Australian Energy Sector Cyber Security Framework (AESCSF)

Liquid Criticality Assessment Tool (L-CAT)

2023 AESCSF Program

Important Notice

Purpose

This document is made available by The Australian Energy Market Operator (AEMO) to provide information about the 2023 Australian Energy Sector Cyber Security Framework (AESCSF) Program.

This document accompanies other general guidance materials made available to Australian energy organisations in the electricity, gas, and liquid fuels sub-sectors.

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Conventions used in this document

For clarity when reading this document, key terms are indicated with a capital letter. Each key term has a specific definition that the reader should consider. An example of this is Participants, as defined above.

Key terms are defined centrally in the AESCSF Glossary which is available separately on the AEMO website.

Australian Energy Sector Cyber Security Framework

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1. Overview

The Liquid Fuels Criticality Assessment Tool (L-CAT) has been designed to assess the relative criticality of organisations participating in the Australian liquid fuels sub-sector. This includes but is not limited to, organisations subject to the National Offshore Petroleum Titles Administrator (NOPTA), and Australian Petroleum Production & Exploration Association (APPEA) and the Australian Institute of Petroleum (AIP) member organisations.

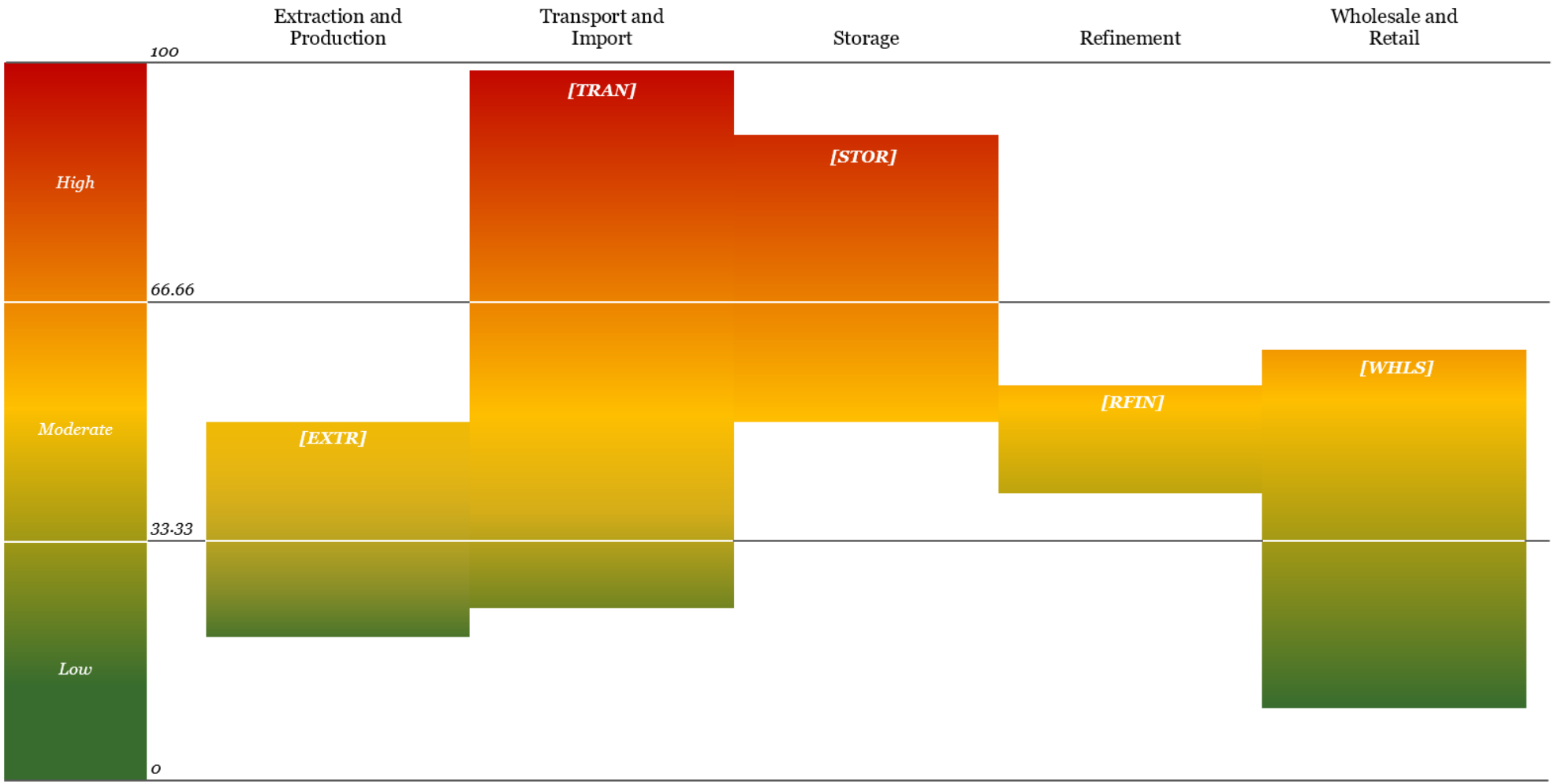
The primary objective of the tool is to place all participating organisations on a single scale for the purpose of reporting, benchmarking, and determining the applicable target state maturity guidance from the Australian Cyber Security Centre (ACSC).

Based on consultation with AEMO, industry and government, each liquid fuel market role has been assigned a criticality band on the scale. Key criticality indicators for each liquid fuel market role have been established to stratify participating organisations within the role's criticality bands. These indicators are posed as questions, some of which are answered as "Yes" or "No", and some of which are a single selection from a pre-defined range.

Participating organisations are placed within applicable criticality bands based on their responses to the questions. This placement determines the criticality rating (High, Medium, Low) for each applicable role. An organisations' overall criticality rating is the highest rating from across all applicable roles.

The L-CAT was introduced in 2022 to complement the expansion of the Australian Energy Sector Cyber Security Framework (AESCSF) Program ('Program'). There have been no significant updates to the L-CAT in the 2023 Program.

1.1. Criticality Bands by Market Role



2. Extraction and Production (L-EXTR)

ID	Question	Context and Guidance	Response Options	Weight
L-EXTR.0	**Is your organisation involved in the extraction and production of crude oil for use in the Australian Domestic market?**	**Is your organisation involved in the extraction of crude oil via the process of drilling, either from beneath the ocean floor, or from on-shore natural deposits?**	**a) Yes** **b) No**	**100%**
L-EXTR.1	What is the total quantity of crude oil (in Barrels) that your organisation extracted and/or produced for use in the Australian domestic market in the last financial year?	This refers to the total crude oil product extracted within Australian waters, or produced on-shore, which is intended for the Australian domestic market in the most recent financial year (1 July to 30 June). *Note:* • *Criticality from the AESCSF perspective is primarily focused on liquid fuels for domestic use, so please exclude any product that has been/ is going to be exported overseas.* • *Do not include data for the current incomplete financial year.* • *1 Barrel equals 158.987 (approximately 159) Litres of liquid fuel.*	a) Less than 100,000 Barrels b) Between 100,000 and less than 250,000 Barrels c) Between 250,000 and less than 750,000 Barrels d) Between 750,000 and less than 2.5M Barrels e) More than 2.5M Barrels f) Unsure	100%

Note: No location/region question raised for this role as it takes place offshore, and any import locations will be captured under transport.

3. Transport and Import (L-TRAN)

ID	Question	Context and Guidance	Response Options	Weight
L-TRAN.0	**Is your organisation involved in the transport (including overseas import) of liquid fuels for use in the Australian Domestic market?**	**Liquid fuels are transported at various stages of the supply chain including:** • **To and from Australian ports (including during the process of importing);** • **To and from fuel storage terminals and depots;** • **To and from refinement facilities;** • **To and from commercial and wholesale customers; and** • **To and from retail facilities.** **Transport takes place via water-vessel, road transport in tankers, pipelines, and rail transport.** • **Water-vessel based transport is used to move volumes of liquid fuel between to Australian ports during the import process, or between Australian ports as needed.** • **Tankers and rail are used to transport discrete quantities of liquid fuel product via the road or rail network in portable storage tanks.** • **The transmission pipeline network uses high-pressure pipelines, compressor stations, storage facilities and other elements to transport gas, water, ethane, oil, and other liquid fuel product Australia-wide.**	**a) Yes** **b) No**	**100%**

ID	Question	Context and Guidance	Response Options	Weight
L-TRAN.1	How many megalitres (ML) of liquid fuel did your organisation transport (including import) for use in the Australian domestic market last financial year?	This refers to the sum of liquid fuels transported during the most recent full financial year (1 July to 30 June). Do not include data for the current incomplete financial year. *Note:* • *Criticality from the AESCSF perspective is primarily focused on liquid fuels imported and / or extracted for domestic use, so please exclude any product that has been/ is going to be exported overseas.* • *1 Megalitre (ML) = 1 Million Litres (L) (1,000,000)*	a) Less than 500 ML b) Between 500 and less than 2,500 ML c) Between 2,500 and less than 10,000 ML d) Between 10,000 and less than 20,000 ML e) More than 20,000 ML f) Unsure	50%
L-TRAN.2	What is the combined maximum throughput in megalitres (ML) of your organisation's transport network servicing the Australian domestic market?	Operating at full capacity, what is the maximum volume of liquid fuels your organisation can transport? This is inclusive of all transport mediums available to your organisation including: • Road transport tankers, where applicable; • Water-vessels, where applicable; • Pipelines, where applicable; and • Rail transport, where applicable. For road transport tankers, rail transport, and water vessels, use the total volume of portable storage across your fleet of assets. For pipelines, use the total daily throughput of your pipeline network. Capacity should be based on pipeline capacity for primary flow direction only. Do not include or add reverse flow capacity for bi-directional pipelines.	a) Less than 5 ML b) Between 5 and less than 25 ML c) Between 25 and less than 100 ML d) Between 100 and less than 200 ML e) More than 200 ML f) Unsure	30%

ID	Question	Context and Guidance	Response Options	Weight
L-TRAN.3	What percentage of your organisation's liquid fuel products are transported directly to Essential Users?	What percentage of the liquid fuel products transported by your organisation are directly transported to organisations considered 'Essential Users' under the Liquid Fuel Emergency Act 1984? If fuel rationing is needed during a liquid fuel emergency, some essential goods and services need to continue to be made available to avoid seriously damaging the health or safety of the community. The providers of these essential goods and services are known as 'essential users'. Essential users may be exempted from rationing during an emergency. They are: • Australian defence services • ambulance services • corrective services • fire or rescue services • police services • public transport services • state emergency services or equivalent organisations • taxi services *Source: Energy.gov.au, "The Liquid Fuel Emergency Act 1984", https://www.energy.gov.au/government-priorities/energy-security/energy-emergency-management-forums/liquid-fuels-emergency-act*	a) Less than 10% b) Between 10% and less than 50% c) Between 50% and less than 90% d) More than 90% e) Unsure	20%

ID	Question	Context and Guidance	Response Options	Weight
L-TRAN.4	In which region (or regions) does your organisation provide this service?	In which region(s) does your organisation transport liquid fuel products? This information is used for reporting purposes only and does not influence your organisation's criticality. Select all regions that apply, including both collection and destination regions.	a) Australian Capital Territory (ACT) b) New South Wales (NSW) c) Queensland (QLD) d) South Australia (SA) e) Tasmania (TAS) f) Victoria (VIC) g) Western Australia (WA) h) Northern Territory (NT)	0%

4. Storage (L-STOR)

ID	Question	Context and Guidance	Response Options	Weight
L-STOR.0	**Does your organisation operate liquid fuels storage capacity inclusive of Terminals and / or depots for domestic use?**	**This refers to storage facilities which take various forms which include:** • **On-shore storage including fuel terminals and/or depots.** • **Off-shore storage being water-berthed vessels en-route/bound for Australia.** **Petroleum products held in storage facilities include Petrol, Diesel, Jet Fuel, LPG, and other petroleum products. Petroleum products and other liquid fuels – refined or otherwise – are usually held within dedicated storage tanks and/or underground storage facilities.**	**a) Yes** **b) No**	**100%**
L-STOR.1	What is combined maximum storage capacity in megalitres (ML) of your organisation's storage facilities?	This refers to the maximum amount of liquid fuel product that can be stored within the combination of your organisation's storage facilities. This includes: • Water-based shipments which are inbound to Australia, if applicable; • On-land storage such as terminals and depots, if applicable; • Refinery-based storage, if applicable; and • Retail-based storage, if applicable; *Note:* • *Criticality from the AESCSF perspective is primarily focused on liquid fuels for domestic use, so please exclude any product that has been/ is going to be exported overseas.* • *1 Megalitre (ML) = 1 Million Litres (L) (1,000,000)*	a) Less than 25 ML b) Between 25 and less than 150 ML c) Between 150 and less than 500 ML d) Between 500 and less than 1,500 ML e) More than 1,500 ML f) Unsure	50%

ID	Question	Context and Guidance	Response Options	Weight
L-STOR.2	What is the combined average quantity of liquid fuels (in megalitres [ML]) held in reserve over the last financial year?	According to Australian Petroleum statistics reported by DISER / Energy.gov.au, there are five classifications of Australian-owned liquid fuels stock, separated by location and intended usage. These classifications are as follows: • On land in Australia and in Domestic waters (ML) • Onboard vessels at sea destined for Australia (ML) • Overseas and awaiting delivery to Australia (ML) • Held for the Australian market in Australia and overseas (ML) • Held for the Australian market in Australia and overseas COE (ML)	a) Less than 15 ML b) Between 15 ML and less than 100 ML c) Between 100 ML and less than 250 ML d) Between 250 ML and less than 750 ML e) More than 750 ML f) Unsure	25%
L-STOR.3	What is the maximum withdrawal capacity of your organisation's on-land storage facilities (megalitres per day [ML/d])?	This refers to the maximum amount of product that can be withdrawn from your organisation's on-land storage facilities (i.e., fuel terminals and depots) in a given day. The maximum withdrawal capacity, or flow rate, is typically dependant on the pressure levels inside the storage with the higher the pressure, the greater the withdrawal capacity.	a) Less than 2 ML/d b) Between 2 and less than 25 ML/d c) Between 25 and less than 400 ML/d d) More than 400 ML/d e) Unsure	15%

ID	Question	Context and Guidance	Response Options	Weight
L-STOR.4	Does your organisation operate any storage facilities that are dedicated to Essential Users?	Does your organisation operate fuel storage facilities (crude or refined) that are dedicated reserves for organisations considered 'Essential Users' under the Liquid Fuel Emergency Act 1984? If fuel rationing is needed during a liquid fuel emergency, some essential goods and services need to continue to be made available to avoid seriously damaging the health or safety of the community. The providers of these essential goods and services are known as 'essential users'. Essential users may be exempted from rationing during an emergency. They are: • Australian defence services • ambulance services • corrective services • fire or rescue services • police services • public transport services • state emergency services or equivalent organisations • taxi services *Source: Energy.gov.au, "The Liquid Fuel Emergency Act 1984", https://www.energy.gov.au/government-priorities/energy-security/energy-emergency-management-forums/liquid-fuels-emergency-act*.	a) Yes b) No	10%

ID	Question	Context and Guidance	Response Options	Weight
L-STOR.5	In which region (or regions) does your organisation provide this service?	In which region(s) does your organisation have storage facilities? This information is used for reporting purposes only and does not influence your organisation's criticality. Select all regions that apply. *Note:* • *Off-shore water vessels which are en-route to Australia should be marked as 'Off-shore (water-vessel), however any other off-shore land-based storage facilities should NOT be included.*	a) Australian Capital Territory (ACT) b) New South Wales (NSW) c) Queensland (QLD) d) South Australia (SA) e) Tasmania (TAS) f) Victoria (VIC) g) Western Australia (WA) h) Northern Territory (NT) i) Off-shore (water-vessel)	0%

5. Refinement (L-RFIN)

ID	Question	Context and Guidance	Response Options	Weight
L-RFIN.0	**Does your organisation operate a liquid fuels refinery or manufacturing plant for the Australian domestic market?**	**This refers to organisations who operate plants which take crude oil products and refine / manufacture them into refined/finished petroleum products, intended for the Australian domestic market.**	**a) Yes** **b) No**	**100%**
L-RFIN.1	What is the total quantity of refined liquid fuels (in megalitres [ML]) that your organisation produced for the Australian domestic market in the last financial year?	This refers to the total quantity of refined liquid fuel product produced during the most recent financial year (1 July to 30 June) intended for domestic use. Do not include data for the current incomplete financial year. *Note:* • *Criticality from the AESCSF perspective is primarily focused on liquid fuels for domestic use, so please exclude any product that has been/ is going to be exported overseas.* • *1 Megalitre (ML) = 1 Million Litres (L) (1,000,000)*	a) Less than 5,000 ML b) Between 5,000 and less than 7,000 ML c) More than 7,000 ML d) Unsure	80%
L-RFIN.2	What is the maximum refined/finished liquid fuel product that your organisation's facilities could produce over 30-day period operating at maximum capacity?	This refers to the maximum refined/finished liquid fuel product that your facilities can produce over a 30-day (1 month) period if operating at maximum (peak) capacity. *Note:* • *The maximum output should factor in any downtime required during sustained peak output during the 30-day period.*	a) Less than 500 ML b) Between 500 and less than 600 ML c) Between 600 and less than 750 ML d) More than 750 ML e) Unsure	20%

ID	Question	Context and Guidance	Response Options	Weight
L-RFIN.3	In which region (or regions) does your organisation provide this service?	This information is used for reporting purposes only and does not influence your organisation's criticality. Select all regions that apply.	a) Australian Capital Territory (ACT) b) New South Wales (NSW) c) Queensland (QLD) d) South Australia (SA) e) Tasmania (TAS) f) Victoria (VIC) g) Western Australia (WA) h) Northern Territory (NT)	0%

6. Wholesale and Retail (L-WHLS)

ID	Question	Context and Guidance	Response Options	Weight
L-WHLS.0	**Is your organisation involved in commercial wholesale and/or public retailing of liquid fuel products for use in the Australian domestic market?**	**Wholesalers of liquid fuels typically sell to commercial customers where the product is either on-sold at a mark-up or run back through the supply chain. A retailer purchases refined products from wholesale markets and sells direct to customers.**	**a) Yes** **b) No**	**100%**
L-WHLS.1	What is your organisation's total quantity of liquid fuels sold (in megalitres [ML]) for the Australian domestic market in the last financial year?	This refers to the combined total liquid fuel products sold during the most recent financial year (1 July to 30 June) which is intended for the Australian domestic market, via one or more of the following: • Commercial wholesaling, where applicable; • Private trade agreements, where applicable; and • Public retailing Do not include data for the current incomplete financial year. *Note:* • *Criticality from the AESCSF perspective is primarily focused on liquid fuels for domestic use, so please exclude any product that has been/ is going to be exported overseas.* • *1 Megalitre (ML) = 1 Million Litres (L) (1,000,000)*	a) Less than 200 ML b) Between 200 and less than 1,000 ML c) Between 1,000 and less than 5,000 ML d) Between 5,000 and less than 15,000 ML e) More than 15,000 ML f) Unsure	60%

ID	Question	Context and Guidance	Response Options	Weight
L-WHLS.2	Of the total quantity of liquid fuels sold for domestic use (above), how much of this was sold to Essential Users?	Of the total quantity of liquid fuel product sold, what percentage of this was sold to 'Essential Users' as defined by the Liquid Fuel Emergency Act 1984? If fuel rationing is needed during a liquid fuel emergency, some essential goods and services need to continue to be made available to avoid seriously damaging the health or safety of the community. The providers of these essential goods and services are known as 'essential users'. Essential users may be exempted from rationing during an emergency. They are: • Australian defence services • ambulance services • corrective services • fire or rescue services • police services • public transport services • state emergency services or equivalent organisations • taxi services *Source: Energy.gov.au, "The Liquid Fuel Emergency Act 1984", https://www.energy.gov.au/government-priorities/energy-security/energy-emergency-management-forums/liquid-fuels-emergency-act*	a) Less than 100 ML b) Between 100 and less than 500 ML c) Between 500 and less than 2,000 ML d) Between 2,000 and less than 5,000 ML e) More than 5,000 ML f) Unsure	20%

ID	Question	Context and Guidance	Response Options	Weight
L-WHLS.3	What types of product does your organisation sell? (Select all that apply)	Which liquid fuel products does your organisation sell? Select all that are applicable Additional guidance for each liquid fuel product is provided below: • Diesel: Inclusive of all grades of diesel product including distillate. • Aviation Fuel: Petroleum/kerosene-based fuels designed for aircraft with additional additives. • Petrol: Consumer grade petroleum-based products, such as 91, 95 and 98 RON Petrol. • Crude oil: Unfinished product which has not undergone refinement • Other fuel products: Inclusive of all other fuel products, including lubricants	a) Diesel (6%) b) Aviation Fuel (6%) c) Petrol (4%) d) Crude oil (2%) e) Other Fuel products (2%)	20%
L-WHLS.4	In which region (or regions) does your organisation provide this service?	This information is used for reporting purposes only and does not influence your organisation's criticality. Select all regions that apply.	a) Australian Capital Territory (ACT) b) New South Wales (NSW) c) Queensland (QLD) d) South Australia (SA) e) Tasmania (TAS) f) Victoria (VIC) g) Western Australia (WA) h) Northern Territory (NT)	0%