

Independent Statutory Review of the
Fuel Quality Standards Act 2000

Prepared by
Fuel Quality Standards Act Review Panel
with assistance from
Economic Associates (Australia) Pty Ltd
and SWB Consulting Pty Ltd

for the Minister for the Environment and Heritage

Final Report
April 2005

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Contents

Executive summary	vii
Recommendations.....	viii
Summary of recommendations.....	viii
Recommendations in full.....	x
List of abbreviations.....	xv
1 Introduction.....	1
The review	1
Structure of the report.....	2
2 The legislation and its policy basis	5
2.1 Objectives of the Act.....	5
2.2 Related policy intent.....	6
2.3 Provisions in the legislation.....	8
3 Operation of the legislation.....	11
3.1 Determinations	11
3.2 Approvals	13
3.2.1 Motor and water sport approvals	13
3.2.2 ‘Wintermix’ automotive diesel fuel	14
3.2.3 Comgas Scheme supply	14
3.2.4 Lower density automotive diesel fuel	15
3.2.5 Cleanerburn TM	15
3.2.6 Christmas Island.....	15
3.3 Prohibited fuel additives.....	15
4 Issues identification.....	17
4.1 Analysis of legislative provisions.....	17
4.1.1 Emergency law (Act, sections 4(1), 4(2)).....	17
4.1.2 External territories (Act, section 7).....	19
4.1.3 Establishment of national standards (Act, section 9).....	19
4.1.4 Regulatory gap regarding natural persons (Act, sections 12, 12A, 18, 19, 20, 66)	22

4.1.5	Approvals (Act, sections 13, 68).....	23
4.1.6	Testing methods (Act, section 21)	24
4.1.7	Making information standards (Act, section 22A).....	25
4.1.8	Expert advisers (Act, section 27)	25
4.1.9	Appointment of inspectors (Act, section 38)	26
4.1.10	Powers of entry (Act, section 40).....	26
4.1.11	Penalty notices (Act, sections 12A, 18, 19)	27
4.1.12	Information sharing (Act, section 67A)	28
4.1.13	Sampling manual (regulation 17).....	29
4.1.14	Definition of fuel (regulation 3(2))	30
4.1.15	Waiver or reduction of application fee (regulations 5, 6)	31
4.1.16	Record keeping (regulation 24).....	31
4.2	Project 1 analysis and consultations	32
4.2.1	Impact of regulation on emissions	32
4.2.2	Competitive impacts of fuel quality standards.....	40
4.2.3	Implementation of fuel quality and information policy	41
4.2.4	Inspections and sampling.....	43
4.2.5	Consultations.....	45
4.2.6	Unanticipated impacts.....	46
4.3	Project 2 analysis and consultations	47
4.3.1	Regulation impact	47
4.3.2	Monitoring, compliance and enforcement	54
4.3.3	Documentation, record keeping and reporting.....	60
4.3.4	Approvals process	61
4.3.5	Unanticipated impacts.....	63
4.4	Summary of issues analysis and consultation outcomes	67
4.4.1	Overview.....	67
4.4.2	Review objectives	67
4.4.3	Nonlegislative issues.....	72
5	Regulation impact analysis.....	73
5.1	Legislative deficits and options for improvement	73
5.2	Affected parties	77
5.3	Impact analysis	77
5.3.1	National standards.....	78
5.3.2	Consistent application of standards for all suppliers	79
5.3.3	Fuel supply in an emergency	80
5.3.4	Enhanced education and communication.....	81
5.3.5	Administration of the approvals system.....	82
5.3.6	Effectiveness and efficiency of monitoring and enforcement mechanisms	83
5.4	Conclusion and recommendations.....	84

6	References.....	87
	Texts, news reports, media releases	87
	Legislation.....	89
	Appendix A Analysis of monitoring programs for petrol and automotive diesel.....	91
	A.1 Petrol	91
	A.1.1 Analysis.....	91
	A.2 Automotive diesel.....	93
	A.2.1 Analysis.....	93
	Appendix B Analysis of approvals	97
	B.1 Types of approvals granted	97
	B.2 Unleaded racing fuels	99
	B.3 Leaded petrol.....	99
	B.4 ‘Wintermix’	99
	B.5 Comgas Scheme — avgas in lieu of petrol	100
	B.6 Low density automotive diesel.....	100
	B.7 Cleanerburn TM	101
	B.8 Christmas Island	101
	Appendix C Fuel taxation and grants.....	103
	Appendix D Consultation.....	105
	D.1 Written submissions	105
	D.2 Targeted consultation	105
	D.2.1 Project 1 consultation.....	105
	D.2.2 Project 2 consultation.....	108
	Appendix E Objectives of the review of the Fuel Quality Standards Act 2000	111

Tables

Table 4.1	Schedule for the implementation of fuel quality and vehicle emission standards: 2002–09	34
Table 4.2	Reductions in emissions under Scenario 4	35
Table 4.3	Sulfur content in petrol and automotive diesel: 1998–2008	36
Table 4.4	Results of sampling program	58
Table 5.1	Identified deficits in the operation of the Act and options for improvement	74
Table 5.2	Advantages and disadvantages of making a regulation under section 9(2) of the Act to achieve consistent standards	78
Table 5.3	Advantages and disadvantages of developing complementary state and territory legislation.....	79
Table 5.4	Advantages and disadvantages of amending the Act to provide a specific power in an emergency	80
Table 5.5	Advantages and disadvantages of developing an enhanced education and communication campaign	81
Table 5.6	Advantages and disadvantages of legislative amendments to simplify the approvals system.....	82
Table 5.7	Advantages and disadvantages of legislative amendments relating to monitoring and enforcement mechanisms	83
Table A1	Results of petrol monitoring program.....	91
Table A2	Geographic distribution of non-compliance: petrol.....	92
Table A3	Non-compliance: petrol	92
Table A4	Results of automotive diesel monitoring program.....	94
Table A5	Geographic distribution of non-compliance: automotive diesel.....	94
Table A6	Non-compliance: automotive diesel	95
Table B1	Approvals under the <i>Fuel Quality Standards Act 2000</i> to July 2004	97
Table C1	Excise duties and road user grants, 2004.....	103
Table C2	Biodiesel and ethanol producer and supplier grants, 2004	103
Table D1	Written submissions received (2004)	105
Table D2	Stakeholders consulted (Project 1)	107
Table D3	Stakeholders consulted (Project 2)	109

Figures

Figure 2.1	Fuel quality standards policy and legislative response.....	8
Figure 2.2	Fuel quality standards legislative scheme.....	10

Executive summary

The review of the *Fuel Quality Standards Act 2000* (the Act) provides an opportunity to assess whether the policy objectives of the Act are valid and whether the terms of the Act remain appropriate for securing those objectives. The review focuses on the operation of the Act and the impacts of the operation of the Act on stakeholders, and the effectiveness of provisions relating to compliance and enforcement.

Section 72 of the Act provides for a review of the operation of the Act to be undertaken as soon as possible after the second anniversary of the commencement of Part 2 of the Act. Part 2 refers to the enforcement of the standards and was deemed to commence on 1 January 2002, when the petrol and automotive diesel determinations took effect.

A review panel was established to conduct the review of the Act. The late Dr Brian Robinson AM was appointed the independent Chair of the Panel and was succeeded by Dr Roy Green AO. Mr Peter Burnett PSM of the Department of the Environment and Heritage (DEH), Mr Stephen Payne of the Department of Industry, Tourism and Resources, and Mr Steve Webber of the Australian Government Solicitor were also appointed as members of the review panel.

The primary objective of the Act is to reduce the adverse effects of motor vehicle emissions on urban air quality and human health. A secondary objective is to ensure the national availability of fuel of a quality that allows the effective adoption of new vehicle engine and emission control technologies.

The objectives of the review are outlined in Chapter 1 of this report. Chapter 2 describes the objectives and related policy intent and Chapter 3 outlines the operation of the Act. Chapter 4 indicates that most stakeholders support the objectives and operation of the Act.

In Chapter 5, the report considers the ways in which the Act could be improved. The first eight objectives of the review provide the basis for examining the effectiveness and efficiency of the operation of the Act. The main finding is that the legislative scheme is appropriately framed, enabling an effective and efficient means for meeting the objects of the Act.

Although there have been unanticipated impacts from the operation of the Act, these impacts are mainly procedural or stem from Constitutional limits. In any event, these impacts have been small, if not negligible, and are far outweighed by the overall benefits from the implementation of fuel quality standards. The review was either unable to determine, or found no unanticipated or negative impacts from the operation of the Act on: welfare, health, safety, economic and regional development, consumer interest, competitiveness of business including small business, and efficient resource allocation.

There was in principle support for the level of stakeholder communication and consultation; however, several stakeholders considered that the implementation of the Act's objects required greater cooperation and consultation. Most stakeholders recognised and supported the need for reporting and record keeping requirements in order to promote compliance and facilitate enforcement.

The review found that there is a need both for ongoing review of resources for fuel sampling and for improved cost-effectiveness in monitoring and enforcement procedures.

The review concludes that the overall policy objectives of the Act are being met and should not be altered, but that the following issues should be addressed:

- Nationally consistent fuel standards and their application to unincorporated suppliers have not been achieved in all respects; there is thus a need for complementary state and territory legislation.
- In order to reinforce the monitoring and enforcement function of the Act, consideration should be given to an ongoing review of resources for fuel sampling and testing, coupled with cost-effective approaches such as the inclusion of penalty notices.
- In order to ensure fuel supply in an emergency, a procedure and an emergency provision for off-specification fuel should be developed.
- To ensure that the administrative effort required is in keeping with the objects of the Act, the approvals systems need to be streamlined; and procedures such as the delegation of duties to DEH, notification obligations for Regulated Persons, and the provision of geographical and seasonal variation to standards need to be refined.
- In order to address stakeholder concerns and ensure continued compliance, industry and community communication and education need to be improved.

Chapter 5 also highlights a range of suggested options to improve current administration and procedures, such as revising sampling methods. These options will require further investigation and review by DEH.

Recommendations

The recommended actions cover three areas: ensuring nationally consistent standards; improvements to monitoring compliance and enforcement; and improvements to the administration of the Act. In the following summary, the recommendations are grouped according to these three areas. The numbers (in brackets) indicate the numbering of the recommendations in the body of the report. 'No change' recommendations are not included in this summary.

A full list of the recommendations, giving their exact wording and the order in which they appear in the report, follows the summary.

Summary of recommendations

Nationally consistent standards

To ensure nationally consistent standards, which will apply to individuals as well as to corporations, it is recommended that:

- DEH commence negotiations with states and territories to institute complementary legislation, to ensure fuel standards are nationally harmonised (18), with the negotiations to include discussions on regulation of the petrol parameter, Reid Vapour Pressure (3).

Improvements to monitoring, compliance and enforcement

A package of legislative amendments would reinforce the monitoring and enforcement function of the Act.

It is recommended that the Act be amended to:

- empower contractors to collect samples of fuel (9)
- remove the requirement for an inspector to first obtain the occupier's permission before exercising monitoring powers (10)
- allow for provision of on-the-spot fines (11)
- broaden section 67A, which enables certain information gathered under the Act to be shared with the Commissioner of Taxation, to include matters in relation to the *Excise Act 1901* (12).

It is also recommended that:

- regulation 17, covering the method of collecting a fuel sample, include provisions on practicability (13) and that a new section 58C be inserted in the Act, providing for an evidentiary certificate of sampling procedures
- regulation 24(2) be amended to include an additional requirement that a record must be available for access and copying by an inspector at the location of the supply of fuel (16).

Consideration should also be given to:

- a full review of the methods of sampling and the choice of monitoring approaches to increase efficiency, with increased sampling for greater coverage (22)
- finalisation of the DEH database, with the location of retail sites to be updated. The sampling and procedure manual should continue to be updated as required and should be complemented by workshops. The method for sampling at depots should be included, when available (20)
- continual review of the level of resourcing for fuel sampling and testing to ensure that the level of funding is appropriate, since effective and efficient fuel sampling and testing are critical to achieving the objects of the Act (21).

Administration of Act

Recommended improvements to the administration of the Act include: approvals for fuel emergencies; streamlining of the approvals system; and the development of an education and information campaign.

Approvals for fuel emergencies

- Fuel emergencies potentially affecting fuel quality should, as far as possible, be dealt with under the Act, with the Fuel Standards Consultative Committee and the National Oil Supplies Emergency Committee consulted to the extent practicable. Appropriate disincentives, such as a cost penalty linked to the quantity of off-specification fuel, should be developed to ensure that the potential for a relaxation of fuel quality standards is not abused by fuel companies (1).

Improvements to the approvals system

In order to facilitate administrative improvements of the approvals system, it is recommended that:

- the definition of fuel be amended to limit the scope of the Act to fuel that is used in mainstream activities to enable, for example, fuel used in defence vehicles to be excluded from the Act (14)
- regulations 5 and 6 be considered for redrafting to allow the waiver of applications for an approval to be solely on the basis of financial hardship and to remove fee variation for Commonwealth, state and territory entities (15)
- the Regulated Persons provision be simplified (5) and amendments that are of a minor nature be delegated (4)
- the section on expert advisers to the Fuel Standards Consultative Committee be repealed (8).

Education and Information requirements

In order to address stakeholder concerns, it is recommended that:

- an education campaign be undertaken to fully inform suppliers and retailers of their responsibilities under the Act. The general public also needs to be advised of the existence of fuel quality standards and the operation of the Act (19)
- non-statutory consultation be undertaken before the making of information standards (7).

Recommendations in full

The recommendations, as they appear in the report, are detailed below.

Recommendation 1

The review panel recommends that fuel emergencies which potentially affect fuel quality should, as far as possible, be dealt with under purpose-designed provisions under the *Fuel Quality Standards Act 2000*. An emergency provision should be included to allow the Minister to grant an approval if satisfied that the following criteria are met:

- There is an emergency potentially affecting fuel quality and it is appropriate to deal with it under this law rather than another.
- The Fuel Standards Consultative Committee and the National Oil Supply Emergency Committee have been consulted to the extent practicable give the nature of the emergency.
- The overall balance of public interest lies in granting an approval.

Appropriate disincentives, such as cost penalties, should be developed to ensure that the potential for a relaxation of fuel quality standards is not abused by fuel companies.

Once the review of *Liquid Fuel Emergency Act* is finalised, DEH will develop appropriate policy and procedures for approvals related to fuel emergencies. This will ensure that provisions of the *Liquid Fuel Emergency Act* and the *Fuel Quality Standards Act* are consistent and are cross-referenced. These procedures would be revised should the recommendation above be implemented.

Recommendation 2

The review panel recommends that there be no change to the current operation of the Act (regarding external territories: section 7).

Recommendation 3

The review panel recommends that discussions be instituted with the states and territories on regulation of Reid Vapour Pressure, with a view to introducing a national standard that takes into account climatic and seasonal factors as appropriate.

Recommendation 4

The review panel recommends that approvals of a minor nature be delegated.

Recommendation 5

The review panel recommends that the Regulated Persons provision be simplified.

Recommendation 6

The review panel recommends no change to the current operation of the Act (regarding test methods: regulation 21).

Recommendation 7

The review panel recommends non-statutory consultations before the making of information standards.

Recommendation 8

The review panel recommends that the section on expert advisers be repealed.

Recommendation 9

The review panel recommends that the Act be amended to empower contractors to collect samples of fuel.

Recommendation 10

The review panel recommends that the Act be amended to remove the requirement for an inspector to first obtain the occupier's permission before exercising monitoring powers.

Recommendation 11

The review panel recommends that the Act be amended to allow for provision of 'on-the-spot' fines for minor offences.

Recommendation 12

The review panel recommends that the Act be amended by broadening section 67A to include matters in relation to the *Excise Act 1901*.

Recommendation 13

The review panel recommends that regulation 17 covering the method of collecting a fuel sample include provisions on practicability and that a new section 58C be inserted in the Act, providing for an evidentiary certificate of sampling procedures.

Recommendation 14

The review panel recommends that the definition of fuel be amended to allow the Minister to make a determination excluding certain fuels in special circumstances, for example, fuel used in defence vehicles, from the Act.

Recommendation 15

The review panel recommends that regulations 5 and 6 be redrafted to allow the waiver of applications for an approval to be solely on the basis of financial hardship and that the fee exemption for Commonwealth, state and territory entities be removed.

Recommendation 16

The review panel recommends that regulation 24(2) be amended to include an additional requirement that a record must be available for access and copying by an inspector at the location of the supply of fuel.

Recommendation 17

The review panel recommends no change to the legislation (regarding synchronisation of fuel and emission standards).

Recommendation 18

The review panel recommends that the Department of the Environment and Heritage approach the states and territories with a view to them passing complementary legislation to achieve national harmonisation of fuel standards.

Recommendation 19

The review panel recommends that, resources permitting, an education campaign be undertaken to fully inform suppliers and retailers of their responsibilities under the Act. The general public needs to be advised of the existence of fuel quality standards and the operation of the Act.

Recommendation 20

The review panel recommends that the Department of the Environment and Heritage's database be finalised as soon as practicable, and the location of retail sites be kept up to date. The sampling and procedure manual should continue to be updated as required and should be complemented by workshops. The method for sampling at depots should be included, when available.

Recommendation 21

The review panel recommends that the level of resources for fuel sampling and testing be kept under review to ensure that adequate resourcing is maintained in order to continue to achieve the objects of the Act.

Recommendation 22

The review panel recommends that a full review be undertaken of the methods of sampling, fuel testing and the choice of monitoring approaches to increase efficiency, with the desired outcome being increased sampling and greater coverage.

List of abbreviations

ACEA	Association des Constructeurs Européen d'Automobiles (European Automobile Manufacturers Association)
AM	Member in the Order of Australia
AO	Officer in the Order of Australia
APADA	Australian Petroleum Agents and Distributors Association
ASTM	American Society for Testing and Materials
BIC	Bus Industry Confederation
DEH	Department of the Environment and Heritage
DIPE	di-isopropyl ether
DITR	Department of Industry, Tourism and Resources
DoHA	Department of Health and Ageing
Euro 2, 3 and 4 standards	United Nations Economic Commission for Europe standards for vehicle emissions
FCAI	Federal Chamber of Automotive Industries
FSCC	Fuel Standards Consultative Committee
g/L	grams per litre
GDI	gasoline direct injection
GVM	gross vehicle mass
IP	Institute of Petroleum
km	kilometre
L	litre
LPG	liquefied petroleum gas
LTEC	Land Transport Environment Committee
MTBE	methyl tertiary-butyl ether
ML	megalitre
MP	Member of Parliament
MVEC	Motor Vehicle Environment Committee
NAFC	national average fuel consumption
NEPM	national environment protection measure
NO _x	oxides of nitrogen
NTC	National Transport Commission
ppm	parts per million
PULP	premium unleaded petrol
RIS	regulation impact statement
RON	Research Octane Number
RVP	Reid Vapour Pressure
the Act	<i>Fuel Quality Standards Act 2000</i>
the Regulations	Fuel Quality Standards Regulations 2001
ULP	unleaded petrol
ULSD	ultra low sulfur diesel

1 Introduction

The review

The *Fuel Quality Standards Act 2000* (the Act) provides in section 72 for a review of the operation of the Act, to be undertaken as soon as possible after the second anniversary of the commencement of Part 2 of the Act. Section 72 of the Act gives guidance on the performance of the review. Provisions in Part 2 that enable enforcement of the standards commenced on 1 January 2002. The determinations for petrol and automotive diesel fuel quality standards took effect on this date.

The timing prescribed for the review provides an early opportunity to evaluate the operation of the Act and to propose corrective actions if necessary. The objectives of the review¹ are to determine:

1. the effectiveness of the fuel quality standards legislation in meeting the objectives set out in the Act
2. any unanticipated impacts of the operation of the Act on welfare, equity, health, safety, environment, economic and regional development, consumer interests, the competitiveness of business including small business, and efficient resource allocation
3. the relative efficiency of the legislation as a means of implementing fuel quality standards
4. whether the primary Act and/or subordinate legislation are appropriately framed in terms of meeting the government's policy objectives in relation to fuels, as set out in documents such as *Safeguarding the Future: Australia's Response to Climate Change* (1997) and *Measures for a Better Environment* (1999)
5. the adequacy of communication and consultation with parties whose activities are directly affected by the operation of the Act, and the ability of those parties to determine/understand their obligations
6. the adequacy of consultation in relation to broader issues of implementation of the Act, and the ability of stakeholders to raise issues arising from the implementation of the Act
7. the cost-effectiveness of monitoring and compliance activities undertaken to enforce the Act
8. the effectiveness of reporting and record keeping requirements in terms of promoting compliance and facilitating enforcement.

Where the review identifies deficits in the operation of the Act, the report should also:

9. identify operational changes that would overcome such deficits
10. identify practical alternatives to the current legislative provision/s, including non-legislative approaches
11. identify the different groups likely to be affected by these alternatives

¹ As amended at the inaugural review panel meeting, 9 February 2004, Canberra.

12. analyse and, as far as practicable, quantify the benefits, costs and overall effects of the alternatives identified
13. recommend a preferred course of action.

During the review, consideration was given to the effectiveness and efficiency of sections of the legislation in achieving the function for which they were drafted, in the light of experience with administering the statute since commencement. The sections reported on are those where the potential was identified for improved administration while preserving or enhancing the achievement of the objects of the Act.

The objects of the Act and its implementation span three areas of policy interest: firstly, protection of the environment and human health; secondly, adoption of better technology and effective operation of engines; and lastly, consumer protection through the provision of information about fuel. The common thread in these policy areas is fuels for motor vehicle engines, but it should be noted that the scope of the Act is broader, and it could be applied to the regulation of any fuel, whether for motor vehicle use or not, for the purpose of reducing pollution and emissions.

To date, no part of the *Fuel Quality Standards Act 2000* has been subject to the scrutiny of the courts. There is no case law that applies directly to this legislation to assist with its interpretation.

The review provides an opportunity to assess whether the legislative scheme is meeting the government's objectives in relation to the implementation of fuel quality standards. The review is intended to focus on the impacts of the operation of the Act on stakeholders, and the effectiveness of provisions relating to compliance and enforcement.

A review panel was established to conduct the review of the Act. The late Dr Brian Robinson AM was appointed the independent Chair of the Panel and was succeeded by Dr Roy Green AO. Mr Peter Burnett of the Department of the Environment and Heritage (DEH), Mr Stephen Payne of the Department of Industry, Tourism and Resources (DITR), and Mr Steve Webber of the Australian Government Solicitor were also appointed as members of the review panel. The objectives for this review are at Appendix E.

Economic Associates (Australia) Pty Ltd and SWB Consulting Pty Ltd were commissioned by DEH to consult with stakeholders and provide advice to the review panel on legislative and policy related issues. The work of Economic Associates provided for the basis of this report. Economic Associates focused on legislative and policy related issues and drew upon the work of SWB Consulting who focused on the impacts of the operation of the Act on industry. Throughout this report, 'Project 1' refers to analyses and consultations by Economic Associates; 'Project 2' refers to analyses and consultations by SWB Consulting.

Structure of the report

The report incorporates the results of the statutory review in Chapters 2–4 and a regulation impact analysis of proposed legislative amendments in Chapter 5. Supporting technical information is provided in the appendices.

Chapters 2 and 3 outline the legislation and its operation. In Chapter 4, the principal issues with the operation of the Act are examined in detail. Relevant findings from

Project 2 are incorporated in this chapter. Non-legislative deficits requiring an administrative and/or policy response are summarised at Section 4.4.1. Chapter 5 provides recommendations regarding amendment to the legislation to address the principal deficits identified in the review.

2 The legislation and its policy basis

2.1 Objectives of the Act

In 2000, the *National Fuel Quality Standards Regulation Impact Statement*² analysed seven options for the delivery of national fuel quality standards. The preferred option, Commonwealth regulation, was implemented by the enactment of the *Fuel Quality Standards Act 2000* (the Act) and the subsequent development of subordinate legislation to underpin the Act.

At section 3, the Act states the objects of the Act as:

‘(a) regulate the quality of fuel supplied in Australia in order to:

- (i) reduce the level of pollutants and emissions arising from the use of fuel that may cause environmental and health problems; and
- (ii) facilitate the adoption of better engine technology and emission control technology; and
- (iii) allow the more effective operation of engines; and

(b) ensure that, where appropriate, information about fuel is provided when the fuel is supplied.’

Objective (b) was added by amendment of the Act in December 2003, which permits regulation of the provision of consumer information about fuel.

The *National Fuel Quality Standards Regulation Impact Statement* at section 3.1 sets the primary objective for the legislation as ‘reduce the adverse effects of motor vehicle emissions on urban air quality, human health, and enhanced greenhouse effect.’

Secondary objectives are stated as:

- the harmonisation of Australian vehicle emission standards with international standards
- the national availability of petrol and diesel of appropriate quality to allow the effective adoption of new vehicle engine and emission control technologies.

Section 4.8 specifies criteria that are satisfied by the proposed option of Commonwealth legislation and are therefore expected outcomes of the legislation in addition to the delivery of the policy aspects stated in the objectives. These include:

- a nationally consistent approach to fuel quality standards
- ensuring that appropriate fuel is available to meet the timetable for introduction of the new Australian Design Rules
- avoiding restriction of competition and trade.

² DEH (2000)

The *Regulation Impact Statement for the Fuel Standard (Petrol) Determination 2001 and the Fuel Standard (Diesel) Determination 2001* again discusses the Australian Government's objectives in mandating fuel quality standards and at section 4 states some guiding principles 'to be employed to ensure that any standards proposed were applicable to the Australian context.' These are:

1. Fuel standards are intended to manage those fuel qualities/parameters that are known to have the potential to impact adversely on the environment.
2. Fuel standards should be compatible with relevant international or internationally accepted standards in order not to impede competition and trade.
3. Fuel standards are intended to be mandated and implemented on a national basis. In particular, fuel standards that are technology enabling must apply nationally. Local environmental circumstances may, however, dictate variation within the national standard to achieve environmental outcomes.
 - Consideration will be given to state-by-state establishment of fuel standards that address airshed-specific environmental conditions; however, in such cases a national standard will be determined as a default.
4. Fuel standards will apply to, and be enforced equally in respect of, imports as well as domestically produced petroleum fuels.
 - Fuel standards must not impede competition, either between Australian refiners, or with imported refined product.
5. Fuel standards that directly address environmental or health issues will be determined on the basis of Australian-specific requirements. In such instances, harmonisation with European specifications may be neither necessary nor desirable.
6. The timetable for the introduction of new fuel standards will be based on Australian requirements. Harmonisation, in terms of timing, will not be based on European or any other regional timetable, except where there is a previous policy decision to this effect or the standard is technology enabling and the need for such harmonisation is clearly demonstrated.
7. Consideration will be given to setting standards that provide, as far as possible, flexibility in terms of compliance.
 - Flexibility provisions must not impede competition or trade.
 - Flexibility provisions must not add significantly to legislative/regulatory complexity or implementation/enforcement costs to government.

Since these guiding principles were used as a basis for discrimination among the options identified when fuel quality standards were formulated in the determinations, they also are expected outcomes of the implementation of the determinations.

2.2 Related policy intent

In a statement titled *Safeguarding the Future: Australia's Response to Climate Change*³ on 20 November 1997, the Prime Minister of Australia the Hon John Howard MP made policy commitments that included, for motor vehicles:

³ Prime Minister (1997)

- mandatory, model-specific, fuel efficiency labelling
- harmonised noxious emissions standards with international standards by 2006
- a 15% fuel efficiency improvement target by 2010 over business as usual through negotiation with automotive companies
- bringing forward the phase-out of leaded petrol, taking equity considerations into account
- developing a basic network of compressed natural gas refuelling stations in selected metropolitan areas.

The Prime Minister stated that these measures would reduce air pollution and improve the health of our cities as well as reducing greenhouse gas emissions.

More specifically, in May 1999, the Australian Government made a number of commitments to improving the quality of petrol and diesel fuels available in Australia, as part of *A New Tax System — Measures for a Better Environment*.⁴

Measures for a Better Environment provided for:

- adoption of international (United Nations Economic Commission for Europe or Euro) vehicle emission standards
- a reduction in the sulfur content of diesel fuel (500 ppm in 2002 and 50 ppm in 2006)
- support for the development of a National Environment Protection Measure for diesel vehicle emissions
- the establishment of diesel vehicle testing facilities
- an energy credit scheme to promote clean fuels.

These initiatives addressed the need to reduce emissions of both noxious air pollutants and greenhouse gases, and established a timetable for the adoption of internationally harmonised vehicle emission standards. High octane and low sulfur levels in petrol were identified as necessary pre-conditions for the introduction of advanced fuel efficiency technologies such as direct injection. Such technologies combined with the improved thermal efficiencies achievable by higher compression engines would contribute to reduced fuel consumption.

In November 1999, the *Downstream Petroleum Products Agenda*⁵ endorsed the development of nationally consistent fuel specifications, to apply equally to domestic production and imported fuels.

The *National Fuel Quality Standards Regulation Impact Statement*⁶ states that ‘Government intervention will ensure that any fuel standards are applied equally in respect of imports as well as domestically produced petroleum fuels and are compatible with relevant international or internationally accepted standards to ensure that competition and trade are not impeded.’ Further, the regulation impact statement, when discussing the preferred option of Commonwealth regulation (at section 4.7) specifies the Euro 2, 3 and 4 specifications for petrol and diesel fuel as the relevant international standards.

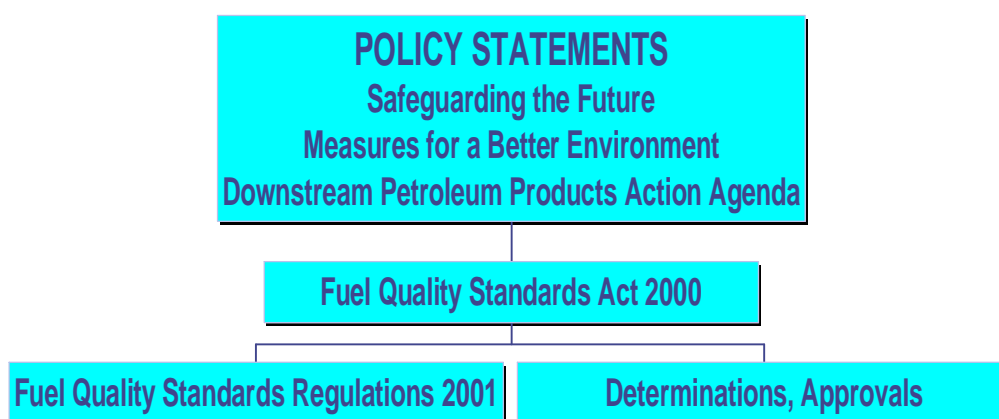
⁴ Prime Minister (1999)

⁵ DISR (1999)

⁶ DEH (2000)

The legislative response to these policy statements can be found in part in the *Fuel Quality Standards Act 2000* given the Royal Assent on 21 December 2000 and later amended on 18 September 2001, 5 December 2003, and the Fuel Quality Standards Regulations 2001 passed on 5 September 2001 (and amended 1 January 2002, 14 June 2002, and 23 December 2003). Together with a series of disallowable instruments, the legislation provides a framework for regulation of fuel quality standards in Australia and sets the introduction times and detailed specifications for the most commonly used motor vehicle fuels. Figure 2.1 summarises the policy documents and the legislative response in relation to fuel quality standards in Australia.

Figure 2.1 Fuel quality standards policy and legislative response



2.3 Provisions in the legislation

The *Fuel Quality Standards Act 2000* provides a framework for setting national fuel quality (and fuel quality information) standards, for compliance monitoring and for enforcement of the standards. There are requirements for industry self-monitoring and reporting, and recording of chain of custody for fuel until it is supplied to an end user. Offence provisions cover the supply of fuel not compliant with the standards, failure to comply with the conditions of an approval, and failure to comply with administrative requirements of the Act. Amendments since commencement applied strict liability (see section 6.1 of the Criminal Code) to many of these offences. Maximum penalties were halved with the change to strict liability, to compensate for the removal of intent as an element of the offence.

The Fuel Quality Standards Regulations 2001 give the details about administrative processes for approvals of variations to the standards, the operation of the Fuel Standards Consultative Committee, how notices of decisions will be published, enforcement (including identity cards for inspectors), how samples will be taken and analysed, and the requirements for keeping records and reporting for various classes of persons.

Part 1 of the Act is introductory and sets out the objectives, some definitions for the Act and how the provisions operate in relation to state and territory laws, and states that the Criminal Code applies to all offences against the Act.

Part 2 of the Act regulates fuel and fuel additives. Offences are created for:

- the supply of fuel that does not comply with fuel standards made under the Act, unless the standard is varied by an approval held by the person
- supplies of fuel that do not comply with fuel quality information standards
- alteration of fuel which is the subject of a fuel standard
- the supply or importation of a fuel additive that is entered in the *Register of Prohibited Fuel Additives*.

An offence can be committed by a constitutional corporation, a Commonwealth entity, or a person in the course of constitutional trade or commerce.

To enable the regulation of fuel quality, the Minister for the Environment and Heritage (the Minister) may determine that specific matters constitute a fuel standard in respect of a specified kind of fuel. Similarly, a fuel quality information standard can be made for the supply of a specified fuel. The process to be followed in making a determination of a standard includes consultation with the Fuel Standards Consultative Committee, which is established by the Act to provide advice to the Minister:

- before a determination of a fuel quality standard or information standard is made
- before an approval to vary a fuel quality standard or information standard is granted
- before a decision to add a fuel additive to the register or to remove it is made
- about guidelines for standards with more stringent parameters for fuel supplies in specified areas of Australia.

A *Register of Prohibited Fuel Additives* is to be kept by the Minister. An additive may be listed following the notification process and guidelines set out in the Act.

A head of power is provided to vary the application of a standard by granting an approval. An application for an approval is decided by the Minister after considering:

- the protection of the environment
- the protection of occupational health and safety
- the interests of consumers
- the impact on economic and regional development
- any other relevant matters.

Documentation containing a statement of compliance with the standard for the fuel supplied is required to accompany each supply of fuel, except the supply to the end user. These documents provide a record of the chain of custody for fuel as it moves through the supply chain.

Part 3 of the Act sets out an enforcement regime for the purpose of monitoring compliance with the Act and prosecuting offences under the Act. Inspectors can be appointed for the purposes of the Act and the powers and obligations of inspectors under the Act are defined. An inspector may enter premises and exercise the monitoring powers in this Part if the occupier has consented to the entry, or if a warrant has been obtained from a magistrate.

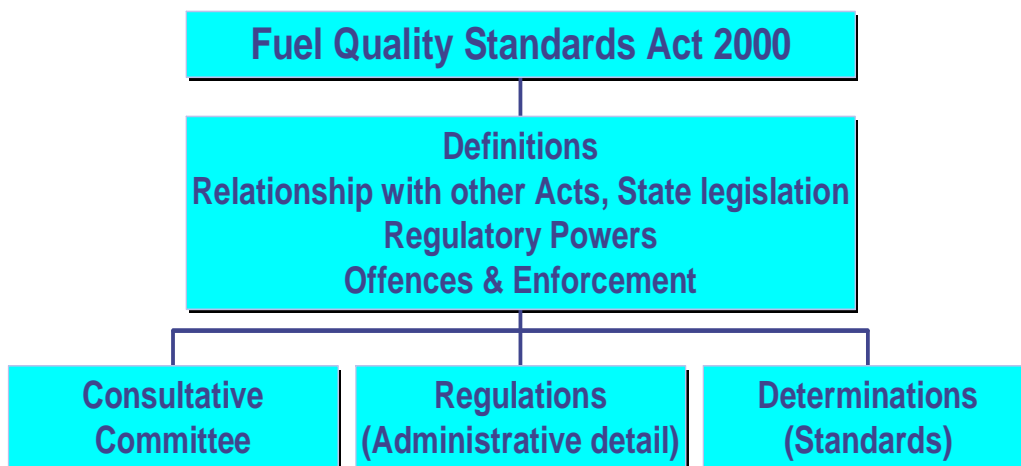
The Federal Court of Australia may grant an injunction restraining persons from actions that would otherwise be offences under the Act.

Part 4 of the Act requires suppliers or importers of fuels which are the subject of a fuel standard to keep records and report them annually to the Department of the Environment and Heritage.

Part 5 of the Act deals with other matters, including review of decisions under the Act, annual reporting by the Minister and periodic review of the operation of the Act.

Figure 2.2 illustrates the legislative scheme for fuel quality standards in Australia.

Figure 2.2 Fuel quality standards legislative scheme



3 Operation of the legislation

The Fuel Quality Standards Regulations 2001 (the Regulations) have been made in accordance with the regulation-making powers in the *Fuel Quality Standards Act 2000* (the Act). The Regulations provide the administrative details of:

- definitions of terms, including fuel and fuel additives
- how to apply for an approval to vary a fuel quality standard
- the fees that apply to approval applications
- documentation that must accompany fuel supplies and the timeframe in which the document is to be provided to the receiver
- appointment and termination of expert advisers and members of the Fuel Standards Consultative Committee
- enforcement, such as identity cards for inspectors, sampling of fuel by an inspector and its analysis
- the information required in records to be kept by suppliers of fuel and the time to retain the records.

The Fuel Standards Consultative Committee is created by the Act. It includes representatives of each of the states and territories, the Commonwealth, fuel producers, nongovernment environmental organisations, and the interests of consumers. The Minister for the Environment and Heritage (the Minister) may appoint additional members to the Committee, which is chaired by a senior officer of the Department of the Environment and Heritage (DEH). The role and function of the Committee and its membership are described on the DEH web site⁷.

The Committee may meet in person or may use a teleconference or email to develop advice to the Minister. The frequency of face-to-face meetings has diminished as the determinations for fuel quality and applications for approvals for variations from the standards have been dealt with. DEH provides a secretariat service to the Committee. The Minister was not required to consult the Committee about the first national environmental fuel quality standards for petrol and automotive diesel, which were announced on 8 May and 15 July 2001, because these were the subject of extensive consultation before the Committee was established.

Section 27 of the Act allows the Minister to appoint expert advisers to assist the Fuel Standards Consultative Committee in its work of providing advice to the Minister. No expert advisers have as yet been appointed.

3.1 Determinations

Determinations that define fuel quality or fuel information requirements have been made by the Minister, as follows:

- Fuel Standard (Petrol) Determination 2001, commenced on 1 January 2002.

⁷ DEH (2004a)

- Fuel Standard (Automotive Diesel) Determination 2001, commenced on 1 January 2002.
- Fuel Standard (Biodiesel) Determination 2003, commenced on 18 September 2003.
- Fuel Quality Information Standard (Ethanol) Determination 2003, commenced on 1 March 2004.
- Fuel Standard (Autogas) Determination 2003, commenced on 1 March 2004.

The petrol, diesel and biodiesel determinations have also been amended since they were made, to include updated fuel parameters and/or test methods. Determinations are disallowable instruments for the purposes of section 46A of the *Acts Interpretation Act 1901*. In practice, determinations must be tabled in the Houses of the Parliament for 15 sitting days, and in this time they can be the subject of a disallowance motion. If the motion is carried, then the determination is invalidated.

Environmental fuel quality standards for petrol and automotive diesel came into force on 1 January 2002 after the Act was given assent on 21 December 2000. These established values for fuel quality parameters for the dominant proportion of the vehicle fuel used in Australia, together with methods for testing, effectively activating the offence provisions of the Act that apply to fuel quality standards. Subsequently, quality standards have been set for other fuels that comprise a minor proportion of the market, and the scope of the standards has been broadened to include values for parameters that ensure vehicle operability. The operability standards complement the environmental standards to secure the efficient operation of engines. A cap of 10% for ethanol in petrol was established on 1 July 2003 by amendment of the petrol determination.

The fuel quality standards apply to a supply of fuel. The Act defines supply as ‘supply (including resupply) by way of sale, exchange or gift’. The supply chain starts with refiners or importers of fuel, continues through distributors to the point of retail sale (usually service stations) or bulk supply (to bus and truck fleet operators). The quality standards are required to be met for every supply in the supply chain, with the responsibility on the person making the supply to use fuel that meets the relevant standard.

The fuel standard determinations provide either values for fuel quality parameters to have effect at the date the determinations commence, or values to come into effect in subsequent years. This is to ensure that appropriate fuels are available to meet the government’s timetable for the introduction of improved engine technologies to meet the United Nations Economic Commission for Europe (Euro) emissions standards for new motor vehicles, and to give industry adequate time to plan for delivery of fuel to meet the standards.

Supply of ethanol blend to a retailer, and the supply of the blend at a service station, is subject to the requirements of the Fuel Quality Information Standard (Ethanol) Determination 2003. For a service station supplying ethanol blended petrol, a notice as defined in the determination must be placed as close as practicable to the delivery nozzle. Supply of ethanol blend to a retailer must be accompanied by documentation that states the amount of ethanol in the petrol, and the application of a fuel quality information standard to the ethanol blend.

3.2 Approvals

The Minister may grant an approval to a person that varies a standard for fuel supplied by the person. (*Fuel Quality Standards Act 2000*, section 13). The information required to be submitted in an application for an approval is set out in Part 2 of the Regulations, along with the fee for the application.

Of the applications for an approval received, a small number have been rejected because either:

- the persons seeking the approval were covered by another approval, or
- the persons seeking the approval did not fulfil the requirements for granting it. (The circumstances were that the Minister sought applications for approvals from organisations representing motor or water sport participants where the organisation had a membership base. Applications for approval were received from commercial organisations without a membership base).

The remainder were granted subject to conditions and for a time specified in the approval.

The approvals granted fall into six general categories:

- motor and water sports approvals
- ‘Wintermix’ automotive diesel fuel
- Comgas Scheme supply
- lower density automotive diesel fuel
- Cleanerburn™
- fuel for Christmas Island.

3.2.1 Motor and water sport approvals

This represents the largest block of approvals by number; five have been granted permitting the supply of leaded petrol and three granted permitting the use of specialist unleaded racing petrol.

Thirty-two motor and water sport organisations are joint holders of an approval that permits the supply of leaded petrol for use in motor and water sport activities. There are 35 race engine builders and tuners that are also joint holders of another approval, permitting the supply of leaded petrol for building, testing or tuning engines that operate on leaded petrol.

Street Machine Services holds an approval to supply leaded petrol at the Summernats Car Festival, and Holden Ltd and the Ford Company of Australia each holds an approval that permits the supply of leaded petrol to undertake engine testing, design and development.

The 32 motor and water sport organisations may issue, to their eligible members, Leaded Fuel Passbooks. In deciding whether or not a member is eligible, these organisations are required to assess whether there is a technical need for a vehicle to continue to run on leaded fuel. Individuals issued with a Leaded Fuel Passbook may purchase leaded racing fuel from fuel suppliers who have been included in the approval as Regulated Persons

(see Section 4.1.5). A passbook holder is limited to obtaining 200 litres of leaded fuel each seven days.

Although no data on the volume of fuel supplied under these approvals could be found, that volume is likely to be relatively minor. This supposition is supported by the findings of a consultancy looking specifically at racing fuel matters, concluded in late 2004. The administration of the Act requires that the approval may be granted to a person who may then supply fuel of the approved quality specification, or alternatively, the supplies may be made by another person specified in the approval (a Regulated Person). These approvals expire on 30 June 2005.

3.2.2 'Wintermix' automotive diesel fuel

Four approvals for the supply of automotive diesel formulated to operate at low temperatures have been granted, and this fuel does not comply with the standard. The approvals were issued to the major oil companies, and include a long list of Regulated Persons who either distribute 'Wintermix' or operate service stations selling it to end users. These approvals expired on 31 December 2004.

The need for 'Wintermix' arises because, as the ambient temperature is reduced, wax crystallises out of diesel fuel and a point is reached where the fuel will no longer flow. Under that circumstance the engine will not start. The longstanding approach to this problem has been for the fuel suppliers to supply a 'Wintermix' fuel in certain regions of the country at certain times. This fuel forms wax at a lower temperature than the usual diesel supply. Typically the fuel can be seen as automotive diesel fuel with some added heating oil or kerosene to provide this low temperature operability. Because of this, the fuel fails to meet the full suite of required diesel characteristics; notably, the viscosity and density are reduced, the lubricity is lower and the sulfur level is higher.

3.2.3 Comgas Scheme supply

An approval has been granted to permit the substitution of avgas (aviation gasoline) for petrol in the Comgas Scheme. This approval expires on 31 December 2005.

The Australian Government Department of Health and Ageing regards petrol sniffing as a major health issue in remote indigenous communities. To try to reduce the incidence of petrol sniffing and to alleviate the health consequences, avgas is supplied for vehicle use rather than petrol. This may lead to some minor adverse vehicle emissions consequences, but it appears that the health issues far outweigh any environmental concerns.

Approximately 33 indigenous communities participate in the Comgas Scheme, which is administered through the Commonwealth Aboriginal and Torres Strait Islander Substance Use Program of the Office for Aboriginal and Torres Strait Islander Health.

Avgas, when used in place of petrol (that is, unleaded, premium unleaded or lead replacement petrol) has been shown empirically to reduce the incidence of petrol sniffing, particularly when restrictions on regular petrol supplies have been combined with other harm reduction strategies.

3.2.4 Lower density automotive diesel fuel

Three small and one large refinery have been granted an approval for a relaxation of the density parameter in the automotive diesel determination. One approval expired on 31 December 2004 and the remaining three expire on 31 December 2005.

The standard specifies a minimum density value as an environmental fuel quality parameter for automotive diesel. A large refinery has been given an approval with a relaxed minimum density value to allow for some batches that would not comply with the standard when running the refinery at optimum conditions. Some 7.25% of the refinery's output is affected. The small refineries produce automotive diesel from crude oil with particular properties which enable little additional refining. The fuel is sold into the local market, remote from other sources of supply of automotive diesel. Economic issues would make it difficult to comply with the standard.

3.2.5 Cleanerburn™

This approval, although granted, was never utilised by the applicant.

3.2.6 Christmas Island

Two approvals were given for the supply of petrol and automotive diesel to Christmas Island. Each of these approvals has expired. The approvals were granted to maintain automotive fuel supplies to the island when the legislation first came into effect.

3.3 Prohibited fuel additives

The Minister has the power to include a fuel additive (or a class of fuel additives) in a register (*Fuel Quality Standards Act 2000*, section 34(1)(a)). There is a complementary power to remove additives from the register. Offences are created at sections 30 and 31 for supplying and importing a fuel additive listed in the register. No fuel additives have been listed in the register.

4 Issues identification

This section examines the issues relating to the operation of the *Fuel Quality Standards Act 2000* (the Act). Section 4.1 presents an analysis of legislative provisions. Sections 4.2 and 4.3 set out the issues arising from consultants' analyses and consultations. Section 4.4 summarises the main findings of the review.

4.1 Analysis of legislative provisions

The legislation has been examined in the light of the experience gained from its administration. Some of the provisions have not been exercised, and reasons have been sought where this is the case. Other provisions have been identified as problematic for administration, or not efficient or effective in achieving the objects of the Act. The parts of the legislation discussed in this section are those where a deficiency has been identified in the achievement of the objects of the Act.

For ease of reference, this discussion cites the relevant section number in the Act or Regulations in the subsection heading.

4.1.1 Emergency law (Act, sections 4(1), 4(2))

The definitions at section 4(1) provide that 'emergency law' means:

- (a) the *Liquid Fuel Emergency Act 1984*; or
- (b) a law specified in a determination under subsection (2) of the Act.

Subsection (2) allows the Minister for the Environment and Heritage (the Minister), by determination, to specify a law of the Commonwealth, a state or a territory as an *emergency law* for the purposes of the Act. To date, no determination under section 4(2) has been made. The scope of 'emergency' that needs to be considered ranges from a situation where the national fuel supply is threatened because of an inability on the part of suppliers to meet fuel quality standards, to the interruption of fuel supply to remote communities.

Since the operation of the Act, there has been one instance of a fuel emergency. On 28 September 2004, the Department of Environment and Heritage (DEH) received an urgent request from the Shell Company of Australia for an approval to vary the Fuel Quality (Petrol) Determination 2001 to enable the supply of unleaded petrol containing up to 25% olefins, rather than the required limit of 20% (with a pool average of 18%). The approval was sought to alleviate an existing tight fuel supply situation in New South Wales that had recently been exacerbated by an unavoidable extension to a maintenance shutdown at Shell's Clyde Refinery. Shell advised that it had exhausted all alternative product supply avenues, including purchases from local oil companies, movements of fuel interstate, and imports from Asia. Without an approval to supply the higher olefin fuel, the company advised that it would only be able to meet 50% of normal unleaded petrol demand, causing widespread disruptions in the marketplace.

An extraordinary meeting of the Fuel Standards Consultative Committee (FSCC), via teleconference, was convened at short notice on 28 September 2004 to consider the approval. Three senior representatives of the Shell Company were invited to attend to enable members of the FSCC to hear at first hand the circumstances resulting in the supply crisis. After lengthy deliberations, and independent technical advice on the potential impacts of the higher olefin level on the environment and vehicle operability, the Committee agreed to recommend to the Minister that the approval be granted. The Minister granted the approval on 30 September 2004 for a 28-day period.

The Department of Industry, Tourism and Resources (DITR) has recently commissioned a review of the *Liquid Fuel Emergency Act 1984*. ACIL Tasman's report⁸ on the review was released on 16 December 2004. The consultant considered the interaction between the *Fuel Quality Standards Act 2000* and the Liquid Fuel Emergency Act, both in relation to the operation of the latter as an 'emergency act' and the effect that powers under this Act — allowing the Minister for Industry, Tourism and Resources to direct outputs from refineries — may have on the operation of the Fuel Quality Standards Act.

In recognition of the potential for a relaxation of fuel standards to supplement fuel supplies in the event of a fuel emergency, the consultant recommended that the government should commission a study jointly by DEH (as secretariat to the FSCC) and the National Oil Supplies Emergency Committee on the issues associated with altering fuel standards in response to a national product supply shortage. This should include the potential impact of a relaxation of fuel standards on vehicle operability; air quality and other environmental impacts; industry competitiveness; and extent to which new product supply — from refineries, other domestic sources and from imports — might be increased by a relaxation of fuel standards in a national fuel emergency.

Recommendation 1

The review panel recommends that fuel emergencies which potentially affect fuel quality should, as far as possible, be dealt with under purpose-designed provisions under the *Fuel Quality Standards Act 2000*. An emergency provision should be included to allow the Minister for the Environment and Heritage to grant an approval if satisfied that the following criteria are met:

- There is an emergency potentially affecting fuel quality and it is appropriate to deal with it under this law rather than another.
- The Fuel Standards Consultative Committee and the National Oil Supply Emergency Committee have been consulted to the extent practicable give the nature of the emergency.
- The overall balance of public interest lies in granting an approval.

Appropriate disincentives should be developed to ensure that the potential for a relaxation of fuel quality standards is not abused by fuel companies.

DEH will develop appropriate policy and procedures for approvals related to fuel emergencies. This will ensure that the provisions of the Liquid Fuel Emergency Act and the Fuel Quality Standards Act are consistent and cross-referenced. These procedures would be revised should the above recommendation be implemented.

⁸ ACIL Tasman Pty Ltd (2004)

4.1.2 External territories (Act, section 7)

Section 7 states that ‘This Act extends to every external territory other than Norfolk Island.’ The objects of the Act under subsection (a) of section 3 are directed towards reducing emissions from the use of fuels that may cause environmental and health problems. These problems are known to have the potential to occur in the urban areas of Australia’s large cities. It is of doubtful value in achieving the objects of the Act to require and enforce compliance with fuel quality standards in remote territories where security of supply to these standards may be difficult to achieve. An example of such an issue is the approvals granted for the supply of petrol and automotive diesel to Christmas Island. Although consideration could be given to broadening the exclusion from the operation of the Act of remote territories where fuel supplies in compliance with the standards may be difficult to secure, there are potentially significant environmental impacts of doing so. For example, non-compliant fuel (with high levels of methyl tertiary-butyl ether, MTBE) could contaminate groundwater supplies. Such impacts warrant the continuation of approvals in remote locations, to allow the imposition of appropriate conditions on non-standard fuel supplies.

Recommendation 2

The review panel recommends that there be no change to the current operation of the Act (regarding external territories: section 7).

4.1.3 Establishment of national standards (Act, section 9)

The explanatory material⁹ that accompanied the Fuel Quality Standards Bill 2000 provides this commentary on what is now section 9 of the Act:

The Act is not intended to exclude or limit the operation of any state or territory law that is capable of operating concurrently with the Act, except to the extent that the Regulations provide for a state and territory law relating to the supply of fuel to be excluded.

The Commonwealth Act is intended to provide for a uniform, national application of standards. In general, where the Commonwealth has specified a standard in respect of a fuel characteristic, the Commonwealth standard will operate to the exclusion of a state or territory standard in respect of the same characteristic.

In some circumstances, for example where fuel characteristics must vary according to climatic conditions, state or territory regulation may be more appropriate. In these instances, the Commonwealth may specify a default standard, to operate only in the absence of consistent state or territory standards.

The Regulations will specify the extent to which state or territory laws are excluded. This is in order to be able to accurately reflect the field that the Commonwealth standards occupy.

In general, motor vehicle fuel quality had not been regulated in Australia. Some states and the Australian Capital Territory had regulations that limited the amount of selected components of fuels, for example lead in petrol, and there were arrangements between refiners and some state governments in the form of a memorandum of understanding to manage other parameters, notably vapour pressure, but generally reliance was placed on

⁹ DEH (2000)

the specification contained in the relevant Australian Standards¹⁰ to define acceptable fuel quality. The oil industry used the Australian Standards as benchmarks for their production, with a focus on producing fuel that was ‘fit for purpose’.

From 1999, regulations were made in Western Australia, South Australia and Queensland to specify particular fuel quality parameters.¹¹ The approaches used by each state were different, reflecting the differences in the environmental issues being addressed and the capacity of local fuel suppliers to meet the requirements. As a result, there were pre-established levels set in some states before the Commonwealth determinations for petrol and automotive diesel were finalised. State governments were not supportive of the Commonwealth legislation overriding the state regulations where the outcome would be a decrease in environmental protection.

Section 9 of the Act, at subsection 2, provides that the Act is to apply to the exclusion of a law of a state or territory regulating fuel standards or fuel quality information standards to the extent prescribed by the Regulations. There has been no regulation made for this subsection.

The effect of the state regulations regarding the elimination of lead additions to petrol has ceased to be of interest — the Commonwealth requirements have ‘caught up’ with those states that mandated a ban on the addition of lead to petrol earlier than required by the determination, resulting in national harmony. Other parameters regulated by the states remain at odds with the levels set by the determinations.

The maximum level of MTBE in petrol is a case that illustrates the point. Regulations in Western Australia prescribe 0.1%; the Queensland regulation sets 0.5%; and the determination sets 1%. The requirements set by the states are more stringent than that required by the Commonwealth’s determination and national uniformity is not achieved. (When the reverse is true, and the determination requirements are more stringent, national uniformity is achieved because the Commonwealth standard prevails.)

At section 21 subsection 2 of the Act, the Minister is given explicit power when making fuel standards to include more stringent parameters for fuel supplied in specified areas of Australia. The power is qualified to the extent that:

- ‘preference (within the meaning of section 99 of the Constitution) to one State or part of a State over another State or part of a State’ must not be given (section 21(3))
- guidelines must be developed for the exercise of the power and the guidelines are a disallowable instrument (section 22).

Guidelines have not been made, and the power has not been exercised. It would seem that this mechanism may be appropriate to address situations where there is an environmental reason for applying stricter fuel quality standards in a particular state or a part of a state.

The Fuel Quality Information Standard (Ethanol) Determination 2003 prescribes the wording and appearance of a notice that is required to be fixed ‘as close as practicable to each nozzle that dispenses the ethanol blend’. The governments of New South Wales and Victoria have separately made regulations under fair trading legislation requiring

¹⁰ Standards Australia 1990, AS 1876–1990; Standards Australia 1998, AS 3570–1998.

¹¹ Environmental Protection Regulations 1998 (Queensland), sections 38ZI-38ZU; Environmental Protection (Diesel and Petrol) Regulations 1999 (Western Australia); Environment Protection (Motor Vehicle Fuel Quality) Policy 2002 (South Australia).

information signs where ethanol blend petrol is sold, using different words and appearance specifications such as colour. State and territory regulation using fair trading legislation is likely to have a different emphasis from Commonwealth determination because the Commonwealth approach seeks to balance environmental and industry development with consumer protection objectives. The Commonwealth legislation in such circumstances prevails (section 109 of the Constitution states that when a law of a state is inconsistent with a law of the Commonwealth, the latter shall prevail, and the former shall, to the extent of the inconsistency, be invalid). However, the practical outcome is that service stations face the complexity of determining which of the Commonwealth and state labelling regulations apply to them. For fuel quality information standards, the existence of state legislation in the same field of application as Commonwealth legislation is resulting in an unnecessary burden on those subject to the regulation.

State and territory fair trading agencies are concerned that the fuel standards in the determinations do not fully address the ‘fit for purpose’ requirement under their legislation. Examples where consumer protection objectives do not appear to have been met by the determinations are the leaks reported from some older diesel fuel pumps associated with the use of some low sulfur diesel, and the need for an approval to vary the determination to allow the supply of ‘Wintermix’ diesel to cold climate areas. Similar issues could arise for fair trading agencies with diesel–biodiesel blends, diesohol and other blended fuels, if products in compliance with the relevant determination fail to meet the expectations of consumers. Operability standards have attempted to address this issue, by defining parameters that can be set at a required level to assure the proper operation of engines.

The volatility of petrol is an important environmental specification not currently included in the determination. Volatility is reflected by a measurement called the Reid Vapour Pressure (RVP). This parameter measures the potential for fuel evaporation, a major contributor to hydrocarbons in city air. Lowering RVP is beneficial to air quality, but the petrol must be formulated to have sufficient vapour pressure to ensure reliable cold starting of engines. Another consideration is the supply–demand balance for the volatile components — if supply exceeds demand, refinery flaring of this material results in emissions of gases that contribute to the enhanced greenhouse effect.

Lower RVP benefits air quality most when the potential for production of photochemical pollution is highest: in summer. A number of states have either regulations to limit RVP in the summer months or an agreement with petrol suppliers to secure the reduction. The values of RVP and the defined summer period vary, reflecting environmental requirements, climatic differences, and refinery capacity to manage RVP. Several states have also allowed a relaxation of RVP where petrol contains ethanol, as ethanol in a 10% blend raises the RVP of the resulting mixture above that of straight petrol.

Section 21 of the Act provides for a *Base standard* and for a *More stringent standard* to be established in specified areas of Australia. There is no reference to a less stringent standard. To remove any doubt, an amendment to allow for less stringent climatic and seasonal variations in the base standard when required to achieve the object of the Act could be considered. Fuel quality standards would be enhanced by the inclusion of a national specification for RVP.

Recommendation 3

The review panel recommends that discussions be instituted with the states and territories on regulation of Reid Vapour Pressure, with a view to introducing a national standard that takes into account climatic and seasonal factors as appropriate.

4.1.4 Regulatory gap regarding natural persons (Act, sections 12, 12A, 18, 19, 20, 66)

The *Fuel Quality Standards Act 2000* applies to corporations, to Commonwealth entities, and to persons involved in constitutional trade or commerce. This leaves a gap in the regulatory net, namely any participants in the fuel chain — including both service stations and individuals — that are unincorporated and are not engaged in interstate trade. At the very least this situation is inequitable, with two classes of operators — one group is required by law to supply fuel in accordance with the Act, and a second group (engaged in the same business) is outside the scope of the operation of the Act.

The extent of the problem of unincorporated individuals supplying non-standard fuel is believed to be small. However its existence defeats the purpose of the legislation, namely to set standards for fuel supply generally, irrespective of the constitutional status of the fuel supplier (whether the retailer is a corporation or not).

Options to address the loophole include:

1. Enactment of parallel state and territory legislation (which would extend the regulatory scheme established by the Commonwealth Act to unincorporated individuals). The disadvantage of this approach is that it is cumbersome, involving new legislation across the states and territories.
2. Amendment of the Act to make corporations who supply fuel to unincorporated individuals liable for the acts or omissions of those individuals (‘upstream corporate liability’), subject to a due diligence defence.

The upstream corporate liability option, however, is not considered feasible; it is unfair and contrived. It is unfair to upstream suppliers, both in making them responsible for compliance in lieu of government, and also in exposing them to potential liability for the actions of others. An alternative formulation of the above concept of making corporate suppliers responsible for certain breaches by individuals is to impose a statutory duty on corporations regarding the supply of fuel to individuals. The duty would be for supplier corporations to take all reasonable measures to ensure that, when they supply fuel to individuals, the individuals understand and will comply with the obligations applicable to corporations under the Act. Breach of the statutory duty would constitute an offence.

In the United Kingdom a similar statutory duty exists in relation to waste management. A person transferring controlled waste must take all reasonable measures to ensure that the transferee is an appropriate person and that the waste is properly described.¹² The legislation requires a code of practice to be published on how to discharge the duty.

Disadvantages of upstream liability are its indirectness, complexity, and additional costs for suppliers. Enforcement for breaches by individuals would not be directly against them, but against their corporate suppliers, adding to the complexity of enforcement. There would be costs associated with requiring corporate suppliers to be discriminating as

¹² Environmental Protection Act 1990 (United Kingdom), section 34.

to which individuals they should supply fuel to, and to follow due diligence procedures to minimise the risk of supplying fuel to individuals who are likely to breach the Act. Corporate suppliers may object to this ‘enforcement’ role in relation to their non-corporate customers

A third option would be to require that states and territories make incorporation a condition of their licensing arrangements to retail petroleum products. This would need to be ‘grandfathered’ (for example, by exempting already licensed operators for a specific period of time to allow them to become incorporated) and may have some equity implications. This option also fails to address the issue of varying fuel standards in some states and territories and is therefore not favoured.

To ensure coverage of unincorporated entities and nationally consistent fuel standards, the favoured option would be to approach the states and territories with a view to developing complementary fuel quality standards legislation.

4.1.5 Approvals (Act, sections 13, 68)

Need for power to delegate

The combined effect of sections 13 and 68 is that only the Minister can grant an approval to vary a fuel standard or a fuel quality information standard. The Minister cannot delegate the power to make an approval or a standard (section 68).

It could be argued that the power to grant an approval is administrative in nature, and should be delegated. For example, an approval may be desirable to permit the supply of a low volume specialist fuel that does not conform to a fuel standard. It may be desirable to grant the approval quickly.

Furthermore, over half of the approvals that have been granted were for the supply of leaded and specialist fuels for motor and water sport use. The time and resources used in processing applications for approvals of this type has been greater than anticipated and it is desirable to streamline the process. The process would be simpler if the decision-making power were delegated, and as these approvals involve only small amounts of fuel, approval at the ministerial level may not be necessary to ensure that the objects of the Act are being met.

Against the above arguments is the fact that the power to grant approvals is broad. There may indeed be political ramifications if a broad approval is granted, hence exclusive ministerial responsibility for approvals may be appropriate in some cases.

A compromise may be to enable the Minister to delegate the power to grant approvals, but only for decisions of a minor nature (in terms of the approval’s likely effect on achieving the objects of the Act). This could be achieved by defining the extent of delegation in the Act, or more flexibly through the giving of general directions in the instrument of delegation executed by the Minister.

Recommendation 4

The review panel recommends that approvals of a minor nature be delegated.

Regulated Persons

The Act is constructed around the regulation of the *supply* of fuel. Section 13 creates a *Regulated Person* as a person other than the person granted the approval who may supply fuel to the varied standard stated in the approval. A Regulated Person must be specified as a part of the approval.

The requirement to specify all persons having the benefit of an approval is administratively difficult and costly, both for DEH and for the approval holder. DEH has no easy way of dealing with amendments to approvals. In a typical situation, there are multiple distributors and retailers affected by an approval. These may vary over time as new businesses establish and others either relocate or close. For the approval holder, it is difficult to identify all potential Regulated Persons for inclusion into the application for approval, partly because some of them are separated by two or more steps in the supply chain. Amendment of an approval once granted is expensive and cumbersome. Section 17 places an onerous condition upon the approval holder — to inform any Regulated Person about applicable conditions in the approval, any changes in conditions, and when it expires.

Examination of the administration of Division 3 — Approvals of the Act has raised significant doubts about the practicality of its implementation. It is by no means certain that all persons supplying fuel under a particular approval are listed as Regulated Persons for the approval. There is considerable doubt that the administrative effort contributes to the achievement of the object of the Act.

A better administrative scheme may be to provide for a *class* of persons to be granted approval to supply fuel as specified in the approval. In cases where the specification is varied for climatic reasons (eg ‘Wintermix’), the class might be distributors and service stations in areas defined by climatic and seasonal factors. Where the variation is for supply from a specified source (eg low density diesel), the class might be the downstream suppliers of material from that source.

Alternatively, provision could be made so that the Minister could delegate some decisions about approvals to DEH. Administrative matters such as the details of Regulated Persons are appropriate for delegation to DEH. However, the uncertainties about completeness of identification of those needing to be listed as Regulated Persons remain with this option.

Recommendation 5

The review panel recommends that the Regulated Persons provision be simplified.

4.1.6 Testing methods (Act, section 21)

Fuel quality standards have been developed by selecting appropriate and measurable fuel parameters and deciding on acceptable values for them. To promote consistency, testing methods to be used in making the measurements were also prescribed in the determinations of fuel quality. Experience has shown that for a variety of reasons it is sometimes desirable to alter a method of testing or specify an alternative equivalent method. The Act requires that the Minister make such a determination, notwithstanding that it is technical in nature.

Consideration could be given to removing the testing methods from the determinations and locating them in a document called up by the Act, such as a fuel sampling and testing

manual. The determinations could then refer to the location of the prescribed methods. Amendment of the methods of testing could be achieved by DEH publishing a new version of the fuel sampling and testing manual.

Recommendation 6

The review panel recommends no change to the current operation of the Act (regarding test methods: regulation 21).

4.1.7 Making information standards (Act, section 22A)

Since it commenced, the Act has been amended to broaden its scope so that fuel quality information standards can be made. The information standards are for ‘a specified supply of a specified kind of fuel’.

Section 22A at subsection 2 (a) states that the information to be provided in connection with the supply of fuel is done in the public interest. The intention of section 22A is similar to that of state agencies dealing with fair trading issues and fair trading. The Minister is required by section 24A to consult with the FSCC before making a determination under section 22A. It may be prudent to consult with state fair trading agencies given the issues (such as in relation to ‘Wintermix’ and regarding leaking of older diesel pumps that can arise when low sulfur diesel is used, as discussed in Section 4.1.3).

Recommendation 7

The review panel recommends non-statutory consultations before the making of information standards.

4.1.8 Expert advisers (Act, section 27)

The appointment of expert advisers to assist the FSCC with its work is provided for at section 27 of the Act. To date, no appointments have been made.

The Act provides that the FSCC will make recommendations to the Minister on matters where consultation is mandated. Consultation is required before the Minister makes a determination of a fuel standard or of a fuel quality information standard, and before granting an approval to vary a fuel standard or a fuel quality information standard. These are potentially complex and technical decisions, and the ability of the FSCC to provide sound advice may be enhanced by having expert advisers available to members of the Committee under circumstances where the advice is requested. However, there is no need to appoint advisers as they have no decision-making role and their specialist advice may be limited to a specific issue. It would be enough for the advisers to be engaged by the Chair to assist the FSCC. The FSCC procedures would allow for this as, under section 28, the committee can determine its own procedures.

Recommendation 8

The review panel recommends that the section on expert advisers be repealed.

4.1.9 Appointment of inspectors (Act, section 38)

Enforcement of the Act Australia-wide presents several challenges, not the least of which is the ability to have technically competent persons available at a range of locations to monitor compliance with the Act's provisions and to gather evidence in cases where non-compliance is suspected. The Act provides for the appointment of inspectors to carry out these functions.

It should be noted that inspectors have significant powers under the Act. A method of limiting the exercise of the available powers for an individual appointee is available through the instrument of appointment, where the role, activities and responsibilities of the inspector can be set out, together with a list of powers he or she is authorised to exercise.

Currently, DEH has service level agreements with some state and territory fair trading agencies and with the Australian Taxation Office for the provision of inspectorial services for the purposes of the Act. The Australian Taxation Office has indicated that it will not be able to provide such services beyond mid-2005, and other arrangements will need to be secured in the relevant states.

Section 51 of the Act makes the Commonwealth liable for some actions of inspectors. Issues of accountability would need careful consideration when contemplating the appointment of inspectors who are not already government employees, in the context of training of officers, supervision, and the collection of evidence sufficient to support prosecution. Nevertheless, it may be cost-effective to contract persons with limited powers to collect initial screening samples of fuel, with more broadly empowered inspectors used for follow-up as necessary. The Act could also be amended to allow contractors, rather than inspectors, to conduct the initial screening of samples. Once the initial screening revealed sites apparently supplying off-specification fuel, inspectors would take repeat samples. This would allow for a less resource-intensive approach, as only the inspectors would invoke the full legal sampling procedures.

Screening could also take place when samples arrive at the laboratory. This screening would indicate whether the fuel was likely to be non-compliant and require the full suite of tests to be undertaken. This approach would reduce the overall cost of testing per sample and would provide a more efficient use of laboratory resources. DEH advises that this proposal is being implemented.

Recommendation 9

The review panel recommends that the Act be amended to empower contractors to collect samples of fuel.

4.1.10 Powers of entry (Act, section 40)

For the purpose of monitoring compliance with the Act, inspectors are granted powers under section 40 to enter premises either with the permission of an occupier or under a monitoring warrant.

The requirement to obtain the permission of the occupier or a monitoring warrant before an inspector can take a fuel sample from a service station does not assist the efficient achievement of the objects of the Act. Inspectors should have the right to take samples

without the occupier's permission or a warrant. Otherwise occupiers can refuse permission, then make arrangements to remedy any breaches of the Act in the time it takes an inspector to obtain a search warrant.

Inspectors under related legislation have the right to enter premises. For example under section 196 of the *Protection of the Environment Operations Act 1997* (New South Wales), authorised officers can enter some premises at any time when certain activities are being carried out on the premises, and other premises at any reasonable time.

Good sense dictates that, in practice, inspectors should normally announce their presence to the occupier and seek the occupier's cooperation upon their arrival at the premises for inspection. However, to require the occupier's permission as a prerequisite to taking a fuel sample is an unwarranted obstacle to efficient and effective enforcement. The power to enter could be limited to stated hours, or to the normal opening hours of the supplier whose premises are to be inspected, or to reasonable hours in the circumstances.

Recommendation 10

The review panel recommends that the Act be amended to remove the requirement for an inspector to first obtain the occupier's permission before exercising monitoring powers.

4.1.11 Penalty notices (Act, sections 12A, 18, 19)

Penalty notices (also called infringement notices or on-the-spot fines, even if they are not issued on the spot) are an efficient and increasingly used enforcement option in relation to minor infringements of taxation, traffic, environmental and occupational health and safety legislation.

It is suggested that DEH should be able to issue penalty notices for minor infringements of the Act, for example where the requisite fuel pump notice in relation to the ethanol content of fuel is not properly displayed. With labelling of biodiesel, and potentially other fuels a strong likelihood in the near future, a penalty-based approach to such minor compliance issues will obviate the need to prepare detailed briefs and obtain witness statements, as is required (and appropriate) for more serious breaches.

In contrast with prosecutions in courts, penalty notices obtain their deterrent effect particularly because they can be issued easily, and issued very soon after the discovery of an alleged offence by an inspector.

Penalty notice provisions in legislation typically provide that a penalty notice may be served personally or by post. If the person served with a penalty notice does not wish to have a matter determined by a court, the person makes a payment as described in the notice.

If the amount of the penalty prescribed for the alleged offence is paid, no person is liable to any further proceedings for the same alleged offence. Therefore, once a penalty notice has been paid, and assuming DEH does not withdraw the penalty notice within 28 days after the date on which it was served, DEH cannot commence proceedings for that offence.

Payment of the fine does not have the effect of an admission of any liability for any civil claim arising out of the events from which the alleged offence arose.

The *Prosecution Guidelines* (2001)¹³ of the New South Wales Environment Protection Authority (now part of the Department of Environment and Conservation) provide guidance on the circumstances where penalty notices can be a useful enforcement option:

‘Penalty notices are appropriate in the following circumstances:

- (a) where the breach is minor
- (b) where the facts are apparently incontrovertible
- (c) where the breach is a one-off situation that can be remedied easily
- (d) where the issue of a penalty notice is likely to be a viable deterrent.

It is not appropriate to issue penalty notices where:

- (a) the breach is on-going and not within the alleged offender’s capacity to remedy quickly
- (b) the penalty prescribed on the notice would be inadequate for the severity of the offence
- (c) the extent of harm cannot be assessed immediately
- (d) the evidence is controversial or insufficient such that if a Court heard the matter, it would be unlikely to succeed
- (e) a period of fourteen days has elapsed since an authorised officer forms a view that an offence has been committed
- (f) negotiations are being conducted already with the [Department] to find a resolution to the problem which is the subject of the breach
- (g) where multiple breaches have occurred.’

Penalty levels are typically a few hundred dollars, commensurate with the minor nature of the alleged offence, and significantly less than the penalty that could be imposed by a court.

Recommendation 11

The review panel recommends that the Act be amended to allow for provision of ‘on-the-spot’ fines for minor offences.

4.1.12 Information sharing (Act, section 67A)

There are other aspects of fuel supply that interest government agencies, in addition to the quality issues addressed by the Fuel Quality Standards Act. Fuel is subject to the collection of excise and provision of grants and subsidies, administered by various Australian Government agencies including the Australian Taxation Office, the Treasury and DITR. State fair trading agencies have responsibilities for investigation of fitness for

¹³ New South Wales Environment Protection Authority 2001, pp 20–21.

use and the accuracy of quantity measurements for supply of fuel to the public. In addition, DEH has arranged for officers from other departments and agencies to be appointed as inspectors under the Act in some cases.

Information obtained by investigations under the Act may be relevant to the enforcement of fair-trading, consumer affairs, tax or environmental legislation of the Commonwealth or states and territories. However, the Australian Government Solicitor has advised DEH¹⁴ that the Act does not presently contain the power for inspectors to pass on information to other agencies.

The Act has recently been amended by inserting section 67A, which enables certain information gathered under the Act to be shared with the Commissioner of Taxation ‘for use in relation to grants described in the *Energy Grants (Cleaner Fuels) Scheme Act 2004*’. However, there are no proposals to enable information gathered by inspectors under the Act to be shared more generally with other agencies that have specific responsibilities related to the quality of fuel.

If the Act is amended to enable information to be shared with additional government agencies in the case of personal information, the effect of the *Privacy Act 1988* should also be considered.

An advantage of legislative amendment to enable information sharing would be to enable more efficient use of the resources of enforcement agencies, and thereby to increase the level of regulatory enforcement. A disadvantage of such amendment may be that its purpose could be regarded as too broad and not related to the purposes of the Act. However, this disadvantage might be overcome by broadening the Act’s objects, and by specifying the particular legislation for the enforcement of which information could be passed on.

Recommendation 12

The review panel recommends that the Act be amended by broadening section 67A to include matters in relation to the *Excise Act 1901*.

4.1.13 Sampling manual (regulation 17)

Prosecution for an offence against section 12 of the Act (Complying with fuel standards) or section 20 (Altering fuel the subject of a fuel standard) is likely to rely in large part on evidence about fuel samples collected by inspectors. Regulation 17 of the Fuel Quality Standards Regulations 2001 gives an outline of what an inspector must do when taking a sample. DEH has developed a *Sampling Manual* with a detailed procedure to be followed by inspectors. One of the objectives of the manual is to ensure that samples are competently and consistently taken to meet the evidentiary requirements of the Act.

Where compliance with sampling procedures is not an issue in court proceedings, it would be useful to streamline proceedings by providing a certificate as prima facie evidence of such compliance, rather than calling oral evidence.

Some unanticipated technical problems have arisen in complying with regulation 17 when taking samples to monitor compliance with the Fuel Standard (Autogas) Determination 2003. Amendment is required to allow for the proper and safe collection and handling of

¹⁴ Personal communication (advice dated 17 October 2002, ref 02103548).

gaseous samples. One approach to the amendment is to qualify the requirements of regulation 17(2)(b) and 17(3)(b) by a test of practicability, defined amongst other things as consideration of the risk and severity of any potential injury to health arising from the collection and storage of the samples.

Recommendation 13

The review panel recommends that regulation 17 covering the method of collecting a fuel sample include provisions on practicability and that a new section 58C be inserted in the Act, providing for an evidentiary certificate of sampling procedures.

4.1.14 Definition of fuel (regulation 3(2))

The Act provides that ‘fuel’ should be defined in the Regulations for the purposes of the Act. The current definition consists of a list of liquid and gaseous fuels that can be used, amongst other purposes, for internal combustion motor vehicle engines.

The objects of the Act focus on limiting emissions from the use of fuels that may cause environmental and health problems. These adverse effects are invariably seen to originate in urban areas with a high density of motor vehicle traffic. In regulating fuel quality with the express intention of addressing urban emissions from motor vehicles, it would appear that a disproportionate administrative effort has been expended on managing non-compliance in situations where the impact on urban air quality is likely to be minimal. An example of this is the granting of approvals for variations to the standards for very low volumes of fuel use (when compared to the total volume of fuel used), such as for motor sports, or for low volume fuel uses in remote locations. In addition, some of these approvals do not seem on the face of it to be a short-term solution to a problem with meeting a particular standard. Rather, it seems likely that the need for a variation to the standard will continue for the foreseeable future unless other aspects of the regulatory regime (for example, values of parameters in the standard) are changed.

In seeking ways to simplify the administration of the Act in these cases, without putting in jeopardy the objects of the Act regarding impacts on air quality, amendment of the determinations to take account of special cases could be considered. This would result in a loss of the simplicity of the standards as now formulated, if special cases were to be incorporated.

An alternative approach is to define ‘fuel’ for the purposes of the Act to exclude certain classes of material. As an example, the Australian Department of Defence — Joint Fuels and Lubricants Agency wishes to harmonise the fuels to be used in military vehicles with the standard war zone fuels used by Australia’s allies. There is an unnecessary risk to personnel in attempting to change to a different fuel when vehicles are entering a conflict zone. The definition of ‘fuel’ in the Regulations could be modified by providing a list of exceptions so that for the purposes of the Act, ‘fuel’ no longer includes any substance used in a military vehicle. Given the relatively small number of military vehicles in Australia, the impact on air quality would be negligible. A disadvantage of this approach may be that it is inconsistent with plain English: fuel is fuel regardless of whether it is defined as such, depending on whether it is used in a military or non-military vehicle. This could be overcome by framing the exclusion differently. For example, the offences could be amended by adding an additional element. A person would then not be guilty of an offence if, for example, the supply of fuel was in a location or for a use prescribed in the Regulations.

There is scope to consider this approach for many of the approvals that have been granted, with significant improvement to the efficiency of the operation of the Act.

Recommendation 14

The review panel recommends that the definition of fuel be amended to allow the Minister to make a determination excluding certain fuels in special circumstances, for example, fuel used in defence vehicles, from the Act.

4.1.15 Waiver or reduction of application fee (regulations 5, 6)

Regulation 5 specifies the application fee payable for an approval. Regulation 5(2)(b) gives the Minister power to waive or reduce the application fee if the Minister considers the fee would cause financial hardship. Regulation 5(2)(b) operates subject to Regulation 6.

Regulation 6(3A) may be read as allowing a request for the waiver or reduction of the application fee on a basis other than financial hardship.

The inconsistency between these sections could be resolved by a clarifying amendment to remove any doubt. This amendment would be consistent with the government's policy on cost recovery.

Regulation 5(2)(a) states that 'no application fee is payable by an applicant that is an agency of the Commonwealth or a state or territory'. This regulation should be repealed to remove the competitive advantage extended to government agencies by fee waiver.

Recommendation 15

The review panel recommends that regulations 5 and 6 be redrafted to allow the waiver of applications for an approval to be solely on the basis of financial hardship and that the fee exemption for Commonwealth, state and territory entities be removed.

4.1.16 Record keeping (regulation 24)

Part 6 of the Regulations applies to the 'Record keeping and reporting obligations' at Part 4 of the Act. Part 6 specifies the records that must be kept by each class of supplier, and at regulation 24(2)(b) requires the records be retained for two years. To facilitate auditing of these records as an effective enforcement process for the Act, it is necessary that the records be available to an inspector at the premises where the supply of fuel occurs. The records may be hard copies of documents, in which case they need to be physically present. Alternatively, if the records are kept electronically, they need to be available for access and printing.

Recommendation 16

The review panel recommends that regulation 24(2) be amended to include an additional requirement that a record must be available for access and copying by an inspector at the location of the supply of fuel.

4.2 Project 1 analysis and consultations

‘Project 1’ refers to the analyses and consultations carried out for the review by Economic Associates (Australia) Pty Ltd.

4.2.1 Impact of regulation on emissions

The objectives of the Act relating to the reduction of emissions from the use of fuel are stated in Section 2.1 as objective (a) parts (i) to (iii). These objectives embody fuel quality policies which have been developed and refined since 1997. This subsection discusses the progress which has been achieved since the Act was proclaimed in 2000, and issues identified in consultations with stakeholders.

Key policies for improving fuel quality and reducing vehicle emissions established during the period 1997 to 2004 included direct improvement in fuel quality by setting the following target dates:

- a national phase-out date for leaded petrol of 1 January 2002
- the diesel sulfur standard to be set at 500 ppm by the end of 2002 for road transport fuel
- maximum diesel sulfur standard of 50 ppm to be introduced from 1 January 2006, and 10 ppm from 1 January 2009.

The schedule for adopting complementary improvements in new vehicle emission standards and efficiency is:

- for new petrol vehicles
 - Euro 2 vehicle emission standards in 2003–04
 - Euro 3 vehicle emission standards in 2005–06
 - Euro 4 vehicle emission standards expected in 2007–08
- for new diesel vehicles
 - Euro 2 emission standards in 2002–03 for all new light diesel vehicles
 - Euro 3 emission standards in 2002–03 for new medium and heavy diesel vehicles
 - Euro 4 emission standards in 2006–07 for all new diesel vehicles
- fuel efficiency
 - improvement in the average fuel efficiency of new cars and light commercial vehicles of 15% relative to business as usual by 2010 (the national average fuel consumption target).

Fuel standards are a key part of the government’s national air quality response and have been welcomed by the community, vehicle manufacturers and importers, and the refinery industry. The first set of standards for petrol and diesel took effect in 2002, and become progressively more stringent until 2009. The standards deliver significant benefits, delivering avoided health costs of \$3.4 billion over a twenty-year period. Key fuel quality achievements include: reducing levels of sulfur, aromatics and benzene; banning lead; and limiting ethanol to 10% in petrol blends.

The continuation of fuel quality standards is critical for improving fuel quality and reducing the adverse effects of motor vehicle emissions on urban air quality and human health. It is by far the most cost-effective approach for addressing urban air quality.

Changes to fuel quality and vehicle emission standards

The fuel quality standards and corresponding vehicle emission standards mandated since the Act was proclaimed are shown in Table 4.1. The roll-out of European vehicle emission standards for petrol and diesel vehicles is also shown in Table 4.1 for comparative purposes.

Petrol standards

On 1 January 2002, petrol standards for unleaded petrol (ULP) were implemented which complemented the vehicle emission standards mandated for Euro 2 vehicles commencing in 2003–04. Higher fuel quality standards were also implemented at the same time for premium unleaded petrol (PULP) to enable the introduction of Euro 3 light vehicles. This allowed an accelerated introduction of Euro 3 technology into Australia for motorists prepared to pay the higher price for the premium fuel, before 2005–06. Euro 4 emission standards will be mandated in Europe in 2005. Over the 2002–2005 period, the gap between European and Australian vehicle emission standards will narrow. However, a timetable for the compulsory introduction of Euro 4 vehicle emission standards in Australia has not been finalised.

Automotive diesel standards

The automotive diesel determination commenced on the same date as the petrol determination, but the 500 ppm sulfur standard (Euro 2 standard) did not commence until 31 January 2002. Also, the lower sulfur standard of 50 ppm will not be mandated until 1 January 2006. As a consequence, vehicle emission standards, specifically for light Euro 2 vehicles in 2002 and medium and heavy Euro 3 vehicles (maximum of 350 ppm sulfur) during 2002–05, were mandated before the required automotive standards.

The use of excise tax instruments has provided an effective incentive for refiners and importers to supply 50 ppm sulfur automotive diesel (ultra low sulfur diesel, or ULSD). From 1 July 2003, the Australian Government introduced a 1 cent per litre excise tax differential for automotive diesel exceeding 50 ppm sulfur. This differential was increased to 2 cents per litre on 1 January 2004. Prior to 1 July 2003, ULSD was not supplied in Australia.¹⁵ The excise tax differential has encouraged production of ULSD. For the period July–December 2003, ULSD production as a proportion of total Australian production was 31%. The proportion rose to 40% for January–July 2004 and is projected to rise to 43% for July–December 2004.¹⁶ The provision of automotive diesel fuels as specified for Euro 3 and Euro 4 emission standards will be guaranteed by suppliers (unless labelled or supplied into depot) from 1 January 2006.

¹⁵ Department of Industry Tourism and Resources (personal communication 2004)

¹⁶ Data provided by the Australian Institute of Petroleum (dated August 2003).

Table 4.1 Schedule for the implementation of fuel quality and vehicle emission standards: 2002–09

	Fuel standards		Vehicle emission standards Australia
	Europe	Australia	
Petrol specification			
Sulfur (maximum)	1993: 500 ppm (Euro 2) 2000: 150 ppm (Euro 3) 2005: 50 ppm (Euro 4)	1 January 2002: ULP, LRP — 500 ppm 1 January 2002: PULP — 150 ppm 1 January 2005: All grades — 150 ppm 1 January 2008: PULP — 50 ppm	Light vehicles ^a (GVM ≤ 3.5 t) 2003–04: Euro 2 2005–07: Euro 3 Medium/heavy ^a (GVM > 3.5 t) 2003–04: US 96 ^b 2005–06: US MY2000 ^b
Research octane number (RON) (minimum)	1993: 95 RON (Euro 2, 3)	1 January 2002: ULP — 91 RON 1 January 2002: PULP — 95 RON 1 January 2002: LRP — 96 RON	
Lead (maximum)	1993: 0.13 g/L (Euro 2) 2000: 0.005 g/L (Euro 3) 2005: 0 g/L (Euro 4)	1 January 2002: All grades — 0.005 g/L	
Diesel specification			
Sulfur (maximum)	1993: 500 ppm (Euro 2) 2000: 350 ppm (Euro 3) 2005: 50 ppm (Euro 4)	31 December 2002: 500 ppm 1 January 2006: 50 ppm 1 January 2009: 10 ppm	Light vehicles ^a (GVM ≤ 3.5 t) 2002–03: Euro 2 2006–07: Euro 4 Medium/heavy ^a (GVM > 3.5 t) 2002–03: Euro 3 or US MY2000 ^b 2006–07: Euro 4 or US 2004 ^c

a Passenger vehicles and buses

b United Nations Economic Commission for Europe and the European Union do not have standards for medium-heavy petrol engines; United States Environmental Protection Agency standard adopted in lieu.

c Nominated standards also apply to vehicles fuelled with liquid petroleum gas and natural gas.

Sources: *Regulation Impact Statement for the Fuel Standard (Petrol) Determination 2001 and the Fuel Standard (Diesel) Determination 2001*, pp 5, 6; *Fuel Standard (Petrol) Determination 2001*, pp 3, 4; *Fuel Standard (Automotive Diesel) Determination 2001*, p 2; *Draft Regulation Impact Statement for Vehicle Emissions and Fuel Quality Standards for Post 2006*, pp 59, 60; Minister for the Environment and Heritage, media release, 22 July 2004.

Although there have been problems synchronising automotive diesel and emission standards, by 2006 Australia's Euro 4 standard will be aligned with that in Europe, reducing the gap to only one year. In 2009, Australia's sulfur content standard for automotive diesel will be reduced further from 50 ppm to 10 ppm. This will be in line with the European timetable.

Potential reduction in noxious emissions from road vehicles

Implementation of petrol and automotive diesel fuel standards and vehicle emission standards has been broadly in line with the timetable adopted as the preferred option in the regulation impact statement for the petrol and automotive diesel determinations.¹⁷ Complementary fuel quality standards for Euro 4 petrol vehicles were, however, omitted from the petrol determination. Modelling of potential reductions in emissions was based

¹⁷ Office of Regulation Review (2001)

on Scenario 4 from the Fuel Quality Review¹⁸, which factored in Euro 4 emission standards for petrol vehicles being implemented in 2008.

The potential reduction in emissions was reported in the regulation impact statement as shown in Table 4.2.

Table 4.2 Reductions in emissions under Scenario 4

Pollutant:	% Emissions reduction with 2000 benchmark	
	2000–10	2000–20
Hydrocarbons	20–25	29
Oxides of nitrogen	34	69
Particulate matter	25	33
Benzene	51	72
Carbon monoxide	45–51	66

Source: *Regulation Impact Statement for the Fuel Standard (Petrol) Determination 2001 and the Fuel Standard (Diesel) Determination 2001*, p 15.

The modelling results indicate the potential for significant reduction in noxious emissions from petrol and automotive diesel road vehicles over the period 2000–2020.¹⁹

Data are not available to estimate the proportionate decline in emissions since the determinations were made. However, significant changes have occurred. On 1 January 2002, the use of lead for octane enhancement purposes was banned. Prior to that date, the lead content in leaded petrol ranged from about 0.2 to 0.3 grams per litre.²⁰ At commencement of the determination, maximum lead content was set at 0.005 grams per litre.²¹

A comparison of the sample results for sulfur content in 1998 and the maximum standards specified in the determinations in 2002 is indicative of substantial improvements in fuel quality for all on-road fuels, with the possible exception of PULP. Table 4.3 shows the actual and proposed sulfur content in petrol and automotive diesel over the period 1998–2008.

¹⁸ Coffey Geosciences Pty Ltd (2000)

¹⁹ Emission standards by Euro standard were reported in Coffey Geosciences Pty Ltd (2000) pp E2, E3, but some of these standards are not directly comparable because different test methods have been used.

²⁰ Environment Australia (2000)

²¹ Fuel Standard (Petrol) Determination 2001, p 3.

Table 4.3 Sulfur content in petrol and automotive diesel: 1998–2008

Fuel	Sulfur content in parts per million			
	1998 sample average	1 Jan 2002 max standard	1 Jan 2005 max standard	1 Jan 2008 max standard
Petrol				
ULP	1 500 ^a (500–1000) ^d	500	150	150
PULP	120 ^b (500–1000) ^d	150	150	50
Automotive diesel	1300 ^c (5000) ^d	500	50	10

^a Sample average with minimum of zero and maximum of 2000 ppm sulfur

^b Sample average with minimum of zero and maximum of 1000 ppm sulfur

^c Sample average with minimum of 100 and maximum of 5500 ppm sulfur

^d Figures in brackets: Standards specified in Standards Australia, cited in Environment Australia (2000)

Source: Environment Australia (2000) Paper 2 p 20, 54, 5; Minister for the Environment and Heritage, media release, 22 July 2004.

Impact on greenhouse gases

The regulation impact statement²² based its estimated changes in greenhouse gases on the modelling results of the *Fuel Quality Review*.²³ The modelling showed greenhouse gases increasing over the period 2000–10 by 20% (with intervention) and by 27% (with business as usual), but it was assumed that the National Average Fuel Consumption target would also be achieved by 2010.²⁴

As concluded in the *Fuel Quality Review*, ‘changes to fuel quality will have little direct impact on greenhouse emissions from the transport fleet, but rather that the main impact will be an indirect one enabling vehicle technology improvements.’²⁵ Since the Act was proclaimed, petrol quality standards have been introduced for Euro 2 vehicles and Euro 3 vehicles (PULP only).

ULP (at Euro 2 standard) has been the predominant fuel used in new petrol vehicles. But, over the period 1999–2000 to 2002–03, the proportion of PULP produced by refineries in Australia increased from 8.2% to 12.7%²⁶, which is indicative of increasing numbers of Euro 3 petrol vehicles in the Australian fleet.²⁷

It has been recognised for some time that major improvements in petrol fuel efficiency will not occur until lean-burn technology is introduced.²⁸ Research conducted for the sponsors of the *World-Wide Fuels Charter* confirms the need to substantially reduce fuel sulfur in petrol. As stated in their December 2002 report:

²² Office of Regulation Review (2001)

²³ Coffey Geosciences Pty Ltd (2000), p 15.

²⁴ FCAI (2003; web site; and personal communication 2004). The Federal Chamber of Automotive Industries (FCAI 2003) has proposed a cooperative NAFC target of 6.8 L/100 km by 2010. In 2001, NAFC was 8.28 L/100 km. FCAI note that the ‘achievement of these targets is dependent on a range of factors including more widespread uptake of higher octane (95 RON) petrol and introduction of very low sulfur petrol to facilitate the introduction of a range of advanced engine and emission control technologies.’ Downsizing vehicles is also necessary. The fuel consumption of Australian manufactured cars is approximately in the range 10–11.5 L/100 km for city driving cycles.

²⁵ Coffey Geosciences Pty Ltd (2000).

²⁶ DITR (2004)

²⁷ A proportion of PULP is probably used in Euro 2 vehicles, whose use of the higher octane fuel is generally not as efficient as in Euro 3 vehicles.

²⁸ ACEA et al (2000), p 90.

These technologies have the potential to reduce fuel consumption by up to 15 to 20%, but require NO_x control technologies which can function under lean conditions. These technologies are very sensitive to fuel sulfur ... Sulfur-free gasolines are required to achieve and maintain high NO_x conversion efficiencies.²⁹

Their findings suggest that substantial improvements in petrol fuel efficiency (without downsizing vehicles) will not occur until ultra low sulfur petrol is mandated (Euro 4 and higher standards with very low sulfur content).

Offsetting factors

Two minor offsetting factors for achieving emissions performance are non-compliance with fuel standards by suppliers and a dilution of standards through the granting of standards exemptions to suppliers.

Impact of non-compliance with fuel quality standards

An analysis of the test results from DEH's sampling program is provided in Appendix A and summarised in Table 4.4 in Section 4.3. The overall rate of non-compliance detected from July 2002 to June 2004 was 2.6%. Non-compliance for the supply of automotive diesel was 3.6% compared with 1.8% for petrol. The results show that, if the real rate of non-compliance is close to the rate detected, the incidence of non-compliance with fuel standards has been relatively low, and as a consequence the effect on emissions would be negligible.

Impact of variations to fuel standards

An analysis of variations granted under the approvals system is provided in Appendix B. There was insufficient information available to fully quantify the impact on fuel standards of the approvals, as the volumes affected by the variations have not been estimated or published in all cases. Indicative estimates would suggest the proportions to be low at approximately 0.01% of petrol and 3% of automotive diesel supplies.³⁰ The main exemptions have been for the supply of various types of leaded petrol, higher sulfur automotive diesel (mainly 'Wintermix'), and lower density automotive diesel.

Findings and issues arising from consultation with stakeholders

The views of the stakeholders consulted are represented in this subsection. Some views may need to be tested with further analysis and research.

Regulation of fuel quality in Australia

Most stakeholders agreed with the long-term objectives of the Act, and were of the view that the Commonwealth legislation was necessary, as the legislation commenced from a baseline of no or very limited fuel quality legislation in the states and territories. In their view, fuel suppliers needed market surety. Without intervention, it would have been more difficult to introduce the fuel quality standards in the same timeframe. Refiners would also oppose any reversal of the standards which have been mandated.

It was difficult for stakeholders to comment on the regulatory effectiveness of the Act, due to a lack of publicly available information regarding fuel quality and non-compliance by suppliers. The National Transport Commission (NTC) noted that the legislation

²⁹ ACEA et al (2000), p 22.

³⁰ Excludes the impact of the approval to supply automotive diesel with 'Cleanerburn' additive. This approval has remained inactive.

appears to have been effective in removing non-compliance on an industry scale, but problems could continue at a local scale. The New South Wales Roads and Traffic Authority noted that 60–80 vehicles are tested per day in its emissions testing program in Sydney. Fuel sampling is undertaken as part of this process. The authority has not identified any major problems with fuel quality since the fuel quality standards were implemented. There has been a marked reduction in ‘smoky vehicles’ in New South Wales, assisted in large by improved diesel fuel quality. Further indicators of declining emissions from diesel vehicles were observed by the Bus Industry Confederation (BIC). If 50 ppm sulfur diesel were guaranteed, there would be no need to install vertical exhausts on heavy diesel Euro 3 vehicles (and higher emission standard vehicles) to disperse particulate matter. Also, the incentive to convert buses to gaseous fuels will decline due to the improving quality of automotive diesel.

An issue for some stakeholders was the lack of fuel and emission standards for off-road vehicles and engines, particularly diesel generation sets in cities and the operation of diesel locomotives in urban areas. This issue was raised by the Australian Automobile Association, the Environment Protection Agency Victoria and the NTC. The NTC noted that definitions of off-road fuels including diesel for rail locomotives will be required to complement off-road emission standards when they are prepared.

Timing of legislation and synchronisation with vehicle emission standards

There were two issues concerning the timing of fuel quality legislation. The first concerned the need to implement fuel quality standards in advance of mandating vehicle emission standards. The Department of Transport and Regional Services and the NTC stressed the importance of a mechanism which ensures fuel quality standards are implemented when Australian Design Rules for emission standards are mandated. Their preference is for fuel of the required quality to be available well in advance of the emission standards (preferably 12–18 months in advance). This would enable vehicle companies to test overseas technology in the Australian market. They recognised the problems for refiners delivering fuels into the market ahead of time, and highlighted the importance of effective incentives for refiners. They noted that problems of synchronising vehicle emission and fuel quality standards could become more acute in the post-2006 period.

A second timing issue related to harmonisation with international standards and the facilitation of better engine technology. The Total Environment Centre commented that the timetable for the introduction of fuel standards lagged behind Europe, and could have been more ambitious in meeting oncoming engine technology. This view was supported by the Truck Industry Council, the BIC and the Federal Chamber of Automotive Industries (FCAI).

The FCAI considered the current Australian Government policy of harmonising with international fuel standards as essential:

Going forward, the recognition of well established, globally accepted, engineering specifications would avoid ‘re-inventing the wheel’ and present a great opportunity to improve the efficiency of the standard setting process. This would allow for much faster determination of parameters and limits, particularly in cases where major stakeholders reach consensus.³¹

³¹ Federal Chamber of Automotive Industries submission to the Review of the Fuel Quality Standards Act 2000, April 2004.

The FCAI stated that there had been undue attention paid to minority interests when setting petrol standards, resulting in compromises. The roll-out of vehicles has been constrained because of the lack of harmonised fuel standards, and there are a number of outstanding parameters which require resolution. The processes for setting and revising fuel standards have been too slow, and have not taken sufficient cognisance of overseas developments.

Introduction of new vehicle technology and more effective operation of engines

Discussions with Toyota Australia indicated that considerable progress could be made if there were a substantial reduction in fuel sulfur in petrol. Gasoline direct injection (GDI) engines (which use 'lean-burn' technology) have been available in Japan since the early 1990s. These engines can deliver fuel efficiency benefits of up to 30%. They require very low sulfur (preferably less than 30 ppm) to achieve this level of efficiency improvement.³² The introduction of Euro 3 vehicles has also been partially compromised by the sulfur content in particular instances. The on-board diagnostics have been disconnected in some vehicles because the sulfur content of PULP remains too high at 150 ppm. In some instances, later 'mass market' models will not be introduced into the Australian market until the sulfur content is substantially reduced.³³

As observed by the Federation of Automotive Products Manufacturers, similar issues have been evident for the introduction of high-technology direct injection diesel vehicles. Diesel fuel injection systems are designed for specific fuel sulfur standards. High-mileage vehicles can fail if the sulfur content of the diesel fuels used is consistently above the requisite standard. Some overseas manufacturers introduced direct diesel injection vehicles before 1 July 2003, in anticipation of supplies of 50 ppm fuel sulfur diesel becoming widely available. Others have held back until 50 ppm sulfur diesel is guaranteed.

The BIC observed that bus operators do not know what diesel fuel is available, unless it is delivered into a depot to particular specifications. Obtaining fuel to the correct sulfur specification is a problem for coach operators who pass through different fuel zones. It is also a problem for small fleet owners who do not have fuel depots. BIC noted that there has not been an acceleration of new vehicle technology in the industry.

A related issue concerns the maintenance of engines. The view of stakeholders was that it was generally too early to draw conclusions regarding the impact of fuel quality on engine maintenance. The Australian Automobile Association advised that tracking the impact of fuel standards had been masked by the introduction of on-road service systems by vehicle companies. The New South Wales Office of Fair Trading reported that the number of complaints related to fuel quality fell from 378 in 2001 to 175 in 2003 (a fall of 53% compared with a decline in total consumer complaints of 28%).

Stakeholders stressed the importance of introducing fuel quality standards before or at the time when new vehicle emission standards are mandated.

³² Toyota Australia (personal communication 2004). There are a number of GDI engine vehicles using 2L 4-cylinder, 2.5L V6, and 3.0L V6 engines in Japan. Some models are also marketed in Europe with GDI engines. Fuel savings with higher sulfur fuels fall short of potential savings due to a higher incidence of 'rich-burn'. Current savings in Japan for a Toyota Progress, for example, are about 11% for a 3L engine and 10.4% for 2.5L engine.

³³ It would appear, however, that vehicle companies are prepared to introduce some models in the luxury range, presumably for customers who are willing to purchase the more expensive ultra low sulfur fuels such as Shell Optimax. Toyota Australia intends to introduce a Lexus model with a GDI engine in 2005.

The government recently announced future low sulfur levels for petrol and diesel that start to take effect from January 2008 and 2009 respectively. The standards are complemented by incentives, from 2006 and 2007, for the early production and import of low sulfur fuels. This package of standards and incentives ensures a future framework for fuel quality standards commensurate with emerging vehicle technologies.

Recommendation 17

The review panel recommends no change to the legislation (regarding synchronisation of fuel and emission standards).

4.2.2 Competitive impacts of fuel quality standards

An important guiding principle for formulating fuel quality standards was:

Fuel standards must not impede competition, either between Australian refiners, or with imported refined product.³⁴

In regard to possible impacts on importers, this principle was qualified by an accompanying principle concerning Australian-specific standards:

Fuel standards that directly address environmental or health issues will be determined on the basis of Australian-specific requirements. In such instances, harmonisation with European specifications may be neither necessary nor desirable.³⁵

Although the fuel quality standards apply equally to local refiners and importers, various competitive impact issues have arisen since the Act was proclaimed. Firstly, the operation of the Act has permitted some states and territories to retain standards which differ from the Commonwealth standards. For example, Western Australia's standard for MTBE is a maximum of 0.1% by volume for petrol compared to 1% by volume in the Commonwealth standard.

The Australian Competition and Consumer Commission concluded in 2002 that the more restrictive standards in Western Australia had anticompetitive consequences.

To the extent that it is difficult to import fuel, the introduction of the fuel standards has made BP a monopoly supplier in Western Australia ... The Commission understands that some of the oil majors have imported fuel into Western Australia since the introduction of new standards, but there have been no imports by independents ... Since the ability of independents to access imports at economically viable prices is diminished, their ability to introduce competitive pressures in the market also diminishes. With less competition in the market-place, prices may rise.³⁶

The variability of specific state standards could also reduce the viability of importers aiming to deliver fuel at terminals at different ports in Australia. The independent importers generally do not have the option of re-refining if the fuel is 'out of spec'.

The second issue concerns the more general impact of Australian fuel quality standards on independent importers. Importers have stated that although fuel that meets Australian standards can be purchased from overseas refineries under contract, it is not generally

³⁴ Cited in Environment Australia (2000) p 7, and carried forward into the *Regulation Impact Statement for the Fuel Standard (Petrol) Determination 2001 and the Fuel Standard (Diesel) Determination 2001*, pp 4, 5.

³⁵ Environment Australia (2000)

³⁶ Australian Competition and Consumer Commission (2002), p 45.

available on spot markets. At the time of consultation, the Independent Petroleum Group advised that only one independent importer, Trafigura Services Australia, continued to import petrol and automotive diesel; however, it is noted that Trafigura dominated the import market prior to and during the introduction of the fuel quality standards. The other independent importers have entered into contracts with Australian refiners to source their fuel supplies in order to guarantee compliance with Australian standards or more stringent state standards. This issue is essentially related to supply assurance and the content of the standards (rather than the operation of the Act), and is therefore outside the terms of reference for this review.

Recommendation 18

The review panel recommends that the Department of the Environment and Heritage approach the states and territories with a view to their passing complementary legislation to achieve national harmonisation of fuel standards.

Complementary state and territory legislation has the added benefit of addressing the constitutional limits of the Act.

4.2.3 Implementation of fuel quality and information policy

The Minister for the Environment and Heritage is responsible for implementing fuel quality policy through the development of subordinate legislation in consultation with the FSCC. DEH along with other key agencies has established working groups to discuss broader fuel policy issues at the development stage:

- Petrol and automotive diesel standards — Motor Vehicle Environment Committee (MVEC) and the Vehicle Emissions and Fuel Standards Review Working Group on behalf of MVEC. MVEC's charter has recently been extended, and it has become the Land Transport Environment Committee (LTEC).
- Autogas standard — Liquefied Petroleum Gas Working Group, established by DEH.
- Biodiesel standards — Biofuels Interdepartmental Committee
- Ethanol information standard — Energy Task Force (established by DEH) and the Ethanol Confidence Building Working Group
- Natural Gas — Abbott Consulting Group, commissioned by DEH.

The FSCC, however, continues to consider all fuel standard issues prior to final consideration by the Minister.

Various interrelated issues were identified in consultations. Some were mainly administrative but had important policy implications.

Nexus between fuel quality and vehicle emissions policies

The NTC noted that a strong nexus between the two policy streams must be maintained and fully synchronised. This nexus is important for all transport fuels. LTEC (formerly MVEC) is primarily responsible for the technical oversight of vehicle emission policies and complementary fuel quality standards. The NTC indicated that the linkage between the FSCC and LTEC should be clarified — specifically, the feedback loop for determinations and approvals.

It was noted by a number of stakeholders that the approvals system requires streamlining to enable the FSCC to focus on higher order policy and implementation issues, particularly the next generation of petrol and automotive diesel fuel quality standards. To this end, the FSCC requires technical support, as the issues are highly complex. The Truck Industry Council noted, for example, that the values of fuel parameters cannot be treated independently. In particular, as the standards for fuel sulfur become more stringent, achievement of standards set for other parameters will become progressively more difficult. Also, other parameter values will become relatively more important.³⁷

Policy symmetry

The interaction of numerous Commonwealth, state and territory policies affects fuel quality outcomes. The BIC recommended that policy symmetry be examined from a whole-of-government viewpoint. Currently there is a lack of symmetry across policy areas including: new fuels and emission standards; noise; taxation and vehicle replacement; transport costs; and liveability of cities.

Consumer affairs policies

The legislation has important consumer implications, including labelling standards for fuels, the setting of operability standards, and the impacts on competition of setting standards. Fuel labelling standards were mandated for ethanol blends in March 2004. In addition, some approvals have been conditional upon retailers supplying information at the bowser — for example the supply of ‘indigenous light density diesel’ from Moama Refinery. The introduction of additional operability standards will also need to be considered from a consumer affairs perspective.

Consumer Affairs Victoria saw a need to include consumer expertise on the FSCC, and recommended that a special subcommittee be formed to address consumer issues. Linkages to the Ministerial Council on Consumer Affairs and its Standing Committee of Officials of Consumer Affairs could be considered. Other stakeholders indicated a need for representation of the Australian Competition and Consumer Commission on the FSCC. It should be noted that the overall policy objective of the Act is environmental, rather than consumer protection. The FSCC is not a decision-making body; it is the Minister who has ultimate decision-making authority. The fair trading issues can be raised with the Minister via other, more appropriate avenues. There is, however, a need for the general public to be informed of the existence of fuel quality standards and the obligation of retailers.

Provision of information for policy

One of the strongest messages conveyed by stakeholders was the need for more information to be provided by DEH regarding compliance to fuel quality standards and fuel quality. The Department of Transport and Regional Services recommended a two-tiered approach — firstly, provision of aggregated compliance data by states and territories and secondly, provision of representative sample data for the quality of fuels. Since the Act was proclaimed, fuel quality data have not been publicly available from the oil industry. Many stakeholders also recognised the public relations benefits of reporting fuel quality statistics; the general view was that the public are not aware of the significant improvements that have occurred since the Act was proclaimed. However, the use of the

³⁷ The Truck Industry Council cited the relationship between fuel sulfur and the cetane index as an important example. A higher cetane index than is currently mandated is required to meet European noise emission standards.

fuel sampling statistics for this purpose is limited, as the sampling regime is biased towards non-compliant fuels (the sampling team responds to consumers' complaints). The results are therefore not representative.

In its annual report, DEH reports on the number of samples taken, and the percentage of non-compliant fuel samples. Legal advice suggests that further detailed information cannot be made publicly available. Providing more detailed information may also have unanticipated consequences, such as DEH being subpoenaed in relation to consumer disputes. This would be resource intensive and arguably inconsistent with the policy objective of the Act.

It was recognised that it might not be cost-effective to meet both objectives by simultaneously conducting strategic sampling to monitor compliance and scientific statistical sampling to provide robust fuel quality statistics. The use of complementary sources of information was recommended by some stakeholders, including information drawn from the annual reports supplied to DEH by refiners and importers. Also, recipients of various production subsidies and grants could be required to provide information regarding fuel quality and volumes.

Some stakeholders recommended that for ease of access all statutory and consensus fuel standards be published in a single document, as it is currently difficult for persons not familiar with the legislation to locate the latest amended determinations. The DEH web site contains the latest determinations via a link to the Scaleplus web site, operated by the Attorney-General's Department. Fuel standards, by nature, require frequent amendment, making it difficult to publish and disseminate up-to-date information on the standards. There is, however, a need for more education on the processes of the Act and the responsibilities of suppliers and retailers. It is noted that the nature of the fuel industry, and the technical nature of the information to be conveyed, make such a national education campaign quite expensive, and one which cannot be undertaken at current resourcing levels.

Recommendation 19

The review panel recommends that, resources permitting, an education campaign be undertaken to fully inform suppliers and retailers of their responsibilities under the Act. The general public needs to be advised of the existence of fuel quality standards and the operation of the Act.

4.2.4 Inspections and sampling

Compliance with petrol and automotive diesel standards since the determinations were implemented in January 2002 has been analysed in Appendix A. The analysis shows a high overall rate of compliance. Most breaches have been caused by adulteration and substitution of fuels.³⁸

Monitoring of fuel quality is conducted on behalf of DEH by authorised officers from trade measurement/fair trading agencies in all states and territories with the exception of New South Wales (excluding southern New South Wales) and Victoria. In these two states, DEH has contracted the Australian Taxation Office to undertake monitoring.

³⁸ A comparison of excise taxes and grants in Appendix C highlights the potential for non-compliance, as there are significant variations in effective taxation rates for different fuels.

Extensive consultation was conducted with these agencies, as well as with Consumer Affairs Victoria and the Office of Fair Trading in New South Wales.

The primary responsibility of the contracted agencies has been to obtain petrol and automotive diesel samples at service stations. Only small numbers of samples have been taken at other (higher) points in the supply chain, such as terminals, depots and refineries. Sampling is fully determined by DEH, which selects the sites to be sampled and directs inspectors to sites on specified dates.

The main issues which arose from consultations were as follows.

Sharing of information and planning responsibilities. In New South Wales and Victoria, contracts could not be negotiated by DEH as the agencies wanted DEH to supply information. In Queensland and South Australia, there is also dissatisfaction with the current arrangements. Agencies in these states would prefer to work collaboratively with DEH, particularly to plan sampling, inspections and investigations; identify areas where there is non-compliance; and analyse the causes of non-compliance. In all states and territories, there is a requirement to respond quickly when there are consumer complaints concerning fuel quality. Also, there is a need to inform the public of fuel quality performance and improvements. These agencies noted that the public is generally not aware of the significant improvements which have occurred since the Act was proclaimed.

DEH cannot provide information to the agencies regarding compliance or the results of sampling. The agencies can only infer that samples comply with the fuel standards when they are instructed to destroy control samples. The agencies have experience inspecting fuel sites, as one of their core responsibilities is volumetric testing of fuel-dispensing units. For example, in 2002–03, the New South Wales Office of Fair Trading inspected fuel-dispensing units at 945 sites (27% of 3500 eligible sites). Volumetric testing programs in other states and territories also appear to have high coverage. The agencies have experience in preparing briefs of evidence for breaches of fair trading legislation, issuing infringement notices and prosecuting for breaches of standards. The agencies believe there are important synergies between volumetric testing, knowledge of retail outlets and fuel sampling. This is a resource which could be used more productively by DEH.

Need to test the legislation in court. Most of the agencies noted that the legislation will not be comprehensively tested until a prosecution for breach of the standards (incorporating a full investigation of the breach) is carried out. A prosecution would also send a clear signal to suppliers that fuel standards are being monitored. At the time of this review, 14 cases had been prepared for the Director of Public Prosecutions. The preparation of earlier briefs was hindered by technical problems of the Act, particularly the need for some offences under the Act to be made offences of strict liability. These problems were subsequently addressed through amendments passed in 2003.

Fuel fit for purpose. Most complaints about fuel relate to fit-for-purpose issues rather than fuel quality per se. In Queensland, the impact of low sulfur automotive diesel on fuel pump seals remains a problem in some areas. The Tasmanian Office of Consumer Affairs and Fair Trading noted that the petrol determination does not include standards for water and sediment contamination. Contamination of this type is a common cause of complaint by mechanics and motorists throughout Australia, which cannot be verified under present arrangements. As noted by the Northern Territory Department of Fair Trading, the

'biggest problem is when mechanics tell their clients they have a problem with their fuel. In most cases there is no way of proving that the fuel is the problem.'³⁹

It was suggested that more information should be provided to the public prior to changes in fuel quality standards to alert the public of possible operability problems. This however, is not a role for DEH, as the problems are essentially related to vehicle components, rather than fuel quality as such. Fit-for-purpose issues are a fair trading issue. In 2002, the Australian Institute of Petroleum released an information brochure on the effect of low sulfur fuels on fuel pumps.

Other issues raised by stakeholders included the following:

- Scheduling of inspections is needed, as the inspections conducted for DEH are not a core activity for the agencies.
- DEH's database of service station locations is frequently out of date. Addresses of sites are often inaccurate.
- Lags occur between procedural changes and updating of the manual. Changes to procedures have not been fully traceable in the manual on some occasions. This could lead to evidence being disallowed in court cases. This issue was, however, addressed in August 2004: the manual has been updated and workshops on procedures were held in each state and territory.
- There is a need for ongoing education of fuel site proprietors and their staff, as the industry is in a continual state of flux.
- In some cases it is not possible to obtain a signed consent form from the occupier of the premises visited by inspectors. In such cases, inspections are normally undertaken with a verbal consent only.
- There are occupational health and safety issues relating to sampling at depots, including the need to climb ladders, and to sample when fuel blankets are in place.

Recommendation 20

The review panel recommends that the Department of the Environment and Heritage's database be finalised as soon as practicable, and the location of retail sites be kept up to date. The sampling and procedure manual should continue to be updated as required and should be complemented by workshops. The method for sampling at depots should be included, when available.

4.2.5 Consultations

The review of consumer groups, environment groups and government agencies in Project 1 focused mainly on the broader issues of implementation of the Act and the ability of stakeholders to raise issues arising from the implementation of the Act (the sixth objective of the review). Stakeholders directly affected by the operation of the Act were largely supply chain stakeholders who were consulted in Project 2. Stakeholders are listed in Appendix D.

The views of stakeholders are addressed by recommendations throughout this report and can be summarised as follows:

³⁹ Northern Territory Department of Fair Trading (personal communication, 2004).

For stakeholders directly involved in formulation of fuel quality policy, consultations for preparation of the Act were considered adequate to very good.

Most of the environment groups lack the resources and technical knowledge to engage effectively in the development and implementation of fuel quality policy. The National Environment Consultative Forum circulates to its members invitations to participate in consultation processes.

The highly technical nature of information being disseminated in discussion papers and draft regulation impact statements limits the scope for many peak organisations to participate in consultation processes. This issue is difficult to address as fuel standards issues are, by nature, technical. The *Clean Fuels Bulletin*, which is published by DEH on the internet⁴⁰, is also used by interested groups as an information source for activities relating to the Act.

Consultation during the implementation phase was considered to be less satisfactory by some stakeholders who have had direct involvement in policy formulation through the FSCC or other working groups and committees. The main issues stemmed from a lack of adequate feedback during preparation of determinations and assessment of applications for variations of standards under the approvals system. However, the process, by nature, is mainly a function between DEH and the Office of Legislative Drafting.

The FCAI noted that good consultation needs balance. In its view, too much credence is given to 'energetic minor participants or participants with clear commercial aims but little technical substance'. There is a need to change the balance and speed up implementation processes.⁴¹

In regard to ethanol blend labelling, Consumer Affairs Victoria was critical of the lack of direct involvement during preparation of the determination. At the time of publication of the regulation impact statement for the determination, only Victoria had acted to label ethanol blends (under Victoria's *Fair Trading Act 1999*).⁴² There was, however, direct involvement by Victoria through its representative on the FSCC from the Environment Protection Authority Victoria.

4.2.6 Unanticipated impacts

Impacts which were not anticipated when the Act and the petrol and automotive diesel determinations were being prepared included the following.

The complexity of administering the approvals system

Leaded fuel for use in motor and water sport activities. Considerable time and resources have been expended processing applications and administering the approvals system to enable these various events to be conducted. It was observed that it is difficult to set general rules for specialist clubs.

Managing supplies of approved 'Wintermix' and low density automotive diesel fuels because of widely dispersed downstream use. In the case of 'Wintermix', the FCAI commented that there is a need for 'a highly precise description of boundaries for

⁴⁰ DEH (various dates)

⁴¹ FCAI (2004), p 2.

⁴² *Regulation Impact Statement Fuel Quality Information Standard (Ethanol) Determination 2003*, p 5.

geographical zones defined for seasonal variation of diesel fuel ...’ It noted that similar problems could emerge for establishing volatility controls for petrol and it may be more realistic to agree consensus standards rather than establish controls within a legislative framework.⁴³

Fuel quality information standards. It was necessary to develop an information standard for labelling ethanol–petrol blended fuels which represented a balance between environment, consumer protection and industry development objectives. Similar concerns are likely to arise when labelling of biodiesel and other fuels such as diesohol occurs.

Impact on independent importers

In the regulation impact statement for the petrol and automotive diesel determinations, it was anticipated that independent importers would experience problems sourcing fuel from overseas markets. The statement noted that the 1% maximum specification for MTBE ‘would ensure that independent imports into Australia remained feasible and that continuous supplies of imported fuel from independent sources can be maintained’. Introduction of the standard was delayed until 1 January 2004 ‘to allow importers additional time to finalise current contracts and renegotiate petrol supplies to meet the standards.’⁴⁴ The major market changes arising from the alignment of domestic refiners with supermarket chains has been the dominant factor in the reduction in the quantity of fuel imported by independents in the last few years.

4.3 Project 2 analysis and consultations

‘Project 2’ refers to the analyses and consultations carried out for the review by SWB Consulting Pty Ltd.

4.3.1 Regulation impact

Fuel availability

The *National Fuel Quality Standards Regulation Impact Statement* (DEH 2000) includes the following comment:

Effectiveness of the Commonwealth’s proposal for national fuel quality standards will be measured in a number of ways. These include the availability of cleaner fuel to consumers ...

The availability of fuel meeting the Australian quality standards is therefore an important effectiveness measure. The supply-related review sought comment from supply chain stakeholders on the impact of the Act on product supply during the first two years of operation. The main issues raised during this consultation include the following.

At consumer level, whilst some supply ‘stock-outs’ have occurred that have directly impacted on consumers, the consensus is that these have been relatively minor and due primarily to problems with seasonal demand forecasts rather than unavailability of fuel meeting the quality standards.

⁴³ FCAI (2004)

⁴⁴ FCAI (2004), p 24.

However, overall the supply ‘buffer’ (that is, product in tankage available for supply to consumers) has diminished. This is in part due to external factors (one refinery closure) and also to fuel quality standards impacts. Elimination of ‘waivers’ for non-complying product results in product that would have previously been released to the market now being held back; also, there are complexities involved with handling two sulfur level grades of diesel fuel. The potential therefore exists for additional short-term supply interruptions to occur.

The number of supply sources accessible to the industry, particularly ‘independents’ who previously imported product, has diminished. Some claims have been made that fuel meeting the Australian quality standards is simply not available from any source. However, since this statement is made primarily in regard to the petrol specification that came into effect on 1 January 2004, there are insufficient industry reporting data available to verify or refute such claims. The latest data available⁴⁵ indicate that imported petrol and diesel fuel volumes for February 2004 significantly exceeded those necessary to service the South Australian market since the closure of Port Stanvac. In addition, the source of these imports was from countries other than those where Mobil would normally source their South Australian petrol and diesel fuel requirements. It is possible, though, that these single-month data simply reflect the irregular pattern typical of fuel imports.

Whilst ‘spot’ or unplanned purchases of fuel meeting the Australian quality standards are now more difficult, a counter-argument put forward is that planned or contracted purchases are not a problem. This is supported by significant import substitution following the Port Stanvac refinery closure (although in this instance the ‘supplier’ and ‘customer’ are ultimately the same entity). This raises the question of whether claimed difficulties in purchasing complying fuel are due to genuine shortages, or a reflection of purchasing philosophy.⁴⁶

Overall, it can be concluded that the objective of availability of cleaner fuel to consumers has been substantially achieved throughout the first two years of operation of the Act.

Industry investment

The *Explanatory Memorandum* to the introduction of the Fuel Quality Standards Bill 2000 includes the statement:

The costs of implementing national fuel quality standards under Commonwealth regulation are borne mainly by the refining industry and consumers. [It is] estimated that costs to the refining industry of full harmonisation with Euro 4 fuel standards would be:

- \$1320 million (M) in capital investment over the period to 2008 (\$185 M on average per refinery); and
- \$136 M pa in operating costs, an average of \$17 million pa per refinery from 2005.

Although these investment impacts fall largely outside of (and the operating cost impacts entirely outside of) the specified timeframe for this review, substantial planning and investment analysis by the refining industry is necessary within the review timeframe if the 2006 targets are to be achieved. The supply-related review therefore sought comment from individual refiners on industry investment as an effectiveness measure. The

⁴⁵ DITR (2004)

⁴⁶ Some ‘independent’ operators have previously based their operations on such ‘spot’ purchasing of fuels of unregulated quality, as this frequently results in lower prices compared to longer term contracted supply.

information obtained through this consultation and from published announcements includes the following.

BP

BP stated that it has spent \$250 million upgrading Bulwer Island⁴⁷ and \$80 million at Kwinana, with further investment of \$20 million required at Bulwer Island to meet the 1% benzene level for 2006 fuel standards.⁴⁸ BP also stated that it had a clean-fuels focus even before the new standards came into place, so the investment was marketing driven, that is, the ability to supply cleaner fuels. This investment cost 'was about on the mark' of expectations.

Caltex

Caltex announced on 25 February 2004 that it will invest \$295 million (including expenditure to date) to upgrade its Kurnell and Lytton refineries to meet fuel standards for cleaner petrol and diesel fuel that are regulated to take effect from 2006.⁴⁹ In assessing this investment, it is important to note that the scope of the project has been expanded to meet future fuel standards that are expected to take effect late this decade, that is, beyond the investment estimated by the regulation impact statement (RIS) for the current legislation.

Mobil

The Mobil Port Stanvac refinery has been placed in a 'mothball' state since the introduction of the Act. Mobil announced on 18 August 2004 that it will upgrade its Altona refinery to meet the forthcoming new fuel standards. It was also stated that the investment cost is greater than anticipated and is expected to get significantly worse for future quality improvements.⁵⁰

Shell

Shell states that investment for 2006 fuel standards will be \$300 million, which is greater than anticipated due to cost over-runs with the hydrodesulfurisation units.⁵¹

Other

IOR advises that investment is required during 2004–05 to meet 2006 standards, possibly as high as A\$1.5 million.⁵²

Numerous stakeholders advised a need to invest in additional storage tank construction (plus the working capital for inventory) and additional infrastructure such as manifolds for product segregation at terminals and coastal storage facilities, to cater for shipping parcel sizes and to ensure that interfaces do not mix. These investments were minor in comparison to refinery upgrades, but represent a significant asset increase for non-refiner suppliers.

Whilst it is not possible to analyse in detail the pre-2006 investment expectations at this time, the cost of announced major refinery upgrades of approximately \$945 million for

⁴⁷ Historical press releases refer to higher upgrade investment cost (\$500 million) but the Bulwer Island upgrade was only partially attributable to Fuel Quality Standards.

⁴⁸ Personal communication during stakeholder review.

⁴⁹ Caltex Australia and Australian Stock Exchange (2004)

⁵⁰ Personal communication during stakeholder review.

⁵¹ Personal communication during stakeholder review.

⁵² Personal communication during stakeholder review.

five major refineries (average \$189 million per refinery) is remarkably consistent with the investment expectations outlined in the RIS for the 2000 legislation.

Competition

No restriction on competition and trade was an important evaluation criterion for selection of the framework for the establishment of national fuel standards. This is further reinforced in one of the three policy statements that outline government objectives, namely the *Downstream Petroleum Products Action Agenda*.⁵³

The agenda identifies the government's strong preference for the development of nationally consistent fuel specifications, noting that there are clear competition benefits from having a nationally consistent approach to fuel standards. It also advises that the government will ensure that fuel specifications apply and are enforced equally to imports and domestically produced fuels.

The supply-related review therefore undertook extensive consultation with industry on this issue, seeking targeted consultations with:

- peak industry bodies representing the supply chain participants, including
 - the Australian Institute of Petroleum, representing refiner/marketers
 - the Independent Petroleum Group, representing importers and independent retailers
 - the Australian Petroleum Agents and Distributors Association (APADA), representing both independent and refiner-aligned distributors
 - the Service Station Association, representing both independent and refiner-aligned service station operators
- proponents of alternative fuel, such as LPG, natural gas and biofuels
- the individual refiner/marketers
- major independent importers/distributors.

This issue of competition effect was the area of most contradictory opinion and feedback encountered in the supply-related review. The influence on competition by two separate factors was raised, namely competition effects of state legislation and market competition, primarily between onshore refiners and importers.

With regard to market competition, two opposing points of view of the effect on importers and onshore refiners were encountered, which can be paraphrased as follows.

The 'level playing field' view

This position was declared unanimously by the refiners and the Australian Institute of Petroleum. The assertion is that prior to the introduction of the Act, a scenario existed where:

- local refiners manufactured to a consistent standard but competed against independent importers who could potentially import fuel of a lower quality

⁵³ DISR (1999)

- there was opportunity for (and a high occurrence of) fuel substitution taking place downstream of the refinery/terminal, with low likelihood of detection and little recourse for disciplinary action or consumer compensation
- ultimately there was no guarantee of quality for the consumer.

Introduction of the Act has created a scenario whereby:

- importers have to adhere to the same quality standards. It is acknowledged that this has resulted in cost increases and that this had a higher impact on importers than on local refiners. However, the assertion is that this was due to a previous unfair advantage in favour of the importers because of lower quality assurance and that the Act has simply 'restored the balance'
- fuel substitution has been materially decreased, thereby actually increasing 'fair competition' between operators by significantly reducing unscrupulous practices by maverick operators
- consumers are assured of quality and are therefore free to 'shop around' for the best deal without risk of operating problems or damage through inferior product.

The 'prop up local refining' view

This position was declared to various degrees by the importers and the Independent Petroleum Group. The assertion is that the introduction of the Act is designed to:

- provide an opportunity to increase prices to consumers in order to improve the viability of an unsustainable onshore refinery capacity
- force major independent retailers to align with a local supplier and therefore decrease the viability of imports due to loss of volume attributable to these contracted clients.

Throughout the consultations with proponents of this view, there was very little mention or acknowledgment of import fuel quality and fuel substitution issues. However, a number of specific 'competitive' impacts were put forward as being a direct consequence of the introduction of the Act, including:

- Cost of product has increased and the market is therefore less competitive, with the consumer paying more.
- Independent distributors and service station operators now need to lock in supplies from onshore refiners (also a competitor) to ensure some certainty of supply.
- Competition at refinery/terminal gate level has decreased because there simply is not as much product to go around, particularly with products such as 50 ppm diesel fuel.

Summary

It is widely stated by industry participants that there have been some upward fuels price movements since the introduction of the Act. Whilst some cost increase is attributable to the production cost of higher quality fuels, it is not possible to measure this impact with any degree of accuracy due to the volatile and fluctuating nature of petroleum fuels pricing. This was illustrated in 2003, when the retail price of diesel and (particularly) petrol varied by more than 20 cents a litre, with no change to the fuel quality standards in that period. Furthermore, the average global refiner margin for gasoline (petrol) has increased during the review period (2002 and 2003) by more than the entire operating cost impact estimated in the RIS to achieve the 2006 quality standards. This adds a further

complication of whether price movements are due to the operation of the Act or external, unrelated factors.

The policy objective that fuel specifications apply to and are enforced equally for imports and domestically produced fuels has been effectively achieved during the initial two years of operation of the Act. Whilst importation of fuel by independents has decreased⁵⁴ and some price increases have occurred, it is the view of the review party that, to the extent that these are in any way attributable to the Act, these are necessary outcomes to achieve the primary quality objective. Any argument that a sector has been unfairly treated or competition has been lessened predicates a relaxation of quality specifications, which is contrary to the primary objective of the Act.

The consultation process

The objectives for the review of the operation of the *Fuel Quality Standards Act 2000*, as outlined in Section 1, include:

- ‘the adequacy of communication and consultation with parties whose activities are directly affected by the operation of the Act, and the ability of those parties to determine/understand their obligations
- the adequacy of consultation in relation to broader issues of implementation of the Act, and the ability of stakeholders to raise issues arising from the implementation of the Act ...’

The supply-related review sought comment from supply chain stakeholders on the adequacy of consultation both during the development and implementation of the Act and also throughout the first two years of operation. The main issues raised during this supply chain stakeholder review include the following.

There is a strong correlation between the degree of satisfaction with consultation processes and the level of satisfaction with the outcomes. Questioning about the specifics of consultation process inadequacies frequently received a response along the lines of ‘advice was totally ignored’, whereas further investigation revealed that such ‘advice’ was actually recorded and rigorously analysed but the stakeholder is simply unhappy with the outcome and has blamed the process.

The majority feedback was that the consultation process reflected a sincere effort by the respective government departments to capture industry feedback and it was generally handled very well. It is felt that this consultation process was a key factor in making possible legislation that captures emissions and operability parameters in a single instrument that is scientifically based.

However, it was generally felt that the good intent behind the consultation process was ultimately over-ridden by inadequate resources and timeline constraints. This resulted in effective consultation during the policy and specification development stages but a perceived resistance towards thorough consultation during development of ‘the detail’ of how the Act would operate.

⁵⁴ As discussed in Section 4.3.1 — Fuel Availability, this statement relates primarily to the post-January 2004 scenario. Whilst publicly available data does not allow this claim to be either verified or refuted, stakeholder feedback during the review consultations clearly indicates that independent imports have decreased, especially during the latter part of the review period.

Some stakeholders suggest that this was further impacted by a lack of industry knowledge within both DEH and DITR, particularly with the constraints, issues, concepts and terms utilised. Again it was generally felt that the positive attitude shown resulted in very effective consultation, but this was diminished by the time taken and in some cases the inability of DEH personnel to independently verify input and move forward. The issues that DEH was dealing with were, in some instances, highly technical; for example, an overseas consultant needed to be commissioned to undertake an assessment of the Cleanerburn™ approval, as no national consultants with the relevant expertise and required degree of independence were available. At least one stakeholder suggested that this was exacerbated by insufficient resources and frequent staff turnover within DEH.

There was almost unanimous comment from stakeholders that the combination of timeline, insufficient resources and lack of industry knowledge resulted in a major deficiency, being that there was no industry review of the final draft of the Act. It is considered that this was an opportunity missed and that with detail on issues such as test methods, documentation and tracking delivered ‘cast in stone’, some aspects of the operation of the Act continue to be unnecessarily onerous and a burden. Stakeholders are, however, unfamiliar with the process for the finalisation of legislation. Although an exposure draft could have been circulated to stakeholders, industry stakeholders are not always provided with such drafts. The formation of legislation is essentially a function between DEH and Parliamentary Counsel.

There was widespread praise for the consultative approach taken with the February 2003 industry workshop to address laboratory test methods. It was felt, however, that the need for such a workshop is in itself a reflection of the previously outlined insufficient resources and lack of industry knowledge. Had such a process been performed during development of ‘the detail’ of the Act’s operation, then all parties would have benefited. In this regard, it is widely believed that communication and consultation with regard to assisting parties to determine and understand their obligations has been inadequate. However, as stated earlier, the determination of the final framework of the regulation is primarily a function of DEH and the Office of Legislative Drafting.

Whilst key supply-related stakeholders were identified and the level of consultation has generally been complimented, certain oversights appear to have been made. This has primarily been the small or ‘niche’ refiners, who were not consulted during development of the Act and also complain of not being involved in the February 2003 industry workshop. Certain suppliers to the refining industry have also claimed a lack of consultation, which appears to arise from dissatisfaction with outcomes.

The *Clean Fuels Bulletin*⁵⁵ was widely praised as an efficient and informative communication mechanism to stakeholders on fuel quality issues. The introduction of the ‘Contact Details’ section with the December 2003 bulletin is praised as a mechanism to assist the ability of stakeholders to raise issues in addition to the specific topics covered by individual bulletins.

Whilst the *Clean Fuels Bulletin* was accepted as an appropriate communication mechanism for legislative issues, quality topics and consensus positions, a number of stakeholders complained of lack of feedback when their submissions were not reflected in the final outcomes. It was generally felt that if a stakeholder put in a submission at odds with the majority view, they would appreciate feedback on the basis for ‘rejection’. The revised position on the petrol and diesel standards was, however, released on the DEH

⁵⁵ DEH (various dates)

web site. The revised position detailed stakeholders' comments and the decision making behind the recommended fuel parameters and their limits.

In summary, whilst there was considerable praise for the positive attitude and sincere effort put into consultation, some stakeholders have stated that effectiveness has been impaired by timeline constraints, insufficient resources and lack of industry knowledge within government departments. However, DEH has also received commendations on the process for the development of standards; this was considered comprehensive and transparent. The lengthy consultation and technical advice ensured that standards were based on Australian requirements and that the standards were successful in addressing Australian-specific environmental requirements, but still allowed for flexibility in terms of compliance.

Caltex summarised the policy development process as incorporating 'a number of essential characteristics: a sound scientific basis, comprehensive economic evaluation, independent expert advice, detailed consultation with stakeholder, an adequate consultation timeframe and open, well defined process.'⁵⁶

As part of this review, some stakeholders have stated that some aspects of the operation of the Act continue to be unnecessarily onerous and are a burden on supply chain stakeholders.

4.3.2 Monitoring, compliance and enforcement

DEH's stated objectives of the *Compliance and Enforcement Policy*⁵⁷ are that compliance and enforcement activities and arrangements:

- help maximise the objectives of legislation and management plans
- maximise compliance with legislation
- enhance the community's capacity to protect the environment and heritage and conserve biodiversity
- are generally accepted as appropriate by stakeholders and the wider community.

The Act has various offence provisions and allows for severe penalties to be imposed on corporations in relation to:

- the supply of fuel that does not comply with a standard made or approval issued under the Act
- alteration of fuel that is the subject of a fuel standard
- the supply or importation of a fuel additive that is entered in the *Register of Prohibited Fuel Additives*.

The legislation provides a framework for fuel quality monitoring and enforcement, relying on the following approaches⁵⁸:

- industry self-monitoring and annual reporting to the government

⁵⁶ Caltex (internal communication to DEH, 2002)

⁵⁷ DEH (2004b)

⁵⁸ International Fuel Quality Center (2003)

- random sampling and mechanisms for information sharing
- sampling able to be conducted at refineries, terminals, inland and coastal depots, distributors' storage depots, and service stations.

A report prepared for Environment Australia by the International Fuel Quality Center⁵⁹ identified a number of key factors which impact on fuel quality compliance. Some of these factors include:

Culture: Those countries that generally have a high ratio of compliance with laws, and have a relatively new vehicle fleet with advanced vehicle emission technology, tend to have less fuel adulteration.

Geography: Smaller countries are more easily managed than a large country, and are therefore more likely to have successful monitoring programs. In Australia, size and geography have played an important role in the type of monitoring system set up and the amount of resources needed.

Socio-economic: Fuel adulteration has nothing to do with the fuel quality itself and everything to do with the cost of the fuel. Most fuel adulteration issues have been directly linked to cutting costs and/or evasion of fuel taxes.

In the past in Australia, where fuel substitution/adulteration occurred, the substituted product could well be more expensive than the fuel. However, because there was a lower or no excise duty payable on the adulterating product, there was an incentive for unscrupulous operators to blend these products and so avoid the full duty payable on the fuel.

Confidence in fuel quality

The industry was approached to determine whether, in its view, it was confident that fuel it supplied and/or received complied with the Act, and whether fuel substitution was more prevalent, reduced or eliminated compared to the period prior to introduction of the Act. The main findings from this consultation include the following.

The industry fully supports the intentions of the Act to ensure that compliant fuels are supplied to the market and that fuel substitution is minimised to the extent possible or eliminated totally.

The major oil companies are extremely confident (most 100%) that the fuels supplied by them and which they may import/purchase on the open market comply with the Act. These companies have either upgraded their manufacturing processes and/or established sampling and test procedures and their own monitoring programs to ensure that their fuels are compliant. Prior to the Act, the major oil refiners and marketers had refinery exchange and borrow and loan agreements in place. These agreements have now been replaced with buy/sell contracts and participating companies have a very sharp focus on quality and compliance.

Two of the major oil companies have stated that either they build in a 'performance or quality buffer' at the refinery to ensure that their product maintains compliance throughout the supply chain, or the standard parameter is taken as the minimum

⁵⁹ International Fuel Quality Center (2003)

acceptable result (in the past, rounding up a test result was possible, but this is no longer acceptable).

The fuel importers and smaller producers are confident that the fuels they supply to the market are compliant, but they tend to reserve judgment on other suppliers' products. One of the importers stated that it believes products supplied 'typically' meet specification but was not 100% confident. Comment was received that there has been a perception put out in the market that imported fuels were somehow inferior to the local products.

The distributors and service station dealers acknowledge that they are reliant on their supply companies to provide compliant fuel. This fact tempers their confidence to some degree. However, they accept that the delivery docket that is provided by their supplier and accompanies the fuel delivery accurately indicates that the fuel complies with the Act.

Overall, the industry is very confident that fuels supplied since the Act was introduced are compliant, and every effort appears to be made to ensure that the compliance criteria are maintained through the supply chain from production to the end consumer. Both the distributor and the service station dealer associations commented that although some instances of fuel substitution may still be occurring, the incidence of such activity has declined, even 'dramatically' according to APADA. This substantial reduction (and in some cases elimination) of fuel substitution and rising industry confidence that compliant fuels are being supplied to the market are positive outcomes of the operation of the Act.

Sampling and enforcement effectiveness

In detecting instances of non-compliance with the Act, DEH analyses information from sources such as the general public, nongovernment organisations and other government agencies. Monitoring may take place through⁶⁰:

- 'Regular and random samples
- Audits
- Targeted investigations
- Analysis of information reported as a condition of permits, licences, approvals and other authorities issued.'

The sampling program began in April 2002. Samples are taken from refineries, bulk storage terminals, including distributor sites, and service stations by inspectors engaged by DEH. Service agreements have been developed with state and territory fair trading agencies and the Australian Taxation Office for officers from these agencies, who are appointed as inspectors under the Act, to conduct sampling as directed by DEH.⁶¹

The stakeholders at industry peak body level and the majority of others are aware that fuel inspectors can enter premises for the purpose of taking fuel samples. However, this awareness has not necessarily filtered down to all stakeholders at the service station level. For instance, there are reports of some service station dealers contacting their supplier to confirm that fuel inspectors have the right to enter the premises and take samples.

⁶⁰ International Fuel Quality Center (2003)

⁶¹ DEH (2001)

The major oil refiners and marketers in particular have implemented rigorous and stringent sampling and testing programs. They have gone a long way to comply with the provisions of the Act through ensuring that all specific parameters for the fuels are met. In the past, a fuel which tested borderline for quality may have passed through the gate. Now such fuel does not leave the facility unless it is fully compliant. Examples of the proactive measures taken by stakeholders include:

- Caltex has initiated two fuel quality test vans for on-site monitoring of its own retail outlets.
- BP regularly samples and tests its products, both refinery production and purchases/imports, throughout the supply chain.
- APADA is aware that fuel inspectors have visited a number of distributors and taken samples for analysis.
- The importers and independent producers were able to confirm that some of their sites had been visited and samples were taken for testing.

Monitoring and sampling program

DEH has developed a monitoring, compliance and enforcement program for the implementation of the new fuel standards. The overall budget for implementing the Act exceeds \$8 million for the four years from 1 July 2001.⁶²

According to DEH, the sampling program has been designed and implemented to ensure product quality and act as a deterrent against fuel adulteration. The industry supports the sampling program and in some cases has implemented its own monitoring, sampling and testing program to ensure that products meet the requirements of the Act. Although there may have initially been a perception that the Act 'lacked teeth', the 2003 amendment to make non-compliance an offence of strict liability has focused the efforts of the main stakeholders to ensure that their products are compliant.

From a DEH perspective, compliance monitoring, sampling and enforcement began in about mid-2002, with a database of sites. Problems with the data on the original database became apparent very quickly. These included:

- The actual dealer could not always be readily identified on a site where lessor, lessee, reseller licence and dangerous goods licence could all be under different names.
- No-one had a definitive database.
- The database required constant updating; sites closed or were operating under a different name.

The end result of this for DEH was a sampling and testing program that was by necessity severely restricted for the first three quarters of the year as the above issues and debate related to test methods (see 'Test methods' below) were resolved. A majority of the test results for the year were obtained from samples taken during the fourth quarter (578 samples during the fourth quarter from a total of 873 for the year).

To further exacerbate these problems with the database, sampling from industry 'tip-offs' has not proven effective. In one instance a major refiner informed DEH about methanol allegedly being added to petrol in Victoria. However, when a sample was eventually

⁶² DEH (2001)

taken and analysed, no adulteration was found. One of the major problems with sampling after tip-offs is the time period for action to be taken. Up to two weeks can elapse before an inspector arrives to take a sample after a tip-off, because sampling is routinely conducted when ‘it fits with the schedule’.

Results from the sampling program are shown in the Table 4.4.

Table 4.4 Results of sampling program

Period	Petrol		Automotive diesel		Total	
	Total samples	Non-compliant	Total samples	Non-compliant	Total Samples	Non-compliant
Jul 02 – Jun 03	522	3 0.6%	351	13 3.7%	873	16 1.8%
Jul 03 – Jun 04	478	15 3.1%	405	14 3.5%	883	29 3.5%
Total period Jul 02 – Jun 04	1000	18 1.8%	756	27 3.6%	1756	45 2.6%

Note: Test results for 2001–02 are not reported here because of issues relating to testing reliability. Full results are reported in Appendix A.

Test methods

The sampling and testing program initially produced some confusion within the industry. Two factors became evident when the results of fuel analyses were first available. Firstly, some of the results were self-evidently out of character for the fuel being tested; for example, an octane result for petrol was quoted as having a Research Octane Number of 50 (50 RON) and a density result for diesel fuel was shown at 0.943. Secondly, in some cases a choice of test method — from either the Institute of Petroleum (IP) or the American Society for Testing and Materials (ASTM) — was specified to test a fuel parameter. The point was raised that the test methods used for testing fuels were ASTM methods, whereas European fuel standards were being used. Where IP and ASTM test methods are identical, this is not an issue. However, problems can arise with testing when the two methods diverge.

As a result of the confusion, a meeting was arranged in Adelaide in February 2003 to discuss fuels testing and test methods. Participants included chemists and technical staff representing the industry and DEH personnel. This meeting was considered extremely successful as it clarified a number of issues. The opportunity was taken by the industry to show a need for a specific test method rather than have a choice of test methods as proposed by DEH.

Cost-effectiveness

The cost of compliance to the stakeholders is generally seen as more onerous than envisaged at the consultation phase. Some companies have invested heavily in their own monitoring and sampling programs, although this has not been a legislative requirement, even to the extent of introducing vans and personnel to take and test samples from their own service stations. It is difficult to differentiate between these additional costs as the costs of compliance or as business improvement programs.

Refining companies and independent oil companies have advised that they needed to upgrade their software and computer system hardware in order to supply information to customers if they request it (as stipulated in the Act) and also to back-track fuels to the point of origin if ever there was an issue of non-compliance. However, again it is difficult to differentiate between the cost attributable purely to compliance and that attributable to general information technology systems upgrades.

From a DEH perspective, the use of other state and Australian Government departments or agencies to act as inspectors means that seven different service agreements have to be drawn up, each with different terms and conditions. This makes the process expensive, unwieldy and inconsistent and therefore adds to complexity and costs.

The sampling and analysis program for 2002–03 cost \$685 454. For 2003–04 it is forecast at \$633 138 and the plan for 2004–05 is to spend \$800 000. For each of the years shown, this equates to a cost per sample of \$785, \$717 and \$842 respectively. However, the average sample collection and analysis cost per state/territory varies from \$560 to \$1039.⁶³

The present sampling effort of some 800 samples per year provides for just one sample for every 40 million litres of liquid fuel supplied. As an alternative way of looking at this, there are some 8000 service stations in Australia, and on a visit to a service station, staff usually take three samples (two types of petrol, one of diesel). This means that a service station, taken at random, is likely to be visited by Commonwealth fuel inspectors only once every 30 years. Fuel sampling is, however, strategically targeted towards non-compliant fuels, with DEH targeting sites where consumers have reported fuel quality issues. The review panel notes that efficient and effective national fuel sampling and testing is critical to the achievement of the objects of the Act.

Recommendation 21

The review panel recommends that the level of resources for fuel sampling and testing be kept under review to ensure that adequate resourcing is maintained in order to continue to achieve the objects of the Act.

Recommendation 22

The review panel recommends that a full review be undertaken of the methods of sampling, fuel testing and the choice of monitoring approaches to increase efficiency, with the desired outcome being increased sampling and greater coverage.

⁶³ DEH (2004b)

4.3.3 Documentation, record keeping and reporting

The *Fuel Quality Standards Bill Revised Explanatory Memorandum*⁶⁴ states that:

a person who is a constitutional corporation or a Commonwealth entity or who supplies fuel in the course of constitutional trade and commerce, must keep and maintain records in relation to such supplies. The regulations will set out the form that these records must take.

The intention of this provision is to ensure that the Commonwealth can trace fuel movements through the supply chain. The regulations will specify the detailed record keeping requirements that the Commonwealth considers are necessary to assist in monitoring compliance with the Act and enforcement of provisions ... They may also specify requirements to keep records of fuel sources, movements and any modifications to fuel such as the addition of additives.

Strict liability applies to failure to keep and maintain the required records.

Effectiveness of documentation and record keeping

From a supplier perspective, the documentation and record keeping requirements of the Act have necessitated some changes to suppliers' existing recording and reporting formats and requirements:

- The major refiners/marketers were required to make changes to delivery documents and internal computer systems. Drivers and site operators are now trained in documentation procedures and the need to keep records. More checklists are now used.
- The view of the importers/independent operators varied from 'operating as an excise manufacturer and already subject to a high level of documentation and record keeping' to 'an added burden but put in place anyway'.
- The distributors also made changes to invoices and delivery documents, with an acknowledgment that the fuel supplied with the docket complies with the Act. New procedures were implemented to ensure that dockets satisfied the requirements of the Act.
- The service station dealers accept that the documentation supplied with their deliveries complies with the Act.
- Comments were received that the product parameters held by the companies were different from or in a different format from that required by DEH, which caused them problems of varying severity to ensure compliance with the required reporting format.
- Further concerns were raised by both refiner/marketers and importers relating to the different reporting requirements which are requested by DEH, DITR and various state government departments and regulatory agencies.

Overall, the industry has recognised the need to keep and maintain records and has changed its systems and operating procedures to comply with the Act.

⁶⁴ *Fuel Quality Standards Act 2000 Revised Explanatory Memorandum*
<http://scaleplus.law.gov.au/html/ems//0/2000/0/0642454620.htm>.

Efficiency and cost

The *Explanatory Memorandum* to the introduction of the Fuel Quality Standards Bill 2000 includes the statement:

It is not envisaged that compliance will result in paper burden costs in the production and supply chain as existing record keeping processes, if operated effectively, should be sufficient. There may only be a requirement that the quality of these processes be improved to ensure that sufficient records are kept and that they are accurate.

There were a variety of responses from stakeholders regarding increased costs resulting from the need to meet the documentation and reporting requirements of the Act. These views range from no added cost to unquantified additional costs. Estimated ranges quoted for these additional costs varied from ‘not significant, for example having to provide new stationery’ to ‘up to six weeks of information technology personnel to change computer systems’.

None of the stakeholders anticipated that there would be additional costs associated with documentation and record keeping.

Comment was received from many stakeholders that the annual reporting format and requirements should have been more clearly defined by DEH and not left to individual stakeholders to design their own format. Mobil dissented from this viewpoint and would have preferred its own format for reporting.

Some stakeholders raised as an issue the short notice they received to provide their reports to DEH.

DEH’s response regarding the reporting format was that the fuel parameters specified in the Act were known to the stakeholders, and DEH was prepared to receive the data from stakeholders in whatever format suited them best. This was seen as the best option to minimise costs to stakeholders. An unforeseen result was the confusion this approach generated amongst the stakeholders.

In summary, any additional costs associated with documentation and record keeping do not appear to have placed a significant burden on the industry overall. In many cases, changes to paperwork were more of a cosmetic nature than to ensure compliance with the Act.

4.3.4 Approvals process

The primary objective of the Act is to regulate the quality of fuel supplied in Australia in order to achieve specific vehicle emissions related environmental outcomes. In implementing the legislation, it was acknowledged that situations would arise where it would be necessary to supply fuels that do not meet the fuel quality standards. The mechanism in the Act to address fuel quality variance issues is the use of approvals. This allows the Minister to grant an approval for specified fuels which are at variance with the standard but which can be supplied for a specified period of time without compromising the objectives of the Act.

The original intent of this provision appears to have been to cater to situations such as where a motor sports organisation applies for an approval to supply non-compliant fuel

on behalf of teams participating in an organised motor racing event.⁶⁵ That explanation puts this provision in its simplest form, but in reality it is applied to far more broad reaching issues than those arising from non-compliant motor sport fuels, even though this segment takes up a significant proportion of the time and effort applied to the approvals process.

Effectiveness

Effectiveness of the approvals process is a double-edged sword and entirely dependent upon which side the process is viewed from. The scope of the Project 2 part of the review was specifically aimed at addressing industry related aspects of:

... the effectiveness of the approvals process (Division 3 of the Act), from a supplier's perspective.

The following issues were raised during the extensive stakeholder review process by suppliers who have participated in the approvals process:

- The majority of suppliers who have worked through the approvals process feel that the process itself is extremely time consuming and onerous.
- The process is considered very rigorous and progress is inordinately slow, in part, by virtue of the volume of information required to be provided by the applicants to DEH. This aspect added weight to the perception by suppliers that DEH needs to seek external technical expertise to digest and analyse, in a timely sense, the core issues of the application and the technical data required to support the application.
- The cost of the approvals process is considered by the majority of suppliers who have submitted applications to be excessive.

Given that the original intent of the approvals process was apparently to address minor 'one-off' situations or events, there is a feeling that the mechanism is being used to apply short-term 'fixes' to some issues or variances which really need to be accommodated by an amendment to the Act rather than repetitive applications for approval. Some of these issues, for example low density diesel and 'Wintermix' or alpine diesel, are now looked upon by some stakeholders as oversights at the time of *Setting National Fuel Quality Standards*⁶⁶ and therefore fall into the category of 'unanticipated aspects' of the Act.

All suppliers with experience in the approvals process expressed a view that it was a necessary but unwieldy mechanism which, when an approval was eventually granted, could be considered effective if it meant they were able to stay in business.

All suppliers with experience in the approvals process also expressed a view that it could be streamlined and made more efficient.

There were mixed views on the role of the FSCC in the approvals process and the relevance of the FSCC make-up. Some expressed concern over the presence of certain industry participants on the FSCC and felt this impacted adversely on the timeliness and transparency of the process.

⁶⁵ *Fuel Quality Standards Act 2000 Revised Explanatory Memorandum*, <<http://scaleplus.law.gov.au/html/ems/0/2000/0/0642454620.htm>>.

⁶⁶ DEH (2001)

To summarise:

- There was general consensus from all stakeholders interviewed that there is a need for a mechanism such as the approvals process to accommodate the short-term or ‘one-off’ situations which could arise. Specific examples were the Comgas Scheme and the typical motor sports specialty fuels.
- All stakeholders who had participated in the process believe that it could be streamlined and made more efficient.
- While there were concerns expressed over the apparent lack of technical expertise within DEH to process the applications, there was an acknowledgment that this does appear to be improving.
- The role of the FSCC and its composition is of concern to some stakeholders and is explored in greater detail in Section 4.1.8 of the Project 2 report.⁶⁷

Utilisation

In addition to the typical cases outlined above, the approvals process has also been utilised for other applications where the product volume involved is much more significant. The approvals process for these applications is therefore much more rigorous and time consuming, and such cases are typically the ones which most frustrate the applicants. Examples cited during the stakeholder interview process include:

- low density diesel
- high sulfur diesel containing Cleanerburn™ additive — although this approval did not proceed
- variations in distillation specification for diesel fuel supplied to Christmas Island
- ‘Wintermix’ or alpine diesel.

4.3.5 Unanticipated impacts

Strict and total parameters compliance

There has been widespread stakeholder feedback that an unanticipated impact of incorporating emission-specific and vehicle operability parameters in a ‘single instrument’ is insufficient flexibility to supply product that is slightly off-specification with regard to a single parameter. This is the function of the approvals process, which was recently utilised by the Shell Company for off-specification fuel in an emergency situation.

Prior to introduction of the Act, fuel quality in Australia was largely unregulated. Whilst fuel standards had been developed for diesel fuel and petrol by Standards Australia (AS 3570 — Automotive Diesel Fuel, and AS 1876 — Petrol), these standards had no legislative basis. The main purpose of these industry guidelines was to specify compositional requirements to ensure reliable vehicle operation.

To ensure that fuel supplied was also consistent with engine development requirements, the majority of states and territories also introduced limited regulations. This is best illustrated by the introduction of unleaded petrol in 1985 to support the introduction of

⁶⁷ SWB Consulting (2004)

new emission control technology, which saw the introduction of such legislation to specifically address lead content in petrol.

Legislation of the emission-related parameters necessary to achieve the Act's objectives would not, in itself, ensure reliable vehicle operation. Additional operability parameters, many of which were included in the prior Australian Standards, needed to be specified to ensure satisfactory performance, reliability and engine life. During the development phase, stakeholders expressed a strong preference for a single instrument to cover both emission and operability parameters in order to ensure that the *consistent across the nation* goal would be achieved. The Act has been implemented on this basis.

This legislative framework has the potential to result in supply interruption. Significant changes to the supply chain have seen both the number of supply sources and the supply 'buffer' reduced, as described in Section 4.3.1 of this report under 'Fuel availability'. In the event of unplanned events, for example unplanned refinery shutdown, or in import-dependent locations where tight supply logistics prohibit obtaining timely alternative supply, a batch or shipment of product may be slightly outside specification limits. Currently, under the Act, the only mechanism to seek exemption for non-complying product is the approvals process or a declared state of emergency. The proposed approvals procedure for fuel emergencies is addressed in section 4.1.1. — Emergency Law.

Pipeline interfaces

Cross-contamination during pipeline transfers is an issue brought up by many stakeholders as fuel parameters are tightened. More line flushings are generated from product transfers and longer interfaces are now becoming the norm. Marine ports are generally based on a single pipeline and a variety of products pass through this line. In the past, these line flushings could be blended off into product or reworked in a refinery if one was nearby. This is becoming more difficult and there may be a need in the future to cut interfaces to slops rather than blend off or rework. This issue will be of even greater concern as fuel parameters move towards 2006 standards.

Examples of the difficulties facing the industry include:

- Ultra low sulfur diesel fuel (50 ppm sulfur) passing through a line where jet fuel or heating oil (1000 ppm sulfur) has been pumped.
- Premium unleaded petrol will have 50 ppm sulfur reducing to 10 ppm sulfur whilst unleaded petrol will have a 150 ppm sulfur limit.

The industry expects that increased costs will be a result, particularly at remote locations. More product will be wasted as longer interfaces are cut to ensure that products comply with the Act.

Approvals

'Wintermix' diesel

'Wintermix' or alpine diesel is the product of a seasonal requirement for a variation to the diesel standard to enable cold weather operation of diesel engines. While not addressed directly in the operability discussion paper⁶⁸, the sections on cloud point and cold filter

⁶⁸ National Heritage Trust, Environment Australia (2000)

plugging point indicate that it was an issue that had been recognised and needed discussion.

Whilst the requirement was therefore recognised, it is now clear that the complex marketplace issues involved in handling a ‘Wintermix’ product were unanticipated.

During the supply-related review process, there was a great deal of criticism regarding the approvals process, with direct reference to the ‘Wintermix’ situation. It appears to have been assumed by industry stakeholders that the matter would be addressed in the Act, with stakeholder consultation also taking place on the detail of the Act’s operation. There was inference that the ‘Wintermix’ situation was contributed to by a lack of understanding of the associated technical and logistical issues.

Whilst this highlights a failure of the consultation process to clearly communicate to the stakeholders just what the approvals process entailed and to seek feedback on likely impacts, it has resulted in the following two specific issues requiring further discussion.

Climatic and seasonal factors

Continuing with the ‘Wintermix’ diesel example, the simplest process would be to allow use of non-complying product on the basis of end use. However, advice from DEH is that it is not possible to legislate on this basis, as this would be beyond the current powers of the Act.⁶⁹

In the absence of exemption on the basis of end use, the next ‘easy option’ would be to use climatic/seasonal factors to define a region where a non-complying product (which has been granted an approval) can be supplied. There was considerable criticism during the review over the inability under the Act to define such regions when granting an approval. The inference during the supply-related review was that, in the absence of consultation or advice to the contrary, this issue could have been handled in a similar manner to the *Cold Weather Considerations* of Australian Standard AS 3570. It was certainly referred to in this manner in the discussion paper⁷⁰, but this option was not taken up in the framing of the Act.

This inability to define regions by climatic/seasonal factors is the primary unanticipated impact. Because of this inability, definition of Regulated Persons has been necessary as an enabling mechanism. It is this outcome which has created a secondary unanticipated impact. DEH intends to revisit the matter of defining regions by climatic/seasonal factors.

Regulated Persons

The complexity of Regulated Persons in the context of the approvals process was a surprise to stakeholders, even though some⁷¹ were aware that a process was to be developed to enable the supply of non-complying product for genuine purposes. The concept of a Regulated Person is intended to address that problem by allowing the supply by others of non-complying product downstream of the approval holder.⁷² This onus is on the approval holder to nominate every Regulated Person involved in the supply of the non-complying product. The onus is also on the approval holder to advise every Regulated Person covered under the approval of its conditions and their respective

⁶⁹ DEH (personal communication during review)

⁷⁰ National Heritage Trust, Environment Australia (2000)

⁷¹ BP (personal communication during review)

⁷² Parliamentary Web Library (2001)

obligations under the conditions. The Regulated Persons must also be kept advised by the approval holder of any variation to conditions or revocation of the approval. There are approximately 400 Regulated Persons covered by the approvals currently in force.⁷³

Whilst the initial nomination is part of the application for an approval, any subsequent variation to the Regulated Persons covered under that approval must be submitted to DEH for approval by the Minister. For example, a refiner or importer may submit an application for approval to supply ‘Wintermix’ diesel and nominate 50 Regulated Persons who will be involved in the downstream distribution of this product to the end user during the nominated period. The 50 nominees are a combination of distributors, sub-distributors and resellers (service stations). The application is approved and the approval holder advises all 50 Regulated Persons of the approval, its conditions and their obligations.

In the first three months of operation of the approval, two sub-distributors (who were different Regulated Persons under the approval) may integrate into a larger distributorship. If one of the two sub-distributors also ran two service stations under different trading names (Regulated Persons), these are now to be integrated into the major distributorship and trade under new names. These changes amount to:

- the deletion of two Regulated Persons (sub-distributors) to be
- replaced by one Regulated Person (main distributor) at
- the specific supply locations (two) and
- the change of two other Regulated Persons (service stations).
- in all — a total of nine amendments, depending on the new business structure.

This example is typical of the administrative complication quite frequently encountered in maintaining the Regulated Persons listings. The approval holder must advise DEH of these changes and they must then go to the Minister who, under the terms of legislation, may or may not grant the amendment. While it would be convenient for these changes to occur concurrently, the reality is that this would be unlikely and would occur in stages over the three-month period.

Each variation typically could take around four weeks to the time the Minister grants approval, following which each new Regulated Person must be advised of the original approval conditions and their individual obligations under the Act. Because the approval holder has less than 51 Regulated Persons supplied, the advice to the new Regulated Person must be within 48 hours of the approval holder being informed of the Minister’s approval or before the first delivery to that Regulated Person, whichever is the earlier. If the approval holder’s changes meant that the number of Regulated Persons went beyond 50, then the timeframe for advice goes out to five days or before the first delivery.

The above illustration uses ‘Wintermix’ diesel as its example, but the processes and complexities are the same for other approvals, such as the various racing fuel approvals and the Comgas approval.

⁷³ DEH (personal communication during review)

4.4 Summary of issues analysis and consultation outcomes

4.4.1 Overview

The Act is generally successful in providing the tools needed to achieve its objects. However, there are some issues which need to be addressed:

- It fails to apply universally to persons supplying fuel in Australia, and no nationally coherent legal and administrative arrangements between jurisdictions exist to address the regulatory gap. This outcome is inequitable. (The Constitution limits the Act's application to a constitutional corporation or a Commonwealth entity or a person who supplies fuel in the course of constitutional trade.)
- Nationally consistent fuel standards have not therefore been achieved in all respects.
- The administrative effort required is not always in keeping with the achievement of the objects of the Act. (Approvals have been granted for the supply of minor proportions of the total supply, often in locations remote from major cities.)
- Procedures need to be refined, for example by removing onerous approval notification obligations in respect of every Regulated Person (rather than more practical notification to the class of affected persons), and by enabling climatic and seasonal variations to standards. Delegation to DEH of amendments that are of an administrative nature could also be considered.

4.4.2 Review objectives

The first eight objectives of the review provide the basis for examining the effectiveness and efficiency of the operation of the Act and deficits which come within its scope. The main findings are presented below. Overall, the legislation has been effective in meeting the objectives of the Act.

Review objective 1: Effectiveness of the fuel quality standards legislation in meeting the objectives of the Act

Fuel quality standards have been implemented broadly in line with the timetable set by policy and in the preparatory documents. There has been only minor dilution of fuel quality standards caused by non-compliance by suppliers and variations granted to suppliers under the approvals system.

Some emission standards have been introduced before corresponding fuel quality standards. To substantially improve fuel efficiency in petrol vehicles, vehicles incorporating lean-burn technologies need to be available to the 'mass market'. This will not occur until ultra low sulfur fuels are implemented in the standards.

Review objective 2: Unanticipated impacts of the operation of the Act

The review was required to assess the unanticipated impacts in context of the following.

Welfare

There has arguably been a reduction of contestability in national fuel markets due to the impact of national standards on independent importers. However, as noted above, any effect standards may have had is minor compared with the realignment of the fuel retail

market as a consequence of the ‘shopper docket’ phenomenon. At the time of consultation, only one importer continued to import fuel from overseas. All other independent importers sourced their fuel supplies from refiners in Australia. It is too early to determine if there have been significant consumer price impacts attributable to these changes.

The requirement of operability standards could lead to interruptions of fuel supplies if batches or shipments are rejected due to being marginally outside specification. This would adversely impact the communities affected. There is, however, provision for variation to the standards to cover for this event, if communities are deemed to be adversely affected.

Equity

National fuel quality and information standards are not applied consistently across Australia because in some instances more stringent legislation applies in particular states. This has led to confusion within states and an inequitable outcome for specific refiners and importers.

Although the Act specifies that it applies to corporations, Commonwealth entities, and persons involved in constitutional trade or commerce, the gap in the regulatory net which this leaves for individuals (unincorporated) who are not engaged in interstate trade was probably not fully anticipated. This situation is inequitable in that one group is required by law to supply fuel in accordance with the Act, and a second group (engaged in the same business) is outside the scope of the operation of the Act.

There is currently an inability under the Act to define geographic regions when granting approvals. An approval can be granted to a *person* only. In the case of ‘Wintermix’, this could lead to some consumers being unable to obtain fuel which is fit for purpose during winter months.

Health

The need to grant an exemption for the supply of avgas to remote indigenous communities to moderate the problem of petrol sniffing was an unanticipated health issue, but not an unanticipated impact of the operation of the Act, as the Act enabled an exemption under the approvals system.

Safety

Under the Act, inspectors can take fuel samples at refineries and large bulk product storage terminals. Allowing inspectors onto these sites to take fuel samples is seen as a critical safety issue. DEH is developing a procedure that will address all safety issues.

Sampling of gaseous fuels both at bulk tanks and at service stations requires that different arrangements be made in order to take samples safely.

Environment

The large number of applications to vary fuel standards under the approvals mechanism was unanticipated. However, there have been negligible impacts on the environment, as the proportion of the fuel supplies affected has been very small.

The introduction of specific fuel quality standards for different fuels causes problems at the pipeline interface where fuels are pumped from ships to onshore storage. Marine ports

are generally based on a single pipeline and a variety of products pass through this line. It leads to a greater need to flush pipelines and dispose of waste fuels.

Economic and regional development

The need for legislation to regulate ethanol labelling was not anticipated when the Act and the petrol determination were being prepared. Drafting of the ethanol labelling determination took account of environment, industry and consumer protection objectives. It is too early to determine if the information standard (separate from the petrol standard) has had an unanticipated impact on ethanol production in regional Australia.

Consumer interests

Increases in fuel costs caused by higher refining costs were anticipated in the preparatory studies for the Act. Further impacts on fuel prices might have occurred due to reduced importing by independent importers. An unanticipated impact that continues to be manifest is the association between the introduction of 50 ppm sulfur diesel refined at the BP Bulwer Island refinery and leaking fuel pump seals. Because of the way product is supplied geographically in response to demand, not all consumers have been exposed to the 50 ppm sulfur fuel, with the consequence that vehicles using the fuel for the first time may experience fuel pump seal failure. This issue was addressed in 2002, when the Australian Institute of Petroleum released an information brochure on the effect of low sulfur fuels on fuel pumps.

The competitiveness of business, including small business

The projected increases in fuel prices were factored into modelling of the Australian economy in preparatory studies. The review did not identify specific impacts on the competitiveness of business.

Efficient resource allocation

The impacts on the domestic oil industry were largely anticipated in preparatory studies for the Act, which included significant refinery investments and additional operating costs. Relatively minor resource allocation inefficiencies would have been caused by the unanticipated complexity of the approvals system for administrators, applicants, approval holders and Regulated Persons. The additional need for flushing pipelines and disposal of waste fuels was also not fully anticipated.

Review objective 3: Relative efficiency of the legislation as a means of implementing fuel quality standards

Seven options for improving the quality of petrol and diesel in Australia were analysed in the *National Fuel Quality Standards Regulatory Impact Statement*.⁷⁴ Not all of these options incorporated statutory standards as a necessary component part.

Options not requiring statutory intervention would have relied on the oil industry to meet the challenge of supplying fuel that was ‘fit for purpose’ when new motor vehicle engine technology was introduced in response to the requirements of the Australian Design Rules. It is unlikely that a coordinated compliance with the fuel quality standards demanded by the vehicle manufacturers in order to guarantee compliance with the design rules would have been achieved voluntarily. Without appropriate fuels readily available,

⁷⁴ DEH (2000)

the benefit to the environment of the new technology designed to meet the Australian Design Rules would not be maximised.

The alternative legislative approach considered was the development of a national environment protection measure (NEPM). NEPMs are the major mechanism which Australia has developed for intergovernmental cooperation on environmental issues. A NEPM has the effect of establishing a national scheme of regulation for an issue of national environmental importance. Implementation is then the responsibility of the Australian Government or individual state and territory governments. Individual governments undertake implementation by the means they see as appropriate. There is no requirement for complementary legislation in each jurisdiction to achieve the objective of the NEPM, although such a scheme could be an agreed approach to the implementation of a specific NEPM.

Some disadvantages of the development of an NEPM for national fuel quality standards were discussed in the RIS. The major concerns were the time required to complete the NEPM process (when establishing fuel quality standards was required urgently to allow sufficient time for refiners to plan and build capital works) and the possibility of state and territory governments varying the standards based on arguments of regional environmental difference.

In qualitative terms, the relative efficiency of non-statutory approaches compared to the *Fuel Quality Standards Act 2000* is difficult to estimate. There is no certainty that negotiation with the oil industry would have been successful in establishing fuel quality standards. On the other hand, the costs to government would have been lower, assuming that the same level of incentive was available to the industry to provide fuel of particular specifications at an early date.

For an NEPM development, initial costs and time investment would be likely to be higher than for the development of Commonwealth legislation, to accommodate the expanded consultation process. Implementation by the states and territories would provide opportunities for efficiency, since these jurisdictions have existing fair trading agencies with skilled inspectors enforcing fair trading laws with similar application. It is impossible to tell whether agreement could have been reached on a set of national standards. Assuming such agreement, the enforcement by state and territory agencies, drawing on their existing experience and skill in dealing with fuel suppliers for fair trading issues, would probably be more efficient than the current arrangement where in some states they provide a service under contract to the Commonwealth.⁷⁵ However, this may have led to differing compliance practices between states and territories.

The RIS identified \$3.4 billion in avoided health costs as a result of the implementation of standards under the Act. The review panel has concluded that the legislation has been a cost-effective and efficient approach.

Review objective 4: Appropriateness of framing of the legislation

The *Fuel Quality Standards Act 2000* bases regulation on the supply of fuel. This strategy works extremely well to regulate quality for the bulk of the fuel volume sold in Australia. Refiners and importers at the apex of the supply chain certify that the bulk supply

⁷⁵ National Environment Protection Council (2003), Chairman's foreword: The *National Environment Protection Council Act 1994* was reviewed in 2000, resulting in changes to the Commonwealth Act in 2002. Mirror amendments to the NEPC legislation of the States and Territories were progressed in 2003.

complies, and subsequent resupply is similarly certified. Where there is no attempt to circumvent the legislation, the scheme works perfectly to ensure that the final retail supply is of certified quality. However, as a result of the Constitutional limitation on the Commonwealth's jurisdiction, the legislation does not apply to some distributors and service station operators. There is an opportunity for supply of fuels not meeting the standards to be conducted lawfully.

Other provisions of the Act allow for the necessary administration processes. These provisions have been shown to be workable, if administratively complex in some cases.

Given the Constitutional limitation to the Commonwealth's jurisdiction to legislate, the Act is framed appropriately to provide as broad a coverage of regulation of fuel quality in Australia as can lawfully be achieved.

Review objective 5: Adequacy of communication and consultation with parties whose activities are directly affected by the operation of the Act, and the ability of those parties to determine/understand their obligations

Whilst stakeholders were impressed with the positive attitude and sincere effort devoted to consultation, effectiveness has been impaired by timeline constraints, insufficient resources and lack of industry knowledge within government departments. As a result, some stakeholders have stated that some aspects of the operation of the Act continue to be unnecessarily onerous and a burden on supply chain stakeholders. In response, the review panel has recommended the streamlining of administrative procedures and improved industry communication and education.

Review objective 6: Adequacy of consultation in relation to broader issues of implementation of the Act, and the ability of stakeholders to raise issues arising from the implementation of the Act

The consensus view was that consultation for the preparation of the Act was good but consultation for implementation of the Act has been less satisfactory. Particular concerns included the lack of feedback during preparation of determinations and assessment of proposed variations to fuel quality standards under the approvals system. Many groups lacked the technical expertise and resources to fully engage in consultation processes.

Review objective 7: Cost-effectiveness of monitoring and compliance activities undertaken to enforce the Act

The costs of monitoring and compliance activities administered by DEH have been less than the \$1 million per year that was forecast in the *Fuel Quality Standards Bill 2000 Revised Explanatory Memorandum*.⁷⁶ For 2002–03 and 2003–04, the annual costs of sampling and testing have been in the range \$600 000–700 000. A budget of approximately \$800 000 is planned for 2004–05. The costs of sampling and testing have, however, varied considerably across states and territories, indicating a potential to improve the cost-effectiveness of the program.

The review panel notes that efficient and effective national fuel sampling and testing is critical to the achievement of the objects of the Act and suggests that the level of resources for fuel sampling and testing be kept under review to ensure that adequate resourcing is maintained.

⁷⁶ *Fuel Quality Standards Bill 2000, Revised Explanatory Memorandum*. Under 'Financial Impact Statement' (p 3) this stated that 'The cost of monitoring is estimated to be in the order of \$1 million per year for petrol and diesel, with similar costs likely to arise as other fuels are regulated.'

Review objective 8: Effectiveness of reporting and record keeping requirements in terms of promoting compliance and facilitating enforcement

Overall, the fuel supply industry has recognised the need to keep and maintain records and has changed its systems and operating procedures to comply with the Act. This enables the ‘chain of custody’ of fuels regulated under the Act to be traced from refiners and importers to service stations and other points of final sale. In addition, refiners and importers are required to report annually to DEH. These systems are important requirements for promoting compliance and facilitating enforcement. To date, fuel documentation has been largely self-regulated, with little external auditing conducted by DEH. The main focus has been on sampling rather than on conducting administrative audits. In addition, the documentation has not been analysed in investigations of breaches of standards. Also, the industry has received very limited feedback on reporting by refiners and importers. It is therefore not possible to draw strong conclusions regarding effectiveness.

4.4.3 Nonlegislative issues

Review objectives 9–13 are directed at addressing the issues identified in objectives 1–8. Chapter 5 uses an RIS framework to consider nonlegislative as well as legislative approaches for improving the operation of the Act, and analyses these approaches in terms of possible advantages and disadvantages for stakeholders.

5 Regulation impact analysis

Specific deficits of the operation of the *Fuel Quality Standards Act 2000* (the Act) requiring a possible legislative response are addressed in this chapter. Practical alternatives to the current legislative provisions including nonlegislative approaches are outlined as options for improvement. The positive and negative impacts for the main stakeholder groups are examined specific options for improvement are recommended.

The impact analysis focuses on the advantages and disadvantages of the options rather than on their costs and benefits because, in this particular review, the main policy thrust — to regulate the quality of fuel — is taken as given and the focus of the review is on the operation of the Act. The options identified from the review of the Act's operation are largely measures to improve administrative efficiency or to enhance the clarity of the Act's provisions. Some measures are directed at enforcement, but levels of compliance are estimated at present to be high. These types of options are expected to be marginal in their economic costs and benefits, and they would certainly be marginal relative to the investment already made by the oil industry to comply with the standards.

5.1 Legislative deficits and options for improvement

The principal deficits of the Act and the Regulations are summarised in Table 5.1. They can be broadly grouped into the following categories:

- *National standards not comprehensive.* The legislative response would be to establish complementary state and territory legislation.
- *Standards not applicable to all suppliers due to the existence of unincorporated suppliers.* The legislative response would be to establish complementary state and territory legislation.
- *Need to maintain fuel supply in an emergency.* An option is to amend the Act to permit a decision that varies a fuel standard in order to maintain fuel supplies in an emergency.⁷⁷
- *Administrative inefficiency of the approvals system.* Options for amending the legislation include making provisions for delegation of duties to the Department of the Environment and Heritage (DEH), definition of classes of Regulated Persons, and special definitions of 'fuel' in the Regulations.
- *Need to improve the effectiveness and efficiency of monitoring and enforcement mechanisms.* The options include special provisions to improve the services of inspectors and amend powers of entry of inspectors; provisions for penalty notices; and a provision to call up the manual in the Regulations, along with a requirement that records be made available to an inspector at the location of supply of the fuel.

The issues and options are outlined in Table 5.1. The legislative problems and issues identified in the table are cross-referenced to relevant parts of Section 4.1, 'Analysis of legislative provisions', in this report.

⁷⁷ The Department of Industry, Tourism and Resources has recently commissioned a review of the *Liquid Fuel Emergency Act 1984*, with the final report delivered on 16 December 2004. Any amendment will consider the outcomes of this review. See section 4.1.1.

Table 5.1 Identified deficits in the operation of the Act and options for improvement

Issues derived from review of the Act and the Regulations		Principal deficiencies identified from analysis and consultations		Options for action ^a
Problem / specific issues	Proposal/purpose	Project 1	Project 2	
National standards not comprehensive				
Establishment of national standards (Act s. 9) [Refer: Section 4.1.3]	End the situation where state standards define the fuel specification	National standards not applied consistently (eg Western Australia) Anticompetitive implications of allowing different standards to be applied	Fuel quality standards do not apply Australia-wide, which is contrary to expectations of the fuel supply industry Anticompetitive impacts of no national standards	Examine complementary state and territory legislation Make a regulation under section 9(2)
Standards not applicable to all suppliers due to the existence of unincorporated suppliers				
Include unincorporated persons (Act ss. 12, 12A, 18, 19, 20, 30, 31, 66) [Refer: Section 4.1.4]	Establish a mechanism so the Act applies to all suppliers of fuel	Largely an issue for DEH, the principal enforcement agency		Examine complementary state and territory legislation
Need to maintain fuel supply in an emergency				
Emergency law (Act ss. 4(1), 4(2)) [Refer: Section 4.1.1]	Confirm coverage is adequate, and conforms with needs of emergency response strategies	No provision to use non-standard fuels in emergency situations		Amendment to the Act should not be considered until DITR review is completed Consider whether any state, territory or Commonwealth laws need to be specified as ‘emergency laws’ Amend the <i>Fuel Quality Standards Act 2000</i> to provide a power to vary a fuel standard in order to maintain fuel supplies in an emergency

Issues derived from review of the Act and the Regulations		Principal deficiencies identified from analysis and consultations		Options for action ^a
Problem / specific issues	Proposal/purpose	Project 1	Project 2	
Inefficient administration of the approvals system				
Approvals (Act ss. 13, 68) [Refer: Section 4.1.5]	Enhance efficiency of administration	Need to streamline approvals system	Unnecessarily complex system for applicants, the FSCC and DEH Processes could be streamlined and made more efficient	Amend the Act to fast-track and streamline the administration of approvals. Consider enabling delegation of the Minister's powers to DEH
Approvals (Act ss. 13, 68) [Refer: Section 4.1.5]	Enhance efficiency of administration		Definition and administration of Regulated Persons requires review	Consider providing for a <i>class</i> of Regulated Persons in the approval process
Regulatory scope (exclusions from definition of fuel) (regulation 3(2)) [Refer: Section 4.1.14]	Efficient operation and achievement of the object of the Act	Complexity of administering the approvals system partly linked to definition of fuels and geographic use of fuels. (eg single battlefield fuel for Australian Defence Force)	Specific climatic/seasonal factors to define regions in the legislation	Consider amending the definition of 'fuel' in the Regulations to achieve strategic exclusions from the operation of the Act (eg the use of avgas for road transport in specified communities, 'Wintermix' in regions defined by climatic/seasonal factors) when the impact on air quality of the exclusion would not hinder the achievement of the objects of the Act; or have purpose-based standards or standards for regions defined by climatic/seasonal factors
Climatic and seasonal variations (Act s. 9) [Refer: Section 4.1.3]	Efficient operation and achievement of the object of the Act	Surety of supply in remote areas such as Weipa was raised as an issue		Consider an amendment to section 21 to allow for less stringent climatic and seasonal variations in the base standard when required to achieve the object of the Act

Issues derived from review of the Act and the Regulations		Principal deficiencies identified from analysis and consultations		Options for action ^a
Problem / specific issues	Proposal/purpose	Project 1	Project 2	
Need to improve the effectiveness and efficiency of monitoring and enforcement mechanisms				
Appointment of inspectors (Act s. 38) [Refer: Section 4.1.9]	Efficient service provision	There is doubt about the ability to appoint as inspector an individual from the private sector, or an individual with powers restricted to the taking of samples	Confusion regarding who can be appointed as an inspector	Amend the Act (if needed) to permit the appointment of fuel samplers and individuals from the private sector as inspectors
Powers of entry (Act s. 40) [Refer: section 4.1.10]	Effective enforcement	Some inspections conducted with a verbal consent only Entry powers restrictive when compared with fair trading legislation		Amend the Act to bring the entry powers into line with those for fair trading legislation
Penalty notices (Act ss. 12A, 18, 19) [Refer: Section 4.1.11]	Efficient enforcement	There is no appropriate penalty for minor infringements of an administrative nature		Amend the Act to provide for penalty notices for appropriate offences
Waiver or reduction of application fee (regulations 5, 6) [Refer: Section 4.1.15]	Efficient administration	Basis for fee waiver is unclear		Amend regulation 6(3A) to remove 'If the request is on the basis that payment of the application fee would cause financial hardship to the applicant'
Waiver or reduction of application fee (regulations 5, 6) [Refer: Section 4.1.15]	Compliance with competition principles	Anticompetitive fee structure at regulation 5(2)(a)		Remove the regulations
Sampling manual (regulation 17) [Refer: Section 4.1.13]	Effective enforcement	Safety issues when sampling and testing gaseous fuels.		Amend the regulation so that health and safety issues are taken into account
Record keeping (regulation 24) [Refer Section 4.1.16]	Effective enforcement	Record keeping requirements do not specify the location and availability for inspection of records kept for the Act		Amend regulation 24(2) to include an additional requirement that a record must be available for access and copying by an inspector at the location of the supply of fuel

5.2 Affected parties

The parties likely to be affected by the options are:

- the fuel supply industry (including refiners, independent importers, distributors and service stations)
- the Commonwealth, the states and the territories
- consumer groups (including vehicle manufacturers and marketers, motorists and transport companies).

5.3 Impact analysis

The impact analysis assesses legislative and nonlegislative options for addressing the deficits identified in Table 5.1. Each option for action is assessed against the status quo (business as usual). The main advantages and disadvantages are summarised in Tables 5.2 to 5.7 in the following subsections.

As already noted, because the options are largely directed at enhancing administrative efficiency and legislative clarity, they are likely to be marginal in terms of economic costs and benefits, and for this reason the impact analysis assesses the options in terms of advantages and disadvantages.

5.3.1 National standards

Table 5.2 Advantages and disadvantages of making a regulation under section 9(2) of the Act to achieve consistent standards

Affected parties	Advantages	Disadvantages
Fuel supply industry	<ul style="list-style-type: none"> • Consistent specification across Australia • Improved certainty of future investment • Removal of trade barriers between jurisdictions and increased potential market size for refiners and importers 	<ul style="list-style-type: none"> • No major disadvantages for the supply industry as a whole
Commonwealth	<ul style="list-style-type: none"> • Consistent with Commonwealth policy 	<ul style="list-style-type: none"> • Possible pressure to accommodate special requirements of individual states and territories
States and territories	<ul style="list-style-type: none"> • Full alignment with Commonwealth legislation 	<ul style="list-style-type: none"> • Adoption of less stringent Commonwealth legislation
Consumer groups	<ul style="list-style-type: none"> • Consistent specification across Australia • Greater contestability in Australian fuel markets, which could lead to more price competition 	<ul style="list-style-type: none"> • No major disadvantages

Other options for action

The other options for action are firstly to encourage the states and territories to withdraw their inconsistent provisions, and secondly to examine the development of complementary state and territory legislation to deliver fuel standards. These options could be pursued through meetings of the Environment Protection and Heritage Council of Ministers.

Summary

Amendment to the Regulations is necessary to ensure that nationally consistent standards are implemented in Australia.

5.3.2 Consistent application of standards for all suppliers

Table 5.3 Advantages and disadvantages of developing complementary state and territory legislation

Affected parties	Advantages	Disadvantages
Fuel supply industry	<ul style="list-style-type: none"> Equitable competition between all incorporated and unincorporated suppliers 	<ul style="list-style-type: none"> Additional administration to demonstrate diligence within the supply chain
Commonwealth	<ul style="list-style-type: none"> Remove an ‘enforcement’ loophole which could be exploited by unincorporated suppliers 	<ul style="list-style-type: none"> No major disadvantages
States and territories	<ul style="list-style-type: none"> Obviate a need to implement complementary legislation 	<ul style="list-style-type: none"> No major disadvantages
Consumer groups	<ul style="list-style-type: none"> Lower likelihood of inconsistent fuel standards across the supply industry 	<ul style="list-style-type: none"> No major disadvantages

Examine complementary state and territory legislation

Complementary legislation would enable enforcement of nationally consistent standards across all suppliers.

Summary

Legislative action is required to achieve uniform regulation within the supply industry, regardless of the status of incorporation of the supplier.

5.3.3 Fuel supply in an emergency

Table 5.4 Advantages and disadvantages of amending the Act to provide a specific power in an emergency

Affected parties	Advantages	Disadvantages
Fuel supply industry	<ul style="list-style-type: none">• Obviate the need for approvals	<ul style="list-style-type: none">• No major disadvantages
Commonwealth	<ul style="list-style-type: none">• Avoid interruptions to supply during periods of emergency	<ul style="list-style-type: none">• No major disadvantages
States and territories	<ul style="list-style-type: none">• Avoid interruptions to supply during periods of emergency	<ul style="list-style-type: none">• No major disadvantages
Consumer groups	<ul style="list-style-type: none">• Fuel supply security enhanced	<ul style="list-style-type: none">• Risk of non-compliant fuels entering other parts of the supply chain

This option seems on balance to be favourable except for the risk that some non-compliant fuel may remain in the supply chain after an emergency.⁷⁸

Consult with state and territory emergency agencies

Alternatively, consultation with state and territory agencies may identify additional legislation that could be determined under section 4(2) of the Act as an *emergency law*. This option requires that an emergency event must trigger other legislation before the relevant section of the Act can operate. There may be situations where an emergency arises that is not covered by the *Liquid Fuel Emergency Act 1984* or other nominated legislation but nonetheless necessitates action to secure the supply of fuel.

Summary

A requirement for legislative change needs to be determined by further research and consultation with the agencies responsible for managing emergency response.

⁷⁸ The Department of Industry, Tourism and Resources has recently commissioned a review of the *Liquid Fuel Emergency Act 1984*, with the final report delivered on 16 December 2004. Any amendment will consider the outcomes of this review. See section 4.1.1.

5.3.4 Enhanced education and communication

Table 5.5 Advantages and disadvantages of developing an enhanced education and communication campaign

Affected parties	Advantages	Disadvantages
Fuel supply industry	<ul style="list-style-type: none"> Major advantage — informs suppliers of statutory obligations 	<ul style="list-style-type: none"> No major disadvantages
Commonwealth	<ul style="list-style-type: none"> Assists in compliance 	<ul style="list-style-type: none"> No major disadvantages other than resource constraints
States and territories	<ul style="list-style-type: none"> Ensures stakeholders are not confused about statutory obligations 	<ul style="list-style-type: none"> No major disadvantages
Consumer groups	<ul style="list-style-type: none"> Consumers aware of fuel quality requirements; provides for increased incident reporting 	<ul style="list-style-type: none"> No major disadvantage

This option is highly favoured.

5.3.5 Administration of the approvals system

Legislative options

To improve the efficiency of the approvals system, a suite of amendments to the legislation is required. Amendments are considered necessary to allow delegation of administrative functions to DEH, to provide a class of Regulated Persons, and to define ‘fuel’ to achieve strategic exclusions for special users, regions defined by climatic/seasonal factors and particular events.

Table 5.6 Advantages and disadvantages of legislative amendments to simplify the approvals system

Affected parties	Advantages	Disadvantages
Fuel supply industry	<ul style="list-style-type: none"> • More streamlined approvals system • Obviate the need to seek variations for specific classes of fuels that may be excluded by an amendment to the definition of ‘fuel’ • Inclusion of regions defined by climatic/seasonal factors eliminates problem of boundaries and administration of Regulated Persons 	<ul style="list-style-type: none"> • Less scrutiny by the FSCC
Commonwealth	<ul style="list-style-type: none"> • Lower costs of administration if specific classes of uses are excluded from legislative coverage • Eliminates administration of Regulated Persons for approvals requiring geographical boundaries • Allows for approvals to be amended 	<ul style="list-style-type: none"> • Need for effective administration to avoid compromising fuel quality standards in metropolitan environments
States and territories	<ul style="list-style-type: none"> • More efficient response to local needs for specialised specification of fuels 	<ul style="list-style-type: none"> • No major disadvantages
Consumer groups	<ul style="list-style-type: none"> • Diminished probability of supply disruption • Reduced administrative burden for specific groups benefiting from the amendments, including motor sport clubs and their members 	<ul style="list-style-type: none"> • No major disadvantages

Summary

The high complexity of the approvals system has been an important unanticipated outcome of the operation of the Act. Amendments to the legislation appear necessary to facilitate streamlining of the approvals system. This would also enable the FSCC to focus on higher order implementation and policy issues.

5.3.6 Effectiveness and efficiency of monitoring and enforcement mechanisms

Legislative options

Improvements to monitoring and enforcement of the Act may be achieved by amendments to provide for penalty notices, appropriate information sharing with other agencies, enhanced powers of entry for the purposes of inspection and investigation, definition of sampling and testing methods, establishment of penalty notice offences, record keeping, and the administration of fee waivers.

Table 5.7 Advantages and disadvantages of legislative amendments relating to monitoring and enforcement mechanisms

Affected parties	Advantages	Disadvantages
Fuel supply industry	<ul style="list-style-type: none"> • More flexibility to accommodate changes in analytical methods 	<ul style="list-style-type: none"> • No major disadvantages
Commonwealth	<ul style="list-style-type: none"> • More efficient enforcement with less restrictive entry powers and penalty notices • Improved intelligence through interagency information sharing • Improved certainty and flexibility for sampling and testing methods • More responsive inspection services 	<ul style="list-style-type: none"> • No major disadvantages
States and territories	<ul style="list-style-type: none"> • Access to information needed for consumer protection • Improved delivery of inspection services and better interagency cooperation • Consistent entry powers for inspectors 	<ul style="list-style-type: none"> • No major disadvantages
Consumer groups	<ul style="list-style-type: none"> • Enhanced consumer protection advice • Improved enforcement of the Act 	<ul style="list-style-type: none"> • No major disadvantages

Summary

The effectiveness and efficiency of enforcement is critical to the achievement of the objects of the Act. The identified legislative amendments will enhance the operation of the Act for all stakeholders, resulting in lower costs whilst achieving the objects of the Act. In some instances, legislative changes will need to be accompanied by administrative changes to secure the desired outcomes. Before moving to an alternative approach to the recruitment of inspectors, further consideration is needed of the benefits to the enforcement program of information sharing between agencies. The issues are discussed in Section 4.1.9.

5.4 Conclusion and recommendations

Six areas relating to the operation of the Act were identified as requiring improvement:

- National standards are not comprehensive; there is a need for the establishment of complementary state and territory legislation.
- Standards not are applicable to all suppliers due to the existence of unincorporated suppliers.
- There is a need to maintain fuel supply in an emergency and to allow the use of off-specification fuel if necessary.
- There is a need to improve education and communication.
- Administrative efficiency of the approvals system requires improvement.
- There is a need to improve the effectiveness and efficiency of monitoring and enforcement mechanisms.

Options for action for each area have been outlined in Table 5.1. The options have been assessed to determine their relative impacts on the main affected parties in Tables 5.2 to 5.7. The principal conclusions and recommendations are as follows.

- *National standards not comprehensive*
It is recommended that consistency be achieved by the development and implementation of complementary state and territory legislation.
- *Standards not applicable to unincorporated suppliers*
Legislative action is required to achieve uniform regulation within the supply industry, regardless of the status of incorporation of the supplier. Complementary state and territory legislation would avoid additional costs and provide for direct regulation.

Complementary legislation implemented under state and territory jurisdiction will allow for unincorporated suppliers to be regulated. Implementation of fuel quality standards through complementary legislation in the states and territories also has the potential to address concerns about the regulatory gap, interjurisdictional information sharing and the absence of national standards.

- *Need to maintain fuel supply in an emergency*
There are no major disadvantages in amending the Act to ensure that fuels are supplied at times of emergency, provided non-compliant fuels do not enter parts of the supply chain where the emergency conditions do not apply.

It is recommended that a requirement for legislative change be determined after the Department of Industry, Tourism and Resources review of the *Liquid Fuel Emergency Act 1984*. Implications for fuel quality standards in the context of a fuel emergency should, as far as possible, be dealt with under the *Fuel Quality Standards Act 2000*.

- *Need for improved education and communication*
It is recommended that an education campaign be undertaken to fully inform suppliers and retailers of their responsibilities under the Act. The general public needs to be advised of the existence of fuel quality standards and the operation of the Act.

- *Inefficient administration of the approvals system*
The proposed amendments to the legislation would complement various administrative improvements to streamline the approvals system for DEH and the FSCC.
- *Need to improve the effectiveness and efficiency of the monitoring and enforcement mechanisms*
A package of legislative amendments is required to reinforce the monitoring and enforcement function of the Act. The analysis showed that these amendments would have no major disadvantages.

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Appendix A

Analysis of monitoring programs for petrol and automotive diesel

A.1 Petrol

A.1.1 Analysis

Over the period from the commencement of the program in 2001–02 to the end of 2003–04, 1331 samples of petrol were tested.

The sampling program has been designed to be distributed across the jurisdictions approximately in proportion to their fuel sales. However, the sampling has been skewed towards known and likely problem areas (as is appropriate for compliance monitoring) such as the addition of ethanol above the 10% cap. Most of the monitoring has concentrated on service stations. Data were not available regarding the distribution of sampling across the supply chain, but discussions with the Department of the Environment and Heritage (DEH) and the agencies responsible for monitoring in the states and territories indicated that over 90% of the samples were drawn from service stations.

Further, reporting on non-compliance is complicated by the introduction of the 10% by volume ethanol in petrol standard on 1 July 2003. Prior to that date, ethanol results higher than that level were not a cause of non-compliance. The introduction of a standard for methyl tertiary-butyl ether (MTBE) does not cause any such concern, since it was introduced from 1 January 2004, which postdates the dataset being examined.

The number of samples in each year, and the level of compliance, are summarised in Table A1. Over the period there were 29 cases (2.2% of the total sample) of non-compliance.

Table A1 Results of petrol monitoring program

Financial year	Sample size (n)	Non-complying	% non-compliance
2001–02	331	11	3.3
2002–03	522	3	0.6
2003–04	478	15	3.1
Total	1331	29	2.2

Source: Department of the Environment and Heritage

The geographic distribution of non-compliance is shown in Table A2. Non-compliance rates are not reported by financial year by jurisdiction, as in some cases the sample sizes are too small to be meaningful.

There were 22 cases (5.6%) recorded in New South Wales, five (4.7%) in South Australia, one (1.9%) in the Northern Territory and one (0.4%) in Victoria.

Table A2 Geographic distribution of non-compliance: petrol

Jurisdiction	Sample size (n)	Non-complying	% non-compliance
Australian Capital Territory	77	0	0%
New South Wales	390	22	5.6%
Northern Territory	53	1	1.9%
Queensland	211	0	0%
South Australia	106	5	4.7%
Tasmania	75	0	0%
Victoria	233	1	0.4%
Western Australia	136	0	0%
Total	1331	29	2.2%

Source: Department of the Environment and Heritage

It has been assumed that the fuel samples have been tested for all standards, or at least all standards most likely to be non-compliant. The causes of non-compliance are shown in Table A3.

Table A3 Non-compliance: petrol

Financial year	Non-compliance parameter	Location	Number
2001–02	Aromatics	South Australia	5
	Aromatics	Northern Territory	1
2002–03	Research Octane Number	New South Wales	5
	Research Octane Number	New South Wales	3
2003–04	Ethanol	New South Wales	2
	Ethanol labelling	New South Wales	10
	Research Octane Number	New South Wales	2
	Research Octane Number	Victoria	1

Source: Department of the Environment and Heritage

Several issues are apparent. Firstly, in 2001–02, five breaches of the aromatics parameter were reported in South Australia and one in the Northern Territory (possibly supplied from South Australia). These account for all the occurrences of non-compliance in South Australia and the Northern Territory. Four of these exceedances were very marginal. DEH reported that it had some reservations about the analytical method. Aromatics have not since reappeared as an exceedance — either there have been no further breaches or testing for it has stopped (the fuel cost estimate document does not include aromatics in the petrol test costs).

Secondly, the other five failures in 2001–02 were the result of a low Research Octane Number (RON). Four of these were gross failures (with some up to ten octane numbers below the standard). It is difficult to determine what could have caused this problem. Further, it would be expected that such a circumstance would have led to widespread complaints of very poor vehicle performance and possible damage. One result had a duplicate measurement reported which differed considerably from the original. This suggests that the test results in that year may have to be largely discounted.

Thirdly, the three failures in 2002–03 were for low RON in lead replacement petrol in New South Wales. These breaches could possibly be explained by adulteration or substitution with unleaded petrol.

Finally, there were two breaches in 2003–04 for ethanol exceedance, ten for breach of ethanol labelling standards and two for low RON in New South Wales. An additional low RON was recorded in Victoria.

It is apparent from the results that there has been a high compliance rate for petrol, despite sampling being biased towards investigating possible breaches. The apparent non-compliance rate over the program period examined was 2.2%. If the test results that are considered doubtful are removed, then the incidence of non-compliance falls from 29 to 19 and the rate from 2.2% to 1.4%. All six of those were in New South Wales — three for RON and three for ethanol. It should be noted, however, that the non-compliance rate could rise as more stringent fuel standards are applied. DEH is progressing towards prosecutions under the Act.

The three possible causes of non-compliance include the following. The first is that the manufactured product, either locally produced or imported or blended (as by the subsequent addition of ethanol), fails to meet the standards. The second is that some contamination occurs in the distribution systems through inadequate quality systems or error. The third is deliberate adulteration for financial gain. For petrol, changes to excise rates for many of the potentially substitutable substances have been aligned with petrol, which has removed a financial incentive to use these substances. There remains, however, an incentive for ethanol exceedance, because local producers receive a production subsidy which offsets the excise tax. It is not easy to envisage the scope for adulteration with products other than ethanol which would leave the petrol usable. A more likely problem would be substitution of unleaded petrol (ULP) for premium unleaded petrol (PULP) or lead-replacement petrol (LRP). PULP and LRP are sold at a premium to ULP.

A.2 Automotive diesel

A.2.1 Analysis

Over the period from the commencement of the monitoring program in 2001–02 to the end of 2003–04, 822 samples of automotive diesel fuel were tested. These data are for automotive diesel fuel produced exclusively from petroleum stock.

The sampling program has been designed to be distributed across the jurisdictions approximately in proportion to their fuel sales. However, the sampling has been skewed towards known and likely problem areas (as is appropriate for compliance monitoring). Most of the monitoring has concentrated on service stations. Data were not available regarding the distribution of sampling across the supply chain, but discussions with DEH and the agencies responsible for monitoring in the states and territories indicated that over 90% of the samples were drawn from service stations.

Automotive diesel standards under the Act were not introduced until 31 December 2002. What has constituted non-compliance has therefore changed during the monitoring period. For example, prior to 31 December 2002, sulfur results higher than 500 ppm were not a cause of non-compliance.

The results of sampling are summarised in Table A4.

Table A4 Results of automotive diesel monitoring program

Financial year	Sample size (n)	Non-complying	% non-compliance
2001–02	64	3	4.7
2002–03	351	13	3.7
2003–04	405	14	3.5
Total	820	30	3.7

Source: Department of the Environment and Heritage

Over the period there were 30 cases of non-compliance or 3.7% of the total sample. The non-compliance rate ranged from 3.5% in 2003–04 to 4.7% in 2001–02.

The geographic distribution of non-compliance is shown in Table A5. Non-compliance has not been reported by financial year as the sample sizes in specific cases are too small to be meaningful. It is particularly noticeable that 24 of these incidents were in New South Wales, whose non-compliance rate was 9.2%. For the other states and territories, the overall non-compliance was six cases or 1.1%.

Table A5 Geographic distribution of non-compliance: automotive diesel

Jurisdiction	Sample size (n)	Non-complying	% non-compliance
Australian Capital Territory	47	0	0%
New South Wales	260	24	9.2%
Northern Territory	28	0	0%
Queensland	151	1	0.7%
South Australia	60	1	1.7%
Tasmania	40	1	2.5%
Victoria	130	3	2.3%
Western Australia	104	0	0%
Total	820	30	3.7%

Source: Department of the Environment and Heritage

The reported instances of non-compliance were examined, as shown in Table A6.

Table A6 Non-compliance: automotive diesel

Financial year	Non-compliant parameter	Location	Number
2001–02	distillation	New South Wales	2
	density	Northern Territory	1
2002–03	distillation	New South Wales	2
	distillation	Victoria	1
	density	Victoria	1
	density	Queensland	1
	viscosity	New South Wales	1
	water and sediment	Tasmania	1
	sulfur	New South Wales	1
	sulfur and distillation	New South Wales	2
	sulfur, distillation and viscosity	New South Wales	3
2003–04	sulfur	New South Wales	8
	filter	New South Wales	1
	sulfur and distillation	New South Wales	2
	sulfur, density and viscosity	New South Wales	2
	sulfur, distillation and filter	Victoria	1

Source: Department of the Environment and Heritage

A minimum of 13 of the 30 cases (43%) show evidence of adulteration. These are cases where distillation parameters have been breached. There were 11 cases in New South Wales and an additional two cases in Victoria. Observation of the parameters that have been breached—including final boiling point, sulfur and viscosity—suggests that the adulterant used may have been lubricating oil, which may have been added to the diesel fuel as a low-cost extender. Of the remaining 17 cases, seven were due to elevated sulfur levels. Some of these might have been due to adulteration (eg with heating oil), or possibly to previous higher sulfur diesel fuel working through the distribution system. However, breaches to the sulfur parameter occurred mainly in New South Wales and were not reported for the Australian Capital Territory, which is supplied from the same sources. The remaining cases were due to several factors, some minor in the extent of the breach.

The reasons for non-compliance would be similar to those for petrol. There would be some potential to add used lubricating oil. However, there are fewer opportunities for fuel substitution. As for breaches of petrol standards, DEH is progressing towards prosecutions under the Act.

Appendix B

Analysis of approvals

B.1 Types of approvals granted

An analysis of approvals was undertaken based on information provided by the Department of the Environment and Heritage (DEH) on 10 February 2004 and revised on 28 July 2004. The approvals covered by this information are listed in Table B1. Only the summaries provided by DEH were analysed, not the gazettals. DEH also provided information regarding the quantities of fuel involved for some of the approvals only. Details for specific approval holders were provided as ‘commercial-in-confidence’ and cannot be reported in this appendix.

Table B1 Approvals under the *Fuel Quality Standards Act 2000* to July 2004

Purpose	Approval holder	Approvals	Comment
Specialist unleaded racing fuels	VPW Australia	1	Current to 30 June 2005. Variation to the methyl tertiary-butyl ether (MTBE) parameter.
Specialist unleaded racing fuels	VP Racing Fuels	1	Current to 30 June 2005. Variation of the aromatics, oxygen, di-isopropyl ether (DIPE), MTBE and olefins parameters.
Specialist unleaded racing fuels	Elf Lubricants Australia	1	Current to 30 June 2005. Variation of the aromatics, oxygen, DIPE, MTBE and olefins parameters.
Leaded petrol for motor and water sports clubs	32 motor and water sports organisations	1	Current to 31 December 2004. With viscosity, density, lubricity and sulfur outside limits.
Leaded petrol for race engine building and tuning	36 dynotuners	1	Current to 30 June 2005. Varies the lead parameter.
Leaded petrol for use at the Summernats Car Festival	Street Machine Services	1	Current to 30 June 2005. Varies the lead parameter.
Leaded petrol for car manufacturer engine testing	Holden Australia	1	Current to 30 June 2005. Varies the lead parameter.
Leaded petrol for car manufacturer engine testing	The Ford Motor Company of Australia	1	Current to 30 June 2005. Varies the lead parameter.
Automotive diesel fuel ‘Wintermix’	BP Australia	1	Current to 31 December 2004. Variation of the viscosity, density, lubricity and sulfur parameters.
Automotive diesel fuel ‘Wintermix’	The Shell Company of Australia	1	Current to 31 December 2004. Variation of the viscosity, density, lubricity and sulfur parameters.
Automotive diesel fuel ‘Wintermix’	Caltex Australia Petroleum	1	Current to 31 December 2004. Variation of the viscosity, density, lubricity and sulfur parameters.

Purpose	Approval holder	Approvals	Comment
Automotive diesel fuel 'Wintermix'	Mobil Oil Australia	1	Current to 31 December 2004. Variation of the viscosity, density, lubricity and sulfur parameters.
Supply of avgas in lieu of petrol (Comgas Scheme)	Department of Health and Ageing	3	Third approval current to 31 December 2005. Provision of avgas to specific remote indigenous communities.
Automotive diesel	BP Bulwer Island	2	Second approval current to 31 December 2004. Density lower than the standard.
Automotive diesel	IOR Energy	2	Second approval current to 31 December 2005. Density lower than the standard.
Automotive diesel	Moama Refinery	2	Second approval current to 31 December 2005. Density lower than the standard.
Automotive diesel	Central Oil Refineries	2	Second approval current to 31 December 2005. Density lower than the standard.
Automotive diesel - Cleanerburn™ additive	Mobil Oil Australia	1	Expired. Sulfur greater than permitted by the standard. Approval has probably been inactive.
Petrol on Christmas Island	Gaseng Petroleum	1	Expired. Variation of sulfur parameter.
Automotive diesel fuel on Christmas Island	Gaseng Petroleum	1	Expired. Variation of distillation parameter.
Total	86	26	

Source: Department of the Environment and Heritage

Since the determinations commenced, there have been 26 approvals granted to 86 approval holders. There remain 17 current approvals for 83 approval holders. Of the nine approvals which have expired, six appear to have been replaced by new approvals to the same approval holders for the same variation to a fuel standard. The remaining three approvals were not renewed.

About 83% of the approval holders have held approvals for leaded petrol for motor and water sports, engine testing, and car racing activities. However, these approvals have accounted for small volumes of fuel. The remaining 17% of approval holders have probably accounted for over 90% of the fuels subject to approval.

The major approval holders have included the refiners for provision of low density diesel, 'Wintermix' diesel, and diesel with Cleanerburn™ additive, suppliers to Christmas Island, and suppliers of avgas in lieu of petrol to remote indigenous communities.

It is not possible to accurately estimate the proportions of fuels impacted by exemptions under the approvals system, as the quantities of fuel involved are only available for a limited number of approval holders. Based on confidential information provided by DEH, and assuming that the approval to use Cleanerburn™ additive has remained inactive, then the quantity of automotive diesel fuel receiving exemptions has probably been in the order of 400 ML per year or 3% of total automotive diesel supplies (14 980 ML in 2002–03). The quantities of petrol receiving variations to

standards have been much lower and would be less than 2 ML per year or less than 0.01% of Australian petrol supplies (19 670 ML in 2002–03).⁷⁹

Information was not available regarding the number of applications which have been rejected. However, prospective approval applicants are referred by DEH to a manual, which assists in the initial application process. Most enquiries proceed to an application.

The Act relates to the ‘supply’ of fuels, and an approval can be granted to a ‘person’ who is a ‘supplier’ of a fuel. This includes, under certain conditions, entities which would normally be users rather than suppliers, including motor sports clubs, vehicle manufacturers, and in the case of the Comgas Scheme, the Assistant Secretary of the Australian Government Department of Health and Ageing.

The following provides a brief review of the main classes of approvals.

B.2 Unleaded racing fuels

The unleaded racing fuels would be specially blended high octane fuels for racing vehicles with highly modified engines. The demand for these fuels may increase, replacing the leaded racing fuels. Applications to supply these fuels could become more common, leading to more applications for approvals and renewals. More efficient mechanisms are required to process and administer these approvals, in the light of their relatively minor impact on emissions.

B.3 Leaded petrol

The approvals for leaded petrol vary the lead parameter, enabling a range of fuels to be used including avgas and specially imported fuels from the United States and France. The volumes of these are expected to be very small. It is unlikely that there would be substantial adverse environmental or health effects from the use of leaded fuel for these applications. The relatively large number of approvals in this case has probably been unanticipated.

In terms of achieving the specified objectives of the Act, having to provide these approvals is ineffective. It does seem that some efficiencies have been achieved in the administration of these approvals, but it is possible that there may be some scope for further efficiencies by such means by not renewing these approvals when they terminate (which would be justified because alternatives are available), or by delegating the power to deal with these applications to DEH.

B.4 ‘Wintermix’

The issue here is that as the ambient temperature is reduced wax crystallises out of diesel fuel and reaches a point where the fuel will no longer flow. Under these circumstances the engine ‘will not start’. The longstanding approach to this has been for the fuel suppliers to supply a ‘Wintermix’ (or ‘alpine mix’) fuel in certain regions of the country at certain times. The former Australian Standard included provisions

⁷⁹ DEH (personal communications 2004); DITR (2004).

for diesel fuel variation for low temperature operation. This fuel forms wax at a lower temperature than the usual supply. Typically, the fuel can be seen as automotive diesel fuel with some added heating oil or kerosene to provide this low temperature operability. Because of this, the fuel fails to meet the standards, notably because of its reduced viscosity, density and lubricity, and higher sulfur content.

It is understood that it is likely that the ability to supply a 'Wintermix' will become more difficult when the lower 2006 sulfur content comes into effect.

As it stands with the automotive diesel fuel determination, a complying automotive diesel fuel may not meet cool climate operability requirements. To the operator under these circumstances, the fuel is unfit for service and has not made the operation of engines more effective. Provision of approvals to supply 'Wintermix' necessarily involves a compromise of some of the fuel quality standards.

It would appear that the need to grant approvals to supply 'Wintermix' has been an unintended outcome of the Act. This fuel has been for a long period a component of diesel fuel supply. It is inappropriate for this fuel to be dealt with under the Act by granting approvals, given the 'fit for purpose' issues involved.

B.5 Comgas Scheme — avgas in lieu of petrol

The Department of Health and Aging (DoHA) has held approvals to distribute the leaded fuel avgas in communities participating in the Comgas Scheme since 16 January 2002; the most recent approval is valid until 31 December 2005.

The Comgas Scheme is a long-term approach to reducing petrol sniffing, and addresses education, prevention, rehabilitation and treatment. It ensures that communities using aviation fuel as part of an abatement strategy can continue to do so at no additional cost. Under the Comgas Scheme, avgas is supplied to approximately 34 Aboriginal communities.

Avgas is supplied to these communities because it is low in aromatic compounds, and it fails to produce the 'high' that petrol sniffers seek and can obtain from unleaded petrol. Although an evaluation of the Comgas Scheme found strong evidence that avgas is unattractive to petrol sniffers, there is concern regarding its use in relation to human health and the environment, and the operability effects it may have on vehicles not designed to operate on leaded petrol.

Additionally, Australian refineries are following the global trend towards the manufacture of low-lead avgas with higher aromatic content, making it an unsuitable petrol for use under the Comgas Scheme.

DoHA has proceeded to investigate unleaded alternatives for use in place of avgas. With the assistance of the Australian Institute of Petroleum, DoHA has engaged BP Australia to manufacture a custom-made unleaded petrol for use under the Comgas Scheme. It is understood that the supply of this blend will commence early in 2005.

B.6 Low density automotive diesel

The BP Bulwer Island refinery was granted an approval to supply automotive diesel at a lower density than specified in the determination. Low density diesel increases certain tailpipe emissions and fuel consumption.

The environmental standards, of which a minimum diesel fuel density is one, have been established on the basis of reducing emissions. It is assumed that BP will make operational changes to achieve compliance. However, in its submission to this review BP stated that it will be seeking an extension of the approval. Fuel parameters cannot always be treated independently, and this problem may have been an unanticipated consequence of lowering the sulfur content in automotive diesel.

The problem of low density has also been encountered by small refineries using a light crude sourced from oil fields in southwestern Queensland. These refineries are able to produce a 'diesel fuel' as a partially treated light crude oil. The dispensation given to these producers is for a lower density product than in the case of BP. This problem should not be considered to be unanticipated, as the fuel was produced in small volumes for many years prior to the legislation.

If the density is below that nominated by the engine manufacturer, the maximum power output will be reduced and the fuel pump delivery to the engine will need to be adjusted upward to maintain maximum power. Therefore, in order to optimise engine performance and tailpipe emissions, both minimum and maximum density limits should be defined in a fairly narrow range.

Black smoke output is sensitive to full load performance when excess combustion air availability is at its minimum. Too high a fuel efficiency for the calibration has the effect of over-fuelling, increasing black smoke and other gaseous emissions output.

It may not be feasible to bring this fuel type into compliance without destroying its cost advantage.

In both cases, it is untenable to continue to provide approvals indefinitely without damaging the intention of the Act.

B.7 Cleanerburn™

It is understood that Mobil Altona is currently meeting the 500 ppm sulfur standard, and has not used this additive.⁸⁰

B.8 Christmas Island

Approvals were granted for transitional supply issue to Christmas Island, which have since lapsed. It is necessary to provide approvals for the supply of non-complying transport fuel to Christmas Island as the Act is applicable to all external territories with the exception of Norfolk Island. Without provision for such approvals, security of fuel supply would be a major issue. The need to enforce full compliance with fuel quality standards in the external territories requires review.

⁸⁰ Advice from DEH (2004)

Appendix C

Fuel taxation and grants

Table C1 sets out the level of excise duty on automotive fuels, and the value of on-road grants available to certain classes of vehicles. Table C2 shows the level of grants available to domestic producers and/or importers in relation to biodiesel and ethanol.

Table C1 Excise duties and road user grants, 2004

Fuel:	Excise duty cents/litre	On-road grant ^a cents/litre
Diesel ≤ 50 ppm sulfur ^b	38.143	18.51
Other diesel ^b	40.143	18.51
Petrol ^c	38.143	0
Fuel ethanol	38.143	20.809
Biodiesel	38.143	18.51
LPG ^d	0	11.925
LNG ^d	0	8.13
CNG ^d	0	12.617

a Road use eligible for grants under the Energy Grants (Credits) Scheme: business operations in all vehicles weighing above 20 t, all vehicles over 4.5 t dedicated to carrying primary production, all buses over 4.5 t using alternative fuels, and all emergency vehicles. Other vehicles weighing between 4.5 t and 20 t only eligible for fuel used in trips outside of or across, but not solely within, defined metropolitan boundaries.

b Applies to all automotive diesel including blends. 'Other diesel' incurs a 2 cents per litre 'cleaner fuels excise differential', to encourage the production of ultra low sulfur diesel.

c From 1 July 2006, petrol used in vehicles 4.5 t and over for commercial purposes will qualify for the same excise relief as eligible diesel use.

d Duty will be phased in from 1 July 2011 to 1 July 2015

Source: Australian Taxation Office <<http://www.ato.gov.au/>> and updated by The Treasury, Indirect Tax Division, communications 9 August 2004.

Table C2 Biodiesel and ethanol producer and supplier grants, 2004

Fuel:	Grant cents/litre	Comment
Biodiesel ^a	38.143	Grants to domestic producers and importers. Administered under Energy Grants (Cleaner Fuels) Scheme
Ethanol ^b	38.143	Grant to <i>domestic producers only</i> . Administered by Department of Industry, Tourism and Resources

a For diesel–biodiesel blends, only that part of the blend that is biodiesel has received the production grant.

b Grant system to be transferred to Energy Grants (Credits) Scheme on 1 July 2011 and phased out by 1 July 2015.

Source: Department of Industry, Tourism and Resources <<http://www.industry.gov.au/content/itrinternet/>> and updated by the Treasury, Indirect Tax Division, communications 9 August 2004.

Appendix D Consultation

The independent reviews of the operation of the *Fuel Quality Standards Act 2000* in Project 1 (carried out by Economic Associates (Australia) Pty Ltd) and Project 2 (carried out by SWB Consulting Pty Ltd) utilised a combination of:

- public call for written submissions from interested parties
- targeted stakeholder consultation.

D.1 Written submissions

Advertisements were placed in key metropolitan newspapers, inviting written submissions to be addressed to the Department of the Environment and Heritage (DEH). A total of six written submissions were received from interested parties. Written submissions were generally submitted in order to provide more detailed written responses to questions raised during the direct consultations, rather than as a response to the press advertisements. The stakeholders who provided submissions are listed in Table D1.

Table D1 Written submissions received (2004)

Organisation	Date
Australian Automobile Association	15 April
Australian Liquefied Petroleum Gas Association	16 April
BP Australia Pty Ltd	16 April
Federal Chamber of Automotive Industries	22 April
Methanex	15 April
Trafigura Fuels Australia Pty Ltd	22 April

D.2 Targeted consultation

The primary review process consisted of consultation with identified key industry stakeholders. An initial list of stakeholders was prepared by DEH based on its previous interaction with industry participants, then expanded at the first meeting of the review panel, based on input from the panel and the consultants undertaking the two review projects.

D.2.1 Project 1 consultation

The stakeholders identified by DEH for the review from the perspective of consumer groups, government agencies and environment groups were as follows:

- consumer groups:
 - Australian Automobile Association
 - Federal Chamber of Automotive Industries

- Australian Trucking Association
- Bus Industry Confederation
- Truck Industry Council
- Orbital Engine Corporation Ltd
- government departments and agencies:
 - state and territory fair trading agencies
 - Department of the Environment and Heritage
 - Department of Industry, Tourism and Resources
 - Department of Transport and Regional Services
 - Australian Greenhouse Office
 - Australian Taxation Office
 - Treasury
 - Department of Defence
 - state and territory governments — environment
- environment groups
 - Clean Air Society Australia & New Zealand.

The list was augmented as consultation proceeded. The consultants approached stakeholders to determine their interest in the review and their willingness to participate in the consultation process. DEH wrote to the stakeholders wishing to participate, providing background information for the review and outlining the principal objectives of the consultation. Proformas were sent to these stakeholders to provide a discussion guide. Meetings and telephone interviews were conducted by one or more members of the consultant team from Economic Associates. For the environment groups, an invitation to participate in consultation was circulated to all members of the National Environment Consultative Forum. A direct approach was made to groups known to have a specific interest in fuel quality.

Numerous discussions were also held with officers of the Clean Fuels and Vehicles Section of DEH, and the Minerals and Fuels Branch of the Department of Industry, Tourism and Resources.

Stakeholder consultations were undertaken during 2004 with the organisations listed in Table D2.

Table D2 Stakeholders consulted (Project 1)

Organisation	Date	Location
ACT Department of Urban Services	26 March	Canberra
Australian Automobile Association	25 March	Canberra
Australian Competition and Consumer Commission	19, 25 March	Melbourne, Canberra
Australian Consumers Association ^a	6 April	Sydney
Australian Government Department of Defence — Joint Fuels and Lubricants Agency	24 March	Canberra
Australian Government Department of Industry, Tourism and Resources	27 April	Canberra
Australian Government Department of Transport and Regional Services	24 February	Canberra
Australian Government Treasury	26 March	Canberra
Australian Greenhouse Office	23 February	Canberra
Australian Taxation Office	19 March	Melbourne
Australian Trucking Association	23 February	Canberra
Bus Industry Confederation	25 March	Canberra
Clean Air Society of Australia and New Zealand ^a	2 April	Melbourne
Environment Protection Authority Victoria	19 March	Melbourne
Environment Victoria	19 March	Melbourne
Federal Chamber of Automotive Industries	1 April	Canberra
Federation of Automotive Products Manufacturers ^a	29 April	Canberra
Greenfleet ^a	1 March	Koonwarra, Vic
Independent Petroleum Group	29 March	Brisbane
Mobil Oil Facility ^a	21 April	Darwin
Motor Trades Association of Australia	25 March	Canberra
National Environment Consultative Forum ^a	22 March	Canberra
National Environment Protection Council	31 March	Adelaide
National Farmers Federation	25 March	Canberra
National Transport Commission	18 March	Melbourne
New South Wales Department of Commerce	24 March	Sydney
New South Wales Environment Protection Authority	24 March	Sydney
Northern Fuel Distributors ^a	21 April	Darwin
Northern Territory Department of Fair Trading ^a	1 April	Darwin
Northern Territory Department of Infrastructure, Planning and Environment ^a	7 April	Darwin
Office of Regulation Review	23 February	Canberra
Queensland Department of Tourism, Fair Trading and Wine Industry Development	22 March	Brisbane
Queensland Environmental Protection Agency	22 March	Brisbane
Roads and Traffic Authority of New South Wales	24 March	Sydney
South Australian Environment Protection Authority	31 March	Adelaide
South Australian Office of Consumer and Business Affairs	31 March	Adelaide
Sustainable Solutions Pty Ltd ^a	1 April	Melbourne
Tasmanian Consumer Affairs and Fair Trading ^a	29 April	Hobart

Organisation	Date	Location
Tasmanian Department of Primary Industries, Water and Environment ^a	15 March	Hobart
Total Environment Centre	22 March	Sydney
Toyota Australia ^a	26 May	Melbourne
Truck Industry Council	24 February	Canberra
Victorian Department of Justice	19 March	Melbourne
Western Australian Department of Consumer and Employment Protection ^a	30, 31 March	Perth
Western Australian Department of Environment ^a	18 May	Perth

^a Telephone interview

D.2.2 Project 2 consultation

The stakeholders identified for the supply-related review were:

- peak industry bodies representing the supply chain participants, including:
 - the Australian Institute of Petroleum, representing refiners.
 - the Independent Petroleum Group, representing importers and independent retailers.
 - the Australian Petroleum Agents and Distributor Association, representing both independent and refiner-aligned distributors.
 - the Service Station Association Limited, representing both independent and refiner-aligned resellers
- individual refiners, including:
 - BP Australia Pty Ltd
 - Caltex Australia
 - Mobil Oil Australia Pty Ltd
 - the Shell Company of Australia Ltd
 - IOR Energy Pty Ltd
- independent importers/marketers, including:
 - Trafigura Fuels Australia Pty Ltd
 - Gull Petroleum
 - Neumann Petroleum Pty Ltd
 - Gaseng Petroleum
- other bodies associated with the industry, including:
 - Australian Liquefied Petroleum Gas Association
 - Australian Biofuels Association
 - Methanex, also represented by Gavin Anderson and Company
 - Ethyl Asia Pacific Company.

As a precautionary measure (to insure against accidental omission of any party), DEH also directly contacted those stakeholders that were involved in the Coffey Geosciences Pty Ltd Review of Fuel Quality Requirements for Australian Transport in 1999, but were not included in the targeted stakeholder lists, to inform them of the review.

The primary supply-related review consultation process was an interview with stakeholders in 2004, conducted by a consultant from SWB Consulting, using a list of ‘prompt’ questions. These questions were provided to stakeholders ahead of the interview in order to prompt (rather than constrain) discussion, to provide an understanding of the review intent and process, to allow pre-meeting preparation by stakeholders and to ensure that impacts on the industry were accurately captured.

The stakeholder consultations resulting from this approach are listed in Table D3.

Table D3 Stakeholders consulted (Project 2)

Organisation	Date	Location
Australian Institute of Petroleum	17 March	Canberra
Australian Petroleum Agents and Distributors Association	23 March	Melbourne
	31 March	Watervale, SA
BP Australia Pty Ltd	24 March	Melbourne
Caltex Australia	18 March	Sydney
Ethyl Asia Pacific Company	6 April	by telephone
Gull Petroleum	26 March	Perth
Independent Petroleum Group	19 March	Brisbane
IOR Energy Pty Ltd	19 March	Brisbane
Methanex, also represented by Gavin Anderson and Company	17 March	Canberra
	22 March	Melbourne
Mobil Oil Australia Pty Ltd	24 March	Melbourne
Neumann Petroleum	19 March	Brisbane
Service Station Association Limited	18 March	Sydney
The Shell Company of Australia Ltd	23 March	Melbourne
Trafigura Fuels Australia	18 March	Sydney

A number of discussions were also held throughout the review process with various members of the review panel and staff of DEH.

Appendix E

Objectives of the review of the Fuel Quality Standards Act 2000

The legislation requires that an initial review of the operation of the Act should take place two years after the Act became fully operational. This review provision provides an early opportunity to assess whether the legislative scheme is meeting the government's objectives in relation to the implementation of fuel quality standards.

The legislation requires a review of the operation of the Act. Without limiting this broad requirement, the Department of the Environment and Heritage has identified a number of specific objectives, which should be met through the review. The review is expected to determine:

- the effectiveness of the fuel quality standards legislation in meeting the objectives set out in the Act
- any unanticipated impacts of the operation of the Act on welfare, equity, health, safety, environment, economic and regional development, consumer interests, the competitiveness of business including small business, and efficient resource allocation
- the relative efficiency of the legislation as a means of implementing fuel quality standards
- whether the primary Act and/or subordinate legislation are appropriately framed in terms of meeting the government's policy objectives in relation to fuels, as set out in documents such as *Safeguarding the Future: Australia's Response to Climate Change* (1997) and *Measures for a Better Environment* (1999)
- the adequacy of communication and consultation with parties whose activities are directly affected by the operation of the Act, and the ability of those parties to determine/understand their obligations
- the adequacy of consultation in relation to broader issues of implementation of the Act, and the ability of stakeholders to raise issues arising from the implementation of the Act
- the cost-effectiveness of monitoring and compliance activities undertaken to enforce the Act
- the effectiveness of reporting and record keeping requirements in terms of promoting compliance and facilitating enforcement.

Where the review identifies deficits in the operation of the Act, the report should also:

- identify operational changes that would overcome such deficits
- identify practical alternatives to the current legislative provision/s, including nonlegislative approaches
- identify the different groups likely to be affected by these alternatives
- analyse and, as far as practicable, quantify the benefits, costs and overall effects of the alternatives identified
- recommend a preferred course of action.