

CASE STUDY OF A SUCCESSFUL AUSTRALIAN NATIONAL ATMOSPHERE/AIR POLLUTION PROGRAMME/STRATEGY

IMPROVING THE QUALITY OF AUSTRALIAN TRANSPORT FUELS

1. The problem or issue addressed:

The transport sector is the single largest contributor to Australia's urban ambient air pollution. It is also one of the largest contributors to national greenhouse gas emissions. The nature of the problem is such that an integrated strategy, coordinating action across a number of different areas was required to address the issue.

The major policy directions for dealing with pollution and greenhouse gas emissions from vehicles are: to reduce their use, to clean up their emissions and to make them more fuel efficient. In Australia, three interrelated strategies are being implemented to 'clean up' vehicle emissions. Vehicles are required to meet effective emission standards when they first enter the market, they are required to continue to meet effective emission standards while they are in use; and they are provided with the cleanest, economically viable fuels on which to operate.

This case study considers the approach taken by the Australian Government to regulate the quality of fuel supplied in Australia and to 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.

New vehicle emission standards harmonising Australian standards with international vehicle emission standards were gazetted in December 1999. These mandatory vehicle emission standards are established as Australian Design Rules (ADRs) under the *Motor Vehicle Standards Act 1989*. The quality of fuel in Australia was a key constraint to enabling the introduction of new vehicle emission standards. Emerging vehicle engine and emission control technologies, needed to meet the new standards and help achieve reductions in fuel consumption, are affected by the quality of the fuel used. As ADRs are nationally applicable it is also necessary to ensure that fuel of the appropriate quality is available nationally.

As a complement to emissions standards introduced under ADRs, the Australian Government enacted the *Fuel Quality Standards Act 2000* (the Act). The Act came into force in 2002 with the commencement of fuel quality standards for petrol and automotive diesel. Fuel quality standards for biodiesel and autogas came into force in 2003. Further fuel quality standards for ethanol and diesohol are under development.

2. Name of the programme:

Fuel Quality Standards Act 2000

3. Timeframe: ____ years Year started: ____2002____

4. Status: ☒ Ongoing ☐ Completed in year _____

5. Main objectives:

- to reduce the adverse effects of motor vehicle emissions on urban air quality, human health and the enhanced greenhouse effect ;
- the harmonisation of Australian vehicle emission standards with international standards; and
- the national availability of petrol and diesel of appropriate quality to allow the effective adoption of new vehicle engine and emission control technologies

6. Lead institution:

The Australian Department of the Environment and Heritage (DEH) administers the *Fuel Quality Standards Act 2000*.

7. Other implementation arrangements and stakeholders involved (public, private, NGOs, CBOs, international support, etc.):

The development of fuel standards involves a process of technical research; development and publication of policy documents such as public discussion papers; industry/stakeholder consultation (including face-to-face meetings, attendance at industry seminars, formal discussions on the policy papers, processing of submissions, ongoing informal consultation); drafting of legislation and subordinate instruments. Four fuel standard determinations have been made since the Act took effect and eight discussion papers have been released.

The Act also establishes an advisory committee called the Fuel Standards Consultative Committee (FSCC). The FSCC includes representatives from the Federal Government and each Australian State and Territory, and members representing fuel producers, a non-government environmental body, consumer interests, the automotive manufacturing industry, independent fuel importers and suppliers, the alternative and renewable fuels industry and the truck manufacturing industry.

In support of Australia's involvement in the Global Partnership for Cleaner Fuels for Cleaner Air, Australia hosted a Fuel Quality Strategy Training Workshop in 2003. The Australian Department of the Environment and Heritage provided funding for the training program, which

was implemented by the Clean Air Initiative for Asian Cities (CAI-Asia) in collaboration with the International Fuel Quality Center (IFQC).

Participants from five Asian countries (Sri Lanka, Philippines, Indonesia, Vietnam and Bangladesh) participated in the program, which aimed to assist these countries in developing medium-term fuel quality strategies to help reduce pollution from motor vehicles. The workshop, and the accompanying training manual focused on improving the fuel quality of gasoline and diesel.

As part of the workshop, decision makers from the five countries developed a plan on how to draft fuel quality strategies for their respective countries. The participants from each country are now in the process of drafting “Terms of Reference” (ToR) to operationalise the draft plans in order to arrive at fuel quality strategies.

The training program has already resulted in concrete actions. In Vietnam, participation in the training of Petrovietnam representatives resulted in the reconsideration of the specifications of the proposed refinery. In Indonesia, monthly meetings are being held to monitor and review progress in the implementation of the ToR.

8. The results achieved (if possible, please address the social, economic and environmental impacts of the programme):

Fuel Quality Standards for petrol and diesel were introduced in 2002 and standards for biodiesel and autogas came into force in 2003. The standards generally tighten over time. For example, sulphur in diesel was capped at 500 mg/kg in 2002. The permissible limit falls to 50 mg/kg in 2006 and falls again in 2009 to 10 mg/kg. Australia is leading the region in the development and implementation of fuel standards. Lower sulphur fuels mean much better air quality in Australia’s urban environments and by 2020, the cleaner petrol and diesel program is estimated to save \$3.4 billion in avoided health costs.

To encourage the earlier production and import of lower sulfur petrol and diesel, the Australian Government introduced excise incentives. These incentives are generally available two years prior to the mandated commencement date of cleaner fuel standards. The incentives for the early production of clean fuel has been an outstanding success in obtaining industry lock-in by securing investment into domestic refining. BP stated that it has spent \$250 million upgrading Bulwer Island 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. Caltex announced on 25 February 2004 that it will invest \$295 million to upgrade its Kurnell and Lytton refineries to meet post-2006 fuel standards. Shell states that investment for post-2006 standards will be \$300 million.

These higher costs were determined to have a small negative impact on the economy and will be more than offset by the gains in avoided health costs (\$3.4 billion).

9. The relationship of the programme to internationally agreed goals and targets:

The programme more closely harmonises Australian fuel quality with international standards and facilitates the introduction of future vehicle emission control technologies.

Australia is joining Japan in leading the Asian region in the production and supply of cleaner fuels. DEH has provided assistance to a number of Asian countries that are in the process of developing and implementing fuel quality standards.

In June 2003, DEH allocated funds to the Asian Development Bank – *Clean Air Initiative – Asia (CAI-Asia)* for a fuel quality project in Asia. This funding was in support of Australia's participation in the "Global Partnership for Cleaner Fuels" announced at the World Summit on Sustainable Development held in Johannesburg in August 2002.

CAI-Asia teamed up with the *International Fuel Quality Centre (IFQC)* to develop a clean fuel workshop concept for five Asian countries, which did not have clean fuel quality strategies in place. The countries involved were Bangladesh, Philippines, Sri-Lanka, Indonesia and Vietnam. It was agreed that the workshop and resulting training manual would focus on current conventional gasoline and diesel fuel quality.

These initiatives relate closely to paragraph 9(a) in the Johannesburg Plan of Implementation (JPOI) that encourages the use of environmentally sound energy sources such as cleaner fuels and paragraph 56(c) aims to reduce respiratory disease from air pollution through the use of cleaner fuels and modern pollution control techniques.

Expected pollutant reductions from vehicle fleet to 2020 in Australia

