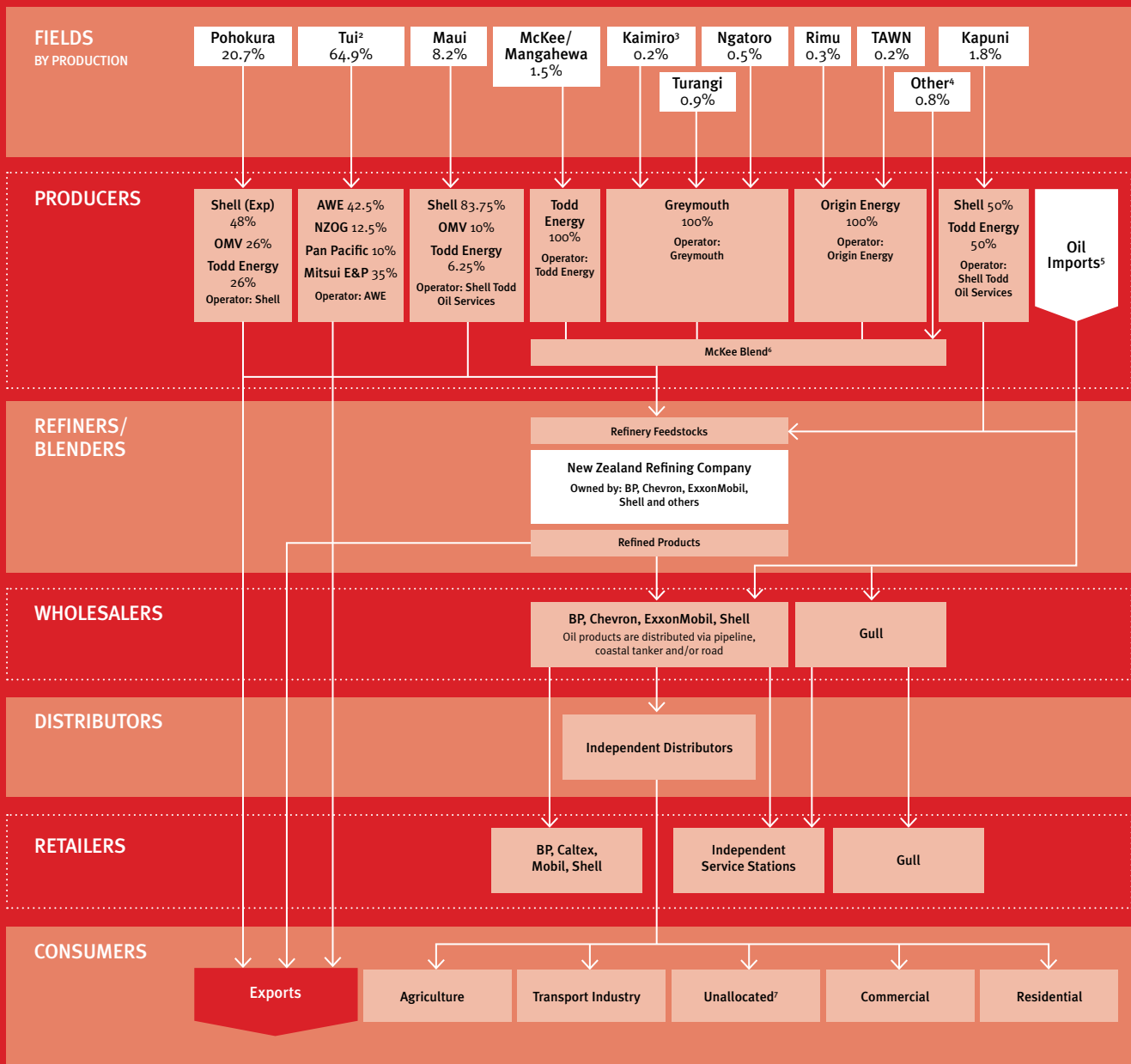


## D. Oil

Figure D.1a: Oil Industry Summary for 2008<sup>1</sup>



Company names are listed without the suffixes "Limited" and "New Zealand Limited" where applicable and subsidiaries are listed as the parent company. **AWE** is Australian Worldwide Exploration Limited, **Chevron** is Chevron NZ (includes Caltex New Zealand Limited), **Greymouth** is Greymouth Petroleum Holdings Limited, **Mitsui E&P** is Mitsui E&P Australia Pty, **ExxonMobil** is ExxonMobil New Zealand Holdings (includes Mobil Oil New Zealand Limited), **NZOG** is New Zealand Oil and Gas, **OMV** is OMV New Zealand Limited (Österr Mineralöl Verwaltung), **Origin Energy** is Origin Energy New Zealand Limited and Contact Energy (51% owned by Origin), **Shell** is Shell NZ Limited (includes Shell Exploration NZ Limited, Shell (Petroleum Mining) Co Limited, Energy Petroleum Holdings Limited, Energy Petroleum Investments Limited, Energy Petroleum Taranaki Limited and Taranaki Offshore Petroleum Company), **TAWN** comprises the Tariki, Ahuroa, Waihapā and Ngaere fields.

Notes to Figure D.1a: <sup>1</sup> Ownership as at 31 December 2008.

<sup>2</sup> Tui crude has been used as feedstock at the refinery in January 2009.

<sup>3</sup> Includes Moturoa field.

<sup>4</sup> Includes Cheal and Surrey fields, and Radnor well. Cheal is owned by Kanuka Energy Limited (36.5%), Cheal Petroleum Limited (30.5%) and Arrowhead Energy Limited (33.0%) and operated by Austral Pacific Energy (NZ) Limited. Surrey is operated by Westech Energy New Zealand Limited.

<sup>5</sup> Crude and refined product are imported by the four large oil companies. Refined product is imported by Gull Petroleum.

<sup>6</sup> Source: Shell NZ Limited.

<sup>7</sup> Unallocated sector includes all resellers of petroleum fuels (service stations, independent distributors etc.).

## Overview of New Zealand's Oil Industry

### Introduction

Oil is New Zealand's largest source of energy, and it has a strong influence on all parts of our economy. Whilst there are a number of producing oil fields in New Zealand, most of our oil is imported. This section of the EDF covers all aspects of oil, from the well (production) to consumption (end use). Units of volume (usually million barrels) are used for the discussion of oil production statistics alongside the energy units because this allows comparison to the Oil and Gas Reserves section (Section H). Energy units (petajoules) are used for discussion of transformation and consumption statistics because this allows comparison between the different oil product types (i.e. a litre of petrol and a litre of diesel have different energy contents, and these fuels are used for energy purposes). Percentage changes between annual statistics were calculated from gross petajoules for consistency.

Total oil production in New Zealand, defined as including condensate, naphtha and crude oil, increased by 45% in the 2008 calendar year to 128 PJ (21 million barrels). This was due to continued strong production from the Tui and Pohokura fields.

Observed consumption data for 2008 showed no significant difference in total petroleum product consumption from the 2007 figures. Petrol and diesel continue to dominate fuel consumption in New Zealand; in 2008, each accounted for 41% of total oil product use. Aviation fuels (7%), fuel oil (3%), LPG (3%) and other oil products (5%) made up the remaining consumption.

The layout of this section has changed since the last edition of the EDF. The most noticeable change to the section is the combination of last year's Tables D.3 Crude Oil, Condensate and Naphtha and D.4 Refinery Blendstocks and Feedstocks. These tables had duplicated information, and have been combined into Table D.3: Crude Oil, Condensate, Blendstocks and Other Feedstocks (Gross PJ). Consequently, the graphs generated from these data have also been combined into Figures D.3a and D.3b. Additionally, Tables D.2a–d Crude Oil, Condensate and Naphtha Production by Field have been reorganised to better reflect the fields producing the most oil in recent years.

Hence, Mangahewa, Cheal and Turangi fields have been given their own columns and Waihapa/Ngaere/Piakau, Rimu and Tariki/Ahuroa have been moved to "Other".

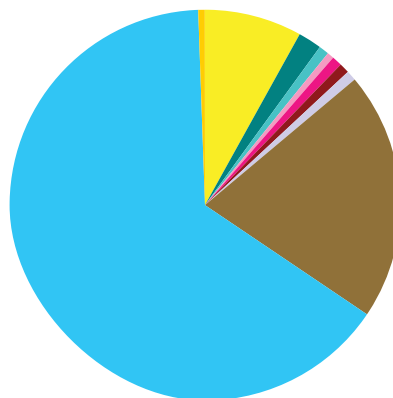
The remaining change occurs in Tables D.6 Observed Oil Consumption by Sector and D.7 Observed Oil Consumption by Fuel, where LPG consumer energy has been included. In Table D.6, this consumer energy figure is listed under "Unallocated", because we do not currently have reliable consumption figures. In Table D.7, LPG now has its own column. The LPG numbers are calculated consumer energy values.

### Crude Oil

#### Ownership

Most of the mining permits for the large fields are jointly owned, with the bulk of investment coming from foreign companies. There were no significant changes of ownership in 2008. A full breakdown of field owners is shown in Figure D.1a.

**Figure D.1b: Oil Production by Field in 2008**



- Tui 64.9%
- Pohokura 20.7%
- Maui 8.1%
- Kapuni 1.8%
- McKee 0.9%
- Turangi 0.9%
- Cheal 0.8%
- Kaimiro/Ngatoro 0.8%
- Mangahewa 0.6%
- Other 0.5%

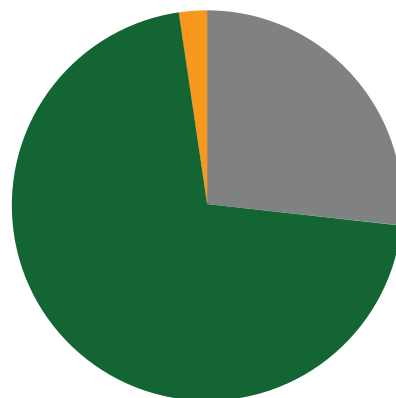
### Production

New Zealand's oil is extracted from 16 fields in the Taranaki region. Total oil production in 2008 was the highest ever in a calendar year (21 million barrels or 128 PJ), up 45% on 2007. New Zealand's mean production rate was 58,400 barrels per day for 2008 (up from 40,750 barrels per day in 2007).

The two newest offshore fields, Pohokura and Tui, dominated production in 2008; these fields contributed 86% of New Zealand's oil production. Figure D.1b shows the percentage crude oil and condensate production by field.

The type of oil produced in New Zealand also changed with the addition of the Tui field. Historically, New Zealand oil consisted of mostly condensate, with some crude oil and naphtha. However, in 2008, crude oil made up 71% of the total production, with condensate (27%) and naphtha (2%) making up the balance (Figure D.1c).

**Figure D.1c: Oil Production by Oil Type in 2008**



- Crude Oil 71%
- Condensate 27%
- Naphtha 2%

## D. Oil

### Overview of New Zealand's Oil Industry continued

#### Exploration and developments

Significant developments in the petroleum exploration industry this year included the opening of two large exploration block offers (Raukumara and Northland offshore basins), acquisition of 3D seismic data off the Otago coast and the commissioning of the Kan Tan IV drill rig to drill exploration wells in Taranaki. This semi-submersible rig will drill several exploration wells near the Tui field in addition to exploration wells in the Northland and Canterbury Basins.

The 2008 Onshore Taranaki Basin block offer saw nine exploration permits awarded to a number of new and existing explorers. As a result, 20 exploration wells are proposed to be drilled over the next five years, targeting both shallow oil and deep gas.

A large multi-basin offshore 2D seismic data acquisition took place over the 2008/2009 summer season. Several explorers took advantage of the calmer weather to acquire over 6,000 km of 2D seismic data, with the *Pacific Titan* in the deep water and offshore Taranaki Basins, Great South Basin and Canterbury Basin.

Also of note was the acquisition of 2D seismic data in the offshore Reinga basin. Located to the north-west of Cape Reinga, CGG Veritas Services SA acquired a minimum of 4,000 km of 2D seismic data, and 1,500 km of these seismic data have been bought by Crown Minerals to be released via data pack for a Reinga Basin Block offer.

The largest project in New Zealand currently under development is the Maari project. The greater Maari field is located 80 km off the South Taranaki coast, south of the Maui field. Development drilling started in 2008, and the first oil came to the surface in February 2009. Full production is likely to be reached in mid 2009 and is expected to be around 35,000 barrels per day. As with Tui, a floating, production, storage and off-take (FPSO) vessel (*Raroa*) is permanently moored approximately 1.5 km from the wellhead platform.

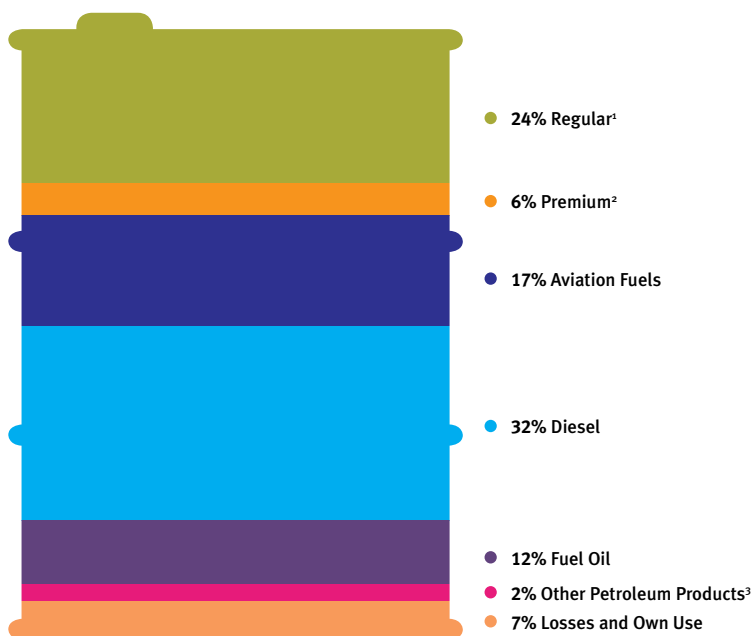
#### Imports and Exports

Oil and blendstocks are imported from three main locations: the Middle East, the Far East and Australia. In 2008, crude oil and blendstock imports increased by 6% to 224 PJ.

New Zealand's oil exports increased as a result of increased domestic production.

2008 saw 120 PJ (20.5 million barrels) of crude oil exported overseas, the highest ever in a calendar year. So much of New Zealand's locally produced crude oil is exported because of its high quality and, therefore, high value on the international market. Australia, Japan and Korea purchase the majority of this oil.

Figure D.1d: Refinery Output



Notes to Figure D.1d: <sup>1</sup> 91 Octane.

<sup>2</sup> 95-98 Octane.

<sup>3</sup> Includes bitumen and other liquid fuels.

This product outturn is indicative only. Actual product depends on refinery configuration and crude type.

### Overview of New Zealand's Oil Industry continued

#### Refinery

The Marsden Point Oil Refinery is New Zealand's only oil refinery. It is operated by the New Zealand Refining Company (NZRC) and is located near Whangarei. It started operating in 1964 and has had one major expansion in 1985; another large expansion is planned for start-up in 2010.

The NZRC processes crude oil and condensate for the four major oil companies active in New Zealand: BP, Chevron, ExxonMobil and Shell. Each of the major oil companies has a stake in the NZRC, and they have combined control of just under 73% of NZRC's 240 million shares. The refinery produces petrol, diesel, jet-A1, fuel oil, bitumen and other petroleum products – but not aviation gasoline. Sulphur is recovered as a by-product and sold as feedstock to the fertiliser industry. Carbon dioxide is also recovered and sold to the beverage industry. The majority of NZRC products are consumed in New Zealand; in 2008, the refinery supplied approximately 85% of New Zealand's oil consumer energy.

On average, the refinery runs on approximately 40%–50% crude from the Middle East, 40%–50% from the Far East or Australia and the remainder from domestic production. In 2008, the refinery had a total intake of 234 PJ, of which 9 PJ (4%) was supplied by domestic production. Total refinery intake was up 7% from 2007, while domestic production of oil products increased by 5% over the same period.

Figure D.1d demonstrates the amount of each product produced over the year as a percentage of total refinery input. For 2008, the refinery's feedstocks were converted into 32% diesel, 24% regular petrol, 17% aviation fuels, 12% fuel oil, 6% premium petrol and 2% other petroleum products, and the remaining 7% was losses and own use. These percentages vary each year depending on refinery configuration and feedstock blends.

#### Self-sufficiency

For this publication, self-sufficiency is calculated as domestic production divided by total domestic consumption (including refinery and industry own uses). Typically, very little domestic oil is used at the refinery (4% in 2008) due to its high quality and consequent high value – for New Zealand, it is beneficial to export high value domestic oil and import cheaper, lower grade, foreign oil. As New Zealand exports most of its locally produced oil, this measure of self-sufficiency should be interpreted with care.

New Zealand became increasingly “self-sufficient” in oil from 1974 to 1993, going from producing less than 4% of its oil demands to producing about half. Self-sufficiency peaked in 1997 at 55%, decreasing to just 14% in 2006 due to continued oil demand growth and declining production. Increased production levels in 2007 and 2008 have raised New Zealand's self-sufficiency level to 47%. With the Maari prospect due to start producing in 2009, this upward trend is expected to continue.

#### Permitting

Further exploration and permitting information can be found in the Oil and Gas Reserves section (Section H). Detailed information on current and historical petroleum permits can be found on the Crown Minerals website: [www.crownminerals.govt.nz](http://www.crownminerals.govt.nz). The website also contains industry overviews, free technical data, maps and latest news from the industry.

#### Deregulation

Deregulation of the oil industry in the late 1980s removed price controls, government involvement in the refinery, licensing of wholesalers and retailers, and restrictions on imports of refined products.

#### Petroleum Products

##### Petroleum Product Wholesalers in New Zealand

The petroleum product wholesalers in New Zealand comprise five companies: BP, Chevron (Caltex and Challenge), ExxonMobil (Mobil), Shell and Gull. BP, Caltex, Mobil and Shell dominate the market and supply a full range of products. Gull has a smaller market share and has limited its participation to petrol and diesel sales.

Biofuels play a very small part in the New Zealand petroleum fuels market. Gull was the first oil company to sell biofuels in New Zealand – a 10% blend of bio-ethanol and premium petrol. Mobil has since made blends of petrol and bio-ethanol available in the lower North Island (a 10% blend of bio-ethanol and premium petrol, and a 3% blend of bio-ethanol and regular petrol) and are trialling the sale of a 5% bio-diesel (5% derived from tallow) at two service stations in the Bay of Plenty.

In February 2009, Shell New Zealand announced a “strategic review of its downstream businesses in New Zealand”. This review will include Shell's stake in the New Zealand Refining Company, its 230 petrol stations and various petroleum fuel distribution operations.

##### Production, Imports and Exports

The NZRC produces a full range of petroleum products and supplied approximately 85% of the New Zealand market in 2008. The remaining product is imported from foreign refineries, predominantly located in Australia and Singapore. There are in the order of 15–20 tanker movements per month importing crude oil, feedstocks and refined products to New Zealand.

Refinery production of petroleum products increased by 10 PJ (or 5%) to 219 PJ in 2008, whereas imports of refined oil products decreased by 8 PJ (or 7%) to 99 PJ over the same period. The reduction in imports is due to an increase in domestic production of oil products. (There was no significant difference in consumer demand between 2007 and 2008.)

### Overview of New Zealand's Oil Industry continued

#### Distribution and Storage

The four major oil companies own bulk storage facilities throughout New Zealand and have agreements in place that allow access to each other's storage facilities. This enables the companies to draw stock from any location if they have authorisation and sufficient stock in another location. This pooled storage system allows the companies to jointly manage stock levels and coordinate import shipments.

Coastal tankers and import vessels are used to move bulk shipments of product around the country to various port storage facilities. The NZRC also owns and operates a 170 km-long petroleum pipeline that runs from Marsden Point to the Wiri depot, located in South Auckland near Auckland International Airport. Wiri Oil Services operates a second pipeline that carries aviation fuels from Wiri to Auckland International Airport.

Road tankers are used to distribute products from bulk storage facilities to service stations and major users, such as construction companies and farms. This final stage of distribution is run in three ways: oil companies distributing their own fuel, oil companies employing independent distributors to distribute fuel on their behalf and independent distributors purchasing fuel from bulk storage facilities at wholesale prices, then selling this fuel to their own customers. Independent distributors who purchase fuel and then on-sell it are referred to as "resellers".

Gull Petroleum Limited operates its own independent petroleum storage terminal at Mount Maunganui. Products are transported from Mount Maunganui to Gull's retail outlets by road tanker.

#### Consumption

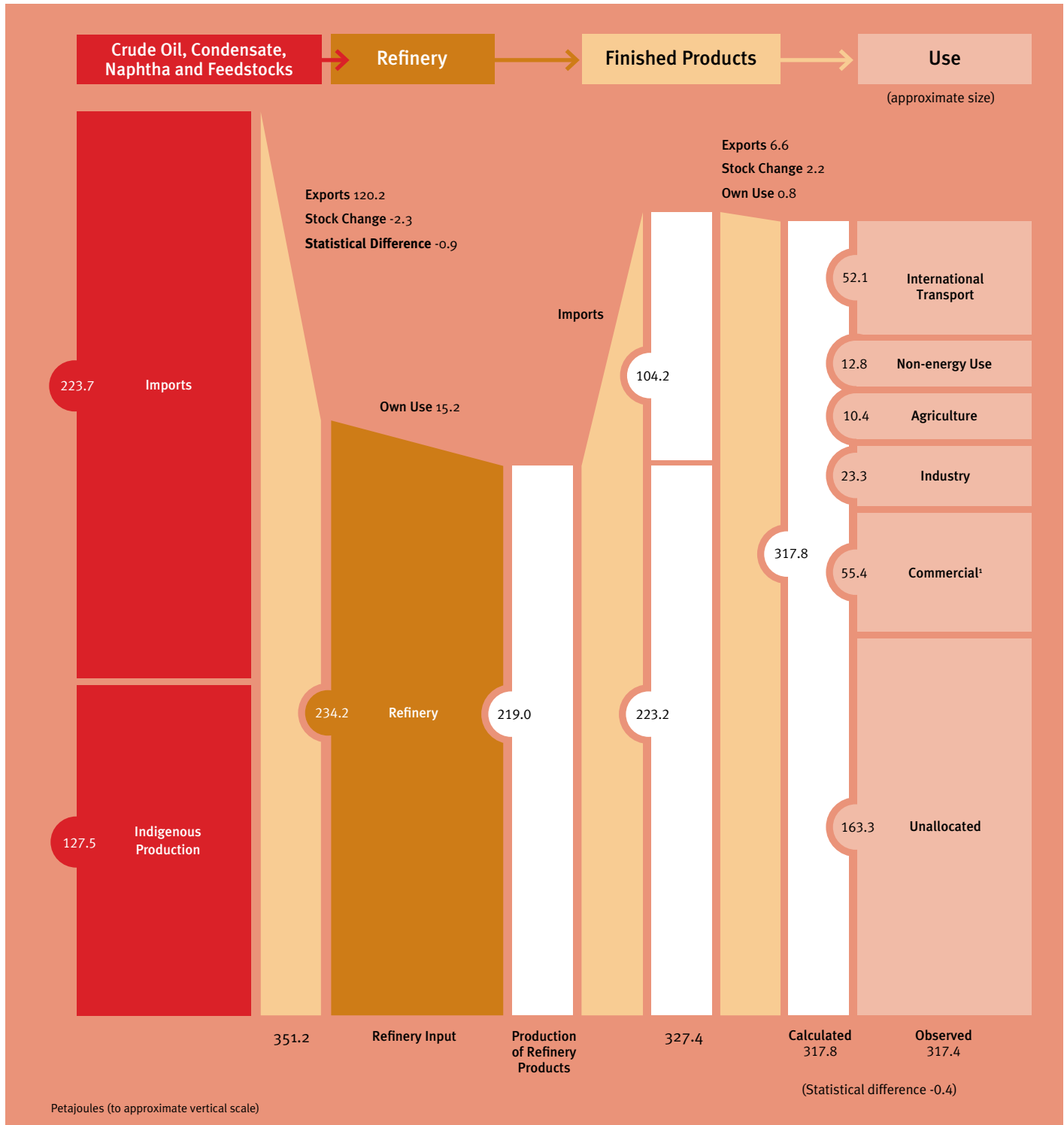
Growth in consumption of oil products continued to slow in 2008 – a trend that has been apparent since 2005, with some fuels showing a significant decrease in demand. This demand reduction was most marked in petrol consumption, which reduced by 3% (3 PJ) from 2007 and 5% in the December quarter. Diesel consumption over the 2008 calendar year was down around 1%, with demand in the December quarter of 2008 around 10% lower than the December quarter of 2007.

These statistics were obtained from the DPFI (Delivery of Petroleum Fuels by Industry, see Glossary) survey. In 2008, a study to investigate the disproportionate growth of the "resellers" category of this survey was undertaken. This project reviewed the fuel supply chain in New Zealand and tested our theory that the DPFI was not accurately describing the consumption of petroleum fuels (download the report from [www.med.govt.nz/energy/info/](http://www.med.govt.nz/energy/info/)).

It was found that independent distributor companies are now selling a significant quantity of fuel directly to their own customers. These deliveries are reported in the "resellers" category, instead of the sector actually using the fuel. The report recommends starting an annual survey of these distributor companies to correctly allocate their sales to the appropriate sectors. This work will start in mid-2009, but until these data have been collected, the "resellers" category will remain "Unallocated", as it was in the previous edition of this publication.

# D. Oil

Figure D.1e: Oil Energy Flow Summary for 2008



Note to Figure D.1e: <sup>1</sup> Includes Transport Industry.

## D. Oil

### Crude Oil, Condensate and Naphtha Production by Field

Table D.2a: Crude Oil, Condensate and Naphtha Production by Field (Mm<sup>3</sup>)

Calendar Year	Mauī <sup>1</sup>	Kapuni <sup>2</sup>	McKee	Mangahewa	Cheal	Turangi	Kaimiro/ Ngatoro <sup>3</sup>	Pohokura	Tui	Other <sup>4</sup>	Total
1970	-	0.067	-	-	-	-	-	-	-	-	0.067
1971	-	0.128	-	-	-	-	-	-	-	-	0.128
1972	-	0.178	-	-	-	-	-	-	-	-	0.178
1973	-	0.205	-	-	-	-	-	-	-	-	0.205
1974	-	0.219	-	-	-	-	-	-	-	-	0.219
1975	-	0.226	-	-	-	-	-	-	-	-	0.226
1976	-	0.600	-	-	-	-	-	-	-	-	0.600
1977	-	0.861	-	-	-	-	-	-	-	-	0.861
1978	-	0.727	-	-	-	-	-	-	-	-	0.727
1979	0.124	0.342	-	-	-	-	-	-	-	-	0.466
1980	0.184	0.234	-	-	-	-	-	-	-	-	0.418
1981	0.265	0.285	0.007	-	-	-	-	-	-	-	0.557
1982	0.507	0.358	0.003	-	-	-	-	-	-	-	0.869
1983	0.483	0.359	0.006	-	-	-	0.001	-	-	0.006	0.848
1984	0.587	0.368	0.124	-	-	-	0.001	-	-	0.073	1.079
1985	0.688	0.393	0.458	-	-	-	0.005	-	-	0.003	1.544
1986	0.829	0.361	0.506	-	-	-	0.004	-	-	0.002	1.700
1987	0.791	0.317	0.510	-	-	-	0.004	-	-	-	1.622
1988	0.859	0.343	0.581	-	-	-	0.004	-	-	0.157	1.945
1989	0.870	0.339	0.615	-	-	-	0.004	-	-	0.330	2.158
1990	0.867	0.310	0.579	-	-	-	0.007	-	-	0.436	2.199
1991	0.898	0.294	0.511	-	-	-	0.011	-	-	0.598	2.312
1992	0.981	0.288	0.410	-	-	-	0.032	-	-	0.489	2.200
1993	1.016	0.259	0.387	-	-	-	0.056	-	-	0.610	2.328
1994	0.964	0.244	0.357	-	-	-	0.057	-	-	0.577	2.199
1995	1.091	0.196	0.356	-	-	-	0.083	-	-	0.184	1.910
1996	1.782	0.199	0.316	-	-	-	0.114	-	-	0.143	2.554
1997	2.641	0.166	0.298	0.001	-	-	0.140	-	-	0.144	3.391
1998	2.002	0.160	0.293	0.005	-	-	0.108	-	-	0.140	2.709
1999	1.749	0.141	0.272	-	-	-	0.090	-	-	0.107	2.359
2000	1.602	0.114	0.191	-	-	-	0.084	-	-	0.076	2.067
2001	1.471	0.104	0.178	0.008	-	-	0.110	-	-	0.092	1.962
2002	1.372	0.095	0.098	0.022	-	-	0.084	-	-	0.091	1.762
2003	1.027	0.077	0.091	0.017	0.000	-	0.058	-	-	0.091	1.360
2004	0.814	0.117	0.080	0.016	0.002	-	0.073	-	-	0.085	1.187
2005	0.758	0.094	0.071	0.011	0.014	0.000	0.069	-	-	0.088	1.106
2006	0.609	0.100	0.056	0.011	0.004	0.011	0.047	0.149	-	0.072	1.059
2007	0.341	0.083	0.043	0.014	0.021	0.036	0.036	0.747	1.007	0.037	2.365
2008	0.294	0.067	0.030	0.018	0.028	0.034	0.030	0.730	2.138	0.019	3.386

Notes to Table D.2a: <sup>1</sup> Includes condensate, naphtha (from April 1999) and crude oil production from Maui and Maui F Sands. Maui F Sands commenced production in September 1996.

<sup>2</sup> Excludes natural gas liquids.

<sup>3</sup> Includes Moturoa field and Goldie well.

<sup>4</sup> Comprises Waihapa/Ngaere, Piakau (ceased production in September 1999), Stratford (ceased production in June 1992), Rimu and Tariki/Ahuroa fields, and Kauri, Surrey and Radnor (ceased production in 2006) wells.

## D. Oil

### Crude Oil, Condensate and Naphtha Production by Field continued

Table D.2b: Crude Oil, Condensate and Naphtha Production by Field (mmbbls)

Calendar Year	Maui <sup>1</sup>	Kapuni <sup>2</sup>	McKee	Mangahewa	Cheal	Turangi	Kaimiro/ Ngatoro <sup>3</sup>	Pohokura	Tui	Other <sup>4</sup>	Total
1970	-	0.421	-	-	-	-	-	-	-	-	0.421
1971	-	0.805	-	-	-	-	-	-	-	-	0.805
1972	-	1.119	-	-	-	-	-	-	-	-	1.119
1973	-	1.289	-	-	-	-	-	-	-	-	1.289
1974	-	1.378	-	-	-	-	-	-	-	-	1.378
1975	-	1.423	-	-	-	-	-	-	-	-	1.423
1976	-	3.775	-	-	-	-	-	-	-	-	3.775
1977	-	5.415	-	-	-	-	-	-	-	-	5.415
1978	-	4.572	-	-	-	-	-	-	-	-	4.572
1979	0.782	2.149	-	-	-	-	-	-	-	-	2.931
1980	1.155	1.474	-	-	-	-	-	-	-	-	2.629
1981	1.667	1.790	0.045	-	-	-	-	-	-	-	3.502
1982	3.187	2.255	0.022	-	-	-	-	-	-	-	5.463
1983	3.035	2.255	0.040	-	-	-	0.005	-	-	0.040	5.336
1984	3.691	2.313	0.780	-	-	-	0.004	-	-	0.458	6.788
1985	4.324	2.473	2.883	-	-	-	0.029	-	-	0.020	9.709
1986	5.214	2.268	3.184	-	-	-	0.023	-	-	0.012	10.688
1987	4.976	1.993	3.204	-	-	-	0.028	-	-	-	10.201
1988	5.405	2.160	3.653	-	-	-	0.027	-	-	0.987	12.231
1989	5.472	2.132	3.867	-	-	-	0.027	-	-	2.074	13.571
1990	5.452	1.948	3.642	-	-	-	0.046	-	-	2.744	13.832
1991	5.650	1.848	3.213	-	-	-	0.070	-	-	3.761	14.543
1992	6.167	1.814	2.581	-	-	-	0.201	-	-	3.074	13.837
1993	6.389	1.626	2.432	-	-	-	0.353	-	-	3.838	14.638
1994	6.064	1.533	2.248	-	-	-	0.361	-	-	3.626	13.832
1995	6.863	1.232	2.237	-	-	-	0.521	-	-	1.159	12.012
1996	11.204	1.250	1.988	-	-	-	0.719	-	-	0.902	16.063
1997	16.611	1.043	1.876	0.007	-	-	0.882	-	-	0.908	21.327
1998	12.593	1.009	1.844	0.029	-	-	0.681	-	-	0.882	17.038
1999	10.999	0.889	1.711	-	-	-	0.565	-	-	0.671	14.835
2000	10.076	0.715	1.200	-	-	-	0.529	-	-	0.479	12.999
2001	9.253	0.653	1.118	0.050	-	-	0.691	-	-	0.576	12.340
2002	8.626	0.600	0.619	0.138	-	-	0.529	-	-	0.570	11.081
2003	6.456	0.481	0.574	0.108	0.001	-	0.366	-	-	0.569	8.556
2004	5.122	0.737	0.504	0.100	0.010	-	0.457	-	-	0.532	7.463
2005	4.770	0.592	0.444	0.072	0.085	0.001	0.436	-	-	0.557	6.956
2006	3.828	0.626	0.352	0.067	0.028	0.070	0.298	0.937	-	0.454	6.660
2007	2.147	0.521	0.272	0.085	0.133	0.227	0.225	4.695	6.334	0.234	14.874
2008	1.848	0.422	0.188	0.113	0.175	0.214	0.187	4.588	13.445	0.117	21.298

<sup>1</sup> Includes condensate, naphtha (from April 1999) and crude oil production from Maui and Maui F Sands. Maui F Sands commenced production in September 1996.

<sup>2</sup> Excludes natural gas liquids.

<sup>3</sup> Includes Moturoa field and Goldie well.

<sup>4</sup> Comprises Waihapa/Ngaere, Piakau (ceased production in September 1999), Stratford (ceased production in June 1992), Rimu and Tariki/Ahuroa fields, and Kauri, Surrey and Radnor (ceased production in 2006) wells.

## D. Oil

### Crude Oil, Condensate and Naphtha Production by Field continued

Table D.2c: Crude Oil, Condensate and Naphtha Production by Field (Thousand Tonnes)

Calendar Year	Maui <sup>1</sup>	Kapuni <sup>2</sup>	McKee	Mangahewa	Cheal	Turangi	Kaimiro/ Ngatoro <sup>3</sup>	Pohokura	Tui	Other <sup>4</sup>	Total
1970	-	52	-	-	-	-	-	-	-	-	52
1971	-	98	-	-	-	-	-	-	-	-	98
1972	-	137	-	-	-	-	-	-	-	-	137
1973	-	158	-	-	-	-	-	-	-	-	158
1974	-	168	-	-	-	-	-	-	-	-	168
1975	-	174	-	-	-	-	-	-	-	-	174
1976	-	462	-	-	-	-	-	-	-	-	462
1977	-	662	-	-	-	-	-	-	-	-	662
1978	-	559	-	-	-	-	-	-	-	-	559
1979	94	263	-	-	-	-	-	-	-	-	357
1980	137	179	-	-	-	-	-	-	-	-	317
1981	198	217	6	-	-	-	-	-	-	-	421
1982	375	273	3	-	-	-	-	-	-	-	651
1983	356	273	5	-	-	-	1	-	-	5	635
1984	432	281	103	-	-	-	1	-	-	60	817
1985	509	301	381	-	-	-	4	-	-	3	1,195
1986	619	275	421	-	-	-	3	-	-	2	1,318
1987	590	241	424	-	-	-	4	-	-	-	1,259
1988	640	261	483	-	-	-	3	-	-	132	1,520
1989	648	260	512	-	-	-	3	-	-	285	1,708
1990	657	236	482	-	-	-	6	-	-	384	1,765
1991	663	223	425	-	-	-	9	-	-	530	1,849
1992	722	219	341	-	-	-	27	-	-	433	1,741
1993	738	194	322	-	-	-	47	-	-	541	1,842
1994	734	182	297	-	-	-	48	-	-	511	1,772
1995	802	146	296	-	-	-	68	-	-	163	1,475
1996	1,322	148	263	-	-	-	94	-	-	124	1,950
1997	1,978	123	248	1	-	-	116	-	-	122	2,589
1998	1,479	119	244	4	-	-	90	-	-	118	2,054
1999	1,317	105	226	-	-	-	75	-	-	89	1,812
2000	1,234	84	159	-	-	-	70	-	-	63	1,610
2001	1,116	77	148	6	-	-	91	-	-	75	1,513
2002	1,051	70	82	18	-	-	70	-	-	74	1,364
2003	787	57	76	14	0	-	48	-	-	73	1,054
2004	617	88	67	13	1	-	60	-	-	68	913
2005	572	70	59	9	12	0	58	-	-	72	853
2006	463	74	47	9	4	9	40	116	-	58	818
2007	257	61	36	11	19	31	30	580	819	31	1,875
2008	220	50	25	14	25	28	25	567	1,738	15	2,709

Notes to Table D.2c: <sup>1</sup> Includes condensate, naphtha (from April 1999) and crude oil production from Maui and Maui F Sands. Maui F Sands commenced production in September 1996.

<sup>2</sup> Excludes natural gas liquids.

<sup>3</sup> Includes Moturoa field and Goldie well.

<sup>4</sup> Comprises Waihapa/Ngaere, Piakau (ceased production in September 1999), Stratford (ceased production in June 1992), Rimu and Tariki/Ahuroa fields, and Kauri, Surrey and Radnor (ceased production in 2006) wells.

## D. Oil

### Crude Oil, Condensate and Naphtha Production by Field continued

**Table D.2d: Crude Oil, Condensate and Naphtha Production by Field (Gross PJ)**

Calendar Year	Maui <sup>1</sup>	Kapuni <sup>2</sup>	McKee	Mangahewa	Cheal	Turangi	Kaimiro/ Ngatoro <sup>3</sup>	Pohokura	Tui	Other <sup>4</sup>	Total
1970	-	2.41	-	-	-	-	-	-	-	-	2.41
1971	-	4.60	-	-	-	-	-	-	-	-	4.60
1972	-	6.40	-	-	-	-	-	-	-	-	6.40
1973	-	7.37	-	-	-	-	-	-	-	-	7.37
1974	-	7.88	-	-	-	-	-	-	-	-	7.88
1975	-	8.14	-	-	-	-	-	-	-	-	8.14
1976	-	21.58	-	-	-	-	-	-	-	-	21.58
1977	-	30.95	-	-	-	-	-	-	-	-	30.95
1978	-	26.14	-	-	-	-	-	-	-	-	26.14
1979	4.44	12.28	-	-	-	-	-	-	-	-	16.72
1980	6.47	8.38	-	-	-	-	-	-	-	-	14.85
1981	9.31	10.15	0.28	-	-	-	-	-	-	-	19.74
1982	17.68	12.75	0.13	-	-	-	-	-	-	-	30.56
1983	16.78	12.76	0.24	-	-	-	0.03	-	-	0.24	29.81
1984	20.38	13.12	4.72	-	-	-	0.03	-	-	2.77	38.24
1985	24.01	14.06	17.48	-	-	-	0.17	-	-	0.12	55.72
1986	29.17	12.86	19.30	-	-	-	0.14	-	-	0.07	61.47
1987	27.80	11.27	19.43	-	-	-	0.16	-	-	-	58.66
1988	30.17	12.21	22.15	-	-	-	0.16	-	-	5.93	70.61
1989	30.55	12.14	23.45	-	-	-	0.16	-	-	12.77	79.05
1990	30.95	11.03	22.08	-	-	-	0.27	-	-	17.23	81.55
1991	31.23	10.42	19.48	-	-	-	0.41	-	-	23.73	85.28
1992	34.01	10.22	15.65	-	-	-	1.08	-	-	19.40	80.36
1993	34.78	9.09	14.74	-	-	-	1.85	-	-	24.22	84.70
1994	34.57	8.52	13.63	-	-	-	1.91	-	-	22.89	81.51
1995	37.78	6.81	13.56	-	-	-	2.86	-	-	7.31	68.33
1996	62.28	6.90	12.05	-	-	-	3.92	-	-	5.59	90.74
1997	93.22	5.76	11.37	0.05	-	-	4.72	-	-	5.54	120.66
1998	69.71	5.57	11.18	0.18	-	-	3.65	-	-	5.37	95.67
1999	62.05	4.90	10.38	-	-	-	2.98	-	-	4.05	84.36
2000	58.13	3.94	7.28	-	-	-	2.81	-	-	2.88	75.05
2001	52.57	3.61	6.78	0.32	-	-	3.51	-	-	3.44	70.23
2002	49.50	3.28	3.75	0.88	-	-	2.74	-	-	3.39	63.55
2003	37.07	2.65	3.48	0.69	0.01	-	2.01	-	-	3.36	49.27
2004	29.07	4.09	3.06	0.64	0.05	-	2.46	-	-	3.14	42.51
2005	26.97	3.29	2.69	0.46	0.48	0.00	2.32	-	-	3.25	39.46
2006	21.80	3.45	2.13	0.43	0.16	0.35	1.56	5.39	-	2.66	37.93
2007	12.10	2.85	1.65	0.54	0.74	1.24	1.18	27.01	38.98	1.39	87.69
2008	10.39	2.35	1.14	0.72	0.98	1.12	0.99	26.39	82.73	0.69	127.52
<b>Δ2006/2007</b>	<b>-44.5%</b>	<b>-17.3%</b>	<b>-22.7%</b>	<b>26.5%</b>	<b>374.1%</b>	<b>258.9%</b>	<b>-24.6%</b>	<b>401.1%</b>	<b>n.a.</b>	<b>-47.9%</b>	<b>131.2%</b>
<b>Δ2007/2008</b>	<b>-14.2%</b>	<b>-17.5%</b>	<b>-30.8%</b>	<b>32.3%</b>	<b>31.6%</b>	<b>-9.4%</b>	<b>-15.6%</b>	<b>-2.3%</b>	<b>112.2%</b>	<b>-50.1%</b>	<b>45.4%</b>

Notes to Table D.2d: <sup>1</sup> Includes condensate, naphtha (from April 1999) and crude oil production from Maui and Maui F Sands. Maui F Sands commenced production in September 1996.

<sup>2</sup> Excludes natural gas liquids.

<sup>3</sup> Includes Moturoa field and Goldie well.

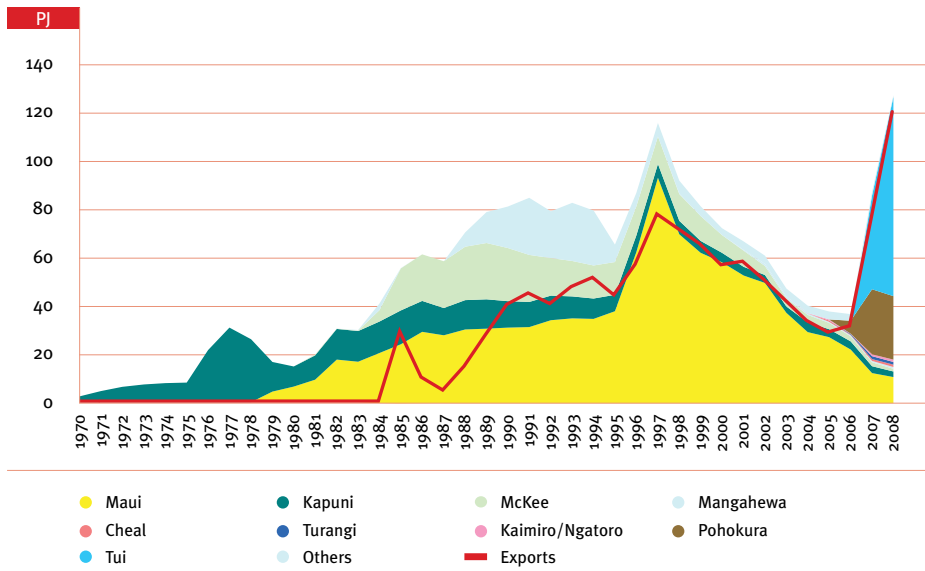
<sup>4</sup> Comprises Waihapa/Ngaere, Piakau (ceased production in September 1999), Stratford (ceased production in June 1992), Rimu and Tariki/Ahuroa fields, and Kauri, Surrey and Radnor (ceased production in 2006) wells.

n.a. = Not applicable.

## D. Oil

### Crude Oil, Condensate and Naphtha Production by Field continued

Figure D.2: Annual Crude, Condensate and Naphtha Production by Field



## D. Oil

### Crude Oil, Condensate, Blendstocks and Other Feedstocks

Table D.3: Crude Oil, Condensate, Blendstocks and Other Feedstocks (Gross PJ)

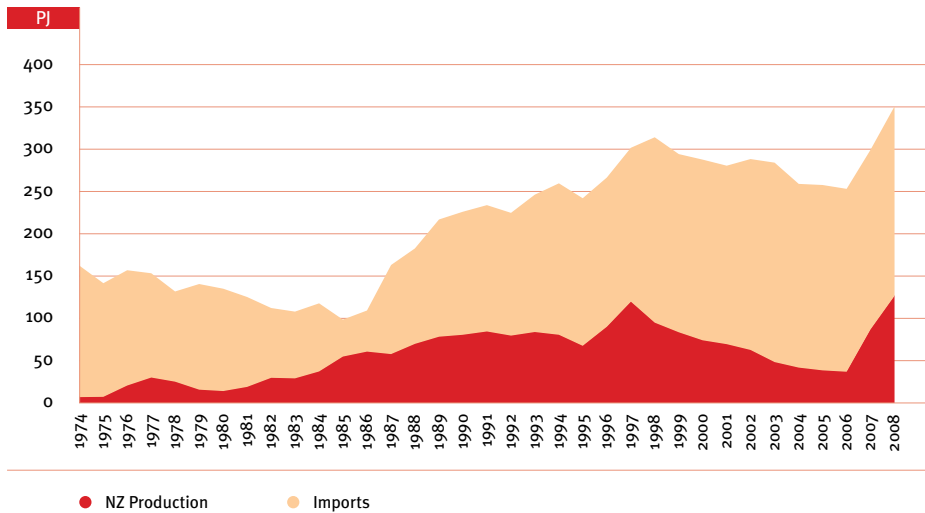
Calendar Year or Quarter	New Zealand Production	Imports	Exports	Stock Change	Total Refinery Intake	Oil Products Production	Calculated Own Use and Losses
1974	7.88	155.37	0.00	0.06	163.18	154.98	-8.20
1975	8.14	134.06	0.00	3.41	138.78	130.02	-8.76
1976	21.58	135.94	0.00	-4.17	161.71	153.09	-8.61
1977	30.95	123.15	0.00	3.41	150.68	142.27	-8.41
1978	26.14	106.42	0.00	-4.45	137.75	129.57	-8.18
1979	16.72	124.66	0.00	-0.28	142.07	133.45	-8.62
1980	14.85	120.93	0.00	1.77	134.09	126.24	-7.85
1981	19.74	106.26	0.00	-1.55	127.64	119.74	-7.90
1982	30.56	82.38	0.00	6.43	106.67	100.36	-6.30
1983	29.81	79.10	0.00	-5.16	114.11	107.66	-6.45
1984	38.24	80.45	0.00	3.08	116.43	110.06	-6.36
1985	55.72	43.60	29.02	1.09	69.45	66.66	-2.79
1986	61.47	48.65	9.95	-20.79	122.97	119.92	-3.05
1987	58.66	105.18	4.66	-10.50	168.82	164.82	-4.00
1988	70.61	112.81	14.46	-20.56	190.58	187.08	-3.50
1989	79.05	138.64	27.56	-19.40	209.97	206.18	-3.80
1990	81.55	145.21	40.24	-30.43	217.00	207.24	-9.76
1991	85.28	149.35	44.88	-18.26	208.26	201.88	-6.38
1992	80.36	145.11	40.53	-16.80	203.24	206.14	2.90
1993	84.70	162.28	47.58	-11.87	208.30	211.69	3.39
1994	81.51	178.84	51.35	-4.68	213.52	219.39	5.87
1995	68.33	174.44	44.12	-12.79	212.09	204.21	-7.87
1996	90.74	176.37	56.83	4.43	201.84	197.93	-3.91
1997	120.66	181.57	77.74	-2.22	226.67	213.12	-13.54
1998	95.67	218.96	71.56	7.43	234.46	221.81	-12.65
1999	84.36	210.52	65.42	3.21	224.40	210.93	-13.47
2000	75.05	213.14	56.63	0.91	230.95	219.11	-11.83
2001	70.23	210.93	58.12	-7.10	229.04	215.65	-13.39
2002	63.55	225.34	50.52	-2.34	240.01	229.97	-10.04
2003	49.27	235.31	41.90	3.06	240.17	224.56	-15.61
2004	42.51	217.01	33.51	-1.37	227.97	220.83	-7.15
2005	39.46	218.72	28.61	-5.36	235.36	224.68	-10.68
2006	37.93	215.83	31.25	-7.81	231.52	217.87	-13.65
2007	87.69	212.06	75.29	4.65	219.12	208.67	-10.45
2008	127.52	223.72	120.24	-2.33	234.19	218.97	-15.22
2007 Mar	9.43	49.03	7.13	-0.24	51.75	47.97	-3.79
Jun	13.30	54.16	11.16	1.47	53.49	52.05	-1.44
Sep	28.88	55.33	21.88	4.44	57.99	55.52	-2.46
Dec	36.07	53.53	35.12	-1.03	55.88	53.13	-2.76
2008 Mar	35.35	60.05	32.46	3.08	60.03	55.54	-4.49
Jun	35.38	50.96	35.72	-6.29	56.96	55.70	-1.26
Sep	31.37	52.06	30.29	-2.57	55.65	53.61	-2.04
Dec	25.42	60.65	21.77	3.45	61.55	54.12	-7.43
<b>Δ2006/2007</b>	<b>131.2%</b>	<b>-1.7%</b>	<b>140.9%</b>	<b>n.a.</b>	<b>-5.4%</b>	<b>-4.2%</b>	<b>n.a.</b>
<b>Δ2007/2008</b>	<b>45.4%</b>	<b>5.5%</b>	<b>59.7%</b>	<b>n.a.</b>	<b>6.9%</b>	<b>4.9%</b>	<b>n.a.</b>

Note to Table D.3: n.a. = Not applicable.

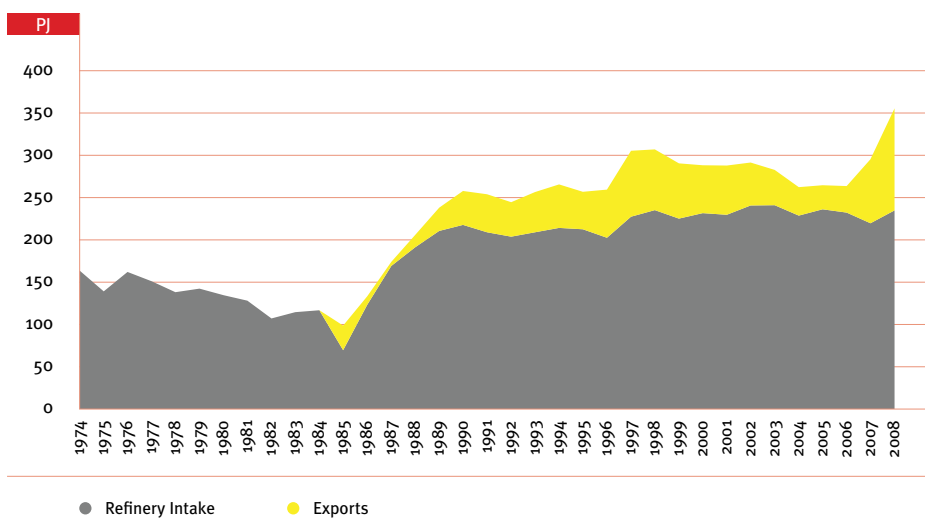
## D. Oil

### Crude Oil, Condensate, Blendstocks and Other Feedstocks continued

**Figure D.3a: Annual Crude, Condensate, Refinery Blendstocks and Other Feedstocks Supply**



**Figure D.3b: Annual Crude, Condensate, Refinery Blendstocks and Other Feedstocks Use**



# D. Oil

## Oil Products Total

Table D.4: Oil Products Total<sup>1</sup> (Gross PJ)

Calendar Year or Quarter	Production	Imports	Losses and Own Use	Exports	International Transport	Stock Change	Consumer Energy (calculated) <sup>2</sup>
1974	154.98	43.74	22.00	0.00	18.71	3.13	154.89
1975	130.02	80.96	9.95	0.00	21.13	-0.59	180.49
1976	153.09	40.84	14.87	0.00	23.95	0.32	154.80
1977	142.27	54.56	9.20	1.48	22.70	3.42	160.03
1978	129.57	54.00	2.73	1.81	22.58	-1.70	158.14
1979	133.45	57.25	1.82	2.65	29.47	3.84	152.92
1980	126.24	57.82	1.52	0.88	23.82	4.31	153.53
1981	119.74	46.98	1.47	0.88	21.74	-6.93	149.57
1982	100.36	57.08	2.44	0.00	20.22	-10.82	145.60
1983	107.66	62.24	3.36	0.61	17.99	3.77	144.17
1984	110.06	61.98	1.52	3.43	18.00	1.86	147.24
1985	66.66	95.17	2.39	3.52	19.05	-0.27	137.14
1986	119.92	48.63	1.07	4.34	17.58	-3.85	149.42
1987	164.82	30.99	1.18	15.01	21.46	5.52	152.65
1988	187.08	14.38	0.34	26.26	25.01	-3.69	153.53
1989	206.18	17.57	0.16	34.17	26.40	0.91	162.10
1990	207.24	24.22	0.40	21.90	34.49	2.11	172.56
1991	201.88	22.89	-0.43	21.40	32.29	-0.96	172.47
1992	206.14	23.93	-0.17	11.06	31.72	1.23	186.22
1993	211.69	23.34	-4.72	18.67	32.65	1.65	186.79
1994	219.39	29.55	-0.97	7.58	40.63	3.62	198.08
1995	204.21	42.37	-2.90	0.69	39.28	0.34	209.17
1996	197.93	56.29	-0.49	4.40	39.41	-2.12	213.02
1997	213.12	57.96	-6.31	7.28	41.01	11.35	217.76
1998	221.81	42.88	-3.90	6.44	40.26	1.24	220.65
1999	210.93	65.20	2.96	4.96	40.10	3.08	225.03
2000	219.11	54.35	-3.11	5.16	35.98	2.82	232.62
2001	215.65	59.48	-1.02	2.38	37.88	3.59	232.31
2002	229.97	61.81	-2.69	6.43	42.20	5.48	240.37
2003	224.56	68.38	-1.77	2.77	47.25	-3.79	248.47
2004 R	220.83	98.35	3.91	3.56	48.68	7.07	255.96
2005 R	224.68	89.77	2.08	7.47	52.57	-4.01	256.34
2006 R	217.87	91.78	-0.19	3.86	52.51	1.15	252.33
2007 R	208.67	107.21	0.12	5.36	52.07	1.83	256.49
2008	218.97	99.18	0.28	6.59	52.11	2.16	257.01
2007 R Mar	47.97	30.72	0.42	1.83	13.72	0.56	62.16
Jun	52.05	27.44	-0.48	0.44	12.36	3.18	63.99
Sep	55.52	20.55	0.51	1.25	12.27	-0.32	62.36
Dec	53.13	28.50	-0.32	1.84	13.73	-1.59	67.97
2008 Mar	55.54	23.81	-0.17	0.75	14.39	-1.86	66.24
Jun	55.70	28.15	0.02	0.84	12.82	5.80	64.37
Sep	53.61	20.40	0.70	3.56	12.62	-1.31	58.44
Dec	54.12	26.82	-0.28	1.44	12.28	-0.47	67.96
<b>Δ2006/2007</b>	<b>-4.2%</b>	<b>16.8%</b>	<b>n.a.</b>	<b>39.0%</b>	<b>-0.8%</b>	<b>n.a.</b>	<b>1.6%</b>
<b>Δ2007/2008</b>	<b>4.9%</b>	<b>-7.5%</b>	<b>n.a.</b>	<b>22.8%</b>	<b>0.1%</b>	<b>n.a.</b>	<b>0.2%</b>

Notes to Table D.4: <sup>1</sup> Includes total of petrol, diesel, fuel oil, aviation fuels and other petroleum products.

R = Revised figures.

n.a. = Not applicable.

<sup>2</sup> See Glossary for further details of consumer energy (calculated).

## D. Oil

### Oil Products Total continued

Figure D.4a: Annual Total Oil Products Supply

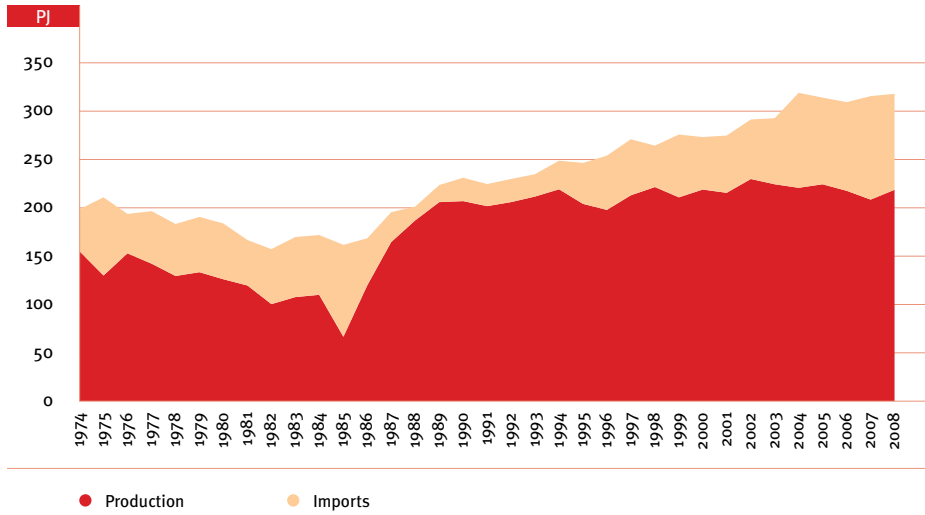
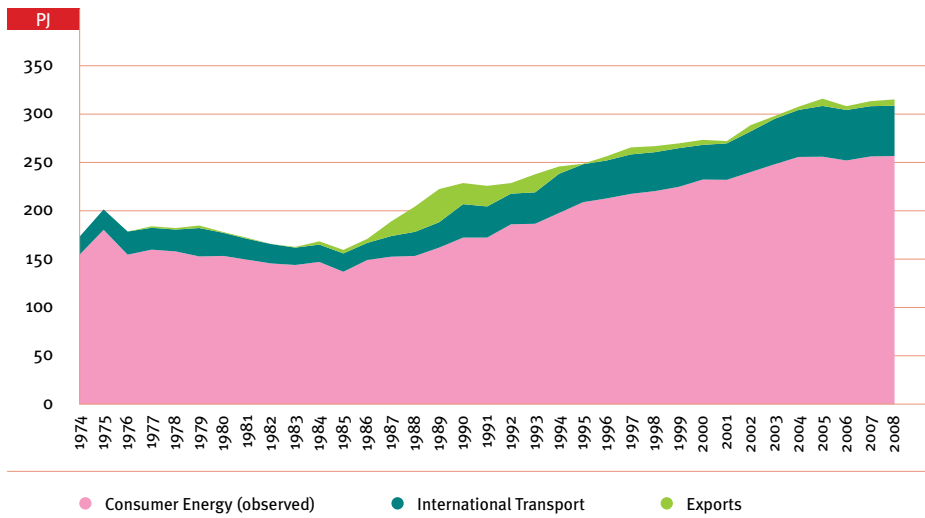


Figure D.4b: Annual Total Oil Products Consumption and Exports



## Oil Products Production

**Table D.5: Production of Oil Products by Fuel Type (Gross PJ)**

Calendar Year or Quarter	Petrol <sup>1</sup>	Diesel	Fuel Oil <sup>2</sup>	Aviation Fuels	Other Petroleum Products <sup>3</sup>	Total Oil Products
1974	58.95	27.63	63.13	0.00	5.27	154.98
1975	57.20	25.50	43.81	0.00	3.51	130.02
1976	66.07	31.01	51.31	0.00	4.69	153.09
1977	60.28	30.14	47.18	0.00	4.67	142.27
1978	58.64	28.91	37.67	0.00	4.35	129.57
1979	60.47	29.97	38.79	0.00	4.22	133.45
1980	57.13	30.07	34.62	0.00	4.42	126.24
1981	59.58	31.17	25.16	0.00	3.83	119.74
1982	54.46	25.45	17.51	0.00	2.95	100.36
1983	59.24	28.09	15.51	0.00	4.82	107.66
1984	60.82	28.32	15.25	0.00	5.67	110.06
1985	34.44	15.08	13.31	0.00	3.83	66.66
1986	76.93	28.21	9.22	0.99	4.56	119.92
1987	76.49	46.06	14.15	22.54	5.57	164.82
1988	82.80	54.81	13.22	30.46	5.79	187.08
1989	87.43	62.70	14.99	35.41	5.65	206.18
1990	85.44	62.11	17.20	36.58	5.91	207.24
1991	81.37	65.84	16.81	33.19	4.69	201.88
1992	84.46	64.56	18.24	32.52	6.36	206.14
1993	85.31	68.40	16.97	34.69	6.32	211.69
1994	80.38	72.15	22.44	37.74	6.68	219.39
1995	74.53	71.17	17.69	34.83	6.00	204.21
1996	69.77	66.85	19.69	35.09	6.53	197.93
1997	72.84	74.16	21.55	38.45	6.13	213.12
1998	74.74	81.30	22.04	37.71	6.01	221.81
1999	64.45	78.85	22.24	38.91	6.48	210.93
2000	67.18	84.38	22.53	38.93	6.09	219.11
2001	70.49	81.32	20.82	37.93	5.10	215.65
2002	71.90	87.75	25.04	40.43	4.84	229.97
2003	71.44	85.14	23.16	38.73	6.08	224.56
2004	76.47	74.90	21.30	43.26	4.90	220.83
2005	77.31	75.26	25.93	40.75	5.42	224.68
2006	69.62	76.27	23.93	42.23	5.81	217.87
2007 R	66.84	72.68	24.32	38.94	5.89	208.67
2008	69.78	74.95	28.48	40.59	5.16	218.97
2007 R Mar	16.30	15.21	5.42	9.24	1.80	47.97
Jun	17.05	18.15	5.89	9.49	1.46	52.05
Sep	16.70	21.49	6.40	9.89	1.05	55.52
Dec	16.80	17.83	6.61	10.31	1.58	53.13
2008 Mar	17.19	19.15	6.90	10.87	1.42	55.54
Jun	17.90	19.99	6.22	9.79	1.80	55.70
Sep	17.38	17.02	8.81	9.95	0.45	53.61
Dec	17.31	18.78	6.55	9.98	1.49	54.12
<b>Δ2006/2007</b>	<b>-4.0%</b>	<b>-4.7%</b>	<b>1.6%</b>	<b>-7.8%</b>	<b>1.2%</b>	<b>-4.2%</b>
<b>Δ2007/2008</b>	<b>4.4%</b>	<b>3.1%</b>	<b>17.1%</b>	<b>4.2%</b>	<b>-12.3%</b>	<b>4.9%</b>

Notes to Table D.5: <sup>1</sup> Includes premium leaded, premium unleaded (from January 1996), premium unleaded 98, regular leaded (to December 1986) and regular unleaded (from January 1987).

<sup>2</sup> Includes both heavy and light fuel oils.

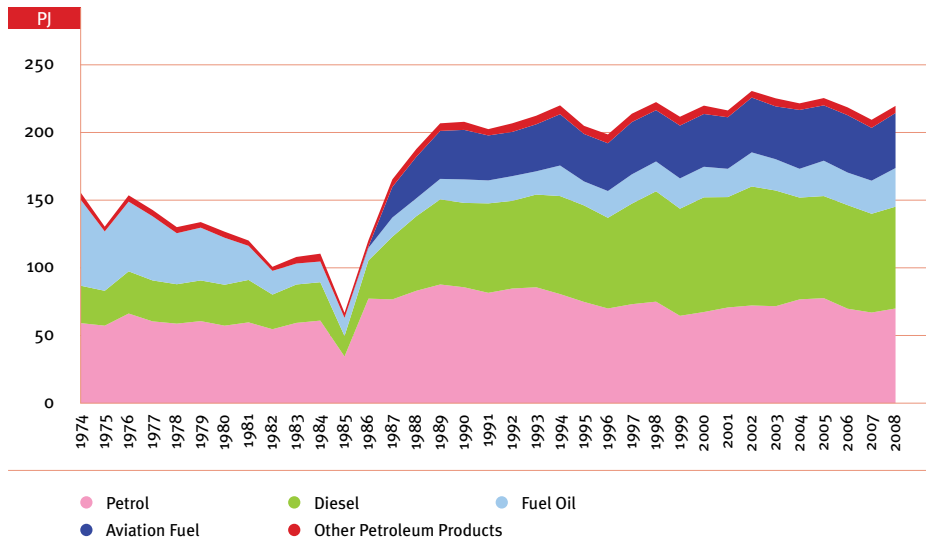
<sup>3</sup> Includes bitumen, lubes, solvents, waxes, petroleum coke, white spirits and other liquid fuels.

R = Revised figures.

## D. Oil

### Oil Products Production continued

Figure D.5: Annual Production of Oil Products by Fuel Type



## Observed Oil Consumption by Sector

**Table D.6: Observed Oil Consumption by Sector<sup>1</sup> (Gross PJ)**

Calendar Year or Quarter	Agriculture	Industrial	Commercial	Residential	Transport Industry <sup>2</sup>	Unallocated <sup>3</sup>		Total Consumption	Non-energy Use (calculated)	Total Oil Consumption
						Oil Products	LPG <sup>4</sup>			
1974	11.12	54.10	15.90	2.38	19.68	68.67	0.26	172.12	5.85	177.97
1975	11.44	41.70	15.33	1.99	22.27	69.37	0.14	162.25	5.28	167.53
1976	11.57	45.74	15.19	1.71	23.21	69.13	0.39	166.95	4.12	171.06
1977	11.93	46.09	15.23	1.67	21.37	71.35	0.55	168.19	4.80	172.99
1978	12.20	36.89	14.57	1.23	20.08	73.12	0.67	158.76	4.28	163.04
1979	13.08	32.87	11.52	0.89	19.85	72.21	0.76	151.19	5.34	156.53
1980	14.72	29.90	15.02	1.34	19.85	69.99	0.91	151.74	6.46	158.19
1981	13.62	26.78	12.12	0.50	18.41	71.14	1.29	143.85	6.76	150.62
1982	15.13	25.99	13.63	0.47	17.15	72.46	1.54	146.37	6.80	153.17
1983	14.32	22.40	12.32	0.45	16.48	73.50	1.58	141.05	6.87	147.93
1984	14.36	18.66	10.87	0.37	18.74	76.07	2.36	141.42	8.20	149.62
1985	13.96	17.63	9.71	0.29	19.89	73.73	4.31	139.52	6.05	145.57
1986	13.32	15.26	8.53	0.26	19.82	78.82	4.92	140.92	7.09	148.02
1987	12.82	18.08	5.81	0.22	20.81	84.47	4.94	147.15	6.87	154.02
1988	12.14	13.53	5.76	0.15	23.35	87.34	5.05	147.32	7.54	154.87
1989	12.66	12.17	5.11	0.11	28.68	90.28	4.83	153.82	8.40	162.22
1990	13.72	11.77	7.09	0.11	31.42	92.99	4.99	162.08	13.79	175.87
1991	11.93	11.20	6.89	0.09	30.93	93.31	5.60	159.95	12.52	172.47
1992	12.98	15.60	9.04	0.21	33.14	96.88	5.89	173.74	12.75	186.49
1993	12.74	11.59	4.16	0.20	34.96	101.14	5.95	170.74	13.44	184.19
1994	13.11	12.12	7.40	0.16	39.60	107.20	5.99	185.58	14.33	199.91
1995	13.09	12.93	5.85	0.14	41.36	116.25	6.02	195.65	14.24	209.89
1996	13.40	13.23	4.06	0.06	41.47	118.78	5.93	196.91	13.61	210.52
1997	14.39	12.85	3.59	0.05	37.76	127.78	5.92	202.34	13.80	216.14
1998	15.15	11.00	4.02	0.08	37.45	131.48	5.38	204.57	12.86	217.43
1999	15.50	9.36	4.55	0.12	37.08	136.45	5.13	208.18	13.13	221.31
2000	13.79	12.00	4.47	0.03	42.42	139.63	5.67	218.01	13.67	231.68
2001	13.28	11.59	3.63	0.02	45.94	141.74	6.45	222.66	10.82	233.48
2002	14.49	12.03	2.94	0.01	47.03	148.78	6.87	232.14	11.40	243.54
2003	15.59	11.71	4.14	0.01	48.70	156.09	7.19	243.44	11.74	255.18
2004	12.72	13.61	5.13	0.00	44.71	165.55	7.83	249.55	12.49	262.04
2005 R	13.61	13.88	4.67	0.00	44.19	167.96	7.79	252.11	12.13	264.24
2006	12.14	14.19	3.17	0.00	47.78	167.62	8.37	253.27	13.24	266.51
2007 R	10.96	16.71	3.27	0.01	45.87	170.94	8.74	256.50	12.99	269.49
2008	10.41	20.68	7.90	0.01	44.01	163.34	8.64	254.99	12.81	267.80
2007 R Mar	3.06	3.66	0.76	0.00	12.25	43.23	1.42	64.39	3.91	68.29
Jun	2.29	4.00	0.83	0.00	10.42	41.95	2.38	61.87	2.93	64.80
Sep	2.75	4.37	0.83	0.00	10.64	41.55	2.81	62.95	2.82	65.78
Dec	2.87	4.69	0.84	0.00	12.55	44.21	2.13	67.29	3.33	70.62
2008 Mar	2.95	4.91	0.81	0.00	11.59	43.67	1.65	65.57	3.42	68.99
Jun	2.62	6.06	2.91	0.00	10.91	38.67	2.57	63.74	3.40	67.14
Sep	2.68	4.55	1.89	0.00	9.58	39.58	2.52	60.81	2.26	63.07
Dec	2.16	5.16	2.30	0.00	11.92	41.42	1.90	64.87	3.73	68.59
<b>Δ2006/2007</b>	<b>-9.7%</b>	<b>17.8%</b>	<b>3.0%</b>	<b>142.4%</b>	<b>-4.0%</b>	<b>2.0%</b>	<b>4.5%</b>	<b>1.3%</b>	<b>-1.9%</b>	<b>1.1%</b>
<b>Δ2007/2008</b>	<b>-5.0%</b>	<b>23.7%</b>	<b>142.0%</b>	<b>45.6%</b>	<b>-4.1%</b>	<b>-4.4%</b>	<b>-1.2%</b>	<b>-0.6%</b>	<b>-1.4%</b>	<b>-0.6%</b>

<sup>1</sup> Observed consumption figures are sourced from the Delivery of Petroleum Fuels by Industry Survey. Excludes oil used at the New Zealand Refinery for non-energy purposes and international fuels.

<sup>2</sup> Transport Industry refers to fuel sold to freight and transportation companies.

<sup>3</sup> Unallocated refers to fuel sold through all service stations and other independent delivery services, e.g. marina refuelling facilities and

farm delivery services. This information is collected in the "resellers" category.

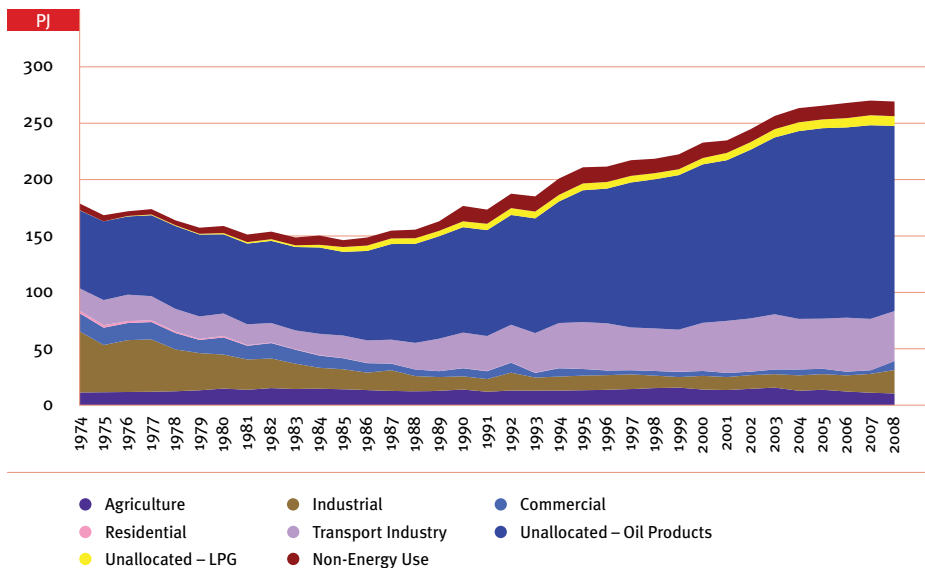
<sup>4</sup> LPG consumption data are calculated from the supply side (total energy available for consumption).

R = Revised figures.

## D. Oil

### Observed Oil Consumption by Sector continued

Figure D.6: Annual Oil Consumption by Sector



### Liquid Fuel Consumption in New Zealand

Since the early 1990s, statistics presented in the EDF show that sales of oil products through resellers (service stations, truck stops and independent distributors) have increased disproportionately relative to the more modest growth in other sectors (Agriculture, Industrial, Transport and Commercial).

This limits the usefulness of the consumption statistics shown in figure D.6 as this does not break down reseller sales by sector.

In 2008 a project was started to investigate the liquid fuel supply chain in New Zealand and the completeness of liquid fuel consumption statistics presented in the EDF. The key finding of this project was that the approach of surveying New Zealand's five major oil companies was inadequate as there are

now many more independent distributors involved in direct fuel deliveries to larger consumers – the major oil companies have moved into a wholesale role and withdrawn from their direct delivery operations. Independent distributors now deliver approximately 19% of New Zealand's diesel and 3% of New Zealand's petrol each year with their customers including farms, contractors, construction and transport firms and other businesses.

The proposed next step is to develop an annual survey of independent distributor companies to capture their fuel deliveries, and allocate these to the appropriate economic sector. Initial work on this survey has started, and we expect the findings to be incorporated into the Energy Data File 2010.

## D. Oil

### Observed Oil Consumption by Fuel

Table D.7: Observed Oil Consumption by Fuel (Gross PJ)

Calendar Year or Quarter	Petrol <sup>1</sup>	Diesel	Fuel Oil <sup>2</sup>	Aviation Fuels	LPG <sup>3</sup>	Other Oil Products (calculated)	Total Oil Products
1974	77.25	40.71	46.84	7.06	0.26	5.85	177.97
1975	78.46	40.77	35.78	7.10	0.14	5.28	167.53
1976	77.38	41.40	40.27	7.51	0.39	4.12	171.06
1977	78.66	43.31	37.73	7.95	0.55	4.80	172.99
1978	79.84	42.38	27.92	7.95	0.67	4.28	163.04
1979	77.82	40.98	23.52	8.11	0.76	5.34	156.53
1980	77.80	45.50	20.47	7.05	0.91	6.46	158.19
1981	77.89	41.11	17.24	6.32	1.29	6.76	150.62
1982	79.50	42.87	16.12	6.34	1.54	6.80	153.17
1983	79.09	41.39	12.89	6.09	1.58	6.87	147.93
1984	80.40	43.02	8.96	6.68	2.36	8.20	149.62
1985	76.60	42.50	9.32	6.79	4.31	6.05	145.57
1986	79.24	42.20	7.96	6.60	4.92	7.09	148.02
1987	85.24	41.14	8.25	7.57	4.94	6.87	154.02
1988	84.39	41.14	8.75	8.00	5.05	7.54	154.87
1989	88.16	42.75	6.95	11.13	4.83	8.40	162.22
1990	90.97	46.30	7.55	12.28	4.99	13.79	175.87
1991	90.40	46.50	7.13	10.32	5.60	12.52	172.47
1992	92.89	53.95	10.83	10.18	5.89	12.75	186.49
1993	92.15	55.20	6.67	10.76	5.95	13.44	184.19
1994	97.53	61.08	8.21	12.77	5.99	14.33	199.91
1995	98.69	69.59	8.09	13.25	6.02	14.24	209.89
1996	97.59	72.00	8.81	12.58	5.93	13.61	210.52
1997	100.07	76.53	7.37	12.45	5.92	13.80	216.14
1998	101.14	78.11	7.01	12.92	5.38	12.86	217.43
1999	102.61	80.92	7.03	12.49	5.13	13.13	221.31
2000	101.60	87.26	9.84	13.65	5.67	13.67	231.68
2001	102.23	87.56	8.76	17.65	6.45	10.82	233.48
2002	105.67	94.00	9.23	16.37	6.87	11.40	243.54
2003	109.29	97.69	11.03	18.23	7.19	11.74	255.18
2004	113.80	101.40	7.75	18.77	7.83	12.49	262.04
2005	110.99	106.70	9.18	17.45	7.79	12.13	264.24
2006	111.88	107.74	7.51	17.77	8.37	13.24	266.51
2007 R	113.86	110.84	8.43	14.63	8.74	12.99	269.49
2008	110.96	109.82	8.25	17.32	8.64	12.81	267.80
2007 R Mar	28.71	27.72	2.15	4.38	1.42	3.91	68.29
Jun	27.64	26.94	1.78	3.14	2.38	2.93	64.80
Sep	27.79	26.93	2.07	3.36	2.81	2.82	65.78
Dec	29.72	29.25	2.43	3.76	2.13	3.33	70.62
2008 Mar	29.22	28.87	2.03	3.80	1.65	3.42	68.99
Jun	27.16	28.77	1.77	3.47	2.57	3.40	67.14
Sep	26.41	25.94	1.92	4.02	2.52	2.26	63.07
Dec	28.17	26.24	2.53	6.03	1.90	3.73	68.59
<b>Δ2006/2007</b>	<b>1.8%</b>	<b>2.9%</b>	<b>12.3%</b>	<b>-17.7%</b>	<b>4.5%</b>	<b>-1.9%</b>	<b>1.1%</b>
<b>Δ2007/2008</b>	<b>-2.5%</b>	<b>-0.9%</b>	<b>-2.2%</b>	<b>18.4%</b>	<b>-1.2%</b>	<b>-1.4%</b>	<b>-0.6%</b>

Notes to Table D.7: <sup>1</sup> Includes premium leaded, premium unleaded (from January 1996), premium unleaded 98, regular leaded (to December 1986) and regular unleaded (from January 1987).

<sup>2</sup> Includes light fuel oil, heavy fuel oils and other fuel oils.

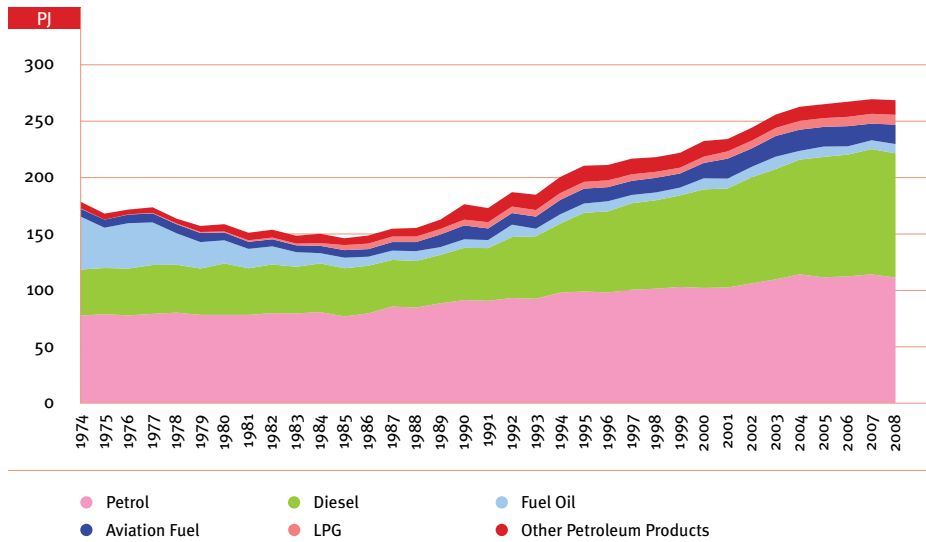
<sup>3</sup> LPG consumption data are calculated from the supply side.

R = Revised figures.

## D. Oil

### Observed Oil Consumption by Fuel continued

Figure D.7: Observed Oil Consumption by Fuel (Gross PJ)



## Total Petrol

Table D.8: Total Petrol<sup>1</sup> (Gross PJ)

Calendar Year or Quarter	Production	Imports	Oil Industry Losses and Own Use	Exports	International Transport	Stock Change	Consumer Energy <sup>2</sup>		Statistical Difference
							Calculated	Observed	
1974	58.95	17.56	0.00	0.00	0.01	-0.85	77.36	77.25	0.11
1975	57.20	33.10	0.04	0.00	0.00	-2.84	93.08	78.46	14.62
1976	66.07	12.76	0.08	0.00	0.01	1.37	77.37	77.38	-0.01
1977	60.28	20.06	0.09	0.00	0.00	0.42	79.83	78.66	1.17
1978	58.64	20.18	0.07	0.00	0.00	-0.49	79.24	79.84	-0.60
1979	60.47	19.32	0.10	0.00	0.00	1.40	78.29	77.82	0.47
1980	57.13	20.07	-0.10	0.00	0.05	-0.01	77.26	77.80	-0.54
1981	59.58	17.70	0.08	0.00	0.00	-0.87	78.07	77.89	0.18
1982	54.46	19.04	0.12	0.00	0.00	-5.97	79.36	79.50	-0.14
1983	59.24	25.14	0.08	0.00	0.00	5.09	79.21	79.09	0.12
1984	60.82	21.69	0.12	0.00	0.00	1.47	80.93	80.40	0.52
1985	34.44	38.78	0.05	0.00	0.00	-1.36	74.53	76.60	-2.08
1986	76.93	5.22	0.09	3.56	0.00	-2.19	80.68	79.24	1.44
1987	76.49	22.42	0.07	11.87	0.00	2.10	84.86	85.24	-0.38
1988	82.80	10.37	-0.02	10.35	0.01	-2.17	85.00	84.39	0.61
1989	87.43	12.80	-0.14	11.71	0.01	0.50	88.15	88.16	-0.01
1990	85.44	13.26	-0.19	5.58	0.01	2.82	90.47	90.97	-0.50
1991	81.37	14.12	0.24	3.83	0.25	-1.04	92.21	90.40	1.81
1992	84.46	10.59	-0.81	3.50	0.01	-0.35	92.71	92.89	-0.18
1993	85.31	14.97	-0.29	5.74	0.01	0.87	93.95	92.15	1.80
1994	80.38	18.69	2.00	1.07	0.19	0.21	95.61	97.53	-1.92
1995	74.53	25.42	-1.20	0.58	0.01	1.46	99.10	98.69	0.41
1996	69.77	30.67	-0.69	1.97	0.02	-0.41	99.55	97.59	1.96
1997	72.84	31.98	-0.39	2.73	0.00	1.12	101.35	100.07	1.28
1998	74.74	28.17	-1.58	1.40	0.00	1.27	101.83	101.14	0.69
1999	64.45	42.06	1.27	0.72	0.00	0.08	104.44	102.61	1.83
2000	67.18	34.95	-0.68	0.61	0.00	0.81	101.38	101.60	-0.22
2001	70.49	36.50	-0.13	0.00	0.00	4.38	102.74	102.23	0.51
2002	71.90	37.46	0.10	0.65	0.00	1.46	107.16	105.67	1.48
2003	71.44	36.47	-0.20	0.62	0.00	-3.35	110.83	109.29	1.55
2004	76.47	41.03	1.44	0.00	0.00	5.00	111.05	113.80	-2.75
2005 R	77.31	39.45	3.13	0.57	0.00	1.49	111.56	110.99	0.57
2006 R	69.62	40.85	0.13	0.00	0.00	-0.47	110.82	111.88	-1.06
2007 R	66.84	47.92	0.49	0.68	0.00	2.02	111.57	113.86	-2.29
2008	69.78	40.21	0.98	0.67	-0.00	-0.43	108.77	110.96	-2.19
2007 R Mar	16.30	12.03	0.34	0.68	0.00	0.70	26.60	28.71	-2.11
Jun	17.05	13.57	0.04	0.00	0.00	2.29	28.29	27.64	0.65
Sep	16.70	9.19	0.30	0.00	0.00	-1.77	27.36	27.79	-0.44
Dec	16.80	13.13	-0.20	0.00	0.00	0.80	29.32	29.72	-0.40
2008 Mar	17.19	11.20	-0.11	0.00	0.00	0.02	28.47	29.22	-0.75
Jun	17.90	10.45	-0.01	0.00	0.00	2.22	26.14	27.16	-1.01
Sep	17.38	8.92	0.61	0.00	-0.00	-1.26	26.95	26.41	0.54
Dec	17.31	9.63	0.49	0.67	0.00	-1.41	27.20	28.17	-0.96
<b>Δ2006/2007</b>	<b>-4.0%</b>	<b>17.3%</b>	<b>n.a.</b>	<b>n.a.</b>	<b>0.0%</b>	<b>n.a.</b>	<b>0.7%</b>	<b>1.8%</b>	<b>n.a.</b>
<b>Δ2007/2008</b>	<b>4.4%</b>	<b>-16.1%</b>	<b>n.a.</b>	<b>-2.1%</b>	<b>0.0%</b>	<b>n.a.</b>	<b>-2.5%</b>	<b>-2.5%</b>	<b>n.a.</b>

Notes to Table D.8: <sup>1</sup> Includes premium leaded, premium unleaded (from January 1996), premium unleaded 98, regular leaded (to December 1986) and regular unleaded (from January 1987).

R = Revised figures.  
n.a. = Not applicable.

<sup>2</sup> See Glossary for further details of calculated and observed consumer energy.

# D. Oil

## Total Petrol continued

Figure D.8a: Annual Petrol Supply

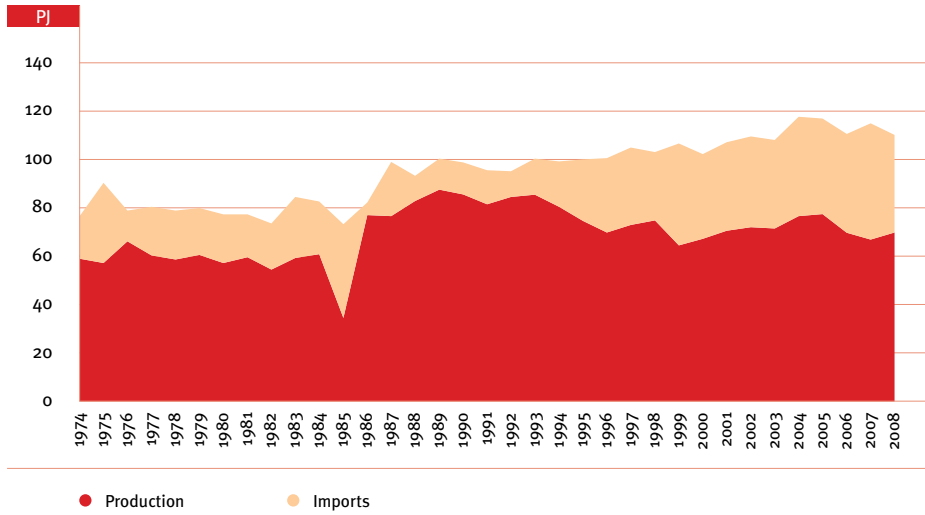
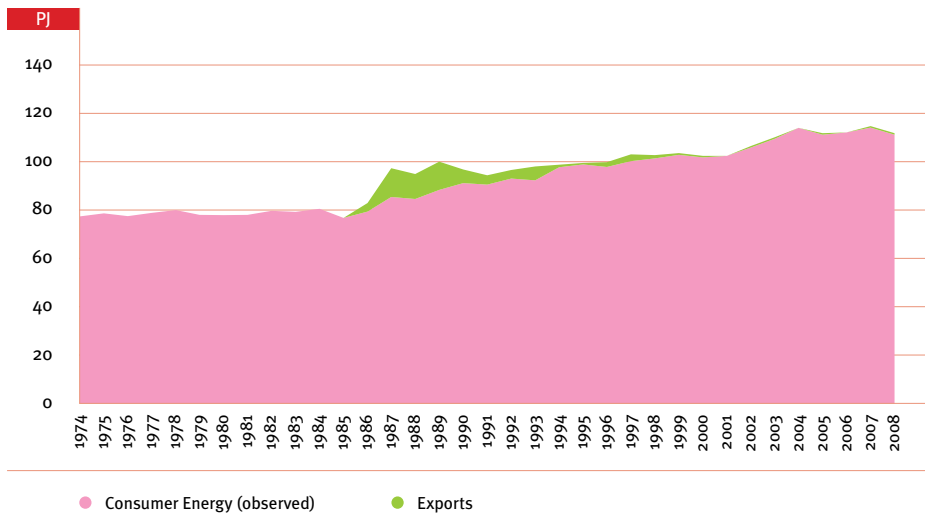


Figure D.8b: Annual Petrol Consumption and Exports



## Premium Unleaded Petrol

**Table D.9: Premium Unleaded Petrol<sup>1</sup> (Gross PJ)**

Calendar Year or Quarter	Production	Imports	Oil Industry Losses and Own Use	Exports	International Transport	Stock Change	Consumer Energy <sup>2</sup>		Statistical Difference
							Calculated	Observed	
1996	31.26	10.13	0.08	1.97	0.01	13.20	26.14	32.07	-5.93
1997	19.41	10.22	0.49	2.73	0.00	-1.43	27.85	27.71	0.14
1998	21.57	6.49	-0.46	1.39	0.00	0.14	26.99	26.60	0.39
1999	18.12	10.49	0.67	0.71	0.00	0.31	26.92	26.14	0.78
2000	17.44	7.18	-0.02	-0.00	0.00	1.79	22.84	23.62	-0.79
2001	17.54	6.43	-0.48	0.00	0.00	2.28	22.18	22.66	-0.48
2002	18.86	7.02	3.63	0.60	0.00	-1.83	23.49	23.43	0.05
2003	15.05	8.97	-1.04	0.62	0.00	-1.02	25.46	24.08	1.38
2004	16.78	11.31	-0.68	0.00	0.00	4.92	23.85	26.64	-2.79
2005 R	16.78	11.20	3.12	0.57	0.00	2.33	21.96	23.19	-1.23
2006 R	12.61	11.18	0.43	0.00	-0.00	0.84	22.52	22.32	0.20
2007 R	12.29	11.90	0.48	0.68	0.00	1.17	21.86	22.94	-1.09
2008	12.77	9.92	1.01	0.67	0.00	1.66	19.35	21.48	-2.13
2007 R Mar	3.03	2.83	0.35	0.68	0.00	0.95	3.87	5.89	-2.02
Jun	2.70	3.80	0.11	0.00	0.00	-0.02	6.41	5.56	0.85
Sep	3.27	2.56	0.02	0.00	0.00	0.27	5.53	5.55	-0.02
Dec	3.30	2.71	-0.01	0.00	0.00	-0.03	6.05	5.94	0.10
2008 Mar	2.76	3.03	-0.01	0.00	0.00	0.41	5.39	5.82	-0.44
Jun	3.44	2.68	-0.00	0.00	0.00	1.38	4.74	5.13	-0.39
Sep	3.69	1.84	0.60	0.00	0.00	0.06	4.88	4.99	-0.11
Dec	2.88	2.37	0.43	0.67	0.00	-0.18	4.34	5.54	-1.20
<b>Δ2006/2007</b>	<b>-2.5%</b>	<b>6.4%</b>	<b>n.a.</b>	<b>n.a.</b>	<b>0.0%</b>	<b>n.a.</b>	<b>-2.9%</b>	<b>2.8%</b>	<b>n.a.</b>
<b>Δ2007/2008</b>	<b>3.9%</b>	<b>-16.6%</b>	<b>n.a.</b>	<b>-2.1%</b>	<b>0.0%</b>	<b>n.a.</b>	<b>-11.5%</b>	<b>-6.4%</b>	<b>n.a.</b>

Notes to Table D.9: <sup>1</sup> Includes premium unleaded and premium unleaded 98.

<sup>2</sup> See Glossary for further details of calculated and observed consumer energy.

R = Revised figures.

n.a. = Not applicable.

Premium unleaded petrol: 1 PJ ~ 21.290 kt ~ 28.377 million litres.

## D. Oil

### Premium Unleaded Petrol continued

Figure D.9a: Annual Premium Unleaded Petrol Supply

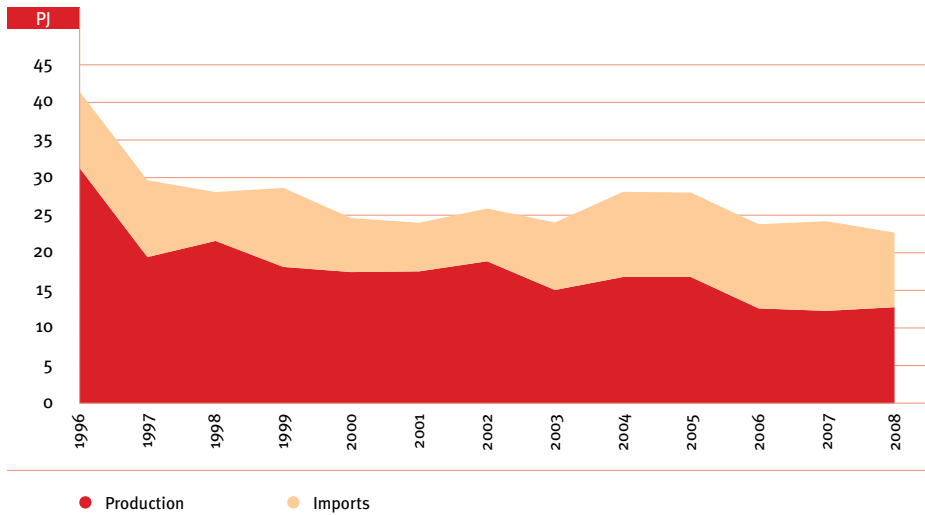
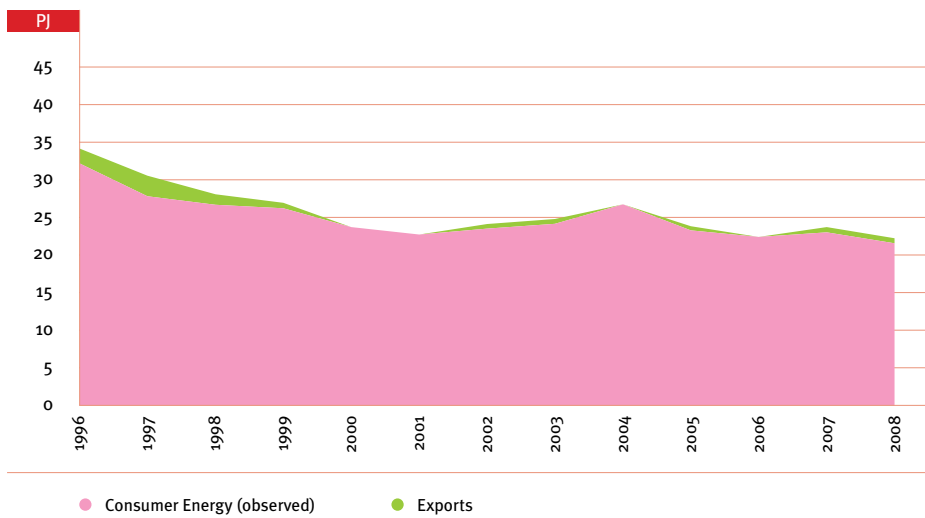


Figure D.9b: Annual Premium Unleaded Petrol Consumption and Exports



# D. Oil

## Regular Unleaded Petrol

Table D.10: Regular Unleaded Petrol (Gross PJ)

Calendar Year or Quarter	Production <sup>1</sup>	Direct Use <sup>2</sup>	Imports	Oil Industry Losses and Own Use	Exports	International Transport	Stock Change	Consumer Energy <sup>3</sup>		Statistical Difference
								Calculated	Observed	
1987	3.86	11.80	0.00	0.09	11.80	0.00	0.20	3.51	3.74	-0.23
1988	6.38	9.43	0.00	0.00	9.52	0.00	-0.02	6.30	6.03	0.27
1989	10.72	9.48	0.00	0.13	9.79	0.00	0.44	9.87	9.54	0.33
1990	17.88	3.72	1.36	0.10	4.06	0.00	1.11	17.72	17.60	0.12
1991	22.28	1.79	1.36	-0.10	2.07	0.00	-6.06	29.50	28.00	1.50
1992	23.78	2.70	0.38	-0.76	2.78	0.00	-9.42	34.27	33.19	1.08
1993	25.69	4.42	0.54	0.06	4.48	0.00	-12.47	38.58	37.51	1.07
1994	30.52	0.00	1.10	0.94	0.01	0.00	-12.79	43.46	42.90	0.56
1995	38.52	0.00	7.47	-0.28	0.10	0.00	-2.48	48.66	48.04	0.61
1996	38.51	0.00	20.54	-0.77	0.00	0.01	-6.51	66.32	65.53	0.79
1997	53.42	0.00	21.76	-0.88	0.00	0.00	2.56	73.51	72.36	1.15
1998	53.17	0.00	21.68	-1.12	0.01	0.00	1.13	74.84	74.54	0.30
1999	46.33	0.00	31.57	0.61	0.00	0.00	-0.23	77.52	76.47	1.05
2000	49.74	0.00	27.78	-0.66	0.61	0.00	-0.98	78.52	77.98	0.54
2001	52.95	0.00	30.07	0.35	0.00	0.00	2.10	80.56	79.57	0.99
2002	53.05	0.00	30.44	-3.53	0.05	0.00	3.30	83.67	82.24	1.43
2003	56.39	0.00	27.50	0.84	0.00	0.00	-2.33	85.37	85.21	0.16
2004	59.69	0.00	29.72	2.12	0.00	0.00	0.09	87.20	87.16	0.04
2005 R	60.53	0.00	28.25	0.02	0.00	0.00	-0.84	89.60	87.80	1.80
2006 R	57.02	0.00	29.68	-0.30	0.00	0.00	-1.31	88.30	89.56	-1.26
2007 R	54.56	0.00	36.02	0.01	0.00	0.00	0.85	89.71	90.92	-1.20
2008	57.02	0.00	30.28	-0.03	0.00	-0.00	-2.09	89.42	90.66	-1.24
2007 R Mar	13.27	0.00	9.20	-0.01	0.00	0.00	-0.25	22.73	22.82	-0.09
Jun	14.35	0.00	9.77	-0.07	0.00	0.00	2.31	21.88	22.08	-0.20
Sep	13.43	0.00	6.63	0.28	0.00	0.00	-2.04	21.82	22.24	-0.42
Dec	13.50	0.00	10.42	-0.19	0.00	0.00	0.83	23.28	23.78	-0.50
2008 Mar	14.43	0.00	8.17	-0.10	0.00	0.00	-0.39	23.08	23.40	-0.31
Jun	14.46	0.00	7.77	-0.01	0.00	0.00	0.84	21.40	22.03	-0.63
Sep	13.69	0.00	7.08	0.02	0.00	-0.00	-1.31	22.07	22.61	-0.53
Dec	14.43	0.00	7.26	0.06	0.00	0.00	-1.23	22.86	22.63	0.24
<b>Δ2006/2007</b>	<b>-4.3%</b>	<b>n.a.</b>	<b>21.4%</b>	<b>n.a.</b>	<b>0.0%</b>	<b>0.0%</b>	<b>n.a.</b>	<b>1.6%</b>	<b>1.5%</b>	<b>n.a.</b>
<b>Δ2007/2008</b>	<b>4.5%</b>	<b>n.a.</b>	<b>-15.9%</b>	<b>n.a.</b>	<b>0.0%</b>	<b>0.0%</b>	<b>n.a.</b>	<b>-0.3%</b>	<b>-0.3%</b>	<b>n.a.</b>

Notes to Table D.10: <sup>1</sup> Refinery production commenced on 1 January 1987.

<sup>2</sup> Syngas supplied directly to exports. The exports in these figures are then deducted in the exports column.

<sup>3</sup> See Glossary for further details of calculated and observed consumer energy.

R = Revised figures.

n.a. = Not applicable.

Regular unleaded petrol: 1 PJ = 21.231 kt = 28.678 million litres.

# D. Oil

## Regular Unleaded Petrol continued

Figure D.10a: Annual Regular Unleaded Petrol Supply

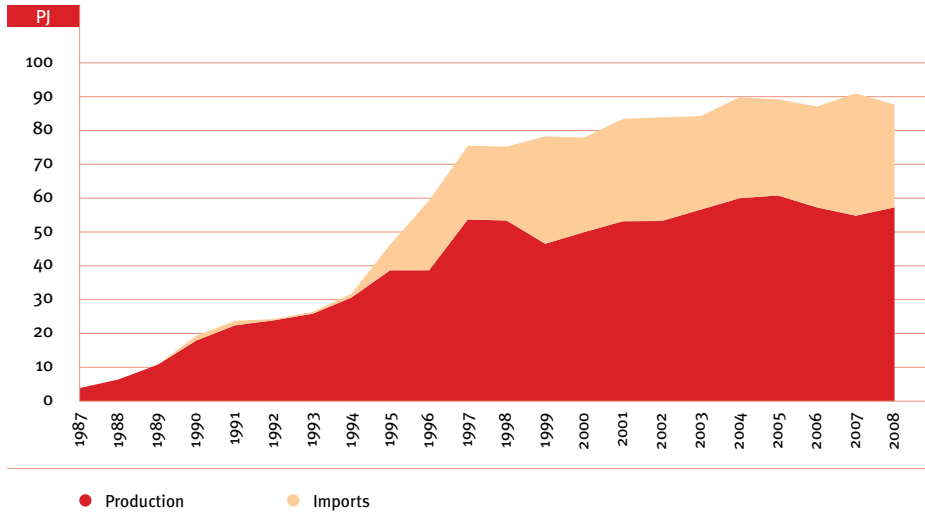
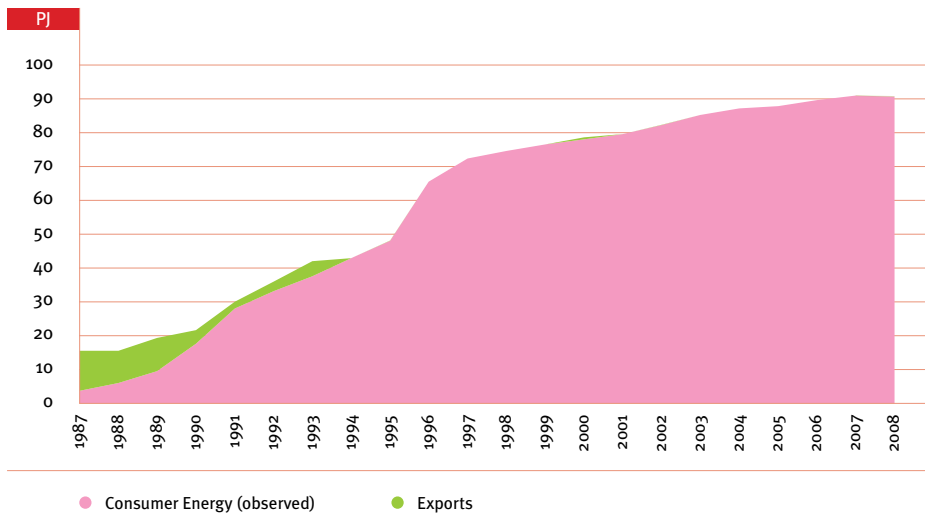


Figure D.10b: Annual Regular Unleaded Petrol Consumption and Exports



## Diesel

Table D.11: Diesel<sup>1</sup> (Gross PJ)

Calendar Year or Quarter	Production	Imports	Oil Industry Losses and Own Use	Exports	International Transport	Stock Change	Consumer Energy <sup>2</sup>		Statistical Difference
							Calculated	Observed	
1974	27.63	13.20	-0.64	0.00	2.83	0.50	38.15	40.71	-2.56
1975	25.50	20.52	-0.72	0.00	4.83	0.97	40.94	40.77	0.17
1976	31.01	15.02	-0.64	0.00	6.34	-0.23	40.56	41.40	-0.84
1977	30.14	19.84	-0.67	0.00	7.14	1.39	42.13	43.31	-1.18
1978	28.91	17.56	-0.52	0.00	5.92	-1.56	42.65	42.38	0.27
1979	29.97	18.37	-0.06	0.00	7.10	2.86	38.42	40.98	-2.56
1980	30.07	16.80	0.17	0.00	5.17	0.86	40.67	45.50	-4.83
1981	31.17	12.06	0.11	0.00	6.02	-3.49	40.58	41.11	-0.52
1982	25.45	19.89	0.11	0.00	7.18	-2.08	40.14	42.87	-2.73
1983	28.09	19.34	0.07	0.00	6.23	0.84	40.30	41.39	-1.09
1984	28.32	20.35	0.17	0.00	6.12	0.89	41.49	43.02	-1.53
1985	15.08	31.57	0.34	0.00	5.70	-1.10	41.71	42.50	-0.79
1986	28.21	20.43	0.13	0.00	4.09	0.40	44.02	42.20	1.82
1987	46.06	2.54	-0.05	1.53	3.39	1.27	42.46	41.14	1.32
1988	54.81	0.23	0.06	10.27	4.97	-1.05	40.78	41.14	-0.35
1989	62.70	0.01	0.01	15.82	4.16	-0.96	43.68	42.75	0.93
1990	62.11	0.43	0.03	10.79	5.96	-0.40	46.16	46.30	-0.14
1991	65.84	0.18	-1.48	14.05	6.63	-1.03	47.85	46.50	1.35
1992	64.56	1.54	-1.42	4.43	4.80	3.05	55.24	53.95	1.30
1993	68.40	0.02	-3.05	8.57	4.69	1.72	56.48	55.20	1.28
1994	72.15	1.83	-0.90	3.97	7.01	0.74	63.16	61.08	2.08
1995	71.17	3.88	0.55	0.01	5.85	-0.27	68.90	69.59	-0.69
1996	66.85	11.77	-0.21	0.09	4.77	-0.07	74.03	72.00	2.04
1997	74.16	12.23	-3.56	1.99	4.45	5.58	77.93	76.53	1.40
1998	81.30	2.72	-1.34	2.89	3.89	-0.98	79.57	78.11	1.46
1999	78.85	10.83	-0.32	0.93	2.55	2.49	84.02	80.92	3.10
2000	84.38	6.84	-0.97	0.22	2.11	2.28	87.57	87.26	0.31
2001	81.32	10.95	-0.50	0.00	2.25	-1.03	91.56	87.56	4.00
2002	87.75	12.20	-1.23	0.32	3.22	1.79	95.85	94.00	1.85
2003	85.14	15.26	-0.17	0.30	2.37	-2.70	100.61	97.69	2.91
2004	74.90	36.22	2.65	0.24	1.45	0.98	105.80	101.40	4.40
2005 R	75.26	32.62	1.99	0.15	1.84	-3.15	107.05	106.70	0.35
2006 R	76.27	34.43	-0.36	0.01	1.46	1.85	107.75	107.74	0.01
2007 R	72.68	40.60	-0.66	0.00	1.34	1.31	111.29	110.84	0.45
2008	74.95	38.00	-1.08	0.01	1.32	-0.78	113.48	109.82	3.66
2007 R Mar	15.21	14.00	-0.15	0.00	0.44	1.92	27.00	27.72	-0.73
Jun	18.15	9.20	-0.19	0.00	0.33	-0.80	28.02	26.94	1.08
Sep	21.49	6.35	-0.10	0.00	0.31	1.12	26.51	26.93	-0.41
Dec	17.83	11.04	-0.22	0.00	0.26	-0.93	29.76	29.25	0.51
2008 Mar	19.15	8.02	-0.15	0.00	0.50	-1.16	27.98	28.87	-0.89
Jun	19.99	12.47	-0.01	0.00	0.25	1.72	30.49	28.77	1.72
Sep	17.02	5.82	0.01	0.00	0.15	-3.20	25.89	25.94	-0.05
Dec	18.78	11.68	-0.93	0.00	0.42	1.86	29.12	26.24	2.88
<b>Δ2006/2007</b>	<b>-4.7%</b>	<b>17.9%</b>	<b>n.a.</b>	<b>0.0%</b>	<b>-8.2%</b>	<b>n.a.</b>	<b>3.3%</b>	<b>2.9%</b>	<b>n.a.</b>
<b>Δ2007/2008</b>	<b>3.1%</b>	<b>-6.4%</b>	<b>n.a.</b>	<b>0.0%</b>	<b>-1.2%</b>	<b>n.a.</b>	<b>2.0%</b>	<b>-0.9%</b>	<b>n.a.</b>

Notes to Table D.11: <sup>1</sup> Includes automotive gas oil, marine diesel and blended heating oil.

<sup>2</sup> See Glossary for further details of calculated and observed consumer energy.

R = Revised figures.

n.a. = Not applicable.

Diesel (50 ppm sulphur): 1 PJ = 21.849 kt = 26.130 million litres.

# D. Oil

## Diesel continued

Figure D.11a: Annual Diesel Supply

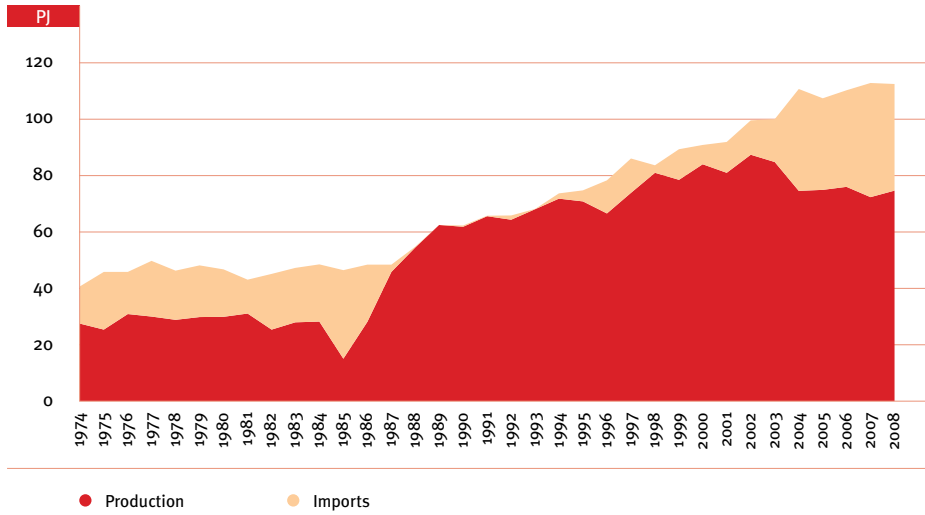
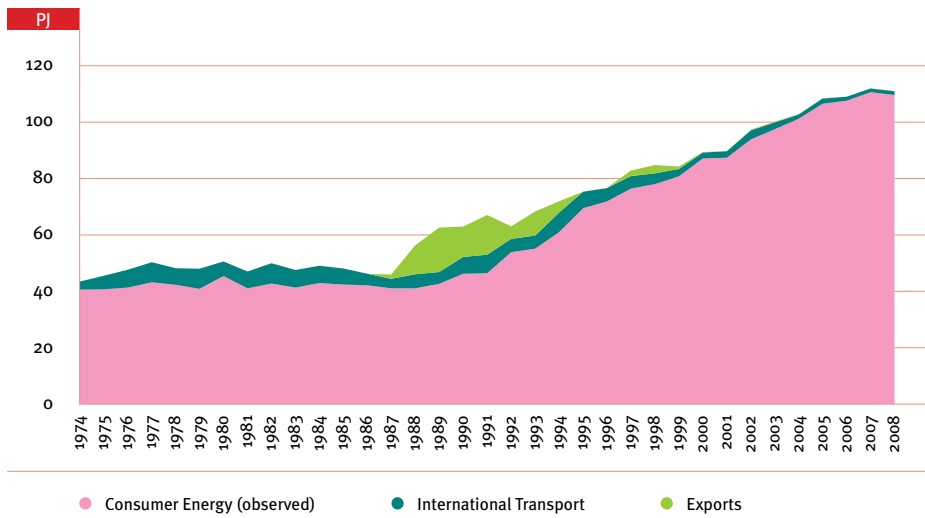


Figure D.11b: Annual Diesel Consumption and Exports



## Fuel Oil

Table D.12: Fuel Oil<sup>1</sup> (Gross PJ)

Calendar Year or Quarter	Production	Imports	Oil Industry Losses and Own Use	Exports	International Transport	Stock Change	Consumer Energy <sup>2</sup>		Statistical Difference
							Calculated	Observed	
1974	63.13	0.20	21.71	0.00	10.63	3.13	27.86	46.84	-18.98
1975	43.81	5.41	9.86	0.00	11.35	-5.67	33.68	35.78	-2.09
1976	51.31	0.00	14.71	0.00	12.18	-0.64	25.06	40.27	-15.21
1977	47.18	0.00	9.03	1.48	10.01	1.48	25.17	37.73	-12.55
1978	37.67	0.00	2.60	1.81	9.24	0.04	23.97	27.92	-3.95
1979	38.79	0.00	1.09	1.80	13.91	-0.61	22.60	23.52	-0.92
1980	34.62	0.03	0.79	0.88	10.15	1.42	21.42	20.47	0.95
1981	25.16	0.03	0.73	0.88	7.48	-1.59	17.69	17.24	0.45
1982	17.51	1.53	1.70	0.00	4.88	-0.90	13.36	16.12	-2.76
1983	15.51	1.58	2.74	0.61	3.70	-1.66	11.70	12.89	-1.20
1984	15.25	2.17	0.94	3.43	3.44	0.48	9.14	8.96	0.18
1985	13.31	3.60	1.53	3.52	3.58	0.39	7.89	9.32	-1.43
1986	9.22	3.53	0.33	0.78	2.66	-0.12	9.11	7.96	1.14
1987	14.15	0.00	0.33	0.59	3.59	0.68	8.97	8.25	0.71
1988	13.22	0.50	0.22	0.00	5.18	-0.70	9.03	8.75	0.28
1989	14.99	0.24	0.13	1.16	4.93	1.21	7.80	6.95	0.84
1990	17.20	0.00	0.30	0.70	8.58	-1.03	8.66	7.55	1.11
1991	16.81	0.39	0.56	1.06	6.32	0.47	8.79	7.13	1.66
1992	18.24	2.28	1.39	1.61	7.40	-2.58	12.70	10.83	1.87
1993	16.97	0.13	-1.13	1.16	8.17	0.10	8.81	6.67	2.14
1994	22.44	0.04	-1.55	0.73	12.00	0.88	10.43	8.21	2.22
1995	17.69	0.10	-1.79	0.00	10.05	-0.48	10.02	8.09	1.92
1996	19.69	0.82	-0.12	2.21	10.29	-1.42	9.55	8.81	0.74
1997	21.55	0.00	-1.31	1.63	11.12	1.71	8.40	7.37	1.03
1998	22.04	0.00	-1.21	1.97	11.12	1.08	9.08	7.01	2.07
1999	22.24	0.00	1.48	3.17	10.20	-1.36	8.75	7.03	1.72
2000	22.53	0.00	-0.79	4.32	8.29	0.02	10.70	9.84	0.86
2001	20.82	0.00	-1.37	2.38	9.04	0.29	10.48	8.76	1.72
2002	25.04	0.00	-1.93	5.27	11.42	0.04	10.23	9.23	1.00
2003	23.16	1.17	-0.22	1.85	9.52	2.73	10.45	11.03	-0.59
2004	21.30	0.00	-0.25	3.32	8.64	-0.51	10.11	7.75	2.35
2005 R	25.93	0.00	-1.15	6.75	11.80	-1.73	10.27	9.18	1.09
2006 R	23.93	0.00	-0.38	3.85	12.06	0.33	8.07	7.51	0.56
2007 R	24.32	0.01	0.03	4.68	12.17	-1.31	8.76	8.43	0.33
2008	28.48	1.91	-0.01	5.91	13.46	2.81	8.24	8.25	-0.01
2007 R Mar	5.42	0.00	-0.05	1.14	3.46	-1.11	1.97	2.15	-0.18
Jun	5.89	0.01	-0.04	0.44	2.42	1.53	1.56	1.78	-0.22
Sep	6.40	0.00	0.11	1.25	2.82	-0.38	2.60	2.07	0.53
Dec	6.61	0.00	0.01	1.84	3.47	-1.36	2.64	2.43	0.21
2008 Mar	6.90	0.00	-0.02	0.74	3.78	-0.06	2.46	2.03	-0.43
Jun	6.22	0.00	-0.06	0.84	3.49	0.51	1.44	1.77	0.33
Sep	8.81	1.41	-0.01	3.56	3.13	2.11	1.44	1.92	0.48
Dec	6.55	0.51	0.08	0.77	3.06	0.25	2.90	2.53	-0.37
<b>Δ2006/2007</b>	<b>1.6%</b>	<b>n.a.</b>	<b>n.a.</b>	<b>21.6%</b>	<b>0.9%</b>	<b>n.a.</b>	<b>8.5%</b>	<b>12.3%</b>	<b>n.a.</b>
<b>Δ2007/2008</b>	<b>17.1%</b>	<b>n.a.</b>	<b>n.a.</b>	<b>26.3%</b>	<b>10.6%</b>	<b>n.a.</b>	<b>-6.0%</b>	<b>-2.2%</b>	<b>n.a.</b>

Notes to Table D.12: <sup>1</sup> Includes light fuel oil, heavy fuel oil and other fuel oils.

<sup>2</sup> See Glossary for further details of calculated and observed consumer energy.

R = Revised figures.

n.a. = Not applicable.

Light fuel oil: 1 PJ ~ 22.873 kt ~ 24.600 million litres.

Heavy fuel oil: 1 PJ ~ 23.272 kt ~ 24.432 million litres.

# D. Oil

## Fuel Oil continued

Figure D.12a: Annual Fuel Oil Supply

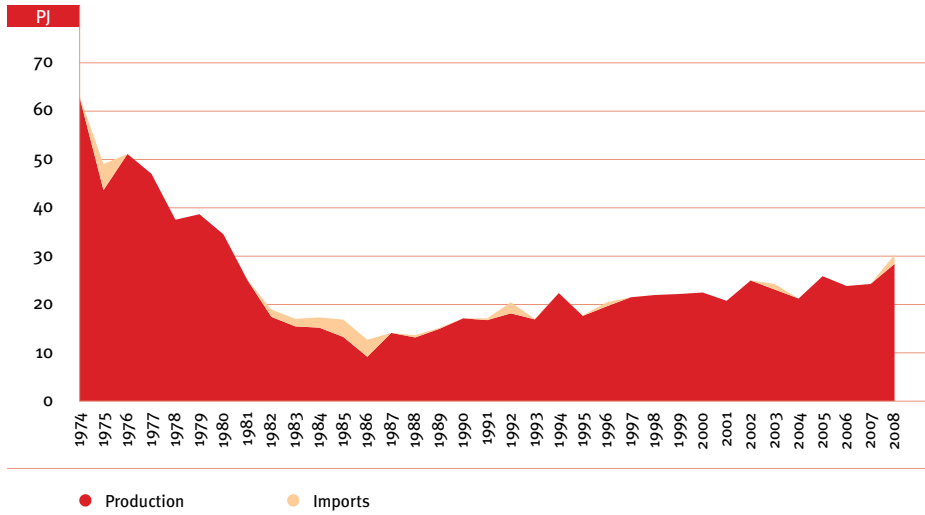
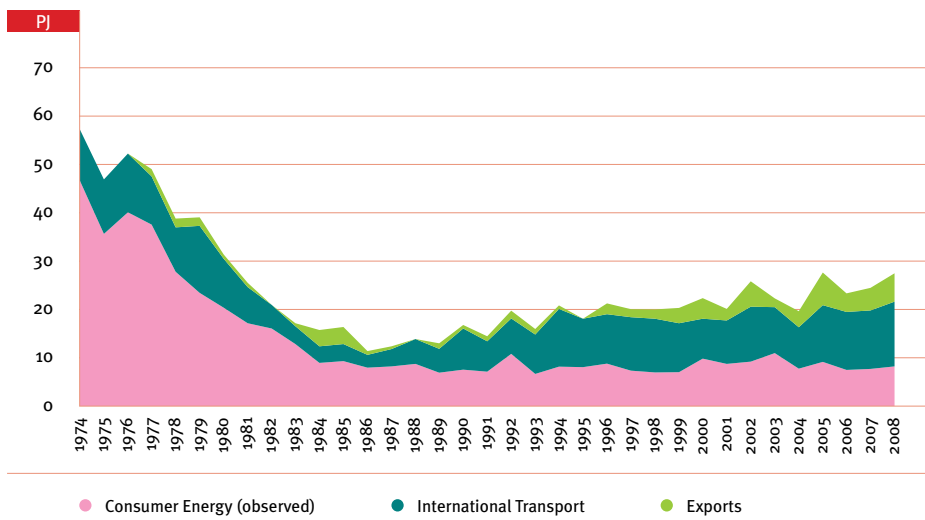


Figure D.12b: Annual Fuel Oil Consumption and Exports



## Aviation Fuels

**Table D.13: Aviation Fuels<sup>1</sup> (Gross PJ)**

Calendar Year or Quarter	Production	Imports	Oil Industry Losses and Own Use	Exports	International Transport	Stock Change	Consumer Energy <sup>2</sup>		Statistical Difference
							Calculated	Observed	
1975	0.00	20.55	0.77	0.00	4.95	7.32	7.50	7.10	0.40
1976	0.00	13.06	0.71	0.00	5.43	-0.77	7.69	7.51	0.19
1977	0.00	14.67	0.76	0.00	5.54	0.27	8.10	7.95	0.15
1978	0.00	16.15	0.58	0.00	7.43	0.14	8.00	7.95	0.06
1979	0.00	17.82	0.52	0.00	8.43	0.60	8.26	8.11	0.15
1980	0.00	17.67	0.38	0.00	8.41	1.17	7.72	7.05	0.67
1981	0.00	14.21	0.22	0.00	8.17	-0.65	6.46	6.32	0.14
1982	0.00	13.73	0.16	0.00	8.09	-0.48	5.95	6.34	-0.39
1983	0.00	13.21	0.14	0.00	7.99	-1.01	6.09	6.09	-0.01
1984	0.00	15.57	0.16	0.00	8.33	-0.40	7.48	6.68	0.80
1985	0.00	17.27	0.15	0.00	9.67	0.48	6.97	6.79	0.18
1986	0.99	17.65	0.19	0.00	10.76	-0.83	8.52	6.60	1.92
1987	22.54	4.22	0.41	1.02	14.44	1.41	9.49	7.57	1.92
1988	30.46	1.01	0.14	5.64	14.82	-0.30	11.18	8.00	3.19
1989	35.41	1.82	0.15	5.49	17.25	0.27	14.08	11.13	2.94
1990	36.58	1.83	0.23	4.83	19.89	-0.02	13.47	12.28	1.20
1991	33.19	0.82	0.26	2.47	19.01	1.19	11.09	10.32	0.78
1992	32.52	2.15	0.80	1.51	19.45	0.10	12.83	10.18	2.64
1993	34.69	0.98	-0.09	3.06	19.72	-1.12	14.10	10.76	3.34
1994	37.74	1.08	-0.68	1.80	21.37	1.78	14.56	12.77	1.79
1995	34.83	3.87	-1.29	0.00	23.29	-0.22	16.91	13.25	3.66
1996	35.09	5.15	0.50	0.00	24.27	-0.80	16.28	12.58	3.69
1997	38.45	5.71	-0.60	0.60	25.37	2.52	16.27	12.45	3.82
1998	37.71	4.73	1.04	0.10	25.25	-1.26	17.31	12.92	4.38
1999	38.91	5.38	-0.09	0.14	27.35	2.19	14.69	12.49	2.20
2000	38.93	5.51	-0.69	0.00	25.58	0.24	19.31	13.65	5.66
2001	37.93	6.20	1.22	0.00	26.59	-0.39	16.71	17.65	-0.94
2002	40.43	5.77	0.81	0.19	27.55	1.93	15.73	16.37	-0.64
2003	38.73	8.91	-1.51	0.00	35.37	-1.07	14.85	18.23	-3.38
2004	43.26	13.80	0.02	0.00	38.59	1.93	16.51	18.77	-2.26
2005 R	40.75	10.63	-2.31	0.00	38.93	-0.58	15.33	17.45	-2.11
2006 R	42.23	9.73	0.51	0.00	39.00	0.01	12.44	17.77	-5.32
2007 R	38.94	11.89	0.19	0.00	38.57	0.19	11.88	14.63	-2.75
2008	40.59	11.78	0.39	0.00	37.33	0.93	13.72	17.32	-3.60
2007 R Mar	9.24	3.09	0.21	0.00	9.81	-0.38	2.69	4.38	-1.68
Jun	9.49	3.00	-0.32	0.00	9.61	-0.00	3.20	3.14	0.06
Sep	9.89	3.23	0.20	0.00	9.15	0.70	3.08	3.36	-0.28
Dec	10.31	2.57	0.09	0.00	10.00	-0.12	2.91	3.76	-0.84
2008 Mar	10.87	3.00	0.11	0.00	10.12	-0.26	3.90	3.80	0.10
Jun	9.79	3.20	0.11	0.00	9.07	0.91	2.89	3.47	-0.57
Sep	9.95	2.65	0.09	0.00	9.34	1.27	1.90	4.02	-2.12
Dec	9.98	2.93	0.09	0.00	8.80	-0.99	5.02	6.03	-1.01
<b>Δ2006/2007</b>	<b>-7.8%</b>	<b>22.2%</b>	<b>n.a.</b>	<b>0.0%</b>	<b>-1.1%</b>	<b>n.a.</b>	<b>-4.5%</b>	<b>-17.7%</b>	<b>n.a.</b>
<b>Δ2007/2008</b>	<b>4.2%</b>	<b>-0.9%</b>	<b>n.a.</b>	<b>0.0%</b>	<b>-3.2%</b>	<b>n.a.</b>	<b>15.4%</b>	<b>18.4%</b>	<b>n.a.</b>

Notes to Table D.13: <sup>1</sup> Includes Avgas, Avtur, Jet-A1 and Jet-4 aviation fuels, light kerosene and premium kerosene.

<sup>2</sup> See Glossary for further details of calculated and observed consumer energy.

R = Revised figures.

n.a. = Not applicable.

Jet fuel: 1 PJ ~ 21.631 kt ~ 26.911 million litres.

## D. Oil

### Aviation Fuels continued

Figure D.13a: Annual Aviation Fuels Supply

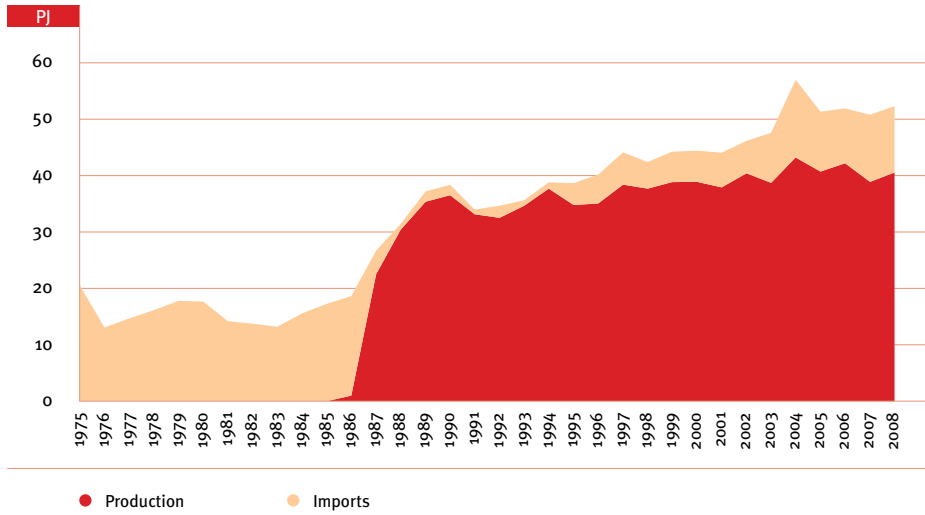
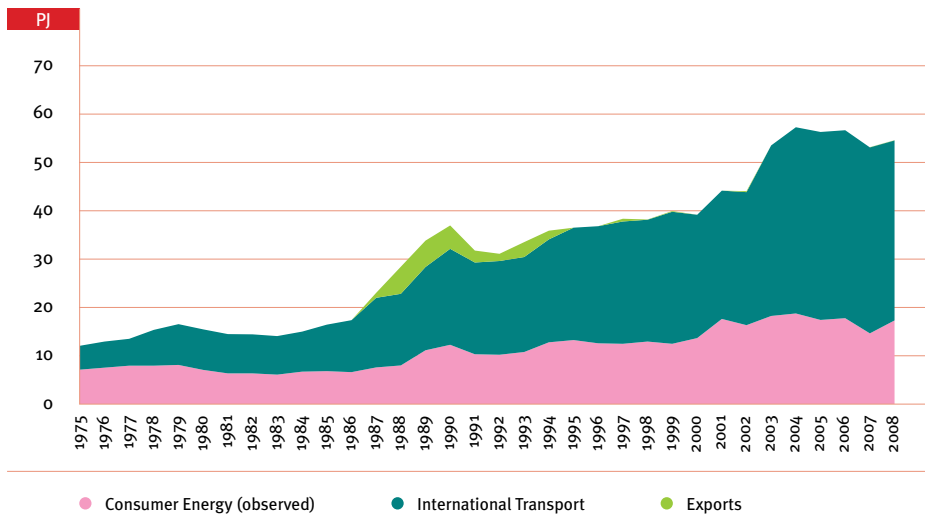


Figure D.13b: Annual Aviation Fuels Consumption and Exports



## Other Petroleum Products

Table D.14: Other Petroleum Products<sup>1</sup> (Gross PJ)

Calendar Year or Quarter	Production	Imports	Oil Industry Losses and Own Use	Exports	International Transport	Stock Change	Consumer Energy (calculated) <sup>2</sup>
1974	5.27	0.77	0.00	0.00	0.00	0.20	5.85
1975	3.51	1.39	0.00	0.00	0.00	-0.38	5.28
1976	4.69	0.00	0.00	0.00	0.00	0.58	4.12
1977	4.67	0.00	0.00	0.00	0.00	-0.13	4.80
1978	4.35	0.10	0.00	0.00	0.00	0.17	4.28
1979	4.22	1.75	0.17	0.85	0.03	-0.41	5.34
1980	4.42	3.24	0.28	0.00	0.05	0.88	6.46
1981	3.83	2.99	0.33	0.00	0.06	-0.34	6.76
1982	2.95	2.89	0.35	0.00	0.07	-1.39	6.80
1983	4.82	2.96	0.33	0.00	0.07	0.51	6.87
1984	5.67	2.19	0.13	0.00	0.12	-0.58	8.20
1985	3.83	3.95	0.31	0.00	0.10	1.32	6.05
1986	4.56	1.81	0.33	0.00	0.07	-1.12	7.09
1987	5.57	1.83	0.43	0.00	0.04	0.06	6.87
1988	5.79	2.27	-0.06	0.00	0.04	0.53	7.54
1989	5.65	2.70	0.01	0.00	0.04	-0.11	8.40
1990	5.91	8.70	0.03	0.00	0.05	0.74	13.79
1991	4.69	7.38	-0.01	0.00	0.08	-0.53	12.52
1992	6.36	7.37	-0.12	0.01	0.06	1.02	12.75
1993	6.32	7.25	-0.16	0.15	0.06	0.08	13.44
1994	6.68	7.91	0.17	0.01	0.07	0.01	14.33
1995	6.00	9.09	0.82	0.10	0.08	-0.15	14.24
1996	6.53	7.88	0.03	0.13	0.07	0.57	13.61
1997 R	6.13	8.04	-0.44	0.33	0.07	0.41	13.80
1998	6.01	7.25	-0.81	0.08	0.00	1.13	12.86
1999	6.48	6.93	0.61	0.00	0.00	-0.34	13.13
2000	6.09	7.05	0.00	0.00	0.00	-0.54	13.67
2001	5.10	5.83	-0.24	0.00	0.00	0.34	10.82
2002	4.84	6.38	-0.44	0.00	0.00	0.26	11.40
2003	6.08	6.57	0.32	0.00	0.00	0.59	11.74
2004	4.90	7.30	0.05	0.00	0.00	-0.34	12.49
2005	5.42	7.08	0.41	0.00	0.00	-0.04	12.13
2006	5.81	6.77	-0.08	0.00	0.00	-0.58	13.24
2007 R	5.89	6.79	0.07	0.00	0.00	-0.38	12.99
2008	5.16	7.28	-0.01	0.00	0.01	-0.37	12.81
2007 R Mar	1.80	1.60	0.06	0.00	0.00	-0.57	3.91
Jun	1.46	1.66	0.03	0.00	0.00	0.16	2.93
Sep	1.05	1.77	-0.02	0.00	0.00	0.01	2.82
Dec	1.58	1.76	-0.01	0.00	0.00	0.02	3.33
2008 Mar	1.42	1.59	0.00	0.00	0.00	-0.41	3.42
Jun	1.80	2.02	-0.02	0.00	0.00	0.43	3.40
Sep	0.45	1.60	0.00	0.00	0.00	-0.22	2.26
Dec	1.49	2.07	0.01	0.00	0.00	-0.18	3.73
<b>Δ2006/2007</b>	<b>1.2%</b>	<b>0.3%</b>	<b>n.a.</b>	<b>0.0%</b>	<b>0.0%</b>	<b>n.a.</b>	<b>-1.9%</b>
<b>Δ2007/2008</b>	<b>-12.3%</b>	<b>7.2%</b>	<b>n.a.</b>	<b>0.0%</b>	<b>0.0%</b>	<b>n.a.</b>	<b>-1.4%</b>

Notes to Table D.14: <sup>1</sup> Includes bitumen, lubes, solvents, waxes, petroleum coke, white spirit and other liquid fuels.

R = Revised figures.

n.a. = Not applicable.

<sup>2</sup> See Glossary for further details of consumer energy (calculated).

## D. Oil

### Other Petroleum Products continued

Figure D.14a: Annual Other Petroleum Products Supply

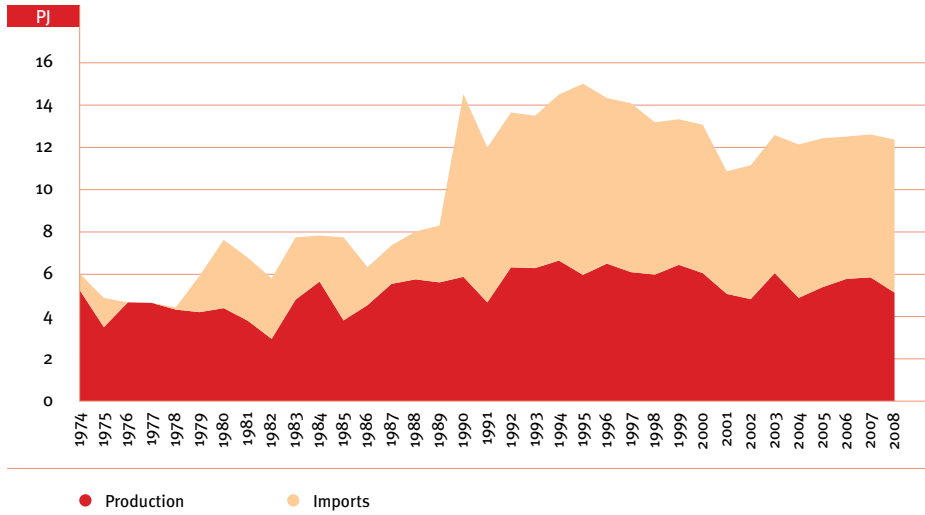
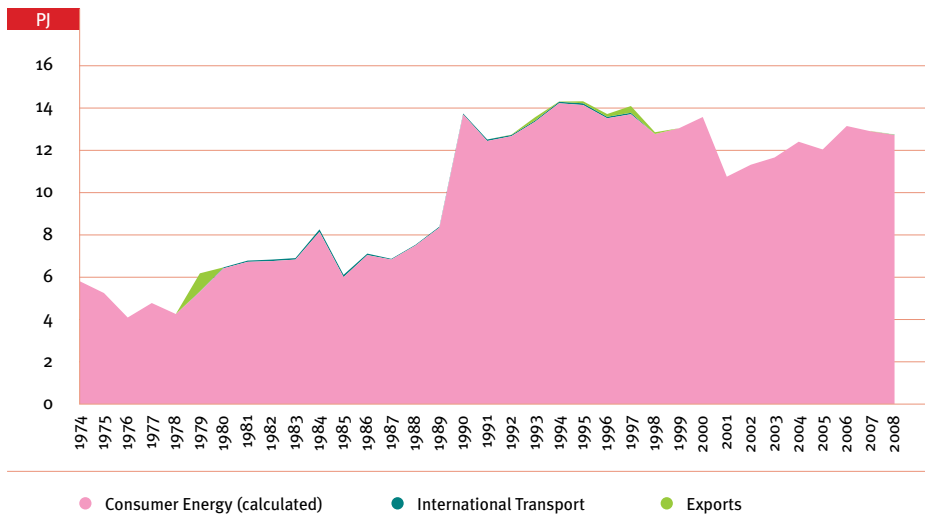


Figure D.14b: Annual Other Petroleum Products Consumption and Exports



## D. Oil

### LPG/NGL

Table D.15: LPG/NGL (Gross PJ)

Calendar Year or Quarter	Total Gross Production	Injected to Gas Sales	Flared, Losses and Own Use	Net Production	Imports	Exports	Stock Change	Consumer Energy (calculated) <sup>1</sup>
1974	0.11	0.00	0.00	0.11	0.00	0.00	-0.15	0.26
1975	0.15	0.00	0.00	0.15	0.00	0.00	0.00	0.14
1976	0.40	0.00	0.00	0.40	0.00	0.00	0.01	0.39
1977	0.56	0.00	0.00	0.56	0.00	0.00	0.01	0.55
1978	0.69	0.00	0.00	0.69	0.00	0.00	0.01	0.67
1979	1.18	0.00	0.03	1.15	0.00	0.00	0.39	0.76
1980	0.86	0.00	0.03	0.83	0.00	0.00	-0.08	0.91
1981	1.30	0.00	0.02	1.28	0.00	0.00	-0.01	1.29
1982	1.57	0.00	0.01	1.56	0.00	0.00	0.02	1.54
1983	1.70	0.00	0.14	1.57	0.00	0.00	-0.02	1.58
1984	2.68	0.00	0.29	2.38	0.00	0.00	0.02	2.36
1985	4.77	0.00	0.44	4.33	0.00	0.00	0.02	4.31
1986	5.58	0.00	0.63	4.95	0.00	0.00	0.02	4.92
1987	5.57	0.00	0.63	4.94	0.00	0.05	-0.05	4.94
1988	6.01	0.00	1.00	5.01	0.00	0.12	-0.16	5.05
1989	6.38	0.00	1.27	5.12	0.00	0.36	-0.07	4.83
1990	6.54	0.00	0.95	5.59	0.00	0.54	0.06	4.99
1991	7.28	0.00	0.83	6.45	0.00	0.90	-0.05	5.60
1992	8.59	0.81	0.75	7.04	0.00	1.22	-0.07	5.89
1993	9.40	1.13	0.97	7.30	0.00	1.34	0.01	5.95
1994	9.11	0.88	1.04	7.20	0.00	1.18	0.03	5.99
1995	9.61	1.93	0.99	6.69	0.00	0.68	-0.01	6.02
1996	11.33	2.30	1.18	7.85	0.00	1.95	-0.03	5.93
1997	12.97	3.05	0.87	9.06	0.00	3.13	0.00	5.92
1998	11.69	2.00	0.64	9.05	0.00	3.66	0.01	5.38
1999	11.74	1.54	0.70	9.50	0.00	4.38	-0.02	5.13
2000	11.95	1.39	0.87	9.69	0.00	4.01	0.02	5.67
2001	12.41	0.71	0.90	10.80	0.00	4.19	0.16	6.45
2002	12.07	0.61	0.93	10.52	0.00	3.36	0.29	6.87
2003	9.96	0.83	0.85	8.27	0.54	1.24	0.38	7.19
2004	9.50	0.32	0.80	8.38	0.39	0.68	0.26	7.83
2005	8.98	0.16	0.80	8.02	0.57	0.55	0.25	7.79
2006	8.28	0.41	0.78	7.09	1.91	0.30	0.34	8.37
2007	5.83	0.08	0.72	5.03	4.14	0.00	0.43	8.74
2008	4.25	0.01	0.55	3.68	5.00	0.00	0.04	8.64
2007 Mar	1.29	0.02	0.21	1.06	0.63	0.00	0.26	1.42
Jun	1.57	0.06	0.19	1.32	1.04	0.00	-0.01	2.38
Sep	1.57	0.00	0.18	1.39	1.54	0.00	0.12	2.81
Dec	1.40	0.00	0.14	1.26	0.94	0.00	0.06	2.13
2008 Mar	1.14	0.00	0.17	0.97	0.60	0.00	-0.08	1.65
Jun	1.25	0.01	0.16	1.08	1.65	0.00	0.16	2.57
Sep	1.01	0.00	0.12	0.88	1.62	0.00	-0.01	2.52
Dec	0.86	0.00	0.11	0.75	1.12	0.00	-0.03	1.90
<b>Δ2006/2007</b>	<b>-29.6%</b>	<b>-80.9%</b>	<b>-7.1%</b>	<b>-29.1%</b>	<b>116.6%</b>	<b>-98.7%</b>	<b>n.a.</b>	<b>4.5%</b>
<b>Δ2007/2008</b>	<b>-27.1%</b>	<b>-81.4%</b>	<b>-23.3%</b>	<b>-26.8%</b>	<b>20.7%</b>	<b>-26.9%</b>	<b>n.a.</b>	<b>-1.2%</b>

Notes to Table D.15: <sup>1</sup> See Glossary for further details of consumer energy (calculated).

LPG 60/40: 1 PJ ~ 20.197 kt ~ 37.821 million litres.

n.a. = Not applicable.

# D. Oil

## LPG/NGL continued

Figure D.15a: Annual LPG/NGL Supply

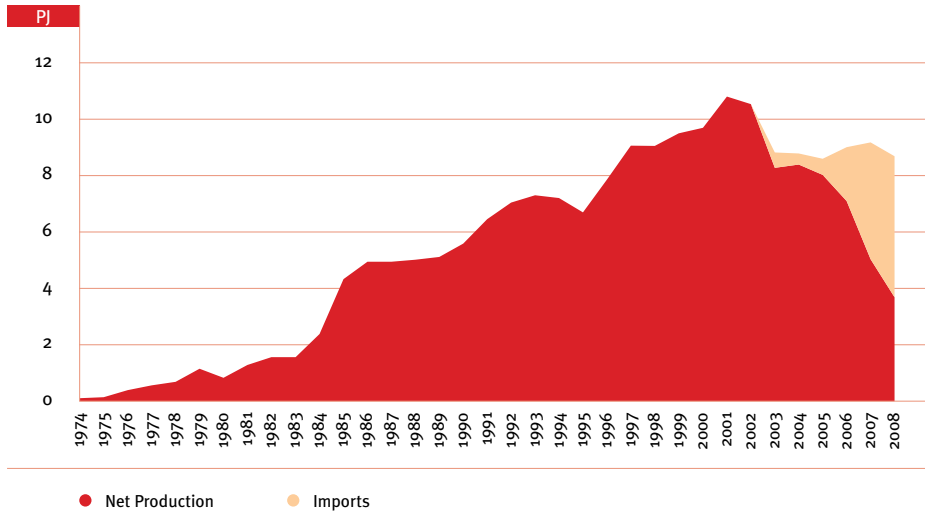


Figure D.15b: Annual LPG/NGL Consumption and Exports

