MAJOR PROJECT ASSESSMENT:
Vopak Biodiesel Facility
Port Botany

Director-General's
Environmental Assessment Report
Section 75I of the
Environmental Planning and Assessment Act 1979

November 2007

Published November 2007
NSW Department of Planning
www.planning.nsw.gov.au

EXECUTIVE SUMMARY

Vopak Terminals Sydney (Vopak) operates two bulk liquid storage facilities in Port Botany, in the Randwick Local Government Area. Vopak proposes to establish a biodiesel facility within the existing Site A operations. Associated tank infrastructure would also be constructed at Site B.

The facility would be constructed in two stages, with each stage involving construction of a biodiesel facility and associated infrastructure of similar capacity. The second stage facility would be constructed approximately six months after commissioning of the first stage.

The project has a capital investment value of $60 million, and would employ between 30 to 50 workers during construction and 8 workers during operation.

The Department received 5 submissions on the project during the exhibition period: 4 from government authorities and 1 from a commercial operator neighbouring the site. None of the submissions objected to the project, however some submissions raised concerns about potential impacts of hazardous materials storage and transport, traffic and noise.

The Department has assessed these concerns in detail (see section 5 of this report), and is satisfied that the project can comply with all the relevant environmental criteria, that the site is suitable for the proposed development, and that the project is generally in the public interest as it would provide a renewable fuel source to the growing market for diesel in NSW. The proposed facility would be located within an existing industrial area and would reuse some existing infrastructure.

1. BACKGROUND

Vopak Terminals Sydney (Vopak) operates two bulk liquid storage terminals in Port Botany, in the Randwick Local Government Area. Site A and Site B (shown on Figure 1) are bulk liquid chemical distribution facilities serving chemical manufacturers, oil companies and chemical traders. The sites are owned by the Sydney Ports Corporation and leased to Vopak. Bulk liquids (primarily petroleum) are transported to and from the sites via the Sydney Ports Corporation operated Bulk Liquids Berth located west of the sites in Port Botany and through existing pipelines from the berth to Site A. Liquids are also transported to and from the sites via road tankers.

Figure 1: Site Location

The Site A facility has been developed in two stages. Stage 1 was approved in 1978 prior to the gazettal of the *Environmental Planning and Assessment Act 1979* and includes 60 bulk liquids storage tanks and associated infrastructure. Stage 2 was approved by the Minister in 1988 and includes nine additional storage tanks. The total storage capacity of the Site A facility is 36,000m^3. The south-western portion of Site A previously housed a road tanker loading facility which was made redundant and fully removed in 2002. This part of the site is currently unoccupied and is the proposed location of the biodiesel facility.

2. PROPOSED DEVELOPMENT

2.1 Project Description

Vopak propose to construct and operate a biodiesel facility at their existing sites in Port Botany. The facility would include a biodiesel plant, additional storage tanks, conversion of existing tanks to store biodiesel, utilities and administration buildings and a pipeline connecting Site A to Site B. These works would be constructed at Site A with one storage tank also constructed on Site B. The project comprises two stages, with both involving construction of a biodiesel facility, storage tanks and associated infrastructure. The second stage will also require demolition of some existing infrastructure on Site A.

The inputs for the biodiesel facility include palm oil, palm kernel oil and other vegetable oils, including palmolein, canola oil and soya bean oil, depending on availability. These would be imported to the site from Indonesia and delivered via ship with transfer to Vopak Site A via the existing Bulk Liquids Berth and pipeline to Site A. A number of other products required for biodiesel production would be transported to the facility via the Bulk Liquids Berth and road tankers, including methanol, sodium methylate, caustic soda and hydrochloric acid.

The entire facility would produce 240,000 tonnes per year of biodiesel from imported vegetable oils. The process would also produce 24,400 tonnes per year of pharmaceutical grade glycerine and would produce waste water and fatty residue. Production would be split evenly between stage 1 and 2, with 120,000 tonnes per year produced from the biodiesel plants constructed in each stage.

The biodiesel would be stored on site in existing and new storage tanks. A third of the product would be transferred to the bulk liquids berth for shipping, a third would leave Site A via road tanker and the final third would be transferred to Vopak Site B via a new pipeline to be constructed as part of the project. Biodiesel transferred to Site B would be temporarily stored in one of the tanks, prior to transport off site via road tankers.

The sites are owned by Sydney Ports Corporation and leased to Vopak. The biodiesel facility would be sub-let to Natural Fuels Australia Ltd, a specialised biodiesel producer.

The location of the proposed facility within Vopak Site A is shown in Figures 2 and 3. The proposed site layout is shown in Figure 4. The major built components of the project are detailed in Table 1.

Table 1: Major Components of the Project

Component	Description
Stage 1 Biodiesel Facility	Construction of: • a biodiesel facility 22m high, with two stacks rising to 27.6m; • 3 major storage tanks (18m high) and 8 minor storage tanks; • reuse of 20 existing tanks; and • a pipeline for biodiesel transfer from Site A to Site B.
Stage 2 Biodiesel Facility	Would involve: • demolition and removal of existing Site A infrastructure including drumming facility, warehouse, maintenance workshop and control room; • relocation of vapour emission control room; • construction of a biodiesel facility 22m high, with two stacks rising to 27.6m; • 5 major storage tanks (18m high) and 6 minor storage tanks; and • reuse of 1 existing tank.
Both Stage 1 and 2	• Construction of pump manifolds and hose exchanges, a waste water treatment plant for site runoff and process waste water, bunding of storage tanks, and on-site piping works; • Construction of administration building (two-storeys), 2 new utilities buildings (two-storeys), workshop and switchroom (one-storey) and 6 cooling towers (5.3m high). • 58 parking spaces for staff and visitors.
Production	240,000 tonnes per year of biodiesel and 24,400 tonnes per year of pharmaceutical grade glycerine.
Operation	24 hours a day, 7 days a week.
Capital Value	$60 million.
Jobs	30-50 during construction and 8 during operation.
Length of construction	Stage 1 – 44 weeks, Stage 2 – 69 weeks.

Figure 2: Vopak Site A – existing site edged blue, proposed site for biodiesel facility edged yellow

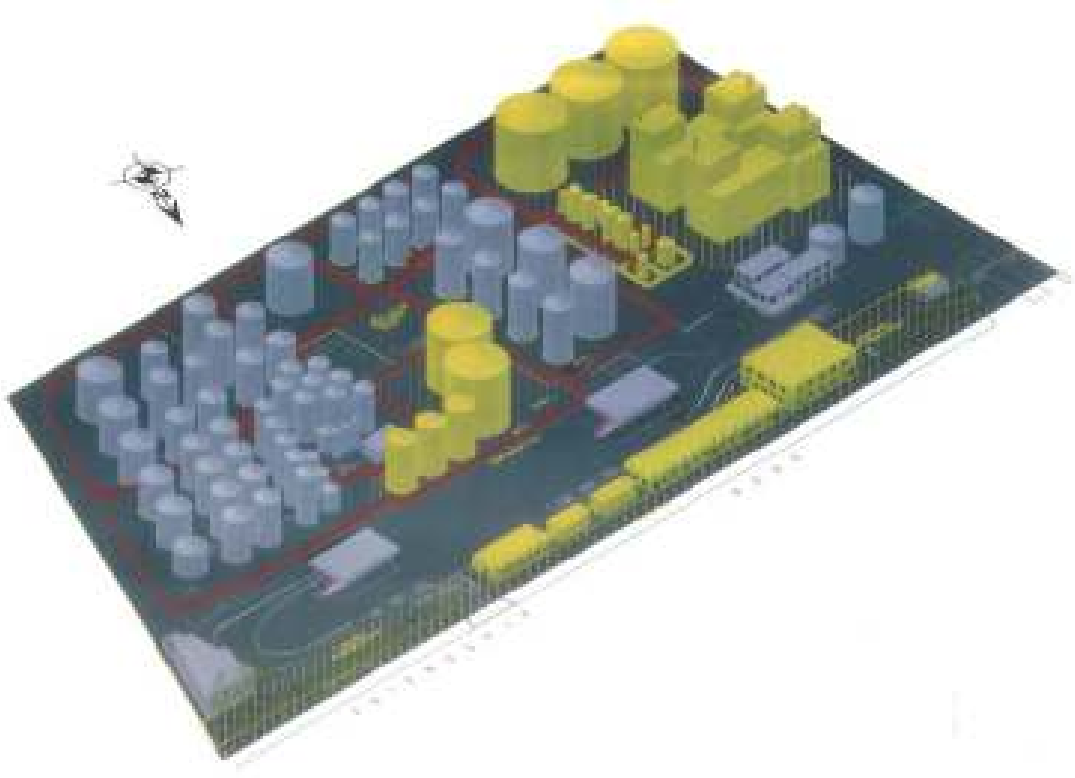

Figure 3: Vopak Site A – existing site shown in blue, proposed biodiesel facility and associated infrastructure shown in yellow

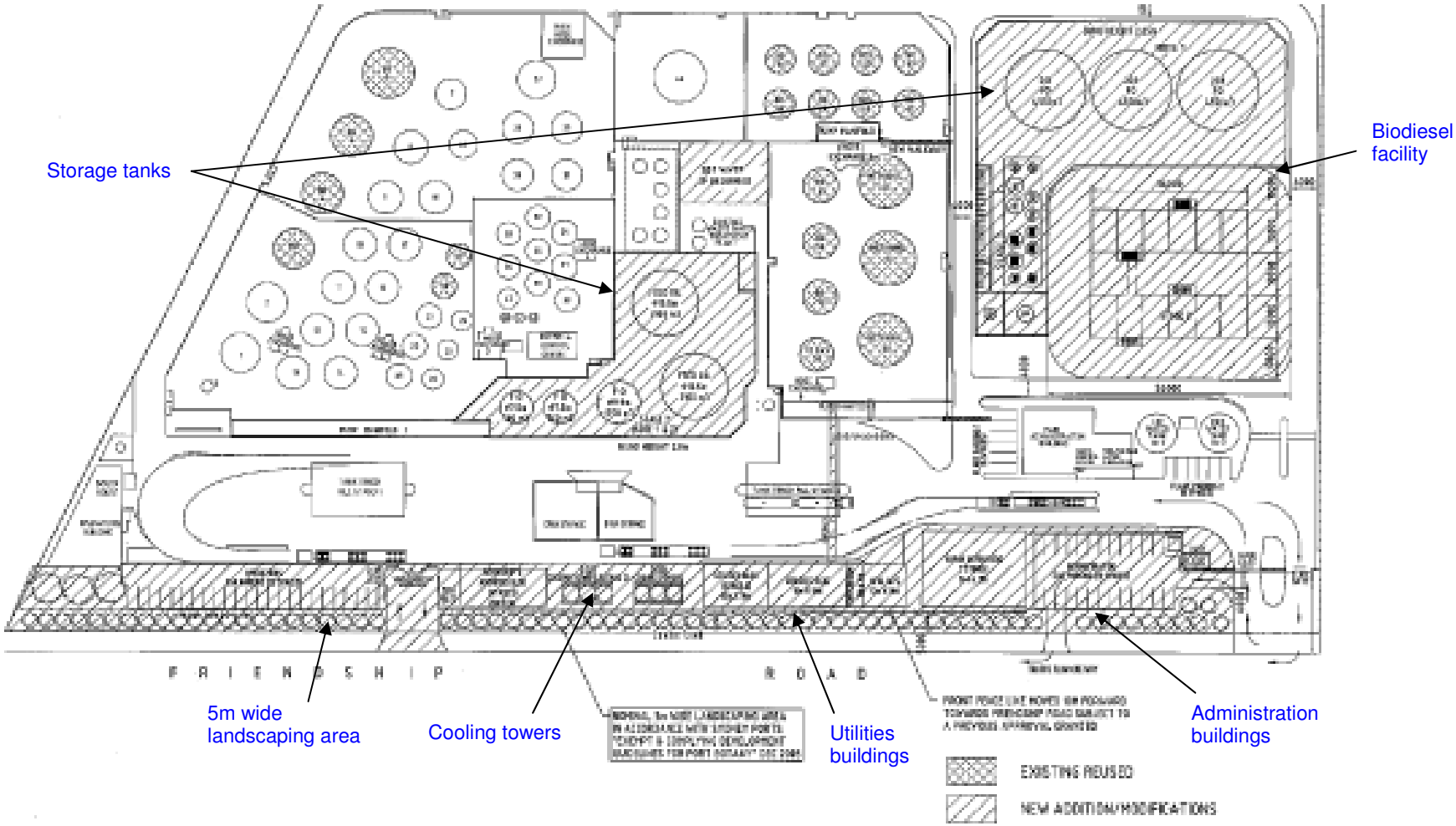

Figure 4: Site Layout

A schematic of a similar biodiesel facility to be constructed in Darwin is shown in Figure 5.

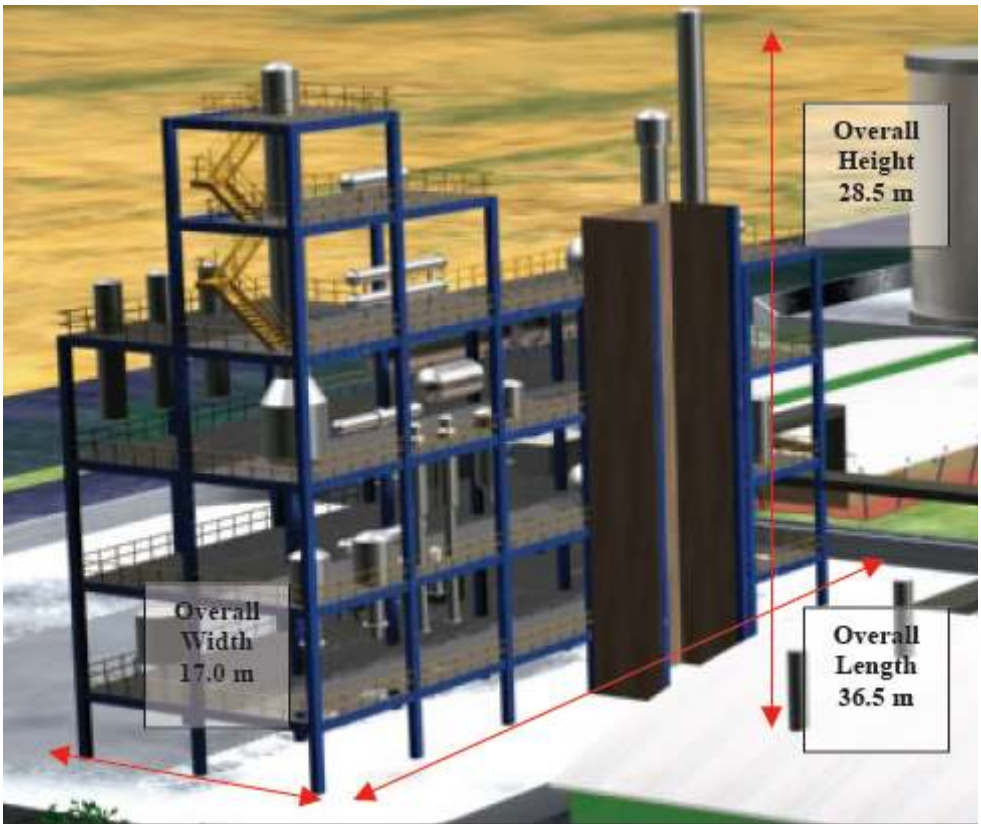

Figure 5: Schematic of biodiesel plant in Darwin

Vopak submitted an environmental assessment of the project to the Department on 25 January 2007 (see Appendix D).

2.2 Need for the Project

The consumption market for diesel fuel in Australia increased by 5% from 2003-04 to 2004-05 and is expected to increase by 2% per annum over the next two decades. Increased consumption is being driven by economic and population growth. In addition, the market for renewable based fuels, such as biodiesel has experienced increasing interest due to rising worldwide demand and increased prices for oil based products. Australian production capacity of oil based diesel has decreased over the past few years due to requirements to produce lower sulphur fuel products. As such, there is a net disparity in diesel demand and supply in Australia, resulting in a shortfall of 2,300ML in the year 2004-05. As a result, there is an increased need to import diesel, thereby reducing cost competitiveness and leaving consumers more susceptible to price fluctuations.

Vopak has identified that a biodiesel facility can ease pressures associated with local refining capacity and represents a competitive alternative to importing oil based diesel. In addition, the production of biodiesel supports the establishment of a renewable fuel industry in Australia.

In relation to siting the proposed facility, the Vopak Site A provides a number of benefits including:

- Consolidate on existing industrial premises and reuse of some existing infrastructure;
- Located well away from residential areas;
- Close proximity to import and export facilities;
- Ability to blend with mineral diesel imported and stored at Vopak Site B;
- Proximity to sizable local market for the product; and
- Good transport networks.

Some minor issues are associated with locating the biodiesel facility in this location. These include a slight increase in societal risk associated with increased road movements of dangerous goods and

increased shipping movements and demand on berth access from importation of raw materials and export of product. These issues have been addressed in the environmental assessment and are considered in Section 5.

3. STATUTORY CONTEXT

3.1 Major Project

The project is classified as a Major Project under Part 3A of the *Environmental Planning and Assessment Act 1979* (the EP&A Act) as it complies with the criteria in Schedule 1 Clause 10(1)(f) of the *State Environmental Planning Policy (Major Projects) 2005*, being development for the purpose of the manufacture of fuels with a capital investment value of more than $20 million.

Consequently, the Minister is the approval authority for the project.

3.2 Permissibility

Under Section 75J(3) of the *Environmental Planning and Assessment Act 1979,* the Minister cannot approve the carrying out of a project that would be wholly prohibited under an environmental planning instrument.

The site is located on land zoned 4B Port Botany under *Randwick Local Environmental Plan 1998* and the project is permissible with development consent as a 'potentially hazardous industry' in this zone.

Consequently, the Minister may approve the project.

3.3 Public Exhibition

The EA for the project was exhibited from 30 January 2007 until 2 March 2007 which satisfies the requirements for public consultation in Section 75H of the EP&A Act.

3.4 Environmental Planning Instruments

Under Section 75I(2) of the EP&A Act, the Director-General's report on this project is required to include a copy of or reference to the provisions of any State Environmental Planning Policy (SEPP) that substantially governs the carrying out of the project.

The Department has considered the project against the relevant provisions of several SEPPs, refer to Appendix F:

- State Environmental Planning Policy No. 11 – Traffic Generating Developments;
- State Environmental Planning Policy No. 33 – Hazardous and Offensive Development.

This assessment concludes that the project is generally consistent with the aims, objectives and requirements of these instruments.

3.5 Objects of the Environmental Planning and Assessment Act, 1979

The Minister is required to consider the objects of the EP&A Act when he makes decisions under the Act. These objects are detailed in Section 5 of the Act, and include:

'The objects of this Act are:

(a) to encourage:

(i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,

(ii) the promotion and co-ordination of the orderly and economic use and development of land,

(iii) the protection, provision and co-ordination of communication and utility services,

(iv) the provision of land for public purposes,

(v) the provision and co-ordination of community services and facilities, and

(vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and
(vii) ecologically sustainable development, and
(viii) the provision and maintenance of affordable housing, and

(b) to promote the sharing of the responsibility for environmental planning between the different levels of government in the State, and

(c) to provide increased opportunity for public involvement and participation in environmental planning and assessment.'

The objects of most relevance to the Minister's decision on whether or not to approve this project are those under Section 5(a)(i), (ii) and (vii).

With respect to ecologically sustainable development (ESD), the EP&A Act adopts the definition in the *Protection of the Environment Administration Act 1991*. Section 6(2) of that Act states that ESD *'requires the effective integration of economic and environmental considerations in decision-making processes'* and that ESD *'can be achieved through'* the implementation of the principles and programs including the precautionary principle, the principle of inter-generational equity, the principle of conservation of biological diversity and ecological integrity, and the principle of improved valuation, pricing and incentive mechanisms. In applying the precautionary principle, public decisions should be guided by careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment and an assessment of the risk-weighted consequences of various options.

The Department has fully considered the objects of the EP&A Act, including the encouragement of ESD, in its assessment of the project application.

This assessment integrates all significant economic, social and environmental considerations and seeks to avoid any potential serious or irreversible damage to the environment, based on an assessment of risk-weighted consequences.

Vopak has undertaken an environmental risk analysis of the project, and considered the project in the light of the principles of ESD.

3.6 Statement of Compliance

Under Section 75I of the EP&A Act, the Director-General's report is required to include a statement relating to compliance with the environmental assessment requirements for the project. The Department is satisfied that the environmental assessment requirements have been complied with.

4. ISSUES RAISED DURING CONSULTATION

During the exhibition period, the Department received 5 submissions on the project (see Appendix C), including:

- 4 submissions from public authorities (Department of Environment and Climate Change, Sydney Water, Randwick City Council and the NSW Fire Brigades); and
- 1 submission from a liquefied petroleum gas supplier located adjacent to the site (Elgas).

The DECC, Sydney Water, Council and the NSW Fire Brigades raised no objections to the project, and provided their recommended conditions of approval. However, the following concerns were raised:

- The NSW Fire Brigades raised concerns regarding fire safety and the adequacy of the current fire protection system, however, they considered that these concerns could be addressed through the preparation of a Fire Safety Study to be completed prior to construction; and
- Council raised concerns about the impact of construction and operation traffic on local roads and the lack of detail on the routes for supply pipelines. The assessment has considered each of these issues (see Section 5).

Elgas indicated that they had no objection to the project.

The RTA did not provide a submission during the exhibition period. However, during the adequacy assessment of the draft environmental assessment, the RTA did not object to the project and provided comments, with key issues relating to the transport of flammable liquids and the potential to track dust and debris onto roads during construction.

Vopak has prepared a response to issues raised in these submissions (see Appendix B).

5. ASSESSMENT OF ENVIRONMENTAL IMPACTS

5.1 Hazards

The proposed project would receive, produce, store and distribute biodiesel and other products, including vegetable oils, hydrochloric acid, sodium hydroxide, glycerine, methanol and sodium methylate. Some of these liquids are potentially hazardous to humans and the environment. The movement and storage of these liquids can lead to hazardous events at several points in the handling process. Handling and distribution can lead to spillage and combustion of product. Similarly, structural faults in the storage tanks or processing plant can result in vapour loss and spillage, which could lead to fires and explosions. Human error or control system failure can also result in hazardous events.

Vopak prepared a Preliminary Hazard Analysis (PHA) for the proposed project to identify potential hazardous events and consequences, risk of propagation from hazardous events in nearby processing equipment, possibility of increasing off-site risk levels and impacts on cumulative risk in the Port Botany locality. The analysis concluded that:

- There is no risk of injury or fatality at residential areas as a result of fires or internal tank explosions due to the large separation distance;
- The potential of multiple fire events or multiple tank explosion events to cause fatality in neighbouring industrial areas and propagation at neighbouring facilities is below the acceptable criterion;
- The likelihood of fire associated with the new biodiesel pipeline is acceptably low;
- There are no significant risk impacts at the Bulk Liquids Berth;
- Societal risk level is acceptably low; and
- There are no significant risk impacts associated with road transport.

Overall, the risks from the project would comply with the Department's guidelines for tolerable fatality, injury, irritation and societal risk. Risks associated with transport, risks to the biophysical environment, the risk of propagation and cumulative risk in the Port Botany area are acceptable. The primary reason for the low risk levels is that significant impacts from potential hazardous events would not extend far from the site.

The Department has reviewed the PHA and is satisfied that all interfaces where hazards could arise (the biodiesel plant, pipelines, transfer manifolds and loading areas) have been assessed and that adequate safety levels could be maintained to ensure the project would not pose an unacceptable risk to human and environmental safety.

To ensure this occurs, the Department's recommended conditions of approval require Vopak to prepare and implement several safety studies and management plans. These conditions would ensure that the hazards issues related to the site are adequately monitored and managed.

5.2 Visual

The proposed facilities would include 8 white, 18 metre-high storage tanks and a 22 metre high biodiesel plant (with two 27 metre high stacks) which would be visually prominent. During the construction period, small cranes (less than 20 metres) would be required on site for periods up to 6 months and a 28 metre high crane would be required for 11 weeks (this would be lowered at the end of each day). The biodiesel plant and construction cranes would be similar to that illustrated in Figure 6 below.

Figure 6: An example of a similar biodiesel plant and construction cranes

Vopak's Site A is located on a manmade peninsula which features prominently in the Botany Bay landscape. It is visible from Yarra Bay to the east, Kurnell to the south and Brighton-le-Sands to the west. Vopak prepared a series of photomontages to demonstrate the visual impact of the proposed facilities (refer to Figure 7).

Figure 7: View of the proposed facilities from Yarra Bay Sailing Club (shown in yellow)

The Department considers that the visual impact of the proposed facilities would be limited due to the following reasons:

- The proposed facility is consistent with the existing industrial nature of the Port Botany peninsula;
- The site is 1 kilometre from the nearest residential area to the east across Yarra Bay)
- The proposed storage tanks would be the same height as the existing tanks on Site A and the biodiesel plant would be smaller than other structures in the vicinity, including the Orica

hydrocarbon storage facility (26.9 metres) and the container cranes associated with Port Botany (55 metres high); and

- The proposed facilities adhere to height restrictions for tanks thereby minimising intrusive skyline views.

Vopak has also committed to ensuring that lighting at the site would not affect neighbouring properties in accordance with AS 1680.1-1990. The tanks must be painted white to prevent overheating of stored fuels, so there is little that can be done in terms of material finishes. Given the location of the facility within an existing industrial area and the limit on tank heights to be consistent with existing development in the area, the Department is satisfied that the visual impact of the proposed project would be acceptable and consistent with the industrial use of the area

5.4 Noise

The site is located within an industrial area, with the nearest residence located 1 kilometre to the north east of the site alongside Bunnerong Canal (see Figure 8).

Figure 8: Nearest residences

Construction
Stage 1 construction activities would take approximately 44 weeks. Stage 2 works would commence approximately 6 months after completion of stage 1 and would run for a period of 69 weeks. The biodiesel facility constructed during stage 1 works would be operational at the same time as stage 2 construction works are taking place.

Based on background noise levels and the length of the construction period, the criteria for construction noise at the nearest residences is $L_{10\ (15\ minute)}$ 50dB(A). The environmental assessment considered the maximum noise levels produced from construction equipment such as cranes, backhoes, concrete saw, pavers and heavy vehicles and concluded that operation of all equipment concurrently would be unlikely to exceed the construction noise criteria at the nearest residents. However, some exceedance of the limits may occur. The Department accepts that some level of disruption to residents may occur during day time construction hours. To ensure that noise disturbance is kept to a minimum, the Department requires Vopak to implement a Construction Noise Management Plan outlining mitigation measures and monitoring. Implementation of the Construction Noise Management Plan will be required throughout stage 1 and 2 construction works.

The Department is satisfied that on-going monitoring and implementation of feasible and reasonable mitigation measures will contain noise levels within accepted criteria.

Operation
The key noise sources during operation of the facility would include tanker trucks, boilers, cooling water pumps and booster pumps. The operational noise assessment considered operation of all equipment at the same time for various meteorological conditions. The assessment concluded that the project specific noise level (PSNL) of $LA_{eq\ (15\ minute)}$ 35dB(A) would be met at most residences, with some exceptions. The assessment concluded that during certain weather conditions (F-class temperature inversion and wind speed of 2 metres/second towards the north east) noise exceedances by up to 3dB(A) may occur during night time and early morning periods at the nearest residences to the site, in the southern part of Matraville. The assessment indicated that the most significant noise contribution leading to these exceedances is likely to be from trucks idling on site. Modelling indicated that without trucks, the noise level would drop to 36 dB(A) in this location.

Given that noise levels may be exceeded, the Department and the DECC require via the recommended conditions of approval for all feasible and reasonable mitigation measures to be investigated, implemented and their effectiveness monitored. In particular, the Department requires that vehicles operate at low speed or power and are switched off when not in use. This shall be coupled with a training and awareness program to ensure that all drivers accessing the site are aware of and adhere to these conditions. The DECC has agreed that if additional measures are found not to be feasible and reasonable, in any case, a level of $LA_{eq\ (15\ minute)}$ 38dB(A) will not be exceeded.

The Department requires that noise is monitored throughout operation of the project to measure compliance with the project noise levels and is satisfied that implementation of these conditions will ensure noise levels at nearest residences remain within accepted criteria.

5.5 Traffic Management

Construction
Construction activity would occur in two stages, with one part of the two-part biodiesel plant being installed in each stage. Construction of stage one of the project would occur over a period of 44 weeks. Construction of stage two would occur over 69 weeks, commencing approximately 6 months after completion of stage one.

Installation and renovation of storage tanks and the construction of associated buildings would occur throughout the entire construction period. Heavy vehicle traffic during construction would comprise delivery trucks, concrete trucks and trucks carrying prefabricated components of the storage tanks, pipes and biodiesel plant.

The maximum volume of heavy vehicle traffic during the peak construction phase would be 15 heavy vehicles per day. Construction workers would access the site in light vehicles. The maximum volume of light vehicle traffic during the peak construction phase would be 60 light vehicles per day. Construction traffic would be spread evenly throughout the day so that only 20% of construction traffic would occur during the morning and afternoon peak periods.

All construction traffic would access the site via Bumborah Point and Military Roads. Vopak's traffic assessment indicated that both roads would comfortably accommodate the additional construction traffic, and that the level of service of all intersections would not change. Notwithstanding this, the recommended conditions of approval require Vopak to prepare a Traffic Management Plan prior to the commencement of construction to manage driver conduct and access arrangements throughout the construction period.

Operation
The operation of the proposed development would generate an additional 30 vehicles (2 trucks, 28 cars) in the local road network per day. This represents an increase of 25% on the existing traffic generated from the site but represents less than 1% increase in traffic on the surrounding road network. The additional vehicle movements would be spread throughout the day and peak hour traffic movements would not change. All traffic would access the site via Simblist, Friendship, Bumborah Point and Military Roads. An increase of 30 vehicles per day is within the design capacity of these roads.

The Department is satisfied that the proposed development would not have a significant impact on the surrounding road network. Nevertheless, the recommended conditions of approval restrict vehicle movements associated with the facility to the day-time period and prevent vehicles from parking or queuing outside the site.

5.6 Greenhouse Gas

Construction and operation of the biodiesel facility would generate greenhouse gas emissions, primarily from combustion of gaseous, liquid and solid fuels. The most significant gases produced by the project are carbon dioxide (CO_2) and nitrous oxide (N_2O) which would be released when fuels are burnt in diesel-powered equipment and in the generation of electrical energy used by the project.

An assessment of the greenhouse gas emissions from the project was completed at the request of the Department (see Appendix E). The assessment estimated emissions from the project based on the Australian Greenhouse Office (AGO) Factors and Methods Workbook, incorporating the *Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard.*

The assessment estimated emissions from scopes 1, 2 and 3 which covers:
- Scope 1 – direct emissions from sources within the boundary of the site;
- Scope 2 – indirect emissions from consumption of purchased electricity, steam or heat, for example, the emissions from combustion of fuel to produce the electricity, steam or heat;
- Scope 3 – other indirect emissions, i.e. upstream emissions from extraction and production of fossil fuels.

The assessment covered:
- Construction – fuel and electricity consumption; and
- Operation – fuel, electricity and gas consumption and end use of biodiesel.

The assessment did not calculate emissions resulting from the production of the palm oil feed stock as the facility may use feedstock from other sources, such as other vegetable oils, including palmolein, canola oil and soya bean oil, depending on availability. In addition, there is an absence of established emissions data for biodiesel feed stock.

The following greenhouse gas emissions are estimated to result from construction and operation of the biodiesel facility:
- Construction – 826,188 tonnes of CO_2-equivalent (CO_2-e); and
- Operation – 421,750 tonnes of CO_2-e annually (or 0.42 million tonnes/year CO_2-e).

Construction related emissions would only occur once over the life of the project, and equate to approximately two years of operational emissions.

Total greenhouse gas emissions in NSW in 2005 were 158.2 million tonnes/year CO_2-e, therefore operation of the proposed biodiesel facility represents approximately 0.27% of the total NSW emissions annually. In the context of global emissions, the project is estimated to contribute 0.000001% of global emissions. The corresponding increase in global warming is difficult to

determine, however it is estimated that emissions from the project would lead to an increase in global temperature of 0.0000004^{o}C.

Whilst these increases are insignificant in the global context, the cumulative effect of many such sources contributes to unacceptable increases in global emissions and temperature. In order to apply reasonable emissions reduction targets or strategies to individual developments, the global and national context of emissions must be considered along with the need for the development, other environmental impacts, social benefits, and the capacity of new developments to achieve emissions reductions.

The Department has considered the greenhouse gas assessment and require via the recommended conditions of approval, that Vopak develop an Energy Savings Action Plan in accordance with Department of Water and Energy guidelines. The Action Plan shall be aimed at implementing measures to reduce energy consumption, and therefore a significant portion of emissions.

In addition to the energy efficiency measures, the Department requires Vopak to undertake greenhouse gas monitoring, investigate other measures to reduce emissions and report on the success of abatement strategies. This would provide for continual improvement in emissions reductions and allow the Department to have an on-going role in seeking emissions reductions from the facility should government emissions policy or market mechanisms change over the lifespan of the project. The Department considers this level of action appropriate to the scale of emissions generated by the project and given its contribution to establishing a biodiesel market in Australia.

5.7 Soil and Water Quality

Construction
The construction of the facility involves demolition, earthworks and the laying of pipelines, which have the potential to generate erosion leading to sedimentation and contamination of waters. Vopak proposes to prepare a Soil and Water Management Plan for the construction phase of the project, which would outline excavation and stockpiling practices, drainage management and monitoring procedures to ensure that impacts on soil and water are mitigated. The disruption to soil involved in the laying of a pipeline would be minimised because all pipes would be laid in existing easements. The Department is satisfied that the proposed earthworks are minor and that this approach would address the risk to soil and water quality posed by construction. To ensure this occurs, the recommended conditions of approval formally require Vopak to prepare the Soil and Water Quality Management Plan.

Operation
The project could adversely impact water quality via contaminated stormwater runoff from the tank storage areas, the road tanker loading bays and general hardstand areas. To minimise this risk, the tank storage areas would be fully bunded. All of the storage areas would drain to the existing on-site waste water treatment plant which would treat the runoff prior to discharge to Botany Bay. Runoff from the road tanker loading area would be drained to a holding tank for off-site treatment. Runoff from general hardstand areas would drain to the existing interceptor pit, for settling and separation prior to discharge to Botany Bay. This is in accordance with the stormwater management system already operating for the existing facilities on the site.

Vopak has an existing licence from the DECC that does not permit pollutant discharges. Vopak consider that existing monitoring and management measures on the site would be sufficient to comply with this licence and to ensure that only unpolluted runoff is discharged to Botany Bay. The Department and the DECC have reviewed the stormwater water quality management system and generally concur with this conclusion. The recommended conditions of approval require Vopak to prepare a Water Quality Management Plan to ensure that runoff from the project is adequately managed. The implementation of this condition, combined with existing stormwater management measures on site would ensure that stormwater is adequately managed throughout the project.

5.8 Other Issues

Other issues associated with construction and operation of the biodiesel facility that require monitoring and management include odour and waste. Consideration has also been given to the feedstock for biodiesel production, primarily palm oil.

Odour

Operation

During operation, the key source of emissions of odour is from the transfer and storage of methanol. Emissions, such as VOCs associated with other products stored on site are likely to occur as a result of thermal breathing of storage tanks, filling of tanks and tank cleaning.

The environmental assessment modelled emissions of methanol from the facility and concluded that the project would meet the DECC criteria of 3.0mg/m^3 (1-hour average) for ground level concentrations. Despite the DECC criteria being met, all methanol storage tanks will be designed with suitable fire protection facilities and nitrogen blanketing provision to minimise vapour emissions associated with storage. A wet scrubber system is incorporated into the design of the biodiesel facility to minimise emissions from operation of the plant.

The Department and the DECC is satisfied that emissions from methanol and VOCs would not generate unacceptable odour impacts, and that Vopak's proposed design measures are appropriate.

Waste

Operation of the biodiesel facility will produce significant quantities of waste, including:

- Fatty matter, maximum of 990 tonnes per year;
- Glycerine Type II, maximum of 1,100 tonnes per year;
- Distillation residue, maximum of 2,990 tonnes per year; and
- Trade wastewater, maximum 65,200 tonnes per year.

The environmental assessment identified that some of the waste material may be suitable for reuse, however, detail of how the material could be reused was not provided. The DECC has identified that the fatty matter should not be used as a potential fuel source without the prior assessment and approval of the DECC.

The Department considers that wastes can be adequately managed through the implementation of a detailed operational waste management plan. The requirement for an operational waste management plan and the restriction on use of fatty matter as a potential fuel source are included in the recommended conditions of approval.

Feedstock

The proposed biodiesel facility would import 240,000 tonnes (t) per year of feed oils, including palm oil, palm kernel oil and alternatives such as palmolein, canola oil, soya bean oil and other vegetable oils. The oil type that would be used would vary, depending on the market supply and demand at any given time.

Palm oil for the facility is likely to be purchased from Malaysia. Current production levels reported by the Malaysian Government's Palm Oil Board indicate that Australia currently imports 120,361 t per year, from an annual production of 15.9 million tonnes (Mt) in Malaysia in 2006, representing 0.75% of total production. Imports to China (3.5 Mt/year) and the European Union (2.5 Mt/year) are significantly greater, representing 22% and 16% respectively.

The additional import contribution from the biodiesel facility (240,000 t/year) would bring Australia's total import consumption to 360,361 t/year, or 2.27% of annual production in Malaysia. This is a minor component of total production and may be sourced from the existing established market. Vopak may alter the vegetable oil feedstock source over the life of the project depending on supply and demand. The facility may operate using alternative vegetable oils sourced from other local or international markets. Palm oil production is regulated by the Malaysian government, and other vegetable oils would be regulated by the respective producing countries. The importation of feedstock is regulated by the Australian federal government. Subsequently, Vopak would need to satisfy any requirements imposed by the Commonwealth relevant to a decision to source palm oil from Malaysia.

Notwithstanding, given community interest about the potential impacts of un-sustainable practices in palm oil production, should Vopak decide to source palm oil from South-east Asia, it is obliged (through its Statement of Commitments) to do so in accordance with the principles and criteria of the Roundtable on Sustainable Palm Oil (RSPO). The RSPO is an organisation of vegetable oil producers, distributors, conservationists and other stakeholders. The RSPO principles and criteria require compliance with applicable State, National and ratified international laws and regulations, as

well as key commitments on environmental and social issues. The commitment extends to applying the same RSPO principles to alternative vegetable oil sources of feedstock.

Lastly, the recommended conditions require Vopak to implement a Procurement Plan identifying environmentally and socially responsible feedstock materials and detailing procedures for sourcing such materials.

The Department is satisfied that its consideration and recommendations relating to the potential sourcing of palm oil from Malaysia is commensurate with its jurisdictional responsibilities relating to the implementation of the *Environmental Planning and Assessment Act, 1979*.

6. RECOMMENDED CONDITIONS OF APPROVAL

The Department has prepared recommended conditions of approval for the project (see Appendix A). These conditions are required to:

- Manage hazards and risks;
- Minimise traffic and noise disruption during construction;
- Monitor and minimise greenhouse gas emissions;
- Manage discharges to stormwater;
- Monitor and manage air emissions during operation; and
- Manage operational waste.

Vopak does not object to the imposition of the recommended conditions.

7. CONCLUSION

The Department has assessed the EA, submissions on the project, and Vopak's response to submissions in accordance with the requirements of Clause 8B of the *Environmental Planning and Assessment Regulation 2000*.

The key issues associated with the development include hazards, visual, traffic, greenhouse gas emissions and stormwater management. The Department has assessed the key issues and considered the project with regard to the objects of the EP&A Act, and the principles of ecologically sustainable development. The Department is satisfied that the project would not result in unacceptable impacts on the surrounding environment. A number of conditions have been recommended to ensure that impacts are minimised and improvements in environmental performance, such as greenhouse gas emissions can be achieved over the long term.

The proposed biodiesel facility is located within an existing bulk liquid storage facility, within an industrial precinct. The site is located well away from residential areas and in close proximity to import and export facilities and with good transport networks. Traffic would access the facility via main roads, and increases in vehicle movements during operation would represent less than 1% of the total volume of these roads. The Department is satisfied that the site is suitable for the proposed development.

The Department considers the project to be in the public interest as it contributes to establishing a market for biodiesel in NSW and provides a renewable fuel source to meet the growing demand for diesel.

8. RECOMMENDATION

It is recommended that the Minister:

- consider the findings and recommendations of this report;
- approve the project application, subject to conditions, under section 75J of the *Environmental Planning and Assessment Act 1979*; and
- sign the attached project approval (see Appendix A).

Deana Burn
Manufacturing and Rural Industries
Major Development Assessment
Tel: 9228 6471

5/11/07

David Kitto
Director
Major Development Assessment

5.11.07

Chris Wilson
Executive Director
Major Project Assessment

Sam Haddad
Director-General

Noted

26/11/07

APPENDIX A – RECOMMENDED CONDITIONS OF APPROVAL

Refer to the Major Projects Assessment section of the Department's website, www.planning.nsw.gov.au

APPENDIX B – RESPONSE TO SUBMISSIONS

Refer to the Major Projects Assessment section of the Department's website, www.planning.nsw.gov.au

APPENDIX C – SUBMISSIONS

Refer to the Major Projects Assessment section of the Department's website, www.planning.nsw.gov.au

APPENDIX D – ENVIRONMENTAL ASSESSMENT

Refer to the Major Projects Assessment section of the Department's website, www.planning.nsw.gov.au

APPENDIX E – GREENHOUSE GAS ASSESSMENT

Refer to the Major Projects Assessment section of the Department's website, www.planning.nsw.gov.au

APPENDIX F – ENVIRONMENTAL PLANNING INSTRUMENTS CONSIDERATION

State Environmental Planning Policy No. 11

State Environmental Planning Policy No. 11 – Traffic Generating Developments applies to the site. SEPP 11 aims to ensure that the RTA is made aware of and allowed to comment on proposals for developments listed in Schedules 1 and 2 of SEPP 11. The proposed development is a development listed under Schedule 1 of SEPP 11. SEPP 11 requires the Department to forward a copy of the development application to the RTA within 7 days of receipt. A copy of the development application was provided to the RTA on 26 October 2006. The RTA did not provide a response on the proposed development during the exhibition period. Pursuant to clause 7(5) of SEPP 11, the Minister is able to determine the application.

State Environmental Planning Policy No. 33

State Environmental Planning Policy No. 33 – Hazardous and Offensive Development applies to the site. SEPP 33 aims to identify proposed developments with the potential for significant off-site impacts, in terms of risk and/ or offence (odour, noise etc). A development is defined as potentially hazardous and/ or potentially offensive if, without mitigating measures in place, the development would have a significant risk and/ or offence impact on off-site receptors. The proposed project constitutes hazardous industry under SEPP 33. A preliminary hazards analysis undertaken by Vopak indicated that the proposal would comply with the relevant guidelines for hazard and risk and the Department is satisfied with this analysis.