

Fuel Taxation

Inquiry

Issues Paper

18 August 2001

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PART 1: INTRODUCTION

1.1 Purpose of the Issues Paper

The purpose of this paper is to assist individuals and organisations making submissions to the Fuel Taxation Inquiry, by providing background information and raising questions on the issues covered by the terms of reference.

This paper provides an overview of the main features of the taxation of fuel in Australia and associated rebates, subsidies and grants. It should not be seen as limiting the extent of issues to be addressed by submissions or the Inquiry.

The paper is the first of a number to be released by the Inquiry providing factual information about fuel taxation. It is intended that these papers not only assist those making submissions, but also inform the community more generally about the work of the Inquiry and Australia's fuel taxation system.

1.2 Background to the Inquiry

On 1 March 2001, the Prime Minister announced an inquiry into the total structure of fuel taxation in Australia.¹

Following consultations the Treasurer and the Minister for Industry, Science and Resources announced on 8 July 2001 the terms of reference for the Inquiry and the Committee of Inquiry membership.

On 29 July 2001, the Chairman, Mr David Trebeck, announced opportunities for participation in the Inquiry. These include the Inquiry taking submissions from the public and undertaking consultation.

Copies of the press releases related to the announcements above are available from the Inquiry website at <http://fueltaxinquiry.treasury.gov.au>.

The Inquiry is due to report to the Government in March 2002.

¹ This was one of a number of Government decisions that related to fuel taxation, including a 1.5 cents per litre cut in fuel excise, abolition of indexation of fuel excise rates and asking the Australian Competition and Consumer Commission to examine the feasibility of placing limitations on petrol and diesel retail price fluctuations.

1.3 Outline of the Issues Paper

This paper is in seven parts. The remaining parts of the paper are as follows:

- Part 2 outlines the Inquiry processes and summarises the terms of reference, which are shown in full on the inside front cover of this paper;
- Part 3 provides an overview of fuel taxation objectives;
- Part 4 provides an overview of the role of fuel in the Australian economy;
- Part 5 addresses that section of the terms of reference relating to issues which the Inquiry is asked to **examine**:
 - the existing structure of Australia’s taxation of fuel and associated rebates, subsidies and grants at both Commonwealth and State levels;
- Part 6 addresses that section of the terms of reference relating to issues on which the Inquiry is asked to **report**:
 - resource allocation, environmental outcomes and the interplay between fuel taxation and petroleum pricing, cost structures and marketing arrangements; and
- Part 7 addresses that section of the terms of reference relating to issues to which the Inquiry is asked to **have regard**:
 - covering a range of issues including economic impacts and the welfare of regional, rural and remote communities.

1.4 Issues on which the Inquiry seeks comment

The Inquiry seeks specific comment on a number of matters which are set out in the following Parts of the paper:

- the role of fuel in the economy (Part 4, Box 4.1);
- administration and *Measures for a Better Environment* (Part 5, Box 5.3);
- resource allocation, environment, pricing (Part 6, Box 6.1); and
- the economy, regional, rural and remote communities, consumers, externalities and government revenue (Part 7).

PART 2: THE INQUIRY PROCESSES

2.1 The terms of reference – key tasks

The terms of reference outline three key tasks for the Inquiry:

- to **examine** the total existing structure of Commonwealth and State² fuel taxation and related rebates, subsidies and grants, including the proposed Energy Grants (Credits) Scheme (terms of reference paragraph 1)
- to **report** on the implications of the existing arrangements for:
 - the economy, environment, the interplay between petroleum taxation and petroleum pricing, cost structures and marketing arrangements;
 - options available to government to reduce or eliminate any adverse effects of existing arrangements and to improve relevant administration arrangements (terms of reference paragraph 4); and
- in making any recommendations, the Inquiry is:
 - bound by Government commitments to maintain the benefits of current fuel rebates, subsidies and grants; not to consider long-term real increases in the effective level of diesel or petrol taxes; by the Government's wish to achieve overall budget neutrality
 - to **have regard** to impacts on various sectors of the Australian community (terms of reference paragraphs 2, 3, 5 and 6).

The key elements of the terms of reference are summarised in Diagram 2.1.

2.2 The terms of reference – scope

In making submissions to the Inquiry, consideration should be given to the scope of issues both covered by and excluded from the terms of reference.

Key elements **within the scope** of the Inquiry include:

² In this paper reference to State means both State and Territory governments.

Part 2: The Inquiry processes

- fuel taxation, rebates, subsidies and grants, including administration arrangements at both Commonwealth and State levels;
- examination of the proposed Energy Grants (Credits) Scheme to commence from 1 July 2002 (replacing the existing Diesel Fuel Rebate Scheme and the Diesel and Alternative Fuels Grants Scheme):
 - the Inquiry will not impact upon the Government’s commitment that the Energy Grants (Credits) Scheme will maintain benefits equivalent to those available under the two existing schemes; and
- the interplay between fuel taxation and petroleum pricing, cost structures and marketing arrangements:
 - the terms of reference specifically ask the Inquiry to report only on the *interplay* between the tax system and these related issues
 - the Inquiry is required to examine the relationship between tax and pricing, broader influences are the subject of a separate examination by the Australian Competition and Consumer Commission.

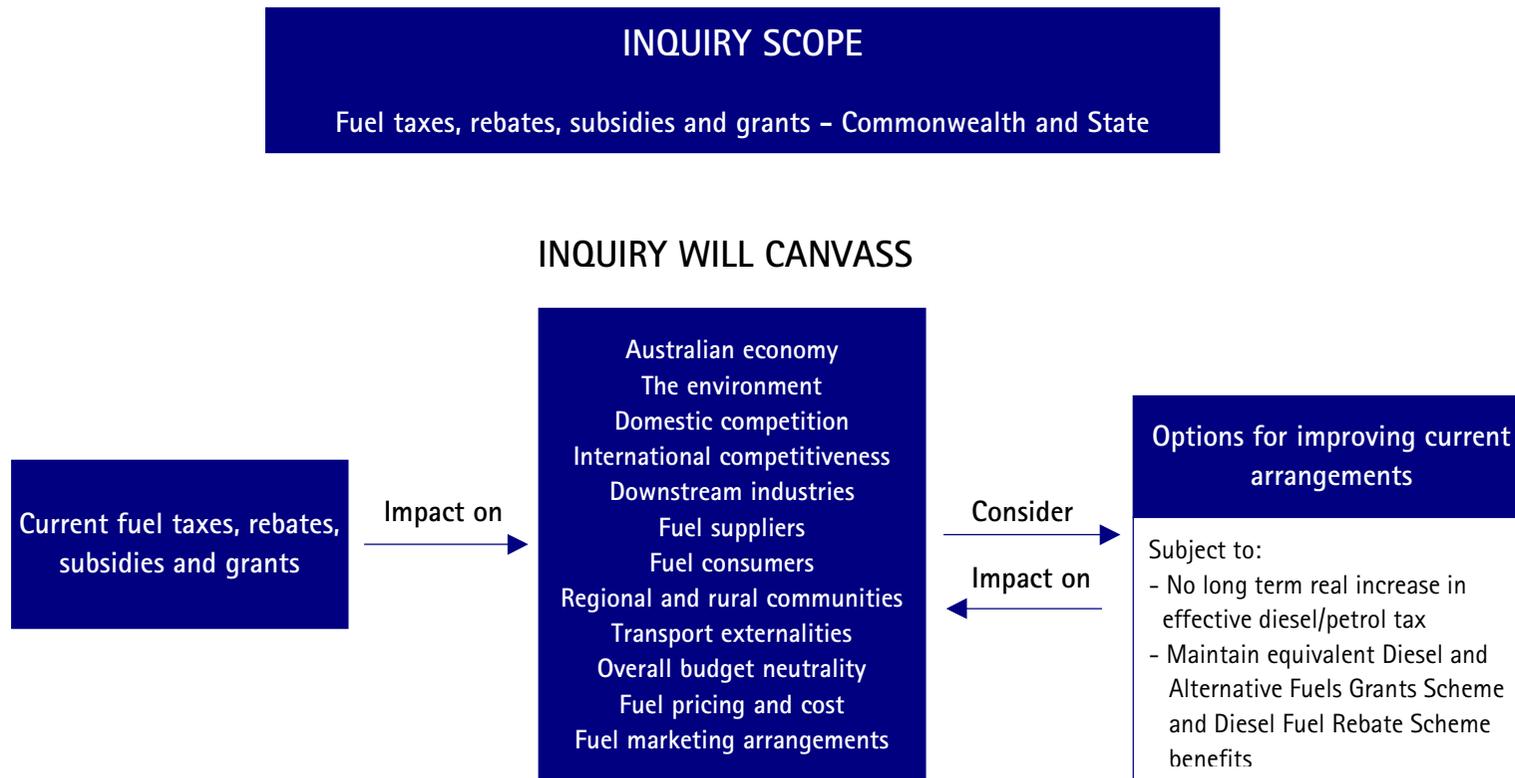
Specific issues **excluded** from examination by the terms of reference include:

- commercial electricity generation — the Inquiry will examine how fuel is taxed according to its use ‘*but not for commercial electricity generation*’;
- income tax arrangements (including royalties and the Petroleum Resource Rent Tax) and the crude oil excise; and
- options involving long-term real increases in the effective level of diesel or petrol taxes paid by business or private consumers.

The Inquiry is also asked to **have regard** to a number of issues, including:

- the Government’s wish to achieve overall budget neutrality in relation to petroleum products — *budget neutrality* refers to the combined effect of revenue and expense measures whereas *revenue neutrality* refers to revenue measures alone;
- the use of fuel that would deliver better air quality and contribute to greenhouse objectives — while the Inquiry will examine the relationship between fuel use and greenhouse objectives, it is not the role of the Inquiry to develop a greenhouse policy response; and
- the welfare of regional, rural and remote communities.

Diagram 2.1: Key elements of the Terms of Reference



2.3 Making a submission to the Inquiry

Submissions to the Inquiry should be received by the Inquiry Secretariat no later than **30 September 2001**.

The Inquiry is intending to make submissions publicly available in a number of formats on the Inquiry's website, except for commercial-in-confidence or other confidential material provided as part of a submission. **Please clearly mark any confidential material or indicate clearly if you do not wish your submission to be made public.**

It would be helpful if the Inquiry could be provided with a signed original of the submission, together with an electronic version on a diskette or as an attachment to an email message. It would be appreciated if virus scanning of both electronic versions or diskettes is undertaken before sending.

Interested parties are encouraged to make use of the Inquiry Website and email address in making submissions.

The Inquiry website is: <http://fueltaxinquiry.treasury.gov.au>.

The Inquiry email address is: fueltaxinquiry@treasury.gov.au.

Printed documents may be sent to the Inquiry by mail or fax to:

Secretary
Fuel Taxation Inquiry
C/- Department of the Treasury
Langton Crescent
PARKES ACT 2600
Fax: 02 6263 4312

2.4 Consultation

The Inquiry has already held preliminary meetings with some interested groups to gain an understanding of the issues that are likely to be raised in submissions.

Following the final date for lodgment of submissions (30 September 2001), the Inquiry will be undertaking further consultation, the timing and arrangements for which will be announced after submissions have been received.

PART 3: OVERVIEW OF FUEL TAXATION OBJECTIVES

This part provides an overview of some of the objectives often put forward for imposing specific taxes on fuel and the factors that need to be taken into account in assessing the appropriateness of these objectives.

3.1 Fuel taxation as a source of revenue

The principal reason for governments imposing taxes is raising revenue to fund the provision of services to the public.

This revenue may be raised by imposing taxes on income (such as wages and salaries or company profits) or on consumption through taxes imposed directly on goods and services.

Taxation of fuel, particularly petroleum products, is widely considered an efficient means of raising government revenue because fuel is widely used by the community and compared with many other goods, its level of consumption is not generally affected by changes in price. This makes it a relatively stable and reliable source of revenue to fund the range of services provided by governments. Furthermore, the administrative framework required to collect specific fuel taxes is relatively less onerous than for other taxes. Typically, there are only a small number of manufacturers legally required to remit the majority of fuel taxes, reflecting the concentrated nature of the industry.

The characteristics of fuel use that make fuel taxation a reliable source of revenue reflect the importance of fuel as an input to the production and distribution of goods and services and therefore to the economy and economic activity more generally.

Governments may seek to reduce the costs of fuel use in particular sectors, such as primary production or transport, or the costs of particular forms of fuel use such as off-road use. This may be achieved through rebate, subsidy or grant schemes.

3.2 Other possible objectives of fuel taxation

In raising revenue, governments also use taxation to achieve other policy objectives such as income redistribution, or influencing taxpayer behaviour in the consumption of particular goods and services.

Most modern economies rely on the market mechanism to determine economic behaviour, with individuals' choices determining the production of goods and services. This is because the market mechanism, operating efficiently, should ensure that goods and services are provided by producers in response to the diverse and changing needs of consumers.

The market should also ensure that prices charged for goods and services reflect their value to consumers. When this occurs, resources available in the economy for the production of goods and services would be allocated by the market to their most highly valued uses.

However, freely functioning markets will not always operate in a fully efficient manner and the outcomes desired by the community may not be achieved without some intervention from government.

For example, while prices should reflect the full cost of production and consumption, some prices do not always take into account all the positive or negative effects of producing or consuming goods. These 'spillover' effects, called externalities, are the impacts of consumption on others, which are not reflected in the price paid for the good or service consumed.

A range of costs often identified with fuel use is borne by the general community. In road transport, for example, the community mostly bears the cost of road construction and maintenance and reduced air quality from exhaust emissions, but individual fuel users gain the economic or social benefits of moving goods or people.

For example, the use of petrol in a motor vehicle pollutes the air enjoyed by the community, but there is no market value for air. In a freely functioning market without government intervention, the motorist does not pay the cost of polluting the air when using petrol. Rather, the community as a whole pays through reduced quality of life, possibly including impaired health and mortality.

In these circumstances, a freely functioning market may not produce the combination of goods and services most desired by the community. If a way could be found for the price of petrol to fully reflect the costs it imposes on the community from its use, consumers may choose other goods and services over petrol (for example, public transport).

There are several mechanisms available to governments to address the spillover costs of fuel use. These include:

- fuel taxes to increase the price of fuel;
- regulations, such as vehicle emissions standards; and
- other mechanisms, such as road tolls or charges imposed on people travelling in congested areas.

Importantly, a number of factors need to be considered in assessing the appropriateness of fuel taxation, or other policy measures to address the spillover costs of fuel use. These factors include:

- advances in technology (such as hybrid electric vehicles) or substitution of fuel that change the impact of fuel use (for example, impacts on air quality);
- the application of taxes directly linked to the cause of the spillover costs
 - for example, fuel taxes might not be the best response to road damage, because such damage is more closely related to the size of a vehicle and the distance it travels, rather than the amount of fuel it uses; and
- the net benefit of addressing spillover costs through government intervention, as intervention itself can impose costs:
 - governments need to take into account the possible costs of intervention, and ensure they are outweighed by the benefits.

In considering these factors, the Inquiry welcomes comments on the extent to which the community considers that fuel taxes are an appropriate mechanism to address the spillover costs of fuel use, or whether these costs should be addressed by other policy instruments. This is further discussed in Part 7.

PART 4: ROLE OF FUEL IN THE ECONOMY

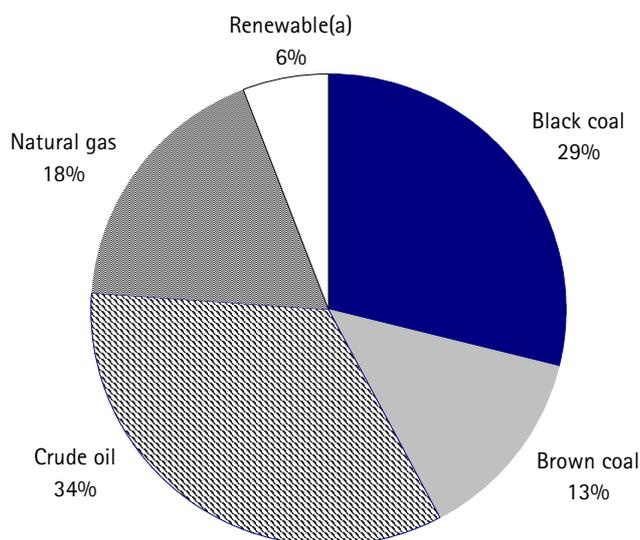
This part provides an overview of the importance of fuel in Australia. It examines which fuel types meet Australia's energy needs, the sectors that use particular fuel types and future oil supplies. Box 4.1 at the end of this part poses a number of questions on which the Inquiry seeks comment and views.

4.1 Which fuel types meet Australia's energy needs?

There are two broad categories of fuel types. *Primary* fuel types are sourced directly from nature, such as coal, crude oil, natural gas and renewable fuel types including hydro-electricity and solar energy. *Derived* fuel types, such as petrol and electricity, are produced from primary or other derived fuel by conversion processes. It is important to examine both fuel types to provide a complete picture of total fuel use in Australia.

Chart 4.1 shows that energy from coal and crude oil comprised around three-quarters of Australia's total energy use in 1997-98. These two primary fuel types are mostly converted to electricity and petroleum products, the latter mainly in the form of petrol and diesel.

Chart 4.1: Contribution to energy use by primary fuel type, 1997-98



(a) The major renewable fuels are hydro-electricity, bagasse (sugar cane waste) and wood.

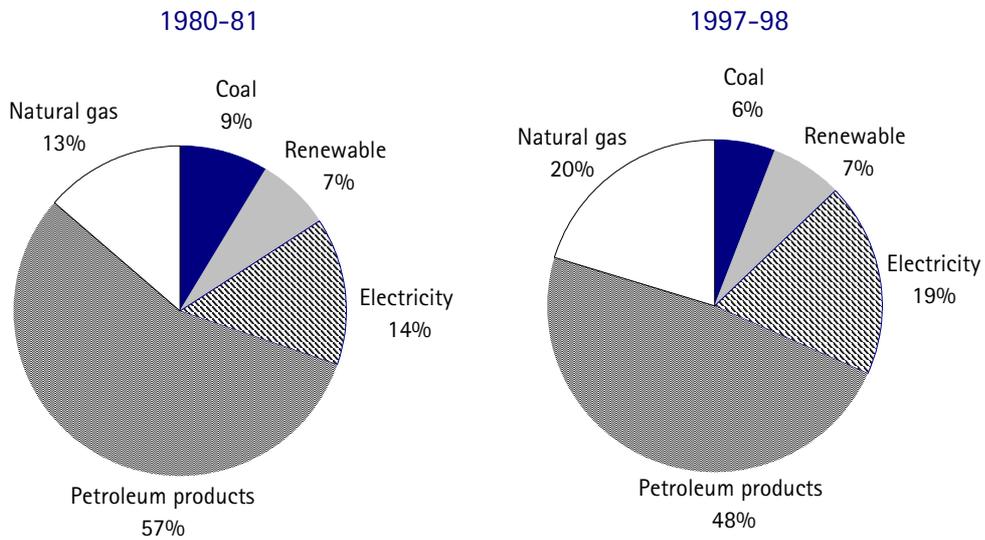
Source: Australian Bureau of Agricultural and Resource Economics, *Australian energy: market developments and projections to 2014-15*, AusInfo, 1999.

In some energy applications, most fuel types can be used as substitutes. For example, heating is commonly provided by electricity (generated from coal, natural gas or renewable sources), heating oil and natural gas. While petrol and diesel are the dominant fuel types used in internal combustion engines, there are a number of government programmes in place to encourage the use of natural gas and LPG in internal combustion engines (see Part 5).

The extent to which derived fuel types substitute for others has changed over time. For example, diesel and electric powered trains have replaced coal fired trains, and electric lights have replaced gas and kerosene lamps. Other changes will occur as technologies, incomes and policies change to make different fuel types preferable for economic or other reasons.

Chart 4.2 shows the contribution of derived fuel types to energy used by final consumers, in the forms that they are ultimately used. The chart shows that a major change between 1980-81 and 1997-98 was a shift in the contribution to energy use from petroleum products to natural gas, reflecting oil price shocks and the development of gas resources and pipelines. Gas also replaced oil products in boilers and kilns in manufacturing, and in cooking and heating appliances in residential and commercial sectors.

Chart 4.2: Contribution to energy use by final consumers by fuel type^(a)



(a) Coal includes coke, coal by-products and briquettes; renewable includes wood, bagasse (sugar cane waste) and solar; petroleum products includes LPG and crude oil; and natural gas includes town gas.
 Source: Australian Bureau of Agricultural and Resource Economics, *Australian energy: market developments and projections to 2014-15*.

4.2 Who uses fuel in Australia?

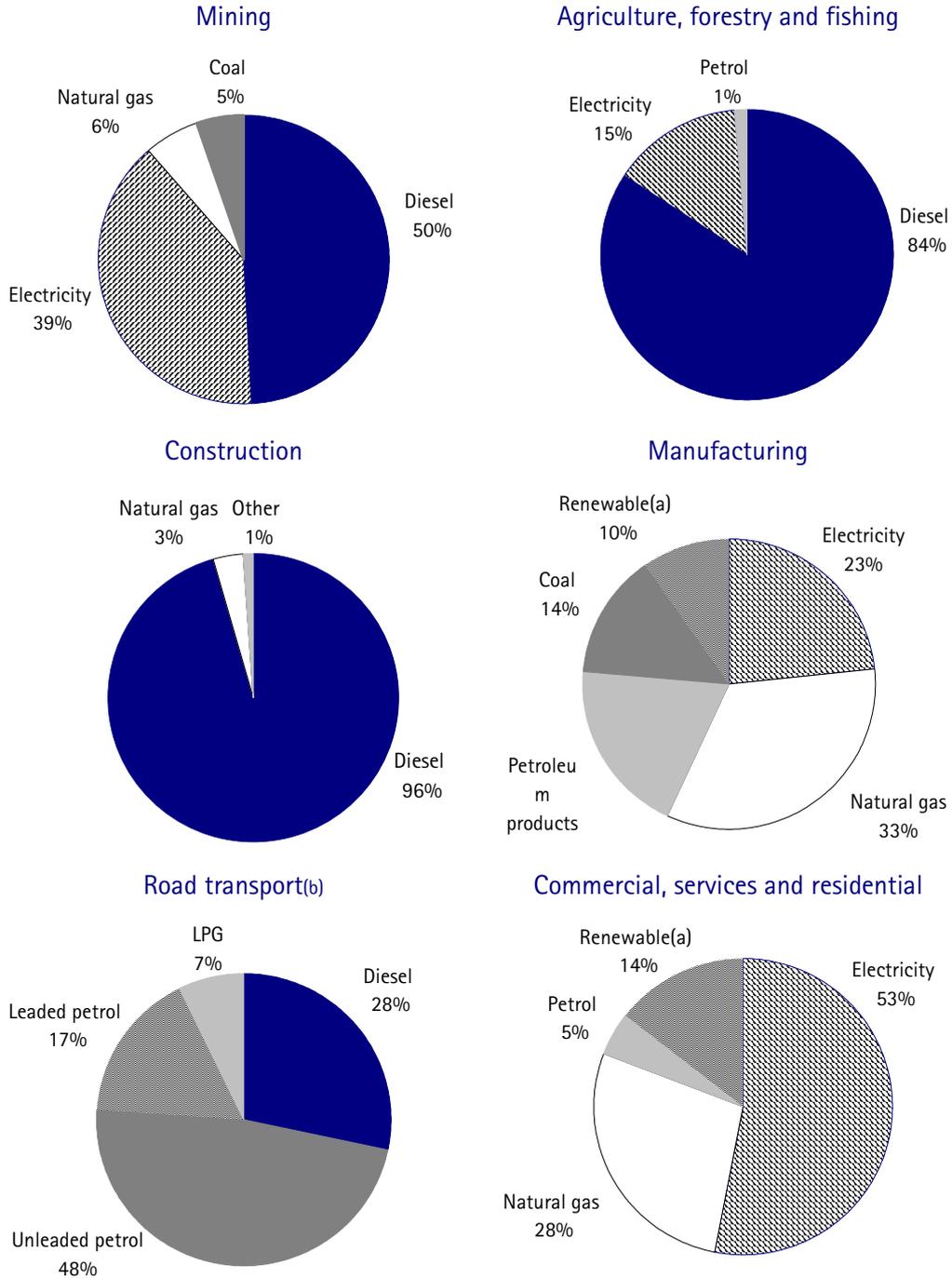
There is considerable variation between sectors in the types of fuel used to meet their energy needs. Chart 4.3 shows the contribution of derived fuel types to the energy needs of particular sectors in Australia in 1998-99. For many sectors, one type of fuel contributed to more than half that sector's energy use and in some cases, one type of fuel contributed to almost all of a sector's energy use.

Diesel contributed the largest share of energy use by the agriculture and construction sectors. Petroleum products also contributed the major share of energy use by the road transport sector (including private motor vehicles), with petrol contributing around 65 per cent and diesel 28 per cent. Electricity meets just over half the combined energy needs of the commercial, services and residential sectors. Natural gas accounts for a significant share of the energy needs of the manufacturing (33 per cent) and the combined commercial, services and residential sectors (28 per cent). The chart indicates that natural gas contributed only 6 per cent of the energy needs of the mining sector. However, this does not include the significant amounts of natural gas acquired by this sector to produce electricity.

The variation between sectors in the types of fuel used largely reflects differences in the types of applications for which energy is required. For example, there are currently few economic substitutes for petroleum products in an internal combustion engine. A wider range of fuels can be used for heating, for example, natural gas, heating oil, electricity and renewables. Hence sectors that require energy for heat have a wider range of fuel options.

As technology develops it is possible that fuel types which are not currently substitutable for petroleum products in certain uses may be so in the future. The taxation of all fuel types, as well as associated rebates, subsidies and grants, may be an important consideration in the development of these technologies and use of these fuels in the future.

Chart 4.3: Contribution to energy use by fuel type and sector, 1998-99



(a) Renewable includes wood, bagasse (sugar cane waste) and solar.

(b) Includes passenger motor vehicles.

Source: Australian Bureau of Agricultural and Resource Economics, *Australian energy: market developments and projections to 2014-15* and unpublished data (forthcoming).

4.3 Oil supply

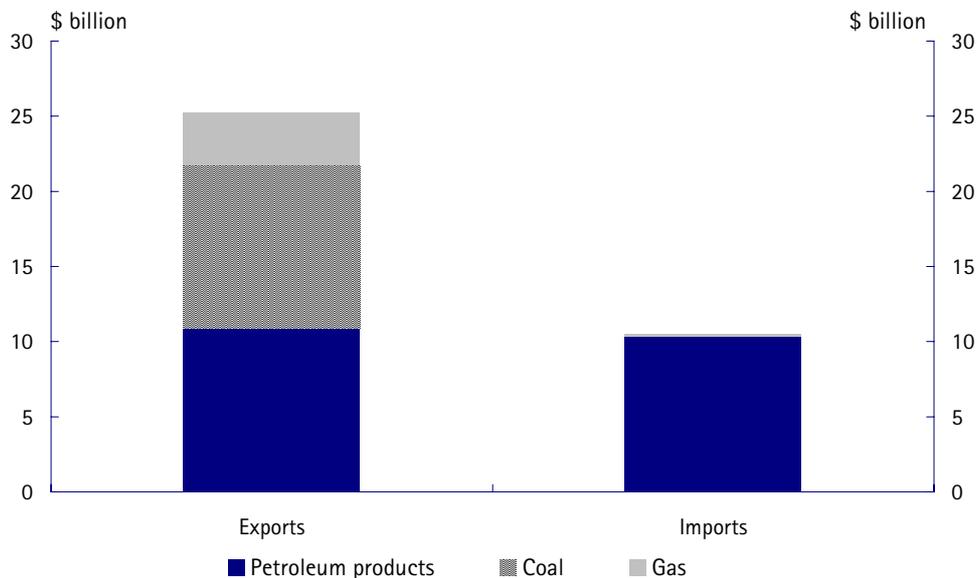
4.3.1 Imports and exports

Chart 4.4 shows the position of Australia's trade in fuel products. In 2000-01, exports of these products were around \$25.2 billion and accounted for around 21.1 per cent of the value of Australia's merchandise exports. Both coal and petroleum products accounted for around 43 per cent each of Australia's exports of fuel products.

In 2000-01, imports of fuel products were around \$10.5 billion and accounted for around 8.9 per cent of the value of Australia's merchandise imports. Almost the total value of Australia's fuel product imports (98 per cent) was attributable to petroleum products.

Even though Australia exports significant quantities of crude oil, Australian refiners also import significant quantities. This is because different types of crude oil are needed to produce the range of petroleum products sought by consumers. Australian crude oils tend to be light which makes them less suitable to produce some refined products, such as diesel and kerosene. In recent years, around 40 per cent of the crude oil used in Australian refineries has been sourced from Australian oil fields.

Chart 4.4: Australia's trade in fuel products, 2000-01



Source: Australian Bureau of Statistics Cat. No. 5422.0.

4.3.2 Future crude oil supplies

A recent study by the Royal Institute of International Affairs canvassed the issue of long-term oil supply.³ The study found that since 1980, world oil discoveries have been outstripped by world production. It notes that there is debate as to the longevity of world conventional oil production,⁴ though forecasts of peak production vary from as soon as 2010 to as far off as 2030.⁵ The International Energy Agency (IEA) expects conventional oil production to peak between 2010 and 2020.⁶

These estimates include assumptions about the price of oil over the forecast period. The amount of oil available is strongly dependent on price. If price levels increase it becomes economic to spend more on exploration and to use techniques to extract a higher proportion of oil from existing reserves. It also becomes more economic to exploit the known large reserves of so-called unconventional oil resources, such as heavy oil and oil sands or to convert natural gas to liquid fuels. The study concludes that, on balance, resources will not be a key constraint on world oil demand up to 2020. It quotes the IEA as stating 'more important are the political, economic and environmental circumstances that could shape developments in oil supply and demand'.⁷

Policies to reduce oil consumption after the price shocks of 1973 and 1979 led to reductions in oil use in many OECD economies from 1980 to 1990. Energy efficiency increased due to conservation and technology advances. Oil use has become increasingly concentrated in sectors such as transport, for which alternative sources of energy are less readily available, while oil used for electricity generation was replaced by nuclear energy, coal, and gas. Although Australia currently has, on balance, a high level of self-sufficiency in oil production, the current reserves of 3.43 billion barrels are less than required to maintain present levels of production in the medium term. Estimates of future production of oil and condensate suggest that without further exploration activity, production rates will decline by 33 per cent by 2005, and 50 per cent by 2010.⁸

3 Mitchell, J., Morita, K., Selley, N., and Stern, J., *The New Economy of Oil — Impacts on Business, Geopolitics and Society*, The Royal Institute of International Affairs, 2001, p. 52.

4 As per the International Energy Agency's definition, oil is considered conventional if it is produced from underground hydrocarbon reservoirs by means of production wells and/or if it does not need additional processing to produce synthetic crude.

5 Production forecasts are canvassed in Mitchell et al., *The New Economy of Oil*, pp. 37-47.

6 Mitchell et al., *The New Economy of Oil*, p. 58.

7 Mitchell et al., *The New Economy of Oil*, p. 60.

8 Powell, T., 'Understanding Australia's petroleum resources, future production trends and the role of frontiers', *APPEA Journal*, 41 part 1, pp. 273-88.

Box 4.1: Issues on which the Inquiry seeks comment

The Inquiry is interested in the community's views on how the current *fuel tax, rebate, subsidy and grant arrangements* influence fuel use decisions.

Business and consumers

To what extent, if any, do these arrangements affect the following decisions:

- total use of fuel?
- the use of particular fuel types both now and in the future?
- the use of particular technologies now and in the future (eg the type of motor vehicle purchased, or heating appliance purchased)?

Petroleum producers and distributors

To what extent do the current arrangements affect decisions to produce and import fuel types, both now and in the future?

Manufacturers of fuel based engines and appliances

To what extent do current arrangements affect medium and long-term production decisions (eg motor vehicle technology or heating appliances)?

What is the scope to substitute other transport fuels for petrol and diesel?

- To what extent is this likely to change in the future?

What is the scope in other sectors to substitute other fuel for petrol and diesel?

- To what extent is this likely to occur in the future?

Is the price elasticity of petrol and diesel used in transport similar to petrol and diesel used by other sectors?

Oil supply

What is the likely trend in Australia's production, imports and exports of crude oil and petroleum products in the medium and long-term? What implications, if any, should this have for government policy on fuel taxation, rebates, subsidies and grants?

PART 5: FUEL TAXATION IN AUSTRALIA

The Inquiry is requested to examine the total existing structure of Commonwealth and State taxation of petroleum products, and petroleum substitute products, particularly for transport and off road use (but not for commercial electricity generation) and related rebates, subsidies and grants, including the proposed Energy Grants (Credits) Scheme and other fuel related measures proposed as part of 'Measures for a Better Environment'.

Terms of reference, paragraph 1

The inquiry will report on:...the options available to the government to reduce the cost or improve the effectiveness of the administration of the existing and proposed arrangements, for industry and consumers.

Terms of reference, paragraph 4(d)

5.1 Fuel taxation

The main form of fuel taxation in Australia is Commonwealth excise. This is currently levied on *petroleum products*.⁹ Other fuel taxes levied by the Commonwealth within the scope of the Inquiry are:

- customs duty: while excise is a tax on the domestic production of goods, customs duty is levied on similar *imported* products; and
- Goods and Services Tax (GST): is a broad based consumption tax levied at an *ad valorem* rate of 10 per cent applying to *all fuel products* sold in Australia; all GST revenue is transferred to the States.

Section 90 of the Constitution reserves to the Commonwealth the power to levy excise. In the past the States, excluding Queensland, levied certain fees on petroleum products, including by way of business franchise fees. However, laws allowing collection of such fees were cast into doubt by the High Court on 5 August 1997.¹⁰

⁹ The main petroleum products are diesel and fuel oil, petrol, heating oil and kerosene, aviation fuel and condensate.

¹⁰ *Ha and Lim v State of New South Wales & ors; Walter Hammond & Associates v State of New South Wales & ors*, High Court of Australia, 5 August 1997, Matter No. S45 of 1996.

From 6 August 1997, at the request of the States, the Commonwealth adjusted excise rates (on tobacco and petroleum products) and wholesale sales tax (on liquor) to fund revenue replacement payments to the States for the loss of business franchise fees. Whilst revenue replacement payments were formally abolished from 1 July 2000, as part of *The New Tax System*, the States still receive the equivalent amount of revenue from fuel revenue replacement payments as they did prior to taxation reform. This is because the Commonwealth guaranteed that in each of the transitional years following the introduction of taxation reform, the States would be no worse off than had the reforms to Commonwealth-State financial relations not been implemented.

5.1.1 Excise contribution to Commonwealth revenue

Excise raised almost \$12 billion¹¹ in 2000-01, while customs duty contributed around \$45 million. Table 5.1 shows that the contribution of excise as a share of Commonwealth revenue has changed little over the last 15 years.

Table 5.1: Fuel excise collections, 1986-87 to 2001-02

Year	Excise collections (\$m)(a)	Share of C'wealth revenue (%)	Year	Excise collections (\$m)(a)	Share of C'wealth revenue (%)
1986-87	5 217	7.1	1994-95	9 406	8.6
1987-88	5 426	6.7	1995-96	10 224	8.4
1988-89	5 828	6.6	1996-97	10 543	8.1
1989-90	6 416	6.7	1997-98(b)	10 895	8.0
1990-91	6 642	6.8	1998-99(b)	10 974	7.5
1991-92	7 093	7.6	1999-2000(b)	11 189	6.7
1992-93	7 200	7.6	2000-01(c)	11 907	7.5
1993-94	8 499	8.5	2001-02(c)(d)	12 190	7.5

(a) Does not include crude oil excise and excludes the Diesel Fuel Rebate Scheme.

(b) Does not include excise collections on behalf of State Governments as a replacement for business franchise fees.

(c) Does not include GST collected from fuel.

(d) Estimate.

Source: *Budget Paper No. 1 2001-02*, AusInfo, 22 May 2001, and prior year budget papers.

¹¹ Around \$1 billion of this excise revenue was collected from fuel imported for further manufacture, including blending with domestic fuel.

5.1.2 Legislative framework

The key pieces of Commonwealth legislation relating to excise are:

- the *Excise Act 1901* and its Regulations;
- the *Excise Tariff Act 1921*; and
- the various Fuel (Penalty Surcharge) Acts 1997.

The Excise Act sets up the basic excise regime, while the Excise Tariff Act defines the products to which excise is applicable and sets out the rates of duty. The Fuel (Penalty Surcharge) Acts extend the legislative framework beyond the point where the power of the Excise Act effectively ends (ie when a product is removed from the licensed premises of an excise manufacturer).

5.1.3 Excise administration arrangements

Responsibility for excise collection was transferred to the Australian Taxation Office (ATO) from the Australian Customs Service (Customs) in 1998. The ATO also administers the collection of GST. Customs administers the collection of customs duty on similar imported petroleum products. In practice the vast majority of imported product is actually entered via the excise system for further blending and manufacturing.¹²

All excisable goods are defined in the Excise Tariff Act, with excise rates mirrored in the customs tariff for imports of the same type of goods. A manufacturer of excisable goods is required under the Excise Act to be licensed, and is only entitled to manufacture products named in the licence at specified premises.

Duty is collected when excisable goods are 'entered for home consumption', which normally means when they are removed from the licensed premises of the excise manufacturer and are available for sale. Liability for duty is usually deferred by the manufacturer and paid weekly by obtaining a 'periodic settlement' permission. Until duty is paid, the goods remain under the control of the ATO. Underbond goods (goods on which duty has not been paid) must be stored in licensed premises or in approved places. Permission must be obtained for any movement of goods in or out of such premises.

¹² Under excise legislation blending is constituted as part of the manufacturing process. Therefore product imported for the purpose of blending with domestic product attracts an excise duty rather than a customs duty.

5.1.4 Current fuel excise rates

Table 5.2 shows the current rates of excise for petroleum products along with specific other fuels that have been listed in the tariff with a zero rate of excise. Table 5.3 shows estimated Commonwealth excise collections in 2001-02.

Table 5.2: Fuel excise rates as at 1 August 2001 (cents per litre)

Product(a)	Engine Use	Burner Use	Other(b)
Petrol – leaded / unleaded(c)	40.516 / 38.143	40.516 / 38.143	Aircraft fuel 2.808
Diesel	38.143	38.143	(b)
Kerosene(c)	38.143	7.557	Aircraft fuel 2.845
Heating oil	38.143	7.557	(b)
Fuel oil(d)	7.557	7.557	7.557
Condensate	38.143	7.557	(b)
Stabilised crude and topped crude	38.143	7.557	(b)
Other refined products	38.143	7.557	(b)
Coal tar and coke oven distillates – leaded / unleaded	40.516 / 38.143	40.516 / 38.143	40.516 / 38.143
Petroleum based oils and lubricants (not for fuel use)	(e)	(e)	5.299
LPG	0	0	0
Ethanol(f)	0	0	0

- (a) For some products the excise payable may be refunded or remitted (refer section 5.1.5).
 (b) A number of 'other uses' are prescribed in excise legislation for most products. Where more than one rate applies for 'other use' per product, no rate has been given (except for aviation fuel rates).
 (c) Excise collected on aviation fuel is hypothecated to the Civil Aviation Safety Authority and Airservices Australia for provision of aviation services such as traffic control, navigation and air safety regulation.
 (d) Fuel oils are typically heavy fuels not suited for use in vehicle engines. The properties of fuel oil for the purpose of excise are defined in subsection 3(4) of the *Excise Tariff Act 1921*.
 (e) The excise rate for these products only applies to use other than as a fuel (eg as a lubricant).
 (f) The excise status of other alternative fuels under the current legislation is being determined.
 Source: Australian Taxation Office information drawn from *Excise Tariff Act 1921, The Schedule*.

Table 5.3: Estimated Commonwealth excise collections, 2001-02 (\$m)

Unleaded petrol(a)	Leaded petrol(b)	Diesel	Other(c)	Total(d)
7 025	2	5 035	128	12 190

- (a) Includes lead replacement petrol.
 (b) Leaded petrol will be phased out nationally by 1 January 2002. States may phase it out sooner.
 (c) Includes aviation gasoline, aviation turbine fuel, fuel oil, heating oil and kerosene.
 (d) Excludes crude oil excise.

Source: *Budget Paper No.1 2001-02*, AusInfo, 22 May 2001.

Box 5.1: Some key events in the history of fuel excise

1929-1959 Excise on petrol was introduced to finance road funding. The revenue was hypothecated for this purpose until 1959.

1957 Excise was applied to diesel for the first time (for on-road use only) reflecting the hypothecation of all excise to road funding. Excise was not applied to diesel used in off-road activities.

1982 With the introduction of the Diesel Fuel Rebate Scheme all off-road users of diesel were required to pay excise, however some were eligible to claim for a partial or full rebate.

A surcharge of one cent per litre (cpl) was introduced to establish a roads programme under the *Australian Bicentennial Road Development Trust Fund Act 1982*. Under this and other road funding legislation, the component of fuel excise directly linked to road expenditure varied during the 1980s (up to around 6 cpl).

1983 Indexation, in line with movements in the Consumer Price Index, was introduced for petroleum excise rates to maintain the real value of excise collections.

1992 Since 1992, successive Federal Governments have established road funding levels solely in the budget process and there has been no effective link between fuel excise and road expenditure.

1997 The High Court cast doubt on the constitutional validity of State business franchise fees.

2000 The rate of excise on petrol and diesel was cut by 6.656 cpl with the introduction of *The New Tax System*.

2001 The excise rate was cut by 1.5 cpl and indexation of petroleum products excise rates was abolished.¹³

¹³ The 1.5 cpl excise reduction applied to all uses of petroleum fuels that attracted the full rate of excise duty, with products attracting a concessional rate receiving a proportional reduction. Abolition of indexation applied to all petroleum fuels with the exception of lubricants.

5.1.5 Structure of the excise tariff

The structure of the excise tariff (and similarly the customs tariff) has evolved as a result of the policy objectives of successive governments (refer Box 5.1). This is reflected in the varying rates applying to different petroleum products and for different uses of the same product (Table 5.2).

Concessional system

The current tariff structure has established a concessional system whereby certain products are either taxed at a lower rate when used as a fuel for industrial purposes or do not attract any excise when used other than as a fuel. These two instances are referred to as concessional use.

This concessional system generally applies to fuel as follows:

- products used as a fuel in an internal combustion engine (ICE) (such as petrol and diesel) are taxed at the full rate of excise;
- products used as fuel, other than in an ICE (eg heating oil and kerosene for industrial purposes) are taxed at a concessional rate;¹⁴and
- products not used as a fuel (eg solvents) are excise free as are certain alternative fuels (including LPG and ethanol).

A number of remission and refund provisions are also set out in the excise regulations that reduce excise for certain industries and for prescribed uses of petroleum products. Like the excise tariff, these provisions have developed over a number of years for various policy reasons.

In addition to the concessional system built into the tariff structure, various other mechanisms have been implemented in the form of rebates, subsidies and grants to provide reductions in the cost to consumers of petroleum products (and fuel more generally).

Fuel substitution issues

The current tariff structure potentially provides incentives to substitute concessionally taxed products in applications that attract a higher excise rate.

14 With the exception of petrol, diesel and coal tar and coke oven distillates that attract the full rate of excise for all uses. This was introduced to combat fuel substitution.

A number of measures have been put in place over the past few years to combat these fuel substitution practices. These include:

- the marker regime for concessional product;
- restructure of the tariff to remove petrol and diesel concessional rates; and
- the application of conditions to ‘weekly settlement’ and ‘underbond movement’ permissions to assist in achieving better compliance levels.

The marker regime and the remissions system

In 1998 legislation came into effect requiring the addition of a chemical marker to concessional fuel sold in bulk. Fuel that attracts the full rate of excise can then be tested for presence of the marker to ensure that the correct amount of excise has been paid. Some exceptions to this regime exist where the addition of the marker will adversely affect the product. As a result, a ‘remission system’ has been put in place where permission is granted for excise to be remitted at the time of entry for home consumption on the basis of end use.

The fact that some concessional products are exempt from containing the marker means there is still risk of continued substitution activity — where unmarked concessional product can be used (or blended with petrol or diesel) for use in an internal combustion engine.

The marker regime (and associated remission system) has introduced an excise compliance burden on those who legitimately deal in concessional product. Until the new fuel substitution measures were brought in it was not necessary to be licensed or to lodge entries detailing the petroleum products manufactured. The fuel substitution measures and the marker regime place responsibility on industry to be aware of the ultimate end use of concessional products that they sell.

5.1.6 Wider fuel taxation administration issues

Consistency of administration

The separation of administration of excise and customs duty for ‘like’ imported petroleum products has brought about two administrative agencies that have different legislation, powers and systems to enforce compliance. This has the potential to create inconsistencies in the system, fuel substitution practices and costs for those complying with different systems.

Alternative fuels

Recently, the ATO has received a marked increase in the level of enquiries on the taxation treatment of alternative fuels. These enquiries are generally made during a product's research and development to determine the effect of taxation on its cost effectiveness.

Classification of new alternative fuels can be time consuming for both business and administrators due to the research necessary to assess the composition of the fuel and determine how it should be classified within the excise tariff. This largely reflects the capacity of the legislative framework to keep pace with rapid developments in the fuel market.

5.2 Rebates, subsidies and grants

The terms 'rebates, subsidies and grants' are often used interchangeably in relation to the descriptions of government programmes. When looked at individually, each has specific meaning in terms of its economic impact and legislative intent. For example, a grant may or may not have a direct relationship to the amount of tax paid depending on the objective of the grant, whereas a rebate is specifically tied to an amount of tax paid and can only be up to 100 per cent of that amount.

In this section, a rebate includes government measures directly related to fuel products that have the intention of offsetting the tax levied on those products. Subsidies and grants include government measures aimed at reducing the cost of fuel to consumers or aimed at influencing fuel use.

This section covers the main rebates, subsidies and grants provided at both Commonwealth and State levels.

5.2.1 Commonwealth rebates, subsidies and grants

The Commonwealth has allocated \$2.9 billion in funding for fuel-related rebates, subsidies and grants in 2001-02. The main programmes are summarised in Table 5.4.

Diesel Fuel Rebate Scheme

This scheme offsets the excise on diesel and like fuels used off-road for particular purposes by providing a full rebate of excise and customs duty. It is administered by the ATO under the *Excise Act 1901*.

Table 5.4: Overview of Commonwealth fuel rebates, subsidies and grants

	Diesel Fuel Rebate Scheme	Diesel and Alternative Fuels Grants Scheme	Fuel Sales Grants Scheme	Petroleum Products Freight Subsidy Scheme
Estimated funding 2001-02(\$m)	1 980	665(a)	210	3.5
Number of claimants(b)	136 742	53 335	4 700	22
Paid to	End users	End users	Fuel retailers	Fuel distributors
Eligibility	<ul style="list-style-type: none"> Certain off-road activities primarily within mining, primary industry, marine and rail transport and hospitals and nursing homes 	<ul style="list-style-type: none"> On-road use in vehicles 4.5 tonnes and over Excludes metropolitan use for certain vehicle size and type 	<ul style="list-style-type: none"> Non-metropolitan and remote areas only 	<ul style="list-style-type: none"> Non-metropolitan Must be distributors of certain petroleum products Incurred transport costs must be above an average amount
Main fuels covered	<ul style="list-style-type: none"> Diesel Fuel oils 	<ul style="list-style-type: none"> Diesel Ethanol(c) Compressed Natural Gas(c) Liquefied Petroleum Gas(c) 	<ul style="list-style-type: none"> Diesel Petrol 	<ul style="list-style-type: none"> Diesel Petrol Aviation gasoline Aviation turbine fuel
Policy objectives contributing to overall scheme intent	<ul style="list-style-type: none"> Rebate of tax for main export industries such as primary, mining; as well as off-road transport Certain community and social welfare benefits 	<ul style="list-style-type: none"> Transport cost reduction Addressing environmental concerns relating to emissions from diesel use within metropolitan areas 	<ul style="list-style-type: none"> Maintain regional and metropolitan price relativities on the introduction of the GST 	<ul style="list-style-type: none"> Transport cost reduction with the aim of lower fuel prices for remote Australia
Benefit	Rebate of excise: <ul style="list-style-type: none"> diesel – 38.143 cpl like fuels – 7.557 cpl 	Fuel grant: <ul style="list-style-type: none"> diesel – 18.510 cpl ethanol – 20.809 cpl CNG – 12.617 cents per m³ LPG – 11.925 cpl 	Fuel grant: <ul style="list-style-type: none"> regional Australia – 1 cpl remote Australia – 2 cpl remote where price exceeds \$1.21- 3 cpl 	Fuel subsidy: <ul style="list-style-type: none"> for transport costs incurred above an average amount known as the 'Customer Pays Margin' (refer section 5.2.1)

(a) Alternative fuel grants account for less than one per cent, based on 2000-01 payments.

(b) The number of claimants refers to users that had actually lodged claims as at July 2001.

(c) Fuels that do not attract an excise.

Source: Australian Taxation Office and AusIndustry (Petroleum Products Freight Subsidy Scheme).

The rationale for this scheme dates to the period when fuel excise revenue was hypothecated to fund road construction and all diesel fuel used off-road was exempt from excise when first applied in 1957. In 1982, due to administrative and eligibility concerns, the previous scheme for exemption from diesel excise was converted into the Diesel Fuel Rebate Scheme. Under the scheme all diesel users were required to pay excise, with some off-road users eligible to claim a full or partial rebate. Primary producers (agriculture, forestry and fishing), miners, users of diesel for heating, lighting, hot water, air-conditioning and cooking for domestic purposes, and at hospitals, nursing and aged care homes were eligible for the rebate. Primary producers received a full rebate of excise, while other categories were only eligible for a partial rebate.

The most significant change to the scheme in recent years was in 1998 when the Government announced its proposals for *The New Tax System*. This included an intention to extend the off-road scheme to include all off-road business use of diesel fuel. Subsequent negotiations with the Australian Democrats resulted in this extension being made to rail and marine transport only. However, activities that had previously only received a partial rebate were given a full rebate of excise (eg mining and residential activities). The scheme was also extended to include rebates for like fuels.

Issues around the administration of this scheme are largely associated with eligibility requirements. These have resulted from the interplay between detailed legislation and case law, particularly for the mining industry.

Diesel and Alternative Fuels Grants Scheme

This scheme was part of *The New Tax System* changes in July 2000 and is administered by the ATO under the *Diesel and Alternative Fuels Grants Scheme Act 1999*.

The scheme is intended to reduce transport costs to business and particularly to benefit regional Australia. It provides a grant of around 18.5 cpl for diesel and reduces the cost of alternative fuels such as ethanol, compressed natural gas and LPG to maintain previous price relativities with diesel.

Eligibility is for all business related on-road use of diesel and alternative fuels in vehicles over 20 tonnes gross vehicle mass. Eligibility for vehicles between 4.5 and 20 tonnes depends on where the journeys are undertaken and the type of transport service provided. The grant is not available for journeys solely within major metropolitan areas. However, journey restrictions do not apply to vehicles transporting passengers or goods solely on behalf of a primary production business, buses using alternative fuels, and emergency vehicles. The eligible journey restrictions are intended to address concerns about air quality in large metropolitan areas.

Like the Diesel Fuel Rebate Scheme, this scheme excludes certain activities from claiming the grant (in this case certain transport activities). Issues around administration predominantly relate to the records that must be kept by those recipients who operate smaller trucks and cross metropolitan boundaries.

The sectors directly receiving the Diesel Fuel Rebate and Diesel and Alternative Fuels Grants are shown in Table 5.5.

Table 5.5: Commonwealth rebate and grant claims by sector^(a)

		Mining	Agriculture	Transport(b)	Forestry and Fishing	Others(c)	Total
DFRS	% of claimants	3	88	1	6	2	100
	% of total \$ paid	48	28	14	8	2	100
DAFGS	% of claimants	1	18	35	1	45	100
	% of total \$ paid	1	2	56	1	40	100

(a) DFRS refers to Diesel Fuel Rebate Scheme and DAFGS refers to Diesel and Alternative Fuels Grants Scheme. Figures based on actual claims lodged as at July 2001.

(b) Transport means marine and rail transport for the purposes of the DFRS. The transport category includes storage for the purposes of the DAFGS.

(c) Others include commercial and residential uses, such as health services. In relation to DAFGS, large users in the Others category include construction, manufacturing, wholesaling and retailing, as well as claimants which have not nominated a sector.

Source: Australian Taxation Office.

Fuel Sales Grants Scheme

This scheme was introduced on 1 July 2000 as part of *The New Tax System*. It provides to registered retailers a grant of one cpl in non-metropolitan zones and two cpl in remote zones. There is an additional remote zone premium of one cpl where the fuel price is consistently over \$1.21 per litre.

The scheme is administered by the ATO under the *Fuel Sales Grants Act 2000* and the *Product Grants and Benefits Administration Act 2000*. The Australian Competition and Consumer Commission monitors how this subsidy is passed on to consumers.

Petroleum Products Freight Subsidy Scheme

This scheme was introduced in 1965 and is intended to reduce the price of eligible petroleum products in remote locations of Australia by reducing the freight component of the purchase price of fuel. The scheme subsidises the cost of transporting fuel to various points of sale in remote Australia to ensure that

purchasers do not pay more than a ‘customer pays margin’ (currently set at 15.3 cpl).¹⁵ Distributors receive refunds of freight costs over the customer pays margin if they undertake in writing to pass the benefits to retailers.

Other fuel-related rebates, subsidies and grants

The Product Stewardship (Oil) Scheme

This scheme was introduced as part of *Measures for a Better Environment* (refer section 5.3). It is intended to encourage the environmentally and economically sustainable reuse of waste oils by providing a benefit to oil recyclers for the appropriate treatment of waste oil products. The scheme involves a levy-benefit arrangement where a five cpl levy is paid by manufacturers of virgin oil and lubricants to fund benefit payments to recyclers. Recyclers are able to claim benefits at various rates, depending on the final product and end use. The scheme is administered by the ATO under the *Product Stewardship (Oil) Act 2000* and the *Product Grants and Benefits Administration Act 2000*.

Comgas

The Commonwealth, through the Office for Aboriginal and Torres Strait Islander Health, provides subsidies to fuel suppliers for the supply of Avgas to remote Aboriginal communities to replace petrol used in motor vehicles. These arrangements form part of a broader strategy to address petrol sniffing within Aboriginal and Torres Strait Islander communities. To date, some 31 communities in Central Australia, Western Australia, and the top end of the Northern Territory are using the Comgas Scheme.

Payments to shale oil producers

Under excise legislation, producers of naptha from shale mined in Australia are eligible to claim a payment for naptha that is used to produce unleaded petrol. Payment amounts are calculated by reference to the amount of excise duty payable on the volume of unleaded petrol that can be obtained from that naptha. This volume depends on the equipment used in manufacture, but is generally around 90 per cent.

There is currently only one producer of naptha from shale oil claiming this payment.

¹⁵ This margin was indexed to the Consumer Price Index from 1983 subject to annual Ministerial review. Discretionary increases of 4 cpl in both 1985 and 1987 were intended to restrict coverage to more remote locations. Indexation was not applied in 2000 and 2001.

5.2.2 State rebates, subsidies and grants

All states except the Australian Capital Territory offer subsidies for on-road use of diesel and, in most cases, petrol as illustrated in Table 5.6. The Western Australian Government also offers a grant of \$500 for the conversion of motor vehicles from petrol to LPG.

The various diesel and petrol subsidies are generally designed to be claimed back from State Revenue Offices by fuel distributors or retailers and bulk end users after sales have occurred.

5.3 Measures for a Better Environment

The Inquiry has been asked to examine the fuel-related measures included in the *Measures for a Better Environment* statement, announced by the Government in May 1999.

Some of these measures specifically concern fuel taxation. Some others target fuels via mechanisms other than taxation, while the remainder are expected to have an indirect effect on fuel.

There are various approaches to reducing emissions included in the measures, most focused on transport. Some are aimed at improving the environmental performance of conventional fuels by either changes in the quality of these fuels or the vehicles that use them. Others are aimed at encouraging the use of alternative fuels, either in transport or other applications.

The full list of measures is described at the following Internet address, http://www.pm.gov.au/news/media_releases/1999/changes3105.htm. The measures with most relevance to this Inquiry are briefly described in Box 5.2. Elements of *Measures for a Better Environment* that were incorporated into the Diesel Fuel Rebate Scheme and the Diesel and Alternative Fuels Grants Scheme are described in section 5.2.1.

Table 5.6: State fuel subsidies

Jurisdiction	Effective date(a)	Cost 2000-01 (\$m)(b)	On-road diesel subsidy (cpl)	Petrol subsidy (cpl)	
Northern New South Wales(c)	2000	32.9	1.67 to 8.35	1.67 to 8.35	
Victoria	1997	32.2	0.751	0.429	
Queensland	1997	443.7(d)	8.4(e)	8.4(e)	
Western Australia	2000	3.2	0.71(f)	Nil	
South Australia only in Zones 2,3(g)	1997	14.6	<u>Zone 3 only</u> 1.94	<u>LRP</u> 0.66(2) 3.17(3)	<u>ULP</u> 0.82(2) 3.33(3)
Tasmania	1997	9.5	1.99	1.95	
Northern Territory	2000	3.2	1.1	1.1	

- (a) In 1997, some jurisdictions introduced fuel subsidies to align their pre-existing regimes with the new Commonwealth excise arrangements. Some subsidies shown in this table date from that time while other jurisdictions introduced new schemes with *The New Tax System* after July 2000.
- (b) For NSW, Tasmania and the Northern Territory, 2000-01 figures do not reflect annual costs of the scheme but actual expenditure in 2000-01.
- (c) The NSW Government pays subsidies for five zones in Northern NSW to enable local sellers of petroleum products to compete with subsidised sellers in Queensland. The zonal subsidies decrease as the distance from the Queensland border increases.
- (d) This figure represents Queensland's estimated actual fuel subsidy payments in 2000-01 including payments made from July to October 2000 under the 1997 scheme. Payments under the new scheme commenced in December 2000.
- (e) The provisional up-front subsidy amount is 8.354 cpl; the remaining 0.046 cpl is a compensatory component towards administration costs.
- (f) This rate is indexed to Commonwealth fuel excise; 0.71 cpl applied from 1 March 2001.
- (g) The South Australian Government pays subsidies for two zones – between 50 km and 100 km from the Adelaide GPO excluding Yorke Peninsula (Zone 2) and over 100 km from the Adelaide GPO (Zone 3).

Source: State and Territory Revenue Offices.

Box 5.2: 'Measures for a Better Environment'

Higher emission standards for new vehicles and associated fuel requirements

More stringent emission standards for new petrol and diesel vehicles are to be progressively introduced from 2002 to 2006

Refer <http://www.dotrs.gov.au/land/environment/new-adrs.html>.

A programme of new petrol and diesel standards has been announced to lower sulphur levels in diesel and a range of other fuel standards to improve emissions.

Refer <http://www.ea.gov.au/atmosphere/transport/fuel/standardstable.html>

To encourage the earlier introduction of low sulphur diesel fuels, the excise payable on diesel fuel with sulphur content higher than 50 parts per million is proposed to increase by 1 cpl from 1 January 2003 and 2 cpl from 1 January 2004.

Subsidies to convert heavy vehicles to CNG and LPG

The \$75 million Alternative Fuels Conversions Programme funds up to 50 per cent of the additional cost to purchase new CNG or LPG buses or other commercial vehicles compared with their conventionally fuelled equivalent or up to 50 per cent of the cost to convert an existing conventionally fuelled vehicle to CNG or LPG.

Refer <http://www.greenhouse.gov.au/transport/afcp.html>.

Support to develop a Diesel National Environment Protection Measure (NEPM)

A Diesel NEPM was agreed by State and Commonwealth governments in June 2001 (refer <http://www.nepc.gov.au>). It provides strategies to reduce in-service vehicle emissions based on improved maintenance regimes, programmes to identify and repair faulty vehicles and to retrofit emission control devices. The Commonwealth has committed \$40 million to establish vehicle testing facilities to support State initiatives in this area.

The Renewable Remote Power Generation Programme

This programme uses the excise on diesel for commercial power generation to provide up to 50 per cent of the capital value of renewable energy systems. The terms of reference exclude fuel used for electricity generation. However, the Inquiry will consider how this programme is funded because of the requirement to have regard to any proposed changes on the welfare of regional, rural and remote communities.

A \$400 million Greenhouse gas abatement programme

Eleven projects involving \$102 million of Government support have been approved to date. While this programme is open to all sectors, two of these projects are intended to promote the use of ethanol as a transport fuel.

The Energy Grants (Credits) Scheme

This scheme is intended to replace the Diesel and Alternative Fuels Grants Scheme and the Diesel Fuel Rebate Scheme from July 2002. The scheme's purpose will be to provide active encouragement for the move to the use of cleaner fuels by measures additional to those under the two existing schemes, while maintaining entitlements that are equivalent to the existing schemes.

Box 5.3: Issues on which the Inquiry seeks comment

The Inquiry is asked to report on options to reduce the cost or improve the effectiveness of the administration of existing and proposed arrangements.

General administration

The Inquiry is interested in community views on the current administration arrangements for fuel taxes, rebates, subsidies and grants, in particular:

- compliance costs and the reasons for these costs;
- the interaction, if any, between Commonwealth and State arrangements; and
- the interaction of customs and excise administration arrangements.

Measures for a Better Environment

In examining the fuel related *Measures for a Better Environment*, the Inquiry is seeking information on:

- their effectiveness and whether it could be improved; and
- whether there are better approaches to meet environmental objectives.

Specifically, this would include information on:

- the reduction — or expected reduction — in emissions from these measures, both greenhouse gases and local air pollution;
- the costs involved in achieving these emission reductions — both to the Government as well as to business and individual consumers;
- the types of incentives used to influence behaviour — and particularly the effectiveness of using fuel taxes and related rebates, subsidies and grants for this purpose;
- whether these measures could be better targeted, both within transport as well as to other sectors; and
- alternative measures that could be used to reduce emissions.

PART 6: ISSUES THE INQUIRY WILL REPORT ON

The Inquiry will report on:

- (a) *the effects on the efficient allocation of resources, taking into account the pivotal role that petroleum products play in economic activity; environmental outcomes, including in relation to transport; and as an input to production more generally;*
- (b) *the interplay between fuel taxation and related issues such as petroleum pricing, cost structures and marketing arrangements.*

Terms of reference, paragraph 4

6.1 Efficient resource allocation

Part 3 of this paper outlined the principal role of taxes as raising revenue to fund public services. It also noted that imposing taxes on goods and services can have other policy objectives besides raising revenue. In particular, by changing the prices of goods and services, taxes can influence decisions by consumers as to what they buy.

While governments do impose specific taxes on some goods and services with the purpose of influencing consumer behaviour, governments generally seek to raise revenue in a way which is neutral on individuals' consumption and investment (or production) decisions.

This is because the resources available in an economy to produce goods and services will be used most efficiently when they are allocated to those uses most valued by consumers.

The imposition of taxes on goods and services which alters their relative prices can change consumer decisions and therefore the allocation of resources in the economy. If prices no longer reflect the true value of goods or services to the economy and consumers, resources may be allocated inefficiently.

For example, two producers of similar products using inputs of similar value may have different prices, because one is using new, more efficient production methods, while the other may have older technology requiring more inputs for the same level of output. If the more efficient producer's product were taxed more highly, so that the price of its product were above that of its competitor, a

tax-induced shift in consumption and resources to the inefficient producer may occur.

To minimise these types of results, governments often rely on broad based consumption taxes (such as a GST), with most goods and services taxed at a uniform rate.

However, there are also instances when governments may seek deliberately to change relative prices, if the market does not accurately reflect the full costs to the economy and the community from consumption of a product. Government intervention in these circumstances may be justified.

As noted in Part 3, the spillover costs, or externalities, from fuel use are often raised in this context.

The Inquiry's requirement to report on the effects of existing tax and rebate, subsidy and grant arrangements on efficient allocation of resources is linked to other elements of the terms of reference, particularly in relation to environmental outcomes (paragraph 4(a)) and externalities associated with transport (paragraph 5 (d)).

In addressing these issues, the Inquiry will examine:

- the effects of the existing structure of taxes, rebates, subsidies and grants on resource allocation in the economy generally
 - for example, whether the existing arrangements change relative prices and therefore the consumption of fuel and fuel related applications; and
- the role of fuel taxes in addressing issues of resource allocation:
 - whether taxes, or other mechanisms are appropriate to address costs such as road construction or maintenance, congestion, pollution and road accident costs.

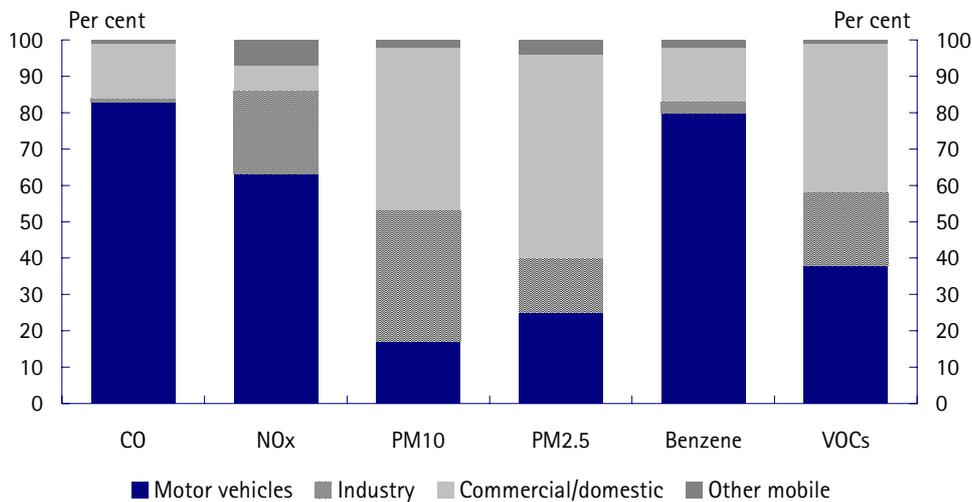
6.2 Environmental outcomes

The Inquiry is required to report on environmental outcomes of fuel use and to take into account use of fuel types that would deliver better air quality and contribute to greenhouse objectives. While the use of fuel also results in other environmental impacts (eg noise), the following section is confined to greenhouse and air quality emissions.

6.2.1 Emissions from fuel use

Fuel combustion is the single largest contributor to urban air pollution and greenhouse emissions. Vehicles are estimated to contribute up to 70 per cent of total urban air pollution while electricity generation is the major source of greenhouse emissions.¹⁶ Chart 6.1 shows the relative contribution of relevant sectors to air pollutants in the Port Phillip region in Victoria in 1995-96. Where air pollution is a problem in rural and regional areas, it is due largely to use of solid fuel heating, fires and wind-blown dust from agricultural or mining activities. Chart 6.2 shows greenhouse gas emissions from fuel use.

Chart 6.1: Sources of air pollution for Port Phillip region, 1995-96^(a)

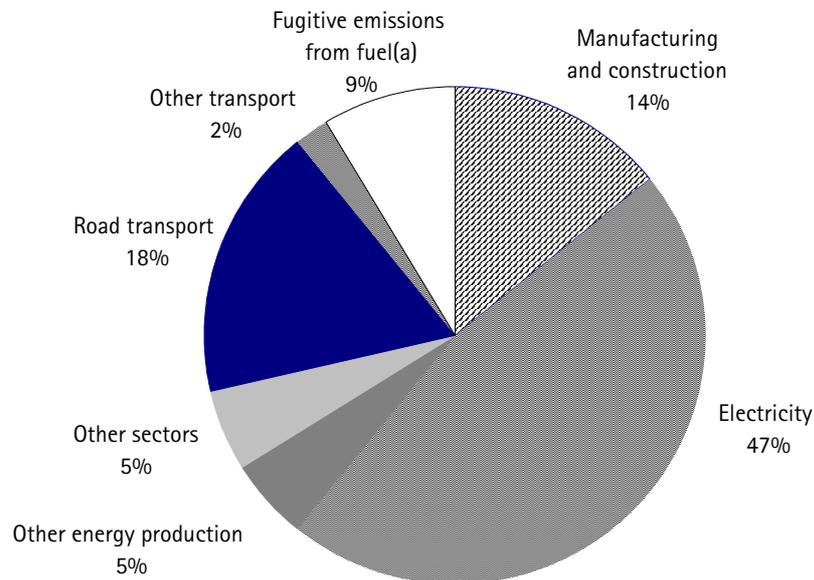


(a) CO – carbon monoxide, NOx – nitrogen oxides, VOCs – volatile organic compounds, SO₂ – sulphur dioxide, PM10 and PM2.5 are particulate matter of size less than or equal to 10 and 2.5 microns in diameter respectively. In summer, vehicle emissions are the main contributor to particulate emissions while in winter, the main contributor in most cities is domestic solid fuel heaters.

Source: Environment Protection Authority Victoria, *Air emission inventory*, 1998.

16 NSW Environment Protection Authority, *Preliminary Economic Analysis of Adopting New Vehicle Emissions Standards*, April 1999.

Chart 6.2: Greenhouse gas emissions from fuel use, 1998



(a) Fugitive emissions are gases released during the extraction and transport of fuel.
Source: Australian Greenhouse Office, *National Greenhouse Gas Inventory 1998, 2000*.

The major impact of air pollutant emissions is upon human health, while greenhouse gas emissions impact on climate change. The health risks associated with exposure to air pollutants include increased susceptibility to cardiovascular disease, respiratory infection, exacerbation of asthma symptoms and eye irritation. Incidences of high air pollution have been shown to be associated with increased hospital admissions and premature death.¹⁷ The impact of climate change associated with greenhouse gases include the effects of rising sea levels and the impact on agriculture, ecosystems and society of changing rainfall patterns and climatic zones.

6.2.2 What determines emissions from fuel use?

There are three key considerations that need to be taken into account in considering policy measures aimed at addressing emissions.

- Level of fuel use — reductions in emissions from use of fuel could be offset by increases in the total quantity of fuel used.

17 Morgan, G., Corbett, S. and Włodarczyk, J., 'Air Pollution and Hospital Admissions in Sydney, Australia, 1990 to 1994', *American Journal of Public Health*, December 1998, Vol. 88 No. 12.

- The fuel life cycle — the environmental effects of fuel use need to be assessed on the fuel’s whole production history, from raw material to energy output as transport, lighting or heating. For example, fuel with low pollutant emissions in end use may generate high levels of emissions during production phases. For some fuel, different methods of production may result in different emissions outcomes. For example, the life cycle emissions from biodiesel differ depending on whether it is produced from canola, tallow or waste vegetable oil.
- Technology — the environmental impact of a fuel may depend on the technology used with the fuel. Optimum emissions performance is achieved when the appropriate quality fuel is matched with vehicle technology. For example, many vehicles with catalytic converters only achieve optimal emissions performance with low sulphur fuels.

Table 6.1 shows the potential for developments in technology to affect greenhouse gas emissions, energy efficiency and life cycle cost for various fuel/technology combinations in a standard passenger motor vehicle.

Table 6.1: Energy, greenhouse and cost comparisons for 2020 cars (Index 100 = 2020 petrol ICE car)^(a)

Technology	Energy	Greenhouse gas emissions	Life cycle cost/km for new car buyers	Uncertainty factor
1996 reference ICE	155	152	102	
2020 petrol ICE	100	100	100	+/- 8
Advanced petrol ICE	84	88	105	+/- 10
Advanced diesel ICE	70	78	108	+/- 12
Petrol ICE hybrid	66	58	112	+/- 12
Diesel ICE hybrid	52	60	114	+/- 12-20
CNG ICE hybrid	62	54	116	+/- 12-22
Methanol FC hybrid	96	84	118	+/- 30-34
Hydrogen FC hybrid	64	70	136	+/- 26-50

(a) ICE=internal combustion engine, FC=fuel cell, hybrid=liquid fuel+electric power.
Source: Energy Laboratory, Massachusetts Institute of Technology, *On the Road in 2020*, MIT EL 00-003, October 2000.

As its benchmark, the table uses the effects estimated for a petrol passenger motor vehicle in 2020 incorporating current trends in technology development. The table shows that, compared with a similar sized vehicle in 1996, the 2020 vehicle will (plus or minus 8 per cent for uncertainty) use 55 per cent less energy, emit 52 per cent less greenhouse gases and cost 2 per cent less over its

full life cycle. The table shows that emission improvement is influenced by the type of fuel/technology combination used.

Emerging technologies such as hybrid and fuel cell vehicles may offer greater potential energy savings but, being less familiar technologies, are associated with a greater range of uncertainty about the accuracy of the forecasts.

Table 6.1 does not address the impact of fuel/technology combinations on air quality. However, the trend is expected to be similar in that improvements in technology will reduce air pollutant emissions. For example, improved diesel vehicle technology designed to meet the more stringent vehicle emissions standards mandated for Australia from 2006 will reduce particulate tailpipe emissions by 94 per cent and nitrous oxide tailpipe emissions by 56 per cent compared with the emissions requirements for 1996 model vehicles.¹⁸ Likewise, petrol hybrid vehicles have the capacity to reduce emissions of nitrous oxides by up to 98 per cent and hydrocarbons by 95 per cent.¹⁹ Hydrogen fuel cell vehicles have zero vehicle tailpipe pollutant emissions.

6.3 Pricing, cost structures and marketing

The Inquiry is asked to report on the **interplay** between fuel taxes and related issues such as petroleum pricing, cost structures and marketing arrangements.

Two pricing issues which receive frequent public comment are fluctuations in fuel prices in metropolitan markets and the difference between metropolitan and country prices. The Australian Competition and Consumer Commission has been asked by the Government to examine the issue of petrol price fluctuations and published a discussion paper on this issue in June 2001. The Fuel Taxation Inquiry is not examining this issue.

Metropolitan and country fuel retailers pay the same excise rate and the same amount for the world market based cost of refined fuel. These components make up the largest part of the final price. Fuel taxation plays little role in the differences in price between city and country areas. The reasons for the differences include factors such as less vigorous competition, lower sales volume and more complex distribution arrangements in country areas. The GST is based on the final price and will reflect these differences, but its impact

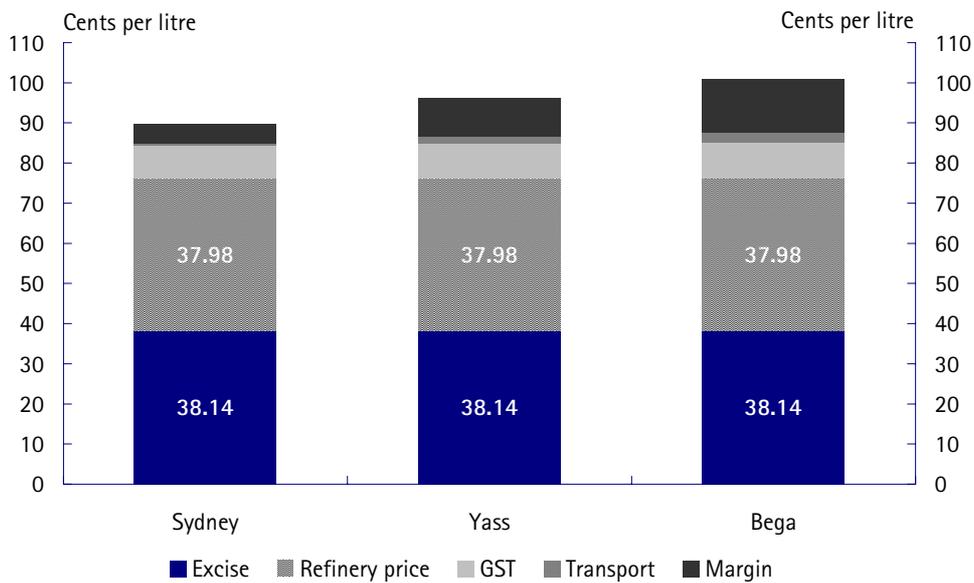
18 Australian Design Rule 70/00 and Australian Design Rule 80/01.

19 Figures for hybrid vehicles are based on the emissions performance of the Toyota Prius compared with the requirements of Australian Design Rule 37/01 which specifies the current emissions performance required of new petrol vehicles in Australia. Prius data supplied by Toyota Australia.

is intended to be offset by the Fuel Sales Grants Scheme (a grant of one or two cpl for regional and remote fuel retailers — see section 5.2.1).

These factors are highlighted in Chart 6.3 which shows the average unleaded petrol prices in June 2001 in two country towns and in Sydney. Bega has limited passing traffic in winter, but Yass, with a similar population, is close to a busier highway. Many Yass motorists also commute to Canberra and have access to that market if local prices are high.

Chart 6.3: Average unleaded petrol prices for June 2001^(a)



(a) Yass and Bega both qualify for a one cpl grant under the Fuel Sales Grants Scheme, which is intended to offset the impact of the GST on petrol prices in areas outside metropolitan areas. The chart shows the retail price of petrol after the grant has been paid to the retailer.

Source: Estimates based on information from Shell, Caltex and the Australian Automobile Association.

An important factor in country fuel prices is the level of competition in the local market. Rural service stations are less likely than their urban counterparts to compete vigorously with their rivals. Country outlets have smaller markets and, given the greater distances between outlets, less passing trade which could be influenced by discounting. Price discounting therefore is less likely to lead to increased market share than it does in a city where customers follow more flexible purchasing patterns. The lower level of competition also means that oil companies are not required to cut the cost of wholesale fuel to help their retailers match local competition as happens regularly in metropolitan areas.

The low volume of petrol sold by many country service stations is also important. Country stations usually sell between a third to a half of the volume of city service stations. As the costs of selling fuel are relatively constant, low volume stations require higher margins per litre of fuel sold to achieve a similar commercial return.

Because of the low volume of sales, country service stations also have less opportunity to sell non-fuel items, which typically have a higher profit margin than fuel. Country service stations may therefore have less options to offset low profit margins from fuel through sales of other products or services.

Apart from major highway sites, many rural service stations receive their supplies from distributors, rather than direct from oil terminals. The cost of distributors' operations also contribute to a higher bowser price in rural areas. Retailing in rural and remote areas also involves higher transport costs relative to retailing operations in cities.

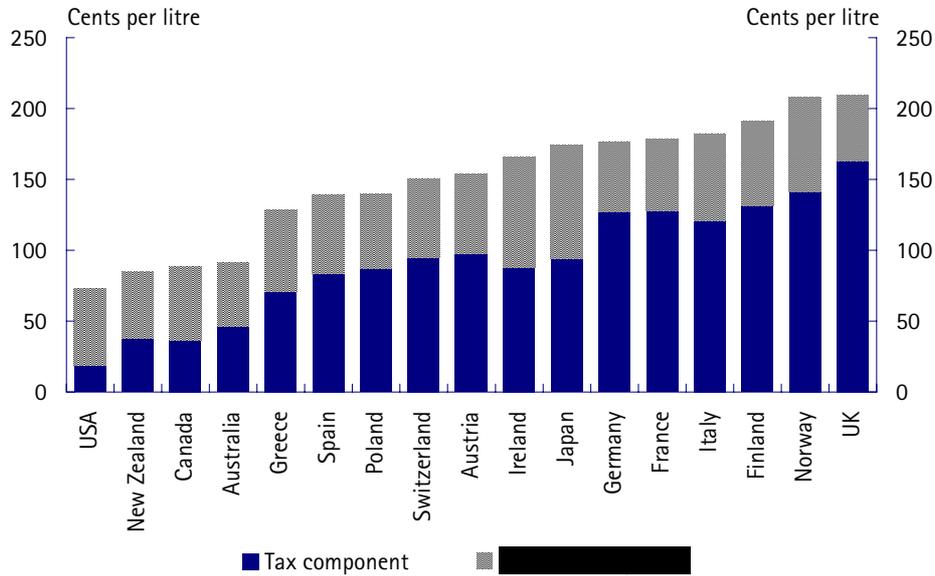
The most commonly known fuel marketing arrangement is a retail service station. However, some fuels are sold predominantly by bulk delivery. For example, less than 19 per cent of diesel is sold at retail outlets.

Of the 8370 service stations across Australia in December 2000, only 315 (or 4 per cent) were operated directly by oil companies. Other service stations have a variety of commercial relationships with the oil companies. They include: oil company franchisees, dealer owned sites with oil company direct supply contracts, dealer or distributor owned with distributor supply contracts, independent chains (eg Gull, Liberty) and supermarkets (Woolworths). There were also a small number of non-branded distributors, mostly in country areas.²⁰

In practice, the Australian retail petroleum market is highly competitive, particularly in larger capital cities. Chart 6.4 shows International Energy Agency information on fuel prices, including the tax component for OECD countries. It shows that Australia has the lowest pre-tax price for petrol and is among the five lowest total prices including tax. Australia's ranking in this comparison has been consistently around this level over many years.

20 Australian Institute of Petroleum.

Chart 6.4: International comparisons of petrol prices, March quarter 2001^(a)



(a) Prices are in Australian dollars.
 Source: Department of Industry, Science and Resources, *Australian Petroleum Statistics*, Issue No. 59, June 2001.

In examining the current fuel taxation structure in Australia, the Inquiry will be undertaking a review of overseas fuel taxation structures including objectives, mechanisms and levels.

The Inquiry is also asked to report on administration issues. These are covered in Part 5.

Box 6.1: Issues on which the Inquiry seeks comment

Resource allocation

Is there a role for fuel taxes, rebates, subsidies and grants in influencing the allocation of resources in the economy?

- If there is a role, what should it be?

Looking at the structure of the current tax, rebates, subsidies and grants as a whole, what is the likely impact on resource allocation and is this desirable?

- How do fuel taxes and the provision of fuel rebates, subsidies and grants affect the consumption and investment decisions of business and consumers and therefore how resources are allocated in the economy?
- What anomalies exist and what are their impacts?

Environmental outcomes

What are the main environmental outcomes from the use of fuel?

Do the current fuel tax, rebate, subsidy and grant arrangements influence environmental outcomes?

Should tax, rebate, subsidy and grant arrangements be used to address environmental impacts from fuel use?

What other mechanisms are available to achieve environmental outcomes from fuel use?

Pricing, cost structures and marketing arrangements

Is there any relationship between the taxation of fuel products and the following issues:

- the cost structures associated with the production and distribution of petroleum;
- the marketing arrangements for petroleum products;
- competition between producers, distributors and retailers of petroleum products; and
- access to supply of fuel products for either retailing, or for use in the production of other fuel products?

PART 7: ISSUES THE INQUIRY IS TO HAVE REGARD TO

The Inquiry should have regard to the impact of existing arrangements and proposed changes on:

- (a) The overall economic performance of the Australian economy, including promoting domestic competition and international competitiveness;*
- (b) Fuel suppliers, downstream industries and consumers;*
- (c) The welfare of regional, rural and remote communities;*
- (d) Externalities associated with transport;*
- (e) The use of fuels that would deliver better air quality and contribute to greenhouse objectives; and*
- (f) The flexibility and sustainability of government revenue.*

Terms of reference, paragraph 5

The terms of reference require the Inquiry to have regard to the above issues in considering options for government.

While the Inquiry will not be considering any options until after submissions have been received and consultation undertaken, it is interested in comments on the impact on the issues outlined above of:

- existing arrangements for fuel taxation, rebates, subsidies and grants; and
- changes which members of the community may wish to suggest to existing arrangements.

7.1 Impacts on the Australian economy

Part 4 of the paper outlined the importance of fuel in the Australian economy.

The Inquiry seeks comment on how existing fuel taxes, rebates, subsidies and grants impact on:

- the overall performance of the Australian economy;
- promoting domestic competition, particularly in relation to the effects of the current differential rates of excise and eligibility for current rebates, subsidies and grants on competition between industry sectors; and
- Australia's international competitiveness, particularly in relation to the role that fuel plays as an input into production and the role of rebate, subsidy and grant schemes to offset the impact of fuel taxes on Australian industry.

7.2 Suppliers, downstream industries, consumers

Part 6 of the paper outlines retail petroleum pricing and marketing arrangements.

The pricing of fuel and marketing arrangements include a wide range of commercial practices. These vary with the type of fuel, the means of delivery and the purpose for which it is used.

The Inquiry seeks comment on:

- the impact of existing taxation arrangements on fuel suppliers, fuel using industries and private consumers of fuel; and
- the impact of existing fuel taxation on choices of fuels for users and existing or potential suppliers.

7.3 Regional, rural and remote communities' welfare

In this paper, the terms of reference have referred to the important implications of fuel taxation and rebates, subsidies and grants for regional, rural and remote communities. These include:

- the importance of petroleum products to the agriculture, mining and road transport sectors;
- rebate, subsidy and grant arrangements (Diesel Fuel Rebate Scheme, Diesel and Alternative Fuels Grants Scheme, Petroleum Products Freight Subsidy Scheme and the Fuel Sales Grants Scheme) that have eligibility requirements partly based around either geographic boundaries or industry sectors located in regional, rural and remote Australia; and
- the proposed Energy Grants (Credits) Scheme to replace the Diesel Fuel Rebate Scheme and the Diesel and Alternative Fuels Grants Scheme.

The Inquiry seeks comment on:

- the impact of the current arrangements on the welfare of regional, rural and remote communities; and
- any suggestions for changes to these arrangements which would improve the welfare of regional, rural and remote communities.

7.4 Externalities and environmental effects

Section 6.2 discussed environmental outcomes associated with fuel use.

The paper also discussed other costs associated with fuel use such as delays through congestion, noise effects from motor vehicles and air pollution.

There are a number of mechanisms available to address effects of fuel use, including emission charges and taxes, congestion pricing, vehicle efficiency and emission standards and road tolls.

The Inquiry seeks comments on:

- the externalities associated with fuel use and the appropriate methods of evaluating these externalities;
- the estimated costs and benefits to the economy of these externalities;
- the extent to which the current fuel tax, rebate, subsidy and grant arrangements address these externalities; and
- appropriate mechanisms for addressing externalities from fuel use.

7.5 Revenue flexibility and sustainability

This paper has outlined the relationship between fuel taxes and revenue collected by the Government:

- fuel excise is estimated to raise around \$12 billion in 2001-02, representing 7.5 per cent of Commonwealth revenue, similar to the average contribution it has made over the last 15 years; and
- fuel taxes are considered an efficient revenue source because compared with some other goods, fuel consumption does not change markedly in response to price.

However, as also noted, the composition of fuel use to meet energy needs has changed over time and should continue to do so, reflecting:

- accessibility of new fuel sources (such as gas products);
- changes in technology;
- changes in the structure of the economy; and
- a range of domestic and international policy influences, including environmental issues and health considerations, as well as economic performance and international competitiveness.

Considering the current structure of Australia's fuel tax arrangements, the Inquiry seeks comment on the major influences on government fuel tax revenue into the future, particularly in relation to:

- potential changes in the composition of fuel use;
- developments in the production of alternative fuels; and
- technological developments in the use of fuels, including substitutability of fuel in particular applications, such as motor vehicles.