CITIPOWER

AUGMENTATION

BOUVERIE
QUEENSBERRY
SUPPLY AREA

CP BUS 3.02 – PUBLIC

2026–31 REGULATORY PROPOSAL

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1. Overview

The inner north region of Melbourne, including the upper northern area of Melbourne's CBD near to Queen Victoria Market and RMIT University, is primarily supplied by our Victoria Market zone substation and Bouverie Queensberry zone substation.

North Melbourne is currently experiencing a period of rapid growth. This is being driven by the re-development of the Arden precinct around the new Arden Station, which the Victorian Government has positioned as an international innovation and technology precinct (with aims to host up to 34,000 jobs and house 20,000 people by 2051).

Population growth and new block loads resulting from this development, as well as ongoing customer-driven electrification, are expected to drive significant demand increases.

Additionally, the Victorian State Government's development of the Arden precinct is forecast to add approximately 33.5MVA of load to the area by 2029 on current planning timeframes. This additional load is not included in our forecasts.

This demand growth is expected to lead to our Victoria Market and Bouverie Queensberry zone substations both exceeding their thermal capacity ratings, leading to energy at risk at both of these sites.

Several options were considered to mitigate expected unserved energy, including installing third transformers supported by offloads and rebuilding zone substations.

Our preferred option to mitigate expected unserved energy is to install a third transformer at our Bouverie-Queensberry zone substation. This option is preferred because it addresses the identified need and provides the highest net benefits.

The capital expenditure required to install a third transformer at BQ is shown in table 1 below.

TABLE 1 EXPENDITURE FORECAST FOR PREFERRED OPTION ($M, 2026)

CAPITAL EXPENDITURE	FY26	FY27	FY28	FY29	FY30	FY31	TOTAL
Install a third transformer at BQ and offload VM to BQ	10.1	10.1	-	-	-	-	20.2

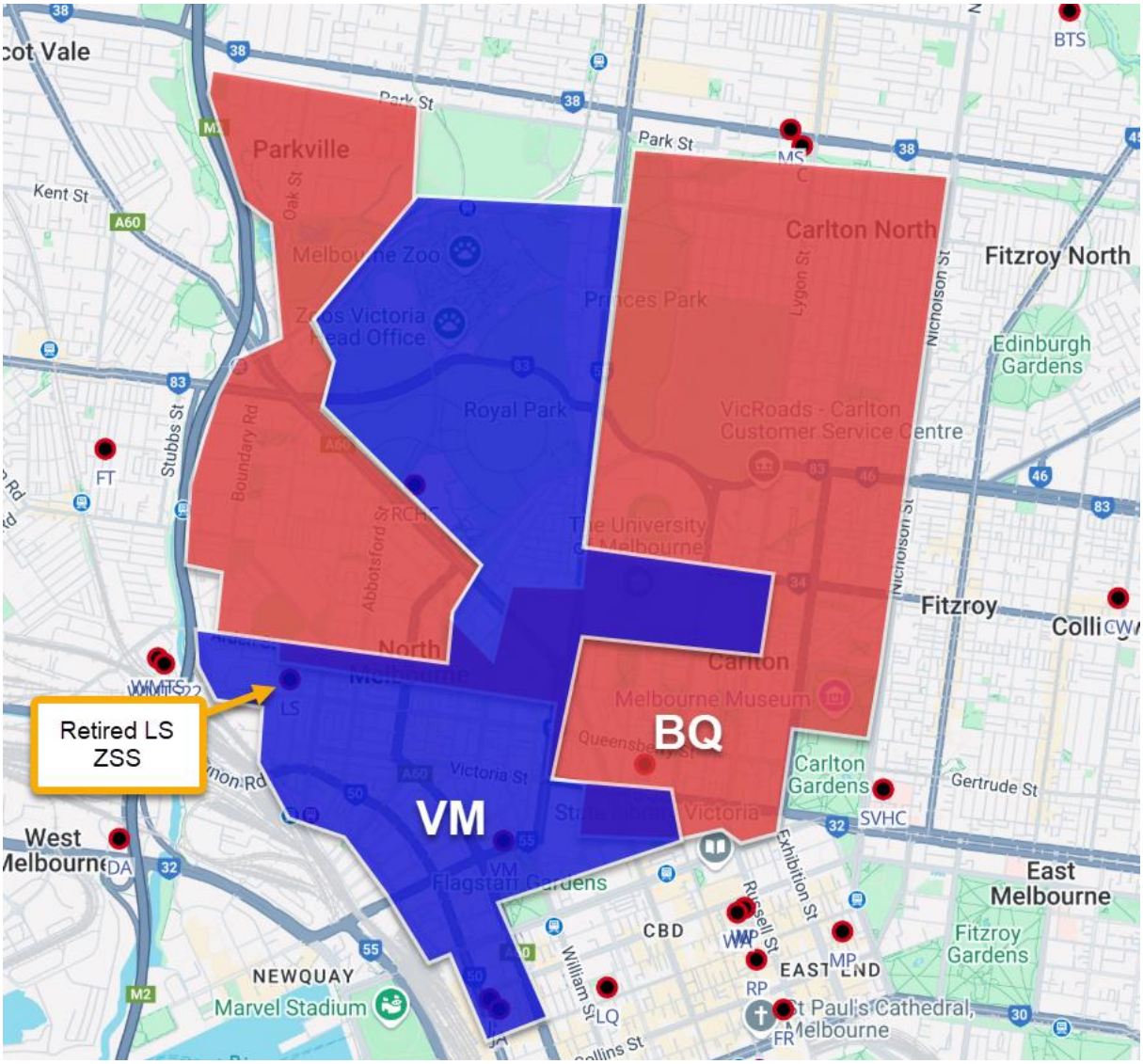
2. Bouverie queensberry supply area

The inner north region of Melbourne, including the upper northern area of Melbourne's CBD near to Queen Victoria Market and RMIT University, is primarily supplied by our Victoria Market zone substation (VM) and Bouverie Queensberry zone substation (BQ).

Our Lauren Street zone substation (LS) previously supplied part of this region, but was decommissioned in 2023 due to the poor condition of its assets and its load transferred to VM and BQ.

BQ serves approximately 20,000 customers and VM zone substation serves 9,800 customers. A portion of the load supplied by both BQ and VM is CBD load that is subject to CBD security of supply obligations.

FIGURE 1 VICTORIA MARKET AND BOUVERIE QUEENSBERRY SUPPLY AREA



2.1 Identified need

North Melbourne is currently experiencing a period of rapid growth. This is being driven by the re-development of the Arden precinct around the new Arden Station, which the Victorian Government has positioned as an international innovation and technology precinct (with aims to host up to 34,000 jobs and house 20,000 people by 2051).

Population growth and new block loads resulting from this development, as well as ongoing customer-driven electrification, are expected to drive significant demand increases.

Block load connections are made up of residential and non-residential connections, with 8 MVA of block loads connecting in mid-2025 to BQ and 24 MVA of block loads connecting to VM by the end of the regulatory period.

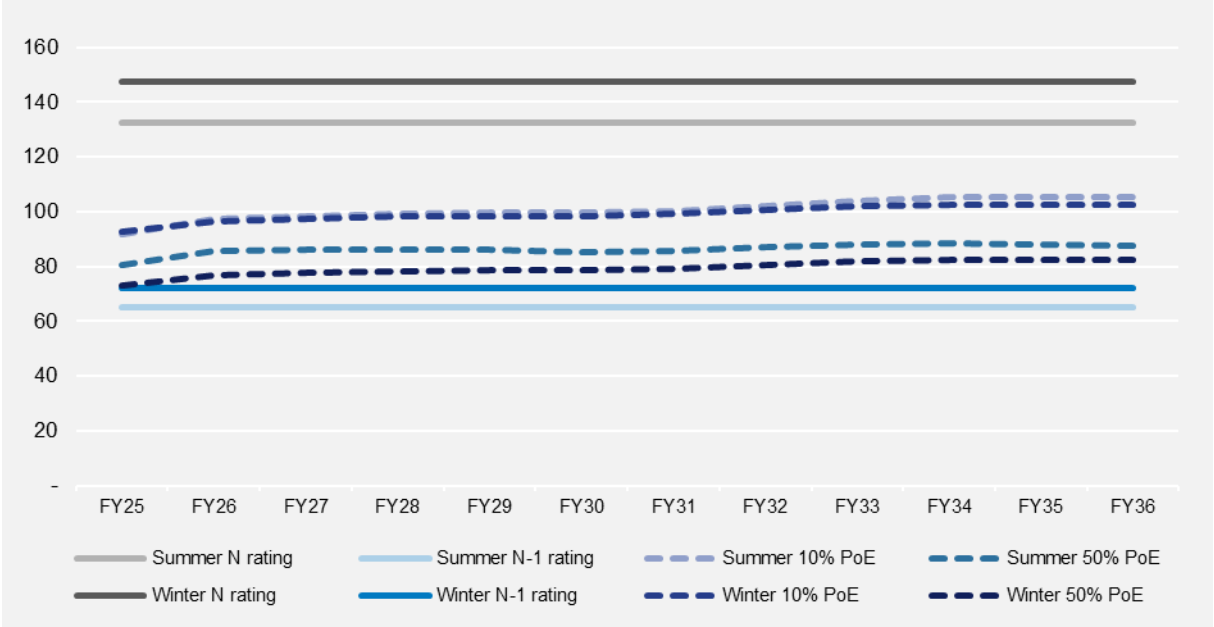
Further, the Victorian State Government's development of the Arden precinct is forecast to add approximately 33.5MVA to load on BQ and VM by 2029 on current planning timeframes[1]. This additional load is not included in committed block loads and will need to be supplied by VM and BQ.

The identified need, therefore, is to provide a reliable supply of electricity to customers in our Bouverie Queensberry supply area as forecast residential growth and development continue.

1.1.1 Forecast demand

Figure 2 below shows that the maximum demand at BQ is forecast to have exceeded its summer and winter N-1 thermal capacity ratings of 64.9 MVA and 72.3 MVA respectively by the beginning of the 2026–31 regulatory period and remain above it through the period.

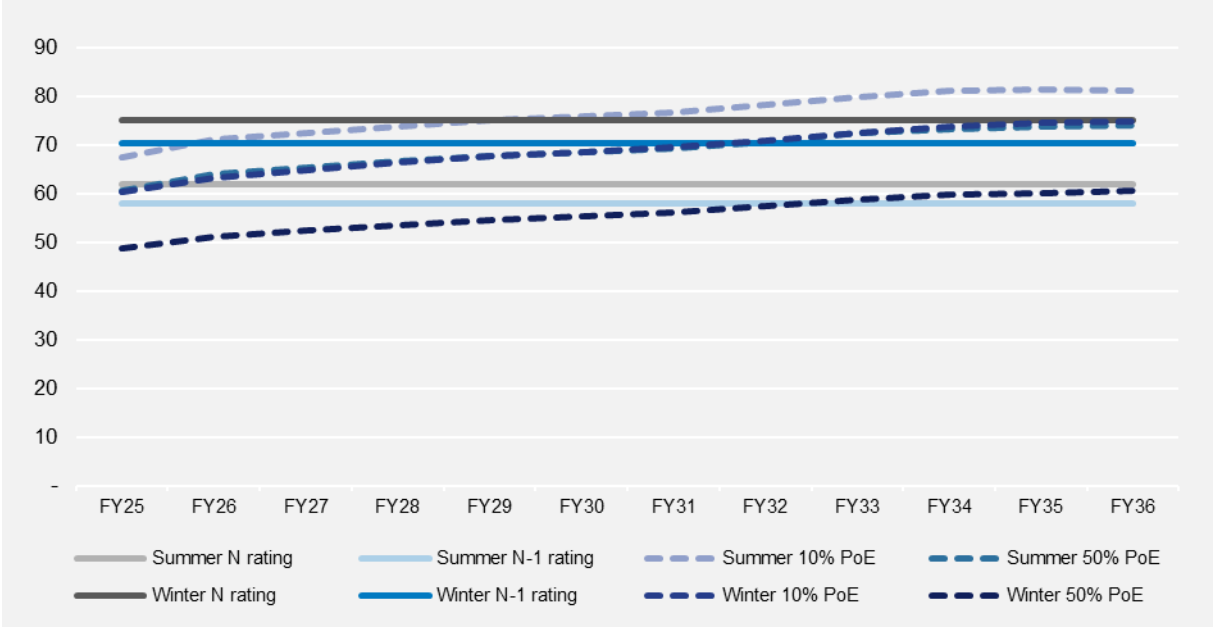
FIGURE 2 MAXIMUM DEMAND FORECAST AT BQ (MVA)



[1] As advised by Development Victoria via email in November 2024

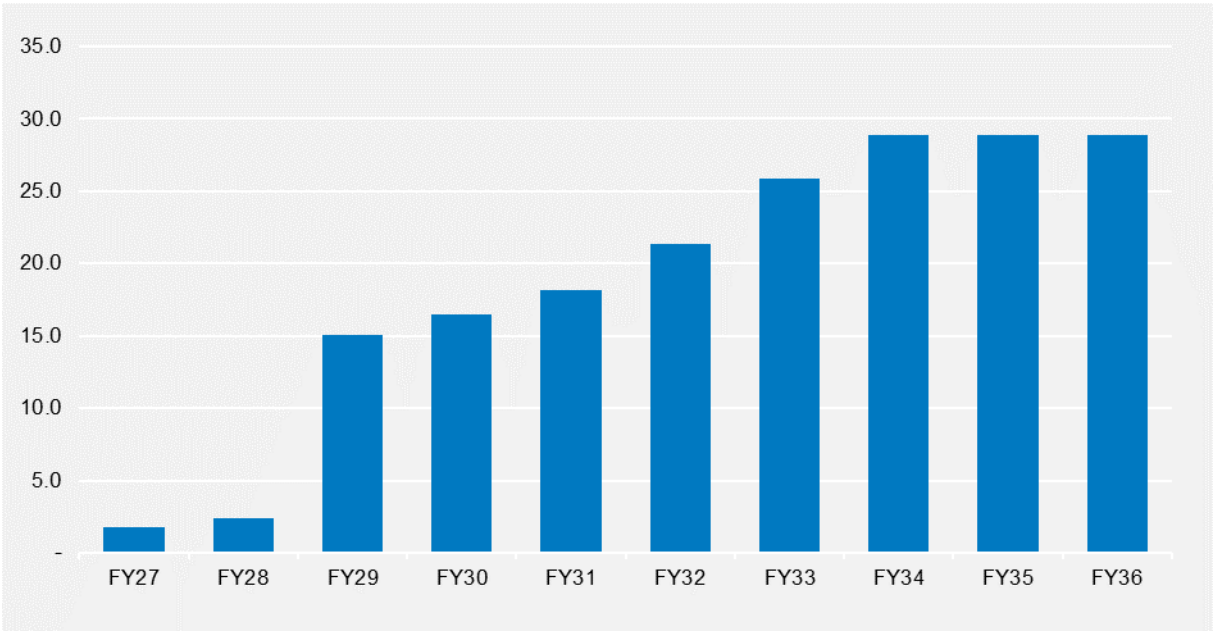
Figure 3 below shows that the maximum demand at VM is forecast to exceed its summer and winter N-1 thermal capacity ratings of 57.9 MVA and 70.2 MVA respectively. Our forecast tool indicates VM will remain above this rating in the 2026–31 regulatory period.

FIGURE 3 MAXIMUM DEMAND FORECAST AT VM (MVA)



If development plans are realised on schedule, the addition of load from the development of the Arden precinct will place significant pressure on the existing capacity of BQ and VM. The energy at risk of not being served at BQ and VM with the addition of forecast load from the Arden precinct in 2029 is shown in figure 4. The value of expected unserved energy based on the AER's 2023 VCR.

FIGURE 4 VALUE OF EXPECTED UNSERVED ENERGY AT BQ AND VM WITH THE ARDEN PRECINCT LOADS ($M, 2026)



3. Assessment of credible options

Several options were considered to meet the forecast demand in the BQ supply area. A summary of the costs, benefits and net present value of each option considered is described below and shown in table 2.

TABLE 2 OPTIONS SUMMARY ($M, 2026)

OPTION	PV COSTS	PV BENEFITS	NET BENEFITS
Maintain status quo	-	-	-
Install a third transformer at BQ and offload VM to BQ	-10.8	340.1	329.3
Rebuild LS to supply the Arden precinct	-37.5	226.9	189.4
Rebuild LS and offload BQ and VM to LS	-52.1	339.7	287.6

A full description of the costs, benefits and optimal timing of each option can be found in our detailed cost-benefit modelling.[2]

3.1 Option one: maintain status quo

Maintaining the status quo provides no mitigation to the energy at risk, other than through currently available operational responses such as limited load transfers. Since all adjacent zone substations are constrained in capacity there are no operational transfers possible in this region. This option will lead to increased supply interruptions and greater potential asset failures as forecast loads exceed the capacity of the substations.

This option fails to address the identified need to maintain reliability of electricity supply to customers within required standards.

3.2 Option two: install a third transformer at BQ and offload VM to BQ

Option two addresses the n-1 capacity exceedance at BQ and VM by installing a third 55MVA 66kV/11kV transformer at BQ. Load would be subsequently transferred from VM to BQ to ensure additional load from the Arden precinct can be accommodated on both zone substations from 2029.

Work required to implement this option includes:

- Installation of a new 55 MVA 66/11kV transformer at BQ
- Establish a normally open auto close scheme on the BQ first transformer.

[2] CP MOD 3.04 - Bouverie Queensberry supply area - Jan2025 - Public

- Upgrading of existing protection, control and communication schemes to accommodate the new configuration.

Installing a third transformer at BQ will increase BQ's N-1 rating to 129.8MVA in summer and 144.6MVA in the winter, which will provide significant headroom to accommodate load from new connections.

The present value of expenditure required under this option and the benefits of improved capacity at BQ and VM relative to the status quo are described in table 3 below.

TABLE 3 OPTION TWO: BENEFITS ASSESSMENT SUMMARY ($M, 2026)

OPTION	PV COSTS	PV BENEFITS	NET BENEFITS
Install a third transformer at BQ and offload VM to BQ	-10.8	340.1	329.3

3.3 Option three: rebuild LS to supply the Arden precinct

Under option three, LS would be rebuilt to supply the Arden precinct load of 33.5 MVA, rather than supplying it through the existing distribution network. Rebuilding LS does not involve load transfer from BQ and VM and therefore will not address existing capacity issues at either zone substation.

The works required to rebuild and commission LS include:

- Installation of 66kV GIS switchgear
- Installation of two 55 MVA 66/11kV transformers
- Installation of 11kV switchgear
- Installation of protection, control, and communication schemes to accommodate the new configuration
- Installing two new 66kV sub transmission lines from West Melbourne Terminal Station (WMTS) to LS
- Rerouting WMTS-JA3 in Laurens Street to LS to create “CBD N-1 Secure" in alignment with our CBD Security of Supply obligations.

The present value of expenditure required under this option and the benefits relative to the status quo are described in table 4 below.

TABLE 4 OPTION THREE: BENEFITS ASSESSMENT SUMMARY ($M, 2026)

OPTION	PV COSTS	PV BENEFITS	NET BENEFITS
Re-build LS to supply the Arden precinct load	-37.5	226.9	189.4

3.4 Option four: rebuild LS and offload BQ and VM to LS

Under option four, LS is rebuilt to supply load from the Arden precinct from 2029. Load would then be transferred from BQ and VM to LS through offload projects. This option includes all of the works identified in option three and also includes the installation of feeder extensions from the rebuilt LS to supply:

- exiting 11kV distribution feeders VM014, VM025 and VM026 with other VM feeder reconfigurations.
- 11kV distribution jumbo feeder sections BQ017 and BQ047.

The present value of expenditure required under this option and the benefits of improved capacity at BQ and VM relative to the status quo are described in table 5 below.

TABLE 5 OPTION FOUR: BENEFITS ASSESSMENT SUMMARY ($M, 2026)

OPTION	PV COSTS	PV BENEFITS	NET BENEFITS
Rebuild LS and offload BQ and VM to LS	-52.1	339.7	287.6

3.5 Option five: non-network solution

Given the size of the support needed from a non-network or SAPS solution, and it being required at all times of the year to maintain supply reliability within the Melbourne Inner North area, it is unlikely that a non-network or SAPS option would be technically and economically viable to address the identified need.

We will continue to publish information on this constraint and project in the Distribution Annual Planning Report (DAPR) and follow our Demand Side Engagement Strategy for this project to ensure that non-network providers are given the opportunity to propose economic solutions that are technically and economically viable.

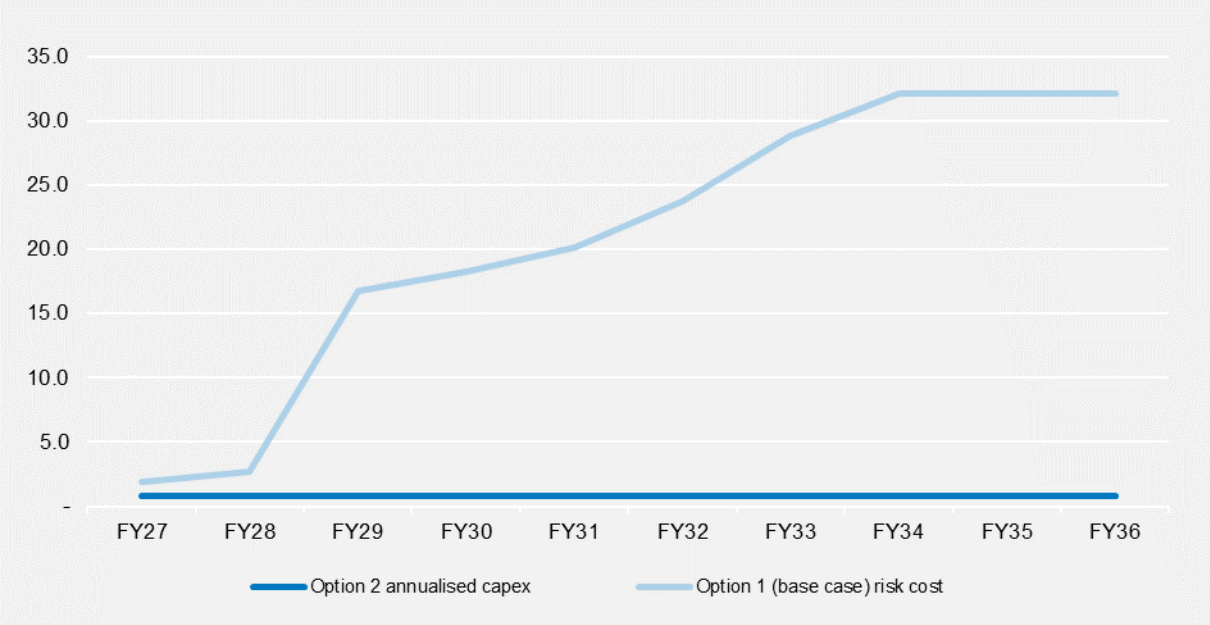
With the level of investment required for the most expensive credible option, this project will be subject to a regulatory investment test for distribution (RIT–D) before investment. This will maximise the chance of a viable non-network solution being identified through the engagement of non-network service providers during the RIT-D consultation.

4. Preferred option

The preferred option for the 2026–31 regulatory period is option two, to install a third transformer at BQ. This option is preferred because it addresses the identified need and provides the highest net benefits. Without this augmentation, there is insufficient system capacity to supply forecast demand. Our preferred option is the least cost option that maximises the net benefits to customers.

A detailed economic assessment, located in our attached cost benefit modelling, of the optimal timing for option two shows the net benefits of establishing a third transformer are maximised if this project is commissioned at the earliest in the 2026–31 regulatory period.[3] Considering the construction timeline and the need to mitigate the risk of supply shortages for the Arden precinct, the project should be commissioned no later than FY28.

FIGURE 5 TIMING OF PREFERRED OPTION ($'000 2026)



The capital expenditure required to install a third transformer at BQ is shown in table 6 below.

TABLE 6 EXPENDITURE FORECAST FOR PREFERRED OPTION ($M, 2026)

CAPITAL EXPENDITURE	FY26	FY27	FY28	FY29	FY30	FY31	TOTAL
Install a third transformer at BQ and offload VM to BQ	10.1	10.1	-	-	-	-	20.2

[3] CP MOD 3.04 - Bouverie Queensberry supply area - Jan2025 - Public

4.1 Sensitivity analysis

Sensitivity analysis was undertaken to understand the impact of increasing costs and decreasing the value of energy at risk mitigated on the net economic benefits of each option in different scenarios. Option two provides the highest net economic benefit under all scenarios and remains the preferred option. Further information on our sensitivity analysis can be found in our attached cost benefit modelling.[4]

[4] CP MOD 3.04 - Bouverie Queensberry supply area - Jan2025 - Public

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