

# Jet Fuel Infrastructure at Sydney Airport

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## About Sapere Research Group Limited

Sapere Research Group is one of the largest expert consulting firms in Australasia and a leader in provision of independent economic, forensic accounting and public policy services. Sapere provides independent expert testimony, strategic advisory services, data analytics and other advice to Australasia's private sector corporate clients, major law firms, government agencies, and regulatory bodies.

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## Executive Summary

The Sapere Research Group has been engaged by BP Australia Pty Ltd to prepare a submission in response to the application for declaration of the jet fuel supply infrastructure at Sydney Airport by the Board of Airline Representatives of Australia (BARA) under Part IIIA of the *Competition and Consumer Act 2010* (Cwth) (CCA). However, all views and opinions expressed in this report are those of the author and not BP.

Jet fuel at Sydney Airport is stored in the Joint User Hydrant Installation (JUHI). Various models for jet fuel supply infrastructure at international airports have been developed. According to the Sydney Jet Fuel Infrastructure Working Group (2010, p. 19), no model can be referred to as “world’s best practice” for jet fuel supply infrastructure ownership or third party access arrangements. Access to jet fuel infrastructure can be described as closed, limited or open.

Participation in jet fuel supply facility joint venture arrangements requires initial and ongoing capital investment, and acceptance of financial, maintenance, operational and environmental liabilities (Sydney Jet Fuel Infrastructure Working Group, 2010, p. 19). The jet fuel supply infrastructure at Sydney Airport is best described as a limited access arrangement.

Section 44G(2)(a) of the CCA provides that the National Competition Council (NCC) cannot recommend that a service be declared unless it is satisfied that access (or increased access) to the service would promote a material increase in competition in at least one market other than the market for the service, commonly referred to as ‘dependent markets’.

In order to satisfy s. 44G(2)(a) of the CCA, it is necessary that the dependent markets are functionally distinct from the market for the service for which declaration is sought (National Competition Council, 2009, p. 30). This could be satisfied where the service provider is not vertically integrated into dependent markets. However, all current users of the Sydney airport JUHI are vertically integrated from the supply of jet fuel through to the provision of into-plane services.

Where a service provider is vertically integrated into a dependent market, it must be established that the provision of the service provided by the facility and the vertically related activity in the dependent market occur in distinct functional markets (National Competition Council, 2009, p. 30). Given all current users of the Sydney Airport JUHI are vertically integrated from the supply of jet fuel through to the provision of into-plane services, it is not entirely clear whether the dependent markets identified by BARA are in fact functionally separate from the services provided by the Sydney Airport JUHI.

According to the NCC (2009, p. 30), where there are such overwhelming efficiencies from vertical integration, and the provision of the service and the vertically related activity occur in the same functional market, there may not be a case for facilitating access to third parties.

The existence of different functional markets will depend on the extent of economies of joint production or joint consumption. Where complementarity between services gives rise to economies of joint consumption or joint production that dictate the services must be performed within the same economic entity, then they could be considered to be functionally within the same market.<sup>1</sup>

There are several reasons as to why jet fuel supply is bundled with into-plane services. On the demand side, there are transaction cost savings from dealing with a full service provider than separately negotiating jet fuel supply and into-plane services.

On the supply side, an into-plane service provider may be reluctant to enter the market and commence operations, which involves employing specialist labour and either acquiring or renting specialised equipment, unless they can secure a customer base on an ongoing basis. One means for an into-plane service provider to secure a customer base would be to partner with an existing jet fuel supplier. This can be achieved either through vertical integration or through the into-plane service provider entering into a commercial relationship with a jet fuel supplier. While vertical integration is practiced at Sydney Airport by jet fuel suppliers either separately or jointly, commercial arrangements have been entered into by jet fuel suppliers with specialist into-plane service providers at major airports overseas.<sup>2</sup>

The decision on whether a jet fuel supplier will decide to vertically integrate downstream into the provision of into-plane services will most likely depend on cost. This will come down to a decision of whether it is cheaper to internalise the provision of into-plane services or to rely on the market and the price mechanism.

One area where there probably are economies of joint consumption between jet fuel supply and the provision of into-plane services is in obtaining indemnity insurance.

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<sup>1</sup> See *Re Sydney International Airport* [2000] ACompT 1 (1 March 2000) at 97

<sup>2</sup> See *Aircraft Service International Group* (2010) and *Vitol Group* (2011).

The fact that vertical integration has occurred between jet fuel supply and the provision of into-plane services at Sydney Airport suggests there are economies of joint production and/or consumption between these two functions which are linked together by the services provided by the Sydney Airport JUHI.

Section 44G(2)(a) of the CCA cannot be satisfied unless the dependent markets are functionally distinct from the market for the service for which declaration is sought. It is highly likely that the services provided by the Sydney Airport JUHI are not functionally distinct from the supply of jet fuel and the provision of into-plane services.

Essentially, BARA in its application is accusing Sydney Airport JUHI users of abusing their market power in order to charge prices for jet fuel in excess of their forward looking, long run economic costs. It attempts to demonstrate this through an examination of jet fuel differentials from major airports around the world.

The jet fuel differential for Sydney Airport appears to be the only piece of evidence provided by BARA in support of its contention that participants in the Sydney Airport JUHI are abusing their market power to set excessive prices for the supply of jet fuel.

One serious flaw with the jet fuel differentials figures being quoted by BARA is that they are opaque and not capable of replication. Until BARA is able to answer questions regarding what is included and what is not in the jet fuel differential figures, and provide an assurance that figures are being compared on a 'like' for 'like' basis, they should be treated with extreme caution and lacking in evidentiary value.

One of the reasons for higher jet fuel differentials in Australia compared to overseas is due to higher production costs.

It appears that production of jet fuel from the Sydney refineries is not currently sufficient to satisfy New South Wales requirements and that the domestic production shortfall is filled by jet fuel imports. On this basis, the marginal source of supply of jet fuel for New South Wales is imported product which in turn would determine the product price. Essentially this means the price of jet fuel in New South Wales would be dictated by the international commodity price plus the cost of freight shipment.

It is possible to deconstruct most of the components of the jet fuel differential for Sydney based on an import parity price from Singapore. The average cost of freight from Singapore to Australia in June 2010 was 9.87 US cents per US gallon which accounts for almost half of the Sydney jet fuel differential.

On top of the cost of freight to Australia from Singapore, there is the cost incurred from insurance on shipping freight and product loss incurred during transit. This amount was around 0.89 US cents per US gallon using the average exchange rate during June 2010. In addition to the cost of freight and insurance and loss, there is the cost of wharfage incurred which accounts for the various charges levied by port authorities for the discharge of refined petroleum products. This amount was around 0.93 US cents per US gallon using the average exchange rate during June 2010.

Removal of the cost of shipping freight, insurance and loss, and wharfage, all items associated with the shipment of jet fuel from Singapore to Australia, reduces the jet fuel differential for Sydney Airport to 7.22 US cents per gallon in June 2010. Included in this remaining amount would be the cost of using the Caltex Pipeline (or the Shell Pipeline if the supplier is Shell), the cost of using the Sydney Airport JUHI, and the cost of the provision of into-plane services. Converted into Australian currency and litres this amount becomes a margin of just 2.18 cents per litre that is left to cover the provision of all of these services with any residual representing some measure of profit.

While participants in the Sydney Airport JUHI are presumably paying at the very least a full commercial rate for the leasing of land at Sydney Airport, this may not necessarily be the case with other airport refuelling systems where there is majority public ownership. Part of the alleged jet fuel differentials for Australia compared to other countries may in part be due to hidden subsidies being provided for airport jet fuel refuelling systems in other countries.

BARA has equated a high level of market concentration with a lack of competition and/or collusion. This represents a dangerous leap of logic. The economics profession has queried the relationship between a high level of market concentration with a lack of competition for a long time.

Economic theory would suggest that the level of market concentration alone may not necessarily be the prime determinant for the actual state of competition in a market. Thus, a competition analysis focused solely on market concentration is fundamentally flawed because it ignores other critical factors.

The exchange of information between market rivals could serve as a facilitating practice which makes it easier for parties to collude in some form. Information exchanges have been recognised as a critical factor for monitoring the compliance of members to a cartel agreement. Without such a flow of information within a cartel situation, co-operation might otherwise breakdown. However, evidence suggests that jet fuel suppliers are behaving in a manner inconsistent with collusive conduct through withholding information from one another.

It has been postulated that the level and pattern of profits provides an indication of evidence of collusive behaviour. However, the available evidence suggests there are no supracompetitive profits being generated in the Australian downstream petroleum industry. In addition, if there were supracompetitive profits to be had then presumably ExxonMobil wouldn't have withdrawn from supplying jet fuel at Sydney Airport during 2010. The pitiful state of profitability strongly infers there is no collusion, either tacit or overt, in the downstream petroleum industry.

BARA has contended that restricting access to the Sydney Airport JUHI to equity holders represents an entry fee that constitutes a barrier to entry and is thus anti-competitive. According to BARA (2011, p. 51):

... the requirement of equity to use the Sydney JUHI is evidence of market power - if there was a competitive market, a requirement of equity would not be sustainable.

However, a review of transaction cost economics demonstrates that the assertion that the requirement of equity for participation in the Sydney Airport JUHI is a manifestation of market power that could not be sustained in a competitive market is arrant nonsense.

An investment in a specialised asset creates quasi-rents which provide the potential scope for opportunistic behaviour. A quasi-rent value of an asset has also been defined as the excess of its value over its salvage or its value in its next best use to another renter (Klein, Crawford, & Alchian, 1978, p. 298). The potentially appropriable specialised portion of the quasi-rent is that portion, if any, in excess of its value to the second highest-valuing user (Klein, Crawford, & Alchian, 1978, p. 298). In the long-run, a firm must earn sufficient quasi-rents to yield a competitive return or it will not be willing to replace capital investments as they wear out or become obsolete (Noll, 2005, p. 593).

Asset specificity creates the scope for opportunistic behaviour that leads to the hold-up problem as outlined by former Industry Commission economist Jim Rose (1999, pp. 81-82):

Asset specialisation creates openings for opportunistic behaviour in which one party to the relationship manoeuvres to extract wealth from the other; and that wealth is wealth that could not be extracted in the absence of the interdependence. Specialised assets are vulnerable to hold-ups. When one party to the relationship refuses to pay the other party more than the highest value of the specialised asset elsewhere, we have a hold-up.

Airport hydrant fuelling systems, such as the Sydney Airport JUHI, is an investment in specialised physical capital of a transaction and site specific nature. The value of the use of this facility, by its very nature, is much smaller for any activity other than for the provision of aircraft refuelling services. Thus owners/operators of such a system are thus “locked in” to the supply of jet fuel and the distribution of aircraft refuelling services.

The traditional means by which asset owners can protect themselves against opportunism is through contracts specifying all possible contingencies. However, as asset specificity increases, it becomes impossible to draw up complete contracts that cover off on all possible contingencies. Thus asset specificity creates contractual hazards. In response to increasing asset specificity, resort must be given to more elaborate governance structures in order to constrain opportunism (Bensaou & Anderson, 1999, p. 462). This may give rise to relational governance through the development of strategic alliances, joint ventures, franchises, and other close relationships between parties (Bensaou & Anderson, 1999).

The requirement for access seekers to become equity holders in the Sydney Airport JUHI needs to be considered in the context of the parties seeking to achieve transactional efficiency in order to minimise transaction costs and thus reduce their exposure to opportunistic behaviour and the possibility of hold-ups.

One potential source of hold-up is paying for site remediation in the event the Sydney Airport JUHI needs to be relocated to make way for the expansion of the international terminal (TI). The cost of the remediation of the current Sydney Airport JUHI bulk storage tank site could run into the millions of dollars. However, the imposition of an open access regime for the Sydney Airport JUHI would ensure that non-equity jet fuel suppliers would escape any future polluter pays obligations and allow them to free ride on equity holders.

Section 44G(2)(a) of the CCA may not be satisfied because some of the dependent markets are not functionally distinct from the market for the service for which declaration is sought. It is highly likely that the services for the Sydney Airport JUHI are not functionally distinct from the supply of jet fuel and the provision of into-plane services.

The jet fuel differential for Sydney Airport appears to be the only piece of evidence provided by BARA in support of its contention that participants in the Sydney Airport JUHI are abusing their market power to set excessive prices for the supply of jet fuel.

The marginal source of supply of jet fuel for New South Wales is imported jet fuel as the Sydney refineries are unlikely to satisfy demand. This means the relevant price of jet fuel will be the international commodity price plus the cost

of freight shipment. Removal of the cost of shipping freight, insurance and loss, and wharfage, all items associated with the shipment of jet fuel from Singapore to Australia, significantly reduces the jet fuel differential for Sydney Airport. Included in the remaining amount would be the cost of using the Caltex Pipeline, the cost of using the Sydney Airport JUHI, and the cost of the provision of into-plane services with any residual representing some measure of profit.

BARA has equated a high level of market concentration with a lack of competition and/or collusion, however, this represents a dangerous leap of logic.

Evidence suggests that jet fuel suppliers are behaving in a manner inconsistent with collusive conduct through withholding information from one another. Furthermore, the lack of profitability in the Australian downstream petrol industry suggests that Australian refiner-marketers participating in the Sydney Airport JUHI are not able to choose their level of profitability.

Finally, consideration of transaction cost economics shows that the requirement for equity participation in the Sydney Airport JUHI is a means to protect owners of the facility from opportunistic behaviour.

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# 1 Introductory Matters

## 1.1 Instructions

By verbal agreement made on 24 October 2011 the Sapere Research Group was engaged by BP Australia Pty Ltd to prepare a submission in response to the application for declaration of the jet fuel supply infrastructure at Sydney Airport by the Board of Airline Representatives of Australia (BARA) under Part IIIA of the *Competition and Consumer Act 2010* (Cwth) (CCA). However, all views and opinions expressed in this report are those of the author and not BP.

This document will form a submission to the National Competition Council (NCC) and address the following matters:

- Consideration of the relevant dependent markets where BARA contends declaration will promote a material increase in competition.
- Critical review of claims of excessive jet fuel price differentials at Sydney Airport compared with overseas airports.
- Consideration of whether the market for jet fuel at Sydney Airport is effectively competitive.
- Examination of whether the requirement for a third party to gain access to the Sydney JUHI to also hold an equity stake in the facility is anti-competitive in its intent.

The letter from the Sapere Research Group setting out the terms of reference for this submission that was accepted by BP Australia Pty Ltd is contained in Appendix 1.

## 1.2 Sapere Research Group

The Sapere Research Group is an expert services and consulting firm with offices in Melbourne, Canberra, Sydney, Wellington and Auckland. Our firm has been providing independent analysis and advice on strategic issues across government and industry since 1997. The Sapere Research Group was formerly LECG Asia Pacific Ltd. The name change follows a management buyout from its US parent firm with effect from 13 December 2010.

## 1.3 Dr Alistair Davey

I am currently a Senior Managing Economist with the Sapere Research Group working in its Canberra Office. I hold the following academic qualifications:

- Doctorate of Policy Administration, Australian National University

- Master of Commerce (specialisation in economics), University of Melbourne
- Postgraduate Diploma in Economics, University of Melbourne
- Bachelor of Arts, University of Melbourne 1988

Prior to joining the Sapere Research Group, I was a Senior Consultant with ACIL Tasman from May 2007 until November 2010. Prior to becoming a consultant, I spent 15 years working for the Australian Government in various roles, serving as the competition and microeconomic advisor to the Treasurer from March 1996 until June 1999, as well as serving as a director in the mergers and acquisitions branch of the Australian Competition and Consumer Commission (ACCC) from June 1999 until September 2003.

I have extensive experience in the issues surrounding the Australian downstream petroleum industry. In 2007 I completed a professional doctorate at the Australian National University where I examined the competitive effects of horizontal agreements (refinery exchange agreements) in the downstream petroleum industry. My recent academic publications on the downstream petroleum industry are:

- ‘Deregulation of Wholesale Petrol Prices: What Happened to Capital City Petrol Prices?’, *Australian Journal of Agricultural and Resource Economics* Vol. 54, 2010, pp. 81-98.
- ‘The Impact of Clean Fuel Specifications on Adelaide Retail Petrol Prices’, *Australian Economic Papers* Vol. 48, 2009, pp. 1-17.

In 2008 I was the primary author of a report on an assessment of Australia’s liquid fuel vulnerability for the National Oil Supplies Emergency Committee (a committee of the Ministerial Council on Energy). This report can be accessed at:

- <http://www.ret.gov.au/energy/Documents/Energy-Security/Liquid%20Fuel%20Vulnerability%20Assessment.pdf>

In 2008 I also completed a critical review of the ACCC’s 2007 petrol pricing report for the Australian Institute of Petroleum, specifically focusing on the ACCC’s conclusions on the competitiveness of the Australian downstream petroleum industry at the wholesale level. In 2010 I prepared a report for BP Australia Pty Ltd on the competition implications arising from retail petrol price cycles in capital cities.

## 2 Background

### 2.1 Jet Fuel Supply Infrastructure Models

Various models for jet fuel supply infrastructure at international airports have been developed. According to the Sydney Jet Fuel Infrastructure Working Group (2010, p. 19), no model can be referred to as “world’s best practice” for jet fuel supply

infrastructure ownership or third party access arrangements. Access to jet fuel infrastructure can be described as closed, limited or open:

- *Closed access* is defined as no third-party access to privately owned infrastructure.
- *Limited access* is defined as requiring participation in a joint venture owning the supply infrastructure in order to access fuel.
- *Open access* is defined as allowing all parties access to fuel through the airport fuel supply infrastructure upon payment of a throughput based fee. (Sydney Jet Fuel Infrastructure Working Group, 2010, p. 19)

Participation in jet fuel supply facility joint venture arrangements requires initial and ongoing capital investment, and acceptance of financial, maintenance, operational and environmental liabilities (Sydney Jet Fuel Infrastructure Working Group, 2010, p. 19). The jet fuel supply infrastructure at Sydney Airport is best described as a limited access arrangement.

## 2.2 Sydney Airport JUHI

Jet fuel at Sydney Airport is stored in the Joint User Hydrant Installation (JUHI), which is fed by two privately owned pipelines: one owned by Caltex and the other one owned by Shell. The JUHI is located at the northern end of the International Precinct of Sydney Airport and contains five storage tanks with a maximum capacity of 30 megalitres (Sydney Jet Fuel Infrastructure Working Group, 2010, p. 26).

The Caltex pipeline runs from the Caltex Kurnell Refinery which is 17 km south east of Sydney Airport. This pipeline can supply the Sydney Airport JUHI with jet fuel produced by the Kurnell Refinery or imported from overseas refineries. The Caltex pipeline also incorporates links from the Vopak terminal and a terminal jointly owned by ExxonMobil and BP at Port Botany (Sydney Jet Fuel Infrastructure Working Group, 2010, p. 25). Vopak operates a major common-user import terminal while the ExxonMobil and BP terminal is a small private terminal (Sydney Jet Fuel Infrastructure Working Group, 2010, p. 20). It is understood that the ExxonMobil and BP terminal is no longer operational.

The Shell pipeline runs from the Shell Clyde Refinery which is 32 km north-west of Sydney Airport. It can supply the Sydney Airport JUHI with jet fuel produced by the Clyde Refinery or imported from overseas refineries.

The Sydney Airport JUHI is an unincorporated joint venture currently comprising BP, Caltex, ExxonMobil, Shell and Qantas (Sydney Airport Corporation Limited, 2009, p. 79). Shell currently operates and manages developments for the facility on behalf of the participants (Sydney Airport Corporation Limited, 2009, p. 79).

Jet fuel is distributed across Sydney Airport from the JUHI storage facility, via a number of underground pipelines, to apron hydrant outlets located adjacent to aircraft gates (Sydney Airport Corporation Limited, 2009, p. 79).

Into-plane services refers to the transfer of the jet fuel from the hydrant network (or refuelling truck) into the aircraft. `Into-plane' dispensing is undertaken directly by the fuel companies or by other entities established by the oil companies. Specialist hydrant refuelling vehicles are used for this task and their administrative and maintenance support is accommodated as part of the JUHI facility. (Sydney Airport Corporation Limited, 2009, p. 79).

### **3 Market Definition and Promotion of Competition in Dependent Markets**

Section 44G(2)(a) of the CCA provides that the NCC cannot recommend that a service be declared unless it is satisfied that access (or increased access) to the service would promote a material increase in competition in at least one market other than the market for the service. The markets in which competition might be promoted in an access declaration are commonly referred to as 'dependent markets' (National Competition Council, 2009, p. 27).

According BARA (2011, p. 5) in its application, declaration of the Sydney Airport JUHI will promote competition in three dependent markets:

Declaration of the services provided by the Sydney JUHI will promote competition for the supply of jet fuel, into-plane services, and for airline and other jet services at Sydney Airport.

Market definition is at the cornerstone of competition law analysis in Australia. The centrality of market definition to Australian competition law analysis has previously been articulated by the former Trade Practices Tribunal in the following terms:

The identification of relevant markets must be the essential first step in the assessment both of present competition in existing circumstances and likely competition in postulated future circumstances. Competition is an active process rather than a passive situation. Nevertheless, the existence and extent of competition or likely competition between those competing

within a market will depend, to a large extent, upon the distinctive, albeit evolving, structure of that market.<sup>3</sup>

Section 4E of the CCA has defined a market in the following terms:

**market** means a market in Australia and, when used in relation to any goods or services, includes a market for those goods or services and other goods or services that are substitutable for, or otherwise competitive with, the first-mentioned goods or services.

Substitution involves switching from one product to another in response to a change in the relative price, service or quality of two products (holding unchanged all other relevant factors, such as income, advertising or prices of third products) (Australian Competition and Consumer Commission, 2008, p. 16). There are two types of substitution: demand-side substitution, which involves customer-switching; and supply-side substitution, which involves supplier switching (Australian Competition and Consumer Commission, 2008, p. 16). However, competition law enforcement agencies in Australia (Australian Competition and Consumer Commission, 2008, p. 18) and the United Kingdom (Office of Fair Trading, 2004, p. 14) have expressed reservations on the extent to which supply-side substitutability will impose a competitive constraint on a market where market power could be exercised.

A market is generally defined according to its product characteristics and the geographic space in which rivalry and competition take place (Australian Competition and Consumer Commission, 2008, p. 15). Defining a product market requires identification of the goods and/or services traded and the sources or potential sources of substitute products (National Competition Council, 2009, p. 28). The geographic dimension of a market identifies the area within which substitution in demand and supply is sufficient for the product(s)/service(s) traded at different locations to be considered in the same market (National Competition Council, 2009, p. 29).

In some cases, market definition requires close attention to the functional levels of the supply chain or the particular timeframe over which substitution possibilities should be assessed (Australian Competition and Consumer Commission, 2008, p. 15). Where products or services pass through a number of levels in a supply chain, it is also useful to describe the market in terms of the function being considered (National Competition Council, 2009, p. 29). The functional dimension identifies

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<sup>3</sup> (1977) Australian Trade Practices Reports 40-042

which of a set of vertically related markets is being considered (National Competition Council, 2009, p. 29). Defining the relevant functional market requires distinguishing between different vertical stages of production and/or distribution and identifying those that comprise the field of competition in a particular case (National Competition Council, 2009, p. 29).

While initially BARA (2011, p. 5) proposes a market for airline and other jet services at Sydney Airport, later on in its application BARA (2011, p. 36) suggests:

International and domestic markets for the carriage of passengers and freight into and out of Sydney Airport.

I am in broad agreement with BARA's revised product market definitions. At a broad level, there is probably at least a distinct product market for the provision of international passenger transport services. The ACCC (2011, p. 11) has suggested the provision of international passenger transport services should be broken up into separate product markets for leisure and business passenger services on long haul routes. However, adopting either a broad or narrow market definition in this case arguably makes no material difference. Other relevant products markets previously used by the ACCC (2011, p. 11) include:

- International air freight transport services and
- Australian domestic passenger transport services.

There is also arguably a product market for the provision of domestic air freight transport services. It is noted that the National Competition Council (2003, p. 51) has previously concluded that domestic passenger and freight services fall into distinct product markets. While air freight may be substitutable with sea and land transport freight, it is often used to facilitate the movement of high-value and time-sensitive products (Australian Government, 2009, p. 32).

As the application relates to jet fuel supply infrastructure at Sydney Airport, the geographic scope of the various air transport services markets probably relates to services "out of" Sydney Airport. This is on the basis that air transport services "into" Sydney Airport have presumably been refuelled at other airports and thus only aircraft seeking to depart from Sydney Airport would be seeking refuelling at Sydney Airport. This approach would be consistent with the "practical approach" previously taken by the NCC (2003, p. 55).

Turning to a jet fuel product market, consistent with the views of BARA (2011, p. 36), I am also of the view that there is a product market for the provision of jet fuel given the complete absence of demand side substitution possibilities. Jet fuel is a kerosene-based fuel used in aircraft powered by gas-turbine engines and is made to standardised international specifications. There are several reasons which

dramatically limit the scope for demand side substitutability for jet fuel at the present time:

1. The extreme conditions under which combustion must reliably and safely take place demand a limited range of potential liquid fuels.
2. Any product proposed must be fully interchangeable with the current jet fuel product to avoid the logistic problems of airports handling multiple fuels of varying qualities and the commercial limitations this would impose.
3. The long life of a commercial jet means any candidate fuel needs to be “backwards compatible” and suitable for use in existing engine technology. (Blakey, Rye, & Wilson, 2011, p. 2864)

According to Robbert Kivits, Michael Charles and Neal Ryan (2010, p. 200) from Southern Cross University:

... the short-term potential for alternative technology to be used in modern airlines is limited, save for the use of aviation fuel derived from biofuels.

According to the CSIRO (2011, p. 5), the only alternative fuel which can meet all of the environmental, economic and technical challenges is sustainable aviation fuel derived from biomass (non-food parts of crops, plants, trees, algae, waste and other organic matter). However, CSIRO (2011, p. 35) recognises that there are still significant commercial risks associated with producing jet fuel from biomass that need to be overcome:

Trends indicate that the economic viability of bio-derived jet fuel will gradually improve over time; however this is not sufficient to ensure investment will take place. Particular scenarios may be very positive but if the general level of uncertainty is too high then investment may be delayed or even avoided. Key uncertainties affecting the uptake of bioderived fuels and hence the risk to investment include the oil price, feedstock production costs and refining costs.

I am prepared to accept that the geographic scope of this market relates to Sydney Airport as suggested by BARA. While it is technically possible for aircraft to seek refuelling from other airports, it is recognised that this comes at the expense of additional cost as well as time delays.

Finally, I turn to the proposed market for the provision of into-plane services. It is the case that into-plane services are offered as part of a bundle of goods / services

which also includes the supply of jet fuel at Sydney Airport.<sup>4</sup> This point is acknowledged by BARA (2011, p. 38) in its application in its discussion of into-plane services:

The growth in the demand for jet fuel offers opportunities for new jet fuel suppliers to offer “end-to-end” services to airlines, which would include into-plane services.

This raises the possibility that the provision of into-plane services is part of the same functional market as the supply of jet fuel.

In order to satisfy s. 44G(2)(a) of the CCA, it is necessary that the dependent markets are functionally distinct from the market for the service for which declaration is sought (National Competition Council, 2009, p. 30). This could be satisfied where the service provider is not vertically integrated into dependent markets. Of the current users of the Sydney Airport JUHI, only Qantas is a participant in the various markets for air transport services out of Sydney Airport.<sup>5</sup> On the other hand, all current users of the Sydney airport JUHI are vertically integrated from the supply of jet fuel through to the provision of into-plane services. BARA (2011, p. 3) has recognised the level of vertical integration in the jet fuel supply chain:

The ownership of the infrastructure is also characterised by vertical integration.

The JUHI is an unincorporated joint venture currently comprising BP, Caltex, ExxonMobil, Shell and Qantas. BP, Caltex, ExxonMobil and Shell are all oil companies involved in the production of refined petroleum products within Australia. Both Caltex and Shell currently operate oil refineries within the Sydney metropolitan area.<sup>6</sup> In March 2007 Qantas commenced self-supply of jet fuel in Sydney in order to improve supply reliability (Qantas Airways Limited, 2008, p. 5).

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<sup>4</sup> Bundling generally refers to the situation where two or more products or services are sold as a single package (Australian Competition and Consumer Commission, 2003, p. 3).

<sup>5</sup> According to BARA (2011, p. 3), Mobil withdrew from the market for the supply of jet fuel at Sydney Airport during 2010.

<sup>6</sup> It should be noted that Shell will cease refining operations at its Sydney refinery before mid-2013 (The Shell Company of Australia Limited, 2011).

Shell and BP directly provide into-plane services at Sydney Airport. In addition, Airport Fuel Services Pty Ltd provide into-plane services at Sydney Airport which is managed by Caltex. The current shareholders of Airport Fuel Services Pty Ltd are Caltex, BP, Qantas and ExxonMobil.

Where a service provider is vertically integrated into a dependent market, it must be established that the provision of the service provided by the facility and the vertically related activity in the dependent market occur in distinct functional markets (National Competition Council, 2009, p. 30). Given all current users of the Sydney Airport JUHI are vertically integrated from the supply of jet fuel through to the provision of into-plane services, it is not entirely clear whether the dependent markets identified by BARA are in fact functionally separate from the services provided by the Sydney Airport JUHI. The possibility that the jet fuel supply chain for Sydney Airport is part of a vertically integrated market from which it is difficult to identify and distinguish separate functional markets is implicitly acknowledged by BARA:

New jet fuel suppliers may also seek to provide “end-to-end” services to airlines and other jet operators (supply to final delivery into aircraft) and, hence, compete in the market for into-plane services to airlines at Sydney Airport. (Board of Airline Representative of Australia, 2011, p. 5)

The Applicant expects that new suppliers of jet fuel will increase innovation in providing ‘end-to-end’ jet fuel supply solutions. (Board of Airline Representative of Australia, 2011, p. 51)

In discussing into-plane service providers at Sydney Airport, BARA (2011, p. 42) comments:

Each supplier is owned and controlled by one or more of the incumbent jet fuel suppliers (and ExxonMobil).

In the event its application is successful, BARA (2011, p. 9) infers that new jet fuel suppliers will provide a fully integrated service to their new customers:

With access being granted, there will be greater scope for the Applicant’s members to source jet fuel at Sydney Airport beyond the incumbent oil companies... Granting access will also enhance the competition for “into-plane” services (the delivery of fuel from the hydrants into aircraft).

According to the NCC (2009, p. 30), where there are such overwhelming efficiencies from vertical integration, and the provision of the service and the vertically related activity occur in the same functional market, there may not be a case for facilitating access to third parties.

The existence of different functional markets will depend on the extent of economies of joint production or joint consumption. Where complementarity between services gives rise to economies of joint consumption or joint production that dictate the services must be performed within the same economic entity, then they could be considered to be functionally within the same market.<sup>7</sup>

There are several reasons as to why jet fuel supply is bundled with into-plane services. On the demand side, there are transaction cost savings from dealing with a full service provider than separately negotiating jet fuel supply and into-plane services. According to the European Commission (2007, p. 16):

On the demand side, consumers may have a preference for a bundle if there are significant transactional costs. In this case, consumers may prefer to purchase the services as a bundle and from a single supplier. Hence the bundle may become the relevant product market.

On the supply side, an into-plane service provider may be reluctant to enter the market and commence operations, which involves employing specialist labour and either acquiring or renting specialised equipment, unless they can secure a customer base on an ongoing basis. At open access international airports, such as Los Angeles and Hong Kong, the entity given responsibility for managing the jet fuel supply infrastructure has also been granted an exclusive franchise (or monopoly) to provide into-plane services. On the other hand, at a limited access airport, such as Sydney Airport, one means for an into-plane service provider to secure a customer base would be to partner with an existing jet fuel supplier. This can be achieved either through vertical integration or through the into-plane service provider entering into a commercial relationship with a jet fuel supplier. While vertical integration is practiced at Sydney Airport by jet fuel suppliers either separately or jointly through Airport Fuel Services Pty Ltd, commercial arrangements have been entered into by jet fuel suppliers with specialist into-plane service providers at major airports overseas.<sup>8</sup>

The decision on whether a jet fuel supplier will decide to vertically integrate downstream into the provision of into-plane services will most likely depend on cost. This will come down to a decision of whether it is cheaper to internalise the provision of into-plane services or to rely on the market and the price mechanism.

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<sup>7</sup> See Re Sydney International Airport [2000] ACompT 1 (1 March 2000) at 97

<sup>8</sup> See Aircraft Service International Group (2010) and Vitol Group (2011).

The 1991 Nobel Laureate for economics Ronald Coase (1937, p. 392) summed up this problem in the following manner:

... the operation of a market costs something and by forming an organisation and allowing some authority (an entrepreneur”) to direct the resources, certain marketing costs are saved. The entrepreneur has to carry out his function at less cost, taking into account the fact that he may get factors of production at a lower price than the market transactions which he supersedes, because it is always possible to revert to the open market if he fails to do this.

One area where there probably are economies of joint consumption between jet fuel supply and the provision of into-plane services is in obtaining indemnity insurance.

The fact that vertical integration has occurred between jet fuel supply and the provision of into-plane services at Sydney Airport suggests there are economies of joint production and consumption between these two functions which are linked together by the services provided by the Sydney Airport JUHI.

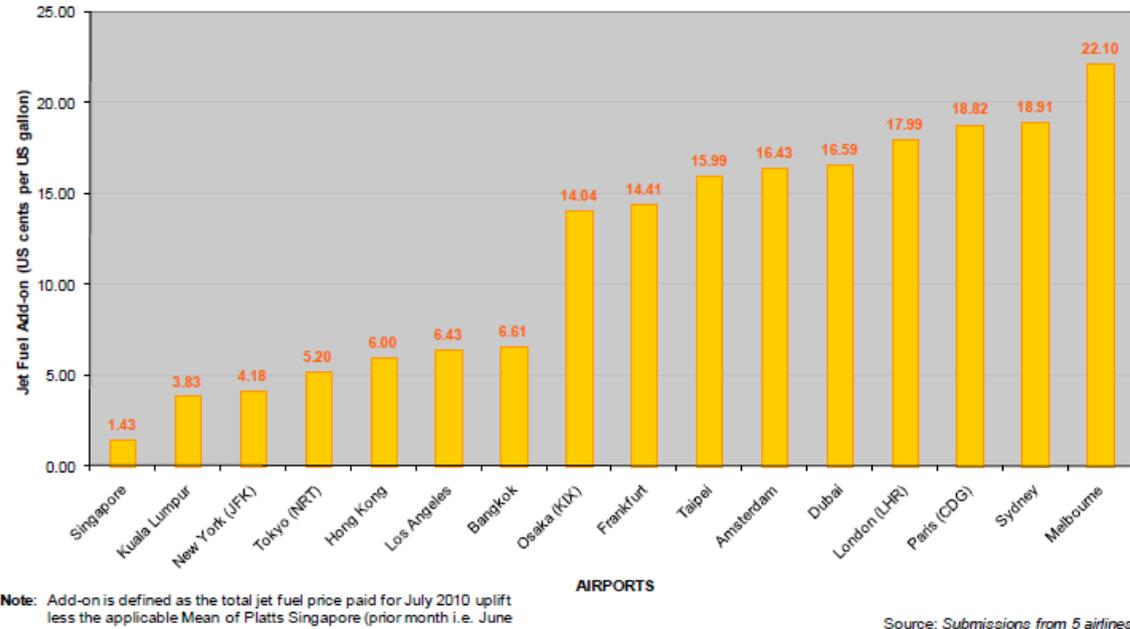
Section 44G(2)(a) of the CCA cannot be satisfied unless the dependent markets are functionally distinct from the market for the service for which declaration is sought. It is highly likely that the services provided by the Sydney Airport JUHI are not functionally distinct from the supply of jet fuel and the provision of into-plane services.

## 4 Jet Fuel Differentials

Essentially, BARA in its application is accusing Sydney Airport JUHI users of abusing their market power in order to charge prices for jet fuel in excess of their forward looking, long run economic costs. It attempts to demonstrate this through an examination of jet fuel differentials from major airports around the world. According to BARA (2011, pp. 52-53):

Figure 3 shows the fuel differential for July 2010 at Sydney Airport, Melbourne Airport and a number of overseas airports. Sydney and Melbourne airports are characterised by the highest fuel differentials in the world. This differential relates to the entire jet fuel supply infrastructure chain.

Figure 3 Jet fuel differentials, US cents per US gallon, July 2010



Source: IATA.

The Applicant does not have sufficient information on which to benchmark these fuel differentials based on variables such as the amount of infrastructure used (length of pipes, storage capacity, etc), ownership arrangements and fuel volumes. However, given the limited access arrangements that apply, it is not unreasonable to expect that the Sydney JUHI takes advantage of its monopoly supply and limited access arrangements in setting the fees paid by the Participants.

Even if this was not the case, then the Oil Company JUHI Participants can earn monopoly rents through higher prices for the provision of jet fuel to airlines given the lack of effective competition. That is, the impact of the market power may manifest itself in the returns earned by the Sydney JUHI and/or the returns on the supply of jet fuel to the incumbent oil company suppliers.

The jet fuel differential for Sydney Airport appears to be the only piece of evidence provided by BARA in support of its contention that participants in the Sydney Airport JUHI are abusing their market power to set excessive prices for the supply of jet fuel.

One serious flaw with the jet fuel differentials figures being quoted by BARA is that they are opaque and not capable of replication. Among some of the reasons as to why replication is important is to address perceived shortcoming in the original results and to resolve inconsistencies in previous results with later results (Reese, 1999, p. 1). In the case of the jet fuel differentials being quoted by BARA it is not entirely clear as to whether 'like' is being compared with 'like'. It could be that the jet fuel differentials being quoted include fees, taxes and charges levied by airports while others do not. It could also be the case that some of the jet fuel differentials being quoted are inclusive of separate into-plane fees or throughput fees while others are not. Some questions that could be asked in relation to the jet fuel differentials include:

- Is the jet fuel differential being quoted for open access jet fuel infrastructure airports such as Hong Kong and Los Angeles inclusive of the provision of into-plane services?
- Is the jet fuel differential being quoted in regard to Los Angeles Airport based on the fee applying to JUHI consortia members or the higher published rate ('rate rack') applying to non-members?

Until BARA is able to answer questions regarding what is included and what is not in the jet fuel differential figures, and provide an assurance that figures are being compared on a 'like' for 'like' basis, they should be treated with extreme caution and lacking in evidentiary value.

One of the reasons for higher jet fuel differentials in Australia compared to overseas is due to higher production costs. It has been estimated that refineries need a production capacity of 200,000 barrels per day (bpd) in order to reach the minimum efficient scale (Scherer, 1996, p. 114).<sup>9</sup> However, refineries in Australia are significantly smaller in size than 200,000 bpd. The ACCC (2007, p. 100) has previously concluded in relation to the operation of Australian refineries:

- Domestic refineries are small in scale and less efficient than refineries in the Asia-Pacific region, particularly the large modern refineries in Singapore. The consequence is that domestic refineries have higher costs of production than other regional refiners.
- ... domestic input costs, particularly labour and environmental compliance costs, are also higher than overseas. As a consequence of relatively high input costs, domestic production costs may currently be up to 20 per cent

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<sup>9</sup> Minimum efficient scale is the smallest level of output that a plant can produce such that its long run average costs are minimised.

higher than the average in the Asia-Pacific region and 50 per cent higher than many refiners in the Singapore region.

- These cost disadvantages are likely to increase as even larger overseas refiners start production over the next few years. Indeed, it appears from the evidence that overseas refiners may enjoy a considerable cost advantage relative to domestic refineries.
- In summary, Australian refineries are more costly to operate than competitor refineries in the Asia-Pacific region, particularly Singapore.

In announcing its decision to close its Clyde Refinery in Sydney before mid-2013, Shell (2011) commented:

The decision recognised the Clyde Refinery was no longer regionally competitive against Asian mega-refineries.

In June 2010 Australian refineries produced only around 69 per cent of domestic jet fuel requirements with New South Wales accounting for around 46 per cent of all domestic jet fuel sales (Department of Resources, Energy and Tourism, 2011). More recently in August 2011 Australian refineries produced around 78 per cent of domestic jet fuel requirements with New South Wales accounting for around 45 per cent of all domestic jet fuel sales (Department of Resources, Energy and Tourism, 2011a). While production from the existing two Sydney refineries is commercial-in-confidence (Sydney Jet Fuel Infrastructure Working Group, 2010, p. 23), it is not unreasonable to surmise that the production of jet fuel from the Sydney refineries is not currently sufficient to satisfy New South Wales requirements and that the domestic production shortfall is filled by jet fuel imports. On this basis, the marginal source of supply of jet fuel for New South Wales is imported product which in turn would determine the product price. Essentially this means the price of jet fuel in New South Wales would be dictated by the international commodity price plus the cost of freight shipment. This reasoning is consistent with the views of the ACCC (2010, p. 117) in regard to the import parity price (IPP) for petrol:

The rationale behind the IPP is that as Australia's refinery output is insufficient to meet the national demand for petrol, importing represents the best alternative source of supply. As imports are the marginal source of supply, prices in Australia must reflect international prices. If a wholesaler can import petrol, it would not purchase petrol from a domestic refiner at a price significantly above the cost of importing.

The IPP contains a number of components, including:

- the benchmark price of refined petrol in Singapore, the largest petrol-trading centre in the Asia-Pacific region

- a quality premium reflecting the difference between the benchmark price of petrol in Singapore as published by Platts and the price of petrol refined to Australian fuel standards
- transportation costs.

The ACCC (2010, p. 117) estimates its IPP for regular unleaded petrol (RULP) based on the following formula:

**IPP = Benchmark price of refined petrol + Quality premium + Freight + Insurance and Loss + Wharfage**

It is possible to deconstruct most of the components of the jet fuel differential for Sydney based on an import parity price from Singapore. The BARA application refers to the use of “Mean of Platts Singapore” during June 2010 for the construction of the jet fuel differential. It is assumed that this refers to the quotes for jet kerosene in Singapore in the *Platts Oilgram Price Report* (Platts, 2010) for June 2010. The *Platts Oilgram Price Report* provides price quotes in US\$ per barrel for jet kerosene for Singapore and on a C+F basis for Australia (which refers to the cost of the product plus the cost of freight to Australia).

The daily price of a barrel for jet kerosene on a C+F basis for Australia was subtracted from the price of a barrel for jet kerosene in Singapore for each trading day in Singapore in June 2010 to provide an estimate of the cost of freight for a barrel of jet kerosene from Singapore to Australia. This provided an average cost of freight per barrel of jet kerosene to Australia of US\$4.14. As there are 42 US gallons per barrel, the average cost of freight per barrel is divided by 42 to convert into US gallons. This yields an average cost of freight of 9.87 US cents per US gallon which accounts for almost half of the Sydney jet fuel differential.

On top of the cost of freight to Australia from Singapore, there is the cost incurred from insurance on shipping freight and product loss incurred during transit. In relation to RULP, the ACCC estimated this amount to be 0.27 Australian cents per litre (cpl) in June 2010 averaged across the five largest cities. This amount converts to 0.89 US cents per US gallon using the average exchange rate during June 2010.<sup>10</sup>

In addition to the cost of freight and insurance and loss, there is the cost of wharfage incurred which accounts for the various charges levied by port authorities for the discharge of refined petroleum products. In relation to RULP, the ACCC estimated this amount to be 0.28 Australian cpl in June 2010 averaged across the

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<sup>10</sup> Average exchange rate of AUS\$1=US\$0.8743 taken from the Reserve Bank of Australia.

five largest cities. This amount converts to 0.93 US cents per US gallon using the average exchange rate during June 2010.

Removal of the cost of shipping freight, insurance and loss, and wharfage, all items associated with the shipment of jet fuel from Singapore to Australia, reduces the jet fuel differential for Sydney Airport to 7.22 US cents per gallon. Included in this remaining amount would be the cost of using the Caltex Pipeline (or the Shell Pipeline if the supplier is Shell), the cost of using the Sydney Airport JUHI, and the cost of the provision of into-plane services. Converted into Australian currency and litres this amount becomes a margin of just 2.18 cpl that is left to cover the provision of all of these services with any residual representing some measure of profit.

Some of the remaining 7.22 US cents per gallon would be composed of funds that need to be set aside to pay the land lease for the Sydney Airport JUHI. The Productivity Commission (2011, p. 307) has observed that land lease charges are typically passed on to the airlines in full. In regard to land lease charges for the Sydney Airport JUHI, it should be noted that the Productivity Commission (2011, p. XLII) found that Sydney Airport has “sufficient market power to be of policy concern”.

Aircraft refuelling services are included as part of the monitoring of prices, costs and profits of aeronautical services performed by the ACCC under the CCA. The ACCC (2010a, p. vii) has also raised concern that Sydney Airport has exercised market power in the provision of aeronautical services:

The monitoring results, when considered within the context of the airport’s market power as well as the incentives and ability to use that market power, point to Sydney Airport earning monopoly rents from services provided to airlines.

While participants in the Sydney Airport JUHI are presumably paying at the very least a full commercial rate for the leasing of land at Sydney Airport, this may not necessarily be the case with other airport refuelling systems where there is majority public ownership. Singapore’s Changi Airport, Kuala Lumpur International Airport, John F Kennedy Airport (JFK) in New York, Tokyo Narita International Airport, Hong Kong Chek Lap Kok International Airport, the Los Angeles International Airport (LAX) and Bangkok International Airport (Suvarnabhumi) have majority public ownership. In the United States publicly owned airports have access to tax-exempt bond financing. According to a 2008 report on the airline industry in the United States:

Due to its close relationships with publicly owned airports, the airline industry has benefited from billions of dollars worth of tax-exempt bond financing around the country...

Tax-exempt bonds represent a subsidy to the airlines because the interest rate is lower—and the cost of financing is less—than what they would receive in the private market. Because the proceeds from the bonds are tax-exempt, investors are willing to receive a lower rate of return than they would otherwise. The cost to the taxpayer is the foregone tax revenue that the bond investors would have paid on the interest earned on their investment. Because the public cost of the bonds derives from foregone tax revenue, the taxpayer subsidy does not appear in state or local budgets. (Briones & Myers, 2008, pp. 18-19)

In the case of LAX, the jet fuel refuelling system operator, LAXFuel Corporation, had received tax-exempt bond financing of US\$250 million by 2005 for the upgrade of jet fuel infrastructure (Briones & Myers, 2008, p. 19). Part of the alleged jet fuel differentials for Australia compared to other countries may in part be due to hidden subsidies being provided for airport jet fuel refuelling systems in other countries.

## 5 Market Concentration

BARA (2011, p. 4) uses the Herfindahl-Hirschman Index (HHI) as prima facie evidence that Sydney Airport JUHI participants exercise market power:

Given the high HHI value combined with the substantial barriers to entry associated with the Sydney JUHI ..., the Applicant submits that it must be concluded that the incumbent suppliers of jet fuel at Sydney Airport have considerable market power.<sup>11</sup>

BARA (2011, p. 46) estimates the HHI to be 0.4 (or 4,000), and goes on to conclude:

A value of 0.40 or 4,000 is well above the generally accepted level for a “concentrated” industry. For example, the ACCC has stated that an industry would be considered concentrated for the purposes of mergers assessment if the HHI was greater than 2,000.

The HHI is a measure of market concentration. It is calculated by adding the sum of the squares of the market share of each firm in the relevant market, thereby giving greater weight to the market shares of the larger firms (Australian Competition and Consumer Commission, 2008, p. 37).

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<sup>11</sup> Issues concerning alleged barriers to entry are dealt with in section 7.

BARA has equated a high level of market concentration with a lack of competition and/or collusion. This represents a dangerous leap of logic. The economics profession has queried the relationship between a high level of market concentration with a lack of competition for a long time. According to Professor Richard Schmalensee (1987, p. 43) of the Massachusetts Institute of Technology:

Most economists now believe that the link between concentration and collusion is relatively weak. In part this reflects a good deal of cross-section empirical work during the 1970s that casts considerable doubt on the strength-and even the existence-of a positive relation between concentration and profitability.

Professor David Round (2006, p. 54), the Director of the Centre for Regulation and Market Analysis at the University of South Australia and member of the Australian Competition Tribunal, has warned:

... concentration statistics or even market shares attributable to individual firms by themselves tell us nothing about the dynamics of competition within a relevant market. They present a snapshot only, and tell us neither how firms obtained those market shares, nor whether those shares are currently increasing or decreasing, and they certainly offer no guide as to what might happen as future market conditions change.

Economic theory would suggest that the level of market concentration alone may not necessarily be the prime determinant for the actual state of competition in a market. Thus, a competition analysis focused solely on market concentration is fundamentally flawed because it ignores other critical factors.

An oligopoly is a market structure characterised by a few sellers. There is no single determinate solution to the problem of oligopoly within the economics literature with many possible outcomes being postulated. The range of solutions runs the full gamut of possible outcomes from that reminiscent of perfect competition where price is equated to marginal cost to that of a monopoly. An oligopoly market structure need not necessarily result in an anti-competitive outcome, for as the Council of the European Union (2004) has observed:

Many oligopolistic markets exhibit a healthy degree of competition.

Similarly, the independent review of the competition provisions of the Trade Practices Act chaired by Sir Daryl Dawson (Dawson report) opined that:

A concentrated market may be highly competitive. (Dawson, Segal, & Rendall, 2003, p. 67)

## 6 Effective Competition

According to BARA (2011, p. 1), Sydney Airport is currently characterised by limited competition between incumbent oil company fuel suppliers. In its application, BARA (2011, p. 2) infers that competition between incumbent oil company fuel suppliers is ineffective:

To create an environment that promotes effective competition between jet fuel suppliers, it will be necessary for new suppliers (importers) to gain access to the jet fuel supply infrastructure on reasonable terms and conditions.

BARA (2011, p. 50) goes on to accuse existing jet fuel suppliers at Sydney Airport of engaging in anti-competitive conduct:

The largely vertically integrated JUHI Participants have the incentive to use their monopoly position to suppress competition in the market for the supply of jet fuel at Sydney Airport.

...

The largely vertically integrated JUHI Participants have the incentive to use their monopoly position to suppress competition in the supply of jet fuel and, hence, into-plane services at Sydney Airport through their control over the number of providers of jet fuel.

In its application, BARA (2011, p. 52) goes on to accuse the participants in the Sydney Airport JUHI of engaging in collusive conduct:

The Oil Company JUHI Participants are rivals in the provision of jet fuel to the airlines (the final users). Taking into account the nature of competition when jet fuel is sold to the final users, these same firms can set charges for storage and using the network that, once the final mark-up has been accounted for, maximises (or nearly maximises) profits.

The obvious point to make is that if BARA has any material whatsoever that can substantiate these claims then it should present it to the ACCC for investigation for compliance with s. 45 of the CCA. Claims of collusive conduct are within the purview of the ACCC, not the NCC.

The Organisation for Economic Co-operation and Development (OECD) (2008, p. 9) has defined facilitating practices in the following terms:

The concept of “facilitating practices” refers to conduct by firms, typically in an oligopolistic market, which does not constitute an explicit, “hardcore”

cartel agreement, and helps competitors to eliminate strategic uncertainty and coordinate their conduct more effectively. Information exchanges are the most common facilitating practice, but competition authorities have investigated a wide range of other practices as well.

The exchange of information between market rivals could serve as a facilitating practice which makes it easier for parties to collude in some form. Information exchanges have been recognised as a critical factor for monitoring the compliance of members to a cartel agreement. Without such a flow of information within a cartel situation, co-operation might otherwise breakdown. However, evidence suggests that jet fuel suppliers are behaving in a manner inconsistent with collusive conduct through withholding information from one another. Jet fuel suppliers at Sydney Airport were criticised in the 2003 Task Force Report on the rationing of jet fuel at Sydney Airport for not sharing information:

On a number of occasions the taskforce was advised that companies in the JUHI were not aware of technical problems in other companies' Sydney refineries, and there is no doubt this contributed to a shortage of supplies. There are commercial and legal reasons which prevent the oil companies from sharing certain types of information. (Wood, et al., 2003, p. 14)

In economic theory a monopolist raises price and cuts back production in order to maximise their level of profit. The outcome under monopoly is that an inefficient level of output is produced because some of the consumers who would have purchased the product in a competitive market do not choose to do so at the higher price, which is referred to as a loss of allocative efficiency. In order to ameliorate the socially undesirable consequences of monopoly, there is competition law and price regulation to protect the community against the abuse of monopoly power.

The benefit of competition is that it pushes prices down towards the cost of production. Price equalling marginal cost is the outcome achieved under the model of perfect competition which is used by economists to assess the welfare implications of real world market situations. On the other hand, a firm able to push its price above marginal cost is generally said to be exercising market power (Lerner, 1934).

American economist John Maurice Clark contended that the economic model of perfect competition was an inappropriate benchmark by which to assess real world outcomes because it “does not and cannot exist and has presumably never existed” (Clark, 1940, p. 241). Instead, Clark was the first to articulate the concept of workable competition, also known as effective competition.

In the Australian context, the definition of workable competition has generally been taken from the decision by the former Trade Practices Tribunal (TPT) in the matter of *Re Queensland Cooperative Milling Association Ltd, Defiance Holdings Ltd (Proposed*

*mergers with Barnes Milling Ltd*) (QCMA). In its decision in QCMA the TPT commented:

As was said the United States Attorney-General's National Committee to Study the Antitrust Laws in its Report of 1955 (at p 3320): "The basic characteristic of effective competition in the economic sense is that no one seller, and no group of sellers acting in concert, has the power to choose its level of profits by giving less and charging more. Where there is workable competition, rival sellers, whether existing competitors or new potential entrants into a field, would keep this power in check by offering or threatening to offer effective inducements..." Or gain, as if often said in United States antitrust cases, the antithesis of competition is undue market power, in the sense of the power to raise price and exclude entry. That power may or may not be exercised. Rather, where there is significant market power the firm (or group of firms acting in concert) is sufficiently free from market pressures to "administer" its own production and selling policies at its discretion...<sup>12</sup>

The essential claim being made by BARA is that jet fuel suppliers are earning supracompetitive profits from the sale of jet fuel at Sydney Airport. After accounting for the cost of shipping transport, insurance and loss and wharfage, the margin on jet fuel being used by BARA falls to just 2.18 cpl which has to cover the cost of using the Caltex Pipeline, the cost for using the Sydney Airport JUHI facilities, into-plane costs with what is left over accounting for profit.

Prominent US anti-trust jurist Richard Posner (2001, p. 90) has contended that the level and pattern of profits provides an indication of evidence of collusive behaviour:

In a few cases it may be possible to infer collusion from the presence or pattern of abnormally high rates of return.

Posner (2001, p. 90) observes that a major problem with this approach is measuring profitability since unusually high rates of profitability may be due to superior efficiency rather than collusion. However, given the scale of Australian refineries previously outlined in section 3, superior efficiency is unlikely to be a cause of any unusually high rates of profitability. When reliable profit data are obtainable then this may be evidence of collusion (Posner, 2001, p. 90).

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<sup>12</sup> *Re Queensland Co-operative Milling Association Ltd* (1976) 8 ALR 481 at [515]

Reliable profit data for the Australian downstream petroleum industry is publicly released each December by the ACCC. The ACCC obtains cost and profit information on the supply of refined petroleum products by Australian refiner-marketers.<sup>13</sup>

The evidence suggests there are no supracompetitive profits being generated in the Australian downstream petroleum industry. According to the ACCC (2010, p. 231), the profits generated by refiner-marketers from the supply of refined petroleum products was negative \$50 million in 2009-10, compared with negative \$2.2 billion in 2008-09.

If refiner-marketer participants in the Sydney Airport JUHI were able to choose their level of profitability, presumably it would be greater than negative \$50 million. In addition, if there were supracompetitive profits to be had then presumably ExxonMobil wouldn't have withdrawn from supplying jet fuel at Sydney Airport during 2010. The pitiful state of profitability strongly infers there is no collusion, either tacit or overt, in the downstream petroleum industry.

## 7 Restricted Access

The equity holding of Qantas in the Sydney Airport JUHI provides clear evidence that other parties are able to join the consortium provided they are willing to make the necessary equity investment. Qantas was able to purchase a share of the on-airport storage and international distribution facilities in 1988 and bought into the domestic distribution facilities in 2004 (Qantas Airways Limited, 2008, p. 5).

However, in its application BARA has contended that restricting access to the Sydney Airport JUHI to equity holders represents an entry fee that constitutes a barrier to entry and is thus anti-competitive. According to BARA (2011, p. 51):

Access is restricted, however, in that the Sydney JUHI can reject applications for access and that an equity stake in the JUHI JV is required in order to get access to the Sydney JUHI – in other words, network ownership is required as a pre-condition to the supply of jet fuel to airlines at Sydney Airport. This equity stake is a large fixed cost (with potentially a high sunk component). This is restrictive by its very nature and does not constitute access on a basis

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<sup>13</sup> This is the total supply sector for the refiner-marketers which includes the importation of crude oil for refining, imports of refined petroleum products, domestically refined petroleum products, and product volumes traded under buy-sell agreements (Australian Competition and Consumer Commission, 2010, p. 230). Refined petroleum products refers to petrol (gasoline), diesel, jet fuel and other related products.

dependent on the cost of provision, which would eventuate in a competitive market. Moreover, the requirement of equity to use the Sydney JUHI is evidence of market power - if there was a competitive market, a requirement of equity would not be sustainable.

A review of transaction cost economics demonstrates that the assertion that the requirement of equity for participation in the Sydney Airport JUHI is a manifestation of market power that could not be sustained in a competitive market is arrant nonsense.

## 7.1 Transaction cost economics

The 2009 Nobel Laureate for economics Oliver Williamson (1983, p. 535) observed there were two different contracting traditions for evaluating nonstandard or unfamiliar contracting practices: the common law tradition and the antitrust or inhospitality tradition. According to Williamson (1983, p. 535):

The inhospitality tradition is supported by the widespread view that economic organization is technologically determined. Economies of scale and technological nonseparabilities explain the organization of economic activity within firms. All other activity is appropriately organized by market exchanges. Legitimate market transactions will be mediated entirely by price; restrictive contractual relations signal anticompetitive intent.

Under the common law tradition, contractual irregularities are presumed to serve affirmative economic purposes (Williamson, 1983, p. 535). A consideration of transaction cost economics demonstrates that the equity requirement imposed on access seekers to the Sydney Airport JUHI does serve an affirmative economic purpose contrary to the assertions made by BARA.

A transaction cost is the cost associated with participating in a market. Some of the main transaction costs include:

- Search and information costs such as determining whether the required product is actually available and at an acceptable price.
- Bargaining costs are the costs incurred in arriving at an acceptable agreement with the other party to the transaction, and drawing up an appropriate contract.
- Monitoring costs are incurred in ensuring the other party abides by their contractual obligations.
- Enforcement costs are incurred in the event that a party fails to abide by their contractual obligations.

Williamson (1979, p. 239) has identified three critical dimensions for categorising transactions:

1. Uncertainty;
2. Frequency with which transactions recur; and
3. The degree to which durable transaction-specific investments are incurred.

An investment in a specialised asset creates quasi-rents which provide the potential scope for opportunistic behaviour. A quasi-rent value of an asset has also been defined as the excess of its value over its salvage or its value in its next best use to another renter (Klein, Crawford, & Alchian, 1978, p. 298). The potentially appropriable specialised portion of the quasi-rent is that portion, if any, in excess of its value to the second highest-valuing user (Klein, Crawford, & Alchian, 1978, p. 298). In the long-run, a firm must earn sufficient quasi-rents to yield a competitive return or it will not be willing to replace capital investments as they wear out or become obsolete (Noll, 2005, p. 593).

Asset specificity creates the scope for opportunistic behaviour that leads to the hold-up problem as outlined by former Industry Commission economist Jim Rose (1999, pp. 81-82):

Asset specialisation creates openings for opportunistic behaviour in which one party to the relationship manoeuvres to extract wealth from the other; and that wealth is wealth that could not be extracted in the absence of the interdependence. Specialised assets are vulnerable to hold-ups. When one party to the relationship refuses to pay the other party more than the highest value of the specialised asset elsewhere, we have a hold-up.

The ACCC has previously recognised the hold-up problem in a previous matter before the Australian Competition Tribunal:

... a contracting problem that can arise where (a) incomplete or otherwise limited contracts exist between two or more parties who can engage in a mutually beneficial activity, and (b) prior to the parties engaging in the mutually beneficial activity, one of the parties must make an investment that is substantially sunk and, as such, the recoverable value of the investment for the investor is significantly below the initial investment cost. 'Hold up' occurs in this situation when the party making the relevant investment cannot, through the contracting process and prior to making his or her investment, be guaranteed to receive an adequate share of the returns from the mutually beneficial activity after the investment is made and the activity occurs. As a consequence of the expectation that he or she will be 'held up' after making the investment, the relevant party will either invest a smaller amount or not invest at all. In the extreme this will make the mutually beneficial activity unviable. (*Re VFF Chicken Meat Growers' Boycott Authorisation [2006] ACompT 2*, para. 103.)

Airport hydrant fuelling systems, such as the Sydney Airport JUHI, is an investment in specialised physical capital of a transaction and site specific nature. The value of the use of this facility, by its very nature, is much smaller for any activity other than for the provision of aircraft refuelling services. Thus owners/operators of such a system are thus “locked in” to the supply of jet fuel and the distribution of aircraft refuelling services.

One often neglected aspect of economic efficiency is transactional efficiency where market participants design business practices, contracts, and organisational forms to minimise transaction costs and, in particular, to mitigate information costs and reduce their exposure to opportunistic behaviour or hold-ups (Kolasky & Dick, 2003, p. 249).

The traditional means by which asset owners can protect themselves against opportunism is through contracts specifying all possible contingencies. However, as asset specificity increases, it becomes impossible to draw up complete contracts that cover off on all possible contingencies. Thus asset specificity creates contractual hazards. In response to increasing asset specificity, resort must be given to more elaborate governance structures in order to constrain opportunism (Bensaou & Anderson, 1999, p. 462). This may give rise to relational governance through the development of strategic alliances, joint ventures, franchises, and other close relationships between parties (Bensaou & Anderson, 1999). According to Professor Paul Joskow (2002, p. 102) of the Massachusetts Institute of Technology:

Recognising the potential for opportunistic behaviour ex ante, the transacting parties have an incentive to choose a governance arrangement ... that mitigates the ex post hold-up potential. This in turn facilitates the creation of an economical trading relationship that supports efficient investments in specific assets, lower costs, and lower prices.

The requirement for access seekers to become equity holders in the Sydney Airport JUHI needs to be considered in the context of the parties seeking to achieve transactional efficiency in order to minimise transaction costs and thus reduce their exposure to opportunistic behaviour and the possibility of hold-ups. Indeed, Williamson (1981, p. 556) has observed that:

... the common ownership of site-specific stations is thought to be so “natural” that alternative governance structures are rarely considered.

The airport that had the lowest reported jet fuel differential according the BARA application, Singapore’s Changi Airport, has jet fuel supply arrangements organised along similar line to the Sydney Airport JUHI. Jet fuel suppliers at Changi Airport have formed a company called the Changi Airport Fuel Hydrant Installation Pte Ltd (CAHFI) (Parliament of Singapore, 2006, pp. 1988-1989). The CAHFI consortium consists of Air Total, BP, Caltex ExxonMobil, Shell and the Singapore Petroleum

Company. The fuel hydrant system includes the fuel jetty (where jet fuel is delivered), storage tanks, underground pipelines and other infrastructure used to store and deliver jet fuel to airline customers. Although fuel supplier share common infrastructure within CAHFI, they compete against each other, with pricing and services provided to airlines by each jet fuel supplier contracted separately with airlines free to engage any one of the CAHFI jet fuel suppliers. Any new oil company interested in doing business at Changi Airport can do so by joining the CAHFI consortium. The admission criteria for new entrants are outlined in the CAHFI's Head of Agreement. Any reputable oil company that can meet the admission criteria will be eligible to join the consortium by buying over an equity shareholding from the existing shareholders.

Jet fuel supply arrangements at the world's busiest airport, London's Heathrow Airport, are also organised along similar lines to the Sydney Airport JUHI. The jet fuel supply and storage infrastructure is owned by two separate joint venture companies (Sydney Jet Fuel Infrastructure Working Group, 2010, p. 20). The Heathrow Hydrant Operating Company (HAPCO) owns and operates the hydrant system and the Heathrow Fuel Company (HAFCO) owns and operates the on-airport jet fuel storage system. Ownership of both joint venture companies comprises oil companies while HAPCO also includes an airline. Access to the infrastructure is available, but dependent on participation in the joint venture.

BARA (2011, p. 22) identifies the Vitol Group as one of the likely new jet fuel suppliers if its application was successful. It is interesting to note that the Vitol Group (2011) was willing to enter the jet fuel supply market at Heathrow Airport through participation in the joint venture companies:

For the first time since 1987 London Heathrow Airport (LHR) finds itself with a new into wing jet fuel supplier, Vitol Aviation... Vitol Aviation have made a number of significant long term commitments and investments to make this entry possible...

In its submission, BARA (2011, p. 9) extols the virtues of jet fuel supply arrangements at Los Angeles Airport:

For example, at Los Angeles Airport, open access arrangements are in place where suppliers (including airlines) can choose whether or not to become a member of the JUHI.

What BARA did not reveal in its application is that companies that do not join the JUHI at Los Angeles Airport actually pay a higher access price. The on-airport jet supply infrastructure is operated by LAXFUEL. Access to on-airport jet fuel supply infrastructure is available to LAXFUEL affiliated companies through participation in the LAXFUEL consortia at agreed rates or via a higher published rate ('rate rack') charged to non-members (Sydney Jet Fuel Infrastructure Working Group, 2010, p.

20). It appears in this instance that LAXFUEL mitigates opportunism and the hold-up problem through charging a higher price to non-members.

One potential source of hold-up is paying for site remediation in the event the Sydney Airport JUHI needs to be relocated to make way for the expansion of the international terminal (T1). According to the 2009 Sydney Airport Master Plan:

The current JUHI storage facility can remain in its current location in the medium to longer term, until the development of T1 requires its relocation...

For the longer term, offsite storage opportunities are possible. (Sydney Airport Corporation Limited, 2009, p. 80)

It is understood that under the terms of the current lease, there is a requirement for the Sydney Airport JUHI to make good the premises at the end of the lease term. Sites contaminated with petroleum compounds include tank sites and can remain at a site for a long period of time (Khaitan, et al., 2006, p. 20). The Sydney Airport JUHI currently contains five bulk storage tanks with space to cater for an additional two bulk storage tanks (Sydney Airport Corporation Limited, 2009, p. 20).

Once petroleum hydrocarbons are released into the environment, some of the nonaqueous phase liquid (NAPL) source material may volatilise into the soil gas and/or dissolve into the aqueous phase (Khaitan, et al., 2006, p. 20). Refined petroleum products such as jet fuel falls into the category of NAPL (Khaitan, et al., 2006, p. 21). Contamination of groundwater by NAPLs is a serious issue because benzene and some polynuclear aromatic hydrocarbons have been found to be hazardous to both human beings and animals (Khaitan, et al., 2006, p. 21). Pools of NAPL remain trapped in the subsurface and act as long-term sources of groundwater contamination (Khaitan, et al., 2006, p. 21). Several processes such as pump-and-treat, containment, in situ biodegradation, phytoremediation, soil washing, surfactant and cosolvent flushing, air stripping, and thermal processes have been applied for the remediation of NAPL-contaminated sites (Khaitan, et al., 2006, p. 21).

The cost of the remediation of the current Sydney Airport JUHI bulk storage tank site could run into the millions of dollars. However, the imposition of an open access regime for the Sydney Airport JUHI would ensure that non-equity jet fuel suppliers would escape any future polluter pays obligations and allow them to free ride on equity holders.

## 8 Conclusions

Section 44G(2)(a) of the CCA may not be satisfied because some of the dependent markets are not functionally distinct from the market for the service for which

declaration is sought. It is highly likely that the services for the Sydney Airport JUHI are not functionally distinct from the supply of jet fuel and the provision of into-plane services.

The jet fuel differential for Sydney Airport appears to be the only piece of evidence provided by BARA in support of its contention that participants in the Sydney Airport JUHI are abusing their market power to set excessive prices for the supply of jet fuel.

The marginal source of supply of jet fuel for New South Wales is imported jet fuel as the Sydney refineries are unlikely to satisfy demand. This means the relevant price of jet fuel will be the international commodity price plus the cost of freight shipment. Removal of the cost of shipping freight, insurance and loss, and wharfage, all items associated with the shipment of jet fuel from Singapore to Australia, significantly reduces the jet fuel differential for Sydney Airport. Included in the remaining amount would be the cost of using the Caltex Pipeline, the cost of using the Sydney Airport JUHI, and the cost of the provision of into-plane services with any residual representing some measure of profit.

BARA has equated a high level of market concentration with a lack of competition and/or collusion, however, this represents a dangerous leap of logic.

Evidence suggests that jet fuel suppliers are behaving in a manner inconsistent with collusive conduct through withholding information from one another. Furthermore, the lack of profitability in the Australian downstream petrol industry suggests that Australian refiner-marketers participating in the Sydney Airport JUHI are not able to choose their level of profitability.

Finally, consideration of transaction cost economics shows that the requirement for equity participation in the Sydney Airport JUHI is a means to protect owners of the facility from opportunistic behaviour.

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## Appendix 1



18 October 2011

MR IAN FLIEDNER  
DIRECTOR COMMUNICATIONS & EXTERNAL AFFAIRS  
BP AUSTRALIA PTY LTD  
LEVEL 17, 717 BOURKE STREET  
MELBOURNE VIC 3008

Dear Mr Fliedner,

Further to my discussion with Richard Wise on 17 October 2011, I am writing to provide BP Australia Pty Ltd with a proposal from the Sapere Research Group for the preparation of a submission in relation to the application by the Board of Airline Representatives of Australia (BARA) to the National Competition Council (NCC) for declaration of the Sydney Joint User Hydrant Installation (JUHI) under Part IIIA of the Competition and Consumer Act 2010 (CCA).

Sapere would prepare a submission under its own name to the NCC focusing on the obligation on the part of the NCC that it cannot recommend declaration under subsection 44G(2)(a) of the CCA unless it is satisfied that access (or increased access) to the service provided by the Sydney JUHI would promote a material increase in competition in at least dependent market (whether or not in Australia), other than the market for the service. My preliminary view is that the conclusions reached in the BARA submission are not well supported and it is my intention to demonstrate why the BARA submission is fundamentally flawed and erroneous in the conclusions reached. In preparing the submission we would adopt the following approach:

- Consideration of the relevant dependent markets where BARA contends declaration will promote a material increase in competition. The identification of relevant markets must be the essential first step in the assessment both of present competition in existing circumstances and likely competition in postulated future circumstances.<sup>1</sup> BARA has nominated the supply of jet fuel, into-plane services (the transfer of jet fuel from the hydrant network into the aircraft), and airline and other jet services at Sydney Airport as the relevant dependent markets.
- Critical review of claims of excessive jet fuel price differentials at Sydney Airport compared to overseas airports. This would involve an examination of the marginal source of jet fuel supply for Sydney Airport, consideration of costs and

<sup>1</sup> 1977 Australian Trade Practices Reports 40-042



economies of scale in oil refining, the cost of shipping transportation, infrastructure costs, and airport charges at Sydney Airport compared with other airports. I would observe that the airport jet fuel differential data used by BARA in its submission is probably not capable of independent verification.

- Consideration of whether the market for jet fuel at Sydney Airport is effectively competitive. This would include critical examination of claims of limited competition between incumbent oil company fuel suppliers at Sydney Airport coupled with insinuations regarding tacit collusion contained in the BARA application, and the relevance of the use of the Herfindahl-Hirschman Index in the BARA application.
- Examination of whether the requirement for a third party to gain access to the Sydney JUHI to also hold an equity stake in the facility is exclusionary and anti-competitive in its intent. This would consider transaction cost rationales for the requirement of users of the facility to hold an equity stake in the Sydney JUHI.

In undertaking this project the Sapere Research Group would require the assistance of BP in seeking further information on shipping transportation costs, aspects of the on-airport costs incurred as part of the jet fuel supply chain, and the provision of into-plane services at Sydney Airport.

I understand that the report needs to be completed before 21 November 2011 as this is the closing date for submissions to the NCC. The total cost for the preparation of this submission is \$27,456.00 inclusive of GST.

If this proposal is acceptable to the BP, please confirm either by e-mail or by phone as I will be able to commence this project shortly. I would be happy to discuss and refine any elements of the suggested approach in order to ensure that the end product meets your needs.

Yours sincerely,



**Dr Alistair Davey**  
Senior Managing Economist