Addressing Long-Term Challenges in the Australian Water Industry

Insights from Victorian Water Businesses

Water companies in Australia face a number of challenges, including population growth, increased urbanisation of the population, ageing infrastructure, climate variability and environmental sustainability. To meet these challenges, water businesses are investing in water security measures, as well as measures around biodiversity and regenerative land use. Community expectations and new government legislation have also seen water businesses invest in cybersecurity, digital metering and smart networks, and emissions reduction initiatives.

FTI Consulting's Economic & Financial Consulting team was engaged by the Essential Services Commission (the ESC) to undertake an independent expert review of Victorian water businesses' operating and capital expenditure forecasts for the 2023 price determination.

The review was the second application of the Commission's performance, risk, engagement, management and outcomes (PREMO) framework, which was introduced in 2018. A key focus of our assessment was on drivers of increased costs, the strategies to manage those costs, and efficiency savings. This article outlines the main insights from our work with the ESC on how water businesses in Victoria are considering some of the challenges in the sector, and creates the basis for dialogue for other water businesses across the country.

Regulators will need to continue to work with the industry if it is to overcome future challenges while trying to ensure that water remains affordable for consumers.

Australia has been known to oscillate between periods of abundant water supply and drought. From 1996 to 2010, most of the south-east experienced prolonged dry conditions, with rainfall persistently below average. This period included the 'millennium drought' from 2001 to 2009, concluding with La Nina during 2010 and 2011. Some of the drought conditions returned over 2017 to 2019, before the return of La Nina in 2020, leading to floods and fatalities in 2021 and 2022.

Australian water companies have engaged several strategies to cope with these variable conditions. One is investment in infrastructure, either for storing water during periods of high rainfall, or to provide alternative supply sources such as desalination. Another strategy is managing demand during periods of drought.

Continuing long-term challenges for the industry centre around population growth, increased urbanisation, ageing infrastructure (with much of Australia's water and sewerage infrastructure having been built in the 1970s), climate variability and environmental sustainability. To meet these challenges, water businesses are investing in water security measures, such as procuring new water supplies, and measures around biodiversity and regenerative land use. Community expectations and new government legislation have also encouraged water businesses to invest in digital metering and smart networks, emissions reduction initiatives and cybersecurity.

Surveys show that Australian consumers are concerned about future water supply. In the Australian Water Association's 2022 survey, less than 45 per cent of 750 respondents were confident that we would have enough water for the next 30 to 50 years.[1] Below, the authors draw on some of the pressing issues that arose over the course of our interactions with 14 water companies in Victoria and give their view on how businesses can balance long-term security of supply with the expectations of regulators and maintaining affordability for the broader community.

ISSUES FACING THE WATER INDUSTRY

The conditions faced by most water businesses in Victoria in recent years has been significantly more challenging than anticipated in 2018 when the ESC approved the expenditure forecasts used to set water prices for the current regulatory period covering 1 July 2018 to 30 June 2023 (the 'PS4' regulatory period).[2]

The COVID-19 pandemic impacted the Victorian water businesses' expenditure in several ways, including:

- requiring additional water and wastewater monitoring and treatment;
- increasing customer hardship due to cost-of-living pressures;
- disrupting business operations, including the ability to carry out maintenance activities and higher rates of staff absenteeism;
- changing work practices, including social distancing and hygiene requirements as well as operations transitioning to enable staff to work from home;
- disrupting supply chains, putting pressure on the availability and cost of inputs; and
- increasing migration from Melbourne to regional areas, resulting in higher-than-expected regional population growth.[3]

These impacts have affected each water business's actual and forecast expenditure in different ways. Some water businesses have faced new costs or cost pressures, while others have enjoyed cost savings. The longer-term implications remain unclear.

Other additional unforeseen events and changes that were not anticipated included:

- the continued impacts of climate change on the frequency and severity of major weather events, including drought, bushfires and floods;
- the continued evolution in climate change and environmental policy, including emission reduction strategies and targets, and associated compliance and reporting obligations;
- a continued hardening of the insurance market, which also (at least partly) reflects the impacts of major global and domestic climate-related events; and
- the need to do more to mitigate cybersecurity risks, including mandated obligations.

However, these issues and challenges do not imply or support the premise that water businesses should continue to increase their operating and capital expenditure, as well as water and sewerage prices to consumers. Additionally, it does not suggest that there should be lower expectations in terms of the need to drive efficiency savings in the longer term for the benefit of customers, or that businesses should avoid responsibility for managing the risk of cost increases.

All this underscores the importance of scrutinising increases in expenditure, to ensure that water businesses continue to act in a manner consistent with prudent business efficiency, including how it responds to operating environment uncertainties and challenges.

Case study background

The ESC issued its final decisions on proposed price changes in June 2023 for 14 Victorian water businesses.[4] These prices will apply to water and sewerage services for the PS5 regulatory period, which covers 1 July 2023 through to 30 June 2028.[5]

Read the final decisions here

OUR ROLE

FTI Consulting was engaged to undertake an independent expert review of water businesses' operating and capital expenditure forecasts for the 2023 to 2028 PS5 regulatory period. We advised on the efficiency and prudency of 14 water business proposal submissions for the 2023 price review. These submissions included proposed changes to their capital and operating spending in the PS5 regulatory period, and the justification of its impacts on consumer prices for water. We considered each businesses' ability to absorb the proposed cost increases, including step changes in operating expenditure, and assessed the reasonableness of the overall cost increases.

The proposals were assessed against a legal framework set out in the *Water Industry Regulatory Order 2014* (WIRO)[6] and the Commission's PREMO framework for approving prices. The PREMO framework was first introduced in 2018.[7] As Figure 1 shows, the PREMO approach contains new and conventional elements related to price, risk, engagement, management and outcomes.

Figure 1: The Commission's PREMO framework

PREMO provides water businesses with incentives to put forward their best offer to customers and deliver the outcomes its customers value most and to deliver these as efficiently as possible.

The Commission's PREMO framework places an emphasis on the efficient delivery of services, and assessing the water business's expenditure forecasts is fundamental to achieving this objective.

OUR IMPACT

For operating expenditure, our assessment approach consisted of the following stages:

1 Review baseline expenditure

- **Adjustments for non-recurrent expenditure:** appropriate adjustments have been made for non-recurrent expenditure in the 2021-22 baseline year and/or additional recurrent expenditure incurred in the 2022–23 financial year.
- **Key drivers of baseline uplifts:** where baseline 2021–22 expenditure is above the Commission's approved benchmark allowance, the key drivers are clear and provide sufficient justification for the increase if required. Material increased should be well supported by documentation or evidence.

2 Review proposed step changes

- **Rationale:** we applied the following criteria to assess whether proposed step changes:
  - comply with new, or changed, legislative or regulatory obligations;
  - achieve an outcome or implement an initiative endorsed by customers or the community;
  - recategorise expenditure between capital and operating expenditure, where it is necessary or appropriate to do so;
  - reflect the incremental operating expenditure associated with a new prudent and efficient capital project; and
  - cannot be mitigated or otherwise absorbed by an efficient business operation within its approved budget (including the growth allowance)
- **Supporting evidence:** key step changes have been substantiated, with further supporting evidence provided for material items.

3 Review proposed treatment of growth and the proposed efficiency factor

- **Net increase in operation expenditure (growth less efficiency factor):** if a business proposes a modest net increase, we may look more favourably on some step changes that may otherwise be considered either immaterial or could be absorbed in a larger growth forecast.

Each business's growth and efficiency factors reflected the nature of their business and its operating environment. In assessing proposed increases in expenditure, including step changes, we considered each business's approach to allow for growth and efficiency, and the resulting net growth factor for the PS5 regulatory period. For example, some businesses proposed more ambitious efficiency targets, resulting in negative net growth in expenditure over the PS5 regulatory period. Some businesses also sought to recognise economies of scale in allowing for growth.

In relation to capital expenditure, we assessed proposed capital expenditure programs against the criteria set out in Figure 2.

Figure 2: Capital expenditure assessment criteria

Assessment of capital program

- Link to customer service outcomes, regulatory obligations and risk management
- Comparison of forecast and actual capital expenditure
- Reliability of cost estimation
- Deliverability of capital program

Assessment of major capital projects and programs

- Major capital projects and programs are clearly justified
- Proposed delivery solution is reasonable

In considering these criteria, we evaluated whether any adjustments to the proposed expenditure forecast were appropriate, material and justified.

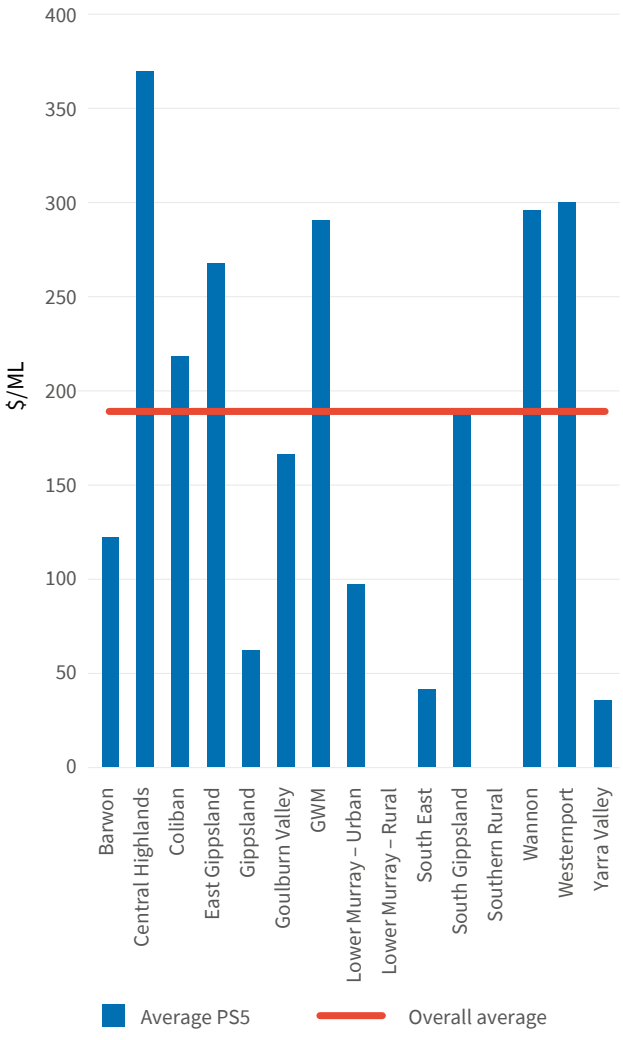
Increased operating costs driven by several common drivers

Despite varying challenges and responses encountered by each water business, there were several common drivers that led to increased operating expenditure for the current PS4 regulatory period and forecasted PS5 regulatory period. These factors related to expenditures on energy, IT and labour.

Electricity

The uncertainty and volatility in the Australian electricity market has made it more challenging for water businesses to forecast electricity costs for the PS5 regulatory period. All water businesses used a report from Schneider Electric Energy and Sustainability Services, commissioned by Intelligent Water Networks, as the basis for forecasting electricity prices during the PS5 regulatory period.[8] Figure 3 shows forecasted electricity expenditure per volume of water delivered for the urban businesses during PS5.

Figure 3: Forecasted energy costs per volume of water delivered during PS5 ($ per ML, 1 January 2023)



Source: Victorian water businesses, 2023 Price Review Models.

Net zero by 2035

In accordance with the *Water for Victoria Plan*, the Victorian water sector has committed to achieving net zero emissions by 2035. The sector has also committed to sourcing 100 per cent of its electricity needs from renewables by 2025.[9]

Five-year targets have been set under the Statement of Obligations on the transition to net zero by 2035.[10] This means that a business that has committed to achieving an annual emissions target in a target year (for example, by 1 July 2030) must ensure that it keeps its emissions at or below that level in all subsequent years leading up to their next five-year emissions target (for example, 1 July 2035).

Table 1 shows the baseline level of emissions for each water business and the reductions required by the 2024–25 financial year. This table shows that the reductions required by each business vary materially depending on their current baseline.

Table 1: Victorian water businesses emission reduction targets

Business	Emissions baseline	Annual reportable emissions 2024–25 (tonnes CO2 e)	% reduction from baseline
Barwon Water	42,986	15,926	-63.0
Central Highlands Water	18,351	14,738	-19.6
Coliban Water	33,604	29,304	-12.8
East Gippsland Water	8,272	6,496	-21.5
Gippsland Water	42,021	32,080	-23.7
Goulburn Valley Water	49,575	37,416	-24.5
Grampians Wimmera Mallee Water	20,017	16,244	-18.8
Lower Murray Water	44,188	24,708	-44.1
South East Water	41,744	23,016	-44.9
South Gippsland Water	7,663	6,480	-15.4
Southern Rural Water	1,559	0	
Wannon Water	31,626	18,976	-40.0
Westernport Water	6,062	5,598	-7.70
Yarra Valley Water	32,004	11,664	-63.6

Source: https://www.water.vic.gov.au/climate-change/reduced-emissions-in-the-water-sector/net-zero-emissions-by-2050

The businesses must then transition over the following five years to their next target for the 2029–30 financial year. All businesses are required to achieve net zero by 2034–35, although some businesses are forecasting to achieve net zero by 2029–30.

It is evident from the water business PS5 submissions and discussions with the businesses that different initiatives are being employed to achieve the 2025 target. These initiatives include one or more of the following:

— direct capital investment in 'behind the meter' renewable capacity (for example, installing solar photovoltaic (PV) equipment at water treatment plants);

— purchasing energy generated from renewable sources (green power), which can involve an additional cost compared to conventional sources; and

— purchasing offsets, such as Large Generation Certificates.

IT expenditures

Several businesses have experienced increases in IT-related operating expenditure in the PS4 regulatory period, which have impacted the 2021–22 baseline. Some businesses are proposing step changes for IT expenditure in the PS5 regulatory period. This was reflected in three main categories:

— cloud-based services;

— cybersecurity; and

— other IT expenditure.

Cloud-based services

Consistent with trends in other businesses and industries, most of the water businesses are either in the process of transitioning, or have transitioned, to cloud-based services, also referred to as Software as a Service (SaaS). Under this model, the software distribution model breaks away from businesses owning its own hardware and software infrastructure, instead relying on key applications centrally hosted via a third-party provider.

This change in service delivery models also means that expenses that were formerly categorised as capital expenditure are now classified as operating expenditure. This includes relevant licence and subscription fees. As a result, there will be a reduction in capital expenditure and an uplift in operating expenditure. However, this may not be a direct substitution, in that the profile for capital expenditure will depend on the investment requirements of the business. This change in operating expenditure is due to several businesses attributing SaaS costs as a driver of the baseline uplift or proposing a step change.

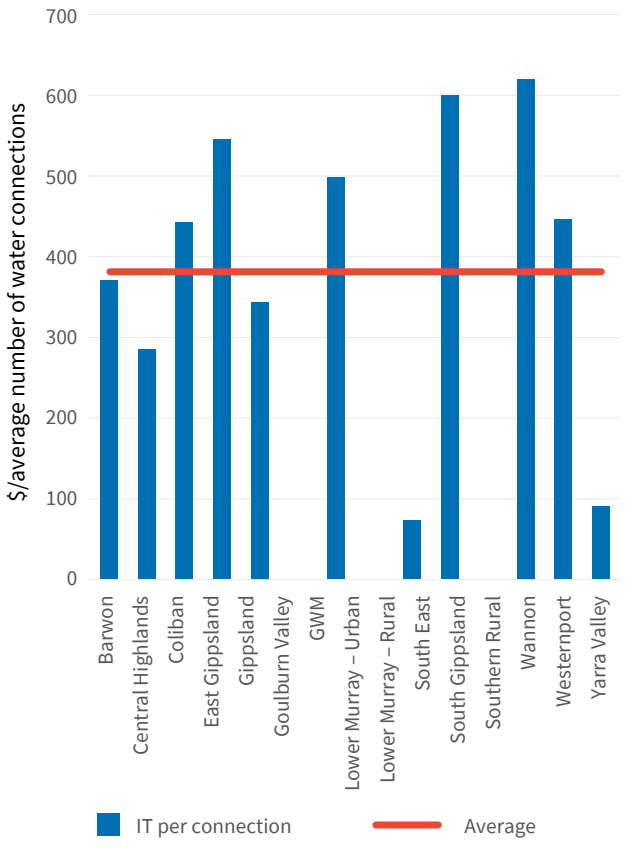
Cybersecurity

The need to upgrade cybersecurity has accelerated over the PS4 regulatory period with increased scrutiny from government agencies, customers and the wider community. Activities range from ensuring that water assets and operations remain resilient to cyber attacks, through to protecting customer data.

Victorian water businesses are required to comply with several requirements and standards, including the Victorian Protective Data Security Framework[11], Victoria's Cyber Security Strategy 2021[12] and the Victorian Critical Infrastructure Resilience Framework[13].

Figure 4 shows that most of the water businesses with a higher average expenditure per water connection are smaller organisations, suggesting the presence of economies of scale for cybersecurity activities.

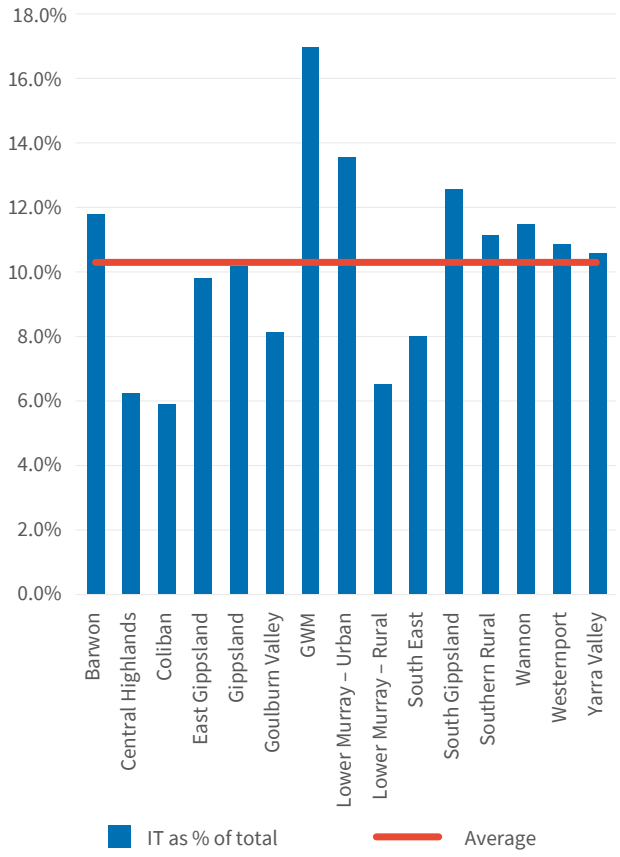
Figure 4: PS5 forecast – IT operating expenditure per water connections ($ per average number of water connections, 1 January 2023)



Source: Victorian water businesses, 2023 Price Review Models.

Figure 5 shows total forecasted PS5 IT operating expenditure as a percentage of total controllable operating expenditure, including rural businesses.

Figure 5: PS5 forecasted IT operating expenditure as a percentage of total controllable operating expenditure (%)



Source: Victorian water businesses, 2023 Price Review Models.

Increased capital expenditure

FTI Consulting's review of water businesses in Victoria provided in-depth insights into the types of capital expenditure programs water businesses are pursuing. Key drivers of the capital expenditures typically related to growth in customer volumes, renewals, implementation of digital strategies, research and development, and environmental conservation.

Under the PREMO framework, water businesses are required to demonstrate that capital expenditure is linked to broader strategic goals, as well as outcomes that would benefit and be supported by customers. To validate these capital programs, it was necessary to demonstrate they will yield significant customer benefits such as a secure and sustainable water supply, innovative and reliable services, a healthy environment, affordability, trust and value. With customer engagement being a key element of the PREMO framework, each water business is required to demonstrate that they had engaged their customer base in the decision-making process through various methods such as focus groups, customer consultation and surveys.

Key capital expenditure programs focused on:

- threats to water security;
- safety risk management obligations, and community and environmental health requirements;
- addressing ageing infrastructure risks;
- managing complexities on brownfield sites;
- IT system capability uplift;
- water and sewer main renewals; and
- water recycling capability including storage.

Market outlook

Our work with the ESC highlighted the challenges that water businesses are facing in continuing to deliver safe and reliable water supplies while ensuring that it remains affordable for customers. This includes having to adapt and respond to changes in the business and operating environment, including the impacts of climate change, as well as replacing ageing infrastructure and managing growth.

The ESC's PREMO framework highlights how effective customer engagement is transforming the way that businesses are working with customers to understand and meet their needs, as well as working through potential trade-offs between service outcome and cost. Encouraging businesses to achieve cost efficiencies also remains a focus of the ESC and other Australian regulators. There may also be alternative pricing mechanisms that could be employed to manage affordability issues (e.g., changing the profile of capital cost recovery so that more is recovered in the future) however these options need to be given careful consideration and in consultation with the businesses, customers and stakeholders, including ensuring that businesses retain appropriate incentives to invest in necessary infrastructure.

Short sighted measures such as running down assets, delaying repairs and maintenance or postponing investment will not solve affordability issues and will only postpone issues of asset renewal into the future. On the contrary, sound policy, governance and regulatory initiatives are key to encourage resilience in the sector for the future.

HOW FTI CONSULTING CAN HELP

FTI Consulting's Economic & Financial Consulting team partners with water businesses to assist with:

- business case development to demonstrate the need for investment;
- analysis of investment strategies and impacts on customers and stakeholders;
- modelling, evaluation and impact assessment to minimise costs and risks;
- optimisation and streamlining of investment strategies to maximise efficiency;
- effective communication of investments' economic impacts to key stakeholders; and
- modelling of prices in accordance with regulatory frameworks.

For more information on these important issues facing the water industry and how we can support your business, please reach out to a member of our team.

ROBERT PRYDON
Managing Director, Economic & Financial Consulting
+61 409 879 939
robert.prydon@fticonsulting.com

SEAN CREES
Managing Director, Economic & Financial Consulting
+61 422 895 965
sean.crees@fticonsulting.com

GRAEME O'MEARA
Senior Consultant, Economic & Financial Consulting
+61 473 835 114
graeme.omeara@fticonsulting.com

Endnotes

[1] "The Future of Water: The Australian Context," Australian Water Association (2023), available at: https://www.awa.asn.au/resources/futureofwaterreport.

[2] Price submission 4 - https://www.esc.vic.gov.au/water/water-prices-tariffs-and-special-drainage/water-price-reviews/water-price-review-2018.

[3] "The impacts of Covid on migration between cities and regions," Australian Governement Centre for Population, available at: https://population.gov.au/sites/population.gov.au/files/2021-09/the-impacts-of-covid-on-migration-between-cities-and-regions.pdf.

[4] "Water price review 2023," Essential Services Commission (2023), available at: https://www.esc.vic.gov.au/water/water-prices-tariffs-and-special-drainage/water-price-reviews/__water-price-review-2023.

[5] This includes 13 water businesses that provide urban water and sewerage services. These are Barwon Water, Central Highlands Water, Coliban Water, East Gippsland Water, Gippsland Water, Goulburn Valley Water, GWMWater, Lower Murray Water, South East Water, South Gippsland Water, Wannon Water, Westernport Water and Yarra Valley Water. It also includes two businesses providing rural services, namely Lower Murray Water and Southern Rural Water.

[6] The Water Industry Regulatory Order 2014 (WIRO) sits within the broader context of the Water Industry Act 1994 (Vic) and the Essential Services Commission Act 2001 (Vic).

[7] "Water Pricing Framework and Approach: Implementing PREMO from 2018," October Essential Services Commission (2016), available at https://www.esc.vic.gov.au/water/how-we-regulate-water-sector/premo-water-pricing-framework/water-pricing-framework-premo-review-2016.

[8] The Intelligent Water Network (IWN) is a collaboration between the Victorian Water Businesses, VicWater and the Department of Environment, Land, Planning and Water (DELWP). With the support of DELWP, IWN engaged Schneider Electric Energy and Sustainability Services (Schneider) to provide forecast electricity prices for the PS5 regulatory period. Victorian Government Purchasing Board reforms have mandated use of the State Purchase Contracts for electricity (large and small market) managed by DTF and Schneider.

[9] "Water for Victoria," Water and catchments, available at: https://www.water.vic.gov.au/water-for-victoria.

[10] Water Industry Act 1994 - Statement of Obligations (Emission Reduction), available at: https://www.water.vic.gov.au/__data/assets/pdf_file/0017/120671/FINAL-SIGNED-STATEMENT-OF-OBLIGATIONS-EMISSION-REDUCTION-2022-UPDATE.pdf.

[11] "Victorian Protective Data Security Framework," Office of the Victorian Information Commissioner, available at: https://ovic.vic.gov.au/information-security/framework-vpdsf/.

[12] "Victoria's Cyber Strategy 2021," Victorian Government (2021), available at: https://www.vic.gov.au/victorias-cyber-strategy-2021.

[13] "Critical Infrastructure Resilience," Emergency Management Victoria, available at: https://www.emv.vic.gov.au/our-work/critical-infrastructure-resilience.