



New Zealand

ENERGY DATA FILE

January 2005

Available on-line through the Energy Statistics and Projections Homepage:

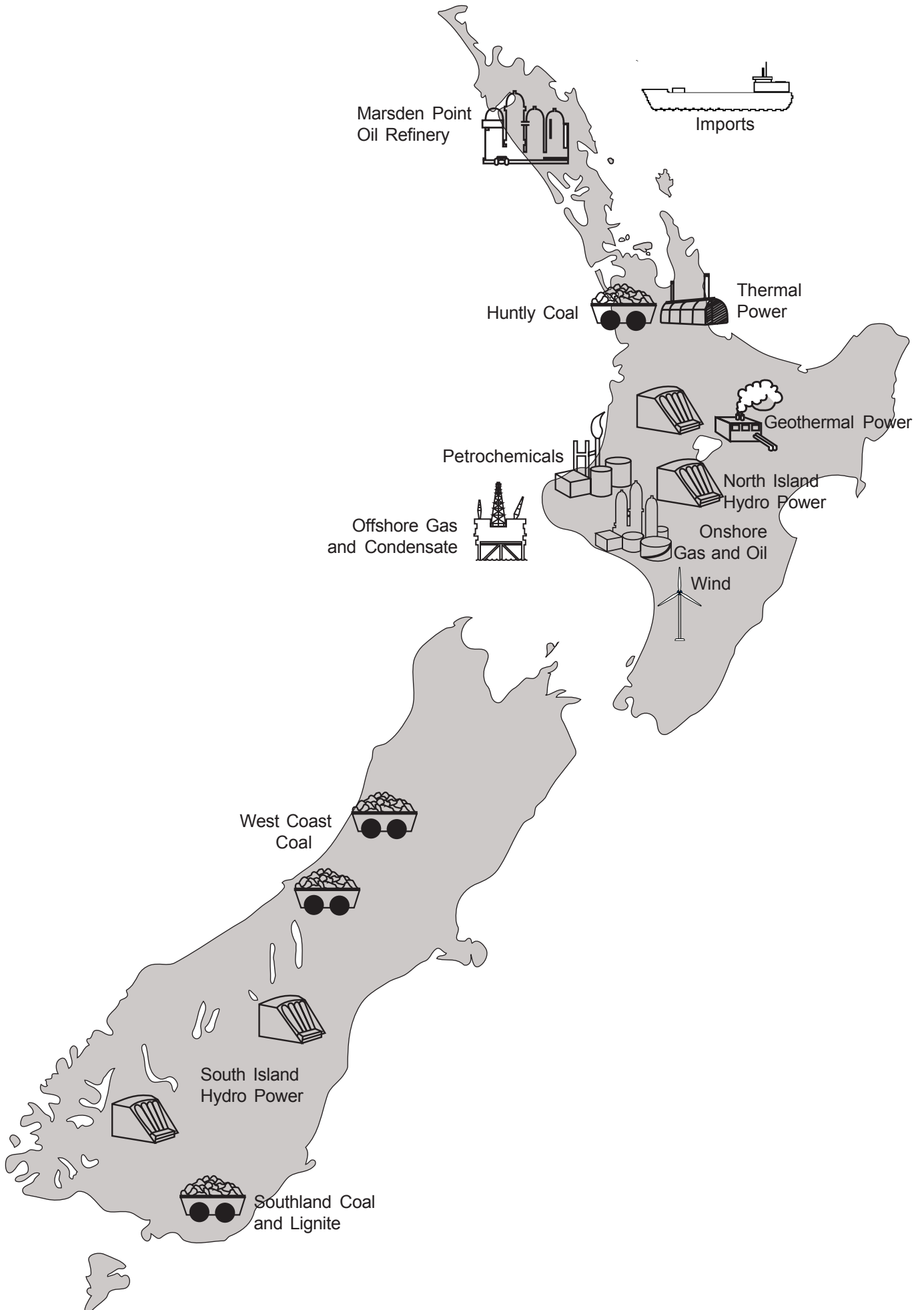
http://www.med.govt.nz/ers/en_stats.html

Compiled by:

Hien D T Dang
Energy and the Environment Group
Resources and Networks Branch
Ministry of Economic Development
PO Box 1473, 33 Bowen Street
Wellington
NEW ZEALAND

Phone: (04) 472 0030
Fax: (04) 473 7010
Email: info@med.govt.nz

New Zealand Energy Sources



Preface

This *Energy Data File* (EDF) aims to provide data and information on New Zealand's energy supply and demand to all interested organisations and individuals.

The data, in most cases, cover energy supply (production and distribution) and consumption presented in the form of tables, most with annual figures from 1974, and quarterly figures for the last few years. As data in printed form are of limited use, we also offer data in electronic form through the **Energy Statistics and Projections Homepage** (see below) and on disk (see inside back cover for details).

Information includes diagrams and text describing the energy industry structure for the main sub-sectors, and at times analyses of specific topics.

Scope: The *Energy Data File* focuses on commercial energy, that is, energy forms that typically are produced and sold as a fuel. Other forms of energy, such as passive solar heating, are not included because of the lack of reliable data.

Accuracy: The data are not in all cases accurate to the number of significant figures or decimal places presented, which are chosen not just for accuracy but also for consistency and to aid comparisons over time. Totals may not exactly equal the sum of displayed data due to rounding.

Currency: All prices are in nominal New Zealand dollars unless otherwise stated.

What's New?

Information presented in the January 2005 *Energy Data File* includes data up to September 2004. The annual electricity enterprise statistics of generation and conveyance in Section G include aggregate electricity statistics for the year ending March 2004. In some instances, estimates have been made of generation by fuel type for the year ended September 2004.

The Oil section (Section D) includes a new table with information on crude oil, condensate and naphtha production by field in mmbbls.

The tables "Gross and Net Gas Production by Field" have been included on pages 94 and 97 in the Gas section (Section E) in Bcf.

Years and quarters: Annual data are presented for years ending 31 December (calendar years), 31 March, 30 June and 30 September. Unless otherwise stated, years are calendar years. Quarters end 31 March, 30 June, 30 September and 31 December.

You may also be interested in our other publications; see page 170 for details. Your comments on this edition and suggestions for future editions are most welcome and can be sent to:

ENERGY AND THE ENVIRONMENT GROUP, RESOURCES AND NETWORKS BRANCH,
MINISTRY OF ECONOMIC DEVELOPMENT, PO BOX 1473, WELLINGTON, NEW ZEALAND

Telephone: National: (04) 474 2180 or (04) 472 0030
 International: [+64] (4) 474 2180 or [+64] (4) 472 0030

Facsimile: National: (04) 473 7010
 International: [+64] (4) 473 7010

Email: info@med.govt.nz

Energy Statistics and Projections Homepage: http://www.med.govt.nz/ers/en_stats.html

Contents

New Zealand Energy Sources	2
Preface	3
New Zealand's Energy Flows for Calendar Year 2003	6
A Energy Overview	7
A.1 Energy Flows	7
A.2 Primary Energy Supply (PJ)	8
A.3 Energy Transformation	9
A.4 Consumer Energy Demand	9
A.5 Energy Greenhouse Gas Emissions	12
A.6 Energy Outlook	12
B Energy Balances	13
Description	13
Table B.1 Quarterly Energy Supply and Demand Balance Tables (Gross PJ)	15
Table B.2 Annual Energy Supply and Demand Balance Tables (Gross PJ)	20
Table B.3 Annual Energy Supply and Demand Balance Table (Net PJ)	31
C Coal	32
Figure C.1 Coal Flows for September Year 2004	32
Overview of New Zealand's Coal Industry	33
Table C.1 Coal Production, Exports and Consumption	35
Figure C.2 Coal Flow Summary for September Year 2004	36
Table C.2 Summary of Coal Consumption by Sector	37
D Oil	38
Figure D.1 Oil Flows for September Year 2004	38
Overview of New Zealand's Oil Industry	39
Table D.1 Summary of Oil Consumption by Sector	43
Figure D.2 Oil Flow Summary for September Year 2004	44
Table D.2 Crude Oil, Condensate and Naphtha Production by Field	45
Table D.3 Crude Oil, Condensate and Naphtha (Gross PJ)	49
Table D.4 Refinery Blendstocks and Other Feedstocks (Gross PJ)	51
Table D.5 Oil Products Total (Gross PJ)	53
Table D.6 Petrol Total (Gross PJ)	55
Table D.7 Production and Consumer Energy by Petrol Types (Gross PJ)	57
Table D.8 Premium Unleaded Petrol (Gross PJ)	59
Table D.9 Regular Unleaded Petrol (Gross PJ)	61
Table D.10 Diesel (Gross PJ)	63
Table D.11 Fuel Oil (Gross PJ)	65
Table D.12 Aviation Fuels (Gross PJ)	67
Table D.13 Other Petroleum Products (Gross PJ)	69
Table D.14 LPG / NGL (Gross PJ)	71
Table D.15 Oil Tables in Thousand Tonnes	72
Table D.16 Oil Import Bill (Quantity and Cost)	85
E Gas	86
Figure E.1 Gas Flows for September Year 2004	86
Overview of New Zealand's Gas Industry	87
Figure E.2 Gas Flow Summary for September Year 2004	91
Table E.1 Gross Gas Production by Field	92
Table E.2 Net Gas Production by Field	95
Table E.3 Gas Production (PJ)	99
Table E.4 Gas Demand (PJ)	101
Table E.5 CNG Sales (PJ)	102
Table E.6 Summary of Gas Consumption by Sector	103

F Renewables		104
	Overview of Renewable Energy Sources in New Zealand	104
Figure F.1	Renewable Energy Flow for September Year 2004	105
Table F.1	Renewable Energy Supply and Consumption (PJ)	107
G Electricity		108
Figure G.1	Electricity Industry General Structure as at 31 March 2004	108
	Overview of New Zealand's Electricity Industry	109
Table G.1	Generation by Fuel Type for March Year 2004	110
Table G.2	Consumption by Sector for March Year 2004	111
Figure G.2	Electricity Flow Summary for March Year 2004	112
Table G.3	Net Electricity Generation by Fuel Type (GWh)	113
Table G.4	Net Electricity Generation by Fuel Type (PJ)	114
Table G.5	Generating Capacity by Fuel Type for March Year 2004 (MW)	116
Table G.6	Generation by Fuel Type for March Year 2004 (MWh)	117
Table G.7a	Information on Current Generating Plants (10 MW or Greater)	118
Table G.7b	Information on Possible Future Plant Changes (10 MW or Greater)	120
Table G.8	Transmission and Distribution Network Statistics for March Year 2004	121
Table G.9	Electricity Consumption by the Residential Sector	123
Table G.10	Electricity Consumption by the Commercial Sector	124
Table G.11	Electricity Consumption by the Industrial Sector	125
Table G.12	Electricity Consumption by All Sectors	126
Table G.13	Electricity End Use for March Year 2004	128
H Reserves		130
	Oil and Gas Reserves	130
Table H.1	Oil and Condensate Reserves and Production	131
Table H.2	Gas Reserves and Production	131
I Prices		133
	Introduction	133
Table I.1	Electricity Consumer Prices (Nominal) cents/kWh	134
Table I.2	Electricity Consumer Prices (Real) cents/kWh	135
Table I.3	Transport Fuels Prices (Nominal) cents/litre and cents/kg	136
Table I.4	Transport Fuels Prices (Real) cents/litre and cents/kg	137
Table I.5	Transport Fuels Prices (Nominal) \$/GJ	138
Table I.6	Transport Fuels Prices (Real) \$/GJ	139
Table I.7	Non-transport Fuels Prices (Nominal) cents/litre and \$/GJ	140
Table I.8	Non-transport Fuels Prices (Real) cents/litre and \$/GJ	141
I.9	Petrol Price Comparison	142
I.10	Comparison of Electricity and Non-transport Fuels Prices	145
I.11	Taxes and Levies	146
I.12	International Energy Price Comparisons	149
I.13	Price Deflators	153
J Units Used		154
K Glossary		156
L Fuel Properties		162
Table L.1	Solid Fuel Calorific Values (Gross)	162
Table L.2	Solid Fuel Calorific Values (Net)	163
Table L.3	Petroleum Calorific Values (Gross)	164
Table L.4	Petroleum Calorific Values (Net)	165
Table L.5	Oil Conversion Factors	166
Table L.6	Gas Physical Properties	166
M Data Sources		167
N Further Information		170