



Australian Government

Department of Climate Change, Energy,
the Environment and Water

Regulation Impact Statement (RIS) Addendum – Minimum Stockholding Obligation

Securing Australia's Domestic Fuel Stocks and Refining
Capacity

November 2022

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Executive Summary

The Minimum Stockholding Obligation (MSO) will quickly provide a positive financial impact to the national economy in the event of a major disruption to fuel supplies, with the benefits outweighing the expected relatively smaller costs.

The MSO scheme is equivalent to comprehensive insurance. In the same way as asset owners insure their property against hazards, it involves a small ongoing cost to deliver adequate mitigation, providing resilience in instances where unpredictable events occur.

The MSO aims to provide certainty of fuel stocks and confidence to fuel users and government about our resilience to potential supply disruptions. It delivers a level of assurance that when a significant disruption occurs, there is sufficient fuel stock in place to keep Australia and the economy going for longer.

The net benefits of the scheme can be derived through determining the anticipated benefits of the scheme during a hypothetical major disruption, and comparing them to estimated costs of industry compliance.

Background

On 26 May 2021, the Australian Government published a Regulation Impact Statement (RIS) in relation to Australia's Fuel Security Package and the *Fuel Security Act 2021* (the Act). This RIS addendum provides additional information and analysis on one measure of the Act, the MSO.

While the Act introduces the legislative framework for the MSO, the *Fuel Security (MSO) Rules 2022* (the Rules) provide further detailed policy settings related to the scheme.

The MSO is an important fuel security measure that will protect fuel consumers and the Australian economy by delivering a domestic fuel stockholding, improving Australia's capability to respond to significant liquid fuel supply disruptions. The MSO has been specifically designed to safeguard minimum levels of key transport fuels to ensure the Australian economy is able to keep moving in the face of international or local supply issues.

The MSO adds an extra 'tool' to the Australian Government's emergency response options and gives greater oversight of actual fuel stock levels. This transparency is key in the lead up to and during an emergency situation. The fuel stocks established by the MSO can be relied upon in times of supply disruption, emergencies, and if fuel demand unexpectedly increases. It will provide certainty to fuel consumers and governments as to sovereign resilience and fuel availability. Setting a fuel stockholding obligation is a common international practice.

As outlined in the main RIS in relation to the Act, liquid fuel security is about making sure Australia has the fuel it needs to meet its economic, environmental, social and national security objectives. For many Australians, fuel security means having the confidence there will be enough fuel for their journey to work, and ensuring businesses large and small can keep running day to day. It also means knowing when things go wrong, there is a plan in place to keep Australia moving.

This addendum sets out the key policy settings, outlines engagement with fuel industry in the development of the policy, and estimates and assesses the regulatory costs and benefits of the MSO to the Australian economy.

Modelling supporting the addendum draws from various sources, including departmental data and data provided by industry through formal reporting mechanisms and consultations.

About the MSO policy

Affected entities

The scheme requires Australia’s largest fuel importers and refiners to maintain a certain level of key transport fuels comprising gasoline (petrol), kerosene (jet fuel) and diesel. Additionally, from mid-2024, a 40 per cent increase in diesel stockholdings will be required for importers.

The MSO introduces an ongoing regulatory requirement on Australia’s most significant fuel market entities—the entities who are currently responsible for supplying approximately 98 per cent of all imported and refined MSO products in each of the key transport fuel categories into the Australian market.

An entity will be subject to a MSO once its annual volumes (in megalitres (ML)), either importing or refining, exceed a threshold level (for each product) prescribed in the Rules. Threshold levels are set to ensure only entities in a position to meaningfully contribute to domestic fuel security are regulated, reduce regulatory burden on smaller entities, and ensure competition in the market is maintained. With this in mind, the threshold levels will be monitored closely and can be adjusted in the future to maintain the 98 per cent principle in order to reflect a changing fuel market and evolving security context.

How the MSO is calculated

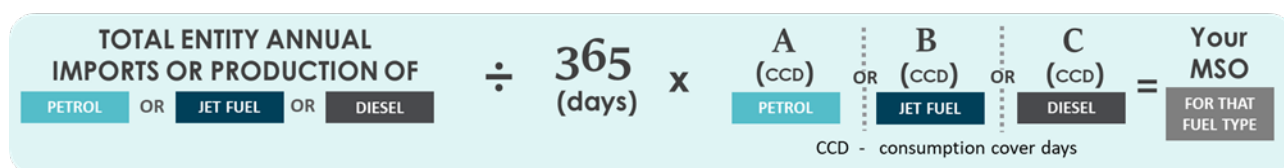
Each entity will have a fuel specific obligation, determined in reference to two factors:

1. the national Consumption Cover Day (CCD) target set by the Minister for Climate Change and Energy (the Minister)
2. their importing/production volumes from the previous calendar year.

CCDs are an indicator of how long fuels would last under normal demand if all refining and import activity were to stop. The CCD metric is based on historical fuel consumption/supply and is easily relatable to maintaining fuel supply security.

Figure 1 below represents how the MSO is calculated, which is based on an entity's total imports and/or production divided by 365, then multiplied by the CCD set by the Minister for each fuel type.

Figure 1: MSO formula



Obligation day

Under the Act, the MSO quantity of a fuel required to be held by an entity must be confirmed on an ‘obligation day’. While it is possible for regulated entities to hold less than the required quantity of stock at other times, the minimum stock level must be held and recorded on this day. The obligation day frequency (explained below) is important in ensuring the national baseline is maintained in the event of a disruption, and does not enable significant periods of time where holdings could fall below the expected minimum holdings.

Stocks able to be counted towards the MSO

When recording stockholdings on an obligation day, holdings must be stored under defined parameters. MSO products are considered as stockholdings if they are:

- stored at a refinery, import terminal or inland storage facility
- held on incoming vessels moored at/just outside port or within coastal shipping
- held on incoming vessels entering Australia's exclusive economic zone (EEZ), which may temporarily exit Australia's EEZ while on route to an Australian port
- outside an entity's direct control, but held by another entity under a legally enforceable arrangement
- within pipelines where the fuel can be extracted if required.

The ability to count crude is limited to stockholdings at a refinery.

Consultation on the MSO policy

The Department has engaged with the fuel industry and representative bodies on the MSO policy and design on a regular basis. The key inputs and assumptions underlying this RIS addendum, were also subject to industry consultation to confirm their appropriateness.

Following the introduction of the Act, entities likely to be subject to the MSO were provided an opportunity to review and comment on key policy elements to be determined by the Rules.

All affected stakeholder entities and representative bodies engaged, provided written and/or verbal submissions on the key policy elements.

The Department also held ongoing regular discussions with the fuel industry throughout the policy development cycle.

On 31 January 2022, a public exposure period on the draft Rules commenced for industry, consumers and state and territory governments to consider the proposed policy settings in their entirety. Public consultation was held for four weeks, concluding on 28 February 2022. Extensions were provided where stakeholders requested additional time.

On 8 August 2022, affected stakeholders were provided the opportunity to comment on the key assumptions and inputs for the modelling of the RIS addendum. Views on an appropriate commencement date for the scheme were also sought.

Comments received through the consultation stages have informed the inputs for the RIS addendum's financial modelling and the MSO Rules.

Industry feedback on policy settings

The majority of industry feedback related to a number of common themes. In general, industry comments sought to:

- minimise regulatory burden where possible
- seek sufficient flexibility in stockholding options to reduce impact on current operations
- ensure existing competitive balance within the market is maintained.

Within these themes, the main policy settings of interest were the:

- threshold levels for each fuel type

- frequency of the obligation day
- level of the national CCDs target
- stocks able to be counted toward the obligation (i.e. EEZ inclusion, stocks stored in pipelines)
- depth and maturity of the intermediary trading market.

Response to industry feedback and changes

In a number of instances industry feedback led directly to changes to the draft policy settings (see Appendix A, B and C).

A key takeaway from industry consultation was the concern of differential impacts to entities. As such, recommendations from industry to address some of their concerns were often in conflict with each other. Differing views of entities stemmed from variations in business models, storage infrastructure and its availability, and contractual arrangements with clients, amongst other matters.

Given the variations in perspectives from across industry, the final settings are designed to deliver a balanced policy position, delivering on the fuel security objectives and ensuring competition impacts are minimised.

The key mechanisms to respond to industry concerns include transitional arrangements, which have been built into the settings. These arrangements are designed to reduce regulatory burden, allow time to adapt to the new scheme as necessary and assist industry to comply with an eased burden through the MSO's infancy.

Key elements of the MSO policy settings and Rules

Transitional settings applicable from commencement until 30 June 2024 include:

- a fortnightly obligation day (Section 15)
- the CCD for importers and refiners: required to hold stocks of at least 24, 24, and 20 days of gasoline, kerosene and diesel, respectively.
- EEZ stocks allowed to be counted toward MSO for imported product (excluding crude or condensate), without an increase to CCDs. (Section 9)

Note: other application based transitional provisions have also been incorporated into the Rules and are available until 30 June 2025.

From 1 July 2024, the key ongoing settings will include:

- a weekly obligation day. (Section 15)
- the CCD (importers): required to hold stocks of at least 27, 27, and 32 days of gasoline, kerosene and diesel respectively. This includes:
 - an additional 3 CCDs for gasoline and kerosene accounting for stocks held in the EEZ
 - an additional 12 CCDs for diesel comprising 8 CCDs as a 40 per cent uplift in stocks plus 4 CCDs accounting for stocks held in the EEZ.
- the CCD (refiners): required to hold stocks of at least 24, 24, and 20 days of gasoline, kerosene and diesel respectively.
- EEZ stocks allowed to be counted toward MSO for imported product (excluding crude or condensate). (Section 9)
- thresholds for affected entities remain at 200 ML, 250 ML and 250 ML gasoline, kerosene and diesel respectively. (Subsection 17(1))

Table 1: National Consumption Cover Day (CCD) target set by the Minister

MSO Activity and MSO Product	CCD (1 July 2023 to 30 June 2024)	CCD (from 1 July 2024)
Importing—gasoline	24	27
Importing—kerosene	24	27
Importing—diesel	20	32
Refining—gasoline	24	24
Refining—kerosene	24	24
Refining—diesel	20	20

National benefits of the MSO scheme

Australia’s diversified supply chain provides an effective buffer in the case of minor disruptions to fuel supplies. However, due to a largely demand driven importing model, fuel companies generally operate on a ‘just-in-time’ basis and do not hold sufficient stocks to cover moderate to severe disruption events. This places fuel users at risk of facing fuel restrictions and significant price disruptions during major stock interruptions.

Australia imports around 90 per cent of its fuel products. As a result, we are a price taker in the international fuel market. Refined product prices experienced at the bowser are linked to import parity pricing. During supply disruptions, Australia’s position as a price taker will remain. Additional stockholding through the MSO will simply ensure access to fuel lasts longer in instances where demand outweighs supply.

The MSO will ensure adequate levels of stocks are held in Australia. The availability of all the major transport fuels underpins our economy, including road and rail freight, mining and agriculture. A major supply disruption would have significant economic implications.

Providing additional days of coverage affords a significant financial benefit via avoidance of future loss to the economy, should a significant disruption occur. Temporary interruptions to supply can result in significant losses, the MSO will protect industries reliant on liquid fuels including agricultural, manufacturing, transport and emergency service sectors.

Australia’s state and territory governments have constitutional responsibility for planning and co-ordinating the response to fuel shortages within their territorial boundaries and have appropriate legislation and associated response plans in place to manage such emergencies.

In the event of an actual or likely fuel shortage with national implications, the *Liquid Fuel Emergency Act 1984* (LFE Act) enables the Government to take management action in the event of a national emergency. This includes suspending the MSO at a request of a state Energy Minister.

Approach to determining the financial benefit of the MSO

The benefits of the MSO will arise in a disruption event, where demand outpaces supply. To determine the financial benefits attributable to the MSO, a plausible non-specific major fuel supply disruption on a national level is envisaged as a reference case in two scenarios:

1. the first reference case assumes the MSO is not in place.
2. the same event is then modelled assuming the MSO is in place, where the impact of the event or events are ameliorated by additional fuel held by the MSO being released into the market.

The value of the additional number of days' supply (demonstrated in the second scenario) is an indicator of the economic benefit of the MSO. The benefits are quantified as the expected avoidance loss in real GDP.

A non-specific supply disruption on a national level is used. Due to the nature of our reliance on imports, disruptions can arise from a number of international or domestic sources affecting supply, whether environmental, geopolitical, demand driven, etc.

Economic impacts are non-linear

The economic impact of a supply disruption is non-linear with respect to the magnitude of the reduction and duration of the event. That is, a disruption event that reduces consumption by 25 per cent instead of 50 per cent will have less than half of the daily economic impact.

Assumptions of a reference disruption event

Several assumptions have been applied in the modelling, including:

- the event occurs in the near future (2027 has been assumed for modelling purposes)
- the production and/or import of product are restricted for a period of time due to some event that causes a disruption in supplies to Australian consumers
- liquid fuel supply to essential services, agriculture and mining will continue
- private household use of diesel will be disproportionately curtailed as with all other non-critical industries
- the nature of the event is such that the Minister directs a suspension of the MSO under the Act and allows stocks to be drawn down for a period of time to meet product demand
- the event lasts longer than can be supplied from pre-MSO BAU stocks.

Detailed formulations of the disruption were prepared, and price effects estimated using current oil prices and exchange rates.

Outcomes of modelled supply restrictions

Due to the various uncertainties of the magnitude of a potential disruption, elasticities between 20 per cent and 50 per cent were modelled for diesel at a normal consumption rate. Diesel is used as the main transport fuel as it is the fuel most affected by the MSO, with petrol and jet fuel levels less affected.

The model estimates the benefit per additional day of consumption cover (expected avoidance of loss in GDP) ranges between:

- \$232.0 million a day, based on a 20 per cent supply disruption to diesel
- \$305.5 million a day, based on 25 per cent supply disruption to diesel

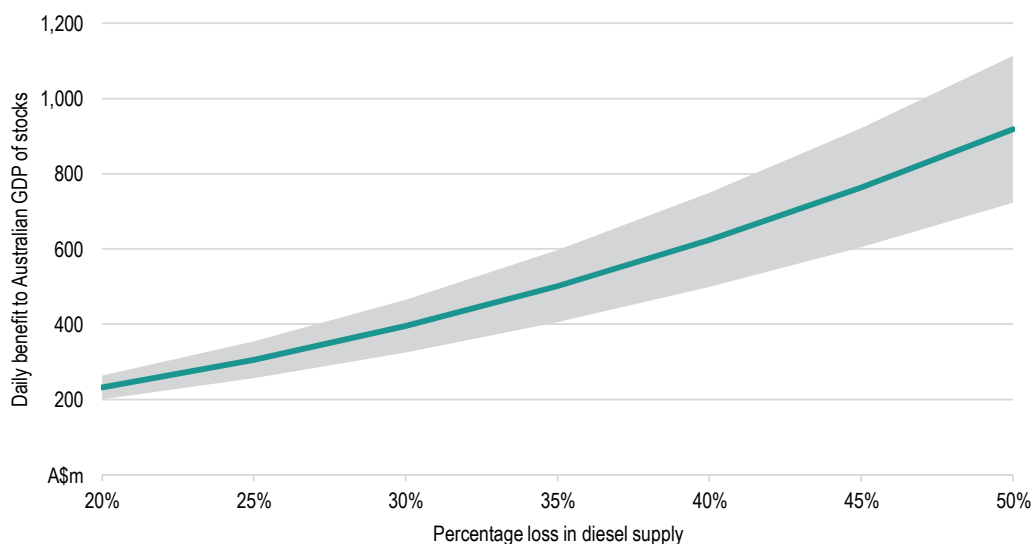
- \$918.2 million a day, based on a 50 per cent supply disruption to diesel.

In CCD terms, the MSO will permit Australians to continue to consume diesel for:

- an additional ~43 days of normal consumption in the event of a 20 per cent supply disruption beyond which could be accommodated from industry’s stocks without the MSO. Total value to the economy of \$9.9b.
- an additional ~34 days of normal consumption in the event of a 25 per cent supply disruption beyond which could be accommodated from industry’s stocks without the MSO. Total value to the economy of \$10.4b.
- an additional ~17 days of normal consumption in the event of a 50 per cent supply disruption beyond which could be accommodated from industry’s stocks without the MSO. Total value to the economy of \$15.6b.

Figure 2 below shows the results of the modelled supply reductions. The solid line is a fitted curve to the results of various simulations, with the greyed area around the solid line representing the range of outcomes based on changes to the assumptions.

Figure 2: Daily economic benefit associated with holding stocks to cover various losses in diesel supply (estimated impact based on 2027 projected diesel consumption and economy)



The results show there is significant benefit to the economy of holding stocks to cover temporary losses in fuel supply. This is because temporary interruptions to supply can result in significant costs, including to importers and refiners themselves.

Breakeven analysis

In light of the number of variables of possible major disruption scenarios, a breakeven analysis has been conducted to identify the disruption points at which the MSO will provide a net benefit to the Australian economy.

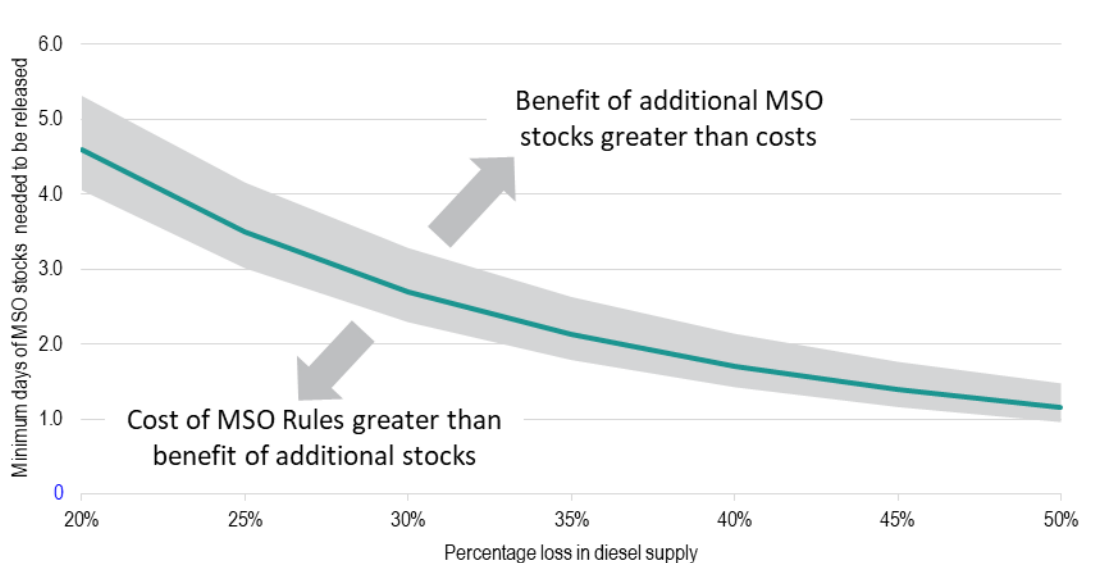
This breakeven analysis provides an estimate of the severity of events where Australians will see a net benefit of the MSO out to 2040.

In the case of a 25 per cent supply disruption, the benefit of one day of additional stockholdings is estimated to be \$305.5 million. Taking the estimated total cost of complying with the MSO of

\$1066.9 million, this implies if the supply interruption lasts for more than 3.5 days beyond pre-MSO BAU levels (i.e. \$1066.9 divided by \$305.5), then the benefits of holding the additional days of stocks (achieved through the MSO) will outweigh the costs.

As a further example, taking the estimated total cost of complying with the MSO, and comparing it to the daily economic benefits presented in Figure 2, it is possible to calculate the minimum number of days of MSO stocks (the additional stocks held compared to the BAU), needed to be released for the total costs to equal the total benefits across the range of supply interruptions modelled. This is presented in Figure 3 below.

Figure 3: Breakeven analysis of minimum number of days of MSO stocks needed to be released to cover the cost of complying with the MSO Rules (2023–2040)



Considering the likelihood of disruptions in supplies

A key consideration in assessing the benefits of the MSO policy is the likelihood of a major disruption event in the future that requires the established stockholding to support a managed fuel release.

In analysing the benefits of the MSO, it could be considered akin to a type of ‘comprehensive insurance’ covering a range of circumstances. The MSO puts arrangements in place to prepare for a situation, whether it be known or unknown to reduce the economic and social impact should an event (or culmination of events) occur.

Global supply shocks

History has demonstrated major fuel events do occur globally, and Australia is not immune from future disruptions. Events including natural disasters, geopolitical conflicts, and interruptions to global shipping can cause disruptions to the international fuel market.

Australia’s fuel security has relied on the diversity of import supply chains and the availability of sufficient production capacity internationally to manage supply shocks when they occur. With Australia reliant on imports to support demand for fuels, it remains susceptible to global fuel crises, either as one-off events or as an occurrence of simultaneous conflating events.

Over the past 50 years, there have been a number of incidents in oil markets that have affected the availability of global oil supplies. These include the:

- first oil crisis: Arab-Israeli War and repudiation of agreements, 1973-74
- second oil crisis: Iranian revolution and Iran-Iraq war, 1979-80
- withdrawal of Saudi Arabian support for oil price, 1985-86
- first Gulf war: Iraq's invasion of Kuwait, 1990-91
- Venezuelan oil supply disruption and invasion of Iraq (second Gulf war), 2002-03
- multiple oil shocks, 2003-14 including
 - loss of 1.5 million barrels per day which was 25 per cent of then US crude oil production with Hurricanes Katrina and Rita in 2002¹
 - diesel shortfall in Victoria in 2012 from refinery problems
- 50 per cent cut in production from Saudi Arabia after a drone attack in 2019
- oil price war between Russia and Saudi Arabia (2020)
- Suez Canal obstruction (2021).

Hurricane Katrina significantly affected global fuel prices and supply chains. In a study undertaken shortly after Katrina, it was estimated there is a 4-7 per cent chance of a hurricane of that magnitude or greater occurring in any year along the US Gulf Coast and east coast respectively.²

The Russia-Ukraine conflict has had an effect on international oil prices, rather than impacting Australian supply chains.

While such events don't always cause a shutdown or a disruption to Australian industry, it is one indicator of the probability of potential disruptions to oil supplies and its uncertainty.

Growing complexity in potential disruption events

More recently, the COVID-19 pandemic has had implications for the global oil market and for supply chains. In 2020 this led the IEA to categorise the threat to the entire supply chain of oil refining, freight and storage as one of the most ferocious shocks to occur in the global oil market.

While the latest outlook is more favourable, the experience with responses to the COVID-19 pandemic has exposed the importance of preparedness to support unforeseen fragility within supply chains, and the growing probability of disruption events occurring.

Due to the growing interconnectedness of the global fuel market, it is becoming more and more difficult to predict the likelihood, origin or trigger of a major disruption in oil and liquid fuel supplies. However, given Australia's strong reliance on imported fuel products, the current geopolitical climate and a history of global fuel disruption events, it is reasonable to expect and prepare for an event of significant magnitude in the near future.

Benefits conclusion

It is the Government's role to ensure resilience to potential supply disruptions and to protect consumers and the economy. The MSO will bring with it a net benefit, through increased and prolonged resilience to a wider range of disruption events that will outweigh costs when a major event occurs.

¹ Energy Information Administration, Data, <https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=mcrfps2&f=maccessed> 13 February 2022

² Elesner et al, Hurricane Katrina Return Period, Geophysical Research Letters, Vol 33, April 2006

The outcomes of the breakeven modelling conclude a supply disruption of 25 per cent only requires the drawdown of at least 3.5 days' worth (i.e. \$1,066.9 million divided by \$305.5 million) of the additional stocks held due to the MSO to deliver a net benefit out to 2040.

Similarly, a supply disruption of 50 per cent requires a drawdown of only 1.2 days' worth (i.e. \$1,066.9 million divided by \$918.2 million) of the additional stocks held due to the MSO for the benefits to outweigh the costs.

A greater frequency or magnitude of drawdowns will result in the benefits of the MSO significantly outweighing the costs.

Modelling does not include the additional benefits that may arise to business confidence from an increased reliability of fuel supply. These benefits persist regardless of an event occurring or not.

Cost impacts

This section provides an analysis of the estimated costs to potential affected entities resulting from the MSO.

The estimated cost of the MSO has been formulated by identifying likely additional regulatory, capital, and operating costs necessary for industry wide compliance. These costs are then compared to projected equivalent costs without the MSO.

The additional capital costs are expected to be comprised of the purchasing and holding of additional stocks where required, and the cost of increasing storage capacity if required. Additional regulatory costs are also expected, due to the nature of increasing reporting and measuring requirements.

The cost impacts are based on historical data and demand projections to 2040 and do not reflect those of a specific entity, but rather the average total costs expected.

In conducting this analysis, care has been taken to appropriately reflect the cost of the MSO settings on entities based on:

- historical imports or production of gasoline, kerosene and diesel
- a projection of their future sales, based on each entity's historical market share
- future oil price assumptions
- current available estimated total storage capacity by product (including storage of crude, condensate and unfinished products for refiners)
- anticipated construction of new storage capacity (including storage capacity currently or expected to be built under the Australian Government's *Boosting Australia's Diesel Storage Program* (BADSP)).
- historically observed pattern of drawing down and refilling stocks based on market conditions
- the ability for importers to count stocks of product stored on vessels within Australia's EEZ
- the ability for refiners to count the volume able to be produced from crude and unfinished products held in storage at the refinery
- the ability for entities that are both a refiner and an importer to acquit stocks across both to meet their obligations
- the ability of entities to trade stocks through a functioning intermediary market to meet their obligations

- the cost of entities building additional storage capacity and purchasing and holding additional stocks of product to meet their obligations.

Elements not included in the cost analysis are:

- stocks held within pipelines – not considered material in volume
- storage capacity operated by entities without an MSO
- potential costs associated with the loss of flexibility by affected entities to manage their stockholdings below their MSO.

MSO total costs

The projected total cost to MSO entities for each product are presented in Table 2 below.

While Net Present Value (NPV) results are presented for a range of discount rates, when considering the results of the analysis, NPV figures of 7 per cent have been used for cost to the consumers.

Over the period to 2040, the MSO settings are expected to add total costs of:

- \$136.8 million (with an NPV7 of \$74.6 million) to **gasoline** importers and refiners
- \$219.1 million (with an NPV7 of \$140.5 million) to **kerosene** importers and refiners
- \$711.1 million (with an NPV7 of \$562.9 million) to **diesel** importers and refiners.

Capital costs

At a national level, no additional product storage is expected to be required across the total group of MSO entities. A large part of this is due to the availability of storage industry-wide and the additional storage capacity being built under the BADSP. Storage availability is anticipated industry-wide through the expectation of a functioning intermediary market, and the flexibility borne by the ability to count stocks held on vessels within the EEZ.

In some cases, affected importers and refiners are likely to be required to increase the stocks of kerosene and diesel product they hold to ensure compliance with their respective MSO (business-as-usual stocks of gasoline are likely to be sufficient to meet their MSO).

Over the period to 2040, it is expected the group of affected importers and refiners will be required to purchase an additional:

- \$102.7 million of **kerosene** (with a NPV7 of \$78.8 million) over 17 years to 2040.
- \$519.8 million of **diesel** (with a NPV7 of \$460.4 million) over 17 years to 2040.

Additional operating costs associated with the holding of additional stocks have also been assumed.

Operating and regulatory costs

Regulatory costs (associated with undertaking set-up and ongoing reporting, auditing, etc.) will depend on the number of affected entities by product.

For this analysis, the same unit costs have been assumed to be incurred irrespective of the number of products any individual entity has to comply with. In total, additional operating and regulatory costs over the period to 2040 are expected to be:

- \$136.8 million for **gasoline** (with a NPV7 of \$76.9 million) over 17 years to 2040
- \$116.4million for **kerosene** (with a NPV7 of \$40.7 million) over 17 years to 2040
- \$191.3 million for **diesel** (with a NPV7 of \$102.5 million) over 17 years to 2040.

Table 2: Estimated cost of the MSO Rules by product (industry wide)

	Total (2023-2040)	NPV3	NPV7	NPV10
	Real A\$m	Real A\$m	Real A\$m	Real A\$m
Gasoline				
Capital costs – storage	0	0	0	0
Capital costs – product stock	0	0	0	0
Operating costs	0	0	0	0
Regulatory costs	136.8	103.6	74.6	60.0
Total gasoline	136.8	103.6	74.6	60.0
Kerosene				
Capital costs – storage	0	0	0	0
Capital costs – product stock	102.7	92.0	78.8	70.0
Operating costs	0	0	0	0
Regulatory costs	116.4	87.1	61.7	49.1
Total kerosene	219.1	179.1	140.5	119.1
Diesel				
Capital costs – storage	0	0	0	0
Capital costs – product stock	519.8	497.8	460.4	430.8
Operating costs	0	0	0	0
Regulatory costs	191.3	143.7	102.5	81.9
Total diesel	711.1	641.5	562.9	512.8
Total all fuels	1,066.9	924.2	778.0	692.0

Notes: All years are financial years ending June 30. All dollar values are in real 2022 terms. Figures are rounded.

Cost to consumer

As outlined above, the MSO will mean some costs to industry. It is anticipated any additional financial cost to affected entities resulting from industry compliance with the MSO will be passed on to the consumer, ultimately impacting price at the bowser. In estimating the pass-through, operating costs have been passed through in the year they are incurred, while capital expenses have been assumed to be amortised over a period of 20 years with a real rate of return on capital assumed to be 7 per cent a year. GST of 10 per cent has been added.

The average consumer price increase over the period to 2040 due to the MSO (including GST) is estimated to be:

- 0.0015 \$/litre (or 0.15 c/litre weighted average of all fuels).

Functioning intermediary market

What is the intermediary market?

To ease the burden of MSO compliance, the Act establishes an intermediary (or secondary trading) market for stocks outside of an entity's direct control to be counted toward their MSO. (See Subsection 23(c) and Subsection 24(c) of the Act).

Flexibility in meeting the MSO through third party arrangements will provide opportunity for companies to minimise compliance costs (mostly through reducing the need for capital costs such as additional storage) and/or adjust the size and location of their fuel stocks.

The intermediary market will be industry led and not be heavily regulated in the first instance. Industry is considered best placed to establish and manage these arrangements through innovation and flexibility without additional costs imposed by market regulation.

An intermediary market for a stockholding obligation, is a common approach in overseas fuel markets, with several OECD countries like the United Kingdom and Sweden implementing an intermediary market scheme to balance surpluses and shortfalls in a regulated entity's MSO.

A number of international arms of Australian fuel stakeholders will have significant experience with similar intermediary market schemes.

Cost implications of a functioning intermediary market

The modelling suggests that where shortfalls arise, entities will be able to meet their obligations through the use of an efficiently operating intermediary market.

The regulatory costs of utilising the intermediary market to meet an entity's MSO are expected to be significantly lower than capital costs of building additional storage, de-optimising shipping cycles or holding additional stock.

It is assumed each entity will rationally choose the lowest cost option if they have insufficient stocks to meet the MSO on an obligation day. That option will be to rely on the intermediary market.

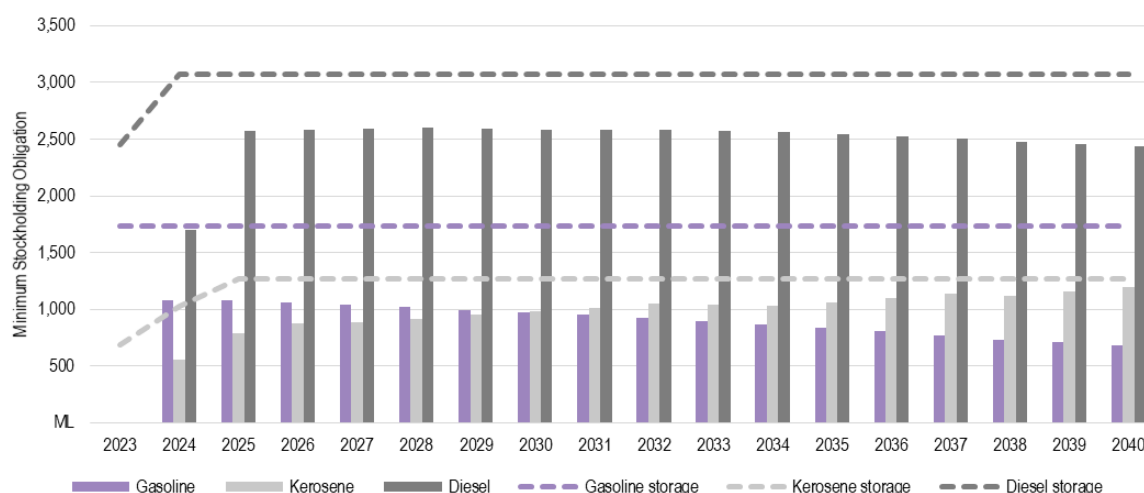
The MSO's transitional arrangements ensure significant surplus stocks are available for 'trading' through the market in the scheme's infancy. Arrangements will allow time for the market to mature and operate effectively. But also provides governments an opportunity to monitor and evaluate its effectiveness.

As such, the costs reflect a functioning intermediary market.

Depth of the intermediary market

Forecasts on storage capacity, stockholdings and projected MSO figures modelled for this analysis show there will be sufficient storage and stockholding available in the intermediary market with adequate participation. (see Figure 4 below).

Figure 4: Forecast aggregate industry position against projected demand



Source: ACIL Allen estimates based on data provided by the Department

Sensitivity analysis

Throughout the development of the policy and this assessment, various sensitivity analysis were undertaken about various costs and alternatives to the MSO Rules.

This section presents the impacts on costs of two meaningful alternatives considered:

1. removal of transitional arrangements for CCDs and obligation day in the period to 1 July 2024.
2. capping the ability for importers to count stocks of product stored on vessels within the EEZ boundary to no more than 4, 3 and 3 days of an entities required minimum consumption cover for diesel, gasoline and kerosene, respectively.

A summary of the cumulative costs under these two alternatives to the MSO settings is shown in Table 5 below. Compared to the costs of the final settings, removing transitional arrangements would increase the costs of the MSO for:

- **gasoline** by \$3.4 million, or an increase in costs of around 5 per cent
- **kerosene** by \$2.3 million, or an increase in costs of around 2 per cent
- **diesel** by \$31.8 million, or an increase in costs of around 6 per cent.

In contrast, capping the ability for importers to count stocks of product stored on vessels within the EEZ would increase the cost of the rules by:

- \$152.4 million in costs to **kerosene**, or an increase of 59 per cent.
- \$149.9 million in costs to **diesel**, or an increase in costs of 24 per cent.
- \$0 in cost to **gasoline** as their business-as-usual stocks of gasoline are likely to be sufficient to meet their MSO.

Table 3: Sensitivity analysis of two key changes to the MSO Rules

	MSO Rules		Without transitional arrangements		With capped allowance of EEZ stocks	
	Total (2023-2040)	NPV7	Total (2023-2040)	NPV7	Total (2023-2040)	NPV7
	Real A\$m	Real A\$m	Real A\$m	Real A\$m	Real A\$m	Real A\$m
Gasoline						
Capital costs – storage	0	0	0	0	0	0
Capital costs – product stock	0	0	0	0	0	0
Operating costs	0	0	0	0	0	0
Regulatory costs	136.8	74.6	140.7	78.0	136.8	74.6
Gasoline – total	136.8	74.6	140.7	78.0	136.8	74.6
Kerosene						
Capital costs – storage	0	0	0	0	109.6	60.1
Capital costs – product stock	102.7	78.8	102.7	78.8	218.9	164.3
Operating costs	0	0	0	0	15.8	6.8
Regulatory costs	116.4	61.7	119.0	64.0	116.4	61.7
Kerosene – total	219.1	140.5	221.7	142.8	460.7	292.9
Diesel						
Capital costs – storage	0	0	0	0	0	0
Capital costs – product stock	519.8	460.4	543.1	487.6	704.0	610.3
Operating costs	0	0	0	0	0	0
Regulatory costs	191.3	102.5	196.5	107.1	191.3	102.5
Diesel – total	711.1	562.9	739.6	594.7	818.8	712.8
Total – all fuels	1066.9	778.0	1,101.9	815.4	1,492.7	1,080.4

Notes: All years are financial years ending June 30. All dollar values are in real 2022 terms. Figures are rounded

In terms of the impact of these alternative scenarios on consumers, as shown in Table 4 below, the average increase in consumer prices over the period to 2040 (including GST) due to the MSO Rules is estimated to be:

- **slightly higher** for all fuels if transitional arrangements are not allowed
- **higher** for diesel (**by 0.05 c/litre**) and kerosene (**by 0.07 c/litre**) if caps are introduced for stocks of product stored on vessels within the EEZ boundary.

Table 4: Sensitivity of average consumer price change of tested sensitivities compared to the MSO Rules (including GST)

	Gasoline	Kerosene	Diesel
Average price increase over period to 2040	c/litre	c/litre	c/litre
MSO Rules	0.07	0.15	0.20
Without transitional arrangements	0.07	0.15	0.21
With capped allowance of EEZ stocks	0.07	0.22	0.25

Notes: All years are financial years ending June 30. All dollar values are in real 2022 terms

Implications for current market competition

The scheme (and the Rules) has been designed to minimise, and provide pathways to mitigate disruptions to market competition.

The cost impacts of the policy are seen as proportionate across the market and are expected to safeguard the continuation of the current competitive balance. This is supported by specific provisions to deter regulatory avoidance behaviour.

Additional costs resulting from the MSO are likely to be incurred at differing rates due to the variations in operating models within the industry.

Regulatory costs are expected to be proportionate to market share and are not seen as a material threat to the current competitive balance.

Individual transitional arrangement mechanisms also exist to maintain the current competitive balance and assist individual entities in meeting their obligation when faced with infrastructure or operational market constraints.

Mechanisms to respond to regulatory avoidance behaviour also exist within the rules, allowing the Secretary to set thresholds for individual entities as low as 10ML.

In determining the level of impact from the MSO on the competitive balance within the current market, it has been assumed:

- industry participants manage their stockholdings efficiently within the constraints of meeting their MSO
- intermediary market functions efficiently
- the entity market share remains similar to the 2018-2020 data, to provide a baseline for determining the impact of an entity withdrawing from the market.

Stock purchases

Where there is a need to purchase and hold additional fuel stocks, no significant competition impacts in the presence of an effective intermediary market are expected.

Analysis shows the need for additional fuel stocks required is not likely to be materially disproportionate across relative smaller or larger groups of MSO-affected entities.

Given the transitional arrangements under the MSO Rules, much of the additional purchases of fuel stocks is expected to occur in the lead up to FY2024-25. Not all entities will be required to purchase additional product. The modelling indicates some entities, to be compliant, may be required to purchase an additional:

- 0.6-0.7 per cent of their annual imports of **gasoline**
- just over 1 per cent of their annual imports of **kerosene**
- around 3 per cent of the annual imports of **diesel**.

Need for additional storage capacity

Analysis shows industry as a whole will have sufficient existing storage capacity to comply with the MSO in the first year. In order to comply, some entities will require access to additional storage capacity or stockholdings through leasing spare capacity of a third party or acquiring stocks in a third party's facility through the intermediary market.

It is expected with sufficient product within the intermediary market, those with existing spare capacity and those that need to acquire additional capacity will seek a return on capital employed. It is more likely than not, there will be limited disadvantage and limited impact on competition, noting in the early years of the scheme, transitional arrangements will reduce the overall necessity for the intermediary market by individual regulated entities.

Impact on shipping cycles

The economics of import terminals requires a balance between the cost of storage and the cost of shipping. Under commercial operations an importer will increase shipping cycles up to the point where the marginal cost of increased shipping cycles exceeds the marginal cost of investing in or acquiring access to additional storage.

The presence of an effective intermediary market should reduce the need for a shift in the commercial operations deemed to be optimal. This is based on industry feedback, demonstrating de-optimisation costs would be significantly larger than the costs of operating in the intermediary market.

Regulation impact summary

The aim of the MSO is to protect fuel consumers and the economy by ensuring fuel availability in the event of significant liquid fuel supply disruptions.

The MSO will quickly provide a positive financial impact to the national economy in the event of a major disruption to fuel supplies, with the potential benefits far outweighing the relatively smaller costs. The MSO is equivalent to comprehensive insurance, providing national resilience in the event of an extended disruption to fuel supplies.

Given Australia's strong reliance on imported fuel products, the current geopolitical climate and a history of global fuel disruption events, it is reasonable to expect and prepare for an event of significant magnitude in the near future.

This addendum to the main fuel security RIS determines:

- a \$305.5 million benefit per day (calculated as the costs to GDP avoided) in the case of a 25 per cent disruption to fuel supplies, for each extra day of fuel delivered through the MSO.
- in a situation where Australia is subject to an extended disruption of a 25 per cent supply loss exhausting all stockholdings, the present value of the benefit would be \$10.4 billion.
- in comparison, the total cost of the scheme is estimated to be \$1,066.9 million in absolute terms and \$691.8 million in NPV terms discounted at 7 per cent (real) to 2040.
- on average fuel users pay an additional 0.0015 \$/litre out to 2040.

Appendix A: Overview of key policy changes as result of industry consultation

The below policy amendments were made as result of industry engagement on a policy paper issued to industry in September 2021.

Obligation day

- Stock measurement day (section 15) – in response to industry feedback that a ‘weekly’ obligation day would be too onerous from day 1 of the scheme, a transitional arrangement was included to give industry time to adjust to the new reporting scheme.
- The obligation day is set to fortnightly until 30 June 2024, reverting to an ongoing position of weekly from 1 July 2024.

Holding stock

- Exclusive Economic Zone (EEZ) stocks (section 9) – ability to count stocks on water within the EEZ was incorporated. 100 per cent of refined MSO products under the ownership/control of an entity can now be counted toward an entity’s MSO.
 - Products that have entered the EEZ, but due to shipping routes have temporarily left the EEZ on course for an Australian port, are now considered to be within the EEZ.
 - The CCD instrument was changed to include a transitional period where the allowance of EEZ stock to be counted towards an MSO will not correspond to an increase in CCDs until 1 July 2024. See the ‘consumption cover days’ section below.
- Pipeline stocks (section 7) – in response to requests for all stocks held within a pipeline under the control of an entity to be counted toward an entity’s MSO, this is now reflected within the Rules.
 - The Rules allow MSO products within a pipeline to be included towards an entity’s MSO where entities confirm adequate arrangements for access to the stocks in the event of a fuel emergency, and accurate reporting capabilities within their MSO plans.

Thresholds

- Provision to protect against entities purposely avoiding the threshold (subsection 17(2)) – the Rules now introduce a mechanism for the Secretary to change the threshold for an individual entity down to 10ML (for each MSO product) if the entity’s refining or importing is considered to be carried out with a purpose or object of purposely avoiding the threshold.
- Ensuring entities are captured based on pre COVID-19 import/refining activity (section 16) – for the first year of the scheme, whether or not an entity meets the threshold (and is subject to an MSO) is determined from both the 2019 and 2021 entity import/refining volumes, while the actual volume obligation will be based on 2021 import/refining data.
 - This ensures significant market participants are not excluded from the scheme in the first year, as result of reduced importing or refining activity due to COVID-19.
 - However, entities will benefit from a reduced obligation through the scheme’s infancy/transitional period where they imported or refined less than normal during 2021.
- Ensuring the principle that 98 per cent of all products are captured by the MSO is maintained post COVID-19, and further disincentives for avoidance behaviour – the Explanatory Statement supporting the Rules now makes it clear the target aim of capturing the majority (defined as approximately 98 per cent) of total products in the market is to be

maintained, and thresholds should be reviewed periodically to ensure this principle is achieved.

- This provides a mechanism to address a concern that currently smaller importers of fuels (existing or new entrants) could increase their market share up to the thresholds for each fuel type, or that several new entrants could access the market with a view to remaining below the thresholds at all times, resulting in a larger proportion of the market not being covered by the obligation.

Consumption cover days

- Additional CCDs relating to crude at refineries – in response to concerns around increased burden, the previously proposed additional CCDs relating to the allowance of crude (held at a refinery) to be counted as stock held by refiners is not included in the CCDs.
- Additional CCDs relating to EEZ Stocks (refer draft notifiable instrument, also listed below) – in response to concerns around ensuring appropriate transitional provisions are provided, the increase of CCDs related to the inclusion of refined products within the EEZ in stocks counted towards the MSO is moved from commencement to 1 July 2024. This transitional period will afford industry a significantly reduced regulatory burden through the scheme's infancy and provide flexibility for industry meeting the obligation in the first year.

Reductions/adjustments to an entity's MSO

- Temporary reductions due to maintenance, repair, shipping delays and off-spec fuel (sections 25 and 26) – provisions are now included in the Rules to support a temporary reduction (by application) of the MSO for certain scheduled and unscheduled occurrences.
- Process to ensure the first year MSO is able to be adjusted if import/refining data was inaccurate (section 27) – noting the first year of the MSO is based on Customs data instead of data reported directly through POFR, some inaccuracies may arise. As such, the Rules now enable a mechanism to adjust the MSO for an entity based on supporting evidence that demonstrates the right figures.
- Process to reduce the MSO over the transitional period where entities are unable to meet the MSO due to physical storage constraints and where the intermediary market is not a viable option (section 23) – an entity's MSO can now be reduced subject to the criteria in the Rules. This provides further support and flexibility where a path toward full compliance is evidenced.

Appendix B: Overview of further changes as result of public consultation on exposure draft Rules

The below policy changes were incorporated into the MSO Rules as amendments in response to 31 January – 28 February 2022 public consultation.

Importer definition

- Additional clarification on the importing definition (section 5) – where importation of an MSO product is done on behalf of a second entity, a provision is now included to allow the ability of the imported quantity to be shifted from the first party if mutually agreed by both parties.
 - For these commercial practices to be covered, the Rules introduce that the Secretary must not have informed both parties that their actions are considered a means to avoid the threshold amount.
 - If both MSO parties do not agree in writing with the change in importing quantities, the importing amount attributed to the MSO will be the signee of the N10 and N30 forms.

Holding stock

- Yield rates for refineries (section 13) – provisions are now included to provide refiners flexibility to use either their current refining yields or the FSSP Rule yields.
 - Yield rates are required in a refiner's MSO compliance plan and adjusted accordingly with any changes to the yield rates. The Rules require the current yield rates to be based on at least a month of production volumes.

Obligation day

- Obligation day changed to Tuesday (subsection 15(1)) – the obligation day is shifted from Monday to Tuesday at the request of industry.

Thresholds

- Volumes lowered for each fuel product (subsection 17(1)) – in response to industry concerns on the thresholds being too high, they were reduced by 100ML for gasoline and diesel, and reduced by 150ML for kerosene. This has no material impact on the number of entities at commencement.

Transitional arrangements and temporary reductions

- Percentages increased for transitional arrangements (subsection 23(2)) – to support industry adjust to the new scheme, the amount an entity may apply for a temporary reduction has increased from 20 per cent to 25 per cent, with the 15ML cap remaining.
- MSO reduction as result of loss of contract (subsection 22(1)) – an amendment was added to the Rules so that larger MSO regulated entities are not disproportionately affected by the percentage threshold values for the loss of contract/s.
 - The Rules were amended to include either a 100ML change in future importing volumes for the MSO period to be considered a significant loss of contract or a 20 per cent reduction (whichever is the lesser).

Intermediary market monitoring

- Provisions monitoring the intermediary market (subsection 42(1)) – additional provisions require the Secretary to take reasonable steps to monitor the price and availability of stock available on the intermediary market.
- Publication of intermediary market information (subsection 42(2)) – to assist entities with their MSO compliance, the Rules provide that the Secretary may publish information about the intermediary market.

Publication of information by the Secretary

- Publication of aggregate MSO products (subsection 43(1)) – to provide transparency for industry and consumers, the Rules now establish a requirement for the Secretary to publish:
 - The number of entities subject to the MSO.
 - The aggregate MSO volume of product required to be held by all entities in the previous financial year.
 - An estimate of the percentage of each MSO product captured in the previous financial year and the entities captured to reach this percentage. This enables industry to have visibility whether 98 per cent of the fuel market has been captured, with the understanding that thresholds will be periodically reviewed to ensure the principle is maintained.
- Inclusion of publication of Secretary's decision of reducing or suspending the MSO (subsection 43(2)) – new provisions in the Rules include that the Secretary may publish general information relating to a temporary reduction of an entity's MSO or a suspension of the MSO.

Other minor changes

- Adjustments to MSO from outages stemming from standards upgrades (subsection 21(5)) – in recognition of circumstances relating specifically to the Refinery Upgrades Program curtailing production, the Rules provide that an entity who refines and imports can subtract the difference between their previous refining trigger assessment period and their current importing MSO.
 - The entity must provide in writing the length of the outage and written notice informing when the upgrades are occurring.
- Scheduled maintenance information within MSO compliance plans (section 39) – this section introduces that if an entity is anticipating applying for a temporary reduction relating to scheduled maintenance, the entity must provide the known future outages in the MSO compliance plan.

Appendix C: Overview of changes arising from August 2022 consultation

The below policy amendments were made as result of final industry engagement in August 2022.

Commencement date

- Commencement date changed to 1 July 2023 – The scheme will begin from 1 July 2023, which will align with the standard contracting cycle, where long-term commitments typically commence in line with the new financial year.
 - The 1 July 2023 start date will also provide sufficient time to prepare for the necessary reporting, compliance systems and market information.

Reductions/adjustments to an entity's MSO

- Extension of section 23 transitional arrangements to be applicable until 30 June 2025 – Section 23 arrangements have been extended for a further 12 months in order to support industry through a transitional period.
- Arrangements able to be further reduced where an entity's compliance is depended on the finalisation of capital investment (subsection 23(2)) – An MSO may be reduced by greater than 15ml for any fuel type (but less than 25 per cent of an entities MSO) under the circumstance where the entity is making a capital investment relating to building or upgrading storage infrastructure, and their compliance is dependent on these works being completed.
- Loss of major customer during an MSO assessment period (subsection 22(2)) – Process introduced to enable a reduction to an entity's MSO where entities lose one or more major customer during an MSO assessment period in order to more accurately determine their obligation for the new MSO period.