The facilities associated with the proposal would be designed in accordance with the latest version of Australian Standards 1940 (AS1940), AS1670 for fire alarms and AS2941 for pump sets.

1.7.2 Traffic and transportation

Road transport

One of the fundamental concepts behind the proposal is that it would utilise existing storage tanks for a large part of the process. This effectively means that significant rationalisation will impact on the storage for the chemical industry within Port Botany. Stage one would see a reduction in the chemicals stored on site, complemented by the storage of feed and finished goods stocks largely brought in by ships. Finished goods (i.e. biodiesel and glycerine in the main) will both be able to access the bulk liquid berth for ship export/coastal transfer and the biodiesel will predominantly be used through injection into mineral diesel oil, which is commonly being delivered out of Vopak Site B. Site B transportation feeds an established market and therefore no change to the normal output of road vehicles would occur as a result of this project.

The net impact of traffic movements due to stage one of the proposal are summarised in Table 1.

Table 1 Traffic flows

Per Annum Vehicle Movement	Existing Road Movements Site A*	New Road Movements for Stage 1 Development	Net Impact (New-Existing)
Road Vehicles	2730	780	-1950
ISO Containers IN	180	227	47
ISO Containers OUT	470	786	316
TOTAL	3560	1793	-1767

** For all existing chemical tankage due to be utilised in Stage 1*

As can be seen from the above, the stage one development has a net reduction of traffic movement on the road infrastructure in Port Botany and associated areas. The impact of stage two of the project doubles the volumes utilised from stage one, and, at worst has a net increase of 26 vehicles per annum.

This reduction in chemical storage at Vopak Site A is anticipated to be relocated elsewhere in Port Botany as there is a surplus of available chemical tankage in the marketplace and hence the number of road tanker movements associated with this relocation will remain the same.

Economies of scale will lead to a significant amount of the pharmaceutical grade of glycerine achieving sufficient export parcel sizing by ship during stage two, thus potentially reducing road traffic as glycerine export shipping would significantly drop vehicles that would otherwise use the roadways.

Shipping & pipeline transport

As the volume associated with the biodiesel plant are new dedicated product volumes, there would be a net increase in cross-berth movements. However, the biodiesel supply would result in an equivalent

reduction of mineral diesel oil import. The type of shipping activity would be different for the feed products supplied into the biodiesel plant. Typically these would constitute vegetable oil from import ships. The methanol feedstock would be imported in the same manner although in larger volumes.

The total volume over the berth increase is therefore the additional quantity of methanol to feed the plant, plus export movement of finished biodiesel. There is sufficient reason to believe that the biodiesel produced at Port Botany would be absorbed into the local market to off-set the greater export requirements of the growing market. The impact of minimal specifications being lower than 10% blends (i.e. B10), as set by the government, could impact partially on the uptake by the oil majors but would drive a different economy of independent diesel/biodiesel importation to serve the independent market.

As such, the overall volume increase on the bulk liquid berth would be static (fixed production capability) per stage as below:

- **Stage 1**: feed stock increase 132,500 tonnes offsetting diesel oil imports by 120,000 tonnes (net increase of 12,500 tonnes);
- **Stage 2**: feed stock increase 265,000 tonnes offsetting diesel oil imports by 240,000 tonnes (net increase of 25,000 tonnes).

At present, the shipping patterns for Site B for Mineral Diesel would suggest that the "replacement biodiesel" quantity of 240,000 tonnes per year would mean the reduction in shipping imports of mineral diesel of the order of 16 cargo shipments per year @ 15 000 tonnes per shipment.

Despite the offset that would apply, petroleum tankers would continue to arrive at the same rate albeit with smaller parcels of mineral diesel. The net increase in shipping is therefore 23 ships for the 2 train model and 20 ships for the single train model.

Associated with the changes in shipping patterns is an alteration in the berth occupancy caused by differing ship pumping rates for the palm oil and methanol compared to petroleum tankers. Generally, the chemical type tankers that bring these products have pumping capacities of the order of 20% of petroleum tankers; hence the number of hours alongside the berth can change significantly.

It is anticipated that the recent berth occupancy figures of the order of 360 hours per month (approximately 50% berth utilisation) would increase by the following:

- 1 Train Biodiesel (80 hours per month)
  - 15 hours per month increase in petroleum / gas shipping; and
  - Total: 455 hours per month = 62% berth occupancy.

This increase also allows for the planned usage of two marine loading arms for Vopak Site B discharges as of 2007 and the increase in throughput from the Vopak B2 facility.

When the No. 2 Biodiesel Train comes on line (possibly 2010):

- 2 Train Biodiesel (80 hours per month) increase:
  - 475 hours per month expected average berth occupancy;
  - 40 hours per month reduction due to larger petroleum ships; and
  - Total: 514 hours per month = 70% berth utilisation.

Pipeline movement of biodiesel will occur for the entirety of the finished product down new dedicated pipelines between Site A and Site B where it will be stored and blended into local road deliveries as B10 mineral diesel oil.

1.7.3 Air quality

Air quality impacts need to be considered to determine any potentially adverse impacts on air quality, particularly during operational periods, and is expected to be a requirement of the Department of Environment and Conservation. There is an identified need to consider tank emissions and loading losses of methanol due to its high vapour pressure. The biodiesel components have very low vapour pressures and are not expected to contribute any air impacts. Biodiesel (B100) does not smell like fossil fuel based diesel and the smell is somewhat like food smells, regardless, ground level concentrations for the biodiesel vapours will need to be predicted around the site and at any nearby sensitive receptors.

1.7.4 Noise

Noise impacts during construction and operational periods would need to be assessed to determine any potentially adverse impacts as part of the Department of Environment and Conservation's Industrial Noise Policy. Potential noise impacts arising from additional transportation movements would also be considered.

1.8 Concluding statement

The preliminary assessment indicates that the key issues identified are summarised as follows:

- Hazards & risks;
- Traffic & transport;
- Air quality; and
- Noise.

The proposed development is likely to provide benefits such as:

- Environmental benefits from improved urban air quality and reduced emissions of greenhouse gases;
- The social and economic impacts associated with the proposal are expected to be positive, as a result of regional development, efficiency and market competition. This will bring about a boost to productivity levels required to fuel the economy;
- Surety and increased supply of petroleum fuels within the Sydney market place. This in turn is likely to contain the influence that increased market demand will have on fuel prices and commercial confidence; and
- The proposed development is considered to be in the public interest, as it would allow the facility to operate in more environmentally and socially responsible manner, increase technological capacity, increase productivity and reduce environmental risks associated with the storing and transportation of bulk liquids.

A preliminary plant layout is provided as an attachment.