

B. Energy Balances

Introduction

This section presents annual energy supply and demand balance tables for New Zealand.

Energy balances using Gross Caloric Values (GCV)¹ are presented in petajoules for the calendar years 2004 to 2008 (Tables B.2–B.6). The 2008 table is also displayed using Net Calorific Values² (Table B.7).

The energy balances focus on commercial energy – energy forms that are typically produced and sold as a fuel. There are not enough reliable data to include other forms of energy, such as passive solar heating. The entry “0.00” in an energy balance table indicates the figure is less than 0.005 PJ but greater than 0 PJ, with zero PJ indicated by a blank entry (this includes where no reliable data are available).

¹ Also known as Higher Heating Value (HHV) – see Glossary for details.

² Also known as Lower Heating Value (LHV) – see Glossary for details.

Supply

The supply side calculation of Consumer Energy (calculated) forms the top half of the energy balance tables.

Total Primary Energy is the amount of energy available for use in New Zealand. Much of it is converted into other forms of energy before it is used. By convention, fuel used for international transport is excluded from total primary energy. Indigenous gas production is given after any gas is flared or reinjected and any LPG extracted.

The primary energy figures presented are actual data except for some that goes into electricity generation as detailed under Energy Transformation.

Energy Transformation includes generation of electricity (including cogeneration) oil production (including refinery operations and the manufacture of synthetic fuel from natural gas – Methanex ceased methanol to petrol production in April 1999) and other transformation, which is primarily steel production.

The energy balances show “energy in” as negative values and “energy out” as positive values in the appropriate fuel columns. Transformation of energy from one form to another always results in conversion losses. Transformation losses are shown as the (negative) totals at the right of the energy balance tables.

Transformation losses in electricity generation are derived from the net electricity generated, with the actual fuel input being used where available and the conversion factors shown in Table B used otherwise. Fuel input to biogas, hydro, wind and waste heat are fully estimated. Quarterly figures for electricity generation are made up of actual data from major generators and the Electricity Commission. Estimates are made where actual data are unavailable at the time of publishing. Table B.1 indicates factors used to make estimates of fuel input for electricity generation.

Table B.1: Default Electrical Transformation Factors¹

Fuel	Net to Gross Factor	Default Efficiency
Biogas	1.07	30%
Coal	1.07	30%
Gas (Single Cycle) ²	1.07	30%
Geothermal ³	1.06	15%
Hydro	1.01	100%
Oil	1.07	30%
Waste Heat	1.07	15%
Wind	1.01	100%
Wood	1.07	25%

Notes to Table B.1: ¹ Default efficiencies are only used where real data are unavailable.

² For combined cycle plants, the assumed efficiency is 55%. Currently, however, actual fuel input data are collected for all combined cycle plants.

³ Pre-2000 geothermal input to electricity generation is fully estimated at an efficiency of 10%. After this date, it is predominantly based on real plant steam data and uses a 15% efficiency where this is unavailable.

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Losses and Own Use in the energy balances exclude transformation losses but include losses both before and after transformation, losses and own use in production, transmission and distribution losses, electricity own use free of charge, and oil industry losses and own use (which includes distribution tankage losses, stocks, accounts adjustment and own consumption).

Non-energy Use is primary energy used for other purposes: bitumen for roads and natural gas used as feedstock for the production of methanol and ammonia/urea.

Demand

Consumer Energy is the amount of energy consumed by final users. It excludes energy used or lost in the process of transforming energy into other forms and in bringing the energy to the final consumers. For example, natural gas is a primary energy source (see Total Primary Energy Supply), some of which is transformed into electricity, of which some is lost in transmission to consumers.

Consumer energy statistics can be either calculated from supply-side data or observed from usage data.

Consumer Energy (calculated) forms the top half of the energy balance tables and is calculated as Total Primary Energy supply less Energy Transformation less Non-energy Use.

Consumer Energy (observed) forms the bottom half of the energy balance tables and is calculated as Agriculture plus Industrial plus Commercial plus Residential plus Unallocated.

Where the end use in the Industrial category is not available or confidential, the “Unallocated” category is used.

Annual figures presented for Consumer Energy (observed) are actual data except for gas, biogas, wastes and wood. Gas used for cogeneration by Industrial and Commercial sectors is estimated. Estimates of on-site cogeneration demand are now included in the electricity end use.

The use of fuels is classified by end use using the Australia New Zealand Standard Industrial Classification (ANZSIC), which was updated in 2006.

International Transport includes international sea and air transport. It excludes coastal shipping, national air transport and all land transport.

Statistical Differences, if any, between the consumer energy calculated and observed are shown at the bottom of the energy balance tables.

For further definitions, see Glossary.

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Table B.2: Energy Supply and Demand Balance Calendar Year 2004

Converted into Petajoules using Gross Calorific Values		Coal			Oil						
		Bitum. & Sub-bitum.	Lignite	Total	Crudes/ Feedstocks	LPG/NGL	Petrol	Diesel	Fuel Oil	Av. Fuel/ Kero	
SUPPLY	Indigenous Production	133.12	3.86	136.98	42.51	9.19					
	+ Imports	20.40	0.03	20.43	217.01	0.39	41.03	36.22	0.00	13.80	
	- Exports	60.13	0.00	60.13	33.51	0.68	0.00	0.24	3.32	0.00	
	- Stock Change	14.95		14.95	-1.37	0.26	5.00	0.98	-0.51	1.93	
	- International Transport						0.00	1.45	8.64	38.59	
	TOTAL PRIMARY ENERGY	78.44	3.89	82.33	227.38	8.64	36.02	33.55	-11.44	-26.73	
	ENERGY TRANSFORMATION	-61.39		-61.39	-227.97	-0.80	75.03	72.25	21.55	43.24	
	Electricity Generation	-42.58		-42.58							
	Cogeneration	-0.62		-0.62							
	Oil Production				-227.97		76.47	74.90	21.30	43.26	
Other Transformation	-18.16		-18.16								
Losses and Own Use	-0.03		-0.03		-0.80	-1.44	-2.65	0.25	-0.02		
Non-energy Use											
CONSUMER ENERGY (calculated)		17.05	3.89	20.94		7.83	111.05	105.80	10.11	16.51	
DEMAND	Agriculture	0.53	0.01	0.53			1.18	9.91	1.43	0.20	
	Agriculture and Hunting	0.53	0.01	0.53			1.15	6.43	0.01	0.19	
	Fishing						0.03	3.47	1.41	0.01	
	Industrial	10.99	3.54	14.53		3.06	0.39	11.91	1.12	0.18	
	Other Primary Industry						0.01	2.83	0.32	0.01	
	Food Processing						0.00	0.06	0.13	0.00	
	Textiles										
	Wood, Pulp, Paper and Printing										
	Chemicals										
	Non-metallic Minerals										
	Basic Metals							0.00			
	Mechanical/Electrical Equipment										
	Building and Construction							0.01	2.61	0.01	0.11
	Unallocated	10.99	3.54	14.53		3.06	0.37	6.42	0.65	0.06	
	Commercial	6.05	0.62	6.67		2.53	1.74	24.57	5.20	18.33	
	Transport Industry	0.08		0.08		1.21	1.27	21.17	4.60	17.67	
Other Commercial	5.97	0.62	6.59		1.32	0.48	3.40	0.60	0.66		
Residential	0.45	0.41	0.87		2.24	0.00	0.00	0.00	0.00		
Unallocated							110.48	55.01	0.01	0.06	
CONSUMER ENERGY (observed)		18.02	4.57	22.60	0.00	7.83	113.80	101.40	7.75	18.77	
Statistical Differences		-0.97	-0.68	-1.65	0.00	-2.75	4.40	2.35	-2.26		

For definitions of terms used and data sources, see Glossary and Data Contributors.

A further breakdown of industrial coal figures is unavailable as the data are confidential.

Electricity end use includes estimates of electricity generated and consumed on-site.

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		Natural Gas	Renewables							Electricity	Waste Heat	
Others	Total	Total	Hydro	Geothermal	Solar	Wind	Biogas	Wood	Total	Total	Total	TOTAL
	51.70	160.64	96.94	81.55	0.21	1.30	2.66	37.92	220.58		1.86	571.76
7.30	315.76											336.19
0.00	37.75											97.89
-0.34	5.96	0.10										21.01
0.00	48.68											48.68
7.64	275.06	160.54	96.94	81.55	0.21	1.30	2.66	37.92	220.58		1.86	740.38
4.85	-11.86	-69.12	-96.94	-72.01		-1.30	-2.55	-3.43	-176.23	132.25	-1.86	-188.21
		-39.77	-96.94	-64.80		-1.30	-1.71		-164.75	142.35		-104.75
		-21.88		-1.21			-0.84	-3.43	-5.49	8.28	-1.86	-21.57
12.08	0.03	0.00										0.03
		-1.96								2.35		-17.77
-7.23	-11.89	-5.51		-6.00					-6.00	-20.73		-44.15
-12.49	-12.49	-50.59										-63.08
0.00	250.71	40.84		9.54	0.21	0.00	0.11	34.49	44.35	132.25	0.00	489.09
	12.72	1.63								5.08		19.95
	7.79	1.63								4.88		14.83
	4.93									0.19		5.12
	16.67	22.73		5.58				26.57	32.15	53.72		139.80
	3.18	0.19								1.04		4.41
	0.19	9.45								7.65		17.30
										0.57		0.57
		8.87								13.15		22.02
		0.81								2.32		3.13
		3.27								0.85		4.12
										23.85		23.85
										1.23		1.23
	2.74	0.14								0.93		3.81
	10.56	0.00		5.58				26.57	32.15	2.11		59.35
	52.38	9.08		3.86			0.11	0.00	3.97	28.51		100.59
	45.92	0.22								1.62		47.84
	6.45	8.86		3.86			0.11		3.97	26.89		52.76
	2.24	6.71		0.10	0.21			7.92	8.23	44.32		62.37
	165.55											165.55
0.00	249.55	40.14	0.00	9.54	0.21	0.00	0.11	34.49	44.35	131.62	0.00	488.26
0.00	1.18	0.69		0.00	0.00		0.00	0.00	0.00	0.63	0.00	0.82

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Table B.3: Energy Supply and Demand Balance Calendar Year 2005

Converted into Petajoules using Gross Calorific Values		Coal			Oil						
		Bitum. & Sub-bitum.	Lignite	Total	Crudes/ Feedstocks	LPG/ NGL	Petrol	Diesel	Fuel Oil	Av. Fuel/ Kero	
SUPPLY	Indigenous Production	135.51	3.93	139.43	39.46	8.82					
	+ Imports	24.99	0.05	25.03	218.72	0.57	39.45	32.62	0.00	10.63	
	- Exports	73.45	0.00	73.45	28.61	0.55	0.57	0.15	6.75	0.00	
	- Stock Change	-6.46		-6.46	-5.36	0.25	1.49	-3.15	-1.73	-0.58	
	- International Transport						0.00	1.84	11.80	38.93	
	TOTAL PRIMARY ENERGY	93.50	3.97	97.47	234.93	8.59	37.39	33.78	-16.81	-27.73	
	ENERGY TRANSFORMATION	-72.73		-72.73	-235.36	-0.80	74.18	73.27	27.08	43.06	
	Electricity Generation	-53.94		-53.94							
	Cogeneration	-0.62		-0.62							
	Oil Production				-235.36		77.31	75.26	25.93	40.75	
Other Transformation	-18.15		-18.15								
Losses and Own Use	-0.03		-0.03		-0.80	-3.13	-1.99	1.15	2.31		
Non-energy Use											
CONSUMER ENERGY (calculated)		20.76	3.97	24.74		7.79	111.56	107.05	10.27	15.33	
DEMAND	Agriculture	1.21	0.01	1.22			1.15	10.78	1.45	0.23	
	Agriculture and Hunting	1.21	0.01	1.22			1.12	6.82	0.01	0.22	
	Fishing						0.03	3.96	1.45	0.00	
	Industrial	12.21	3.46	15.68		2.87	0.47	12.08	1.13	0.20	
	Other Primary Industry						0.01	2.87	0.33	0.01	
	Food Processing						0.00	0.06	0.12	0.00	
	Textiles										
	Wood, Pulp, Paper and Printing										
	Chemicals										
	Non-metallic Minerals										
	Basic Metals							0.00			
	Mechanical/Electrical Equipment										
	Building and Construction							0.01	2.74	0.01	0.10
	Unallocated	12.21	3.46	15.68		2.87	0.44	6.41	0.67	0.08	
	Commercial	2.93	0.51	3.44		2.59	0.91	24.36	6.59	17.01	
	Transport Industry	0.08		0.08		1.22	0.79	21.64	5.46	16.31	
	Other Commercial	2.85	0.51	3.36		1.37	0.13	2.72	1.13	0.70	
Residential	0.47	0.41	0.88		2.33	0.00	0.00	0.00	0.00		
Unallocated							108.46	59.48	0.00	0.01	
CONSUMER ENERGY (observed)		16.83	4.40	21.22	0.00	7.79	110.99	106.70	9.18	17.45	
Statistical Differences		3.93	-0.42	3.51		0.00	0.57	0.35	1.09	-2.11	

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A further breakdown of industrial coal figures is unavailable as the data are confidential.

Electricity end use includes estimates of electricity generated and consumed on-site.

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		Natural Gas	Renewables							Electricity	Waste Heat	
Others	Total	Total	Hydro	Geothermal	Solar	Wind	Biogas	Wood	Total	Total	Total	TOTAL
	48.29	149.01	83.97	89.26	0.24	2.21	2.70	38.96	217.34		1.59	555.65
7.08	309.07											334.10
0.00	36.63											110.09
-0.04	-9.12	0.06										-15.51
0.00	52.57											52.57
7.12	277.27	148.94	83.97	89.26	0.24	2.21	2.70	38.96	217.34		1.59	742.61
5.01	-13.57	-87.80	-83.97	-79.59		-2.21	-2.48	-3.83	-172.08	134.70	-1.59	-213.07
		-56.62	-83.97	-72.10		-2.21	-1.66		-159.94	142.97		-127.53
		-24.35		-1.49			-0.82	-3.83	-6.14	9.47	-1.59	-23.22
13.16	-2.94	0.00										-2.94
		-1.98								2.18		-17.94
-8.16	-10.63	-4.85		-6.00					-6.00	-19.93		-41.43
-12.13	-12.13	-19.98										-32.11
0.00	251.57	41.16		9.67	0.24	0.00	0.22	35.13	45.26	134.70	0.00	497.43
	13.61	1.78								5.34		21.95
	8.17	1.78								5.05		16.23
	5.44									0.29		5.73
	16.75	28.51		5.71				27.23	32.95	54.60		148.48
	3.23	0.18								1.16		4.57
	0.19	10.14								8.24		18.57
										0.63		0.63
		8.18								12.62		20.79
		6.25								2.72		8.96
		3.69								0.89		4.58
										24.23		24.23
										1.18		1.18
	2.87	0.07								0.86		3.79
	10.47	0.00		5.71				27.23	32.95	2.07		61.17
	51.46	7.37		3.86			0.22	0.00	4.08	29.73		96.08
	45.41	0.19								1.69		47.38
	6.05	7.18		3.86			0.22		4.08	28.04		48.70
	2.33	6.48		0.10	0.24			7.90	8.24	43.81		61.74
	167.96											167.96
0.00	252.11	44.14	0.00	9.67	0.24	0.00	0.22	35.13	45.26	133.48	0.00	496.21
0.00	-0.54	-2.98		0.00	0.00		0.00	0.00	0.00	1.22	0.00	1.22

B. Energy Balances

Table B.4: Energy Supply and Demand Balance Calendar Year 2006

Converted into Petajoules using Gross Calorific Values		Coal			Oil					
		Bitum. & Sub-bitum.	Lignite	Total	Crudes/ Feedstocks	LPG/ NGL	Petrol	Diesel	Fuel Oil	Av. Fuel/ Kero
SUPPLY	Indigenous Production	148.98	4.01	152.99	37.93	7.87				
	+ Imports	28.30	0.04	28.34	215.83	1.91	40.85	34.43	0.00	9.73
	- Exports	85.24	0.00	85.24	31.25	0.30	0.00	0.01	3.85	0.00
	- Stock Change	3.69		3.69	-7.81	0.34	-0.47	1.85	0.33	0.01
	- International Transport						0.00	1.46	12.06	39.00
	TOTAL PRIMARY ENERGY	88.35	4.05	92.40	230.31	9.14	41.33	31.11	-16.24	-29.28
	ENERGY TRANSFORMATION	-71.09		-71.09	-231.52	-0.78	69.50	76.63	24.31	41.72
	Electricity Generation	-51.85		-51.85						
	Cogeneration	-0.62		-0.62						
	Oil Production				-231.52		69.62	76.27	23.93	42.23
Other Transformation	-18.60		-18.60							
Losses and Own Use	-0.03		-0.03		-0.78	-0.13	0.36	0.38	-0.51	
Non-energy Use										
CONSUMER ENERGY (calculated)		17.26	4.05	21.31		8.37	110.82	107.75	8.07	12.44
DEMAND	Agriculture	1.96	0.02	1.98			1.05	9.18	1.67	0.24
	Agriculture and Hunting	1.96	0.02	1.98			1.02	6.44	0.00	0.23
	Fishing						0.03	2.74	1.67	0.01
	Industrial	12.92	3.52	16.44		2.92	0.48	12.41	1.13	0.17
	Other Primary Industry						0.01	3.08	0.32	0.01
	Food Processing						0.00	0.06	0.12	0.00
	Textiles									
	Wood, Pulp, Paper and Printing									
	Chemicals									
	Non-metallic Minerals									
	Basic Metals							0.00		
	Mechanical/Electrical Equipment									
	Building and Construction						0.01	2.43	0.01	0.10
	Unallocated	12.92	3.52	16.44		2.92	0.46	6.85	0.68	0.06
	Commercial	3.40	0.49	3.90		2.87	1.62	27.26	4.71	17.36
	Transport Industry	0.08		0.08		1.42	1.53	25.22	4.45	16.58
Other Commercial	3.32	0.49	3.82		1.44	0.09	2.04	0.26	0.78	
Residential	0.25	0.43	0.69		2.58	0.00	0.00	0.00	0.00	
Unallocated						108.73	58.89	0.00	0.00	
CONSUMER ENERGY (observed)		18.54	4.47	23.01	0.00	8.37	111.88	107.74	7.51	17.77
Statistical Differences		-1.28	-0.41	-1.69	0.00	-1.06	0.01	0.56	-5.32	

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A further breakdown of industrial coal figures is unavailable as the data are confidential.

Electricity end use includes estimates of electricity generated and consumed on-site.

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		Natural Gas	Renewables							Electricity	Waste Heat	
Others	Total	Total	Hydro	Geothermal	Solar	Wind	Biogas	Wood	Total	Total	Total	TOTAL
	45.80	154.12	84.86	92.70	0.27	2.24	3.02	38.87	221.95		1.74	576.61
6.77	309.53											337.87
0.00	35.41											120.64
-0.58	-6.32	0.00										-2.63
0.00	52.51											52.51
7.35	273.72	154.12	84.86	92.70	0.27	2.24	3.02	38.87	221.95		1.74	743.94
5.89	-14.24	-89.12	-84.86	-82.98		-2.24	-2.76	-4.15	-176.98	136.67	-1.74	-216.50
		-60.10	-84.86	-75.65		-2.24	-1.87		-164.61	145.97		-130.59
		-22.04		-1.33			-0.89	-4.15	-6.37	8.68	-1.74	-22.09
13.65	-5.81	0.00										-5.81
		-2.19								2.29		-18.49
-7.76	-8.43	-4.78		-6.00					-6.00	-20.28		-39.51
-13.24	-13.24	-23.21										-36.45
0.00	246.24	41.80		9.73	0.27	0.00	0.26	34.72	44.98	136.67	0.00	491.00
	12.14	1.87								6.03		22.02
	7.70	1.87								5.60		17.15
	4.44									0.43		4.87
	17.11	27.34		5.77				26.87	32.64	54.37		147.89
	3.42	0.20								1.18		4.80
	0.18	9.36								7.95		17.49
										0.61		0.61
		7.04								13.06		20.10
		5.01								2.86		7.87
		5.66								0.88		6.55
										23.79		23.79
										0.99		0.99
	2.54	0.07								0.82		3.43
	10.97	0.00		5.77				26.87	32.64	2.22		62.26
	53.82	4.95		3.86			0.26	0.00	4.12	31.96		98.74
	49.20	0.19								1.83		51.30
	4.61	4.77		3.86			0.26		4.12	30.12		47.44
	2.58	6.56		0.10	0.27			7.85	8.22	45.56		63.61
	167.62											167.62
0.00	253.27	40.72	0.00	9.73	0.27	0.00	0.26	34.72	44.98	137.91	0.00	499.88
0.00	-7.03	1.08		0.00	0.00		0.00	0.00	0.00	-1.24	0.00	-8.88

B. Energy Balances

Table B.5: Energy Supply and Demand Balance Calendar Year 2007

Converted into Petajoules using Gross Calorific Values		Coal			Oil						
		Bitum. & Sub-bitum.	Lignite	Total	Crudes/ Feedstocks	LPG/ NGL	Petrol	Diesel	Fuel Oil	Av. Fuel/ Kero	
SUPPLY	Indigenous Production	120.72	4.12	124.84	87.69	5.75					
	+ Imports	17.09	0.01	17.10	212.06	4.14	47.92	40.60	0.01	11.89	
	- Exports	63.67	0.00	63.67	75.29	0.00	0.68	0.00	4.68	0.00	
	- Stock Change	9.29		9.29	4.65	0.43	2.02	1.31	-1.31	0.19	
	- International Transport						0.00	1.34	12.17	38.57	
	TOTAL PRIMARY ENERGY	64.84	4.13	68.98	219.81	9.46	45.22	37.96	-15.53	-26.87	
	ENERGY TRANSFORMATION	-44.41		-44.41	-219.12	-0.72	66.35	73.33	24.29	38.75	
	Electricity Generation	-26.07		-26.07							
	Cogeneration	-0.62		-0.62							
	Oil Production				-219.12		66.84	72.68	24.32	38.94	
Other Transformation	-17.69		-17.69								
Losses and Own Use	-0.03		-0.03		-0.72	-0.49	0.66	-0.03	-0.19		
Non-energy Use											
CONSUMER ENERGY (calculated)		20.44	4.13	24.57		8.74	111.57	111.29	8.76	11.88	
DEMAND	Agriculture	1.45	0.01	1.46			0.93	8.17	1.64	0.22	
	Agriculture and Hunting	1.45	0.01	1.46			0.91	5.87	0.01	0.22	
	Fishing						0.02	2.31	1.64	0.00	
	Industrial	13.95	3.68	17.63		2.92	1.75	13.25	1.57	0.15	
	Other Primary Industry						0.01	3.39	0.71	0.00	
	Food Processing						0.00	0.04	0.10	0.00	
	Textiles										
	Wood, Pulp, Paper and Printing										
	Chemicals										
	Non-metallic Minerals										
	Basic Metals							0.00			
	Mechanical/Electrical Equipment										
	Building and Construction							0.01	1.65	0.01	0.08
	Unallocated	13.95	3.68	17.63		2.92	1.73	8.17	0.75	0.07	
	Commercial	3.47	0.53	4.00		3.12	1.15	28.52	5.22	14.24	
	Transport Industry	0.08		0.08		1.56	0.82	26.60	4.90	13.55	
Other Commercial	3.39	0.53	3.92		1.55	0.33	1.93	0.32	0.69		
Residential	0.25	0.30	0.55		2.70	0.00	0.00	0.00	0.00		
Unallocated							110.04	60.89	0.00	0.02	
CONSUMER ENERGY (observed)		19.12	4.52	23.64	0.00	8.74	113.86	110.84	8.43	14.63	
Statistical Differences		1.32	-0.39	0.93	0.00	-2.29	0.45	0.33	-2.75		

For definitions of terms used and data sources, see Glossary and Data Contributors.

A further breakdown of industrial coal figures is unavailable as the data are confidential.

Electricity end use includes estimates of electricity generated and consumed on-site.

B. Energy Balances

		Natural Gas	Renewables							Electricity	Waste Heat	
Others	Total	Total	Hydro	Geothermal	Solar	Wind	Biogas	Wood	Total	Total	Total	TOTAL
	93.44	169.81	85.10	96.87	0.30	3.35	2.95	39.81	228.38		1.36	617.82
6.79	323.41											340.51
0.00	80.66											144.33
-0.38	6.91	0.03										16.22
0.00	52.07											52.07
7.17	277.21	169.78	85.10	96.87	0.30	3.35	2.95	39.81	228.38		1.36	745.71
5.82	-11.29	-104.84	-85.10	-87.09		-3.35	-2.67	-4.38	-182.58	137.84	-1.36	-206.64
		-75.35	-85.10	-79.84		-3.35	-1.87		-170.16	146.01		-125.56
		-22.34		-1.25			-0.80	-4.38	-6.42	9.26	-1.36	-21.49
13.91	-2.43	0.00										-2.43
		-2.04								2.21		-17.52
-8.09	-8.87	-5.11		-6.00					-6.00	-19.64		-39.64
-12.99	-12.99	-23.70										-36.69
0.00	252.93	41.25		9.78	0.30	0.00	0.28	35.43	45.79	137.84	0.00	502.38
	10.96	1.80								6.61		20.84
	7.00	1.80								6.15		16.41
	3.96									0.46		4.42
	19.63	30.99		5.83				27.63	33.45	54.94		156.63
	4.11	0.22								1.33		5.66
	0.14	11.60								7.79		19.52
										0.55		0.55
		6.23								12.50		18.73
		7.39								2.81		10.20
		5.42								0.92		6.34
										24.72		24.72
										0.91		0.91
	1.75	0.13								0.79		2.66
	13.64	0.00		5.83				27.63	33.45	2.62		67.34
	52.25	4.76		3.86			0.28	0.00	4.14	32.98		98.13
	47.43	0.25								1.90		49.66
	4.82	4.51		3.86			0.28		4.14	31.08		48.47
	2.71	5.61		0.10	0.30			7.80	8.20	44.81		61.89
	170.94											170.94
0.00	256.50	43.16	0.00	9.78	0.30	0.00	0.28	35.43	45.79	139.34	0.00	508.43
0.00	-3.57	-1.91		0.00	0.00		0.00	0.00	0.00	-1.49	0.00	-6.04

B. Energy Balances

Table B.6: Energy Supply and Demand Balance Calendar Year 2008

Converted into Petajoules using Gross Calorific Values		Coal			Oil						
		Bitum. & Sub-bitum.	Lignite	Total	Crudes/ Feedstocks	LPG/ NGL	Petrol	Diesel	Fuel Oil	Av. Fuel/ Kero	
SUPPLY	Indigenous Production	123.67	3.80	127.47	127.52	4.24					
	+ Imports	14.06	0.01	14.07	223.72	5.00	40.21	38.00	1.91	11.78	
	- Exports	78.51	0.00	78.51	120.24	0.00	0.67	0.01	5.91	0.00	
	- Stock Change	-20.07		-20.07	-2.33	0.04	-0.43	-0.78	2.81	0.93	
	- International Transport						0.00	1.32	13.46	37.33	
	TOTAL PRIMARY ENERGY	79.28	3.82	83.10	233.33	9.19	39.96	37.45	-20.26	-26.48	
	ENERGY TRANSFORMATION	-59.35		-59.35	-234.19	-0.55	68.80	76.03	28.49	40.20	
	Electricity Generation	-43.09		-43.09							
	Cogeneration	-0.28		-0.28							
	Oil Production				-234.19		69.78	74.95	28.48	40.59	
Other Transformation	-15.95		-15.95								
Losses and Own Use	-0.03		-0.03		-0.55	-0.98	1.08	0.01	-0.39		
Non-energy Use											
CONSUMER ENERGY (calculated)		19.93	3.82	23.75		8.64	108.77	113.48	8.24	13.72	
DEMAND	Agriculture	1.73	0.01	1.74			0.81	7.60	1.85	0.15	
	Agriculture and Hunting	1.73	0.01	1.74			0.80	5.68	0.00	0.15	
	Fishing						0.01	1.92	1.85	0.00	
	Industrial	14.67	4.08	18.75		2.61	3.55	14.97	2.05	0.11	
	Other Primary Industry						0.01	3.44	0.31	0.00	
	Food Processing						0.00	0.06	0.10	0.00	
	Textiles										
	Wood, Pulp, Paper and Printing										
	Chemicals										
	Non-metallic Minerals										
	Basic Metals							0.00			
	Mechanical/Electrical Equipment										
	Building and Construction							0.01	2.06	0.01	0.05
	Unallocated	14.67	4.08	18.75		2.61	3.54	9.41	1.62	0.06	
	Commercial	4.06	0.55	4.61		3.46	1.15	29.42	4.34	17.00	
	Transport Industry	0.08		0.08		1.70	0.68	25.27	4.07	13.99	
Other Commercial	3.98	0.55	4.53		1.76	0.47	4.15	0.27	3.01		
Residential	0.15	0.22	0.36		2.56	0.00	0.01	0.00	0.00		
Unallocated							105.44	57.83	0.00	0.06	
CONSUMER ENERGY (observed)		20.62	4.85	25.46	0.00	8.64	110.96	109.82	8.25	17.32	
Statistical Differences		-0.68	-1.03	-1.71	0.00	-2.19	3.66	-0.01	-3.60		

For definitions of terms used and data sources, see Glossary and Data Contributors.

A further breakdown of industrial coal figures is unavailable as the data are confidential.

Electricity end use includes estimates of electricity generated and consumed on-site.

B. Energy Balances

		Natural Gas	Renewables							Electricity	Waste Heat	
Others	Total	Total	Hydro	Geothermal	Solar	Wind	Biogas	Wood	Total	Total	Total	TOTAL
	131.75	159.93	80.32	113.21	0.32	3.81	2.87	40.42	240.95		1.21	661.31
7.28	327.90											341.97
0.00	126.82											205.33
-0.37	-0.12	-0.01										-20.20
0.01	52.11											52.11
7.64	280.84	159.94	80.32	113.21	0.32	3.81	2.87	40.42	240.95		1.21	766.03
5.17	-16.05	-92.26	-80.32	-103.45		-3.81	-2.59	-4.42	-194.59	137.29	-1.21	-226.16
		-60.76	-80.32	-96.20		-3.81	-1.83		-182.16	146.08		-139.94
		-23.13		-1.25			-0.76	-4.42	-6.43	9.36	-1.21	-21.69
13.22	-7.16	0.00										-7.16
		-2.50								2.15		-16.29
-8.05	-8.89	-5.87		-6.00					-6.00	-20.30		-40.08
-12.81	-12.81	-28.74										-41.55
0.00	251.98	38.93		9.76	0.32	0.00	0.28	36.00	46.36	137.29	0.00	498.32
	10.41	1.59								6.78		20.51
	6.63	1.59								6.31		16.27
	3.78									0.46		4.25
	23.28	29.41		5.81				28.25	34.06	53.31		158.82
	3.76	0.10								1.39		5.26
	0.16	9.49								7.84		17.50
										0.55		0.55
		5.39								12.38		17.78
		9.15								2.81		11.97
		5.23								0.94		6.17
										22.96		22.96
										0.90		0.90
	2.13	0.04								0.78		2.95
	17.23	0.00		5.81				28.25	34.06	2.75		72.79
	55.38	3.52		3.86			0.28	0.00	4.14	33.35		100.99
	45.71	0.19								1.92		47.90
	9.67	3.32		3.86			0.28		4.14	31.43		53.09
	2.57	4.27		0.10	0.32			7.75	8.17	44.76		60.13
	163.34											163.34
0.00	254.98	38.79	0.00	9.76	0.32	0.00	0.28	36.00	46.36	138.20	0.00	503.80
0.00	-3.01	0.14		0.00	0.00		0.00	0.00	0.00	-0.90	0.00	-5.48

B. Energy Balances

Table B.7: Energy Supply and Demand Balance Calendar Year 2008 NET

Converted into Petajoules using Net Calorific Values		Coal			Oil						
		Bitum. & Sub-bitum.	Lignite	Total	Crudes/ Feedstocks	LPG/ NGL	Petrol	Diesel	Fuel Oil	Av. Fuel/ Kero	
SUPPLY	Indigenous Production	117.70	3.43	121.13	118.21	3.91					
	+ Imports	12.79	0.01	12.80	207.39	4.61	37.51	35.64	1.81	11.06	
	- Exports	70.82	0.00	70.82	111.46	0.00	0.62	0.01	5.57	0.00	
	- Stock Change	-18.85		-18.85	-2.16	0.04	-0.40	-0.73	2.65	0.87	
	- International Transport						0.00	1.24	12.69	35.05	
	TOTAL PRIMARY ENERGY	78.52	3.44	81.96	216.30	8.47	37.29	35.43	-19.11	-24.87	
	ENERGY TRANSFORMATION	-59.35		-59.35	-217.09	-0.51	64.19	71.32	26.88	37.75	
	Electricity Generation	-43.09		-43.09							
	Cogeneration	-0.28		-0.28							
	Oil Production				-217.09		65.11	70.30	26.87	38.12	
Other Transformation	-15.95		-15.95								
Losses and Own Use	-0.03		-0.03		-0.51	-0.91	1.01	0.01	-0.37		
Non-energy Use											
CONSUMER ENERGY (calculated)		19.17	3.44	22.61		7.96	101.48	106.44	7.77	12.88	
DEMAND	Agriculture	1.63	0.00	1.63			0.76	7.12	1.75	0.14	
	Agriculture and Hunting	1.63	0.00	1.63			0.74	5.32	0.00	0.14	
	Fishing						0.01	1.80	1.75	0.00	
	Industrial	13.78	3.68	17.46		2.41	3.31	14.04	1.93	0.10	
	Other Primary Industry						0.00	3.22	0.30	0.00	
	Food Processing						0.00	0.05	0.10	0.00	
	Textiles										
	Wood, Pulp, Paper and Printing										
	Chemicals										
	Non-metallic Minerals										
	Basic Metals							0.00			
	Mechanical/Electrical Equipment										
	Building and Construction							0.01	1.94	0.01	0.05
	Unallocated	13.78	3.68	17.46		2.41	3.30	8.83	1.52	0.05	
	Commercial	3.81	0.49	4.31		3.19	1.07	27.60	4.10	15.96	
	Transport Industry	0.08		0.08		1.57	0.63	23.71	3.84	13.14	
Other Commercial	3.74	0.49	4.23		1.62	0.44	3.89	0.26	2.83		
Residential	0.14	0.19	0.33		2.36	0.00	0.01	0.00	0.00		
Unallocated						98.38	54.25	0.00	0.06		
CONSUMER ENERGY (observed)		19.36	4.37	23.73	0.00	7.96	103.52	103.01	7.78	16.26	
Statistical Differences		-0.19	-0.93	-1.12	0.00	-2.04	3.43	-0.01	-3.38		

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A further breakdown of industrial coal figures is unavailable as the data are confidential.

Electricity end use includes estimates of electricity generated and consumed on-site.

B. Energy Balances

NET

		Natural Gas	Renewables							Electricity	Waste Heat	
Others	Total	Total	Hydro	Geothermal	Solar	Wind	Biogas	Wood	Total	Total	Total	TOTAL
	122.12	144.58	80.32	113.21	0.32	3.81	2.59	31.65	231.91		0.85	620.58
6.38	304.41											317.21
0.00	117.67											188.49
-0.33	-0.05	-0.01										-18.90
0.01	48.99											48.99
6.70	259.91	144.58	80.32	113.21	0.32	3.81	2.59	31.65	231.91		0.85	719.20
4.53	-12.93	-83.40	-80.32	-103.45		-3.81	-2.34	-3.46	-193.38	137.29	-0.85	-212.62
		-54.93	-80.32	-96.20		-3.81	-1.65		-181.98	146.08		-133.93
		-20.91		-1.25			-0.69	-3.46	-5.40	9.36	-0.85	-18.07
11.60	-5.10	0.00										-5.10
		-2.26								2.15		-16.05
-7.06	-7.84	-5.30		-6.00					-6.00	-20.30		-39.46
-11.23	-11.23	-25.99										-37.22
0.00	235.74	35.20		9.76	0.32	0.00	0.25	28.19	38.53	137.29	0.00	469.37
	9.77	1.44								6.78		19.62
	6.21	1.44								6.31		15.59
	3.56									0.46		4.02
	21.79	26.59		5.81				22.12	27.93	53.31		147.08
	3.53	0.09								1.39		5.01
	0.15	8.58								7.84		16.58
										0.55		0.55
		4.88								12.38		17.26
		8.27								2.81		11.09
		4.73								0.94		5.67
										22.96		22.96
										0.90		0.90
	2.00	0.03								0.78		2.82
	16.11	0.00		5.81				22.12	27.93	2.75		64.24
	51.92	3.18		3.86			0.25	0.00	4.11	33.35		96.87
	42.88	0.17								1.92		45.05
	9.04	3.00		3.86			0.25		4.11	31.43		51.82
	2.37	3.86		0.10	0.32			6.07	6.49	44.76		57.81
	152.69											152.69
0.00	238.54	35.07	0.00	9.76	0.32	0.00	0.25	28.19	38.53	138.20	0.00	474.07
0.00	-2.80	0.13		0.00	0.00		0.00	0.00	0.00	-0.90	0.00	-4.70