

BRUNEI DARUSSALAM
ENERGY BALANCE TABLES

2002										Mtoe
	Coal	Oil	Gas	Hydro	Nuclear	NRE	Electricity	Heat	Total	
Production		9.7	10.0							19.7
Net Imports		- 9.2	- 8.0							- 17.2
TPED		0.5	2.0							2.6
Electricity and Heat Generation			- 0.7				0.2			- 0.4
Petroleum Refineries		- 0.1								- 0.1
Others			- 1.4							- 1.4
TFED		0.4					0.2			0.6
Industry										0.1
Transport		0.4								0.4
Residential										0.1
Commercial							0.1			0.1

2010										Mtoe
	Coal	Oil	Gas	Hydro	Nuclear	NRE	Electricity	Heat	Total	
Production		10.9	14.9							25.7
Net Imports		- 10.2	- 12.5							- 22.7
TPED		0.7	2.4							3.1
Electricity and Heat Generation			- 0.7				0.2			- 0.4
Petroleum Refineries		- 0.1								- 0.1
Others			- 1.7							- 1.7
TFED		0.6					0.2			0.8
Industry		0.1								0.1
Transport		0.5								0.5
Residential										0.1
Commercial							0.1			0.1

2020										Mtoe
	Coal	Oil	Gas	Hydro	Nuclear	NRE	Electricity	Heat	Total	
Production		11.0	14.8							25.8
Net Imports		- 10.1	- 12.5							- 22.6
TPED		0.9	2.3							3.2
Electricity and Heat Generation			- 0.7				0.3			- 0.4
Petroleum Refineries		- 0.1								- 0.1
Others			- 1.6							- 1.6
TFED		0.7					0.2			1.0
Industry		0.1								0.1
Transport		0.6								0.6
Residential										0.1
Commercial							0.1			0.1

2030										Mtoe
	Coal	Oil	Gas	Hydro	Nuclear	NRE	Electricity	Heat	Total	
Production		11.1	14.7							25.9
Net Imports		- 10.1	- 12.5							- 22.6
TPED		1.1	2.2							3.3
Electricity and Heat Generation			- 0.7				0.3			- 0.4
Petroleum Refineries		- 0.2								- 0.2
Others			- 1.5							- 1.5
TFED		0.9					0.2			1.1
Industry		0.1								0.1
Transport		0.8								0.8
Residential										0.1
Commercial							0.1			0.1

BRUNEI DARUSSALAM

MACRO ASSUMPTIONS

	1980	2002	2010	2020	2030	Growth Rate (% per annum)				
						80-02	02-10	10-20	20-30	02-30
GDP (2000 PPP US\$ billion)	5.7	5.8	6.6	7.9	9.3	0.1	1.6	1.7	1.7	1.7
Population (million)	0.19	0.35	0.40	0.43	0.46	2.8	1.5	0.9	0.6	1.0
GDP per capita (2000 PPP US\$)	29 407	16 683	16 807	18 210	20 308	-2.5	0.1	0.8	1.1	0.7
GDP in Services (2000 PPP US\$ billion)	1.4	3.0	3.4	4.0	4.8	3.4	1.7	1.8	1.7	1.7
GDP in Industry (2000 PPP US\$ billion)	3.9	2.7	3.0	3.6	4.2	-1.6	1.5	1.6	1.5	1.5
Urbanisation level (%)	60	75	81	85	87	1.0	0.8	0.5	0.3	0.5

ENERGY PROJECTIONS

	1980	2002	2010	2020	2030	Growth rate (% per annum)				
						80-02	02-10	10-20	20-30	02-30
Production	21.1	19.7	25.7	25.8	25.9	- 0.3	3.4			1.0
Coal										
Oil	12.2 (58%)	9.7 (49%)	10.9 (42%)	11.0 (43%)	11.1 (43%)	- 1.0	1.4	0.1	0.2	0.5
Gas	8.9 (42%)	10.0 (51%)	14.9 (58%)	14.8 (57%)	14.7 (57%)	0.5	5.1	- 0.04	- 0.04	1.4
Hydro										
NRE										
Nuclear										
Net Imports	- 18.2	- 17.2	- 22.7	- 22.6	- 22.6	- 0.3	3.5			1.0
Coal										
Oil	- 11.8	- 9.2	- 10.2	- 10.1	- 10.1	- 1.1	1.3	- 0.1		0.3
Gas	- 6.5	- 8.0	- 12.5	- 12.5	- 12.5	1.0	5.8			1.6
Electricity										
Total Primary Energy Demand	2.68	2.57	3.07	3.18	3.28	- 0.2	2.3	0.3	0.3	0.9
Coal										
Oil	0.20 (8%)	0.55 (21%)	0.72 (23%)	0.88 (28%)	1.05 (32%)	4.6	3.4	2.1	1.8	2.3
Gas	2.46 (92%)	2.02 (79%)	2.35 (77%)	2.29 (72%)	2.23 (68%)	- 0.9	1.9	- 0.3	- 0.3	0.3
Hydro										
NRE										
Nuclear										
Input for Electricity and Heat Generation	- 0.14	- 0.66	- 0.67	- 0.69	- 0.69	7.5	0.2	0.2	0.1	0.2
Coal										
Oil	-0.001 (1%)									
Gas	-0.13 (99%)	-0.66 (99%)	-0.67 (99%)	-0.68 (99%)	-0.69 (99%)	7.5	0.2	0.2	0.1	0.2
Hydro										
NRE										
Nuclear										
Other Transformation	- 0.78	- 1.46	- 1.81	- 1.74	- 1.69	2.9	2.7	- 0.4	- 0.3	0.5
Coal										
Oil		-0.10 (7%)	-0.12 (7%)	-0.13 (8%)	-0.15 (9%)		2.5	1.3	1.3	1.6
Gas	-0.78 (100%)	-1.36 (93%)	-1.69 (93%)	-1.61 (92%)	-1.54 (91%)	2.6	2.7	- 0.5	- 0.4	0.4
NRE										
Electricity										
Heat										

BRUNEI DARUSSALAM

	1980	2002	Mtoe			Growth rate (% per annum)				
			2010	2020	2030	80-02	02-10	10-20	20-30	02-30
Total Final Energy Demand	0.22	0.64	0.81	0.97	1.13	5.0	2.9	1.8	1.5	2.0
Coal										
Oil	0.19 (88%)	0.45 (69%)	0.60 (74%)	0.74 (77%)	0.89 (79%)	3.9	3.7	2.2	1.8	2.5
Gas										
NRE										
Electricity	0.03 (12%)	0.20 (31%)	0.21 (26%)	0.22 (23%)	0.24 (21%)	9.7	0.7	0.7	0.5	0.6
Heat										
Industry	0.06	0.07	0.09	0.10	0.12	1.3	2.5	1.5	1.1	1.6
Coal										
Oil	0.05 (89%)	0.05 (64%)	0.06 (63%)	0.06 (62%)	0.07 (62%)	-0.2	2.2	1.3	1.0	1.5
Gas										
NRE										
Electricity	0.01 (11%)	0.03 (36%)	0.03 (35%)	0.04 (36%)	0.04 (37%)	6.9	2.2	1.8	1.5	1.8
Heat										
Transport	0.14	0.38	0.51	0.65	0.79	4.8	4.0	2.4	2.0	2.7
Coal										
Oil	0.14 (100%)	0.38 (100%)	0.51 (100%)	0.65 (100%)	0.79 (100%)	4.8	4.0	2.4	2.0	2.7
Gas										
NRE										
Electricity										
Residential	0.02	0.06	0.06	0.07	0.08	5.2	1.7	1.6	0.8	1.3
Coal										
Oil	0.01 (56%)	0.02 (40%)	0.03 (41%)	0.03 (42%)	0.03 (43%)	3.6	2.1	1.8	0.9	1.6
Gas										
NRE										
Electricity	0.01 (44%)	0.03 (60%)	0.04 (59%)	0.04 (58%)	0.05 (58%)	6.7	1.4	1.5	0.7	1.2
Heat										
Commercial	0.01	0.14	0.14	0.14	0.15	12.2	0.2	0.1	0.2	0.2
Coal										
Oil										
Gas										
NRE										
Electricity	0.01 (100%)	0.14 (100%)	0.14 (100%)	0.14 (100%)	0.15 (100%)	12.2	0.2	0.1	0.2	0.2
Heat										

ENERGY SECURITY

	1980	2002	2010	2020	2030
Diversity of Primary Energy Demand (Rated between 1 and 100)	14	33	36	41	45
Net Energy Import Ratio (%)	-630	-668	-737	-711	-688
Net Oil Import Dependency (%)	-5 835	-1 669	-1 410	-1 142	-959

BRUNEI DARUSSALAM
ELECTRICITY GENERATION

	1980	2002	2010	2020	2030	Growth rate (% per annum)				
						80-02	02-10	10-20	20-30	02-30
Total Electricity Generation (TWh)	0.34	2.70	2.83	3.01	3.14	9.8	0.6	0.6	0.4	0.5
Coal										
Oil	0.004 (1%)	0.025 (1%)	0.026 (1%)	0.026 (1%)	0.026 (1%)	8.7	0.3			0.1
Gas	0.3 (99%)	2.68 (99%)	2.80 (99%)	2.98 (99%)	3.12 (99%)	9.8	0.6	0.6	0.4	0.5
Hydro										
NRE										
Nuclear										
Total Installed Generation Capacity (GW)	0.08	0.64	0.86	1.04	1.04	10.2	3.7	1.9		1.8
Thermal	0.08 (100%)	0.64 (100%)	0.86 (100%)	1.04 (100%)	1.04 (100%)	10.2	3.7	1.9		1.8
Coal										
Oil		0.004 (1%)								
Gas	0.08 (100%)	0.63 (99%)	0.85 (100%)	1.03 (100%)	1.03 (100%)	10.2	3.8	1.9		1.8
Hydro										
NRE										
Nuclear										

ENERGY INTENSITY & CO₂ EMISSIONS

	1980	2002	2010	2020	2030	Growth Rates (% per annum)				
						80-02	02-10	10-20	20-30	02-30
Energy Intensity (toe per US\$ million GDP)	473	439	463	403	353	- 0.3	0.7	- 1.4	- 1.3	- 0.8
Industry (toe per US\$ million GDP in Industry)	14	27	29	29	28	3.0	1.0	- 0.1	- 0.4	0.1
Commercial (toe per US\$ million GDP in Services)	8	47	42	35	30	8.6	- 1.5	- 1.6	- 1.5	- 1.5
Energy Intensity (kgoe per capita)	13 907	7 330	7 781	7 347	7 178	- 2.9	0.7	- 0.6	- 0.2	- 0.1
Industry	285	208	225	238	252	- 1.4	1.0	0.6	0.5	0.7
Transport	699	1 075	1 301	1 501	1 724	2.0	2.4	1.4	1.4	1.7
Residential	93	157	159	171	175	2.4	0.2	0.7	0.2	0.4
Commercial	57	396	357	331	319	9.2	- 1.3	- 0.8	- 0.3	- 0.8
CO₂ Emissions (million tonnes)	2.7	7.5	9.1	9.7	10.1	4.7	2.5	0.6	0.5	1.1
Electricity Generation	0.3	1.6	1.6	1.6	1.6	7.4	0.2	0.2	0.1	0.2
Transformation other than Electricity Generation	1.8	4.6	5.8	5.8	5.9	4.3	2.8	0.1	0.04	0.8
Industry	0.1	0.1	0.2	0.2	0.2	0.4	2.2	1.3	1.1	1.5
Transport	0.4	1.1	1.5	1.9	2.3	4.8	4.0	2.4	2.0	2.7
Residential		0.1	0.1	0.1	0.1	3.7	1.9	2.0	0.9	1.6
Commercial										
CO₂ Emissions Intensity										
CO ₂ emissions per GDP (tonnes per US\$ million)	477.5	1 284.7	1 375.1	1 226.6	1 092.8	4.6	0.9	- 1.1	- 1.1	- 0.6
CO ₂ emissions per capita (tonnes per capita)	14.0	21.4	23.1	22.3	22.2	1.9	0.9	- 0.3	- 0.1	0.1

ENERGY INVESTMENT REQUIREMENTS

(Cumulative from 2003 -)	2010	2020	2030
Total (2000 US\$ billion)	2.86 - 3.73	3.14 - 4.09	3.35 - 4.41
Coal Production & Transportation			
Oil & Gas Production & Processing	1.30 - 1.96	1.36 - 2.06	1.46 - 2.22
Oil & Gas International Trade	1.25 - 1.38	1.25 - 1.38	1.25 - 1.38
Oil & Gas Domestic Pipeline	0.15 - 0.21	0.24 - 0.35	0.34 - 0.49
Electricity Generation & Transmission	0.16 - 0.18	0.28 - 0.31	0.29 - 0.32