

December 2023

KBR's Detailed Business Case

A Summary by BIL

Introduction

In 2021, PIRSA engaged consulting firm KBR to prepare a Detailed Business Case for a potential project to bring fit-for-purpose treated recycled water from the Bolivar Wastewater Treatment Plant to the Barossa Valley and Eden Valley as a source of additional irrigation and grazing water.

On 24 October 2023, DEW (as the State's new lead agency for this study) released the Detailed Business Case: <https://cdn.environment.sa.gov.au/environment/images/BNW-DBC-Main-report.pdf>.

The Detailed Business Case document is long. BIL has prepared a summary (this four-page document) for its shareholder-customers.

Current Process

Also on 24 October 2023, Minister Close published a media release that recognised a supply of water from Bolivar as envisaged in the Detailed Business Case is unviable:

<https://cdn.environment.sa.gov.au/environment/images/CLOSE-New-direction-in-efforts-to-secure-recycled-water-for-Barossa-growers.pdf>

However, BIL, the State and Barossa Australia have agreed to work closely together to investigate a potential project that uses fit-for-purpose treated recycled water from Bolivar to supply BIL's current water needs plus additional irrigation/stock water needs for Barossa Valley and Eden Valley i.e. to disconnect BIL from its current River Murray supply.

Disconnecting BIL from the River Murray might make a project viable because it:

- potentially provides additional Federal government funding, by exchanging River Murray water entitlements for capital funding;
- potentially provides additional State / SA Water funding, by making BIL's MAPL capacity available to SA Water; and
- should reduce unit capital and operating costs, because of economies of scale.

An additional element of this investigation is whether a water supply to Eden Valley can be created in the short-term.

Unlike the Detailed Business Case, BIL will play a central role in these investigations. When initial findings are available, we will share information and engage with our shareholder-customers and others who might be interested in a water supply.

Therefore, the following summary of the KBR Detailed Business Case is provided for background information only; recognising that only parts of it will apply to the potential project currently being considered by BIL.

KBR's Detailed Business Case

The Basic Concept

The basic concept is for wastewater at Bolivar Wastewater Treatment Plant to be treated to be fit-for-purpose for viticulture and grazing in the Barossa Valley and Eden Valley. This would require a desalination plant at Bolivar.

Treated water would be pumped through a pipeline to large storages, likely in the western Barossa region and within the Barossa.

New pipelines and pump stations would connect the storages to BIL pipelines, allowing BIL to supply existing customers. Extensions to BIL could supply new customers on the Valley floor.

For Eden Valley, a new pipeline and pump station from the eastern limit of BIL's existing pipe network up into the Eden Valley area would supply storages and customers. A network of pipelines and pump stations within Eden Valley would supply customers.

Volume

KBR initially asked growers and graziers in the Barossa (the Barossa Valley and Eden Valley regions) how much water they would be interested in using at various capital and ongoing price points. 195 responses were received.

After preparing initial concept engineering designs and costings, KBR asked growers and graziers their minimum, likely and maximum water demand if the capital contribution was \$10,000 paid over 10 years and the annual water use price was \$1,700/ML in Barossa Valley and \$1,800/ML in Eden Valley. 210 responses were received. The total volumes are below:

	Minimum	Likely	Maximum
Barossa Valley	3,500 ML	5,600 ML	8,800 ML
Eden Valley	1,800 ML	3,000 ML	4,500 ML
Total	5,300 ML 5.3 GL	8,600 ML 8.6 GL	13,300 ML 13.3 GL

KBR noted a likely customer willingness-to-pay upper limit of \$1,500/ML.

Water Supply Options, Infrastructure Requirements and Capital Cost

KBR did further engineering design and costing on five options and derived initial capital cost estimates.

	Description	Total Capital Cost Estimate
Option 1.	8.6 GL of recycled water direct from Bolivar to Barossa and Eden Valley	\$534.0 m
Option 2.	13 GL of recycled water direct from Bolivar to Barossa and Eden Valley	\$688.0 m
Option 3.	3 GL of River Murray water from SA Water's Mannum-Adelaide Pipeline to Eden Valley	\$237.0 m
Option 4.	8.6 GL of recycled water using NAIS* infrastructure from Bolivar to Two Wells, then new infrastructure to Barossa and Eden Valley	\$649.0 m
Option 5.	13 GL of recycled water using NAIS* infrastructure from Bolivar to Two Wells, then new infrastructure to Barossa and Eden Valley	\$842.0 m
*NAIS = Northern Adelaide Irrigation Scheme, a recycled water pipeline from Bolivar wastewater treatment plant to Two Wells		

Significant government investment is required for all options.

All four Bolivar recycled water options include:

- A new desalination treatment plant at Bolivar, to reduce the salinity of the recycled water to be fit-for-purpose for viticulture
- A new pipeline and pump station system to transfer treated water to the Barossa region
- New large water storage(s) near and within the Barossa and Eden Valleys
- New and modified pipelines and pump stations within the BIL scheme
- A new pipeline and pump station from the Barossa Valley to Eden Valley
- New pipelines, pump stations and water storages within Eden Valley

Option 3, for River Murray water to Eden Valley only, included:

- A new pipeline and pump station from SA Water's Mannum-Adelaide Pipeline to Eden Valley
- New pipelines, pump stations and water storages within Eden Valley

Economic Benefits

The report concluded that the economic benefits would exceed the cost of the project for Options 1, 2 and 4 i.e. investment of public funds in these options was considered worthy of further investigation.

Only Option 2 was rated as having a highest chance of success.

Therefore, KBR's preferred option to pursue was Option 2 – 13 GL of recycled water direct from Bolivar to Barossa and Eden Valleys.

Assessments and Other Considerations

KBR undertook social, environmental and cultural heritage assessments and engagement with Traditional Owners. No showstoppers or fatal flaws were identified.

KBR highlighted a recycled water supply has a number of sustainability credentials, being a climate-independent reliable source of water, reduced reliance on deteriorating local surface and ground water sources, and reduced reliance on River Murray water.

Project Proponents

KBR identified three parties that could build, own and operate the project's infrastructure: SA Water, BIL or a private third-party (noting the need for a private third party to make a commercial profit, which puts further upward pressure on the water prices required).

KBR's 'path of least resistance' and potentially preferred model consisted of water treatment by SA Water, water transportation to the region by either SA Water or BIL, and for distribution to customers in both Barossa Valley and Eden Valley by BIL.

Timeline to Delivery

KBR estimates a project delivery timeframe of mid-2026 to mid-2027.

BIL notes, however, that there has been a one year delay in progressing any project, and so this would now be revised to mid-2027 to mid-2028.

KBR's suggested next steps include commercial discussions with BIL and further studies and assessments, before a formal funding application to the Federal Government.