NSW GOVERNMENT | Planning & Infrastructure

MAJOR PROJECT ASSESSMENT: Caltex Jet Fuel Pipeline Upgrade Project (Stage 2) MP 11_0004

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

August 2011

Cover photo: View into the 'Right of Way' Easement from Captain Cook Drive towards the Caltex Refinery, Kurnell
Inside photo: Caltex Shipping Wharf

Published August 2011
NSW Department of Planning and Infrastructure
www.planning.nsw.gov.au

EXECUTIVE SUMMARY

Caltex Refineries (NSW) Pty Ltd (Caltex) proposes to upgrade the existing jet fuel pipeline between the Caltex refinery at Kurnell and its terminal at Banksmeadow.

The upgrade forms part of a larger strategy to improve the reliability of jet fuel supply to Sydney Airport, and includes:

- the installation of new pumps and associated infrastructure at both the refinery and the terminal; and
- the replacement of around 1.5 kilometres of the existing pipeline.

The project has a capital investment value of approximately $24 million and is expected to generate up to 70 construction jobs.

The project constitutes a 'major project' under Part 3A of the *Environmental Planning and Assessment Act 1979* (the EP&A Act), and requires the Minister's approval. However, as Caltex has made reportable political donations the project application will be determined by the Planning Assessment Commission under delegation,

The Department exhibited the Environmental Assessment (EA) of the project from Friday 29 April 2011 until Friday 3 June 2011, and received 13 submissions on the project: 9 from government agencies and 4 from the general public.

Objecting submissions raised concerns mainly in relation to noise, hazards, risk, and soil and water impacts. Supporting submissions highlighted the importance of ensuring an efficient supply of jet fuel to Sydney Airport.

The Department has assessed the merits of the project in accordance with the requirements of the EP&A Act.

This assessment has found that the potential environmental impacts of the project can be adequately mitigated and/or managed to ensure an acceptable level of performance.

It has also found that the project would improve the safety, efficiency and reliability of jet fuel supply from the Caltex Refinery to Sydney Airport.

Consequently, the Department considers that the project is in the public interest and should be approved, subject to conditions.

1. BACKGROUND

1.1 Relevant Caltex Operations and Surrounding Land Uses

Caltex's Kurnell Refinery (the refinery) and Banksmeadow Terminal (the terminal) are located on opposite sides of Botany Bay, approximately 30 kilometres (km) south of the Sydney central business district. These two facilities are connected to each other via a jet fuel pipeline, known as the Kurnell B Line (see Figure 1).

Figure 1: *Project Location – Regional Context*

Kurnell Oil Refinery Site

Kurnell Oil Refinery was commissioned in 1956 and is the largest refinery in NSW. It has capacity to process approximately 124,500 barrels of crude oil a day (equivalent to about 19.8 million litres of oil).

It mainly produces petrol (49%), diesel (22%) and jet fuel (15%), totalling 86% of production. Smaller quantities of other products are produced including fuel oils, liquid petroleum gas, butane, refinery grade propylene, bitumen and a mix of lubricating oil base stocks, waxes and process oils.

Raw crude oil for processing at the refinery site, as well as finished products, are delivered to the refinery from overseas to an existing wharf, which extends about 1 km into the southern part of Botany Bay.

The site is bordered by Botany Bay National Park to the east, Captain Cook's Landing Place Park to the south, Bonna Point Reserve to the west and the community of Kurnell to the north. Captain Cook Drive is the only main road accessing the Kurnell Peninsula and provides access to the wider road network (see Figure 2).

The closest residents to the refinery site itself are located about 30 metres away on Cook Street. Aside from the residents of Kurnell, the nearest suburb of Woolooware is located approximately 5 kilometers south-east of the refinery.

There is an existing 'right of way' easement that runs in a north-westerly direction from the refinery to Caltex's wharf. The closest residents are about 15 metres away from this 'right of way' easement.

Banksmeadow Oil Terminal Site

Banksmeadow Oil Terminal is used to store various oil products from the refinery and is Caltex's main storage terminal in NSW. It can store up to 50 million litres of its products, including petrol, diesel, heating oil, aviation fuel and fuel oils.

These products are distributed to the nearby Mobil/BP Botany Oil Terminal, to the Vopak Terminal at Port Botany dockyards for transport by sea, and Sydney Airport.

The terminal site is located on the northern side of Botany Bay at Banksmeadow in the Botany Bay LGA. The site is bordered by Sydney Airport to the north-west, the Mobil/BP Botany Oil Terminal to north, the Port Botany Docklands (including the Patrick Container Terminal and the Vopak Terminal chemical storage facility) to the south and a range of other industrial, aviation and port-related uses (see Figure 3).

The nearest residential receivers are located more than 500 metres from the site. Beyond this, the terminal site is surrounded by the suburbs of Botany, Matraville, Malabar, Eastgardens, Chiefly, La Perouse and Phillip Bay.

The terminal is accessed via a number of arterial roads, including General Holmes Drive, Botany Road and Foreshore Road.

Figure 2: *Kurnell Refinery Site – Local Context*

Figure 3: *Banksmeadow Terminal Site – Local Context*

The Kurnell B Line

At around the same time as the oil refinery and terminal were constructed, the KBL was constructed to allow refined oil to be transported between the refinery and the terminal.

Caltex currently uses the KBL to transfer jet fuel from the refinery to the terminal and then onto the Joint User Hydrant Installation Facility (JUHI) at Sydney Airport which stores and distributes jet fuel for use by various aircraft carriers.

The KBL currently runs in a north-west direction from the refinery through Caltex's existing 'right of way' easement, under Prince Charles Parade and resurfaces about halfway along the shipping wharf. The KBL then runs about 400 metres along this wharf before diving beneath Botany Bay until it reaches land at Bomborah Point on the opposite of the bay.

From here the KBL (still submerged) heads north up Bomborah Point Road until it resurfaces at the Banksmeadow Terminal. The KBL then travels west from the Terminal until it reaches the JUHI at Sydney Airport (see Figure 1).

1.2 Existing Approvals

The refinery and the terminal were both constructed in the 1950's and so they predate existing planning legislation. Both sites currently rely on a mixture of continuing use rights and a number of other planning approvals that have been issued in recent years by the Federal Government, the NSW Government, Sydney Airport Corporation, City of Botany Bay Council and Sutherland Shire Council.

Both of the sites are also regulated by the Office of Environment and Heritage (OEH) under the *Protection of the Environment Operations Act 1997* through Environmental Protection Licenses (EPLs) Nos. 837 (the refinery) and 6950 (the terminal).

In addition, the KBL itself is regulated by WorkCover NSW under the *Occupational Health and Safety Regulation 2001* (see Section 3).

1.3 Project Background

The Caltex Oil Refinery at Kurnell is one of the main suppliers of fuel to Sydney Airport.

In 2003, Sydney Airport experienced jet fuel supply disruptions which severely limited the operational capacity of the Airport for a number of weeks.

In response to this, the Federal Government established the 'Jet Fuel Taskforce' to examine and make recommendations on how to reduce the risk of jet fuel shortages and to ensure provision of a secure supply of jet fuel in the future.

In response to these recommendations, Caltex is proposing a staged upgrade of the pipeline infrastructure that supplies jet fuel to the Airport. This project, known as the 'Caltex Jet Fuel Pipeline Upgrade Project' comprises three distinct stages (see Table 1 below)

Table 1: *Staging of the 'Caltex Jet Fuel Pipeline Upgrade Project'*

Stage	***Summary***	***Status***
1	• upgrade works to the JUHI at Sydney Airport to increase the filtering capacity of jet fuel.	• approved in two stages by the Sydney Airport Corporation and the Federal Government in 2009 with works completed in March 2010.
2	• upgrade works to Caltex's existing infrastructure associated with the supply of jet fuel to Sydney Airport (see Section 2.2).	• this project application.
3	• construct and operate an additional pipeline from the refinery to Sydney Airport to meet long term jet fuel demands.	• subject of a separate, future application. Aiming to be operational by 2020.

2. PROPOSED PROJECT

2.1 Project Description

The major components of the project are summarised in Table 2, and depicted in Figures 4 to 6. The project is described in full in URS's Environmental Assessment (EA), which is attached as Appendix F.

Table 2: *Major Components of the Project*

Aspect	*Description*
Project Summary	The project includes: - installation of new pumps on the Caltex refinery site at Kurnell; - replacement of around 1.5km of piping on the KBL between the refinery and Caltex's wharf on the southern side of Botany Bay; and - installation of new booster pumps, piping modifications and an electrical switch room within Caltex's Banksmeadow terminal. The new piping and associated works would be used to carry jet fuel from the refinery, to the terminal and onto the Joint User Hydrant Installation Facility (JUHI) at Sydney Airport for use by various aircraft carriers.
Kurnell Refinery	• Installation of: – two transfer pumps and motors; – two coalescer filters and associated instruments; – a new pigging station; and – cabling for the pumps, motors, valves and other works. New equipment would be installed on a new concrete pad with an area of 286m^2, adjacent to the primary containment bund for Tank 166.
Kurnell B Line	Replacement of around 1.5km of existing piping on the KBL from the Kurnell refinery boundary, through the 'right of way' easement and along 410m of Caltex's wharf on the southern side of Botany Bay (see Figure 5). The replacement piping would be buried in a 1.5m by 1.5m trench laid in sections and welded together. The new piping would have a design pressure of over two times greater than the existing piping, allowing liquid flow rates through the pipe to double from 205 to over 400 kilolitres per hour. The KBL would be cleaned and tied off: it would remain in the ground as is and the replacement piping would be installed alongside the disused existing KBL. No trenching would be required across Cook Street, Captain Cook Drive or Prince Charles Parade as existing pipeline sleeves would be used to pass the new pipe under these roads. The new pipeline would also be laid alongside the existing pipes that run along Caltex's wharf.
Banksmeadow Terminal	• Installation of: – two booster pumps, a coalescer filter and associated instruments; – two new variable speed drives within a new building structure; – motorised and isolation valves; and – a power supply for the pumps and valves including an extension of the 11kV panel. • Modifications to the: – booster pump suction and discharge pipe work; – pig launching and receiving stations; and – branch line into Banksmeadow to enable stripping transfers from Kurnell to Banksmeadow. New equipment would be installed on a new concrete pad with an area of 106m^2 within an existing pump and equipment area.
Hours of Operation	Construction – 7.00am – 6.00pm (Monday to Friday), 8.00 – 1.00pm (Saturday) and no work on Sundays or Public Holidays. Operation – 24 hours, 7 days a week.
Capital Investment Value	$24 million
Employment	Up to 25 full-time jobs during construction
Construction	Staged construction over approximately 9-10 months.

2.2 Project Staging

Construction works would be undertaken concurrently and staged as shown in Table 3 (and Figure 10 in Section 5.2 'Noise and Vibration).

Table 3: *Approximate Project Staging*

Stage	***Period (months)***									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Kurnell Refinery Works										
Kurnell B Line Upgrade Works										
- Road 7 to Gate 5										
- Gate 5 to Cook Street (ROW)*										
- Cook Street to Captain Cook Drive (ROW)										
- Captain Cook Drive to Wharf (ROW)										
Banksmeadow Terminal Works										

**ROW – construction works occurring at the Refineries 'right of way' easement*

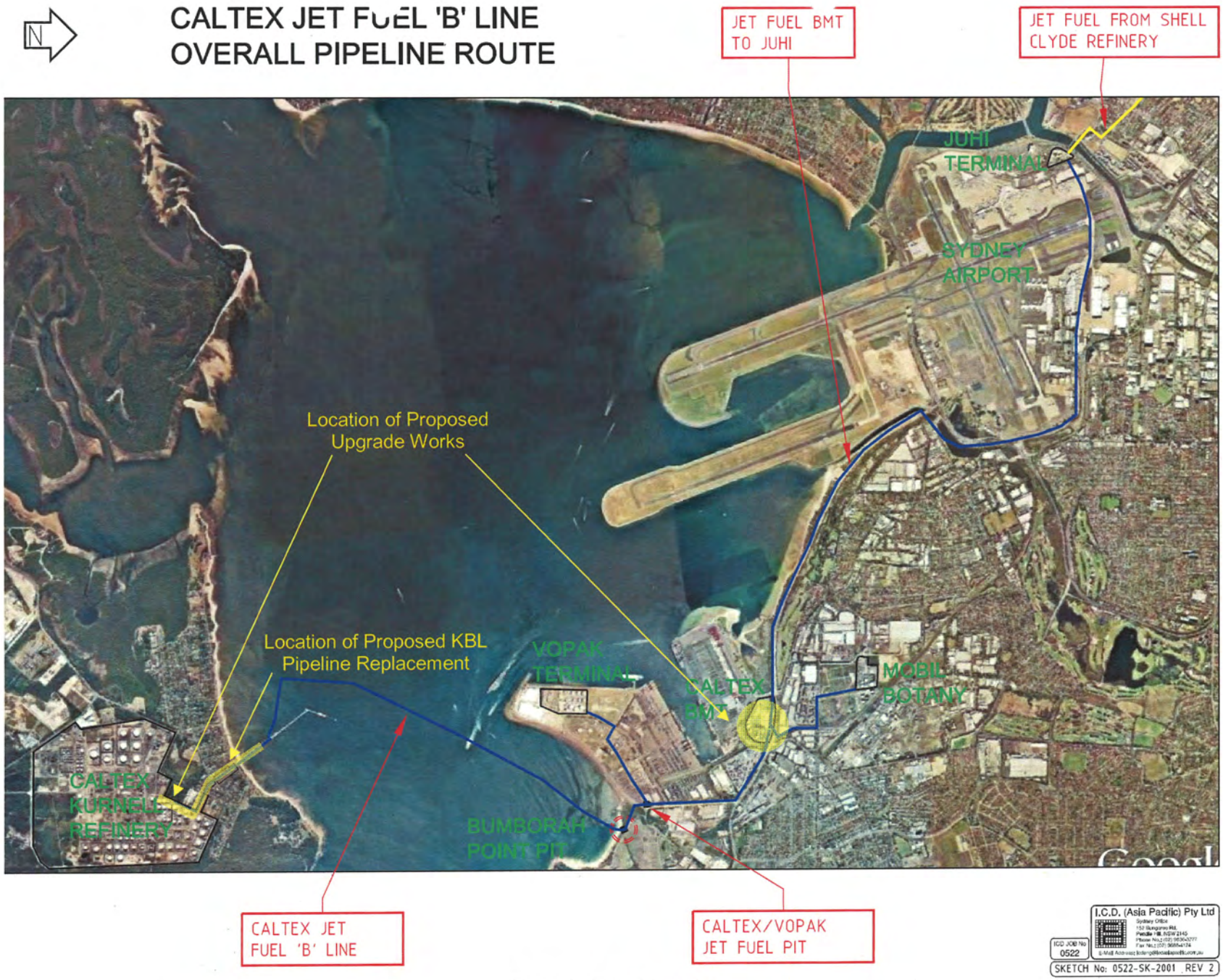

Figure 4: *Project Overview*

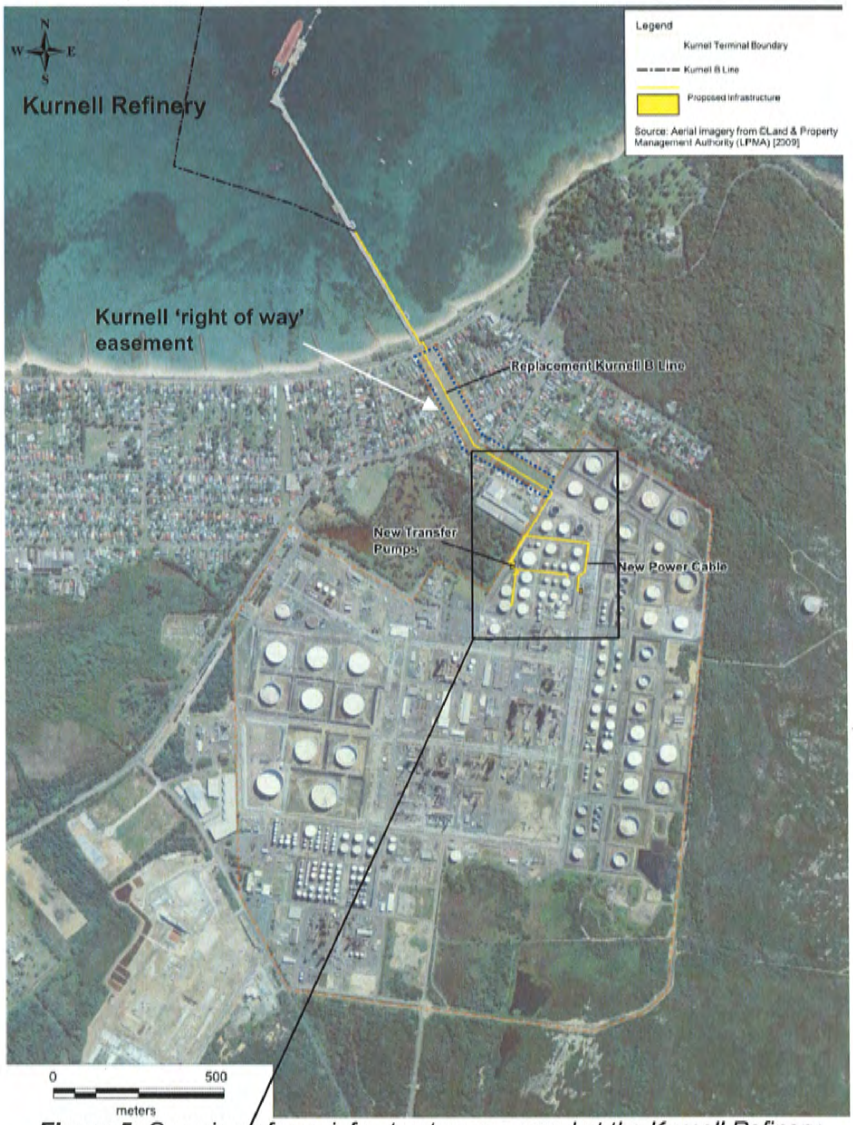

Figure 5: *Overview of new infrastructure proposed at the Kurnell Refinery*

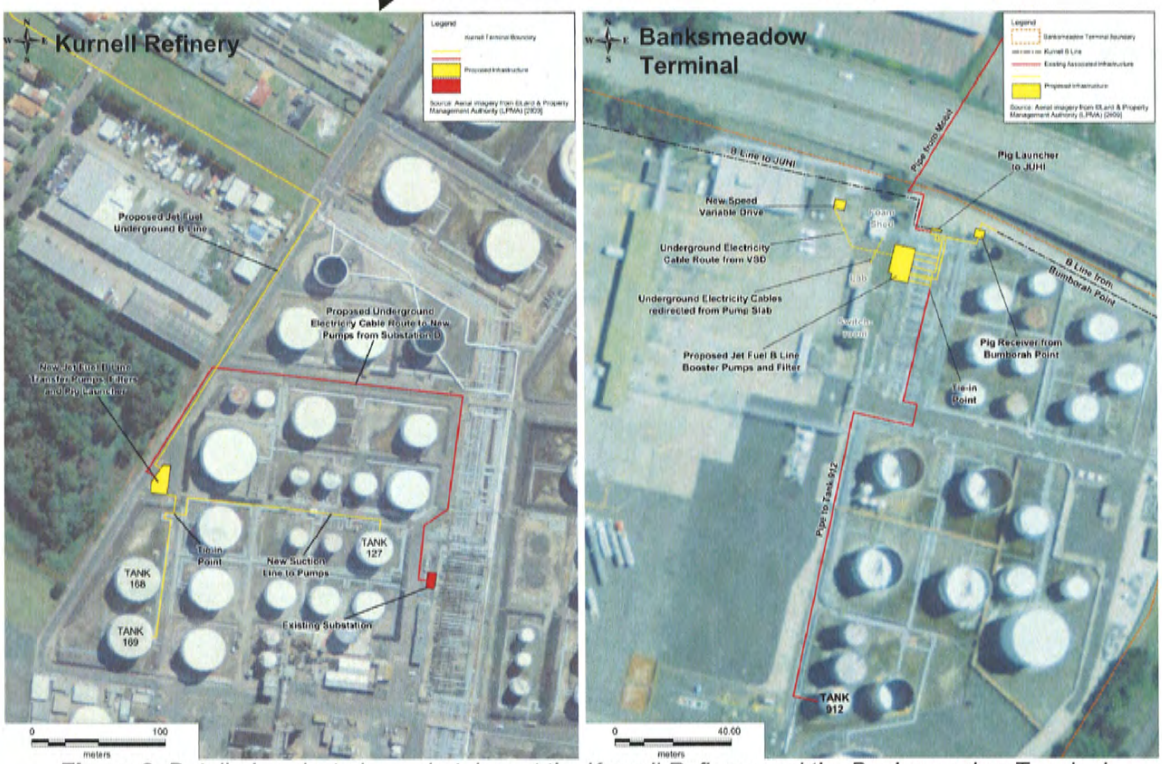

Figure 6: *Detailed works to be undertaken at the Kurnell Refinery and the Banksmeadow Terminal*

3. STATUTORY CONTEXT

3.1 Major Project

The project does not meet any of the relevant criteria for Major Projects in *State Environmental Planning Policy (Major Development) 2005* (the Major Development SEPP).

However, the former Minister declared the project to be of State environmental planning significance by way of an order published in the Government Gazette under section 75B(1) the *Environmental Planning and Assessment Act 1979* (EP&A Act) on 10 December 2010.

The project was considered to be of State environmental planning significance because it:
- is critical to the ongoing operations of Sydney Airport; and
- would improve the environmental and safety standards of the existing pipeline.

3.2 Approval Authority

Under the EP&A Act the Minister is the approval authority for a major project. However, as reportable political donations were made by Caltex, the application must be determined by the Planning Assessment Commission in accordance with the Minister's Instrument of Delegation, dated 28 May 2011.

3.3 Permissibility

The Kurnell Refinery site is zoned '4(c1) (Special Industrial (Oil Refining) Zone' under *State Environmental Planning Policy (Kurnell Peninsula) 1989* (the Kurnell Peninsula SEPP). The proposed development is permissible with consent in this zone.

The Banksmeadow Terminal site is zoned 'IN1 General Industrial' under Schedule 3 (Part 20 'Three Ports Site') of the Major Development SEPP. The proposed development is also permissible with consent in this zone.

3.4 Integrated Approvals

Under Section 75V of the EP&A Act, a number of further approvals are required to be obtained, but must be approved in a manner that is consistent with any Part 3A approval for the project.

In this case, the project requires variations to existing Environmental Protection Licenses (EPLs) held for both the terminal (No. 6950) and refinery sites (No. 837) under the *Protection of the Environment Operations Act 1997*.

The Department has consulted with the Office of Environment and Heritage (OEH) and considered the relevant issues relating to these variations in the assessment of the project (see Section 5 of this report).

3.5 Unintegrated Approvals

The KBL was previously regulated under the *Dangerous Goods Act 1975* (the DG Act), which has now been repealed.

Despite the repeal of the majority of the DG Act, certain savings and transitional provisions of this Act remain in effect through Schedule 3, Clause 3 of the *Occupational Health and Safety Regulation 2001*, which is administered by WorkCover NSW.

This includes the need to get approval from WorkCover NSW to carry out any modifications to certain pipelines (i.e. to lay, relay, renew, repair a pipeline in whole or in part).

Caltex has received approval from WorkCover NSW for the pipeline upgrade and a copy of this approval has been provided in the Response to Submissions report (RTS, see Appendix D).

3.6 Exhibition and Notification

Under Section 75(3) of the EP&A Act, the Director-General is required to make the Environmental Assessment (EA) of the project publicly available for at least 30 days.

After accepting the EA for the project, the Department:

- made it publicly available from **Friday 29 April 2011** until **Friday 3 June 2011**:
  - on the Department's website, and
  - at the Department's Information Centre, Sutherland Shire Council's Administration Centre, City of Botany Council's Administration Centre and the Nature Conservation Council;
- notified landowners in the vicinity of the site about the exhibition period by letter;
- notified relevant State government authorities, Sutherland Shire Council and City of Botany Council; and
- advertised the exhibition in the Southern Courier and the St. George/Sutherland Shire Leader.

This satisfies the requirements in section 75H (3) of the EP&A Act.

During the assessment process, the Department also made a number of documents available for download on the Department's website. These documents included the:

- project application;
- Director-General's environmental assessment requirements;
- EA;
- submissions received; and
- Caltex's response to those submissions (RTS).

3.7 Environmental Planning Instruments

Under Section 75I of the EP&A Act, the Director General's report is required to include a copy of, or reference to, the provisions of environmental planning instruments that substantially govern the carrying out of the project.

The Department has considered the project against the relevant provisions of several key environmental planning instruments including:

- the Major Development SEPP;
- *State Environmental Planning Policy No. 33 – Hazardous and Offensive Development* (SEPP 33);
- *State Environmental Planning Policy No. 55 – Remediation of Land* (SEPP 55);
- *State Environmental Planning Policy (Kurnell Peninsula) 1989*;
- *Botany Bay Local Environmental Plan 1995*; and
- *Sutherland Shire Council Local Environmental Plan 1998.*

The Department is satisfied that, subject to the implementation of the recommended conditions of approval, the project is generally consistent with the aims and objectives of these instruments (see consideration of these instruments Appendix C).

3.8 Objects of the *Environmental Planning and Assessment Act 1979*

In determining the application, the Minister should consider whether the project is consistent with the relevant objects of the EP&A Act.

The Department has fully considered the objects of the EP&A Act, including the encouragement of ESD, in its assessment of the application. The Department considers that objects (ii), (iii), (vi) and (vii) are relevant to the merit assessment of this application.

The Department considers that the project represents an orderly and economic use of the land for the provision of improved utility services. Further, the Department considers that thorough an emphasis on avoidance of impacts, careful design, management and mitigation measures, the project would not impact on any important ecological areas, threatened ecological species or communities and is consistent with the principles of ESD.

3.9 Statement of Compliance

Under Section 75I of the Act, the Director-General's report is required to include a statement relating to compliance with the environmental assessment requirements with respect to the project.

The Department is satisfied that the environmental assessment requirements have been complied with.

4 ISSUES RAISED IN SUBMISSIONS

During the exhibition period, the Department received a total of 13 submissions on the project: 9 from public authorities and 4 from the general public.

A summary of the issues raised in submissions is provided below. A full copy of these submissions is attached in Appendix E.

4.1 Public Authorities

Sutherland Shire Council (SSC) supported the project subject to the implementation of a number of measures to reduce construction noise impacts on nearby residents such as limiting construction and demolition work hours and notifying affected residents prior to peak construction noise works.

City of Botany Bay Council (BBC) did not object to the project but requested an assessment of construction noise and vibration impacts on nearby residential receivers, and the implementation of the recommended management measures in the EA to adapt to sea level rise.

WorkCover NSW (WorkCover) did not object to the project but requested that Caltex address a number of issues identified in the Preliminary Hazards Analysis (PHA) for the project. WorkCover also recommended a number of conditions of approval in relation to safety and risk.

The Office of Environment and Heritage (OEH) raised no objections to the project and recommended a number of conditions of approval in relation to construction hours, noise, vibration, community consultation, stormwater and water conservation.

Sydney Port Corporation (SPC) raised no objections to the project but recommended a condition of approval for a spill management plan to manage accidental leakage of contaminants into Botany Bay.

The Roads and Traffic Authority (RTA) raised no objections to the project provided that it is carried out in accordance with the existing Deed of Agreement that Caltex has with the RTA for the pipeline to pass under the Sydney road network.

The NSW Office of Water (NOW) raised no objections to the project and recommended that the statement of commitments for surface and groundwater be incorporated into the conditions of approval.

Fire and Rescue NSW (NSWFB) raised no objections to the project and recommended all building works be constructed in accordance with the Building Code of Australia (BCA), and that a Fire Safety Study and Emergency Plan be prepared for the project.

The Australian Government Department of Energy, Resources and Tourism supported the project and provided a copy of the Federal Government's 'Sydney Jet fuel Infrastructure Working Group' report which outlines the projected jet fuel infrastructure needed to meet demand at Sydney Airport to 2029.

4.2 General Public

Of the four submissions received from the general public, one supported and three objected to the project.

The one supporting submission highlighted the economic significance of Sydney Airport to the State and the nation, and the importance of ensuring an efficient supply of jet fuel to the airport.

The three objecting submissions from local residents raised a number of issues including the potential for soil and water contamination (due to a fuel leak), structural impacts on nearby properties, land use conflict with adjoining residents, a lack of community consultation by Caltex and potential health and safety issues.

4.3 Response to Submissions

Caltex has provided a response to the issues raised in submissions (see Appendix D), as well as a revised Statement of Commitments for the project. These have been made publicly available on the Department's website.

The Department has considered the issues raised in submissions, and Caltex's responses to these issues, in its assessment of the project.

5 ASSESSMENT

The Department has considered the EA, the issues raised in submissions, and Caltex's response to these issues, in its assessment of the project. The Department considers the key issues to be the potential hazards and risk, noise and vibration, soil and water and flora and fauna impacts. All other issues are considered to be minor (see Table 3).

5.1 Hazards and Risk

SEPP 33 applies to the project as it is defined as 'potentially hazardous industry'. Therefore, the EA for the project contains a Preliminary Hazards Analysis (PHA) undertaken by Planager Pty Ltd in accordance with the requirements of *Hazardous Industry Planning Advisory Paper No 6 - Hazardous Analysis* (HIPAP 6) and *Hazardous Industry Planning Advisory paper No. 4 - Risk Criteria for Land Use Safety Planning* (HIPAP 4) (see Appendix E of Appendix F).

The main potential hazard is associated with the handling of jet fuel which is a flammable liquid under certain atmospheric conditions. Therefore, the likely hazardous incidents with potential to cause injury or fatality to people or damage to property or the biophysical environment are fires and explosions.

Following a number of clarifications requested by both the Department and WorkCover in relation to the PHA, the Department is satisfied that:

- the approach undertaken in the Hazard Identification is sufficient and generally compliant with Australian Standard *AS 2885 – 2007 Pipelines – Gas and Liquid Petroleum*;
- sufficient safeguards are in place and will be maintained to ensure the safe operation of existing fuel tanks at the Kurnell refinery and the Banksmeadow terminal;
- the methodology used for calculation of the consequences and frequency analysis is sound and well applied;
- the individual fatality risk at the nearest residential area from the pumping stations at both sites is well below the accepted criteria ($1x10^{-6}$ per year or 1 in a million) for residential land use;
- the injury, irritation and propagation criteria adopted for NSW would be satisfied for both sites;
- the design parameters of the proposed pipeline upgrade would not substantially affect the risk levels of the Kurnell B Line (KBL); and
- Caltex would comply with *AS 615.1.1 – Functional Safety of Electrical/Electronic/Programmable Electronic Safety Related Systems*.

Taking into account that the maximum risk levels at the refinery site boundary is $0.08x10^{-6}$ (800,000 to 1) a year, and negligible at the terminal site, the Department considers that the risk from the project would not significantly impact on the overall risk from each facility.

Further, the Department is satisfied that the PHA has applied a sound methodology to estimate the risks from the project, and demonstrated that it would comply with all risk criteria adopted in NSW for new developments.

Notwithstanding, to ensure safe operation throughout the life of the facility, the Department has recommended a number of hazards-related conditions of approval (pre-construction, pre-commissioning, pre-startup, post-startup and on-going) including the requirement for Caltex to:

- undertake a Fire Safety Study considering and, if necessary, implementing measures to ensure acceptable fire protection levels at the site/s;
- undertake a Fire Hazards Analysis in accordance with the Department's relevant guideline/s;
- undertake a Hazard and Operability Study consistent with the Department's relevant guideline/s;
- undertake a Construction Safety Study consistent with the Department's relevant guideline/s;
- update the Emergency Plan and Safety Management System to incorporate any changes associated with the project;
- submit Pre and Post-Startup Compliance Reports detailing compliance with all conditions required to be satisfied prior to and after operation has commenced; and
- undertake on-going independent Hazard Audits for the project to ensure safety and compliance with all statutory documents and approvals.

Based on the information provided in the EA, and assuming all safeguards and recommendations of the PHA are implemented along with the Department's recommended conditions of approval, the Department is satisfied that the project would not pose an unacceptable risk to surrounding land uses.

5.2 Noise and Vibration

The EA for the project contains a noise and vibration assessment carried out by Renzo Tonin and Associates (NSW) Pty Ltd (Renzo Tonin) (see Appendix D of Appendix F).

Noise

Noise from the works proposed at the terminal site would not be audible at any residential receivers because of the distance between the terminal and these receivers (about 500 metres), and because the local noise environment is dominated by a range of industrial, aviation and port-related uses, as well as road traffic noise.

However, the residents in Kurnell could be affected during the construction of the project because they live much closer to the proposed works. The nearest receivers to the refinery site are about 30 metres away on Cook Street, and the nearest receivers to the 'right of way' easement are about 15 metres away (see Figure 10).

Renzo Tonin's assessment found that the nearest (and therefore most affected) receivers would experience noise levels up to 76dB(A) from the works at the refinery site itself, and up to 88dB(A) from the works to be carried out in the 'right of way' easement.

The Department considered this impact to be unacceptable because not only would there be large scale exceedances of the applicable noise criteria, but they could also result in strong adverse community reaction and exceed Occupational Health and Safety (OH&S) standards.

Figure 10: *Construction stages and receiver locations*

After further discussions with the Department, Caltex has agreed to:

- restrict construction works to standard day-time hours only;
- reduce the period of construction in the 'right of way' easement to around 4 to 5 months and carry out the works in 3 stages (see Figure 10);
- implement reasonable and feasible noise management and mitigation measures (including the installation of acoustic screening/enclosures and silencers on plant equipment); and
- comply with the relevant OEH construction noise criteria.

The Department is now satisfied that the level of construction noise would be acceptable, but believes that Caltex should be required to:

- monitor and comply with construction noise criteria set in the approval;
- implement best practice noise management during construction, including all reasonable and feasible noise mitigation measures to minimise construction noise generated by the project;

- regularly assess the noise monitoring data and relocate, modify and/or stop operation on-site to ensure compliance with the relevant conditions of this approval;
- prepare and implement a Noise and Vibration Management Plan (including a Noise Monitoring Program) for the project; and
- prepare and implement a Community Consultation Plan for the project.

Construction traffic noise impacts at both the terminal and refinery sites are predicted to be compliant with OEH's *NSW Environmental Criteria for Road Traffic Noise* and as such, no adverse impacts in relation to construction traffic noise are expected.

Operational noise is not considered to be an issue for this project because once the construction works have been carried out at the terminal site, the refinery site and along the 'right of way' easement, there would be no noise from the operation of the infrastructure proposed as part of the project (essentially fuel running through pipes).

Further, ongoing operational noise from the refinery and terminal sites would continue to be regulated by OEH through its existing EPL's.

Vibration

Renzo Tonin's assessment showed that the level of vibration that would be experienced by residents would not exceed the applicable criteria for human comfort or structural damage at any of these receivers because the vibration intensive plant to be used for construction works would be operated at a sufficient enough distance away from all residences.

However, to ensure that this issue is managed throughout the construction program, the Department Caltex should be required to measure the actual vibration emissions of the equipment used during construction, and establish site specific working distances for the use of this equipment.

Conclusion

The Department is satisfied that the level and duration of noise and vibration that would be experienced by residential and industrial receivers in Kurnell during the construction period would not be significant, particularly given that the works would not be constant in one area and would take place during daytime hours only. The recommended conditions of approval would ensure that these impacts are managed and mitigated appropriately.

5.3 Soils and Water

Both the refinery and the terminal sites have been in operation since the 1950s. While no preliminary testing of the soils proposed for excavation has been undertaken, Caltex's historical contamination investigations revealed that Total Petroleum Hydrocarbons (TPHs), Benzene Toluene Ethylbenzene Xylene (BTEX), Polycyclic Aromatic Hydrocarbons (PAHs), Phenols and Lead are likely to be present at both the refinery and terminal sites.

It is therefore highly likely that both sites have experienced some kind of hydrocarbon related spills which have contaminated soil and water resources in this area. As such, it is probable that patches of contaminated soil would be encountered during construction.

Contaminated soil may be encountered at either site during trenching activities, excavation of foundations for the new concrete pads (where new equipment would be installed) or pipeline excavation works.

Soil Contamination

Contaminated soils that are excavated and stockpiled during the construction works would need to be carefully managed to ensure that these contaminants are not released into the environment and/or do not cause odour issues for residents, particularly those closest to the pipeline upgrade works. Spills and leaks from construction and plant equipment would need to be minimised for the same reason.

To manage these potential impacts, Caltex has committed to preparing and implementing a Contamination Management Plan as a component of its Construction Environmental Management Plan (CEMP) including:
- details of how excavated soil would be tested, handled and stockpiled;
- procedures to be followed in the event that contaminated soil or water is encountered during all construction activities;

- controls to minimise erosion and prevent contaminated sediment being released into local water systems; and
- details of how contaminated soil (and water) would be disposed of off-site (e.g. at a licensed facility).

Soils would be tested for both contaminants and odour using standard practices (e.g. soil vapour and soil, leachate and water sampling) as they are stockpiled following excavation.

If the excavated material is found to be contaminated, materials would then be classified in accordance with OEH's *NSW Waste Classification Guidelines: Part 1: Classifying Waste (2009)*, batched, further tested (where required) and then taken to a suitably licensed waste facility.

Sand and/or virgin excavated natural material would be imported to replace any contaminated soil disposed of off-site.

All of these commitments have been incorporated into the Department's conditions of approval, which require Caltex to prepare and implement a Soil and Water Management Plan for the project (as a component of the CEMP). Both NOW and OEH would be consulted during the preparation of this plan to ensure that the relevant issues raised in their submissions are addressed.

Acid Sulfate Soils (ASS) are unlikely to be an issue at either the refinery or the terminal sites because both sites are generally flat and low lying with sandy substrate soils, and therefore fall within the 'Low Probability' group. However, preliminary investigations and soil testing would be undertaken prior to excavation work for the presence of ASS which would then form the basis for a project-specific ASS Management Plan to be prepared as part of the CEMP.

To suppress dust and odour when soil is exposed, Caltex would implement a number of management and mitigation measures through an Air Quality Management Plan (AQMP) for the project which would be implemented as part of the CEMP (see 'Air Quality' section in Table 3 below).

Once construction is complete, no further impacts are expected as a result of the operation of the project as this would be managed through existing inspection, management and maintenance programs already implemented by Caltex at each site.

Water Contamination

Contaminated soil and sediment has the potential to be released into the local water system, which could affect the nearby Marton Park Wetland (see also 'Flora and Fauna' in Table 3 below). Further, contaminated groundwater is also likely to be encountered during construction works (trenching and pipeline excavation) and needs to be carefully managed.

In addition to the soil management measures set out above, Caltex has committed to implementing a series of measures in its Groundwater Management Plan to ensure that there are no impacts to existing groundwater systems. These include groundwater dewatering, testing and, if necessary, off-site disposal at a licensed facility and/or sewage treatment plant (as above).

SPC raised concerns about the possibility of spillage of contaminants (i.e. jet fuel or residual construction waste) into Botany Bay when works are being carried out along the wharf and requested that Caltex prepare a Spill Management Plan. Similarly, one public submission raised concern over the potential for fuel to leak onto the property with associated contamination.

To address this issue, in its RTS, Caltex reconfirmed that the KBL would be cleaned, tied off and remain in the ground while the replacement piping would be installed alongside the existing KBL. As outlined in the statement of commitments, platforms would be attached to the Kurnell Wharf to catch residual construction materials (e.g. rust and metal off-cuts) thereby preventing pollution of Botany Bay. Furthermore, during commissioning (testing), Caltex has committed to deploying spill teams along the length of the new pipeline to ensure swift cleanup and response in the unlikely event of a leak. All construction waste would be disposed of in accordance with the Waste Management Plan (included as part of the CEMP) for the project.

BBC raised concerns that the EA does not adequately consider the impacts of sea level rise on the project. However, the EA outlines the relevant policies and provides a brief discussion of the impact of the project on sea level rise. As noted in the EA, the project essentially represents upgrade works to existing jet fuel supply infrastructure. The Department is satisfied that the impacts of the project on sea level rise have been adequately assessed, and that a range of reasonable and feasible measures could be implemented in the future to adapt to any actual rise in sea level around the wharf.

All of the commitments summarised above have been formalised into the recommended conditions of approval by the Department, including a requirement for Caltex to prepare and implement a Soil and Water Management Plan for the project (as above).

Due to the minor and staged nature of construction works (i.e. intermittent construction to minimise the amount of open excavations at any one time), the project is unlikely to contribute to significant changes in stormwater flow or water infiltration and would not therefore contribute to increased flood risk at either site. Nonetheless, the Department has recommended a series of stormwater management conditions to ensure that this issue is managed appropriately.

Conclusion

The Department is satisfied that with the implementation of the commitments made by Caltex and recommended conditions of approval, there are unlikely to be any adverse impacts on soil, surface water or groundwater resources during the construction of the project.

Once construction of the pipeline has finished, no impacts are expected as a result of the operation of the project. Rather, because the existing infrastructure would be upgraded to modern standards, the new pipeline would be less likely to leak. In addition, the integrity of the pipeline would be monitored and suitable remedial action taken should any leaks be detected. Therefore, the on-going environmental risk of piping fuel from the refinery to the terminal would be decreased.

5.4 Other Issues

The Department's consideration of other issues is provided in Table 3 below.

Table 3: *Other Assessment Issues*

Issue	***Consideration***	***Recommended Conditions***
Flora and Fauna	• URS Australia Pty Ltd (URS) undertook desktop and field surveys to determine the significance of the ecological values that could be affected by the project. • The terminal site contained only modified exotic flora and pasture, therefore, the assessment focused on the refinery site, its 'right of way' easement and the nearby Marton Park wetland. • These studies concluded that all vegetation that could be affected is in poor to moderate condition. • URS assessed the potential impacts of the project on any *Environmental Protection Biodiversity Conservation Act 1999* (EPBC Act) listed species in accordance with relevant Federal Government guidelines. • It was found that whilst some threatened species were considered likely to occur within the study area of the project, the proposed development would not have a significant impact on any EPBC Act listed species and no referral to the Federal Government was considered necessary by Caltex. • The Department is satisfied with the findings that the ecological risks of the project are not significant, provided the management and mitigation measures outlined in Section 5.3 above are implemented. • Caltex has proposed a number of controls to minimise risks to flora and fauna (e.g. use of environmentally friendly fertilisers). The Department has formalised these commitments into the requirement for Caltex to prepare a Flora and Fauna Management Plan (FFMP, including a Weed Management Plan) as part of the CEMP for the project.	• Prepare and implement a FFMP as part of the CEMP, which would include: – measures to be taken to prevent the spread of any identified noxious/exotic weeds; and – measures to be taken to minimise impacts on flora and fauna.
Air Quality	• The terminal site is located over 500m from the closest residential receptor, therefore, no air quality impacts are expected as a result of the works there. • However, at the refinery site, residential receptors are located as close as 15m from the 'right of way' easement where construction earthworks would occur. • Caltex's air assessment concludes that whilst the maximum 24 hour average PM_{10} concentration for particulate matter would be below the project goal of 50 $\mu g/m^3$ (ranging between 5 to 20 $\mu g/m^3$ between a distance of 5 to 15m), minor VOC and odour emissions are likely to occur as a result of contaminated soil and groundwater being encountered during pipeline excavations (see also Section 5.3). • Caltex has outlined a number of measures in their SOCs to manage and mitigate air quality impacts on nearby sensitive receptors during construction including staged pipeline excavation and installation (limit soil exposure), regularly inspect and monitor potential contamination and odour and revegetate exposed soils once construction has been	Require Caltex to: • minimise dust and odour emissions from the project; • prepare and implement a AQMP as part of the CEMP, which includes the measures to be taken to and minimise air pollution.

	completed. • The Department and OEH agree that the project would have negligible air quality impacts on nearby sensitive receivers.	
Heritage (Aboriginal and non-Aboriginal)	• Caltex's heritage assessment found that there were no heritage sites, objects, places, landforms or areas of archaeological potential within the study area other than some small features (e.g. shell middens) on the surface of the 'right of way' easement. • These items (and any other items discovered as construction takes place) are likely to be highly damaged and distributed due to repeated maintenance excavations. • Similarly, it is considered unlikely that any in situ archaeological deposits remain which retain any archaeological integrity or significant archaeological information. • The only known heritage item that would be close enough to be affected by the project is the 'Silver Beach and Roadway' which is listed as a local heritage item under the Kurnell Peninsula SEPP. • However, the local heritage significance of this item would be retained with only short-term impacts (during construction) until the pipeline excavations are backfilled and returned to the trench. • Neither the Council (Botany and Sutherland) nor OEH raised any issues in relation to heritage impacts from the project and the Department does not foresee any heritage impacts arising from the project.	• Prepare and implement a Heritage Management Plan as part of the CEMP, which includes programs/procedures for managing the discovery of previously unidentified heritage values and heritage inductions for construction personnel.
Greenhouse Gas Emissions	• The majority of greenhouse gas (GHG) emissions generated would be scope 1 emissions as fuel is combusted during the construction stage of the project. • Given the minor nature of expected GHG emissions and the extent of construction activities, Caltex's assessment concludes that GHG emissions during the construction of the project would be negligible. • Notwithstanding, Caltex has made a series of commitments to minimise and mitigate GHG and to reduce energy use on site. • The Department is satisfied that the project has incorporated a satisfactory number of measures to reduce carbon emissions and would not be a significant contributor of GHG emissions.	• Require Caltex to minimise GHG emissions and energy use during the project.
Transport	• The traffic generated at the refinery and terminal sites during construction of the project would incorporate a mix of construction plant vehicles, delivery vehicles and construction personnel movements. • Caltex's Traffic Impact Assessment concludes that the number of trips generated by construction activities would be very minor representing approximately 1% of existing volumes on the local road network. • No operational traffic impacts are expected at either the refinery or the terminal because no additional employees or vehicles would be required. • The RTA raised no objections to the project provided that it was carried out in accordance with the Deed of Agreement (DOA), which regulates the laying, constructing and operating of steel pipelines for the carriage of liquid jet fuel in, under and across Cook Street, Captain Cook Drive and Prince Charles Parade.	• Require Caltex to comply with the RTA's DOA.
Socio-Economic Impacts	• Caltex undertook a Social Impact Assessment to identify the social and economic impacts of the project. • Caltex's assessment indicated that the project would generate 40 jobs at the Kurnell Refinery and 30 jobs at the Banksmeadow terminal during construction. • The project would therefore result in a positive impact on the local community through the creation of local jobs during the construction stage. • Caltex's assessment concluded that the project would reduce fuel rationing at Sydney Airport, support its efficient operation and ensure the airport's on-going and significant contribution to the state (6%) and national (2%) economies. • The Department is satisfied that the project would result in a positive socio-economic impact on the local community and support the growth of Sydney Airport.	• N/A
Cumulative Construction Impacts	• Caltex assessed the cumulative impact of the project with other construction projects in the area. • The assessment identified that no major construction works would be taking place close enough to the refinery site to affect the same receptor/s. • The assessment identified a number of works occurring at Port Botany (Orica Botany and Port Botany Expansion projects) in the vicinity of the terminal site but these projects are unlikely to be affected by the small scale of the works proposed at the terminal. • The Department is satisfied that the project would not result in any adverse cumulative impacts.	• N/A

6. CONCLUSION

The Department has assessed the merits of the project having regard to the objects of the EP&A Act and the principles of ecologically sustainable development.

This assessment has concluded that with the implementation of the recommended conditions of approval, the impacts of the project can be mitigated and/or managed to ensure an acceptable level of environmental performance.

It has also found that the project would improve the safety, efficiency and reliability of jet fuel supply from the Caltex Refinery to Sydney Airport.

Consequently, the Department considers that the project is in the public interest and should be approved, subject to conditions.

7. RECOMMENDATION

It is recommended that the Planning Assessment Commission:

- **consider** the findings and recommendations of this report;
- **approve** the project application under section 75J of the EP&A Act; and
- **sign** the attached project approval (refer Appendix B).

Kitto 25/8/11

David Kitto
Director
Mining & Industry Projects

26.8.11

Chris Wilson
Executive Director
Major Projects Assessment

26/8/11

Richard Pearson
Deputy Director-General
Development Assessment and Systems Performance

Haddad

Sam Haddad
Director-General

26/8/2011

APPENDIX A: SUMMARY OF SPECIFIC ENVIRONMENTAL CONDITIONS OF APPROVAL

Aspect	*Condition*	*Requirement*
Schedule 2: Administrative Conditions		
General Terms of Approval	1 - 9	Minimise harm to the environment, carry out project in accordance with EA, ensure structural adequacy, protection of public infrastructure, proper demolition and operation of plant equipment
Schedule 3: Specific Environmental Conditions		
Hazards and Risk	1	Pre-construction studies requiring fire safety study, hazard and operability study, final hazards analysis and construction safety study
	2	Pre-commissioning studies requiring an updated emergency plan/s and safety management system/s
	3	Pre-startup condition requiring demonstrated compliance with relevant conditions
	4	Post-startup condition requiring demonstrated compliance with the emergency plan/s and safety management system/s
	5	Hazard Audit 12 months after date of approval and every 3 years thereafter
Noise and Vibration	6-8	Comply with construction noise criteria, operating hours and operating conditions
	9-10	Prepare and implement Noise and Vibration Management Plan and Community Consultation Plan prior to construction
	11	Develop and implement safe site-specific working distances for all vibration intensive equipment
Soil and Water	12-17	Comply with water discharge limits, stormwater, water re-use, disposal and conservation and spillage control measures
	18	Prevent erosion and sedimentation during construction
	19-21	Prepare and implement a Soil and Water Management Plan and an Acid Sulphate Soils Management Plans, prior to construction
Air Quality	21-23	Comply with odour discharge limits and operating conditions
	24	Prepare and implement an Air Quality Management Plan prior to construction
Greenhouse Gas	25	Implement reasonable and feasible measures to minimise energy use and greenhouse gas emissions on site
Flora and Fauna	26	Prepare and implement Flora and Fauna Management Plan, including a Weed Management Plan, prior to construction
	27	Minimise vegetation clearing and reinstate any trees removed by the project
Waste	28	Prepare and implement Waste Management Plan prior to construction
Traffic	29	Carry out the project in accordance with the Deed of Agreement between Caltex, the RTA and relevant LGA/s
Heritage	30	Prepare and implement a Heritage Management Plan prior to construction
Visual Amenity	31	Mitigate visual impacts for the life of the project
Schedule 4: Environmental, Management, Reporting and Auditing		
Construction Environmental Management Plan	1	Prepare and implement Construction Environmental Management Plan, prior to construction
Incident Reporting and Access to Information	2 - 4	Report incidents and make specific information on the project publicly available on the Proponent's website
Appendix 1: Site Plans		
Appendix 2: Statement of Commitments		
Appendix 3: Noise Receiver Locations		