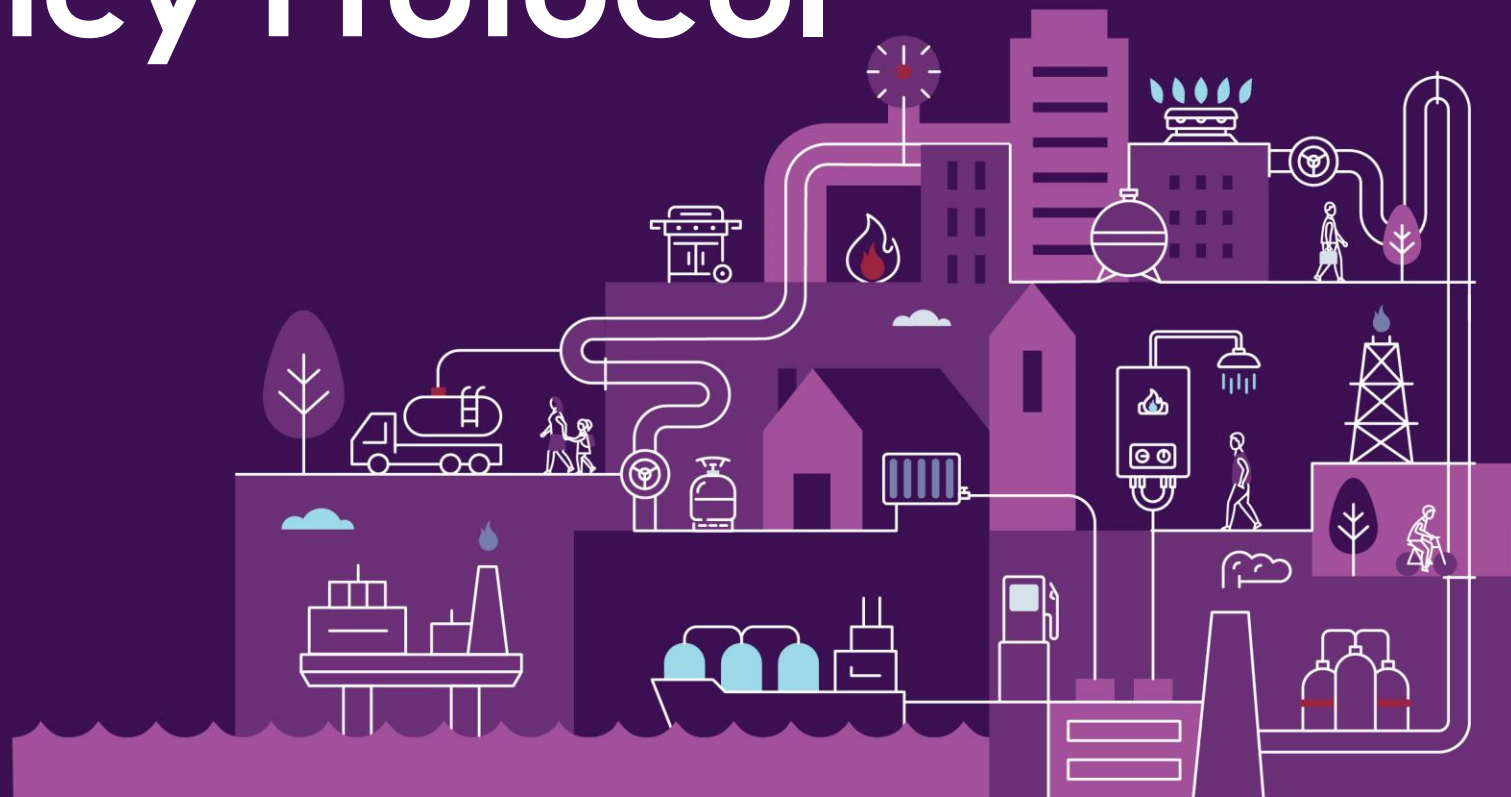


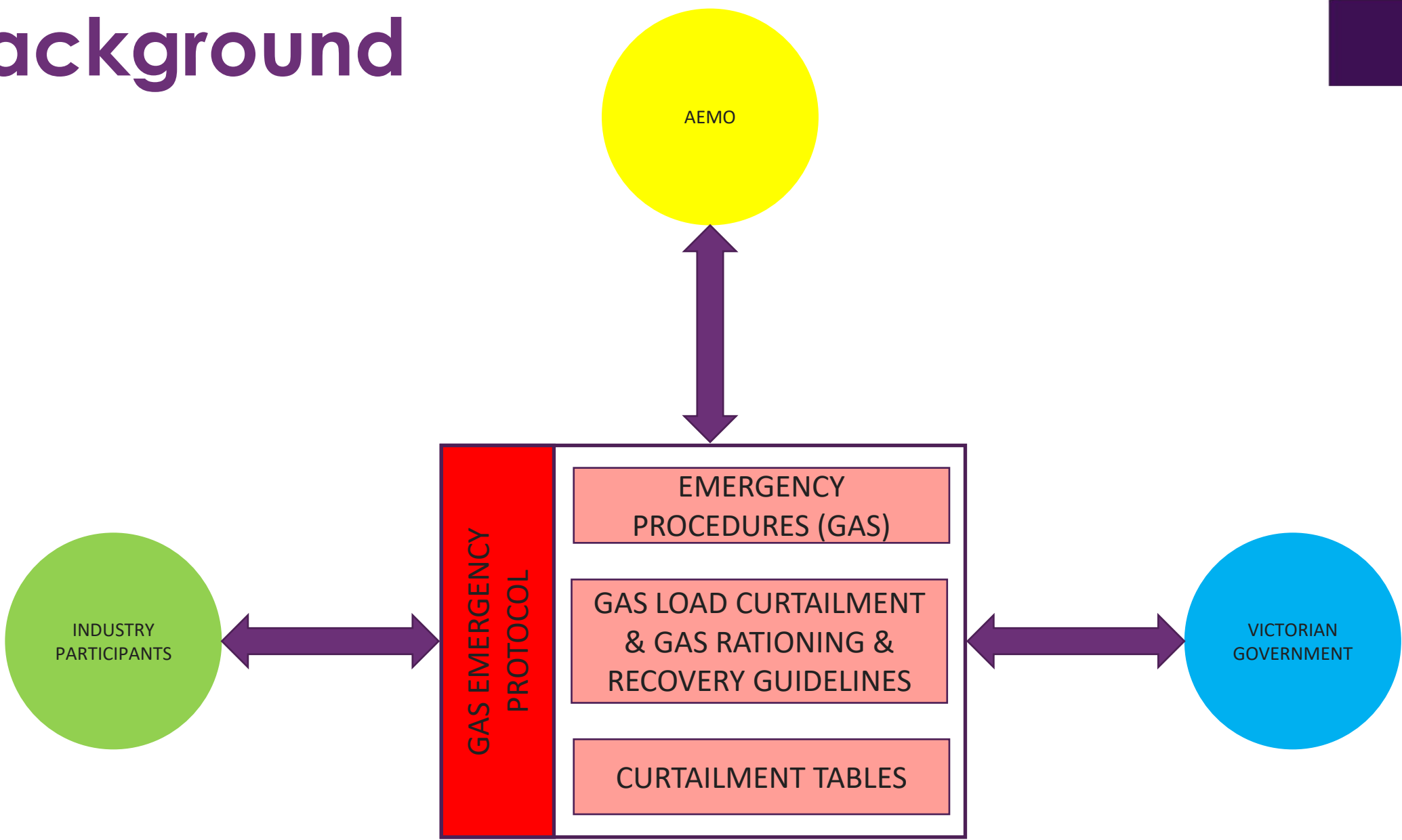
# Gas Emergency Protocol



# Agenda

1. Background
2. Emergency Procedures (Gas)
  1. Emergency Process
3. Gas Load Curtailment and Gas Rationing and Recovery Guidelines
  1. Phases
4. Curtailment
  1. Curtailment Types
  2. Curtailment Enactment Timings
  3. Curtailment Process
5. Rationing
6. Recovery
7. GEMCF

# Background





# Emergency procedures (gas)

**Prepared by:** AEMO Gas Markets and Systems Operations

**Version:** 9.0

**Effective date:** 7 December 2022

**Status:** Published

**Approved for publication and use by:**

**Approved by:** Michael Gatt

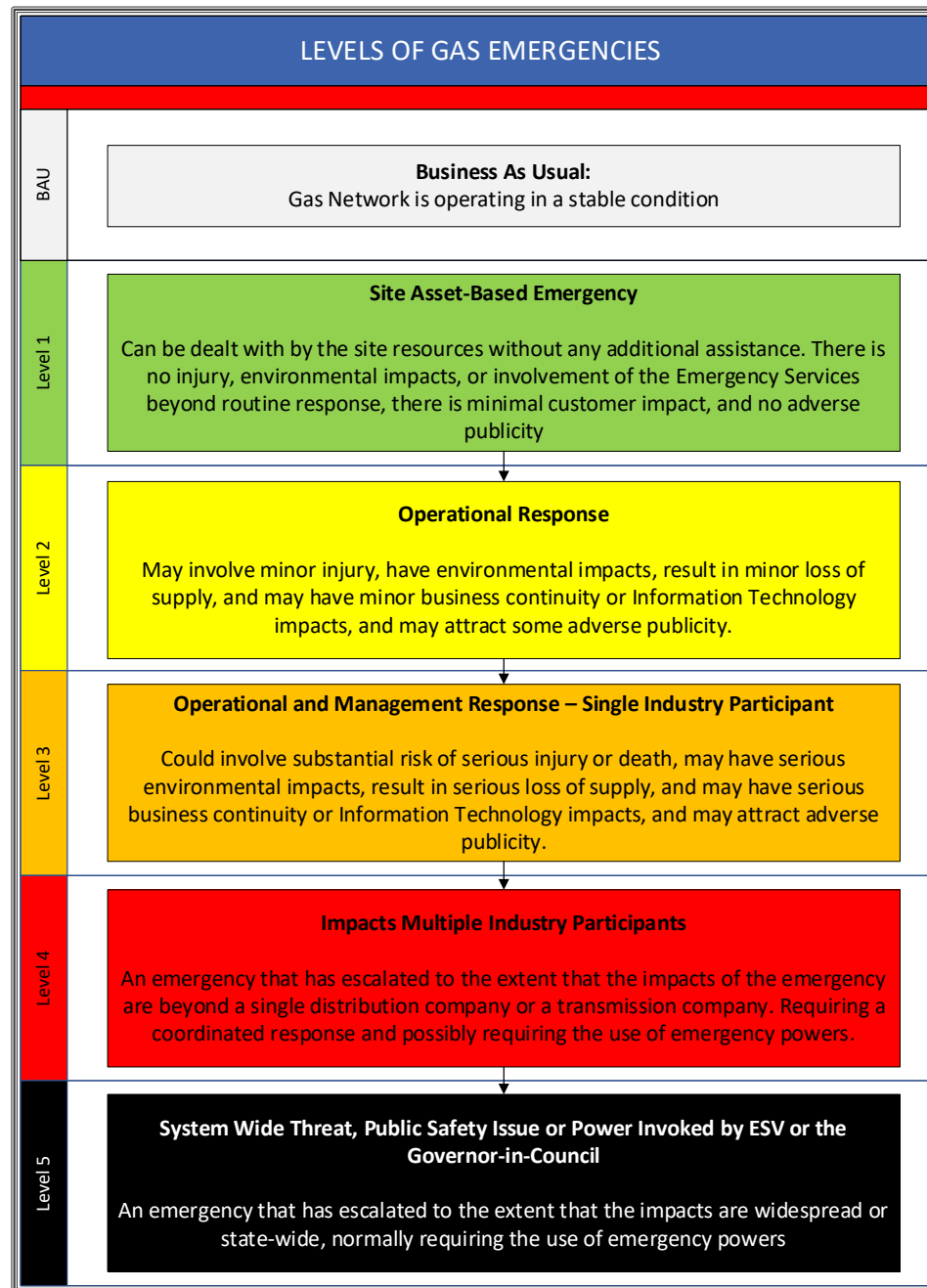
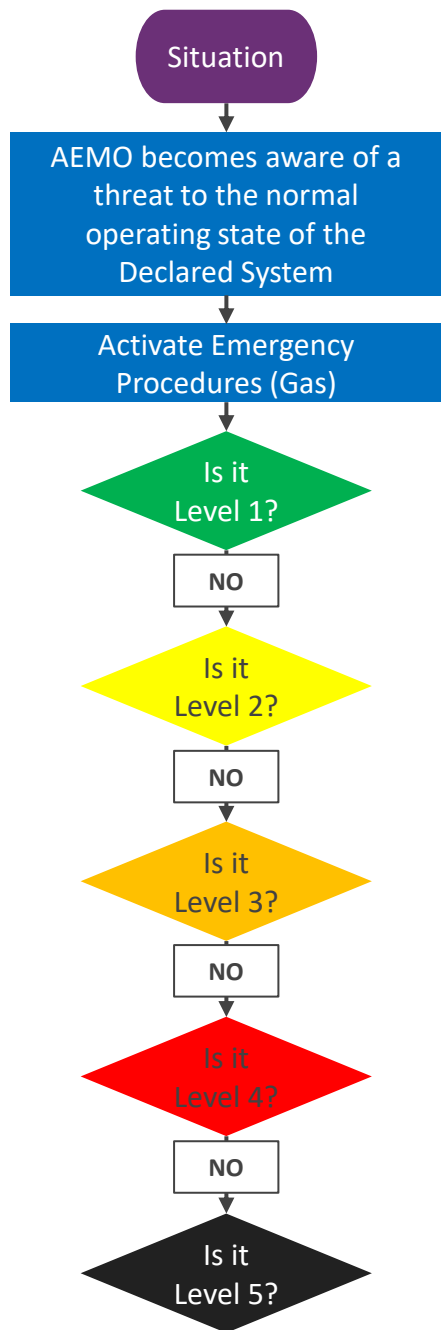
**Title:** Executive General Manager, Operations

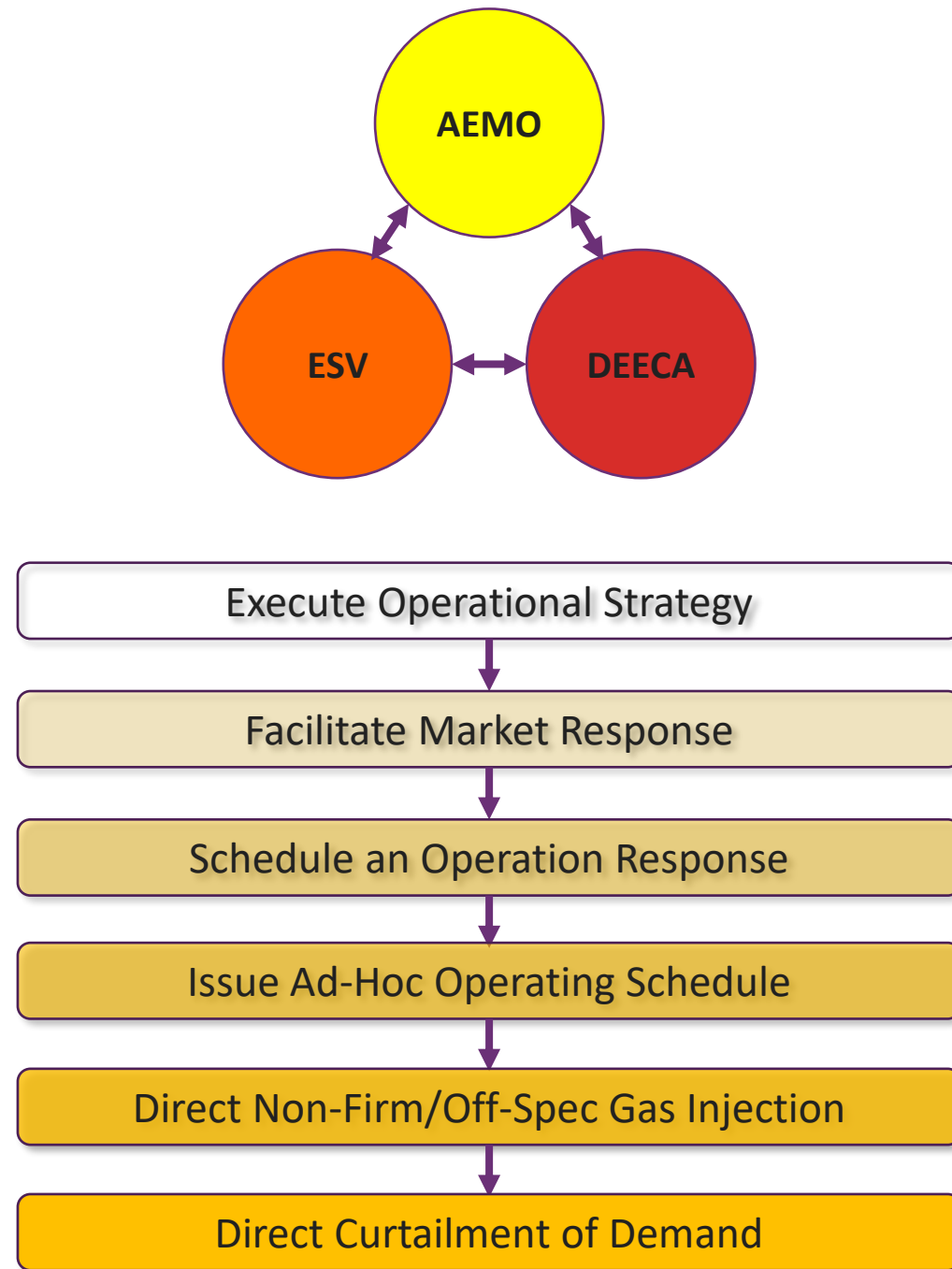
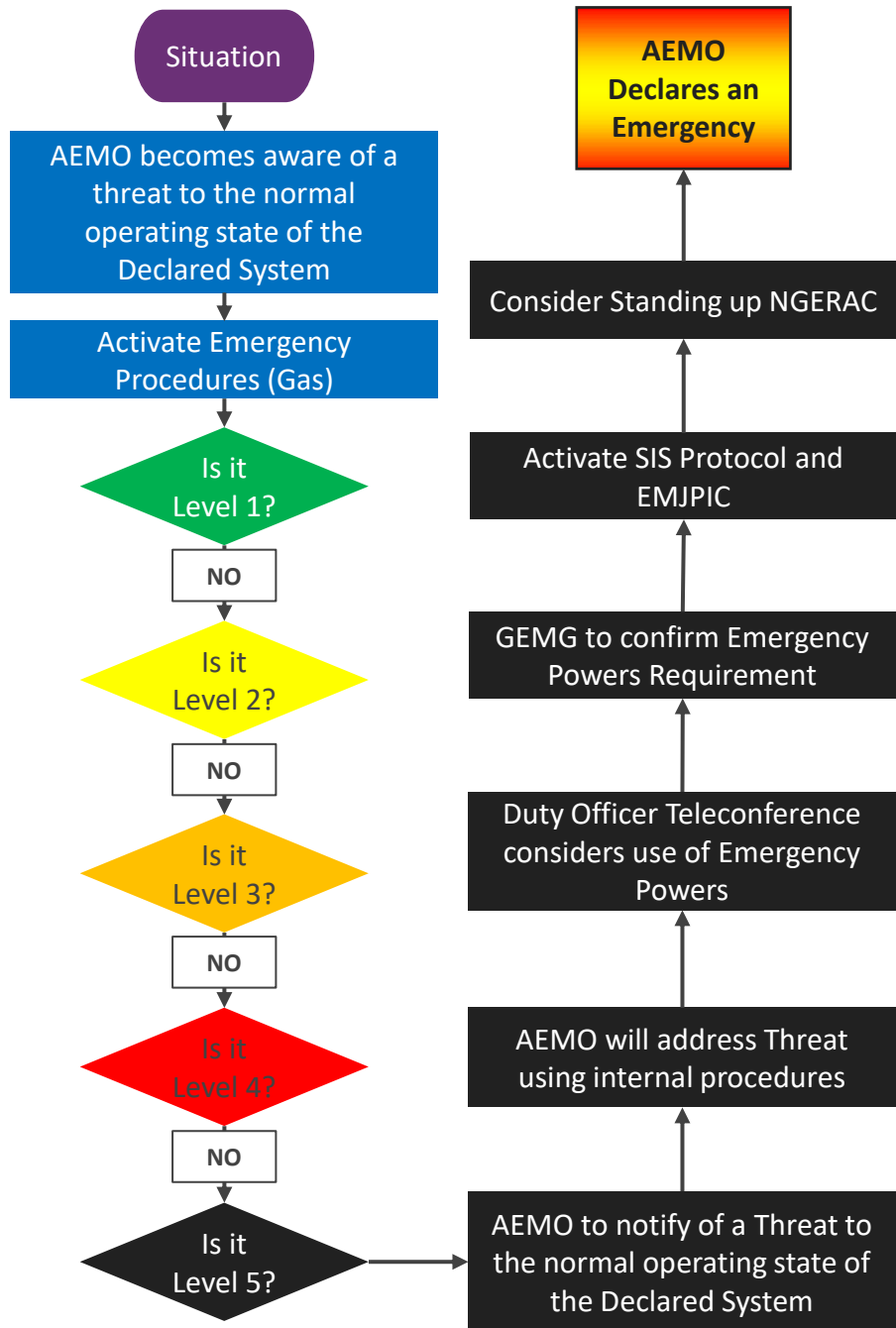
**Date:** 7 December 2022

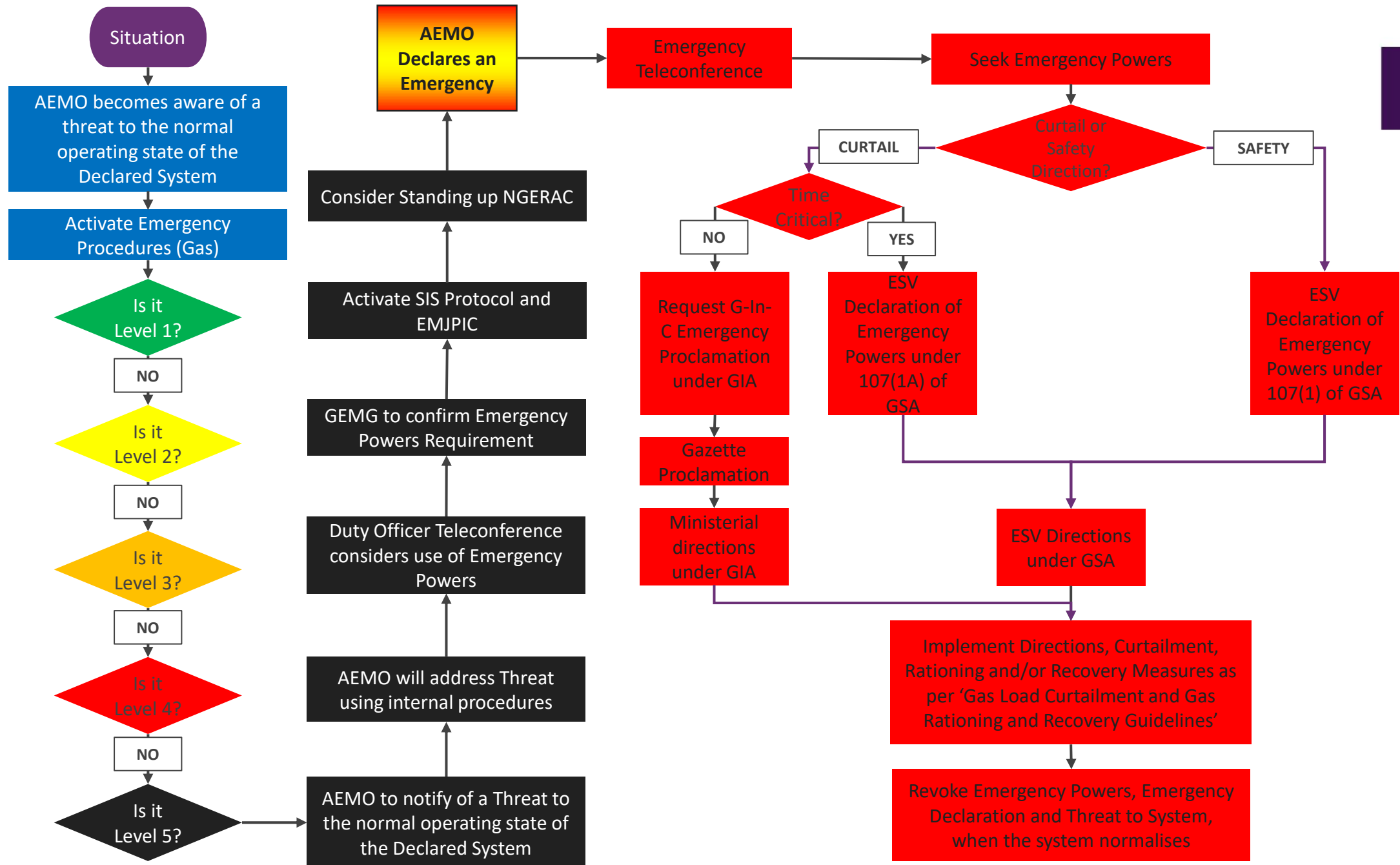
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Australian Energy Market Operator Ltd ABN 94 072 010 327









# Gas Load Curtailment and Gas Rationing and Recovery Guidelines

Prepared by:	AEMO Gas Markets and Systems Operations
Version:	9.0
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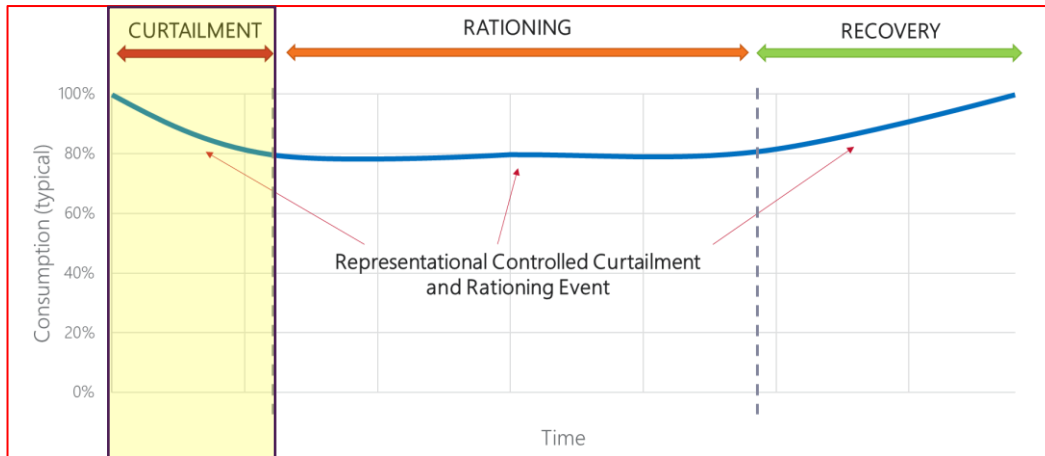
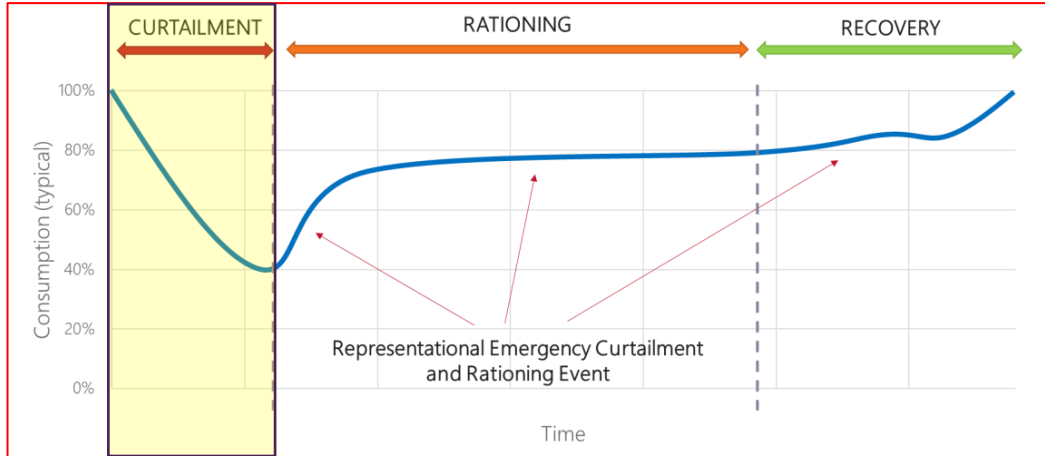
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# Phases



## • Curtailment

- Deliberate reduction of gas delivery or gas usage required due to a shortage of supply or because demand exceeds pipeline capacity
- During a catastrophic event, severe and immediate measures used to arrest the fall in pressure to remain above the minimum (nose diving plane)
- In less severe situations (or those with greater lead time) it is used in a more considered manner to bring demand down to a sustainable level (gradual reduction of altitude)

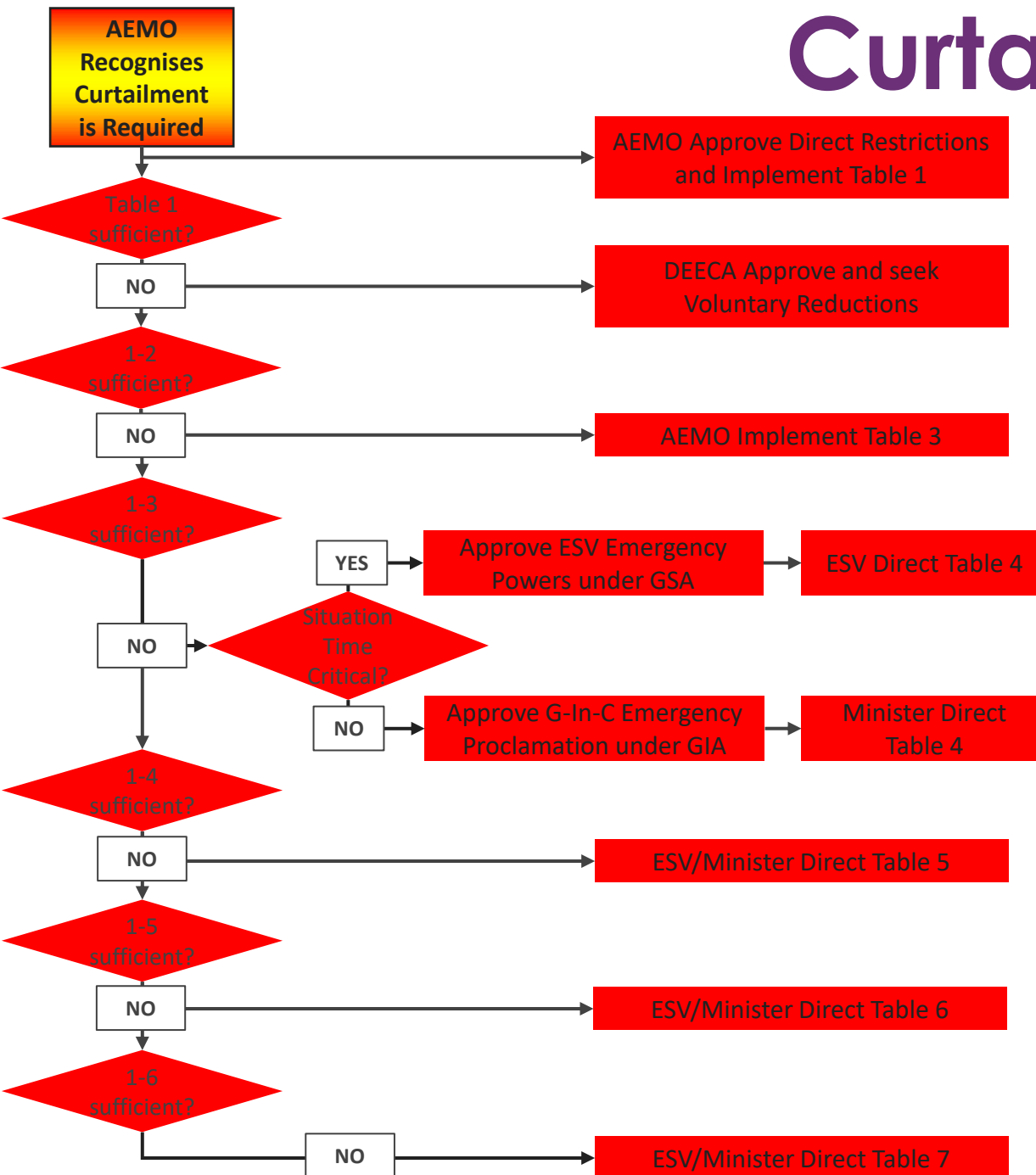
# Curtailment Types

- Voluntary Reduction
  - Reduction of demand through community goodwill
    - No obligation or enforcement
    - Unpredictable response
    - Questionable duration
- Directed Restrictions
  - AEMO directions to DTS participants using NGL 91BC
    - Predictable response and reduction
    - Enforceable obligation
    - Limited Audience and becoming less effective in peak season
- Mandatory Restrictions
  - Government Emergency Powers (ESV and/or DEECA)
    - Applicable to anyone/anything in Victoria
    - Enforceable, but limited visibility to facilitate
    - Directed mainly towards domestic customers
    - Ultimately reliant of end user response as limited/no physical control

# Curtailment Enactment Timings

- Voluntary Reduction
  - Implementation of Emergency Powers not required
  - Quickest to enact when dealing with Domestic Consumers
  - Limited only by the speed by which the message can be disseminated and the speed by which consumers can implement reductions...if they do
- Directed Restrictions
  - A permanent power maintained by AEMO which is quick to enact, but limited to only Market Participants, not Domestic Consumers
- Mandatory Restrictions
  - Requires enacting Emergency Powers which can take significant time
  - ESV uses Gas Safety Act and doesn't need to be gazetted
  - DEECA use Gas Industry Act and requires G-In-C approval and gazetting
  - Rules of thumb = ESV less than 24 hrs, DEECA more than 24 hrs

# Curtailment



**Table 1 Curtailment tables summary**

	Table description	Typical measure type
<b>Table 1</b>	Supply for: (a) Withdrawals into storage. (b) GPG subject to specified considerations. (c) Customers with interruptible supply contracts. (d) Controllable withdrawals to interconnected transmission pipelines.	Directed restriction
<b>Table 2</b>	An appeal for a voluntary reduction in gas consumption.	Voluntary reduction
<b>Table 3</b>	<i>Tariff D</i> – Category B Curtailment of high consuming ( <i>tariff D</i> ) customers that will likely have a negligible to low impact to health, the environment or community financial sustainability.	Directed restriction
<b>Table 4</b>	Residential and small commercial ( <i>tariff V</i> ) customers.	Mandated restriction
<b>Table 5</b>	<i>Tariff D</i> – Category A Curtailment of high consuming ( <i>tariff D</i> ) customers that will likely have a low to intermediate impact to health, the environment or community financial sustainability.	Directed restriction
<b>Table 6</b>	Priority services, which is formed from: 1. Critical services. 2. Pre-approved customers with a curtailment allowance.	Mandated restriction
<b>Table 7</b>	In order of priority: 1. Medically required residential gas consumption for customers not registered in the gas Life Support Register. 2. Residential customers that are registered in the gas Life Support Register. 3. Essential services.	Mandated restriction

# Example Curtailment – 70TJs – Estimation Only

Curtailment

Solution

137 - 15/03/2023 14:00:00 - 15/03/2023 23:00:00 - Curtailment - GEM...

New

Retrieve

Export To CSV

Curtail Inclusion

Exemptions

Publish

Start Date/Time

15/03/2023 02:00 PM

End Date/Time

15/03/2023 11:00 PM

Comment

Curtailment - GEMCF example for presentation

15/03/2023

Wed 15-Mar-2023

Tables

Pipes

CTMs

Hourly Detail

Table	Table Description	Total Daily Demand (GJ)	Restricted Daily Qty (GJ/d)	Exempt Qty (GJ/d)	Curtailment Yield Qty (GJ/d)	Call Curtailment Table (Yes/No)	Quantity Curtailed (GJ/d)
1a	Controllable exports to Storage Facilities	41,250	24,110		17,140	Yes	17,140
1b	Controllable exports to GPG.	0	0		0	Yes	0
1d	Tariff V - Customer contract allowing an interruption of supply of gas	0	0		0	Yes	0
1e	Controllable withdrawals to interconnected transmission pipelines.	20,331	11,915		8,416	Yes	8,416
2	Tariff V – Voluntary Reduction	0	0		0	Yes	0
3	Tariff D – Category B	30,836	26,209		4,627	Yes	4,627
4a	Tariff V – Reduction residential and small commercial customers.	0	0		0	Yes	0
4b	Tariff V – Residual residential and small commercial customers.	168,777	147,650		21,127	Yes	21,127
5	Tariff D – Category A	55,498	47,188		8,311	Yes	8,311
6a	Tariff D – Customers registered with a curtailment allowance	14,711	11,920		2,791	Yes	2,791
6b	GPG Gas Allowance for Fuel Switching/NEM Security	24,700	24,700		0	Yes	0
6c	Tariff V – Critical Services	1,072	856		216	Yes	216
6d	Tariff D – Critical Services	21,933	17,781		4,152	Yes	4,152
7a	Tariff V – Medically Required Customers	5,721	4,568		1,153	Yes	1,153
7b	Tariff V – Life Support	715	571		144	Yes	144
7c	Tariff D – Essential Service	9,622	8,160		1,462	Yes	1,462
7d	Tariff V – Essential Service	2,503	1,999		504	Yes	504
Total		397,668	327,626	0	70,044		70,044

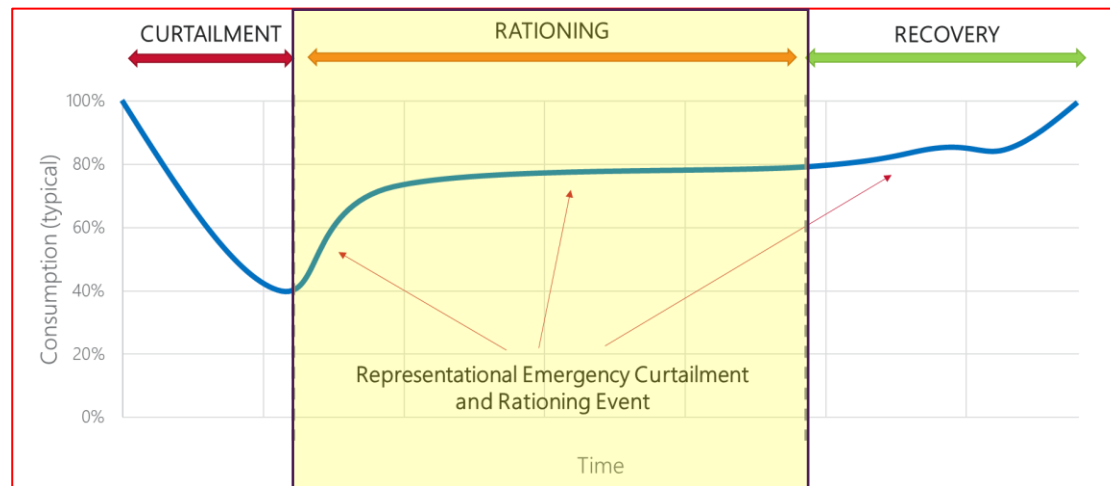
# Curtailment Communication

Type	Responsible Party	Communication to Participants	Communication to End User
Voluntary Reduction	DEECA	Emergency Teleconference SISP	EMV Communication Platform Mainstream Media
Directed Restrictions	AEMO	Market Notice VGECP	TBC by Retailer Companies
Mandated Restrictions (Gas Safety Act)	ESV	Emergency Teleconference SISP EMJPIC	EMV Communication Platform Mainstream Media Social Media Websites (Other Methods - Time Dependant)
Mandated Restrictions (Gas Industry Act)	DEECA	Emergency Teleconference SISP EMJPIC	EMV Communication Platform Mainstream Media Social Media Websites (Other Methods - Time Dependant)

# Factors Effecting Curtailment Effectiveness

- Incident Type
  - Duration
  - Gas Lost
- Incident Location
  - Less Critical area of DTS
- Seasonal/Temperature Impact
  - Demand
  - Variation of Customer Type and Usage
- Time of Day
  - Communication Difficulties
  - Ability to respond

# Rationing



- Implemented if the system has been returned to a stable condition, but is unable to supply the original or desired quantity of Gas to consumers
- Allocation will be dependant on a number of factors but total consumption will need to be sustainable under the new conditions

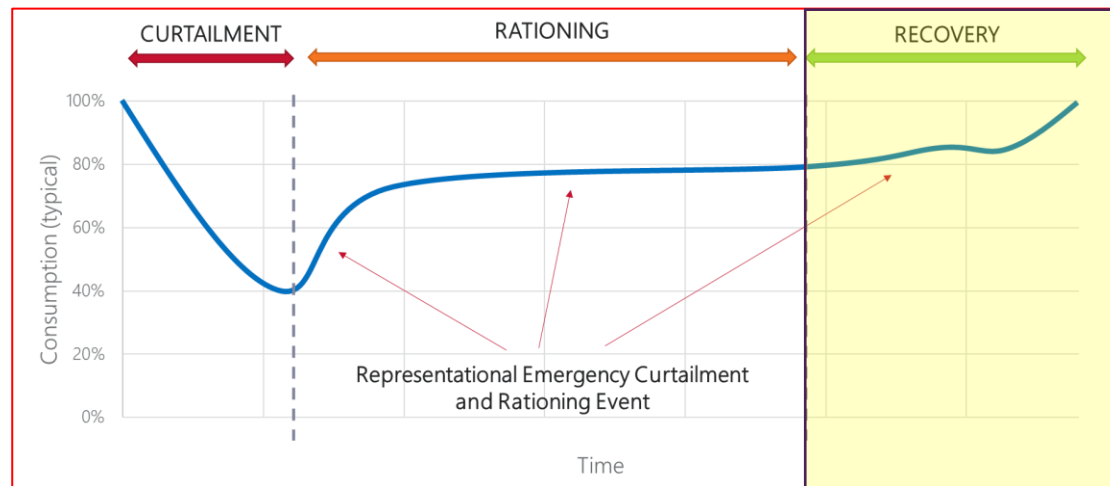


# Rationing

**Table 2      Rationing customer prioritisation summary**

	Priority description
Priority 1	<ol style="list-style-type: none"><li>1. Essential services</li><li>2. Residential customers that are registered on the gas Life Support Register.</li><li>3. Residential customers with a medical requirement to consume gas.</li></ol>
Priority 2	Priority persons and services Priority services is formed from: <ol style="list-style-type: none"><li>1. Critical services.</li><li>2. Pre-approved customers with a rationing allowance.</li></ol>
Priority 3	<i>Tariff D</i> – category A customers.
Priority 4	Residential and small to medium commercial customers ( <i>Tariff V</i> ).
Priority 5	<i>Tariff D</i> – category B customers.
Priority 6	Supply for: <ol style="list-style-type: none"><li>(a) withdrawals into storage.</li><li>(b) GPG subject to specified considerations.</li><li>(c) customers with an interruptible supply contract.</li><li>(d) controllable withdrawals into interconnected transmission pipelines.</li></ol>

# Recovery



- As remediation works progress, supply will be slowly and sustainably restored
- Allocation will be dependant on a number of factors but will cater to the often erratic nature of this phase, including requiring large demand blocks and intimate communication requirements
- This phase will not always reflect the reverse of the Curtailment tables or the rationing prioritisation

# Pre-Approved Allowance

- Curtailment Allowance
  - Prioritises a minimum quantity of gas to mitigate an extreme or high risk to the Victorian public that results from a sudden loss of supply, as might occur during curtailment
- Rationing Allowance
  - Prioritises a minimum quantity of gas to mitigate an extreme or high risk to the Victorian public that results from a prolonged disruption of supply, as might occur during rationing

# Gas Emergency Management Consultative Forum

- GEMCF supports Vic Govt and the gas industry in their preparations for a gas emergency.
- GEMCF is a forum to share ideas on good practice emergency management, identify opportunities to enhance existing response frameworks and undertake an annual exercise to test readiness.
- GEMCF exercise held on 28 April. Some comments:
  - Emergency Protocol training provided
  - Communications processes to implement curtailment
  - Timelines for curtailment measures



For more information visit

[aemo.com.au](http://aemo.com.au)