

Maritime Union of Australia

Submission to

Department of Industry

Energy White Paper – Green Paper consultation

7 November, 2014

This response has been prepared and submitted
on the basis that it is a public document.

Submitted by email:
EWP@industry.gov.au

Paddy Crumlin,
National Secretary,
Maritime Union of Australia
365 Sussex St, Level 2,
Sydney, NSW, 2000

For inquiries contact: penny.howard@mua.org.au

Website: www.mua.org.au

1. Introduction

- 1.1. The Maritime Union of Australia (MUA) represents over 15,000 workers in the shipping, stevedoring, port services, offshore oil and gas and diving sectors of the Australian maritime industry.
- 1.2. Members of the MUA work in a range of occupations across all facets of the maritime sector including on coastal cargo vessels (dry bulk cargo, liquid bulk cargo, refrigerated cargo, project cargo, container cargo, general cargo) as well as passenger vessels, towage vessels, salvage vessels, dredges, ferries, cruise ships, recreational dive tourism vessels and in stevedoring and ports. In the offshore oil and gas industry, MUA members work in a variety of occupations on vessels which support offshore oil and gas exploration e.g. on drilling rigs, seismic vessels; in offshore oil and gas construction projects including construction barges, pipe-layers, cable-layers, rock-dumpers, dredges, accommodation vessels, support vessels; and during offshore oil and gas production, on Floating Production Storage and Offtake Tankers (FPSOs), FSOs and support vessels. MUA members work on LNG tankers engaged in international Liquefied Natural Gas (LNG) transportation. The MUA is a member of the International Transport Workers Federation (ITF) which is the peak global union federation for over 700 unions representing over 4.5 million transport and logistics workers worldwide.

2. Summary

- 2.1. This submission demonstrates the risks to Australian fuel security and environmental safety posed by our reliance on international-flag tankers chartered on the spot market for delivery of our liquid fuel supplies. Since 2004, international-flag tankers have been detained 122 times by the Australian Maritime Safety Authority (AMSA) for serious safety issues. The five Australian-crewed and managed tankers operating on long-term contracts have never been detained once in 36 years of service.
- 2.2. The submission also outlines risks to Australian fuel security which have not been considered by government assessments to date, including recent threats made by Al-Qaeda and the risk posed by relying on international-flag tankers for our fuel imports, ships which have no obligation to assist Australia in the event of a fuel emergency.
- 2.3. **This submission recommends: To ensure adequate fuel security, the Australian government should mandate that Australian companies importing fuel to Australia and carrying fuel domestically in Australia only contract Australian-flag ships to carry their cargos. These ships could be partly on the Australian International Shipping Register and partly on the Australian General Register to provide companies additional flexibility.**

3. Energy policy goals and structure of the Green Paper draft

- 3.1. The MUA is concerned that the first objective of the Green Paper draft appears to be 'Attracting energy resources investment', inevitably for export.
- 3.2. We believe that the primary aim of government energy policy should be to ensure that Australians have access to secure and affordable energy supplies. These supplies should be generated with a view to the long-term security of the planet and the impact of climate change on our atmosphere.
- 3.3. There are several critical energy issues which Australia is facing, issues which must be addressed in the next White Paper:
 - The looming gas shortage and price increases in eastern Australia and especially NSW due to a huge increase in gas exports and no gas reservation or pricing policy.¹
 - The diminished fuel security caused by closure of **all** the petroleum refineries in NSW and the ACT. From September 2014 **all** fuel supplies for transport, aviation, industry and mining in NSW and the ACT will depend on international-flag tankers importing fuel to only three ports (Sydney, Port Botany, and Newcastle). One mid-size fuel tanker carries the equivalent of 1,000 truck tankers so replacement supplies cannot be transported from other states in the event of a disruption to these ports or ships.
 - The dramatic 46% decline in Australian fuel reserves since 2009, reserves which have become even more important since our reliance on imports has increased.
 - The significant increases in retail electricity prices, which have increased at a rate four times higher than CPI between 1995 and 2012, and are projected to continue to increase.² Combined with an expected tripling of gas prices in two to three years, this will cause significant cost-of-living pressures on ordinary Australians, as well as Australian manufacturers.
- 3.4. We are disappointed to see that the Green Paper appears to offer no recognition or solution to any of these real energy issues that will affect all Australians. It is frustrating that while the evidence shows that the privatisation and deregulation of the electricity market has led to much higher prices for consumers, the government continues to repeat the same mantra when it comes to liquid fuels and gas supply.
- 3.5. The MUA supports a domestic gas reservation policy for Australia, as outlined in the BIS Shrapnel report *The Economic Impact of LNG Exports on Manufacturing and the Economy – How should we respond to the looming crisis?*, and in the submission of the Australian Workers' Union to this round of consultations.
- 3.6. This remainder of this submission will focus on fuel security and shipping.

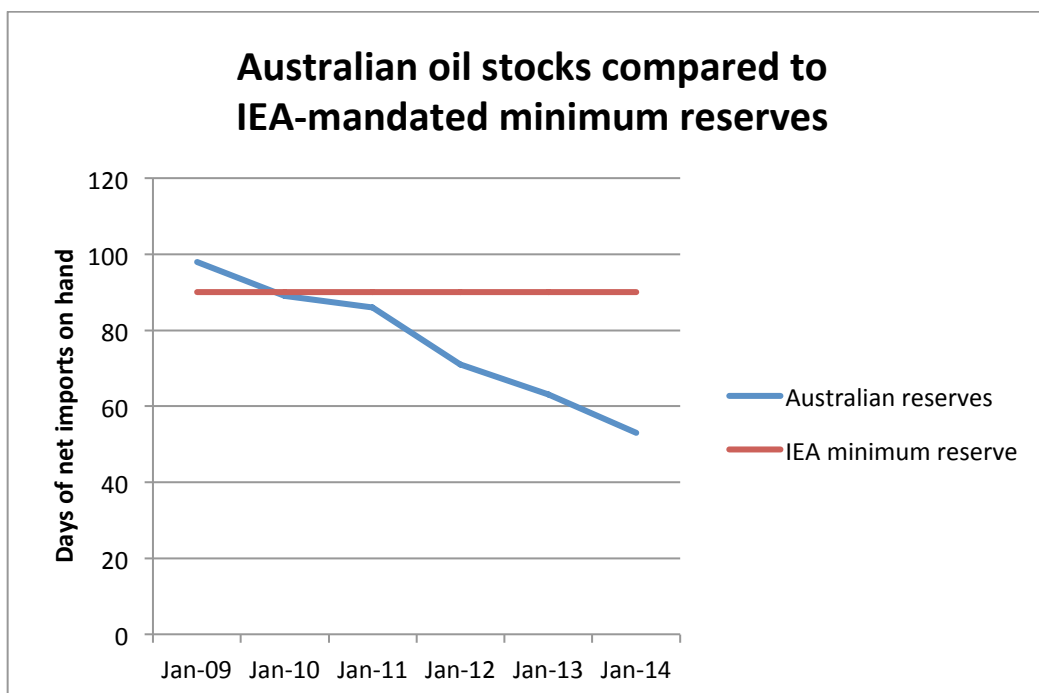
¹ BIS Shrapnel, *The Economic Impact of LNG Exports on Manufacturing and the Economy – How should we respond to the looming crisis?*, September 2014.

² David Richardson, *Electricity and privatisation: What happened to those promises?*, The Australia Institute Technical Brief No. 22, April 2013.

4. Our fuel security is declining

- 4.1. The MUA supports the concerns about fuel security raised by the NRMA in their February 2014 Issues Paper submission, and their November 2014 Green Paper submission. We support their call for a Transport Energy Plan for Australia. We wish to add the following points.
- 4.2. Liquid fuel supply is dependent on the capacity of existing local transport networks and supply chains. The closure of Australian refineries particularly affects NSW and the ACT, where as of September 2014 there are no operational refineries. Ships are now critical to all fuel supplies for transport, aviation, industry and mining in NSW and the ACT. All fuel will depend on international-flag tankers importing fuel to only three ports (Sydney, Port Botany, and Newcastle).
- 4.3. One fuel tanker (MR size) carries the equivalent fuel of 1,000 truck tankers so it is simply not possible to transport replacement supplies by road from refineries in Brisbane or Melbourne in the event of a disruption to these ports or ships.
- 4.4. The precarious nature of Australia's liquid fuel supply is further increased by the dramatic 46% decline in the International Energy Agency (IEA)-recorded Australian fuel reserves since 2009 (Figure 1). Australia has not met the IEA's 90-day minimum of stocks on hand since 2009. In 2009, Australia held 98 days of net imports according to the IEA's method of calculation - far lower than the reserves held by the US, UK, Germany and Japan, but on par with Greece, France, New Zealand, Luxembourg, Spain and Turkey. In 2014, reserves have fallen to only 53 days of net imports, far lower than any other IEA member (the next lowest is Luxembourg at 90 days).

Figure 1: Australian oil stocks on hand in days of net imports, according to the International Energy Agency (Closing Oil Stock Levels in Days of Net Imports).



Source: www.iea.org/netimports/

4.5. However, the IEA method of counting reserves is over-estimates the real quantities of stocks available for use. The Bureau of Resource and Energy Economics says that Australia had 20 days of automotive gasoline, 17 days of diesel, and 18 days of aviation turbine fuel on hand at the end of August 2014.³ The NRMA has made the following estimates of the fuel stocks available for ordinary people:

- 3 days of fuel supplies at petrol stations;
- 3 days of hospital pharmacy supplies;
- 7 days of retail pharmacy supplies;
- 7 days of chilled and frozen foods stocks; and
- 9 days of dry goods stocks.⁴

4.6. The decline in fuel reserves should be of concern given that domestic fuel demand is increasing, while domestic production is decreasing.

4.7. One reason for the declining stock levels may be the restructuring of the Australian fuel companies – not only the closure of refineries, but the entry of new fuel trading companies. The IEA explains that “the Australian government relies on the normal stockholding practices of the domestic oil industry to meet its 90-day net import obligation as a member of the

³ Bureau of Resource and Energy Economics, Australian Petroleum Statistics, Issue no.217, August 2014, Table 7.

⁴ NRMA Motoring & Services Response to the Australian Government Energy White Paper Issues Paper 2014, p.1.

IEA.”⁵ Yet as the domestic oil industry changes, companies may be changing their storage policies and practices. It is a significant risk that the Australian government provide no regulation of these reserves.

5. Shipping is becoming more important to our fuel security, but safety standards are declining

- 5.1. The reduction in domestic refineries, reduction in fuel reserves, increasing fuel use and increasing reliance on just-in-time imports means that Australia’s reliance on shipping for its fuel supplies has increased significantly.
- 5.2. Although Australia has been reliant on imported crude oil for its refineries for a long period of time, the fuel stocks held inside the country were greater at that time and the operation of domestic refineries gave companies more flexibility.
- 5.3. Australian fuel supplies rely on domestic shipping, to re-distribute fuel between land transport hubs, and on international shipping, to import fuel.
- 5.4. Most domestic shipping is carried out by five Australian-crewed tankers on long-term charter to BP, Caltex and Vitol/Viva (previously Shell). These ships are the *Alexander Spirit* and *Hugli Spirit* (Caltex), the *British Loyalty* and *British Fidelity* (BP), and the *Tandara Spirit* (Shell/Vitol). These five tankers carry 4-5 million tonnes of refined product around the Australian coast each year. The direct control that fuel companies have over these tankers offers an important level of flexibility, in both the transportation and temporary storage of refined fuel products.
- 5.5. These five Australian-crewed tankers are scrupulously maintained and have *never* been detained by the Australian Maritime Safety Authority’s (AMSA) Port State Control safety inspections over a combined 36 years of service and 95 ship inspections (Table 1). Australian crews are long-serving seafarers that are multi-skilled with the highest attention to detail and standards of ship maintenance.

⁵ www.iea.org/netimports/

Table 1: Australian-crewed petroleum tankers on long term contracts to Australian oil companies.

	Operating since	Port State Control inspections	Detentions
British Loyalty	2004	32	0
British Fidelity	2004	22	0
Hugli Spirit	2005	15	0
Alexander Spirit	2007	14	0
Tandara Spirit	2008	12	0
Total		95	0

Source: IHS Fairplay ‘Sea-web’ commercial ship database, listing for each ship.

- 5.6. International petroleum imports, and an increasing amount of domestic shipping, are undertaken on international-flag and crewed tankers. In contrast to the excellent record of the Australian-crewed ships, international-flag tankers have been found to have hundreds of deficiencies that are so serious that they are detained an average of 12 times per year by AMSA’s Port State Control safety inspectors (Table 2).
- 5.7. Detentions by AMSA inspectors hold a ship in port until it can demonstrate that the required improvements have been made. They are a harsh measure that AMSA does not undertake lightly. In most cases, ships with deficiencies are given notices to improve and allowed to proceed according to their schedule. AMSA explains that ships are only detained: ‘to ensure that the ship will not sail until it can proceed to sea without presenting a danger to the ship or persons on board, or without presenting an unreasonable threat of harm to the marine environment, whether or not such action will affect the normal schedule of the departure of the ship’.⁶
- 5.8. AMSA further explains that detentions take place when they find ‘serious deterioration of the hull structure, overloading, defective equipment such as lifesaving, radio, and fire-fighting appliances, poor operational practices and poor conditions [which] may cause a ship to be considered as unseaworthy or substandard’.⁷ In 2013, most ships were detained because of deficiencies found in their International Safety Management compliance, fire safety, lifesaving appliances, pollution prevention, and emergency systems.⁸
- 5.9. Since 2004, international-flagged and crewed tankers have been detained by AMSA 122 times, in contrast to no detentions at all for the Australian-crewed tankers (Table 2).

⁶ Australian Maritime Safety Authority, *Port State Control 2010 Report Australia*, p. 18.

⁷ Australian Maritime Safety Authority, *Port State Control 2010 Report Australia*, p. 18.

⁸ Australian Maritime Safety Authority, *Port State Control 2013 Report Australia*, Table 8.

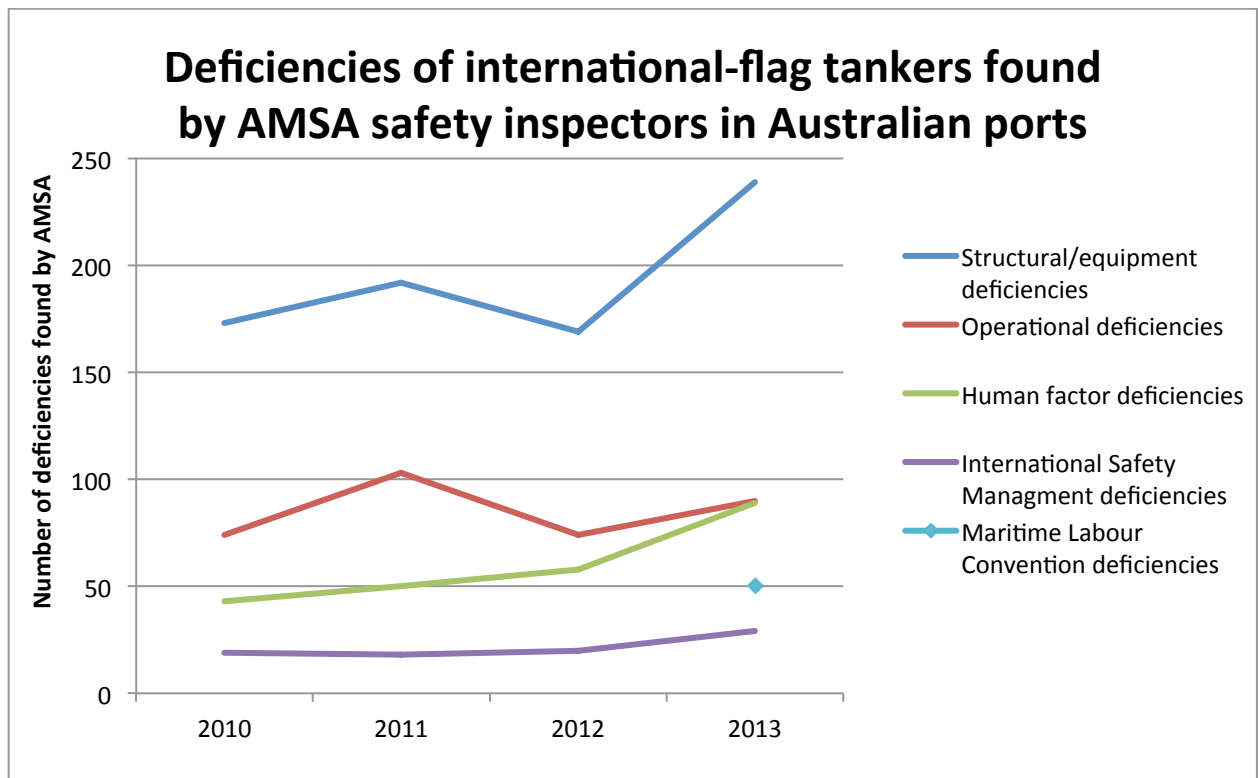
Table 2: AMSA Port State Control detentions of international-flag tankers in Australian ports.

Detentions of international-flag tankers per year	
2004	8
2005	11
2006	7
2007	16
2008	14
2009	13
2010	11
2011	17
2012	12
2013	13
TOTAL	122
AVERAGE PER YEAR	12.2

Source: Australian Maritime Safety Authority, *Port State Control Report 2004-2013*. Table 9 in each annual report. 'Tankers' includes 'chemical tankers', 'oil tankers', 'Noxious Liquid Substance tankers', and 'Tankers not otherwise specified'. All of these types of tankers are engaged in carrying refined petroleum products.

5.10. The total number of deficiencies found by AMSA safety inspectors on international-flag tankers in Australian ports tankers has increased 45% over the past 4 years (not including the new category of 'Maritime Labour Convention deficiencies' added in 2013). There were a total of 497 deficiencies found in 2013, up from 309 in 2010 (Figure 2). There are a particularly high and increasing number of what AMSA describes as 'structural/equipment deficiencies' on tankers visiting Australia.

Figure 2: Deficiencies on international-flag tankers found by AMSA safety inspectors in Australian ports.



Source: Australian Maritime Safety Authority, *Port State Control Report 2010-2013*. Table 7 in each annual report. ‘Tankers’ includes ‘chemical tankers’, ‘oil tankers’, ‘Noxious Liquid Substance tankers’, and ‘Tankers not otherwise specified’. All of these types of tankers are engaged in carrying refined petroleum products.

- 5.11. AMSA reported that international-flag ‘Noxious Liquid Substances Tankers’ (which would include refined product tankers) were the 2nd most likely type of ship to be detained in 2013.
- 5.12. AMSA says that for the international-flag ships ‘the relatively high proportion of detainable deficiencies attributable to the International Safety Management category continues to remain a major cause of concern as it indicates that the management of ships is not as effective as desired’.⁹
- 5.13. The deficiencies that AMSA has identified on international-flag ships are only part of the problem. AMSA was only able to inspect 54% of the international ships that visited Australia in 2013.¹⁰
- 5.14. An increasing quantity of coastal refined petroleum cargos are being carried by international-flag ships with poorer safety records (Table 3). Multinational fuel companies operating in Australia have been reducing their use of Australian crews and Australian-flag ships for cargos loaded and discharges in Australia, despite their excellent safety record. For example, in 2011, Shell removed the Australian crew from the tanker the *Araluen Spirit*, and sold the ship. Shell

⁹ Australian Maritime Safety Authority, *Port State Control 2013 Report Australia*, p. 14.

¹⁰ Australian Maritime Safety Authority, *Port State Control 2013 Report Australia*, p. 3.

continued to import growing volumes of refined fuel, but used international-flagged crews and ships instead.

5.15. Disturbingly, we have information that at least two other multinational oil companies plan to remove the Australian crew from two of the Australian tankers:

- BP wants to remove the Australian crew from the *British Fidelity*, and
- Vitol (a Swiss oil trading company who recently purchased Shell's refinery business in Australia) want to remove the Australian crew from the *Tandara Spirit*.

5.16. There has already been a 47% increase in domestic voyages by international-flag ships and a 67% increase in the tonnage of refined petroleum these ships carry from 2011-12 to 2013 (Table 3).¹¹

Table 3: Increase in international flagged and crewed tankers carrying refined petroleum in domestic trades. These are only voyages loading and discharging in Australia and travelling interstate. These figures do not include intra-state voyages and tankers hopping from port to port delivering international imports.

International-flag ships on domestic voyages carrying refined petroleum	2011-12	2013
Number of domestic voyages	152	223
Tonnes of refined petroleum	1,150,707	1,924,628

Source: 2011-12 figures are from a database of Single Voyage Permits and Continuing Voyage Permits supplied to the MUA by the Department of Infrastructure and Transport. 2013 figures are from an analysis of a Temporary Licence Voyage Reports available at:

www.infrastructure.gov.au/maritime/business/coastal_trading/licencing/voyage_reports.aspx.

5.17. Australia's increasing reliance on international flagged and crewed ships, which have a demonstrably poorer safety record, for domestic petroleum deliveries and international petroleum imports, is an accident waiting to happen.

6. Shipping is becoming more important to our fuel security, but the supply chain is out of our hands

6.1. The Australian Institute of Petroleum (AIP) has been keen to assure the Australian public that the fuel supply chain is secure.¹² However, it must be remembered that the key members of the AIP are the multinational companies such as BP, Shell and Caltex/Chevron that have been closing Australian fuel refineries. The reason these companies have been doing this is that

¹¹ Note that the definition of 'domestic voyage' means that the cargo must be loaded and discharged in Australia. A ship importing an international cargo in multiple ports is considered to be on an international voyage even if it is travelling between Australian ports.

¹² Australian Institute of Petroleum, *Maintaining supply security and reliability for liquid fuels in Australia*.

they can get a greater return on their investments in other areas of their business, such as crude oil exploration and production. They would rather not invest in the maintenance required to retain Australia's refining infrastructure. Companies also say that fuel is produced more cheaply in the Asian mega-refineries than in Australia.

- 6.2. The Australian Institute of Petroleum and a report completed for the Department of Resources, Energy and Tourism (DRET) argue that the international supply chain now required to supply Australia's fuel needs is secure because the stock of fuel on ships gives companies additional flexibility to deal with any potential problems.¹³
- 6.3. The DRET report purported to examine threats to Australia's fuel security, and concluded as follows:

"Two scenarios were developed to consider how the shipping market would respond in a supply chain disruption.

- In the case of domestic refinery disruption, it is likely to be timely product supply rather than ship availability that will impact the resupply options.
- While a scenario can be contemplated which redirects cargoes committed to the Australian supply chain, the practical, commercial, legal and reputational issues associated with such an act would present a significant challenge to a company taking action of that kind.

In reality it is difficult to envisage a scenario in which shipping is not available and historically we cannot point to an event which saw the collapse of the petroleum tanker market. Supply disruption affecting tankers is far more likely to arise as a result of other components in the supply chain (e.g. disruption to liquidity in the banking system, geopolitical events)."¹⁴

- 6.4. However, there are several plausible energy security problems that the DRET report did not consider. These are outlined below.
- 6.5. Previous assessments of energy security argued that the diverse sources of refined petroleum provided security. However, 43% of Australia's imported petroleum came from Singapore in 2013-14 (10,487.6 ML out of the total 24,493.5 ML of refined petroleum imports). Singapore supplies twice as much fuel to Australia as Japan or Korea.¹⁵
- 6.6. It has recently emerged that: 'Al Qaeda has urged jihadists to attack oil tankers in two maritime hotspots that supply Australia with up to 70 per cent of its petrol. In the first issue

¹³ Australian Institute of Petroleum, *Maintaining supply security and reliability for liquid fuels in Australia*, and Hale and Twomey, 2013, *Australia's Maritime Petroleum Supply Chain*, report prepared for the Dept of Resources, Energy and Tourism, 27 June 2013.

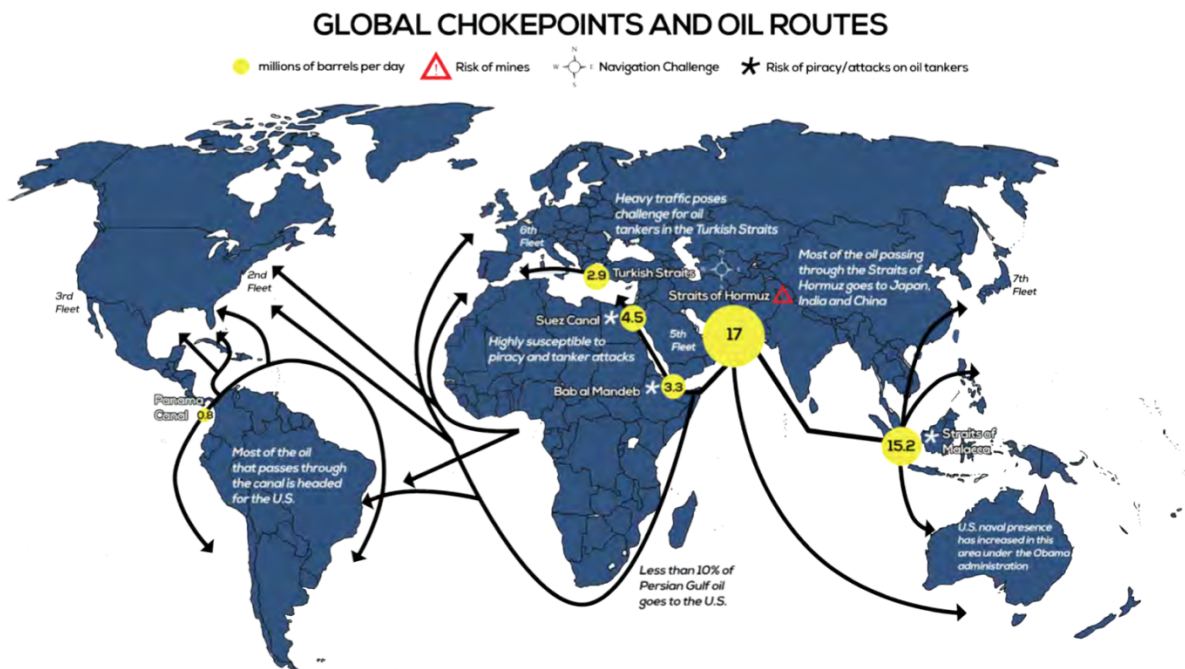
¹⁴ Hale and Twomey, 2013, *Australia's Maritime Petroleum Supply Chain*, report prepared for the Dept of Resources, Energy and Tourism, 27 June 2013, p. i.

¹⁵ Bureau of Resource and Energy Economics, *Australian Petroleum Statistics*, Issue no.217, August 2014, Table 4B.

of its English language propaganda magazine *Resurgence*, the terror group identifies the "energy umbilical cord" sustaining western economies and describes fuel pipelines and shipping lanes as the "Achilles heel of western economies dependent on oil from the Muslim world". The magazine includes a map of shipping "choke points" it says are ripe for sabotage and a diagram of the fuel routes between the Persian Gulf, Singapore and Australia.¹⁶ (Figure 3).

- 6.7. In the event of any security issue in Singapore, the largest source of Australian fuel imports, we could try to source replacement fuel from Japan or Korea. However, it is a longer voyage to Australia from these countries and replacement supplies may not be available.

Figure 3: Diagram of petroleum shipping routes from Al-Qaeda magazine, highlighting vulnerable areas.



- 6.8. The DRET report on the security of Australia's maritime supply chain showed that most imports of refined petroleum are done using the shipping spot market, with the ship contracted to carry the cargo only 2-3 weeks before the cargo is loaded.¹⁷ Tankers operating on the spot market are all international-flag, international-owned and international-managed ships that operate internationally. They shift from one contract to another, and hold multiple contracts in any one year.

- 6.9. In the event of a fuel emergency in Australia, Australian companies and/or the Australian government would need to be able to direct and re-direct ships to the necessary load and

¹⁶ Heath Aston, Al Qaeda threatens Australian fuel supplies, *Sydney Morning Herald*, November 1, 2014.

¹⁷ Hale and Twomey, 2013, *Australia's Maritime Petroleum Supply Chain*, report prepared for the Dept of Resources, Energy and Tourism, 27 June 2013, p. 19, 25.

discharge ports in order to address the emergency. The problem they would encounter is that all the international-flag tankers they use for international imports have no obligation to assist the Australian government or Australian companies, particularly if this meant changing the terms of their contract (which on the spot market, is only for one voyage). These tankers could easily be directed by their owners or managers to fulfil other contracts outside Australia if these owners or managers preferred.

- 6.10. If the nature of the Australian fuel emergency was such that shipowners had to put their ship at some risk to travel to Australia, the international owners and managers of the tankers on the spot market could easily choose to avoid this risk and seek contracts elsewhere. Tankers are multi-million dollars pieces of advanced machinery, and owners are under no obligation to put their investments at risk.
- 6.11. The use of the tanker spot market means that different international-flag ships are used on each voyage to Australia. This means that AMSA's safety inspectors are on a constant treadmill of inspecting a large number of ships that are new to Australian ports, and there is no incentive for ships to consistently improve and maintain ships to the high standards that AMSA expect. One indication of this high turnover of ships is that 89 different international-flag tankers were used on 222 domestic voyages carrying refined petroleum in 2012-13 (Appendix 1).¹⁸ These ships carried just under 2 million tonnes of refined petroleum in 2013, an amount that could be carried on 2-3 dedicated domestic tankers.
- 6.12. The DRET report does not consider the risk of relying completely on a very few fuel import terminals. For example, Caltex say that they supply 40-50% of the NSW and ACT total fuel supply, and from 2014 they will be 'totally reliant' on their berth in Kurnell for the supply of petroleum products. This berth is 'at the hub of Caltex's entire supply chain for NSW and the ACT'.¹⁹ There are only three ports in NSW and the ACT with fuel import berths: Port Botany, Sydney and Newcastle.
- 6.13. Fuel supply in NSW and the ACT in particular is vulnerable to disruption at fuel import terminals as there are no refineries in that state and territory, limited quantities of reserves, high population, high demand for fuels, and significant congestion around port areas.
- 6.14. Fuel contamination is another risk. In July 2014 high-sulfur S77 fuel was supposed to be discharged from a tanker to a fuel terminal in Sydney Harbour on but its recipient, the Australian Navy, refused to accept the fuel because upon testing it was found to be contaminated and suffering from 'Fuel Blockage Tendency'. The S77 fuel was loaded at the Oil Tanking refinery in Singapore called in June 2014.

¹⁸ From analysis of Temporary Licence Voyage Reports available from:

https://www.infrastructure.gov.au/maritime/business/coastal_trading/licencing/voyage_reports.aspx

¹⁹ Caltex, 2013 *Environmental Impact Statement: Kurnell Ports and Berthing Facility, Volume 1*, February 2013, p.2-1.

7. Increasing fuel safety and security through Australian shipping

- 7.1. Australia is more reliant than ever before on shipping for its fuel security. Yet companies are shifting to use international-flag, international-owned, international-managed and international-crewed ships with demonstrably poorer safety records than Australian-crewed and managed tankers (section 5). Australian companies and the Australian government do not have the capacity to take control of and re-direct these tankers in the event of a fuel emergency in Australia. The use of the spot market to charter tankers contributes to the persistently high rates of deficiencies and detentions as it leads to a very high turnover of tankers used for imports to Australia, with no incentive for improvements if the ship is not scheduled to return to Australia.
- 7.2. **Recommendation: To ensure adequate fuel security and environmental protection, the Australian government should mandate that Australian companies importing fuel to Australia and carrying fuel domestically in Australia only contract Australian-flag ships to carry their cargos. These ships could be partly on the Australian International Shipping Register and partly on the Australian General Register to provide companies additional flexibility.**
- 7.3. Using Australian-flag ships would give the Australian government and fuel companies additional flexibility and security by giving them the ability to take control of and re-direct ships in the event of a fuel emergency. It would also ensure the maximum environmental safety and highest standards for ships regularly travelling in Australian waters carrying petroleum products.
- 7.4. Using Australian-flag ships would contribute to the maintenance of a maritime skills base in Australia, which is essential to the continued smooth operation of Australian ports, the maintenance of shipping expertise in Australian import and export companies. This is not a trivial matter as Australian imports and exports on ships using Australian ports was valued at \$406 billion in 2012-13.²⁰ Maritime skills are also important to the protection of the Australian coastal environment.
- 7.5. The contract structure currently used by Australian companies to import petroleum is adaptable to this recommendation. Fuel is purchased 'Free on Board' (FOB), which means that the Australian fuel importer is responsible for arranging the shipping and owns the fuel from the time it is loaded on to the ship.²¹ Australian fuel importing companies could arrange to use Australian-flag ships on long-term contracts to carry this fuel instead of relying on the spot tanker market.

²⁰ Department of Infrastructure and Regional Development, *Australian Sea Freight 2012-13*, p.3.

²¹ Hale and Twomey, 2013, *Australia's Maritime Petroleum Supply Chain*, report prepared for the Dept of Resources, Energy and Tourism, 27 June 2013, p. 18-19

Appendix 1: International flag tankers making domestic refined petroleum voyages in Australia in 2013

International-flag tankers carrying refined petroleum on voyages loading and discharging in Australian ports using a Temporary Licence in 2013. 222 of these voyages were carried out in 2013 on 89 different ships.

These ships would have been chartered by fuel companies to import fuel to Australia, and would carry out domestic voyages opportunistically to complement their primary import voyage. The ships listed represent a sample of all the international-flag tankers importing refined petroleum into Australia.

Table 4: International-flag tankers carrying refined petroleum on domestic Temporary Licence voyages in 2013.

Name of ship	Number of voyages in Australia in 2013
Ocean Autumn	10
Challenge Paragon	9
HIGH COURAGE	9
Unique Fidelity	9
Challenge Plus	8
British Chivalry	7
Eagle Milan	7
Ocean Stellar	7
Iver Excel	6
High Endeavour	5
Iver Express	5
Ocean Summer	5
Turmoil	5
British Integrity	4
British Liberty	4
British Unity	4
Pacific Rainbow	4
Stolt Suisen	4
Value	4
Yayoi Express	4
Advance 2	3
Challenge Polaris	3
Challenge Procyon	3
Doric Pioneer	3
High Prosperity	3
Norca	3
Unique Developer	3
Ardmore Seafarer	2
Atlantic Eagle	2
British Tenacity	2

Caribbean Spirit	2
Chembulk Wellington	2
Dai Nam	2
Eships Maya	2
HAI CHI	2
Maersk Miyajima	2
Maple Express	2
Mearsk Miyajima	2
Ocean Globe	2
Ocean Mars	2
Ocean Sunrise	2
Orient Star	2
Pro Emerald	2
Stolt Rindo	2
Sunda Sea	2
Ye Chi	2
Alice	1
AXIOS	1
Barent Sea	1
British Curlew	1
British Security	1
Britto	1
Castor Voyager	1
Challegne Plus	1
Challegne Premier	1
CHANG HANG GUANG RONG	1
Chang Hang Tan Suo	1
CHANG HANG XING YUN	1
Citron	1
DL SUNFLOWER	1
Framura	1
Gan Tribute	1
Gan Triumph	1
Golden Accord	1
Golden Tiffany	1
He Chi	1
High Glow	1
High Valor	1
HONGBO	1
KWK Esteem	1
Maria Princess	1
Noble Express	1
Nord Optimisor	1
OCEAN MOONBEAM	1

Ocean Spring	1
Petrolimex	1
Pro Jade	1
Pro Sapphire	1
Ratna Namrata	1
Sapporo Princes	1
Seachance	1
Star Bird	1
Stavanger Blossom	1
Stolt Azami	1
Stolt Sakura	1
STX ACE 10	1
Torm Almena	1
Wei Chi	1
Zhu Jiang	1
TOTAL	222

Source: https://www.infrastructure.gov.au/maritime/business/coastal_trading/licencing/voyage_reports.aspx