

Data Collection/Processing Approach to the Energy Balance – The case of New Zealand

By

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New Zealand

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IEA

9, Rue De la Federation

Paris

Presentation Overview

- 1. Objectives**
- 2. Data Collection (coal, oil, gas and electricity, etc)**
- 3. Data Processing**
- 4. Data Validation**
- 5. Dissemination**
- 6. Enabling Legislation**

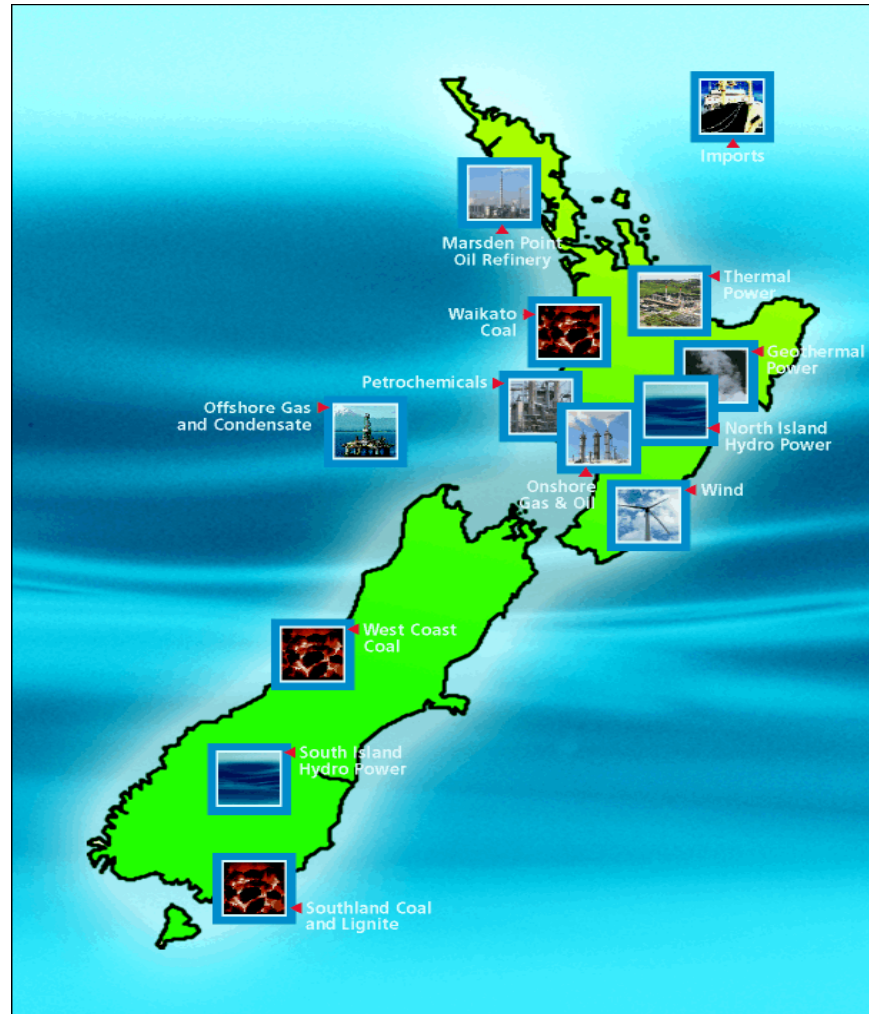
1. Objectives

- Monitor industry trends & for policy analysis
- Provide aggregate statistics for domestic/international reporting (IEA, APEC, etc)
- Prepare Energy related GHG emissions inventory
- Projections of demand & supply using modelling

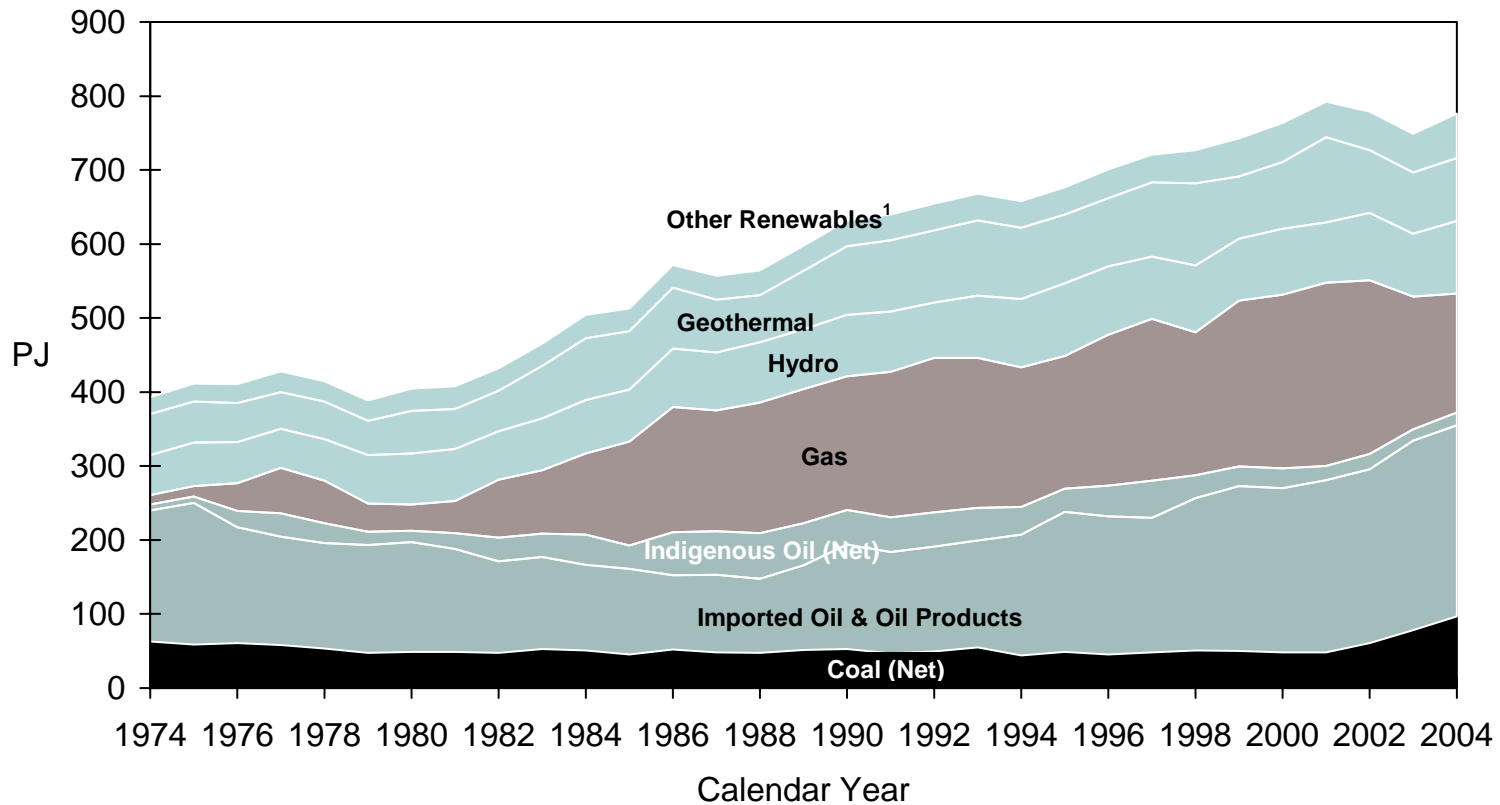
2. Data Collection

- **Frequency of Collection**
 - Monthly (production, sales and stocks)
 - Quarterly (oil deliveries, coal and gas sales surveys & oil product prices)
 - Annual (end use for electricity)
- **Supply and Demand (also prices, stocks & reserves)**

New Zealand Energy Sources



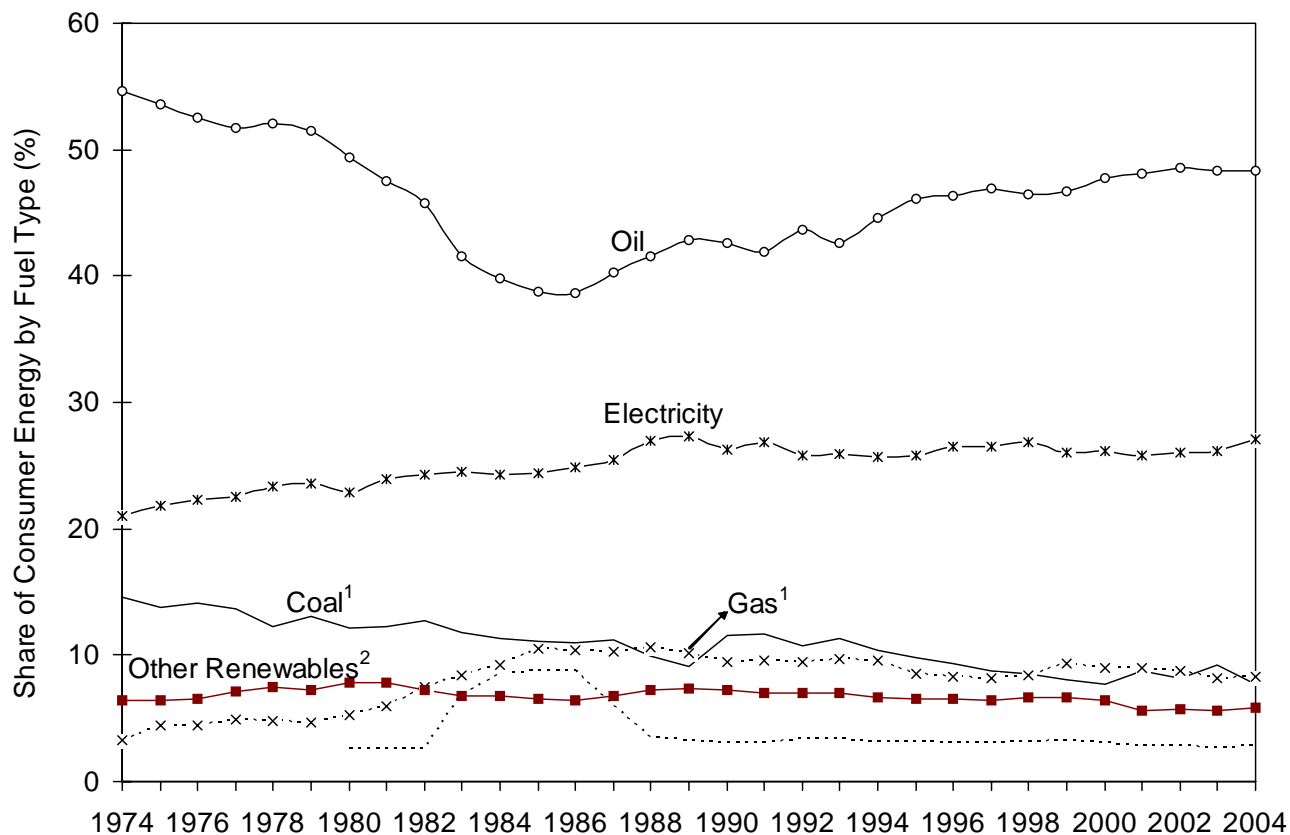
Total Primary Energy Supply 1974-2004



Note:

¹ "Other Renewables" includes electricity generation from wind, biogas, industrial waste, wood and solar water heating.

Total Consumer Energy Fuel Shares From Calendar Years 1974 to 2004



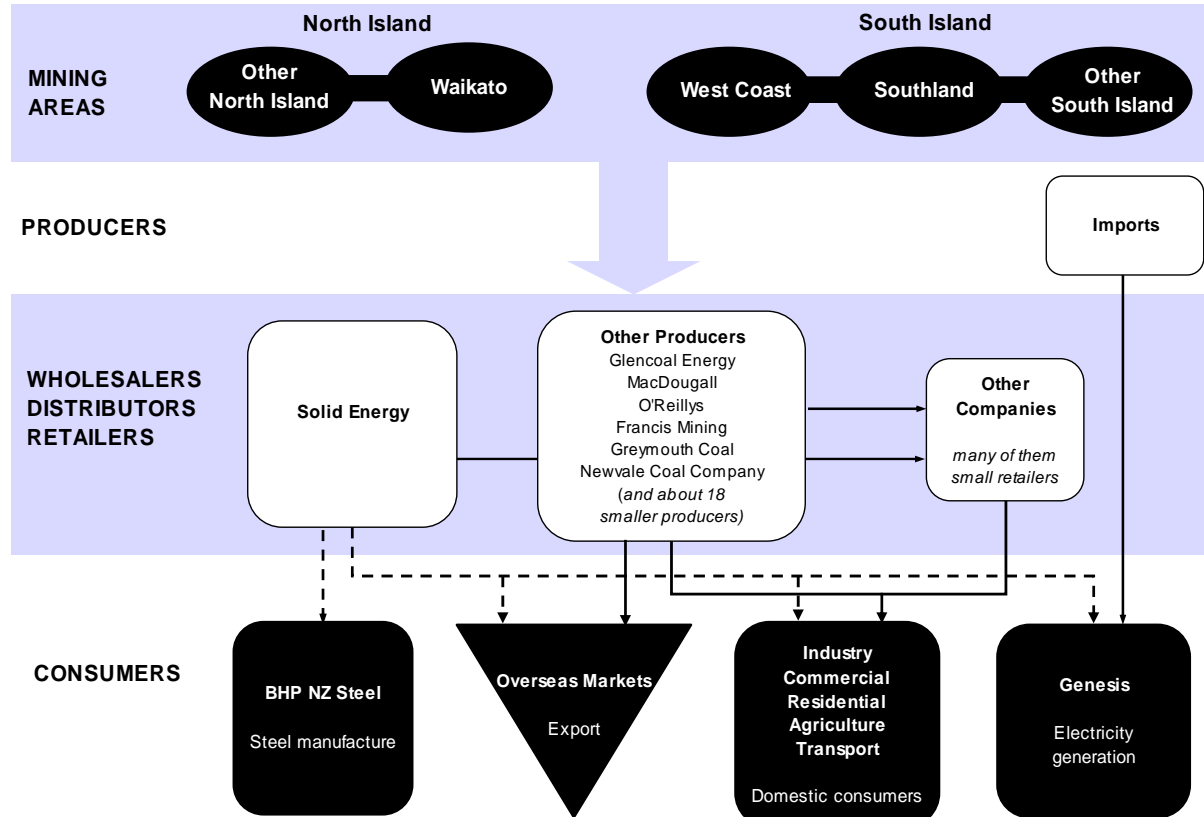
Notes:

1 Excludes cogeneration.

2 "Other Renewables" includes direct use of biogas, industrial waste, wood and solar.

2. Data Collection

Coal Flows Diagram



Company names are listed without the suffixes Limited and New Zealand Limited where applicable.

2. Data Collection

Coal

- **Supply:**
(Indigenous Production, Imports, Exports, Stock Changes, and International Transport)
 - **Mine operators:**
 - ♦ provided six-monthly coal production by mine returns until December 1997.
 - ♦ is now obtained through coal production levies data from the mines.
 - **Crown Minerals**, a group within the Ministry of Economic Development, provided calendar year coal
 - ♦ production data, based on Resources Levy reporting from 1998.
 - **Coal imports and exports through its INFOS database until September 1999.**

2. Data Collection

Coal

- **Energy Transformation:
(Electricity Generation, Cogeneration, Oil Production and Losses and Own use)**
 - **Electricity Generation**
 - ♦ **Electricity Companies (generators):** provide monthly generation data and coal used for electricity generation.
 - **Cogeneration**
 - ♦ **The Cogeneration Association of New Zealand's survey:** provides annual electricity statistics on cogenerators.
 - **Oil Production**
 - ♦ **Not applicable**
 - **Losses and Own Use**
 - ♦ **Estimated about 2 PJ/year**

2. Data Collection

Coal

- **Non-energy Use:**
 - Not applicable

2. Data Collection

Coal

- **Demand:**
 - **Statistics New Zealand :**
 - ◆ *Quarterly Coal Sales Survey* for coal from which quarterly production data are estimated. This survey is sponsored by the Ministry of Economic Development.
 - **New Zealand Steel Limited:**
 - ◆ Provides quarterly data on coal used.

2. Data Collection

Coal

COAL SALES

CONFIDENTIAL

DECEMBER 2005 QUARTER

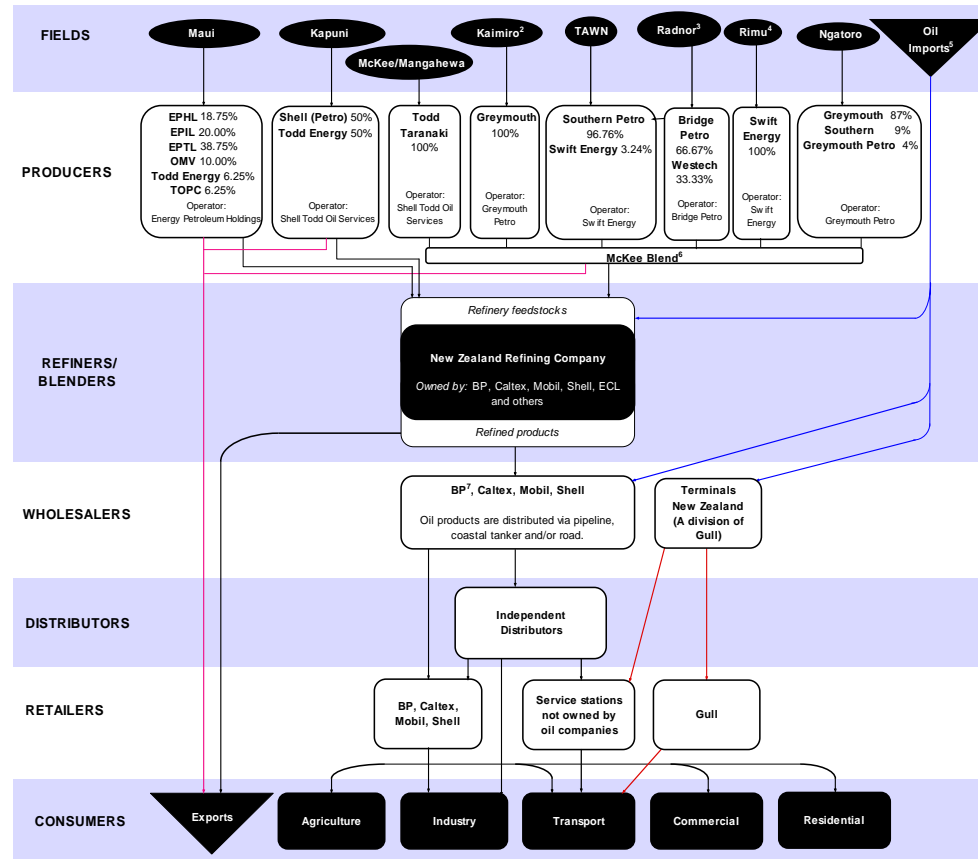
Sales for use in:	TONNES (1) (2)			
	Bituminous	Sub-Bituminous	Lignite	Total
Primary Industries (3)				
Basic Metal Manufacturing (4)				
All Other Manufacturing (5)				
Electricity Generation				
Household Consumption				
Export				
Other (6)				
TOTAL				
Production for the quarter				

Note:

- (1) INCLUDES all sales, or transfers out, of coal extracted from the respondents own mine(s).
- (2) EXCLUDES sales of coal purchased, or transferred in, for resale.
- (3) AGRICULTURE AND HUNTING; FORESTRY AND LOGGING;
MINING AND QUARRYING ETC.
- (4) BASIC METAL MANUFACTURING i.e. manufacturing of iron, steel and non-ferrous metals.
- (5) ALL OTHER MANUFACTURING i.e. slaughtering, preparing and preserving of meat; dairy products; cement; lime and plaster; pulp ; paper and paper products; sawmills etc.
- (6) OTHER i.e. building and construction; retail and wholesale trade; restaurants and accomodation; transport and storage; business services; central and local government; hospitals etc.

2. Data Collection

Oil Flows Diagram



2. Data Collection

Oil

- **Supply:**
(Indigenous Production, Imports, Exports, Stock Changes, and International Transport)
 - **Oil Operators: Data Sources - Crude, Feedstocks and LPG/NGL**
 - ◆ Monthly Production information and stock levels are provided by
 - Greymouth Petroleum
 - Shell Todd Oil Services (STOS)
 - Swift Energy
 - STOS also provides export information.
 - The New Zealand Refining Company provides details on imports of crude oil by origin and refinery feedstocks. NZRC also provides crude and semi-refined input, and oil products production and stock levels.
 - Liquigas Limited (from June 2003) provides LPG stocks, imports, exports, deliveries and losses.

2. Data Collection

Oil

- **Supply:**
(Indigenous Production, Imports, Exports, Stock Changes, and International Transport)
 - **Oil Companies: Data Sources – Oil Products (Petrol, Diesel, Fuel Oil, Aviation Fuels and Other Petroleum Products)**
 - The New Zealand Refining Company provides details on oil products stock levels by fuel type.
 - Major Oil Retailers (BP, Caltex, Mobil, Shell and Gull) provide a monthly return containing oil products stocks, imports and exports, refinery receipts, intercompany sales, rebrands and blends, international transport, domestic sales, losses and also import/export schedules.
 - Silver Fern Shipping Limited provides stock levels, stock on coastal ships, stock in Refinery Auckland Pipeline and stock at Wiri.

2. Data Collection

Oil

- **Energy Transformation:
(Electricity Generation, Cogeneration, Oil Production and Losses and Own use)**
 - **Electricity Generation**
 - ◆ Not applicable
 - **Cogeneration**
 - ◆ Not applicable
 - **Oil Production**
 - ◆ The New Zealand Refining Company provides details on crude and semi-refined input, and oil products production.
 - **Losses and Own Use**
 - ◆ Major Oil companies (BP, Caltex, Mobil, Shell and Gull)
 - ◆ Natural Gas Corporation, STOS and Liquigas Limited (from June 2003).

2. Data Collection

Oil

- **Non-energy Use:**

(Other Petroleum Products: Bitumen, Lubricant, Solvents, Waxes, Petroleum Coke, White Spirit and Other Liquid Fuels)

- The New Zealand Refining Company
- Major Oil companies (BP, Caltex, Mobil and Shell)

2. Data Collection

Oil

- **Demand: (Agriculture, Industrial, Commercial, Residential and Domestic Transport)**
 - **Statistics New Zealand :**
 - ◆ *Deliveries of Petroleum Fuels by Industry (DPFI) Survey*, quarterly data on petroleum product demand to 14 final use sectors, based on oil company returns. This survey is sponsored by the Ministry of Economic Development.

2. Data Collection

Oil

DELIVERIES OF PETROLEUM FUELS BY INDUSTRY (TONNES)

QUARTER ENDED DEC 2005

Deliveries to:	GASOLINE		DIESEL		FUEL OILS			OTHER					TOTAL
	Premium	Regular	Auto Gas Oil	Marine Gas Oil	L.F.O.	H.F.O.	Power Station Bunker Etc	Aviation Gas	Jet Fuels	Kerosene	Heating Oil	Light Flash Naptha Etc	
Primary Industry -													
Agriculture & Hunting													
Fishing													
Other Primary Industry													
Manufacturing -													
Food Processing													
Iron & Steel													
Other													
Electricity & Gas -													
Electricity Generation													
Gas Generation													
Transport-													
International													
Domestic													
Building & Construction													
Resellers of Petroleum													
Households													
Other Users													
TOTALS													

2. Data Collection

Energy Supply and
Demand Balance
March Quarter 2004

Oil

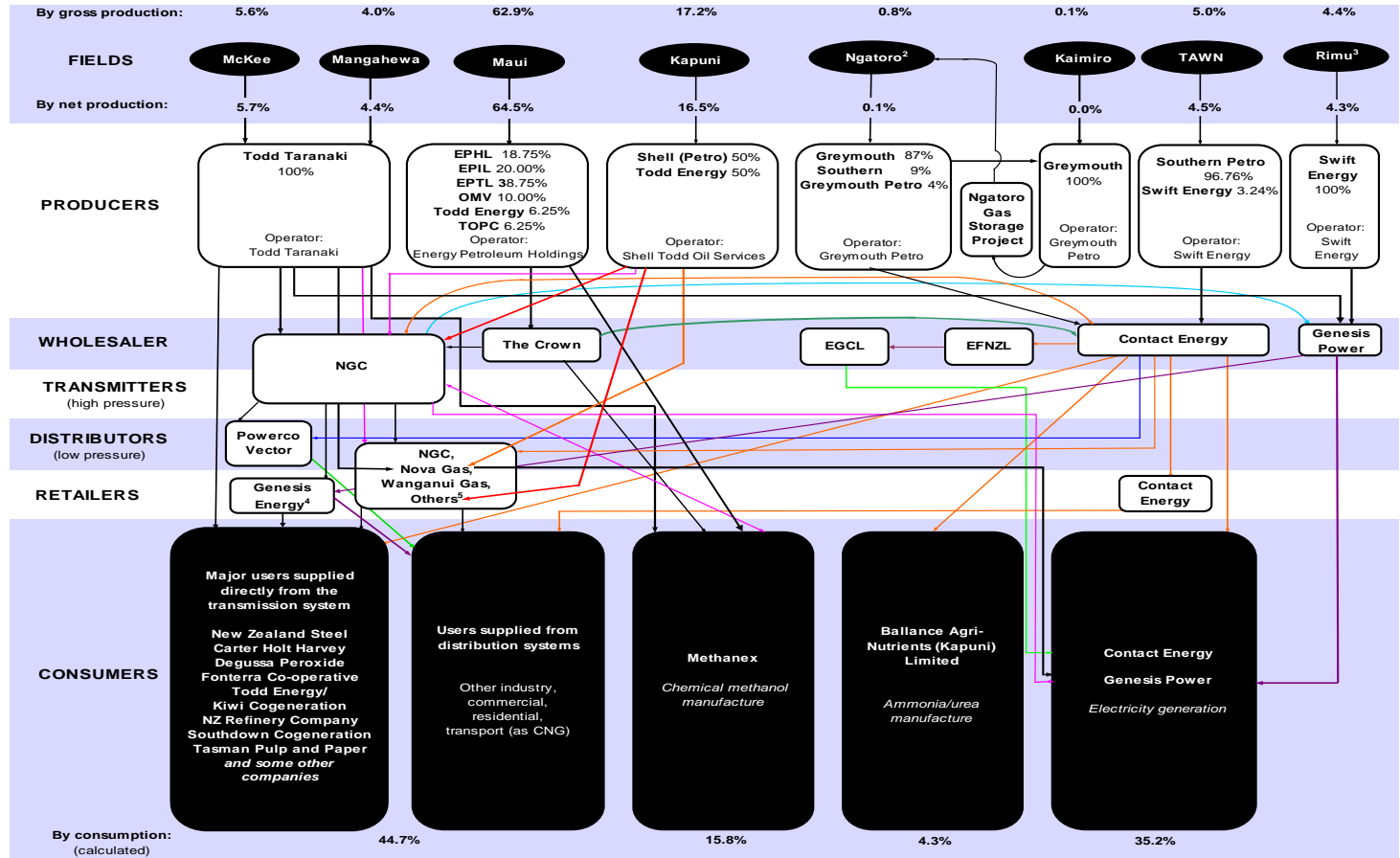
From Deliveries of Petroleum fuels

Gross Calorific Values in Petajoules	OIL							Total
	Crudes/ Feedstocks	LPG/ NGL	Motor Gasoline	Diesel	Fuel Oil	Av. Fuel/ Kero	Others	
Indigenous Production	10.02	1.88						11.90
+ Imports	47.60		11.07	9.70		3.21	2.02	73.59
- Exports	6.85	0.30			0.96			8.10
- Stock Change	-8.17	0.06	1.29	2.57	0.14	0.67	-0.85	-4.29
- International Transport				0.33	2.26	7.79		10.38
TOTAL PRIMARY ENERGY	58.94	1.52	9.78	6.80	-3.37	-5.25	2.87	71.30
ENERGY TRANSFORMATION	-58.94	-0.19	20.04	20.51	6.47	12.71	1.11	1.70
Electricity Generation								
Cogeneration								
Oil Production	-58.94		19.28	19.01	6.35	10.78	3.14	-0.32
Losses and Own Use		-0.19	0.77	1.43	0.11	1.93	-2.03	2.02
Non-energy Use								-3.97
CONSUMER ENERGY (calculated)		1.33	29.92	27.31	3.10	7.46	0.00	69.02
DEMAND								
Agriculture			0.22	2.66	0.50	0.04		3.53
Agriculture and Hunting			0.31	1.64	0.00	0.04		2.00
Fishing			0.01	1.02	0.50	0.00		1.54
Industrial		0.35	0.05	3.21	0.26	0.06		3.93
Other Primary Industry		0.00	0.66	0.07	0.00			0.75
Food Processing		0.00	0.02	0.03				0.05
Textiles								
Wood, Pulp, Paper and Printing								
Chemicals								
Non-metallic Minerals								
Basic Metals					0.00			
Mechanical/Electrical Equipment								
Building and Construction			0.00	0.61	0.00	0.04		0.69
Unallocated		0.35	0.04	1.87	0.15	0.02		2.43
Commercial		0.19	0.02	0.51	0.07	0.17		0.97
Residential		0.27	0.00	0.00	0.00	0.00		0.27
Domestic Transport		0.52	28.56	19.44	1.08	4.46		54.06
CONSUMER ENERGY (observed)		1.33	28.95	25.83	1.81	4.73	0.00	62.75
Statistical Differences		0.00	0.87	1.48	1.19	2.73	0.00	6.27

- Agriculture & Hunting
- Fishing
- Other Primary Industry
- Food Processing
- Iron & Steel
- Other
- Electricity Generation
- Gas Generation
- International Transport
- Domestic Transport
- Building & Construction
- Resellers of Petroleum
- Households
- Other Users

2. Data Collection

Gas Flows Diagram



2. Data Collection

Gas

- **Supply:**
(Indigenous Production, Imports, Exports, Stock Changes, and International Transport)
 - **Gas Operators: Data Sources – Kapuni, Maui, McKee, Waihapa/Ngaere, Kaimiro, Tariki/Ahuroa, Mangahewa, Ngatoro, Rimu/Kauri fields**
 - ♦ Monthly returns for gas production, LPG and natural gasoline extracted, gas re-injected, gas flared, and own use are provided by
 - Greymouth Petroleum (Kaimiro and Ngatoro fields)
 - Shell Todd Oil Services (Kapuni, Maui, McKee and Mangahewa fields)
 - Swift Energy (Waihapa/Ngaere, Tariki/Ahuroa, Rimu/Kauri fields)

2. Data Collection

Gas

- **Energy Transformation:
(Electricity Generation, Cogeneration, Oil Production and Losses and Own use)**
 - **Electricity Generation**
 - ◆ Electricity companies: Contact Energy, Genesis Power, Meridian Energy, Mighty River Power, TrustPower and Pioneer Generation
 - **Cogeneration**
 - ◆ **The Cogeneration Association of New Zealand**
 - **Oil Production**
 - ◆ **Not applicable**
 - **Losses and Own Use**
 - ◆ Greymouth Petroleum
 - ◆ Shell Todd Oil Services
 - ◆ Swift Energy
 - ◆ Natural Gas Corporation

2. Data Collection

Gas

- **Non-energy Use:**
 - Methanex New Zealand: gas used for the production of Methanol
 - Balance Agri-Nutrients (Kapuni) Limited: gas used for the production of Ammonia/Urea

2. Data Collection

Gas

- **Demand: (Agriculture, Industrial, Commercial, Residential and Domestic Transport)**
 - **Gas Retailers : provide details on gas consumption, gas sales revenue and gas customer numbers from years 2000.**
 - ◆ Contact Energy
 - ◆ Genesis Energy
 - ◆ Natural Gas Corporation
 - ◆ Nova Gas
 - ◆ Wanganui Gas

2. Data Collection

Quarterly Gas Survey

CLASSIFICATION OF RETAIL ELECTRICITY SALES D
during the year ended 31 March 2003 except for customer numbers which should be as at 31 March 2004.

A retailing or generating enterprise that sells directly to consumers, should account for the sales by consumer classification below. Consumers should be classified according to their primary revenue earning activity (which is not necessarily the purpose for which the electricity is used). For clarification of, or advice on, the ANZSIC classification system, a contact is listed on Page iii. **The number of consumers should be as at 31 March 2004 and not during the period.**

Consumer classification	ANZSIC	Electricity sold ¹ (MWh) Liquid Fuel Sold	Energy charges ^{2,3} \$(000) excluding GST	Line charges ² \$(000) excluding GST	Number of consumers ⁴ to whom electricity was sold
Agriculture, forestry and fishing	Agriculture, agricultural services and hunting	A01-A02			
	Forestry and logging	A03			
	Commercial fishing	A04			
	Sub-total	A			
	Mining				
Coal mining	B11				
	Oil and gas extraction	B12			
	Other mining and quarrying and services to mining	B13-B15			
	Sub-total	B			
Manufacturing					
Sub-total	C				
Electricity, gas and water	Electricity supply	D361			
	Gas supply (including LPG and CNG)	D362			
	Water supply, sewerage and drainage services	D37			
	Sub-total	D			
	Construction, trade and hospitality				
Construction	E				
Wholesale and retail trade	F, G				
Accommodation, cafes and restaurants	H				
Sub-total	E-H				

continued on page 4 opposite

- Information on electricity sold as shown should account for all electricity sold to consumers throughout the country through all network systems used.
- A split between energy and line charges must be reported in each of the ANZSIC classifications shown. Where a split between energy and line charges is not clearly defined, then best estimates must be made and quoted in this return.
- Information on electricity retailing income as shown should account for all income from electricity sold to consumers.
- Number of consumers should relate to the numbers as at the end of the reporting period and not the number of consumers during the reporting period.

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Consumer classification	ANZSIC	Electricity sold ¹ (MWh) Liquid Fuel Sold	Energy charges ^{2,3} \$(000) excluding GST	Line charges ² \$(000) excluding GST	Number of consumers ⁴ to whom electricity was sold
Transport and storage	Road freight	I611			
	Road passenger	I612			
	Rail ⁴	I62			
	Water	I63			
	Air	I64			
	Other transport, and services to transport	I65, I66			
	Storage	I67			
	Sub-total	I6			
	Other services				
	Communication services	J			
Finance, insurance, property and business services	K, L				
Government (including foreign), administration ⁵ and defence	M				
Education	N				
Health and community services	O				
Cultural, recreational, personal and other services	P, Q				
Sub-total	J-Q				
Residential					
Households				a	
TOTAL RETAIL⁶				b	

b = sum of seven ANZSIC sub-totals + a

- Information on electricity sold as shown should account for all electricity sold to consumers throughout the country through all network systems used.
- A split between energy and line charges must be reported in each of the ANZSIC classifications shown. Where a split between energy and line charges is not clearly defined, then best estimates must be made and quoted in this return.
- Information on electricity retailing income as shown should account for all energy-income related activities for electricity sold to consumers.
- Include urban and railway transport.
- Include public lighting.
- Exclude bulk sales and report in section E on page 6.
- Number of consumers should relate to the numbers as at 31 March 2004 and not the number of consumers during the period.

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Consumer classification	ANZSIC	Electricity sold ¹ (MWh) Liquid Fuel Sold	Energy charges ^{2,3} \$(000) excluding GST	Line charges ² \$(000) excluding GST	Number of consumers ⁴ to whom electricity was sold
Manufacturing	Meat and meat products	C211			
	Dairy products	C212			
	Other food processing; beverages, malt and tobacco products	C213-C219			
	Textile, clothing, footwear and leather	C22			
	Log sawmilling and timber dressing, and other wood products	C231-C232			
	Paper and paper products	C233			
	Printing, publishing and recorded media	C24			
	Petroleum refining	C251			
	Petroleum and coal products	C252			
	Chemicals and chemical products	C253, C254			
Rubber and plastic products	C255, C256				
Non-metallic mineral products	C26				
Iron and steel	C271				
Basic non-ferrous metals	C272				
Basic non-ferrous metal products	C273				
Metal products (other)	C274-C276				
Transport equipment	C281, C282				
Photographic and scientific equipment	C283				
Electronic, electrical and industrial equipment and appliances	C284-C286				
Other manufacturing	C29				
Sub-total	C				

Please copy the sub-total C onto page 3

- Information on electricity sold as shown should account for all electricity sold to consumers throughout the country through all network systems used.
- A split between energy and line charges must be reported in each of the ANZSIC classifications shown. Where a split between energy and line charges is not clearly defined, then best estimates must be made and quoted in this return.
- Information on electricity retailing income as shown should account for all energy-income related activities for electricity sold to consumers.
- Number of consumers should relate to the numbers as at 31 March 2003 and not the number of consumers during the period.

Ministry of Economic
Development



Manatū Ōhanga

2. Data Collection

Renewables

(Hydro, Geothermal, Solar, Wind, Biogas, Waste Heat and Wood)

- **Supply:**
(Indigenous Production, Imports, Exports, Stock Changes, and International Transport)
 - Electricity companies: Provide monthly net generation data.
 - ◆ Contact Energy
 - ◆ Genesis Power
 - ◆ Meridian Energy
 - ◆ Mighty River Power
 - ◆ TrustPower
 - ◆ Pioneer Generation
 - Solar Industries Association : Provides quarterly solar statistics from March 2002 data.
 - Other independent and on-site cogenerators.

2. Data Collection

Renewables

- **Energy Transformation:
(Electricity Generation, Cogeneration, Oil Production and Losses and Own use)**
 - **Electricity Generation**
 - ◆ Electricity companies: Contact Energy, Genesis Power, Meridian Energy, Mighty River Power, TrustPower and Pioneer Generation
 - **Cogeneration**
 - ◆ **The Cogeneration Association of New Zealand**
 - **Oil Production**
 - ◆ **Not applicable**
 - **Losses and Own Use**
 - ◆ Electricity companies: Contact Energy, Genesis Power, Meridian Energy, Mighty River Power, TrustPower and Pioneer Generation.

2. Data Collection

Renewables

- **Non-energy Use:**
 - Not applicable

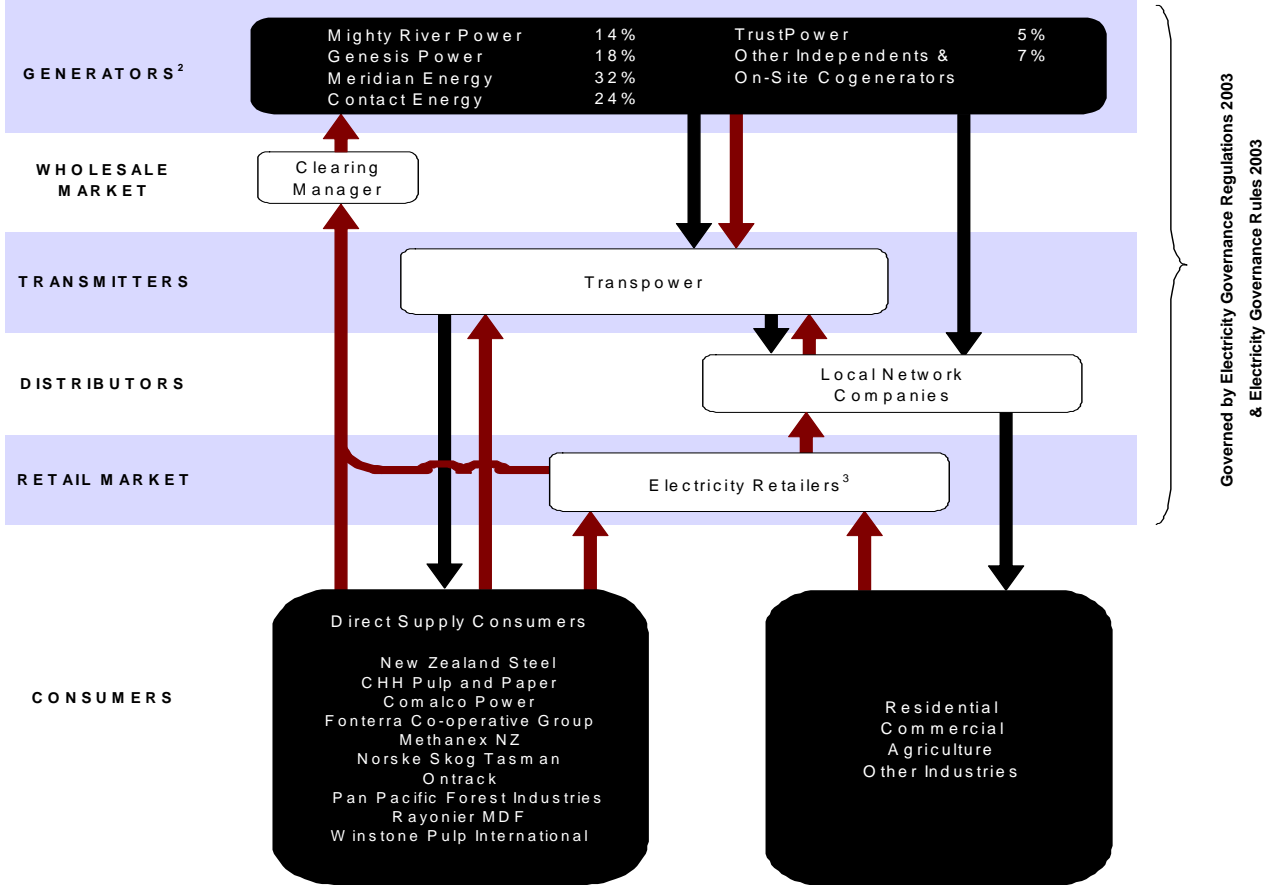
2. Data Collection

Renewables

- **Demand: (Agriculture, Industrial, Commercial, Residential and Domestic Transport)**
 - **Statistics New Zealand: provides quarterly data on direct use of geothermal**
 - **Others are estimated.**

2. Data Collection

Electricity Flows Diagram



2. Data Collection

Electricity

- **Supply:**
(Indigenous Production, Imports, Exports, Stock Changes, and International Transport)
 - **Not applicable.**

2. Data Collection

Electricity

- **Energy Transformation:
(Electricity Generation, Cogeneration, Oil Production and Losses and Own use)**
 - **Electricity Generation: provides net generation output**
 - ◆ Electricity companies: Contact Energy, Genesis Power, Meridian Energy, Mighty River Power, TrustPower and Pioneer Generation
 - **Cogeneration: provides net cogeneration output**
 - ◆ **The Cogeneration Association of New Zealand**
 - **Oil Production**
 - ◆ **Not applicable**
 - **Losses and Own Use**
 - ◆ **Estimated**

2. Data Collection

Electricity

- **Non-energy Use:**
 - Not applicable

2. Data Collection

Electricity

- **Demand: (Agriculture, Industrial, Commercial, Residential and Domestic Transport)**
 - **Electricity companies (generators, wholesalers, transmitters, distributors and retailers) provides details on electricity consumption for years ending March.**

3. Data Processing

- **How it is collected and managed**
 - Electronic submissions & hard copies via mail
 - Initial submissions & revisions
 - Dedicated database (SQL database)

4. Data Validation

- **Time series check (no breaks in series)**
- **Reconcile supply and demand**
 - **Compared figures with other sources**
- **Contact companies to resolve inconsistencies.**

5. Dissemination

- Energy Data File (Energy Balances)
- Energy in Brief March 2006
- Energy Greenhouse Gas Emissions report
- Energy Outlook

5. Dissemination



NZ Energy Data File



NZ Energy in Brief



NZ Energy Greenhouse Gas Emissions



NZ Energy Outlook to 2025





Energy Supply and Demand Balance for September Year 2005

Converted into Petajoules using Gross Calorific Values		COAL						OIL						GAS		RENEWABLES							ELEC- TRICITY	TOTAL			
		Bituminous		Sub-bitum.	Bituminous Sub-bitum.	Lignite	Peat/ Coke	Total	Crudes/ Feedstocks	LPG/ NGL	Motor Gasoline	Diesel	Fuel Oil	Av. Fuel/ Kero	Others	Total	Natural Gas	Hydro	Geo- thermal	Solar	Wind	Biogas			Wastes	Wood	Total
		Coking	Other																								
S U P P L Y	Indigenous Production	21.99	0.45	14.18	36.62	0.74	37.36	11.40	2.51						13.91	42.47	28.03	22.31	0.05	0.31	0.37	4.05	8.32	63.45		157.19	
	+ Imports		0.84	4.30	5.13	0.00	5.13	49.92	0.23	8.30	5.89	0.00	3.60	1.81	69.74												74.89
	- Exports	17.00			17.00	0.00	17.00	7.89	0.05	0.00	0.00	0.35	0.00	0.00	8.29												25.30
	- Stock Change							-6.24	0.11	-0.01	0.23	0.39	0.77	0.63	-4.13	0.05											-4.07
	- International Transport									0.00	0.37	2.30	9.47	0.00	12.13												12.13
	TOTAL Primary Energy	4.99	1.28	18.48	24.75	0.74	0.00	59.67	2.59	8.30	5.29	-3.03	-6.64	1.18	67.36	42.42	28.03	22.31	0.05	0.31	0.37	4.05	8.32	63.45		198.72	
	ENERGY TRANSFORMATION				-12.78			-59.67	-0.22	19.12	19.64	4.95	10.63	1.36	-4.19	-15.24	-28.03	-18.47		-0.31	-0.35	-3.96	-1.45	-52.58	39.01	-45.79	
	Electricity Generation				-12.07											-9.00	-28.03	-16.84		-0.31	-0.28			-45.47	39.35	-27.19	
	Cogeneration				-0.21											-4.75	-0.13			-0.07	-3.96	-1.45		-5.61	2.60	-7.96	
	Oil Production							-59.67		19.26	19.95	5.15	10.32	3.18	-1.81												-1.81
Losses and Own Use				-0.50				-0.22	-0.14	-0.31	-0.20	0.32	-1.83	-2.38	-1.49	-1.50							-1.50	-2.95	-8.82		
Non-energy Use													-2.54	-2.54	-14.22											-16.76	
CONSUMER ENERGY (calculated)	1.28	18.48		11.97	0.74	0.00	2.37	27.42	24.93	1.92	3.99	0.00	60.63	12.95	3.84	0.05	0.00	0.02	0.09	6.87	10.87	39.01		136.17			
D E M A N D	Agriculture				0.13	0.003	0.13		0.28	1.97	0.36	0.05		2.65	0.49										1.38	4.65	
	Agriculture and Hunting				0.13	0.003	0.13		0.28	1.41	0.00	0.05		1.74	0.49										1.33	3.69	
	Fishing								0.00	0.56	0.35	0.00		0.91										0.05	0.97		
	Industrial*				6.42	0.52	6.93		0.79	0.11	2.98	0.33	0.03	4.24	6.95		3.17				0.09	4.85	8.11	13.67	39.90		
	Other Primary Industry								0.00	0.77	0.09	0.00		0.87	0.05									0.29	1.20		
	Food Processing								0.00	0.01	0.04	0.00		0.05	2.53									1.85	4.43		
	Textiles																							0.15	0.15		
	Wood, Pulp, Paper and Printing															2.56								3.11	5.67		
	Chemicals															0.20								0.58	0.78		
	Non-metallic Minerals															0.81								0.23	1.03		
Basic Metals				4.48			4.48			0.00													6.32	10.80			
Mechanical/Electrical Equipment																							0.39	0.39			
Building and Construction								0.00	0.62	0.00	0.02		0.64	0.04									0.22	0.90			
Unallocated				1.93	0.52		2.45	0.79	0.10	1.57	0.20	0.01		2.68	0.76	3.17			0.09	4.85	8.11	0.54	14.54				
Commercial				1.93	0.21		2.14	0.41	0.24	1.85	0.09	0.16		2.76	2.74				0.02				0.02	7.37	15.03		
Residential				0.14	0.15		0.30	0.83	0.00	0.00	0.00	0.00		0.83	2.70	0.67	0.05					2.02	2.74	12.57	19.15		
Domestic Transport				0.02			0.02	0.33	27.28	18.08	1.43	4.25		51.38	0.07									0.59	52.05		
CONSUMER ENERGY (observed)				8.64	0.88	0.00	9.51	2.37	27.91	24.88	2.21	4.49	0.00	61.86	12.95	3.84	0.05	0.02	0.09	6.87	10.87	35.58		130.78			
Statistical Differences				3.33	-0.14	0.00	3.20	0.00	-0.49	0.05	-0.29	-0.50	0.00	-1.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.43	5.40		

* Breakdown of industrial coal figures are unknown or confidential.
 Revised residential wood figures, see Glossary, Section K for details. Waste heat has been investigated.
 For definitions of terms used and data sources see Glossary, Section K, and Data Sources, Section M.
 Electricity end use excludes electricity generated and consumed by cogeneration plants.

5. Enabling Legislation

- **International Energy Agreement Act 1976**
- **The Gas (statistics) Regulation 1997
(under the Gas Act)**
- **The Electricity (statistics) Regulation 1996
(under the Electricity Act)**

Thank You

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