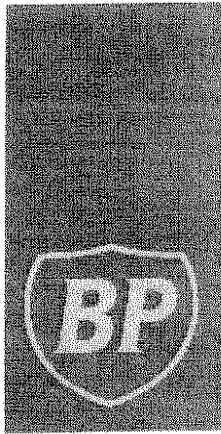


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SUBMISSION BY BP AUSTRALIA LIMITED

TO

THE DEPARTMENT OF THE ENVIRONMENT AND HERITAGE

**REGARDING THE SETTING OF NATIONAL FUEL QUALITY
STANDARDS**

4 July 2000

1. Executive Summary

BP strongly supports the recommendations in Chapter 7 of Discussion Paper No 2 to improve and mandate the quality of Australia's transport fuels.

Where our view differs from the recommendations, we generally favour a more accelerated approach. Tables 1 and 2 overleaf summarise our position on the individual specifications. We are in agreement with the proposals except where indicated.

These fuels will have an immediate positive air quality impact across the whole fleet when they are introduced, and also encourage earlier major benefits from the introduction of new engine technologies.

For diesel, the national fuel standards will be supplemented by the excise differential incentive to move to Ultra Low Sulphur Diesel.

For petrol, we believe that the highly commendable proposal for Setting National Fuel Standards, of itself will not be sufficient to achieve the policy goal of introducing widespread uptake of new petrol engine technologies with consequent major Greenhouse and emissions benefits.

Government, OEMs and oil companies need to establish a policy framework to achieve this goal via a comprehensive policy package.

This policy package needs to encourage refiners to produce cleaner petrol and give the OEMs the surety that the petrol will be not only available prior to production of cars with the new engines, but in such a way that there will be no misfuelling problems. Accordingly, we have proposed a package which comprises national fuel standards, an incentive scheme to produce and purchase Euro 4 petrol similar to the incentive scheme for Euro 4 diesel, regulatory moves to ensure that new engine cars cannot be misfuelled, and oil industry moves to ensure that the price differential between 91 and 95 octane is not unreasonable.

If this opportunity is lost there will be few other opportunities available this decade which will so elegantly address these problems.

Rationalisation and restructuring within the refining industry will occur regardless of cleaner fuels. Therefore our fuel standards should not be overly shaped or delayed by this aspect.

Table 1: BP Comments on Diesel Specifications

<u>Parameter</u>	<u>Specification</u>	<u>Date of Introduction</u>	<u>BP Comment</u>
Sulphur	500 ppm (max)	1/1/02	350 ppm by 1/1/02
	50 ppm (max)	1/1/05 - 6	50 ppm from 1/1/05
	30 ppm (max)	1/1/08	See Note (1)
Cetane Index	47 (Min)	1/1/02	E4 Cetane Index should coincide with 50 ppm S. See Note (2)
	50 (Min)	1/1/06	
Density	820 - 850 kg/m ³	1/1/02	E4 (845? kg/m ³) by 1/1/05
	820 - 845 kg/m ³	1/1/06	
Distillation, T95	360 C (max)	1/1/02	E4 T95 (350 C) should be required in 1/1/05
	350 C (max)	1/1/06	
PAHs	11 % max	1/1/06	E4 (not yet decided) by 1/1/05
Ash & suspended Solids	100 ppm (max)	1/1/02	
Viscosity @ 40 C	2.0 - 5.0 cSt	1/1/02	Recent BP work suggests 2.3 rather than 2.0 may be an appropriate minimum.

Notes

- (1) BP supports the EA proposal for 30 ppm in 2008 but recognises that a great deal of work is being done in Europe and the US now which may provide a better indication of an appropriate level
- (2) the Cetane Index for E4 may be 48-50 rather than the 52 quoted in the study.

Table 2: BP Comments on Petrol Specifications

<u>Parameter</u>	<u>Specification</u>	<u>Date of Introduction</u>	<u>BP Comment</u>
Sulphur	150 ppm (max)	1/1/02	50 ppm from 1/1/05
	50 ppm (max)	1/1/05	
	30 ppm (max)	1/1/08	
RON	ULP - 91 (min)	1/1/02	Excise incentive for E4 95 from 2003
	PULP - 95 (min)		
MON	ULP - 81 (min)	1/1/02	
	PULP - 85 (min)		
RVP	67 kPa	1/1/02	See comment in Section 6.2 215?
	62 kPa	1/1/05	
	58 kPa	1/1/08 - 10	
Distillation	FBP - 201 C	1/1/05	
Olefins	18% vol max	1/1/02	E4 spec in 2005
	16% vol max	1/1/05	
Aromatics	45% vol max	1/1/02	E3 (42%) in 2002
	42% vol max	1/1/05	E4 (35%) in 2005
	38% vol max	1/1/08 - 10	
Benzene	3% vol max	1/1/02	Agree with 3% but believe a move to 1% earlier than 2005 is warranted
	2% vol max	1/1/05	
Lead	0.013g/l max	1/1/02	Lead should be phased out by 1/1/02 if not earlier
	nil	1/1/05	
Oxygen	2.7% max	1/1/02	Strongly oppose the use of MTBE

2. Introduction

BP Australia Limited (BP) has been investing and operating in Australia for over 80 years. BP has refineries at Kwinana near Perth, the only refinery servicing the west and northwest of Australia, and Bulwer Island at the mouth of the Brisbane River, and is involved in petroleum marketing in all States with a national market share of about 19 percent. BP has approximately \$3 billion invested in the downstream petroleum sector.

BP strongly and actively supports moves to cleaner fuels.

Speaking in Detroit in January 1999, BP Amoco Group Chief Executive Sir John Browne said:

"In 1997 (in the US), 129 metropolitan areas exceeded the standard level of at least one pollutant... The problems are not limited to the USA. In Paris there were 11 days last year when motorists faced restrictions on bringing their cars into the city because of poor air quality... This is a challenge we can't ignore... We can delay and resist and wait for the standards or taxes to be imposed. Or we can accept the challenge and start to provide the answer in a creative progressive fashion... we're positioning ourselves to market a different fuel mix - in particular developing a new offer of clean fuels - without lead and with minimal levels of sulphur."

And more recently from his speech to World Petroleum Congress (June 2000) :

"There is much debate about the impact of environmental concern on our industry. I'm convinced that impact will be profound over time, and that we won't and shouldn't ignore or dismiss the real concerns about the impact of human activity on the natural environment.

To me the shift that has taken place in the fuel mix, and the development of cleaner, lighter products which are being eagerly embraced by the consumer is the real leading indicator of change. And I think it is also a demonstration that we have nothing to fear as an industry from a serious debate on the environment because technology is progressively enabling us to supply the sort of products which the new consumer wants to buy."

And his commitment "... to respond constructively and commercially to all environmental challenges - from climate change to the need for clean air in the cities."

BP Amoco's Cleaner Fuels strategy includes:

- Making cleaner fuels available in more than 40 of the world's major cities by the end of 2000.
- Working to reduce emissions of the greenhouse gases produced by our manufacturing operations by 10% from a 1990 baseline by 2010.

This submission is in response to the Discussion Papers issued by the Department of Environment and Heritage in May 2000 on Setting National Fuel Quality Standards.

BP supports the setting of national fuel quality standards and is pleased to make this submission.

While our submission addresses the detailed issues of Setting Fuel Quality Standards, we believe this issue cannot be looked at in isolation. This is because the implementation of the standards alone will not achieve the strategic aims of quantum improvements in air

quality and Greenhouse emission reduction. Hence our submission seeks to take a holistic view, covering not just the standards, but also the accompanying issues and policy initiatives to achieve what we see as the strategic objective. These preface the sections on national fuel standards.

Accordingly the submission addresses:-

- Strategic context (Section 3) - what do we as a nation want to achieve?
- A proposed policy package to achieve the aim (Section 3)
- National fuel standards and issues arising (Section 4)
- Specific fuel parameters (Sections 5 and 6)
- Specific points raised by Environment Australia for comment (Section 7)
- Other issues (Section 8)

3.Strategic Context and Proposed Policy Package

3.1 Broad Strategic Issues

We believe the strategic objectives are fourfold:

1. Improve air quality
2. Reduce Greenhouse emissions
3. Improve fuel efficiency
4. International harmonisation of fuels and engines

We also believe that these objectives need to be achieved as soon as is practicable to obtain the environmental benefits, and in as economic and coordinated way as practicable.

The policy framework for this relies on governments, the oil industry, the OEM industry, and the consumer. Setting national fuel standards is a central policy plank of this strategy for both fuels.

The approach to air quality involves two steps. Firstly, introducing the cleaner fuels will have an **immediate** air quality improvement on the **whole** fleet. For this reason there is a benefit in accelerating the timetable.

The second effect is as an “enabler” for advanced engine technologies. This will have a larger air quality effect, only involve new vehicles, but with the benefit growing year by year. Again there is benefit in proceeding sooner.

It will also reduce Greenhouse emissions via greater fuel efficiency. The real benefit of harmonisation with Europe and the US at Euro 4 is that it opens the way for the widespread introduction of Euro 4 diesel and high compression petrol engines.

The policy circumstance for diesel is relatively straightforward, as will be discussed. However, for petrol engines, there are some special issues which must be considered. The issues are:-

- not only do we need to move to a cleaner, Euro 4 fuel, but to enable the introduction of more efficient vehicle engines, we need to move to higher octane fuel (95 octane compared with ULP's 91 octane)
- for OEMs to make this move to cars suited to 95 Euro 4 fuel, the cleaner fuels must be widely available - it is insufficient for just one refiner to provide this fuel.
- while the 95 octane fuel carries fuel efficiencies for the newer cars tuned for that fuel, its higher octane does not similarly benefit the majority of the existing fleet. The existing fleet is likely to remain with 91 octane.
- The price of Euro 4 95 octane fuel is higher than ULP because it costs more to produce. Hence there is a prima facie incentive for some motorists of newer cars to use ULP.
- If newer cars are tuned to 95 octane fuel, and are instead fuelled with ULP (91 octane) this would lead to poor performance and consumer backlash.
- For the owner of a new car fuelled by 95 octane petrol, a 2 cpl premium would amount to \$30 - \$50 per year depending on whether it was for private or fleet use.

- With all this uncertainty, there is a major impediment in the OEMs moving to these higher quality engines based on Euro 4 95 octane fuel.

This leads to a “chicken and egg” situation strongly hindering the uptake of these engines in Australia.

We - and others including Holden in particular - feel there is a window of opportunity to overcome this logjam. If we seize this opportunity, Australia could move forward to achieve a quantum leap in environmental and Greenhouse improvement and initiate a cycle of better fuels and engines.

The benefits arising from this we see as being:-

- there is at least a 2% efficiency benefit in moving the fleet to a 95 octane fuel with newer engines. Given that transport contributes nearly 20% of national Greenhouse emissions, and a 2% fuel efficiency translates into a 6.6% Greenhouse emission benefit, as the fleet moves to 95 octane over time, an overall national emissions reduction of close to 1% can be attained as a primary benefit
- as a secondary benefit, the enabling aspect - whereby the cleaner fuel encourages the uptake of more efficient new generation technologies - could add a similar, or even greater reduction in Greenhouse emissions
- these two benefits then, could go a significant way to contributing to Australia meeting its Kyoto Greenhouse targets. Obviously, the sooner the measures are introduced, the greater the contribution
- there is also the very substantial air quality benefit arising from the moves
- If the moves are done in concert across the OEM and oil industries, this will minimise the economic cost of the moves to the benefit of all. Furthermore, The move to cleaner fuels may also result in the Australian refining industry gaining for itself a competitive advantage with these products in the region.
- Australian fuel quality would meet international benchmarks for the first time.

If, on the other hand, the window of opportunity is lost, there could be major delays in investing, and inappropriate investments. And the air quality and Greenhouse benefits would be seriously delayed.

BP is also concerned that the wishes of OEMs, environmentalists and Government may be compromised because of fears that some refineries may have to close. This was an issue given considerable discussion in the Government's Downstream Petroleum Products Action Agenda. Each of the major oil companies has since stated that the current low level of profitability may lead to refinery closures. Rationalisation and restructuring within the industry is considered necessary and will occur regardless of cleaner fuels. Indeed we believe a move to cleaner fuels will improve the competitiveness of the Australian refining industry by enabling it to supply this quality into the region.

3.2 Euro 4 Diesel

The policy package for this is largely defined. It involves:-

- provision of the incentive to move to Ultra Low Sulphur diesel
- establishing the National Fuel Standards.

Both of these are either at an advanced point or will be defined by this current Government initiative. Our views on the latter are in Section 5.

3.2 Euro 4 95 Octane Petrol

There are several major impediments in the nation moving to Euro 4 95 octane petrol. The key to moving successfully to this grade is the elimination or substantial reduction in uncertainty and risk and thus overcoming the "chicken and egg" conundrum.

Our analysis and that of consultants DBM shows that fuel price is either the main or second most important factor in the choice of fuel purchase.

We acknowledge the contributions of others, in particular Holden, in aiding our efforts to seek a way through the logjam.

The way forward must be targeted at reducing the uncertainty and risk for all, while at the same time providing a reasonable deal for the motorist.

We propose the following as a way forward:-

- Full Euro 4 specification petrol with no MTBE should be legislated for 1/1/05. This would apply for 91 and 95 grades.
- There should be an early introduction 2 cpl excise differential incentive for Euro 4 95 octane quality from 1/1/03 to encourage uptake by both car companies and consumers. BP submitted a proposal for this in March 2000, and we re-confirm our request for such an incentive (a summary of this is in ATTACHMENT 1)
- In 2004/5 we believe at least one and probably more OEMs wish to introduce high compression engines requiring 95 octane fuel. To prevent misfueling and thus provide surety for the OEMs to proceed to produce these engines some regulated mechanism is required. This could be a fuel specific nozzle at service stations, or some other mechanism.
- To ensure no motorist dissatisfaction with this, the pump price differential for 91 and 95 octane fuel to be at a level whereby motorists would be satisfied that the differential between 91 and 95 is not unreasonable i.e. any additional price of the fuel at the pump is offset by genuine fuel efficiency improvement and less tangibly by emission and Greenhouse benefits.

We believe this to be the optimal path for the following reasons:-

- it would minimise the cost to the consumer by allowing the present fleet to continue with ULP 91, albeit a cleaner ULP. There is little if any fuel efficiency benefit in most of the current fleet using 95 octane, which has a higher cost.
- it would make it easier for the refiners to meet this goal, than, say, if they had to produce solely 95 octane in a short space of time.
- consequently, it is more likely to receive widespread buy-in, which is critical for success.

4. National Fuel Standards - General

4.1 BP Position

BP is in broad agreement with the proposed timetable for improved fuel quality. It provides a sound framework to bring Australia into line with internationally recognised standards.

The main area of difference between our view and the Government's proposal is that we prefer an accelerated timetable. Apart from sulphur in diesel there will be little improvement in fuel quality until 2005. Even the reduction in diesel sulphur is still eighteen months away in spite of the fact that two States have already demonstrated that change is possible within a matter of months.

4.2 State versus Federal Position

The issue of possible conflict between State and Federal specifications has been raised.

BP recognises that there appear to be powers with both levels of Government in this regard. BP believes that conflict can be removed by the following approach:-

- there be National Standards
- the States can also set standards ahead of - in chronological terms - the National Standards, provided that the parameters used are consistent with and in close sympathy with the National Standards
- in any situation, the stricter specification applies. Hence if a State applies a specification ahead of the National Standard, then the State specification applies in its jurisdiction.

We believe a National position and move on Clean fuels will accelerate changes by OEMs and will also facilitate alignment by suppliers to minimise the cost impact of cleaner fuels in the market place. However, we would be concerned if any resistance to a National Clean Fuels agenda created the opportunity for slowing down the process, i.e. if progress was limited by the slowest mover.

5. Specific Fuel Parameters - Diesel

5.1 Table 3: BP's Comments on Individual Specifications as recommended in Discussion Paper No 2

<u>Parameter</u>	<u>Specification</u>	<u>Date of Introduction</u>	<u>BP Comment</u>
Sulphur	500 ppm (max)	1/1/02	350 ppm by 1/1/02
	50 ppm (max)	1/1/05 - 6	50 ppm from 1/1/05
	30 ppm (max)	1/1/08	See Note (1)
Cetane Index	47 (Min)	1/1/02	E4 Cetane Index should coincide with 50 ppm S. See Note (2)
	50 (Min)	1/1/06	
Density	820 - 850 kg/m ³	1/1/02	
	820 - 845 kg/m ³	1/1/06	E4 (845? kg/m ³) by 1/1/05
Distillation, T95	360 C (max)	1/1/02	E4 T95 (350 C) should be required in 1/1/05
	350 C (max)	1/1/06	
PAHs	11 % max	1/1/06	E4 (not yet decided) by 1/1/05
Ash & suspended Solids	100 ppm (max)	1/1/02	
Viscosity @ 40 C	2.0 - 5.0 cSt	1/1/02	Recent BP work suggests 2.3 rather than 2.0 may be an appropriate minimum.

Notes

- (1) BP supports the EA proposal for 30 ppm in 2008 but recognises that a great deal of work is being done in Europe and the US now which may provide a better indication of an appropriate level
- (2) the Cetane Index for E4 may be 48-50 rather than the 52 quoted in the study.

5.2 Ash (Diesel)

BP strongly encourages the move to better quality diesel. The use of unprocessed or non-demineralised waste oil as a diesel extender for on road use is contrary to the move to improve diesel specifications.

The specification proposed for ash and suspended solids of 100 ppm is consistent with the current AS 3570, WWFC category 3 and Euro 2. We would not be comfortable with any relaxation from 100 ppm.

6. Specific Fuel Parameters - Petrol

6.1 Table 4: BP Comments on Individual Specifications as proposed

<u>Parameter</u>	<u>Specification</u>	<u>Date of Introduction</u>	<u>BP Comment</u>
Sulphur	150 ppm (max)	1/1/02	
	50 ppm (max)	1/1/05	50 ppm from 1/1/05
	30 ppm (max)	1/1/08	
RON	ULP - 91 (min)	1/1/02	
	PULP - 95 (min)		Excise incentive for E4 95 from 2003
MON	ULP - 81 (min)	1/1/02	
	PULP - 85 (min)		
RVP	67 kPa	1/1/02	
	62 kPa	1/1/05	
	58 kPa	1/1/08 - 10	See comment 6.2 215?
Distillation	FBP - 201 C	1/1/05	
Olefins	18% vol max	1/1/02	
	16% vol max	1/1/05	E4 spec in 2005
Aromatics	45% vol max	1/1/02	E3 (42%) in 2002
	42% vol max	1/1/05	E4 (35%) in 2005
Benzene	38% vol max	1/1/08 - 10	
	3% vol max	1/1/02	Agree with 3% but believe a move to 1% earlier than 2005 is warranted
	2% vol max	1/1/05	
Lead	0.013g/l max	1/1/02	Lead should be phased out by
	nil	1/1/05	1/1/02 if not earlier
Oxygen	2.7% max	1/1/02	Strongly oppose the use of MTBE

6.2 RVP

58 kPa is more aggressive as an endgame than UN ECE (60 kPa) and has not been contemplated for WA or Queensland. Meeting the RVP will have quite an impact as we also move to reduce aromatics so it may be appropriate to keep to the 60 kPa E4 limit in the time scale proposed.

6.3 Benzene

We believe there is considerable debate on benzene and the move to 1% is appropriate. It is also an emotive issue. It has been declared as a priority existing chemical and is likely to be a priority pollutant under the Air Toxics Program. Motor vehicles are the main source.

Apart from the EU, the US has a 0.8% limit on benzene which has been in place for more than 5 years. Japan and HK have already moved to 1%. Singapore, Taiwan and S Korea will move to 1% by 2004/5.

A combination of tighter aromatics specs and lower benzene will have an impact on benzene emissions. Fuel benzene has a bigger impact on evaporative emissions than on

exhaust emissions. It appears the only reason the study didn't recommend lower benzene was the cost to the refiners.

6.4 Olefins

The treatment of olefins (p76) in the report appears surprisingly dismissive. It states there is uncertainty over emissions calculations yet overrode the conclusions reached for the UN ECE standards. Even though there is insufficient modelling of 1,3 butadiene, it is a "priority pollutant" and petrol vehicles are responsible for 90% of the transport emissions, it receives little attention in fuel specifications. While pooling would reduce production costs for the refiners the conclusion from Coffey that it is "appropriate" is unsubstantiated.

We believe E4 olefins position may remain at the E3 value of 18%.

6.5 Aromatics (Petrol)

Aromatics are an issue because of the effect on benzene. However the FQR is concerned that with the higher octane demand, a 35% limit would require investment in alkylation, isomerisation etc. But the current pool averages 35% now and WA will go to 42% next year. This produces the ludicrous situation where the Government is contemplating that "The recommendation is that aromatics increase by 10-15% over the next 5-8 years". This is also one of the few E4 specifications that is already set.

Coffey have also made the comment about pool averaging which overly simplifies a complex issue.

7. Specific points raised by Environment Australia

7.1 All parameters or just "environmental" fuel properties?

Many of the operational properties such as driveability are linked to the environmental properties and are essential to ensure general acceptance of these new fuel specs by the customer. It makes sense to address these at the same time as it also provides certainty for investment and forward planning.

BP is currently working with other oil companies and FCAI to determine an optimum driveability range. We understand FCAI believe a range of 550 to 570 is required for Australia.

For diesel the other parameters mentioned in the study are cloud point, CFPP and flashpoint. These are relatively straightforward specifications which are generally already optimised for Australia and hence could be rolled into any new specification.

Some further attention to CFPP warranted.

7.2 Need for 350 ppm S from 2002

There is little additional cost for moving from 500 to 350 ppm S. For such an important parameter an expedited approach is warranted and it will maintain a link and momentum with the UN ECE specs and the timing of their implementation. This would still place us two years behind Europe. Our ultimate aim is to move to 50 ppm sulphur as soon as possible.

7.3 Ultimate trends for Sulphur

Both the US and Europe are moving to accommodate very sulphur sensitive vehicle technologies. Some countries in the EU, such as Germany, are already moving to lower levels of sulphur than 50 ppm with 10 ppm already available. The EPA, USA, is proposing a rule to reduce sulfur in diesel fuel from the present 340-500 ppm to 15 ppm, with a 2006 deadline. The EPA expects this will raise diesel fuel prices by 3-4USc /gal and that heavy-duty vehicle costs would increase by US\$1,000-1,600/vehicle.

In Europe the Commission has just initiated a study to evaluate the need/costs/supply issues of reducing sulphur in gasoline and diesel from 50ppm down to 30 and 10ppm. We believe the EU regulatory authorities will not change the agreed Auto-oil year 2005 limits but will adjust the Fuels Directive such that 10ppm will be mandated from 2007/8.

All stakeholders ie industry, member states, NGOs and consultants are currently being requested to contribute (by end July) to this study and BP will respond in addition to the official oil industry response.

In the US we have been asked by the EPA to respond to the proposed 15ppm sulphur diesel specification. Our position is that we will be supporting the sulphur limit, however

we believe the EPA has significantly underestimated the cost of the fuel. We would estimate the total refinery costs excluding distribution will be in the 9-12 USc/gal.

In summary, BP believes that we must be prepared to supply fuels with as little as 10 - 30 ppm sulphur around 2007/8, if not earlier.

A press release on BP Amoco's trial of 15 ppm S diesel in New York is attached in ATTACHMENT 2.

7.4 Lubricity

There is concern that for older vehicles, especially Light Diesels, that pump wear and other hardware deterioration will become an issue. It may be appropriate to address lubricity as a specification in its own right.

7.5 Pool averages and caps

We oppose the use of pool averaging because it moves away from the simple maxima of ECE specifications. Pool averaging would create a boutique specification that favours the local industry and may make it difficult for importers.

Both engine manufacturers and importers need to be confident of the detail of fuel specifications. While the use of pool averaging may appear a minor effect it will increase uncertainty and costs for users and suppliers.

We believe that establishing the specification in terms of averages will be complex. For example, will this be a State wide average, a refinery average, a company average or an airshed average? Will it be at the refinery gate or at the pump? Will it be managed on a weekly, monthly or annual average basis? What will importers have to do? Will it allow pooling across grades of petrol or diesel?

It will also increase the cost of compliance assurance. This will be linked to the risk of unintended consequences such as rorting all points along the supply chain.

8. Other Issues

8.1 Additives

BP strongly opposes the use of MTBE. MTBE is known to be a water table contaminant, as current action in the US has identified. Many areas in Australia depend heavily on artesian water supplies and therefore would be susceptible to such contamination. For example 50% of Perth's potable water supply is from surficial aquifers and these are very susceptible to contamination from oxygenates such as MTBE.

BP opposes the use of MMT. MMT is a controversial additive which has attracted the ire of car makers. While some companies have argued for its use in pre 1986 cars, it would appear to us to be substituting one metal for another, undoing much of the good work on lead phaseout. We believe if MMT is permitted other companies which supply us with product may use it. So although we will not use it in our refineries, where we have no other economic supply options, product containing MMT may enter our system.

8.2 External Supply of Cleaner Fuels to Australia

There is a view that the timing of Cleaner Fuels must reflect the refiners' ability to commission new plant. Our view is that there is or will be sufficient availability of Cleaner Fuels in the region to supplement local production if this is needed. The reasons for this are:

- Europe and the US are well ahead of us. Significant regional economies are already using 500 ppm S diesel (Singapore, Hong Kong, Japan, South Korea, Taiwan and Thailand) and otherwise tightening specifications.
- For 500 ppm sulphur diesel - one major oil company is currently importing to WA (One cargo every 3-4 weeks from Yanbu or Singapore), another can produce it without modifications from one of its refineries and both our refineries can produce it now.
- The pricing system Platts will have a regional price quote for 500 ppm sulphur diesel in July. This reflects the growing trade for that quality in the region.
- ULSD (50 ppm) is being supplied into the region in small quantities now.
- Exporting areas like Asia and the Middle East will have to progressively invest to provide E4 quality fuels because the market for higher levels of sulphur are disappearing.
- The largest oil companies in the world are involved in providing fuels to Australia. In general these companies have extensive operations in Europe and the US, providing them with expertise in the technology of production and sourcing of Cleaner Fuels.
- We have specifically identified a number of potential sources of very high quality fuels in the region.

8.3 Costs of Cleaner Fuels

BP is concerned that the costs of cleaner fuels have been overstated to the point where this is used as a disincentive to move down this path.

The figure of \$1.3 billion in capex is given prominence in the Coffey report. But BP challenges this figure, as it includes all refiners making the investment. Similarly, we believe that by using a cost of capital of 20% that a profit element has been included in the cents per litre costs. This has had the effect of increasing the cost artificially.

ATTACHMENT 1

Moving to Cleaner & More Efficient Petrol for Australia

The Proposal

- Proposal to accelerate move of Australian car fleet to Euro 4 related specifications (95 octane minimum, 50 ppm sulphur, 1% benzene) by initiative incorporating:-
 - excise differential of 2 cpl for this fuel over unleaded petrol in 2003
 - no requirement to pass the differential on to consumer, (thus allowing refiner incentive to invest and produce to this specification ahead of requirement), but refiner/marketers likely to compete away part in order to ensure product is price attractive to consumers
 - Depending upon option, this can be revenue neutral for Government
 - Proposal available to all producers including imports
 - education programme for consumers by Government/refiners/auto industry

Why Decision Now?

- Allows time for refineries and auto industry to prepare
- Continues initiatives announced in ANTS package in respect of Clean Fuels

Impact on Stakeholders

(a) Government

- Using its most effective measure (excise) as a "carrot" to improve environmental quality, giving all refiners advance notice and time to consider implementation of Euro 4 petrol production, and assist auto industry to meet consumption targets
- Depending on the option, little or no net cost to Government revenue
- An effective way of coordinating an auto/oil/consumer change

(b) For Consumers

- Smooth transition to Euro 4 Petrol.
- Increased fuel efficiency more than offsets higher price of Euro 4, as well as attaining environmental benefits
- Other products (ULP, LRP) will continue to be available, giving choice

(c) For Refiners and Importers

- Financial incentive to invest in production capacity. At present, there is a disincentive as extra costs render a refinery competitively vulnerable in this period.
- The benefits equally available to importers

(d) For Auto Manufacturers

- Helps them achieve fuel efficiency targets, and by standardising our fuel with other major demand countries, and by elimination of any current de-tuning and re-tuning.

(e) For the Environment

- Drastic reduction in benzene and volatile organic compound (VOC) emissions from petrol engines. Decrease in sulphur allows catalytic converters to be more effective.
- A significant GHG benefit

(f) For the Bush and Industry

- Impact on rural areas minimal. There will be jobs created in industry during investment period.

Low Sulfur Diesel Dramatically Reduces Air Emissions

During BP Amoco Testing on Southland Truck, Bus Fleets

LOS ANGELES, June 15 /PRNewswire/ -- Initial testing of BP Amoco's (NYSE: BPA) new ultra low sulfur diesel fuel shows dramatic decreases in soot, hydrocarbons and carbon monoxide, reducing air emission levels by more than 90 percent when teamed with catalytic exhaust filters.

The yearlong test, which began last fall on more than 180 urban commercial vehicles from seven Southern California fleets, was initiated by ARCO on its new EC Diesel fuel and is continuing under BP Amoco, which recently acquired ARCO. The test is designed to evaluate the effectiveness of new low sulfur diesel fuels, combined with exhaust filters that trap particulates, compared to existing California (CARB diesel) fuel which is considered one of the nation's cleanest.

Participants in the test demonstration study include: San Diego School District buses, City of Los Angeles refuse and street maintenance trucks, Los Angeles Mass Transit buses, Santa Monica Big Blue buses, Ralph's Grocery tractor trailer trucks, Hertz rental maintenance trucks, and BP Amoco gasoline tanker trucks.

Initial testing of the low sulfur diesel was conducted by West Virginia University's internationally recognized mobile laboratory. Overall emission reductions in the test vehicles averaged between 90 and 99 percent for particulate matter (PM), hydrocarbons (HC) and carbon monoxide (CO), according to the study. Along with West Virginia's lab, UC Riverside and the California Air Resources Board (CARB) will be conducting additional emission testing.

These outstanding test results are being attributed primarily to the low sulfur content of BP Amoco's new fuel that has a maximum sulfur content of 15 parts per million (ppm), and its use with catalytic exhaust filters. Until now, the sulfur content of diesel fuel used by most California fleet operators is almost 10-times greater at an average of 120 ppm. Diesel fuel used in other parts of the country averages a whopping 340 ppm, but can contain up to 500 ppm, as it legally can in California.

The ultra-low sulfur content of the fuel is important in that it enables the catalytic exhaust particulate traps on diesel engines to function.

"We are very pleased that the emission results are even better than we expected," said Mike Hoffman, BP Amoco's business unit leader who runs its Los Angeles refinery. "Even though diesel fuel has been increasingly scrutinized by air quality advocates, this data shows that this new low sulfur fuel, working with particulate filters, will be similar to alternative fuels in reducing emission levels resulting in healthier air quality. Most importantly, it's available now, well in advance of anticipated regulatory requirements aimed at helping reduce emissions in Southland urban fleets."

The company can, and is committed to, manufacture up to one million gallons a day of low sulfur diesel at its Los Angeles Refinery; specifically for fleet operators in Southern California that are retrofitting their vehicles with particulate traps. The company will continue to produce CARB diesel for its customers who have yet to retrofit their fleets. BP Amoco currently supplies about 20 percent of the state's 220,000-barrel daily product of diesel through distributors.

In a recently published article, Dr. Allan Lloyd, CARB chairman, was quoted as saying, "I've heard it said that we (CARB) want to ban diesel in California. That is not the case. Diesel is very important to the economy of California, both to the trucking community and to agriculture."

BP Amoco also sees diesel as a viable fuel of the future and is committed to providing a diesel product in Southern California that will enable bus and truck engine manufactures to meet new, lower emission standards that are likely to be set soon, according to Hoffman. The new standards, from CARB, the South Coast Air Quality Management District (SCAQMD), and other regulators will require both diesel and alternative-fueled trucks and buses to meet the same technology forcing emission standards for NOx and particulates.

Actively involved in the project from its inception, Lloyd has said numerous times that CARB has supported the test program and that he is pleased to see impressive results coming out of such a tremendous effort.

Additional participants in the test project are the Department of Energy, the National Renewable Energy Laboratory, the California Energy Commission, and the SCAQMD, along with numerous engine and vehicle-manufacturing partners.

The initial results from the internationally recognized program are being presented next week at two Society of Automotive Engineer conferences in Washington D.C. and Paris, France.

London-based BP Amoco p.l.c., one of the world's largest petroleum and petrochemical companies and a leader in solar power generation, recently announced its "Clean Fuels '40 Cities' 2000 Program" dedicated to bringing clean fuels to cities worldwide.

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For a menu of BP Amoco news releases or to retrieve a specific release, visit our web site at <http://www.bpamoco.com> on the Internet.

Additional information on BP Amoco's EC Diesel fuel can be obtained at www.ecdiesel.com or by contacting the EC Diesel informational line at 714-670-5382.
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