

REVIEW OF FUEL QUALITY REQUIREMENTS FOR AUSTRALIAN TRANSPORT COMMENCES

A contract has now been let for a review of fuel quality requirements in Australia. The study is to be carried out by Coffey Geosciences Pty Ltd over the next 12 months and will include wide consultation with key stakeholder groups. The scope and rationale for the work is covered in more detail below.

The study is one of the "Clear the Air Projects" which are the Government's first stage response to the Inquiry into Urban Air Pollution carried out by the Academy of Technological Sciences and Engineering in 1997.

The study is funded under the Natural Heritage Trust Fund and is managed by Environment Australia in close cooperation with the Australian Greenhouse Office, Federal Office of Road Safety and the Department of Industry Science and Resources.

Background

There are a number of pressures to change fuel characteristics in Australia. These pressures arise from environmental policy objectives as well as industry needs to accommodate technological change in support of better environmental standards.

The report by the Australian Academy of Technological Sciences and Engineering (AATSE), *"Urban Air Pollution in Australia"*, identified a number of specific links between fuel characteristics and vehicle emissions.

A number of overseas studies have been undertaken on fuel specifications. The recent Auto/Oil Air Quality Improvement Research Program (AQIRP) in the US showed a clear relationship between fuel specifications and emissions in petrol fuelled vehicles. A similar study in Europe, the European Auto-Oil Programme (EPEFE) carried out by the European Motor Industry (represented by ACEA) and the European Oil Industry (represented by EUROPIA) identified the effect of changing specific fuel characteristics on emissions from diesel and petrol vehicles.

The recent reviews of Australian Design Rule (ADR) 37 on light spark ignition (petrol) vehicles and ADR 70 on compression ignition (diesel) vehicles also have highlighted issues with respect to fuel characteristics.

In addition, the Prime Minister's statement on climate change in November 1997 *"Safeguarding the future: Australia's response to climate change"* includes a commitment to improve the fuel economy of vehicles, encourage alternative fuels, move to internationally harmonised emission standards and phase out leaded petrol.

Objective

The aim of this study is to undertake a comprehensive review of possible new fuel specifications for Australia, designed to reduce emissions of greenhouse gases and air pollutants from Australian road transport. The project will assess the impact on Australian refineries, vehicle manufacturers, consumers and the economy-wide effects of changing fuel specifications for petrol and diesel. Impacts on air pollutants and greenhouse emissions will also be analysed.

Review Scope

The scope of work can be summarised as follows:

- the Review will focus on the impact/cost of changing fuel specifications, it will not consider whether Australia has an air quality problem;
- specifications for LPG are not part of the Review but the interaction between LPG and petrol and diesel should be taken into account;
- only road transport fuels are to be directly considered;
 - indirectly, other fuels and lubricants, and changes to them, should be considered if they are affected by the Review objective or if they have an impact on refinery investment decisions, particularly investment decisions affecting road transport fuels;
- the Review is not a policy study which will come up with a recommendation as to which fuel specification should be adopted;
 - the report will be an input to the policy decision;
- the consultant will be expected to consult widely, and in detail, with major stakeholders;
- the consultant will be required to prepare a critical review of relevant Australian and overseas literature;
- the approach to analysing fuel specifications is to be flexible;
 - the range of options to be costed will not be predetermined by Environment Australia but will be developed by the consultant in close consultation with the industry and other stakeholders;
- the impacts should be assessed in at least two broad ways:
 - first, on the volume and type of emissions in each State and Territory capital city; and
 - second, on the investment decisions and commercial operation of Australian refineries, the remainder of the downstream oil industry and more widely;
- prior to estimating the impacts of new fuel specifications, it will be necessary to establish underlying assumptions and a baseline against which the changes can be assessed;
 - the baseline will need to incorporate technology and policies already in place or known to be on the way, during the time period under consideration;

- the consultant will take into account the Federal Government's policy on alternative fuels and vehicle fuel economy, and its policy to accelerate the phase out of leaded petrol;
- the time period for assessing impacts will be up to the year 2010 and a look forward to the 2020 (forecast rather than detailed assessment);
- emissions from both refineries and motor vehicles should be considered in terms of the full fuel lifecycle;
- non-emission impacts should be considered in a holistic framework, beginning with the capacity of existing refineries to meet the new specifications (and the cost of any changes to meet the new specifications) and extending beyond the refinery gate to:
 - the downstream oil marketing and distribution system;
 - independent fuel importers and their marketing and distribution systems;
 - the road transport industry (particularly if price rises for fuel are an outcome);
 - other fuel intensive industries;
 - industry more generally (including the rural and mining industries);
 - motor vehicle manufacturers and the interaction with new car technologies, and impacts on the competitiveness of Australian car manufacturers and parts manufacturers;
 - consumers (consumer choice decisions rather than health considerations); and
 - the economy more generally including employment, inflation, trade and GDP.

Fuel Specification Implications

Changes in vehicle technology are likely to require more tightly specified fuel standards.

Introduction of ADR 37/02 may require increased availability of 95 RON unleaded petrol to operate vehicles complying with EURO II. Currently, this grade of petrol only has about 3% of the market and is sold at a significantly higher price than 91 RON unleaded petrol.

The level of sulfur in diesel is also a critical factor in ensuring that diesel vehicles comply with EURO II standards in service.

Implications for Refining

The impact of fuel specification changes on Australia's downstream oil industry will not be confined to refiners. Independent importers and distribution systems may be affected by the new fuel specifications

Changes to vehicle technology and some of the changes to fuel quality will require investments by car manufacturers and oil companies and will therefore require reasonable lead times.

Wider Economic Impacts

While changes to fuel specifications will potentially have a direct impact on the refining and car manufacturing industries, the impacts could spread much wider. Consumption and production decisions may change throughout the economy, particularly if there is a significant effect on fuel prices. Fuel intensive industries such as transport and distribution might be particularly affected and in turn there will be implications for other downstream industries, GDP, trade, employment and inflation.