9,648	442	10,746
2012	779	10,253	530	11,562
2013	1,003	10,627	424	12,054
2014	1,152	11,075	402	12,629
2015	1,346	11,047	430	12,823
2016	1,723	11,170	535	13,428
2017	2,309	11,066	445	13,820
2018	2,265	11,674	616	14,555
2019	2,251	12,540	587	15,377
2020	2,348	12,085	539	14,972

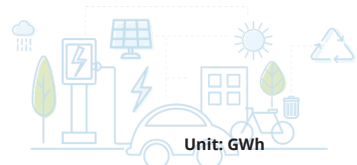


ELECTRICITY GENERATION MIX

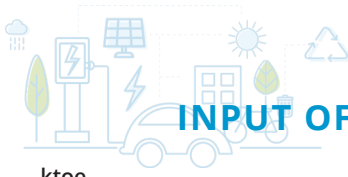


Source: Performance & Statistical Information on the Malaysian Electricity Supply Industry 2021



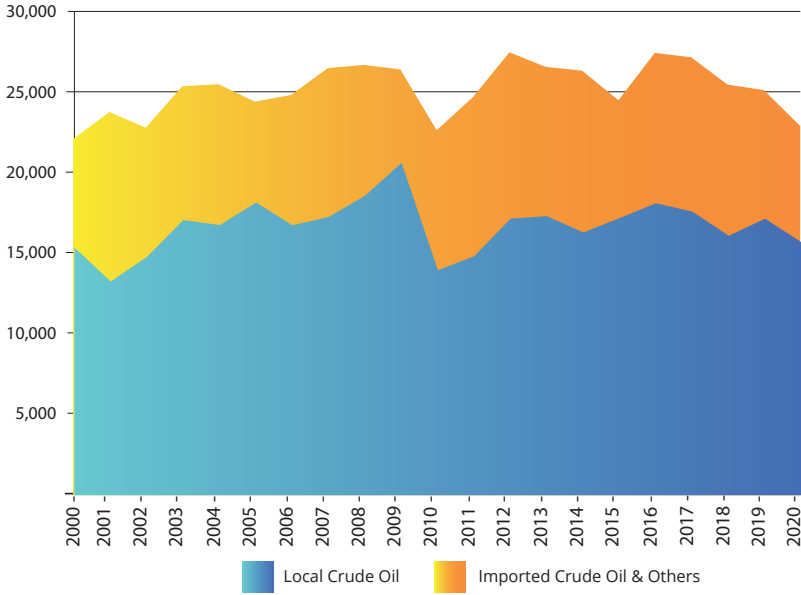


YEAR	ELECTRICITY GENERATION MIX					
	Hydro	Gas	Coal	Oil	Renewables	Total
2000	6,994	50,314	4,038	2,935	-	64,281
2001	6,066	54,066	6,238	3,362	-	69,732
2002	5,415	53,979	9,559	5,211	-	74,164
2003	5,090	56,478	13,435	2,197	-	77,200
2004	5,573	61,363	22,627	1,859	-	91,422
2005	6,007	61,396	25,231	1,396	-	94,030
2006	6,323	64,768	26,626	1,908	50	99,675
2007	5,957	65,568	30,856	1,768	63	104,212
2008	7,807	67,779	31,029	1,649	66	108,330
2009	6,890	63,370	37,644	1,726	132	109,762
2010	6,361	61,342	49,401	1,659	170	118,933
2011	8,056	55,732	52,302	9,403	1,576	127,069
2012	9,251	60,992	55,615	6,623	1,596	134,077
2013	11,799	71,174	53,663	3,312	1,318	141,266
2014	13,540	74,466	53,693	1,132	995	143,826
2015	15,524	67,900	60,129	1,472	1,196	146,221
2016	20,357	69,871	66,246	1,142	1,056	158,672
2017	26,716	62,131	68,866	1,695	1,316	160,724
2018	27,125	66,116	72,897	1,695	1,695	169,528
2019	26,280	70,410	74,955	949	2,569	175,163
2020	27,301	52,850	87,282	738	3,313	171,484
2021	30,986	59,568	78,384	1,066	4,227	174,231



INPUT OF CRUDE OIL IN REFINERIES

ktoe



Source: National Energy Balance 2020



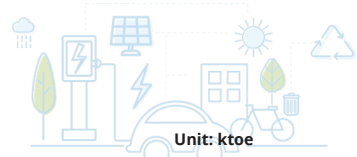
69.6% Local Crude Oil

30.4% Imported Crude Oil & Others



68.5% Local Crude Oil

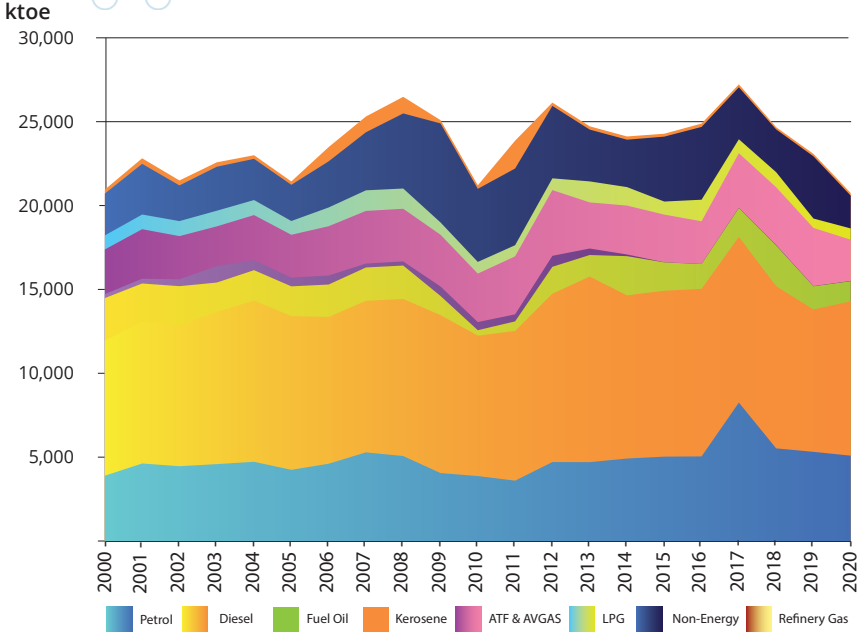
31.5% Imported Crude Oil & Others



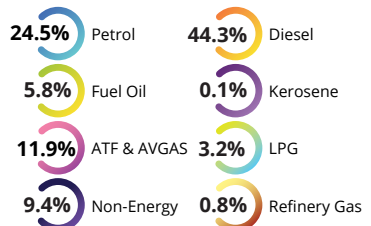
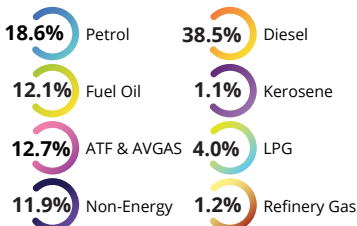
YEAR	INPUT OF CRUDE OIL IN REFINERIES		
	Local Crude Oil	Imported Crude Oil & Others	Total
2000	15,421	6,743	22,164
2001	13,299	10,546	23,845
2002	14,838	8,032	22,870
2003	17,127	8,322	25,449
2004	16,810	8,764	25,574
2005	18,216	6,271	24,487
2006	16,797	8,113	24,910
2007	17,320	9,251	26,571
2008	18,638	8,138	26,776
2009	20,685	5,812	26,497
2010	14,003	8,706	22,709
2011	14,874	9,904	24,777
2012	17,213	10,347	27,560
2013	17,365	9,289	26,654
2014	16,351	10,066	26,417
2015	17,249	7,327	24,575
2016	18,170	9,353	27,524
2017	17,647	9,605	27,252
2018	16,144	9,409	25,553
2019	17,209	7,999	25,207
2020	15,739	7,235	22,974

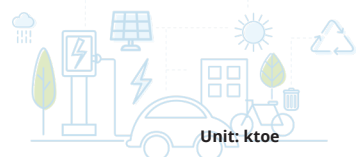


PRODUCTION OF PETROLEUM PRODUCTS FROM REFINERIES



Source: National Energy Balance 2020

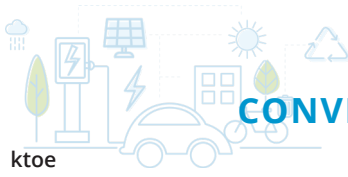




Unit: ktoe

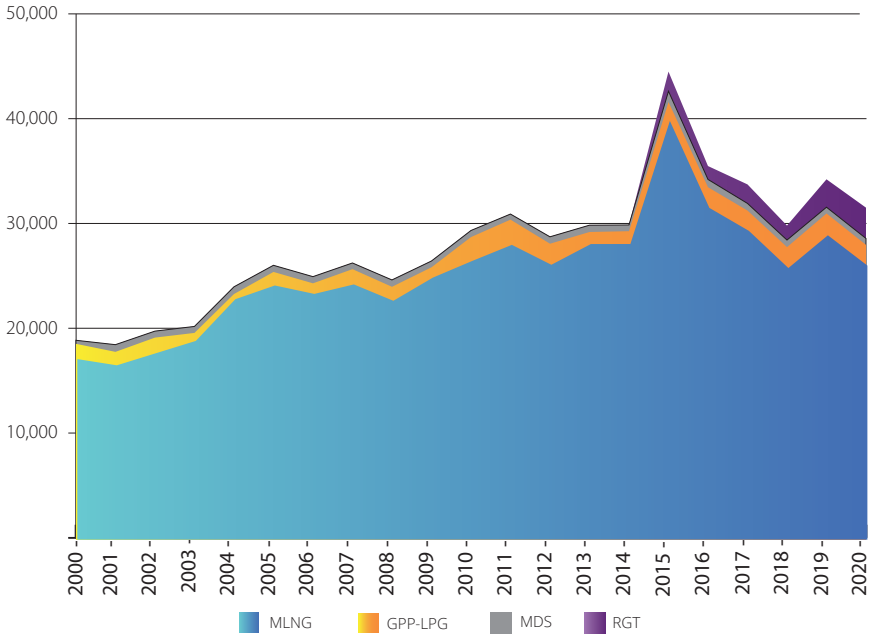
YEAR	PRODUCTION OF PETROLEUM PRODUCTS FROM REFINERIES								
	Petrol	Diesel	Fuel Oil	Kerosene	ATF & AVGAS	LPG	Non-Energy	Refinery Gas	Total
2000	3,893	8,059	2,532	239	2,660	838	2,492	241	20,954
2001	4,623	8,462	2,269	283	2,954	875	3,020	331	22,817
2002	4,460	8,401	2,332	414	2,570	897	2,127	294	21,495
2003	4,584	9,062	1,763	983	2,367	932	2,623	262	22,576
2004	4,724	9,611	1,813	591	2,693	897	2,455	215	22,999
2005	4,245	9,161	1,777	521	2,553	822	2,157	202	21,438
2006	4,607	8,752	1,933	537	2,938	1,118	2,750	849	23,484
2007	5,285	9,033	1,990	234	3,138	1,228	3,461	938	25,307
2008	5,066	9,364	1,994	245	3,139	1,208	4,475	991	26,482
2009	4,052	9,415	1,144	565	3,085	732	5,905	195	25,093
2010	3,873	8,369	327	483	2,891	697	4,357	209	21,206
2011	3,599	8,925	571	419	3,457	665	4,572	1,659	23,867
2012	4,708	10,033	1,608	654	3,918	702	4,318	197	26,138
2013	4,702	11,063	1,286	387	2,750	1,252	3,089	195	24,724
2014	4,918	9,725	2,340	100	2,916	1,102	2,826	192	24,119
2015	5,031	9,890	1,692	6	2,841	780	3,869	172	24,281
2016	5,044	9,988	1,479	4	2,548	1,285	4,339	201	24,888
2017	8,253	9,877	1,725	10	3,255	832	3,100	174	27,226
2018	5,524	9,665	2,432	18	3,451	900	2,550	130	24,669
2019	5,317	8,484	1,388	8	3,470	560	3,708	147	23,082
2020	5,089	9,199	1,204	12	2,459	672	1,954	156	20,745

Notes: 1. Middle Distillate Synthesis (MDS) commenced pre-commercialization operation in year 2000
 2. MLNG plant produced LPG in 2003

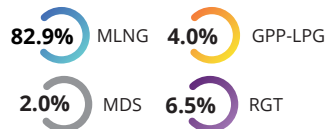
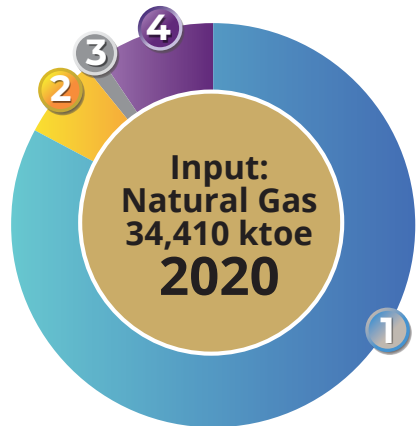
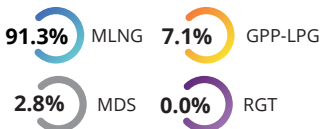
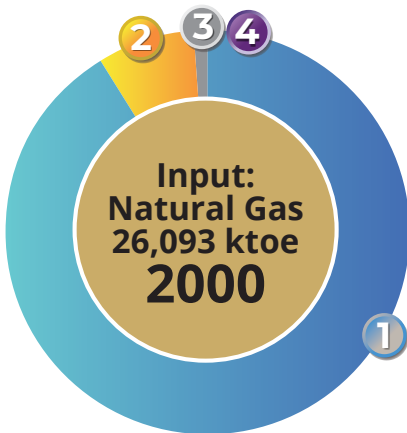


CONVERSION IN GAS PLANTS

ktoe



Source: National Energy Balance 2020





YEAR	INPUT:	CONVERSION IN GAS PLANTS			
	Natural Gas	MLNG	GPP-LPG	MDS	RGT
2000	26,093	17,231	1,482	164	n/a
2001	25,703	16,636	1,310	513	n/a
2002	25,571	17,803	1,504	445	n/a
2003	27,940	18,965	790	443	n/a
2004	33,176	22,944	520	513	n/a
2005	36,447	24,254	1,319	460	n/a
2006	35,378	23,450	1,036	464	n/a
2007	38,141	24,355	1,483	417	n/a
2008	38,193	22,793	1,362	481	n/a
2009	37,098	25,004	1,012	426	n/a
2010	40,246	26,601	2,299	454	n/a
2011	40,737	28,130	2,434	359	n/a
2012	40,042	26,231	2,035	486	n/a
2013	39,678	28,209	1,174	478	n/a
2014	39,193	28,213	1,250	420	n/a
2015	40,773	39,957	1,826	862	1,873
2016	39,665	31,658	1,997	573	1,277
2017	38,296	29,468	1,961	509	1,815
2018	32,980	25,973	2,022	501	1,383
2019	33,968	29,074	2,107	425	2,663
2020	34,410	26,206	1,998	441	2,939

Note : MDS commenced pre-commercialisation operation in year 2000

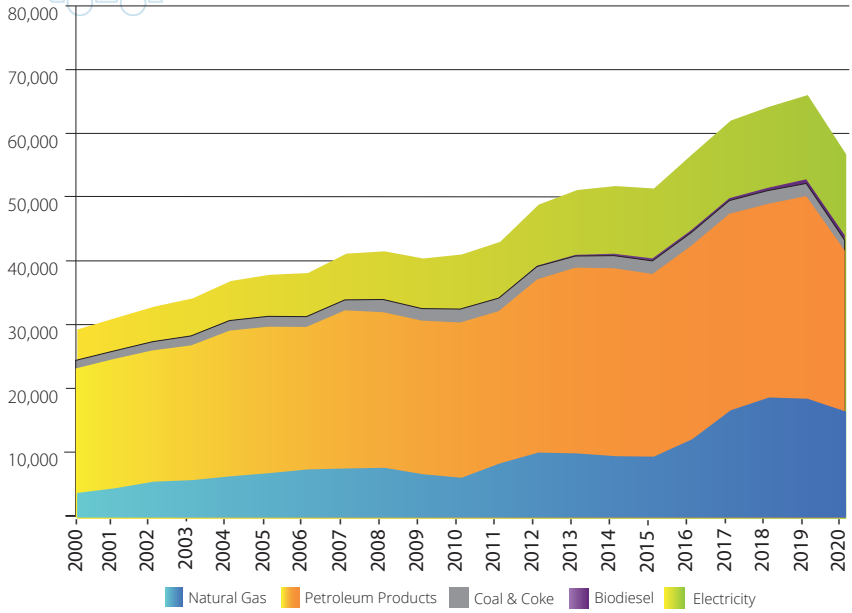
Source: Oil and gas companies



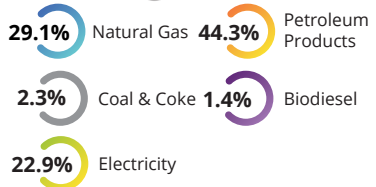
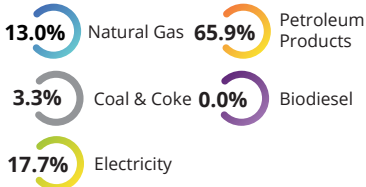
ENERGY CONSUMPTION

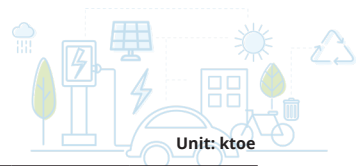
FINAL ENERGY CONSUMPTION BY FUEL TYPE

ktoe



Source: National Energy Balance 2020



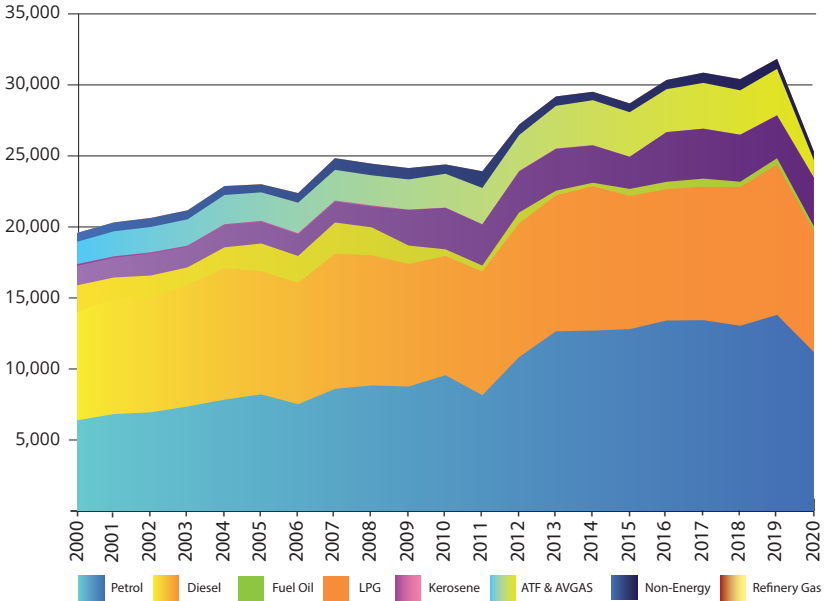


YEAR	FINAL ENERGY CONSUMPTION BY FUEL TYPE					
	Natural Gas	Petroleum Products	Coal & Coke	Biodiesel	Electricity	Total
2000	3,862	19,582	991	-	5,263	29,698
2001	4,620	20,323	977	-	5,594	31,514
2002	5,643	20,638	1,086	-	5,922	33,289
2003	5,886	21,175	1,212	-	6,313	34,586
2004	6,490	22,886	1,305	-	6,642	37,323
2005	6,981	23,012	1,348	-	6,944	38,285
2006	7,562	22,398	1,335	-	7,272	38,567
2007	7,709	24,852	1,362	-	7,683	41,606
2008	7,818	24,451	1,713	-	7,986	41,968
2009	6,802	24,145	1,613	-	8,286	40,846
2010	6,254	24,403	1,826	-	8,993	41,476
2011	8,515	23,922	1,759	24	9,236	43,456
2012	10,206	27,215	1,744	115	10,011	49,290
2013	10,076	29,190	1,539	188	10,590	51,584
2014	9,641	29,517	1,709	300	11,042	52,209
2015	9,566	28,699	1,778	389	11,397	51,829
2016	12,304	30,348	1,785	389	12,394	57,219
2017	16,838	30,862	1,804	379	12,607	62,490
2018	18,851	30,409	1,808	436	13,153	64,658
2019	18,647	31,835	1,706	648	13,647	66,483
2020	16,631	25,309	1,338	791	13,100	57,169

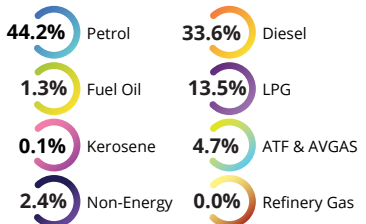
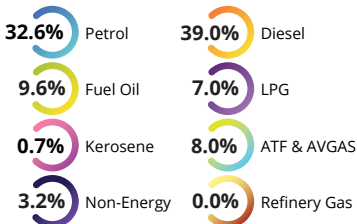


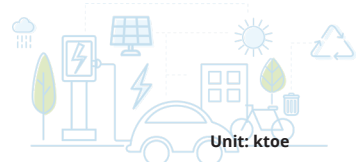
FINAL ENERGY CONSUMPTION FOR PETROLEUM PRODUCTS

ktoe

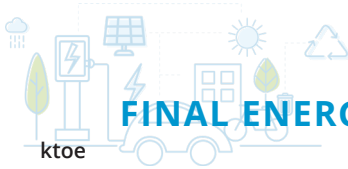


Source: National Energy Balance 2020



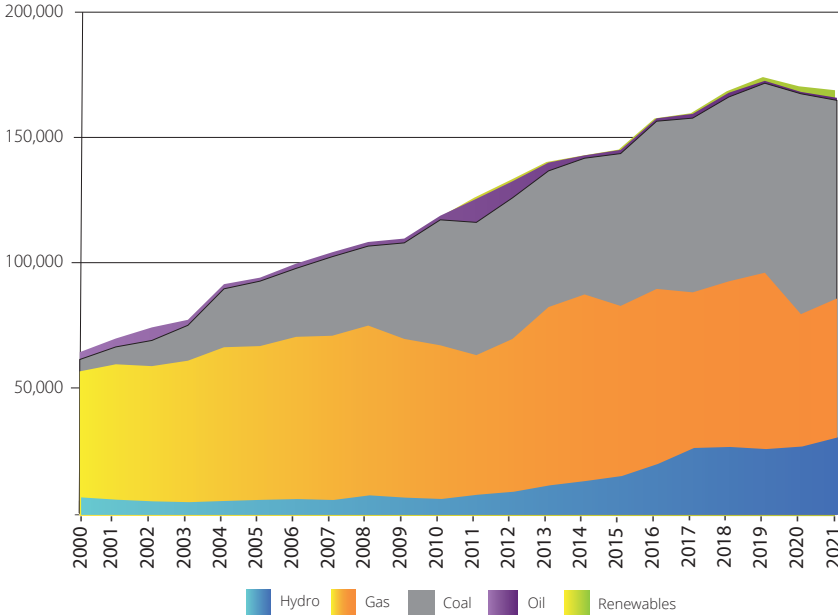


YEAR	FINAL ENERGY CONSUMPTION FOR PETROLEUM PRODUCTS								
	Petrol	Diesel	Fuel Oil	LPG	Kerosene	ATF & AVGAS	Non-Energy	Refinery Gas	Total
2000	6,387	7,627	1,875	1,362	131	1,574	622	3	19,581
2001	6,827	8,116	1,497	1,392	99	1,762	626	4	20,323
2002	6,948	8,042	1,589	1,542	92	1,785	633	6	20,637
2003	7,360	8,539	1,256	1,437	93	1,852	632	7	21,176
2004	7,839	9,262	1,463	1,542	86	2,056	626	11	22,885
2005	8,211	8,672	1,953	1,510	81	2,010	564	10	23,011
2006	7,517	8,540	1,901	1,520	79	2,152	672	12	22,393
2007	8,600	9,512	2,202	1,474	76	2,155	823	9	24,851
2008	8,842	9,167	1,963	1,475	75	2,112	818	0	24,452
2009	8,766	8,634	1,291	2,506	30	2,120	799	0	24,146
2010	9,560	8,388	478	2,920	19	2,380	657	0	24,402
2011	8,155	8,712	414	2,892	19	2,553	1,178	0	23,923
2012	10,843	9,410	768	2,892	38	2,521	743	0	27,215
2013	12,656	9,568	329	2,946	31	2,998	662	0	29,190
2014	12,705	10,161	246	2,632	23	3,158	592	0	29,517
2015	12,804	9,377	498	2,261	4	3,134	621	0	28,699
2016	13,411	9,254	513	3,497	5	3,019	650	0	30,349
2017	13,437	9,388	579	3,514	5	3,220	719	0	30,862
2018	13,041	9,756	387	3,309	6	3,121	789	0	30,409
2019	13,811	10,583	446	3,017	12	3,261	705	0	31,835
2020	11,188	8,516	338	3,423	32	1,199	613	0	25,309

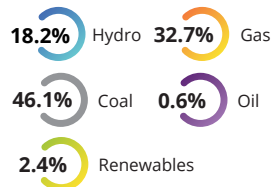
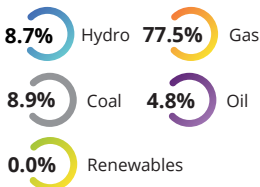
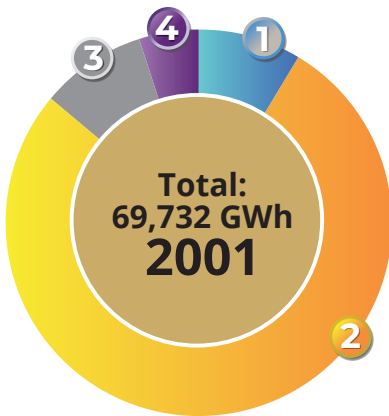


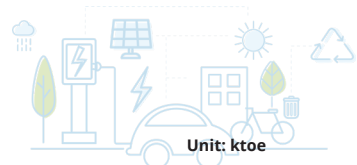
FINAL ENERGY CONSUMPTION BY SECTOR

ktoe



Source: National Energy Balance 2020





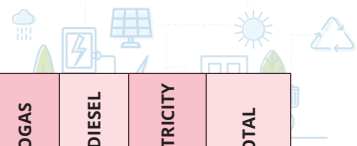
YEAR	FINAL ENERGY CONSUMPTION BY SECTOR					
	Industry	Transport	Residential and Commercial	Non-Energy Use	Agriculture and Fishery	Total
2000	11,406	12,071	3,868	2,250	104	29,699
2001	11,852	13,137	4,048	2,378	98	31,513
2002	12,854	13,442	4,387	2,511	96	33,290
2003	13,472	14,271	4,399	2,345	98	34,585
2004	14,914	15,385	4,754	2,183	87	37,323
2005	15,583	15,293	5,134	2,173	101	38,284
2006	15,248	14,819	5,424	2,819	258	38,568
2007	16,454	15,717	6,197	2,957	281	41,606
2008	16,205	16,395	6,205	2,876	287	41,968
2009	14,312	16,119	6,336	3,868	211	40,846
2010	12,928	16,828	6,951	3,696	1,074	41,477
2011	12,100	17,070	6,993	6,377	916	43,456
2012	13,919	19,757	7,065	7,497	1,053	49,291
2013	13,496	22,357	7,403	7,277	1,051	51,584
2014	13,162	24,327	7,459	6,217	1,045	52,210
2015	13,971	23,435	7,600	5,928	895	51,829
2016	16,019	24,004	8,051	8,729	415	57,219
2017	17,463	24,039	7,796	12,517	674	62,489
2018	19,046	23,555	7,773	13,262	1,021	64,658
2019	18,921	25,004	8,000	13,631	927	66,483
2020	17,714	18,660	8,123	11,805	867	57,169



ENERGY BALANCE

ENERGY BALANCE TABLE FOR 2020

ENERGY SOURCE	NATURAL GAS	LNG	CRUDE OIL (1/)	OTHERS (2/)	TOTAL PETROLEUM PRODUCTS	PETROL	DIESEL	FUEL OIL	LPG
PRIMARY SUPPLY									
1. Primary Production	72,597	0	26,783	0	0	0	0	0	0
2. Gas Flaring, Reinjection & Use	(13,763)	0	0	0	0	0	0	0	0
3. Imports	5,519	2,939	6,969	75	12,586	6,914	2,812	216	539
4. Exports	(1,179)	(26,155)	(10,604)	(5)	(10,590)	(1,773)	(3,866)	(422)	(257)
5. Bunkers	0	0	0	0	(546)	0	(131)	(415)	0
6. Stock Change	0	0	(23)	0	1,286	900	578	(183)	365
7. Statistical Discrepancy	0	0	(24)	0	0	0	0	0	0
8. Primary Supply	63,156	(23,216)	23,101	70	2,736	6,042	(607)	(824)	647
TRANSFORMATION									
9. Gas Plants									
9.1 LNG	(32,996)	26,155	0	0	51	0	0	0	51
9.2 MDS	(1,008)	0	0	0	441	0	92	0	0
9.3 GPP-LPG (3&4/)	(3,345)	0	0	0	1,998	0	0	0	1,998
9.4 RGT	2,939	(2,939)	0	0	0	0	0	0	0
Subtotal	(34,410)	23,216	0	0	2,491	0	92	0	2,049
10. Refineries	0	0	(22,974)	(70)	20,745	5,089	9,199	1,204	672
11. Power Stations & Self-Generation									
11.1 Hydro Stations	0	0	0	0	0	0	0	0	0
11.2 Thermal Stations	(9,841)	0	0	0	(166)	0	(154)	(12)	0
11.3 Self-Generation (5/)	(1,395)	0	0	0	(56)	0	(56)	0	0
Subtotal	(11,236)	0	0	0	(222)	0	(210)	(12)	0
12. Losses & Own Use	(879)	0	(127)	0	(533)	0	0	(18)	0
13. Statistical Discrepancy	0	0	0	0	92	58	42	(12)	55
14. Secondary Supply	(46,525)	23,216	(23,101)	(70)	22,573	5,146	9,123	1,162	2,776
FINAL USE									
15. Residential	1	0	0	0	960	0	0	0	958
16. Commercial	14	0	0	0	543	0	214	41	288
17. Industry	7,358	0	0	0	2,616	101	2,009	296	179
18. Transport	65	0	0	0	17,771	11,029	5,542	0	0
19. Agriculture	0	0	0	0	261	0	260	1	0
20. Fishery	0	0	0	0	547	57	490	0	0
21. Non-Energy Use	9,193	0	0	0	2,611	0	0	0	1,998
22. Total Final Use	16,631	0	0	0	25,309	11,188	8,516	338	3,423
ELECTRICITY OUTPUT									
Main Activity Producer									
Gross Electricity Generation - GWh	48,262	0	0	0	670	0	670	0	0
Autoproducer									
Gross Electricity Generation - GWh	5,429	0	0	0	176	0	176	0	0



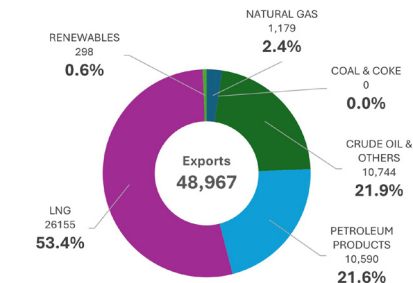
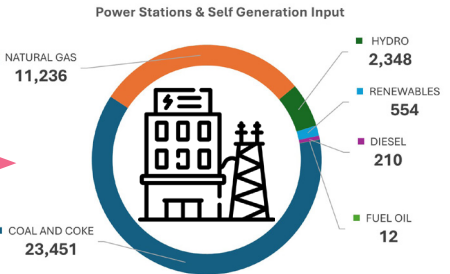
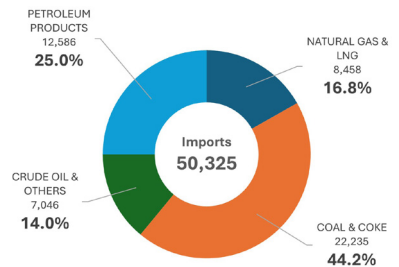
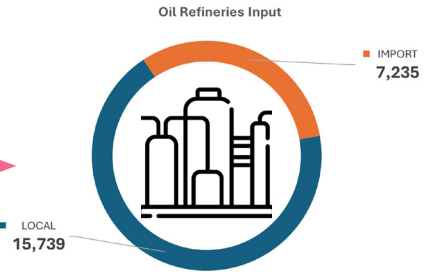
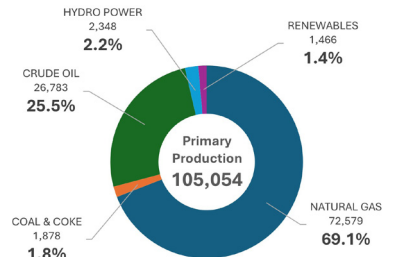
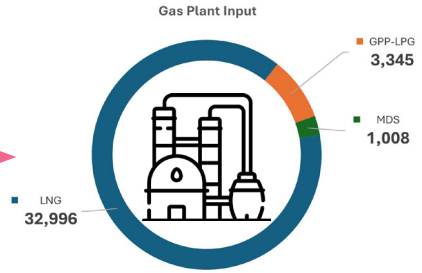
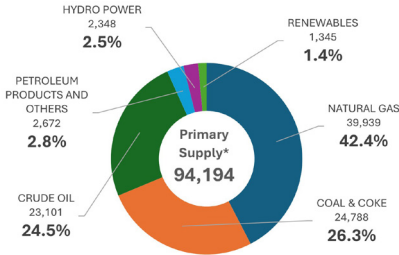
KEROSENE	ATF & AVGAS	NON-ENERGY	REFINERY GAS	COAL & COKE	HYDRO POWER	SOLAR	BIOMASS	BIOGAS	BIODIESEL	ELECTRICITY	TOTAL
0	0	0	0	1,878	2,348	181	232	142	912	0	105,054
0	0	0	0	0	0	0	0	0	0	0	(13,763)
1	761	1,344	0	22,235	0	0	0	0	0	2	50,325
(40)	(1,166)	(3,046)	0	0	0	0	0	0	(298)	(135)	(48,967)
0	0	0	0	0	0	0	0	0	0	0	(546)
8	(833)	451	0	708	0	0	0	0	177	0	2,148
0	0	0	0	(33)	0	0	0	0	0	0	(57)
(31)	(1,238)	(1,252)	0	24,788	2,348	181	232	142	791	(134)	94,194
0	0	0	0	0	0	0	0	0	0	0	(6,790)
35	0	314	0	0	0	0	0	0	0	0	(566)
0	0	0	0	0	0	0	0	0	0	0	(1,347)
0	0	0	0	0	0	0	0	0	0	0	0
35	0	314	0	0	0	0	0	0	0	0	(8,703)
12	2,459	1,954	156	0	0	0	0	0	0	0	(2,299)
0	0	0	0	0	(2,348)	0	0	0	0	2,348	0
0	0	0	0	(23,451)	0	(176)	(54)	(137)	0	12,085	(21,739)
0	0	0	0	0	0	(5)	(178)	(5)	0	539	(1,100)
0	0	0	0	(23,451)	(2,348)	(181)	(232)	(142)	0	14,972	(22,839)
0	0	(359)	(156)	0	0	0	0	0	0	(1,267)	(2,806)
17	(21)	(45)	0	0	0	0	0	0	0	(471)	(379)
63	2,438	1,865	0	(23,451)	(2,348)	(181)	(232)	(142)	0	13,234	(37,026)
2	0	0	0	0	0	0	0	0	0	3,124	4,085
0	0	0	0	0	0	0	0	0	0	3,480	4,038
31	0	0	0	1,338	0	0	0	0	0	6,403	17,714
0	1,199	0	0	0	0	0	0	0	791	34	18,660
0	0	0	0	0	0	0	0	0	0	59	320
0	0	0	0	0	0	0	0	0	0	0	547
0	0	613	0	0	0	0	0	0	0	0	11,805
32	1,199	613	0	1,338	0	0	0	0	791	13,100	57,169
0	0	0	0	88,875	27,295	2,044	169	427	0	0	167,742
0	0	0	0	0	4	15	623	15	0	0	6,262

ENERGY FLOW CHART 2020

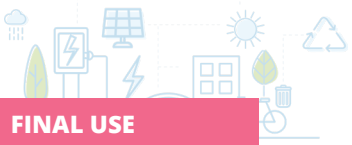
Unit: ktoe

PRIMARY SUPPLY

TRANSFORMATION

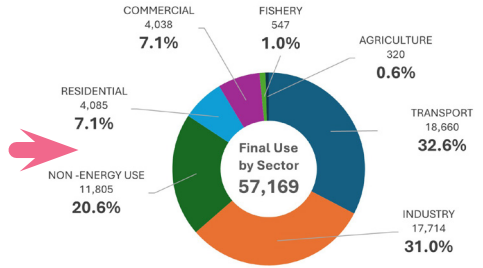


Note (*): Primary Supply = Primary Production - Flaring + Imports - Exports - Bunkers (+) Statistical Discrepancy

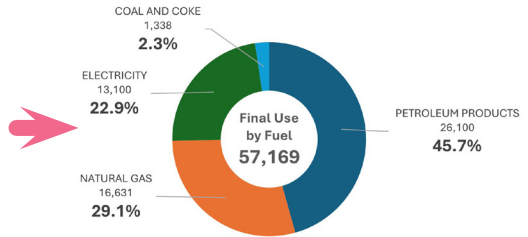


FINAL USE

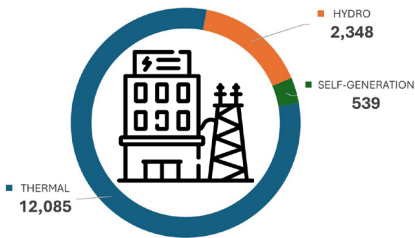
Gas Plant Output



Oil Refineries Output



Power Stations & Self Generation Output



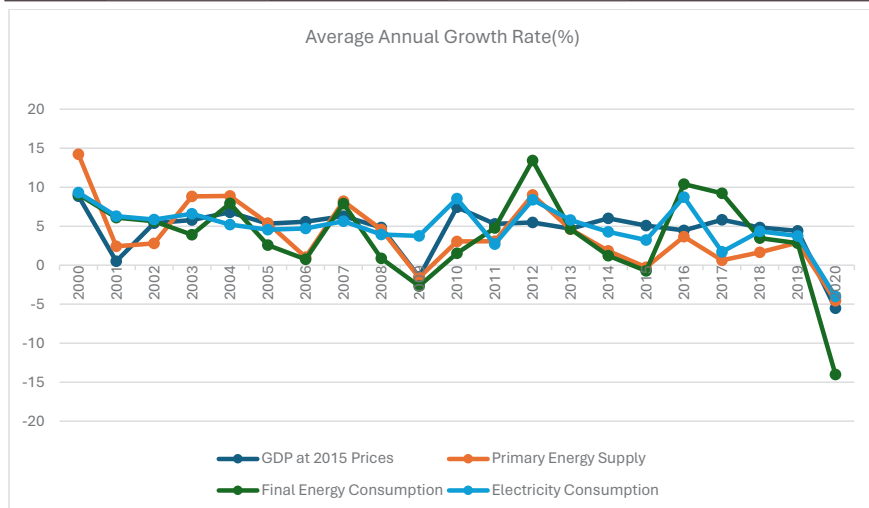


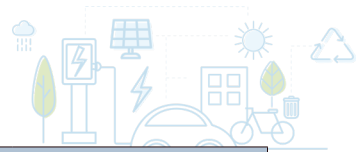
ENERGY INDICATORS



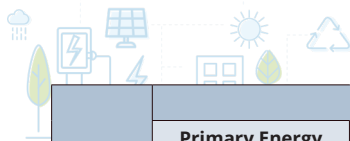
AVERAGE ANNUAL GROWTH RATE

YEAR	AVERAGE ANNUAL GROWTH RATE (%)			
	GDP at 2015 Prices	Primary Energy Supply	Final Energy Consumption	Electricity Consumption
2000	8.86	14.21	9.08	9.30
2001	0.52	2.42	6.11	6.29
2002	5.39	2.80	5.63	5.86
2003	5.79	8.83	3.90	6.60
2004	6.78	8.89	7.91	5.21
2005	5.33	5.38	2.58	4.55
2006	5.58	1.02	0.74	4.72
2007	6.30	8.21	7.88	5.65
2008	4.83	4.60	0.87	3.94
2009	-1.51	-1.58	-2.68	3.76
2010	7.42	3.05	1.54	8.53
2011	5.29	3.07	4.77	2.69
2012	5.47	9.00	13.43	8.40
2013	4.69	4.61	4.65	5.78
2014	6.01	1.85	1.21	4.27
2015	5.09	-0.28	-0.73	3.22
2016	4.45	3.66	10.40	8.74
2017	5.81	0.64	9.21	1.72
2018	4.84	1.66	3.47	4.33
2019	4.41	2.89	2.82	3.76
2020	-5.53	-4.55	-14.01	-4.01

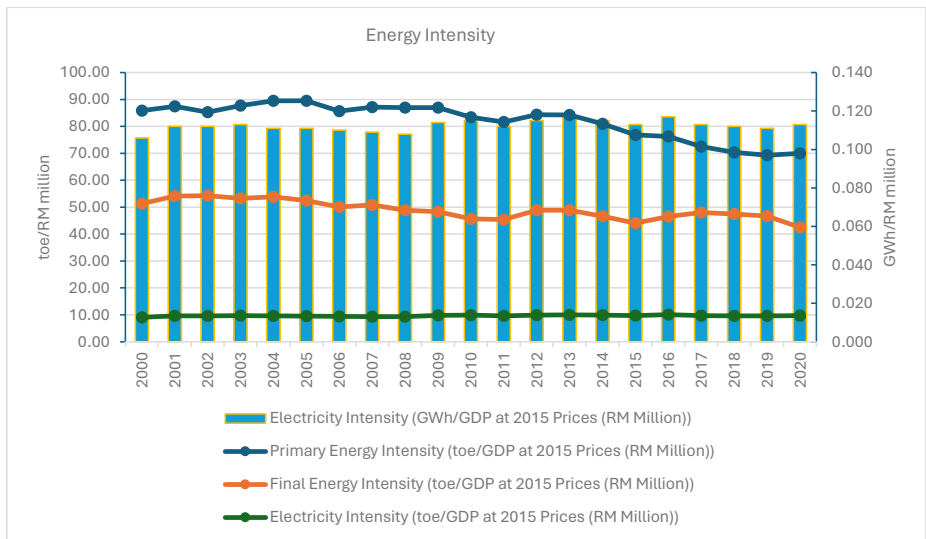


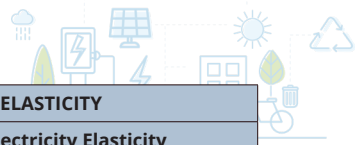


YEAR	PER CAPITA			
	GDP at Current Prices (RM)	Primary Energy Supply (toe)	Final Energy Consumption (toe)	Electricity Consumption (kWh)
2000	15,783	2.12	1.26	2,603
2001	15,265	2.12	1.31	2,705
2002	16,246	2.13	1.36	2,804
2003	17,402	2.27	1.38	2,930
2004	19,310	2.43	1.46	3,022
2005	20,870	2.51	1.47	3,099
2006	22,478	2.49	1.45	3,183
2007	24,589	2.64	1.54	3,300
2008	27,929	2.71	1.52	3,367
2009	25,385	2.62	1.45	3,429
2010	28,733	2.65	1.45	3,656
2011	31,372	2.69	1.50	3,693
2012	32,913	2.88	1.67	3,943
2013	33,713	2.95	1.71	4,074
2014	36,031	2.95	1.70	4,179
2015	37,739	2.90	1.66	4,248
2016	39,505	2.96	1.81	4,553
2017	42,854	2.95	1.95	4,576
2018	44,708	2.96	2.00	4,721
2019	46,526	3.03	2.04	4,877
2020	43,518	2.89	1.75	4,673

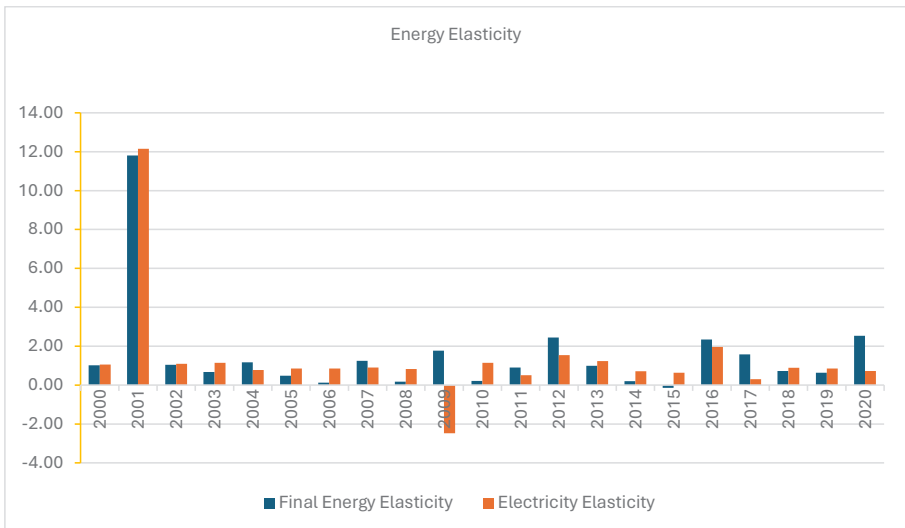


YEAR	ENERGY INTENSITY			
	Primary Energy Intensity (toe/GDP at 2015 Prices (RM Million))	Final Energy Intensity (toe/GDP at 2015 Prices (RM Million))	Electricity Intensity (toe/GDP at 2015 Prices (RM Million))	Electricity Intensity (GWh/GDP at 2015 Prices (RM Million))
2000	85.82	51.29	9.089	0.106
2001	87.44	54.14	9.611	0.112
2002	85.29	54.27	9.654	0.112
2003	87.75	53.29	9.728	0.113
2004	89.48	53.86	9.585	0.111
2005	89.52	52.45	9.513	0.111
2006	85.65	50.04	9.436	0.110
2007	87.19	50.79	9.378	0.109
2008	86.99	48.87	9.299	0.108
2009	86.93	48.29	9.796	0.114
2010	83.39	45.65	9.897	0.115
2011	81.63	45.42	9.653	0.112
2012	84.36	48.85	9.921	0.115
2013	84.29	48.83	10.024	0.117
2014	80.98	46.62	9.860	0.115
2015	76.84	44.04	9.684	0.113
2016	76.26	46.55	10.082	0.117
2017	72.53	48.04	9.692	0.113
2018	70.33	47.41	9.645	0.112
2019	69.30	46.69	9.584	0.111
2020	70.02	42.50	9.739	0.113





YEAR	FINAL ENERGY AND ELECTRICITY ELASTICITY	
	Final Energy Elasticity	Electricity Elasticity
2000	1.02	1.05
2001	11.81	12.15
2002	1.04	1.09
2003	0.67	1.14
2004	1.17	0.77
2005	0.48	0.85
2006	0.13	0.85
2007	1.25	0.90
2008	0.18	0.82
2009	1.77	(2.48)
2010	0.21	1.15
2011	0.90	0.51
2012	2.45	1.54
2013	0.99	1.23
2014	0.20	0.71
2015	(0.14)	0.63
2016	2.34	1.96
2017	1.58	0.30
2018	0.72	0.89
2019	0.64	0.85
2020	2.53	0.72

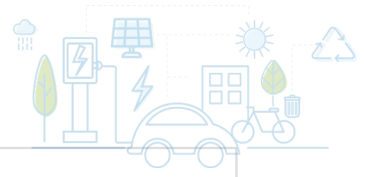




FINAL ENERGY CONSUMPTION PER CAPITA IN ASEAN

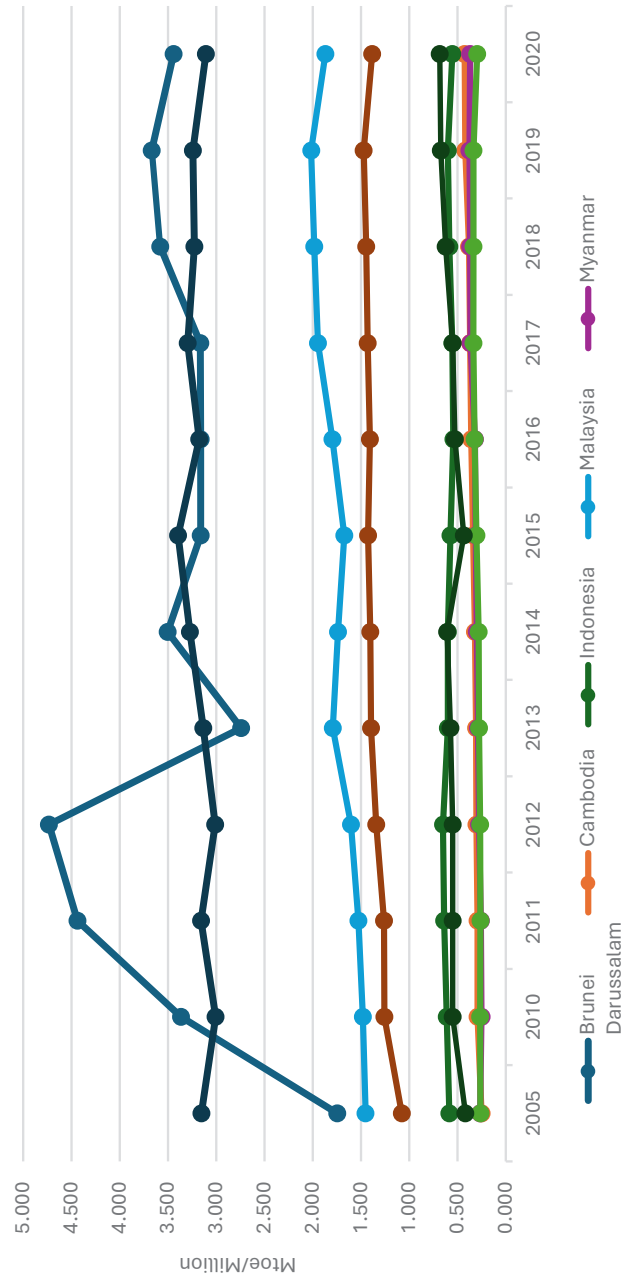
Unit : Mtoe/Millions

Mtoe/millions	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Brunei Darussalam	1.747	3.364	4.438	4.733	2.743	3.502	3.163	3.160	3.164	3.581	3.667	3.441
Cambodia	0.251	0.292	0.294	0.303	0.309	0.319	0.338	0.358	0.368	0.382	0.420	0.426
Indonesia	0.585	0.613	0.640	0.651	0.599	0.599	0.575	0.544	0.553	0.583	0.601	0.554
Malaysia	1.452	1.480	1.527	1.604	1.793	1.740	1.674	1.798	1.945	1.983	2.017	1.871
Myanmar	0.265	0.252	0.257	0.276	0.287	0.300	0.310	0.321	0.367	0.371	0.376	0.369
Philippines	0.263	0.267	0.263	0.265	0.276	0.283	0.303	0.323	0.336	0.335	0.335	0.295
Singapore	3.152	3.006	3.158	3.013	3.133	3.273	3.395	3.178	3.296	3.227	3.240	3.107
Thailand	1.078	1.256	1.261	1.342	1.398	1.402	1.427	1.408	1.430	1.446	1.472	1.385
Vietnam	0.418	0.550	0.550	0.552	0.575	0.607	0.433	0.527	0.551	0.625	0.673	0.684



Unit: Mtoe/Millions

Final Energy Consumption per Capita in ASEAN



Source: World Energy Balances, 2022 Edition, International Energy Agency (IEA)

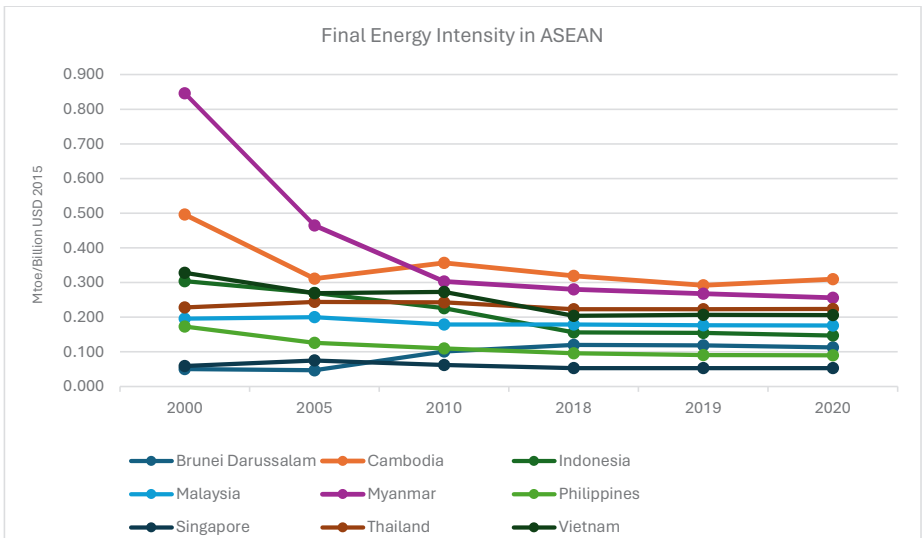


FINAL ENERGY INTENSITY IN ASEAN

Unit : Mtoe/Billion USD 2015

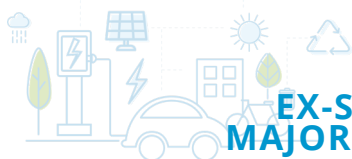
Mtoe/billion 2015 US\$	2000	2005	2010	2018	2019	2020
Brunei Darussalam	0.050	0.047	0.101	0.120	0.119	0.113
Cambodia	0.496	0.311	0.357	0.319	0.292	0.310
Indonesia	0.304	0.270	0.226	0.156	0.155	0.147
Malaysia	0.196	0.200	0.179	0.179	0.177	0.176
Myanmar	0.846	0.465	0.303	0.280	0.268	0.256
Philippines	0.173	0.126	0.110	0.096	0.091	0.090
Singapore	0.059	0.075	0.062	0.053	0.053	0.053
Thailand	0.228	0.244	0.243	0.223	0.223	0.224
Vietnam	0.328	0.269	0.273	0.204	0.207	0.206

Source: World Energy Balances, 2022 Edition, International Energy Agency (IEA)

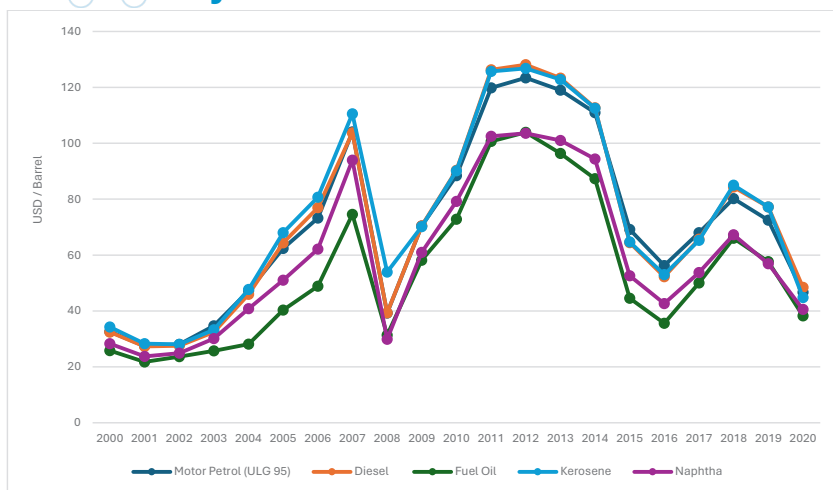




ENERGY PRICES



EX-SINGAPORE PRICES OF MAJOR PETROLEUM PRODUCTS



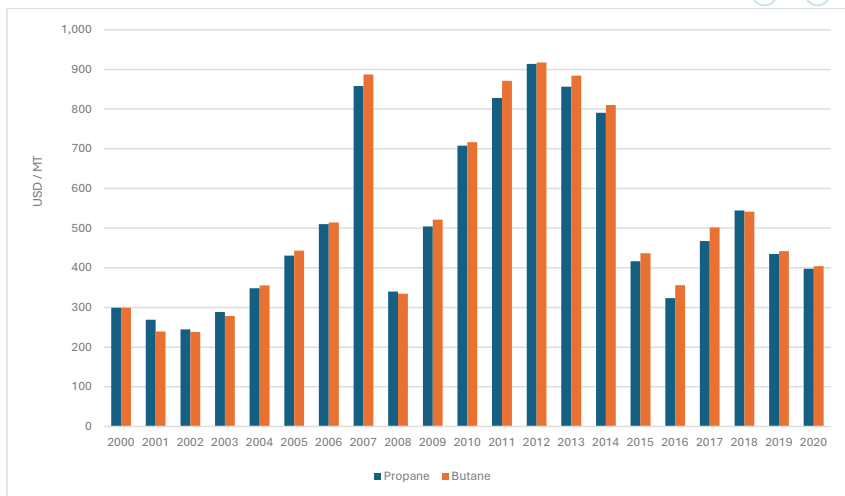
Unit : USD/Barrel

YEAR	Motor Petrol (ULG 95)	Diesel	Fuel Oil	Kerosene	Naphtha
2000	32.64	32.48	25.82	34.27	28.32
2001	27.43	27.32	21.78	28.32	23.75
2002	28.04	27.55	23.63	28.08	24.93
2003	34.69	32.46	25.72	33.25	30.14
2004	47.23	45.92	28.15	47.69	40.82
2005	62.38	64.35	40.32	67.99	51.04
2006	73.20	76.93	48.84	80.72	62.13
2007	104.05	103.74	74.60	110.50	93.98
2008	39.25	39.32	31.40	53.90	29.90
2009	70.38	70.42	58.12	70.14	60.96
2010	88.41	90.35	72.85	90.18	79.24
2011	119.79	126.28	100.68	125.71	102.49
2012	123.42	128.10	103.92	126.79	103.57
2013	119.00	123.27	96.35	122.85	100.99
2014	110.97	112.69	87.31	112.50	94.40
2015	69.17	64.47	44.52	64.69	52.62
2016	56.26	52.24	35.62	53.00	42.65
2017	67.99	65.65	49.99	65.27	53.79
2018	80.23	84.33	65.98	85.04	67.29
2019	72.49	77.23	57.63	77.24	56.90
2020	46.7	48.42	38.21	44.82	40.55

Source: PETRONAS

Note: Data shown are prices Ex-Singapore, in USD per Barrel, taken from Industry Sources

ANNUAL LIQUEFIED PETROLEUM GAS (LPG) CONTRACT PRICES - ARAB GULF



Unit : USD/MT

YEAR	Propane	Butane
2000	299.29	299.46
2001	269.29	239.43
2002	244.58	238.48
2003	288.84	278.46
2004	348.61	355.33
2005	430.79	442.89
2006	510.27	514.00
2007	858.00	887.50
2008	340.00	335.00
2009	504.37	521.43
2010	708.01	716.81
2011	828.03	871.12
2012	914.12	917.45
2013	856.79	884.14
2014	790.70	810.58
2015	416.75	436.57
2016	323.67	356.17
2017	467.56	502.06
2018	544.24	541.65
2019	434.58	441.67
2020	397.40	404.13

Source: PETRONAS

Note: Yearly LPG contract prices - Arab Gulf, in USD per Metric Tonne, taken from Industry Sources

AVERAGE ANNUAL PRICES OF NATURAL GAS IN MALAYSIA



Unit : RM/ MMBtu

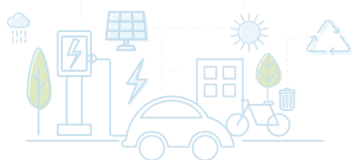
YEAR	Gas Price to Power Sector	Gas Price to Non-Power Sector-GMB	Gas Price to Non-Power Sector-PGB
2000	6.40	16.72	11.32
2001	6.40	14.10	11.32
2002	6.40	13.40	11.32
2003	6.40	9.40	11.32
2004	6.40	9.40	11.32
2005	6.40	9.40	11.32
2006	6.40	9.40	11.32
2007	6.40	9.40	11.32
2008	10.36	12.98	16.55
2009	11.30	12.21	16.77
2010	10.70	11.05	15.35
2011	12.45	12.80	17.10
2012	13.70	14.05	18.35
2013	13.70	14.05	18.35
2014	15.20	15.55	19.85
2015	18.95	17.80	22.10
2016	18.95	21.05	25.10
2017	21.95	23.80	28.10
2018	24.95	26.80	31.10
2019	27.95	29.80	34.10
2020	N/A	33.65	30.95

Source: PETRONAS

Note: Starting Jan 2020, gas price for power sector is based on market price

OFFICIAL SELLING PRICES OF MALAYSIAN CRUDE OIL





Unit: USD / Barrel

YEAR	Tapis Blend Crude Oil	Labuan Crude	Miri Light Crude Oil	Bintulu Crude Oil	Terengganu Condensate	Bintulu Condensate	Dulang Crude Oil	Kikeh Crude Oil
2000	30.25	30.25	30.25	29.95	30.29	29.09	29.18	-
2001	25.06	25.06	25.06	24.78	23.86	23.96	24.68	-
2002	25.52	25.52	25.52	25.22	24.32	24.42	25.23	-
2003	30.60	30.60	30.60	30.33	29.40	29.50	29.99	-
2004	41.84	41.84	41.84	41.54	40.64	40.74	41.17	-
2005	57.71	57.71	57.71	57.43	56.51	56.61	57.41	-
2006	69.56	69.56	69.56	69.28	68.66	68.45	68.96	-
2007	78.96	78.96	78.96	78.66	77.91	77.92	78.59	-
2008	102.79	102.79	102.79	102.49	101.59	101.69	102.49	-
2009	64.97	64.97	64.97	64.67	63.77	63.87	64.67	-
2010	79.51	79.51	79.51	79.21	78.31	78.41	79.21	-
2011	116.25	116.25	116.25	115.95	115.95	115.05	115.15	-
2012	118.22	118.66	118.56	118.36	110.92	110.62	118.16	115.94
2013	114.70	116.00	115.70	115.70	107.40	107.10	115.10	116.00
2014	103.26	106.41	104.89	103.13	91.82	93.99	105.46	105.66
2015	45.12	47.73	47.63	44.94	40.28	42.98	47.35	46.96
2016	45.43	47.63	47.63	45.13	39.76	42.56	47.23	47.63
2017	56.30	57.90	57.90	56.30	53.57	54.97	57.50	57.90
2018	73.84	75.24	75.24	73.84	67.71	69.41	74.84	75.24
2019	68.93	70.33	70.33	68.93	58.08	59.58	69.93	70.33
2020	43.65	45.05	45.05	44.85	-	-	42.85	45.05

Source: PETRONAS

AVERAGE SELLING PRICES OF TNB

Unit: sen/kWh

YEAR	Domestic	Commercial	Industrial	Mining	Public Lighting	Agriculture	Green Tariff	Average
2015	32.67	47.68	36.56	25.00	25.49	45.86	-	39.45
2016	33.21	46.76	37.13	25.34	25.57	45.78	-	39.55
2017	32.87	47.16	36.97	25.07	25.53	45.54	-	39.53
2018	33.09	47.28	37.30	24.61	25.57	45.69	-	39.68
2019	33.74	47.20	37.62	24.07	25.13	45.98	8.00	39.89
2020	34.91	47.48	38.01	25.55	25.37	45.77	8.00	40.07
2021	35.29	47.42	37.91	26.63	25.37	45.90	-	39.94

Source: TNB

AVERAGE SELLING PRICES OF SESB

Unit: sen/kWh

YEAR	Domestic	Commercial	Industrial	Public Lighting	Average
2015	29.14	37.63	30.8	25.54	32.60
2016	28.86	38.21	31.36	23.09	33.41
2017	28.39	38.26	31.09	23.27	33.30
2018	29.11	39.19	31.36	24.61	34.00
2019	29.60	39.38	31.58	25.14	25.47
2020	30.20	39.61	31.87	34.31	34.29
2021	30.26	38.41	31.63	25.30	34.43

Source: SESB

AVERAGE SELLING PRICES OF SEB

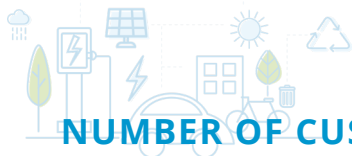
Unit: sen/kWh

YEAR	Domestic	Commercial	Industrial	Public Lighting	Average
2015	28.25	31.72	24.48	na	28.50
2016	28.30	30.53	24.15	47.12	28.20
2017	28.21	30.54	23.86	47.18	28.04
2018	28.27	30.50	23.69	47.17	27.96
2019	28.47	30.65	24.16	47.20	28.22
2020	30.20	39.61	31.87	25.47	34.29
2021	28.96	30.59	23.96	47.28	28.30

Source: SEB



ELECTRICITY SUPPLY PERFORMANCE



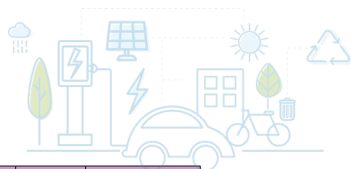
NUMBER OF CUSTOMERS OF TNB, SESB AND SEB

YEAR		Domestic	Commercial	Industry	Public Lighting	Mining	Others (Including Agriculture)	TOTAL
2015	TNB	6,920,122	1,475,306	27,672	65,888	28	1,627	8,490,643
	SESB	460,321	85,581	2,756	5,596	-	-	554,254
	SEB	516,084	88,297	1,004	8,939	-	-	614,324
	TOTAL	7,896,527	1,649,184	31,432	80,423	28	1,627	9,659,221
2016	TNB	6,989,968	1,464,815	27,556	67,808	34	1,808	8,551,989
	SESB	478,049	90,510	1,545	5,906	-	-	576,010
	SEB	536,466	91,359	1,013	9,457	-	4	638,299
	TOTAL	8,004,483	1,646,684	30,114	83,171	34	1,812	9,766,298
2017	TNB	7,181,846	1,510,341	28,867	70,402	38	2,112	8,793,606
	SESB	491,809	93,738	1,550	6,061	-	-	593,158
	SEB	554,467	93,627	1,051	10,040	-	4	659,189
	TOTAL	8,228,122	1,697,706	31,468	86,503	38	2,116	10,045,953
2018	TNB	7,378,425	1,553,607	29,749	72,554	45	2,228	9,036,608
	SESB	505,239	96,167	1,589	6,129	-	-	609,124
	SEB	568,712	96,416	1,066	10,491	-	4	676,689
	TOTAL	8,452,376	1,746,190	32,404	89,174	45	2,232	10,322,421
2019	TNB	7,553,229	1,575,198	30,520	75,463	53	2,326	9,236,789
	SESB	519,308	98,479	15,987	6,335	-	-	640,109
	SEB	583,613	99,774	1,059	11,146	-	4	695,596
	TOTAL	8,656,150	1,773,451	47,566	92,944	53	2,330	10,572,494
2020	TNB	7,728,383	1,590,434	31,637	77,982	53	2,431	9,430,920
	SESB	529,185	99,974	1,603	6,535	-	-	637,297
	SEB	598,106	101,453	1,067	11,484	-	-	712,110
	TOTAL	8,855,674	1,791,861	34,307	96,001	53	2,431	10,780,327
2021	TNB	7,916,379	1,618,366	32,846	80,866	60	2,548	9,651,065
	SESB	544,186	103,352	1,614	6,585	-	-	655,737
	SEB	617,255	104,537	1,072	12,071	-	1	734,936
	TOTAL	9,077,820	1,826,255	35,532	99,522	60	2,549	11,041,738

TRANSMISSION SYSTEM CAPACITY OF TNB, SESB AND SEB

System	2018			2019			2020			2021		
	TNB	SESB	SEB	TNB	SESB	SEB	TNB	SESB	SEB	TNB	SESB	SEB
TRANSMISSION SYSTEM LINES/CABLES (km)												
500kV	1,628	-	753	1,886	-	753	2,176	-	377	2,567	-	753
275 kV	9,047	598	2,810	9,597	598	3,068	9,406*	598	1,560	9,526	807	3,100
132 kV	12,407	2,180	840	12,482	2,217	916	12,697	2,240	454	12,761	2,244	1,200
66 kV	-	110	-	-	103	-	-	103	-	-	103	-
TRANSMISSION SUBSTATIONS												
Number	443	45	37	457	46	42	462	48	43	472	49	46
Capacity (MVA)	115,120	5,049	10,736	121,590	5,489	10,726	125,490	5,399	11,936	130,710	6,349	13,586

Note : * Including 627.64 cct-km 500 kV lines energized at 275kV



DISTRIBUTION SYSTEM CAPACITY OF TNB, SESB AND SEB

System	2018			2019			2020			2021		
	TNB	SESB	SEB	TNB	SESB	SEB	TNB	SESB	SEB	TNB	SESB	SEB
DISTRIBUTION SYSTEM LINES/CABLES (km)												
Overhead Lines <small>a,b,c</small>	352,565	9,465	26,236	366,568	10,048	26,850	379,468	9,840	27,634	392,894	12,820	28,427
Underground Cables <small>a,b,c</small>	307,474	1,109.05	8,769	316,439	316,439.00	9,098	323,844	1,612	9,540	330,241	1,710	10,320
DISTRIBUTIONS SUBSTATIONS												
Number	81,327	7,957	13,824	83,467	8,597	13,544	85,127	8,610	14,595	86,468	8,592	12,264
Capacity (MVA)	114,089	5,441	9,600	117,436	6,091	5,940	120,301	6,114	9,845	123,084	6,289	10,126

Notes:

a. Only 11kV and 33 kV for SESB's overhead lines and underground cables

b. SESB data is financial year data

PERFORMANCE HIGHLIGHTS OF TNB, SESB AND SEB

System	2018			2019			2020			2021		
	TNB	SESB	SEB	TNB	SESB	SEB	TNB	SESB	SEB	TNB	SESB	SEB
Maximum Demand (MW)	18,338	955	3,504	18,566	1,001	3,777	18,808	987	3,664	18,585	1,003	4,107
Total Units Generated (GWh)	17,827	1,033	27,177	16,735	1,125	29,456	16,642	1,178	28,088	17,041	1,250	31,025
Total Units Sold (GWh)	113,469	5,345	24,316	116,525	5,576	25,492	110,879	5,331	26,211	111,858	5,356	28,590
Sales Revenue of Electricity (RM million)	45,029	1,830	5,266	46,487	1,913	5,585	44,435	1,828	5,460	44,654	1,843	2,234
Installed Capacity (MW)	5,066	328 ^a	4,641	4,766	328 ^a	5,204	4,509	329 ^a	5,242	4,529	311 [*]	5,682
Total Number of Employees	28,371	3,179	4,841	28,825	3,180	5,207	27,957	3,134	5,380	27,243	3,197	5,442
Sales Revenue Per Employee (RM million)	1.59	0.58	1.09	1.61	0.60	1.07	1.59	0.58	1.02	1.64	0.58	0.41
Unit Sold Per Employee (GWh)	4.00	1.68	5.33	4.04	1.75	5.20	3.96	1.70	4.87	4.11	1.68	5.25
Installed Capacity Per Employee (MW)	0.18	0.10	0.96	0.17	0.10	1.00	0.16	0.10	0.97	0.17	0.11	1.04
Total Purchased Units (GWh)	108,912	5,382	-	112,899	5,597	-	110,059	5,072	-	116,356	5,263	-
Total Units Exported (GWh)	0.08	-	1,509.00	0.26	-	1,697.00	3.00	-	1,568.00	1.00	-	973.30
Total Units Imported (GWh)	19.98	-	-	40.58	-	-	18.00	-	-	34.00	-	-

Note: 1. a = Dependable Capacity



REVENUE, ASSET SIZE, EMPLOYMENT AND ANNUAL INVESTMENT OF TNB AND SESB

		Revenue (RM Billion)	Asset Size (RM Billion)	Employment	Annual Investment (RM Billion)
TNB	2010	28.4	60.0	25,571	3.8
	2011	30.2	60.5	26,732	4.6
	2012	33.3	62.5	28,105	4.9
	2013	34.8	69.1	29,269	5.6
	2014	39.8	71.0	30,065	6.5
	2015	40.3	73.1	29,602	7.7
	2016	41.3	74.9	28,807	6.6
	2017	44.2	75.8	27,990	6.1
	2018	47.1	83.9	28,371	7.5
	2019	47.2	71.3	28,825	7.6
	2020	44.4	181.4	27,957	7.8
	2021	44.7	181.4	27,243	7.9
SESB	2010	1.1	3.0	2,617	0.3
	2011	1.1	4.0	2,614	0.3
	2012	1.4	4.0	2,675	0.3
	2013	1.5	3.9	2,759	0.3
	2014	1.7	5.7	2,975	0.2
	2015	1.9	6.3	3,092	0.3
	2016	2.1	6.4	3,282	0.4
	2017	2.2	6.9	3,264	0.4
	2018	2.1	7.1	3,179	0.3
	2019	2.3	5.0	3,180	0.4
	2020	2.2	10.3	3,134	0.3
	2021	1.8	N/A	3,197	N/A

Source: TNB, SESB



NUMBER OF ELECTRICITY SUPPLY INTERRUPTIONS

YEAR	Peninsular Malaysia	Sabah	Sarawak
2010	101,126	24,173	8,003
2011	83,347	25,334	7,759
2012	75,271	26,841	7,881
2013	79,372	24,849	7,994
2014	70,629	22,739	9,496
2015	63,920	19,585	6,158
2016	58,175	20,105	7,550
2017	60,058	18,611	6,089
2018	64,198	17,017	5,772
2019	69,621	20,534	6,728
2020	64,512	22,863	5,425
2021	70,004	23,193	5,215



PERFORMANCE OF DISTRIBUTION SYSTEM IN PENINSULAR MALAYSIA

	2015	2016	2017	2018	2019	2020	2021
Electricity Supply Interruptions per 1,000 Customers							
Scheduled Interruptions	0.17	0.16	0.06	0.05	0.04	0.08	0.05
Unscheduled Interruptions	7.25	6.68	7.01	7.51	7.73	7.06	7.39
SAIDI, SAIFI & CAIDI							
SAIDI (Minutes/ Customer/Year) by Voltage Level	51.49	49.29	54.49	48.22	48.13	44.95	45.25
SAIFI (Number of Interruptions/ Customer/Year) by Voltage Level	0.83	0.90	0.93	0.86	0.83	0.8	0.78
CAIDI (Minutes/ Interrupted Customer/Year) by Voltage Level	62.04	54.77	58.59	56.07	57.99	56.05	58.31

SYSTEM AVERAGE INTERRUPTION DURATION INDEX (SAIDI) BY STATE IN PENINSULAR MALAYSIA

State	2015	2016	2017	2018	2019	2020	2021
Johor	58.98	49.39	56.04	41.73	41.91	42.98	46.86
Kedah	57.42	60.82	82.51	73.30	65.76	64.98	57.94
Kelantan	56.18	67.9	59.34	49.91	39.33	42.69	37.94
WP Kuala Lumpur	32.36	32.39	41.01	28.59	26.68	28.19	30.04
Melaka	42.48	38.04	42.62	18.59	21.99	27.28	23.51
Negeri Sembilan	56.86	51.03	35.56	57.37	37.58	43.96	35.98
Pahang	62.61	57.22	51.30	46.01	60.84	45.80	40.63
Perak	51.64	46.23	52.83	43.89	43.26	43.20	54.60
Perlis	34.09	35.98	144.10	56.67	61.72	41.45	38.42
Pulau Pinang	54.49	51.05	58.12	78.66	89.34	51.74	49.22
WP Putrajaya (including Cyberjaya)	0.63	0.13	0.55	0.73	0.04	0.08	1.22
Selangor	50.74	54.67	52.34	64.77	61.55	58.52	61.46
Terengganu	41.46	39.65	42.82	36.67	30.70	33.62	35.84
PENINSULAR MALAYSIA	51.49	49.29	54.49	48.22	48.13	44.95	45.25

SYSTEM AVERAGE INTERRUPTION FREQUENCY INDEX (SAIFI) BY STATE IN PENINSULAR MALAYSIA

Unit : Number of Interruptions/Customer/Year

SAIFI by State	2015	2016	2017	2018	2019	2020	2021
Johor	0.70	0.70	0.55	0.63	0.75	0.90	0.75
Kedah	1.20	1.40	1.19	1.26	1.22	1.24	1.11
Kelantan	1.25	1.45	1.53	1.47	1.02	1.12	1.19
WP Kuala Lumpur	0.48	0.57	0.61	0.46	0.43	0.50	0.46
Melaka	0.58	0.64	0.55	0.28	0.44	0.48	0.44
Negeri Sembilan	0.77	0.78	0.44	0.77	0.51	0.70	0.71
Pahang	1.44	1.56	1.39	0.65	0.82	0.66	0.61
Perak	0.80	0.94	0.71	1.41	1.48	1.37	1.45
Perlis	0.46	0.57	2.32	0.79	1.02	0.60	0.67
Pulau Pinang	0.83	0.82	0.69	1.68	1.37	1.64	1.56
WP Putrajaya (including Cyberjaya)	0.01	0.15	0.00	0.09	0.00	0.02	0.10
Selangor	0.74	0.84	0.60	0.94	0.76	0.75	0.73
Terengganu	0.87	1.01	1.10	1.00	0.93	0.76	0.82
PENINSULAR MALAYSIA	0.83	0.90	0.93	0.86	0.83	0.80	0.78

CUSTOMER AVERAGE INTERRUPTION DURATION INDEX (CAIDI) BY STATE IN PENINSULAR MALAYSIA

Unit : Number of Interruptions/Customer/Year

CAIDI by State	2015	2016	2017	2018	2019	2020	2021
Johor	84.26	70.56	101.89	66.24	55.88	48.02	62.90
Kedah	47.85	43.44	69.33	58.17	53.90	52.57	52.10
Kelantan	44.94	46.83	38.78	33.95	38.56	38.04	31.85
WP Kuala Lumpur	67.42	56.82	67.23	62.15	62.05	56.05	65.68
Melaka	73.24	59.44	77.50	66.39	49.98	57.07	53.91
Negeri Sembilan	73.84	65.42	80.81	74.51	73.69	62.80	50.89
Pahang	65.65	62.26	84.23	31.13	74.20	69.08	66.83
Perak	43.48	36.68	36.91	71.73	29.23	31.53	37.60
Perlis	64.55	49.18	74.41	46.82	60.51	68.73	57.78
Pulau Pinang	74.11	63.12	62.11	70.78	65.21	31.53	31.51
WP Putrajaya (including Cyberjaya)	63.00	0.87	0.00	8.11	0.00	3.71	12.05
Selangor	68.57	65.08	87.23	68.90	80.99	78.45	84.08
Terengganu	47.66	39.26	42.39	36.67	33.01	44.24	43.81
PENINSULAR MALAYSIA	62.04	54.77	58.99	56.07	57.99	56.05	58.31



PERFORMANCE OF DISTRIBUTION SYSTEM IN SABAH

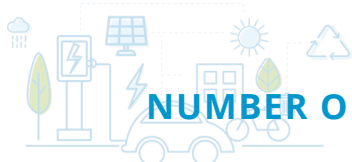
	2015	2016	2017	2018	2019	2020	2021
Electricity Supply Interruptions per 1,000 Customers							
Scheduled Interruptions	1.81	2.34	3.46	3.01	3.19	4.19	4.13
Unscheduled Interruptions	33.32	32.15	28.85	15.04	17.35	18.67	19.06
SAIDI, SAIFI & CAIDI							
SAIDI (Minutes/Customer/Year)	379.26	311.01	240.9	267.87	205.31	189.43	332.14
SAIFI (Number of Interrup-tion/Customer/Year)	9.63	8.60	6.61	8.61	10.83	12.41	12.1
CAIDI (Minutes/ Interrupted Customer/Year)	39.38	36.16	36.44	31.11	29.26	15.26	29.27

PERFORMANCE OF DISTRIBUTION SYSTEM IN SARAWAK

	2015	2016	2017	2018	2019	2020	2021
SAIDI (Minutes/Customer/Year)	143.00	119.00	110.60	95.81	83.42	77.68	84.78
SAIFI (Number of Interrup-tion/Customer/Year)	1.69	1.46	1.28	1.20	1.07	1.02	1.01
CAIDI (Minutes/ Interrupted Customer/Year)	84.62	81.51	86.72	79.63	78.29	76.00	84.00



PIPED GAS SUPPLY PERFORMANCE



NUMBER OF NATURAL GAS CUSTOMERS BY SECTOR

YEAR	Licensee	Domestic	Commercial	Industrial	Total
2015	GMB	12,571	862	795	14,228
	SEC	-	-	22	22
2016	GMB	12,339	935	819	14,093
	SEC	-	-	23	23
2017	GMB	12,818	1017	853	14,688
	SEC	-	2	21	23
2018	GMB	12,683	1014	879	14,576
	SEC	0	0	24	24
2019	GMB	12,620	1056	933	14,609
	SEC	0	2	23	25
2020	GMES	11,348	946	961	13,255
	SEC	0	2	24	26
	PEGT	0	1	2	3
2021	GMES	10,335	879	989	12,203
	PEGT	0	1	2	3
	SHELL	0	0	1	1
	SEC	0	2	27	29
2022	GMES	9,502	770	1021	11,293
	PEGT	0	1	8	9
	SHELL	0	0	5	5
	PETROLIFE	0	0	2	2
	SEC	0	2	28	30

1) GMB (Gas Malaysia Berhad), GMD (Gas Malaysia Distribution Sdn. Bhd.), GMES (Gas Malaysia Energy and Services Sdn. Bhd.), PEGT (Petronas Energy and Gas Trading Sdn. Bhd.), PETROLIFE (PETROLIFE Aero Sdn. Bhd.), SHELL (SHELL Malaysia Trading Sdn. Bhd.)

NATURAL GAS CONSUMPTION BY SECTOR



Unit : mmBtu

YEAR	Licensee	Domestic	Commercial	Industrial	Total
2015	GMB	28,710	1,021,607	157,720,218	158,770,535
	SEC	-	-	294,387	294,387
2016	GMB	24,738	1,007,563	162,451,003	163,483,304
	SEC	-	-	284,156	284,156
2017	GMB	25,850	1,045,193	182,502,651	183,573,694
	SEC	-	41,557	274,759	316,316
2018	GMB	26,100	1,017,938	192,474,505	193,518,543
	SEC	0	0	322,911	322,911
2019	GMB	26,488	996,089	199,848,019	200,870,596
	SEC	0	27,041	426,637	453,678
2020	GMES	30,204	606,643	199,216,710	199,853,557
	SEC	0	24,489	648,362	672,851
	PEGT	0	1,882,358	2,053,341	3,935,699
2021	GMES	27,114	469,909	202,682,539	203,179,562
	PEGT	0	1,399,889	1,676,448	3,076,337
	SHELL	0	0	1,800,709	1,800,709
	SEC	0	33,071	823,130	856,202
2022	GMES	23,624	761,984	155,402,960	156,188,568
	PEGT	0	1,440,250	28,255,640	29,695,890
	SHELL	0	0	4,436,091	4,436,091
	PETROLIFE	0	0	1,707,820	1,707,820
	SEC	0	44,729	655,660	700,389

NATURAL GAS PIPE LENGTH

Unit : km

YEAR	Peninsular (GMD)		Sabah (SEC)	
	Polyethylene Pipe	Stainless Steel Pipe	Polyethylene Pipe	Stainless Steel Pipe
2015	567.04	1,472.70	6.78	1.30
2016	571.00	1,543.00	6.78	1.30
2017	577.00	1,594.00	6.78	1.30
2018	426.00	1,680.00	6.78	1.30
2019	586.00	1,810.00	6.81	4.00
2020	420.43	1,939.71	9.81	4.00
2021	582.86	2,038.32	11.00	4.00
2022	586.54	2,111.33	12.16	4.00

PERFORMANCE HIGHLIGHTS

YEAR	Licensee	Demand (mmBtu)	*Sales of Gas (RM '000)	Total Number of Employees	Revenue per Employee (RM '000)	Unit Sold Per Employee (mmBtu)
2015	GMB	158,770,535	3,594,520	451	7,970	352,041
	SEC	294,387	9,789	74	132	3,978
2016	GMB	163,483,304	3,973,843	430	9,241	380,194
	SEC	284,124	9,872	80	123	3,552
2017	GMB	183,573,694	5,260,870	487	10,803	376,948
	SEC	274,759	11,424	83	138	3,310
2018	GMB	191,791,567	6,178,724,795	504	12,367,545	380,539
	SEC	322,911	1,437,160	79	32,482	4,077
2019	GMB	200,870,594	6,838,254	530	12,902	379,001
	SEC	455,797	12,371	83	149	5,492
2020	GMEs	199,853,557	6,738,208	60	112,303	3,330,893
	PEGT	3,935,699	117,108	22	5,323	178,895
	SEC	672,851	15,503,910	80	193,799	8,410
2021	GMEs	203,179,560	5,868,426	60	97,807	3,386,326
	PEGT	3,076,337	81,284	35	2,322	87,895
	SHELL	N/A	N/A	N/A	N/A	N/A
	SEC	856,202	20,875,711	83	251,515	10,316
2022	GMEs	156,188,580	7,598,947	60	126,649	2,603,143
	PEGT	29,695,890	1,356,263	45	30,139	659,909
	SHELL	N/A	N/A	N/A	N/A	N/A
	PETROLIFE	1,707,820	84,280	35	2,408	48,795
	SEC	700,389	19,851,921	107	185,532	6,546

* GMEs Shipping License starts from 01.01.2020

NUMBER OF SUPPLY INTERRUPTIONS IN PENINSULAR MALAYSIA AND SABAH

YEAR	GMD	SEC
2015	22	0
2016	14	0
2017	16	0
2018	29	0
2019	13	0
2020	4	0
2021	2	2
2022	3	4

* GMD Distribution License starts from 01.01.2020

SAIDI, SAIFI, CAIDI, NETWORK INTEGRITY AND CUSTOMER SERVICE



YEAR	SAIDI (Minutes/Customer/Year)		SAIFI (Disruptions/Customer/ Year)		CAIDI (Minute/Disruption)	
	Peninsular	Sabah	Peninsular	Sabah	Peninsular	Sabah
2015	0.0874	N/A	0.0016	N/A	54.0500	N/A
2016	0.5812	N/A	0.0010	N/A	575.2300	N/A
2017	0.1067	N/A	0.0025	N/A	42.5100	N/A
2018	0.3060	N/A	0.0008	N/A	404.8200	N/A
2019	0.1780	N/A	0.0010	N/A	259.5600	N/A
2020	5.7780	N/A	0.0040	N/A	1381.6300	N/A
2021	1.4393	N/A	N/A	N/A	N/A	N/A
2022	0.0000	N/A	N/A	N/A	N/A	N/A

YEAR	Network Integrity (Disruptions/Customer/Year)		Customer Service	
	Peninsular	Sabah	Peninsular	Sabah
2021	2	N/A	47	N/A
2022	1.2	N/A	35	N/A

INDUSTRIAL SALES VOLUME BY INDUSTRY GROUPING

Unit: mmBtu

YEAR	Licensee	Natural Gas Consumption by Sub-Sector (mmBtu)											Power	Export
		Non-Power												
		Non-Metallic Industry	Basic Metal Industry	Rubber products	Food, Beverages & Tobacco	Chemical Products	Electrical & Electronic	Machinery & Equipment	Fabricated Metal Products	Glass Products	Others			
2020	GMES	9,431,627	8,300,981	73,714,916	42,336,782	24,825,286	1,392,590	172,199	3,420,951	18,137,579	17,806,394	0	0	
	PEGT	0	0	0	0	0	0	0	0	0	1,884,748	2,050,952	0	
2021	GMES	9,442,045	8,382,949	68,792,166	41,767,885	24,963,431	1,632,353	176,869	3,287,899	21,367,334	22,869,608	0	0	
	PEGT	0	0	0	0	0	0	0	0	0	1,400,681	1,675,656	0	
	SHELL	0	0	1,800,709	0	0	0	0	0	0	0	0	0	
	SEC	5,689	0	50,524	74,388	0	0	0	144,285	0	581,315	0	0	
2022	GMES	10,453,772	8,892,374	42,241,487	39,097,997	15,604,892	1,616,399	211,321	3,340,002	9,850,137	24,094,579	0	0	
	PEGT	0	5,753,638	3,909,752	5,795,226	0	0	0	0	11,089,885	1,440,677	1,706,712	0	
	SHELL	0	0	1,287,321	0	3,148,770	0	0	0	0	0	0	0	
PETROLIFE		0	0	0	0	938,740	0	0	0	769,080	0	0	0	
	SEC	0	140,519	76,650	99,396	330,766	0	0	0	0	53,058	0	0	



NOTES ON ENERGY BALANCE



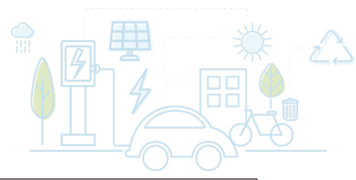
NOTES ON ENERGY BALANCE

The net calorific value (NCV) was chosen as the basis of calculations rather than the gross calorific value (GCV). The Joule was used as the rigorous accounting unit, while the “tonne oil equivalent” (1 toe= 41.84 Gigajoules) was chosen as the final unit for presentation in the Energy Balance

COMMERCIAL ENERGY BALANCE FORMAT

The rows of the Energy Balance tables contain the following items:-

Primary supply	Refers to supply of energy that has not undergone the transformations / conversion process within the country.
Primary production (1)	Refers to the quantity of fuels extracted. Data for natural gas excludes the amount of reinjected and flared gas. Gross production of hydro is shown in conventional fuel equivalent input.
Gas Flaring, Reinjection & Use (2)	Refers to the quantity of gas flared, re-injected into the gas fields and use for production purpose.
Imports (3) and exports (4)	Refer to the amount of primary and secondary energy obtained from, or supplied to other countries. In the energy balance format, imports always carry a positive and export a negative sign.
Bunkers (5)	Refer to the amount of fuels delivered to ocean-going ships of all flags engaged in international traffic.
Stock change (6)	Refers to the difference between the amounts of fuel in stocks at the beginning and end of year and should ideally cover producers, importers and industrial consumers. At this stage, however, only oil companies' stocks are taken into account. A negative sign indicates net increases while a positive sign indicates net decreases in stocks.
Total	Under primary supply, 'total' is the addition of columns to obtain total availability. Under transformation, 'total' is the addition of columns to obtain transformation and conversion losses.
Gas Plants (9)	Shows the input of natural gas into the LNG, MDS, GPP-LPG and RGT plants and their respective outputs.
Refineries (10), Power Stations and Co-generation & Private licensees (11)	Shows the input of any energy product (negative sign) for the purpose of converting it to one or more secondary products (positive sign).
Losses and Own Use (12)	Refers to losses of electrical energy and natural gas which occur outside the utilities and plants (i.e. distribution losses) and the consumption of energy by utilities and plants for operating their installation (i.e. electricity for operating auxiliary equipment and petroleum products used in the crude distillation process respectively). It does not, however, include conversion loss that is accounted for in the 'total' column.
Secondary supply (14)	Refers to the supply of energy from the transformation process and after deducting the energy sector's own use and losses, including power station use.



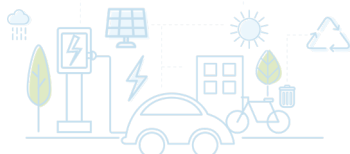
Residential and commercial (15 & 16)	Not only refers to energy used within households and commercial establishments but includes government buildings and institutions.
Industry (17)	Is a very broad-based sector ranging from manufacturing to mining and construction. Diesel sales through distributors are assumed to be to industrial consumers.
Transport (18)	Basically refers to all sales of motor gasoline and diesel from service stations and sales of aviation fuel. It also includes diesel and motor gasoline sold directly to government and military.
Agriculture (19)	Covers agriculture and forestry.
Fishery (20)	May involve the capture of wild fish or raising fish through fish farming or aquaculture.
Non-energy use (21)	Use of products resulting from the transformation process for non-energy purpose (i.e. bitumen/lubricants, asphalt/greases) and use of energy products (such as natural gas) as industrial feed stocks
Final use (22)	Refer to the quantity of energy of all kinds delivered to the final user.

NOTES:

- I. Non-commercial energy such as firewood and other biomass fuels have been excluded in the energy balance until more reliable data are made available.
- II. The output side of the final user's equipment of device i.e. useful energy will not be dealt with in the balance as it will involve assessing the efficiencies of end - use equipment operating under various different conditions.

NOTES ON ELECTRICITY

Reserve Margin	Total capacity margin is defined as the amount of installed generation available over and above system peak load Reserve Margin = $\frac{\text{Installed Capacity} - \text{Peak Demand}}{\text{Peak Demand}}$
Peak Demand	The maximum power demand registered by a customer or a group of customers or a system in a stated period of time such as a month or a year. The value may be the maximum instantaneous load or more usually, the average load over a designated interval of time, such as half an hour and is normally stated in kilowatts or megawatts.
Installed Capacity	Installed capacity is defined as the maximum possible capacity (nameplate rating) that can be provided by the plant.
Dependable Capacity	The maximum capacity, modified for ambient limitations for a specified period of time, such as a month or a season.
Available Capacity	Available capacity refers to the Latest Tested Net Capacity. It is the dependable capacity, modified for equipment limitation at any time.
Unit Generated (Gross Generation)	The total amount of electric energy produced by generating units and measured at the generating terminal in kilowatt-hours (kWh) or megawatt hours (MWh)
Unit Sent Out From Station(s) (Net Generation)	The amount of gross generation less the electrical energy consumed at the generating station(s) for station service or auxiliaries.



NOTES ON COAL

Measured Resources	Refers to coal for which estimates of the rank and quantity have been computed to a high degree of geologic assurance, from sample analyses and measurements from closely spaced and geologically well known sample sites.
Indicated Resources	Refers to coal for which estimates of the rank, quality, and quantity have been computed to a moderate degree of geologic assurance, partly from sample analyses and measurements and partly from reasonable geologic projections.
Inferred Resources	Refers to coal of a low degree of geologic assurance in unexplored extensions of demonstrated resources for which estimates of the quality and size are based on geologic evidence and projection. Quantitative estimates are based on broad knowledge of the geologic character of the bed or region where few measurements or sampling points are available and on assumed continuation from demonstrated coal for which there is geologic evidence.

CONVERSION COEFFICIENTS AND EQUIVALENCE

TJ/1000 Tonnes ¹

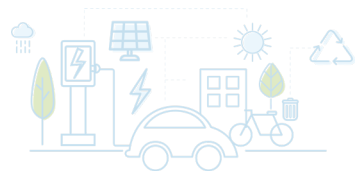
Hard coal	29.3076	Lignite/brown coal	11.2834
Coke/oven coke	26.3768	Peat	9.5250
Gas coke	26.3768	Charcoal	28.8888
Brown coal coke	19.6361	Fuelwood ²	13.4734
Pattern fuel briquettes	29.3076	Lignite briquettes	19.6361

Natural Gas Products (TJ/1000 Tonnes)

Liquefied Natural Gas (LNG)	45.1923	Natural Gas	1TJ/ million scf 0.9479 mmbtu/GJ
Butane	50.393	Ethane	1,067.82 GJ/mscf
Propane	49.473	Methane	1,131.31 GJ/mscf

Electricity

Electricity	3.6 TJ/GWh
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Petroleum Products (TJ/1000 Tonnes)

Crude petroleum (imported)	42.6133	Gas oil/diesel oil	42.4960
Crude petroleum (domestic)	43.3000	Residual fuel oil	41.4996
Plant condensate	44.3131	Naphtha	44.1289
Aviation gasoline (AVGAS)	43.9614	White/industrial spirit	43.2078
Liquefied petroleum gas (LPG)	45.5440	Lubricants	42.1401
Motor gasoline	43.9614	Bitumen (asphalt)	41.8000
Natural gasoline	44.8992	Petroleum waxes	43.3334
Aviation turbine fuel (ATF)	43.1994	Petroleum coke	36.4000
Kerosene	43.1994	Other petroleum products	42.4960

1,000 Tonnes Oil Equivalent (toe) = 41.84 TJ

Notes:- 1. Unless otherwise indicated
2. Assuming 9.7 TJ/1000 cu m

CONVERSION COEFFICIENTS FOR CRUDE OIL AND PETROLEUM PRODUCTS

Barrels to tonne

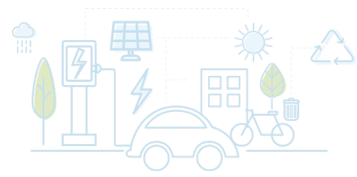
Product	Barrels/tonne
Crude Oil - Import	7.33
- Local	7.60
Motor Gasoline	8.55
Diesel Oil	7.50
Fuel Oil	6.60
Kerosene	7.90
LPG	11.76
ATF	7.91
AVGAS	9.05
Non-energy	6.50



DEFINITION

The sources of energy covered in the Energy Balances are as follows:-

Natural Gas	Is a mixture of gaseous hydrocarbons (mainly methane), which occurs in either gas fields or in association with crude oil in oil fields.
Liquefied Natural Gas (LNG)	Is a natural gas that is liquefied for ocean transportation and export.
Crude oil	Is a natural product that is extracted from mineral deposits and consists essentially of many different non-aromatic hydrocarbons (paraffinic, cyclonic, etc.).
Aviation gasoline (AVGAS)	Is a special blended grade of gasoline for use in aircraft engines of the piston type. Distillation range normally falls within 30°C and 200°C.
Liquefied Petroleum Gas (LPG)	Commercial LPG consists essentially of a mixture of propane and butane gases which are held in the liquid state by pressure or refrigeration.
Motor gasoline (Mogas)	Petroleum distillate used as fuel in spark- ignition internal combustion engines. Distillation range is within 30°C and 250°C.
Aviation turbine Fuel (ATF)	Fuel for use in aviation gas turbines mainly refined from kerosene. Distillation range from 150°C and 250°C.
Kerosene	Is a straight-run fraction from crude oil, with boiling range from 150°C to 250°C. Its main uses are for domestic lighting and cooking.
Diesel oil (or gas oil)	Distillation falls within 200°C and 340°C. Diesel fuel for high-speed diesel engines (i.e. automotive) is more critical of fuel quality than diesel for stationary and marine diesel engines. Marine oil usually consists of a blend of diesel oil and some residual (asphaltic) material.
Fuel oil	Heavy distillates, residues or blends of these, used as fuel for production of heat and power. Fuel oil production at the refinery is essentially a matter of selective blending of available components rather than of special processing. Fuel oil viscosities vary widely depending on the blend of distillates and residues.
Non-energy products	Refer mainly to naphtha, bitumen and lubricants, which are obtained by the refinery process from petroleum but used for non-energy purposes. Naphtha is a refined or partly refined light distillate, which is further, blended into motor gasoline or used as feedstock in the chemical industry. Bitumen is a viscous liquid or solid, non-volatile and possesses waterproofing and adhesive properties. Lubricating oil is used for lubricating purposes and has distillation range from 380°C to 500°C.
Refinery gas	The gas released during the distillation of crude oil and comprises methane, ethane, propane and butane. Most refinery gas is retained in the refinery and used as fuel in plant operations.
Coal and coke	Solid fuels consisting essentially of carbon, hydrogen, oxygen and sulphur. Coal in the energy balance is mainly bituminous coal (medium grade in terms of energy content) and some anthracite (high quality hard coal). Coke is obtained from coal by heating at high temperature in the absence of air.



<p>Hydropower</p>	<p>Is the inferred primary energy available for electricity production and is shown in terms of conventional fossil fuel equivalent using the average thermal efficiency of conversion for the year, i.e. the hypothetical amount of fossil fuel, which would be needed to produce the same amount of electricity in existing thermal power plants.</p>
<p>Electricity Production</p>	<p>Production of electricity refers to production from public utilities as well as independent power producers (IPPs) and private installations & co-generation plants which obtain licenses from the Electricity and Gas Supply Department of Energy Commission. Figures for 'fuel input' into power stations & co-generation plants were only available for Tenaga Nasional Berhad, SEB, SESB, IPPs as well as GDC Sdn. Bhd. Estimates were made using average conversion efficiency to obtain the fuel input into private installations.</p>



ENERGY COMMISSION CONTACT INFORMATION

HEADQUARTERS

Suruhanjaya Tenaga (*Energy Commission*)

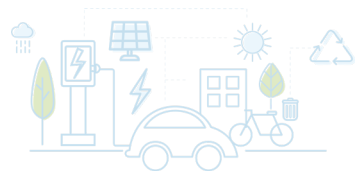
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Kelantan & Terengganu	Tingkat 6, Bangunan KWSP Jalan Padang Garong 15000 Kota Bharu KELANTAN	T: 09 748 7390 F: 09 744 5498
Pahang	Tingkat 7, Menara Zenith Jalan Putra Square 6 25000 Kuantan PAHANG	T: 09 514 2803 F: 09 514 2804
Selangor, Kuala Lumpur & Putrajaya	Tingkat 10, Menara PKNS No 17, Jalan Yong Shook Lin 46050 Petaling Jaya SELANGOR	T: 03 7955 8930 F: 03 7955 8939
Johor	Suite 18A, Aras 18 Menara ANSAR 65, Jalan Trus 80000 Johor Bahru JOHOR	T: 07 224 8861 F: 07 224 9410
Negeri Sembilan & Melaka	Tingkat 3, Wisma PERKESO Jalan Persekutuan, MITC 75450 Ayer Keroh MELAKA	T: 06 231 9594 F: 06 231-9620
Labuan	Operating from the following Regional Office starting 1 st January 2024 until further notice: Tingkat 3, Wisma PERKESO Jalan Persekutuan, MITC 75450 Ayer Keroh MELAKA	T: 06 231 9594 F: 06 231-9620



NOTES



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