

The background of the slide is a composite image. The top half features a bright blue sky with a faint rainbow arching across it. Below the sky is a horizontal line of trees and distant hills. The bottom half of the slide shows a lush green vineyard with rows of grapevines in the foreground, leading towards the horizon. A semi-transparent blue circle is overlaid on the left side of the image, containing the text.

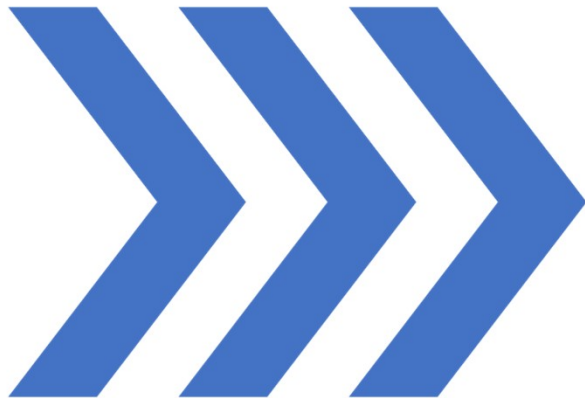
Barossa New Water (BNW)

**Barossa Improved Grazing Group (BIGG) &
Angaston Ag. Bureau Water Forum**

Barossa New Water Project Update

9 November 2021

Purpose



Demand assessment



Explain Round 1 expression of
interest form

What do we do?

Our team has delivered 28 water infrastructure business cases over the last decade nationally (27 for irrigation).

Our method is demand-driven with a commercial focus.

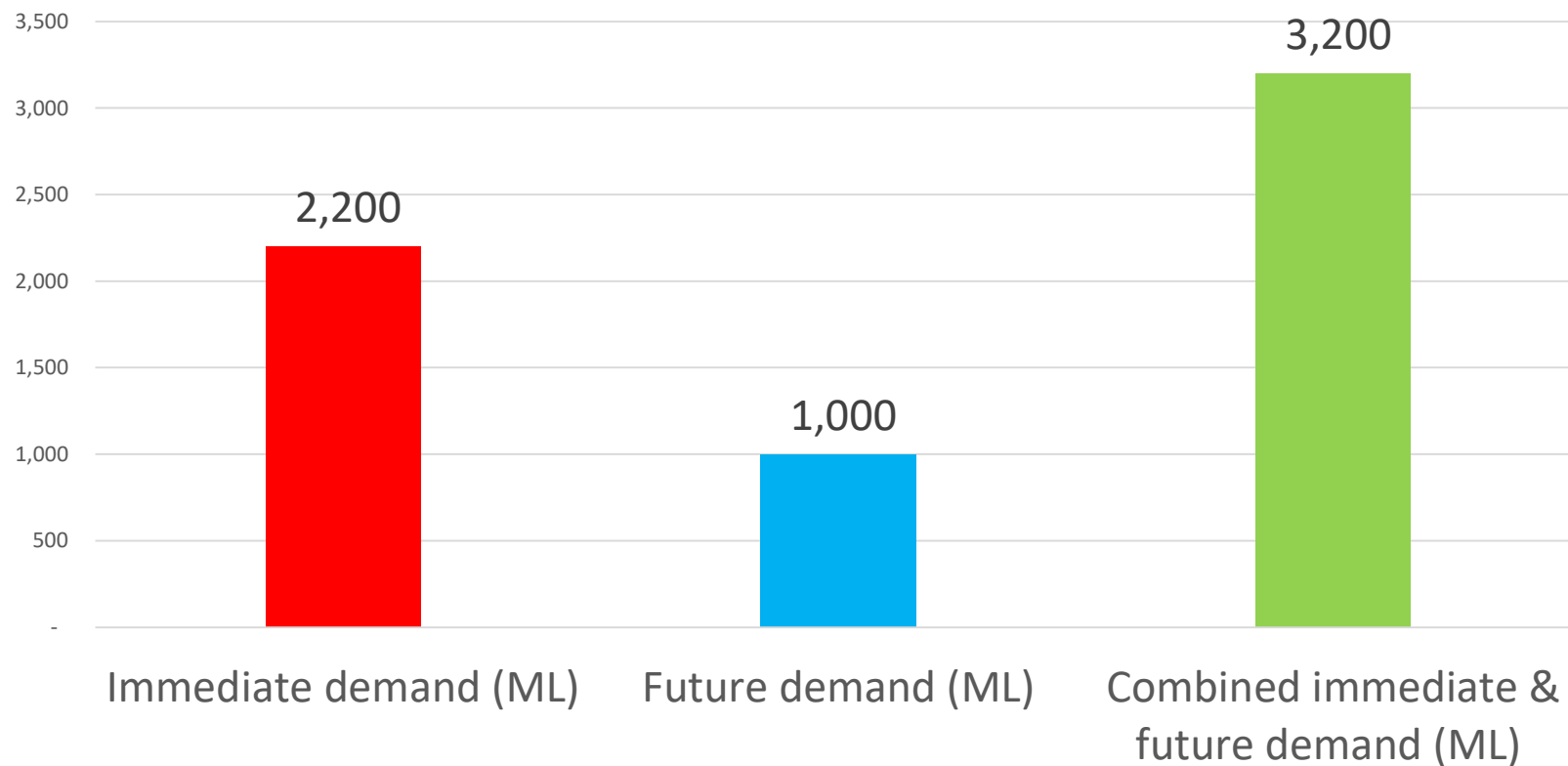
Key team members have developed 15-20 irrigation schemes nationally (ongoing)

Previous demand assessments

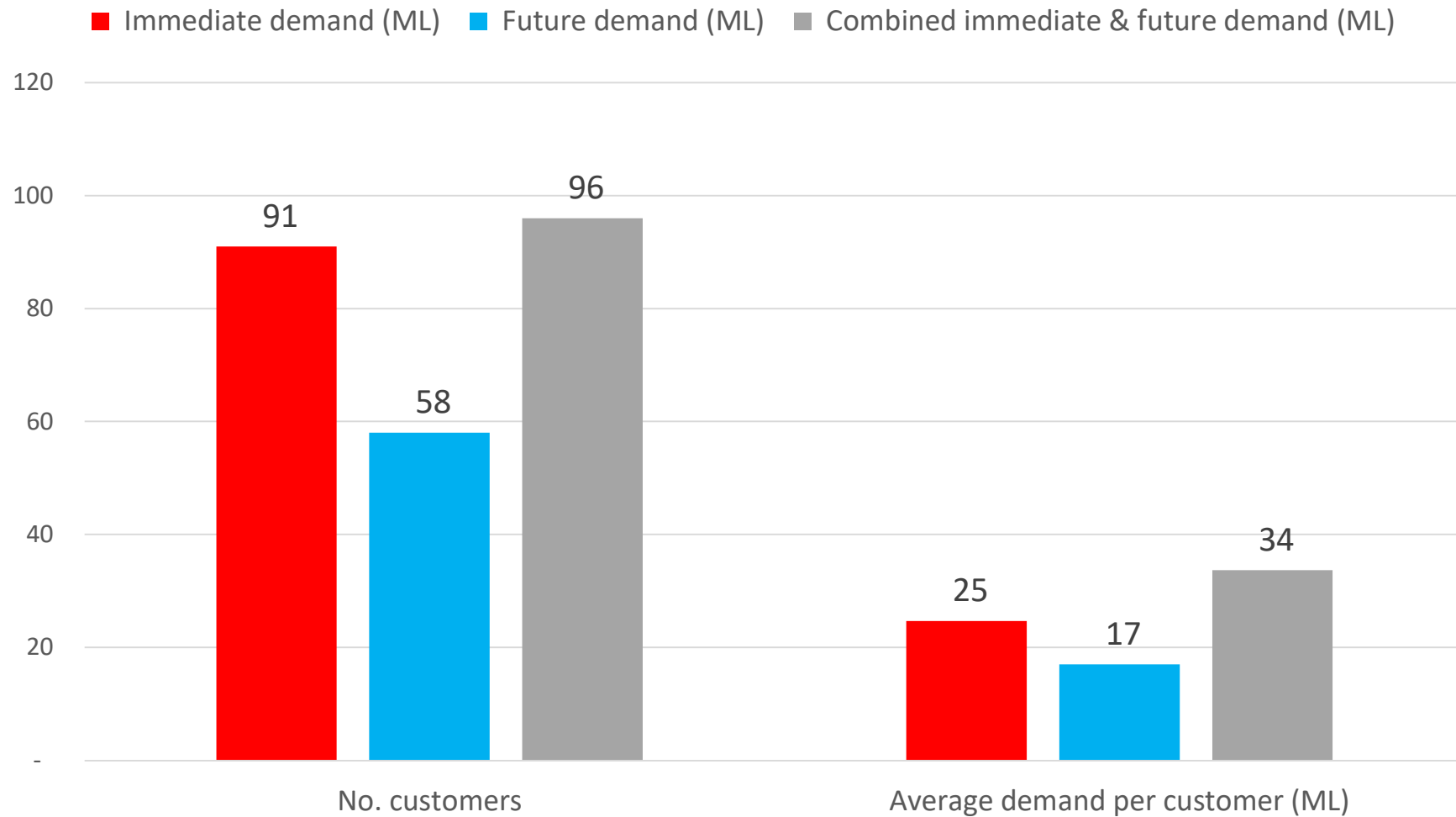
Eden Valley

- KBR has this information
- Many of the questions were not commercial
- Eden Valley customers invited to complete KBR's Round 1 EoI

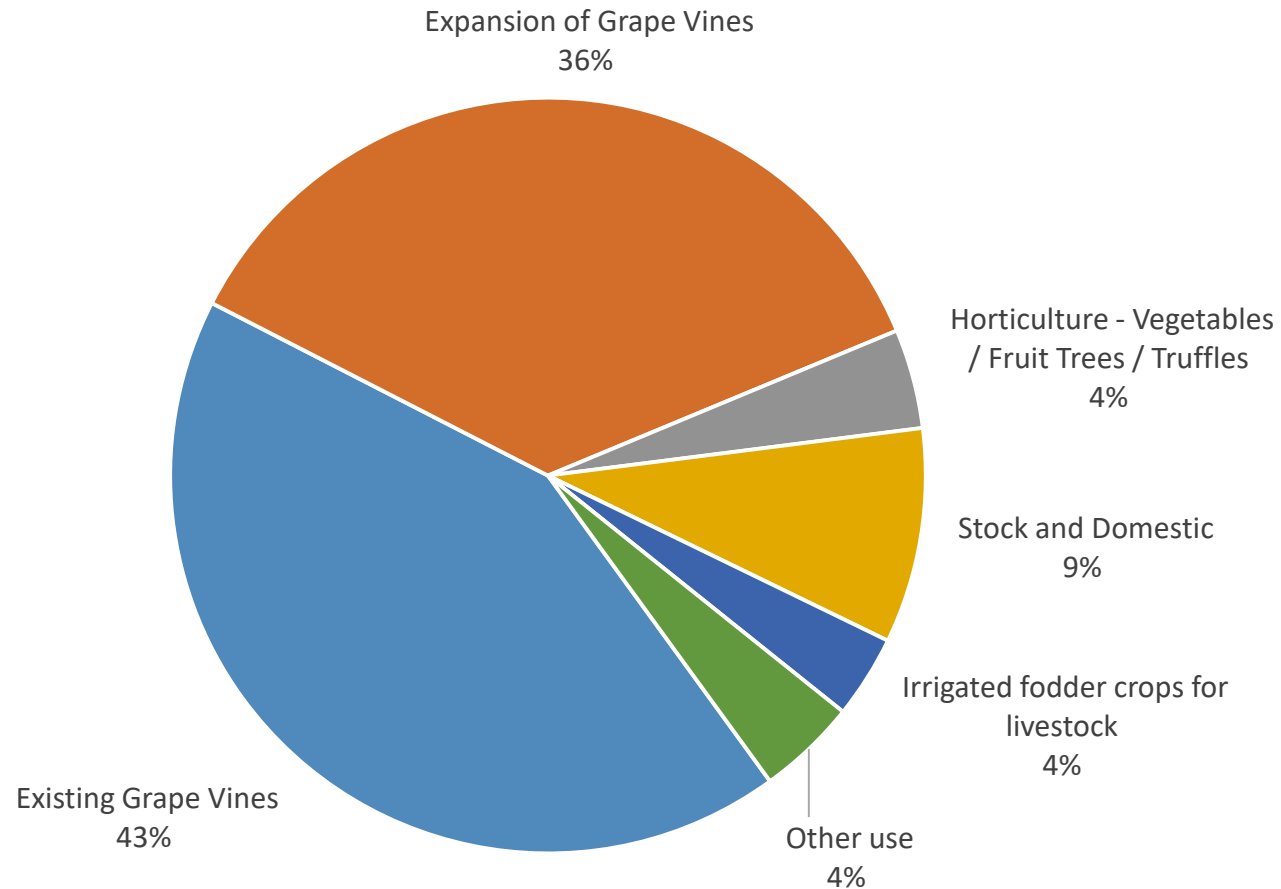
What Eden Valley said last survey (SA Water) – Volume of immediate and future demand?



Eden Valley customer numbers & Average demand per person (ML/customer)



Eden Valley Number of Enterprises / Water Uses



Project scope



BNW (Bolivar WWTP) option presented, but will also consider other alternatives (e.g. raw water to Eden Valley)



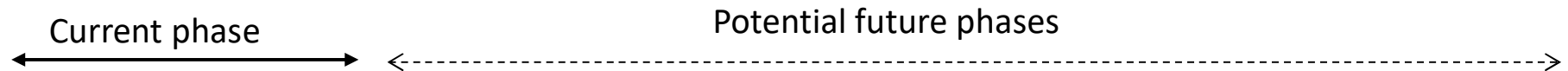
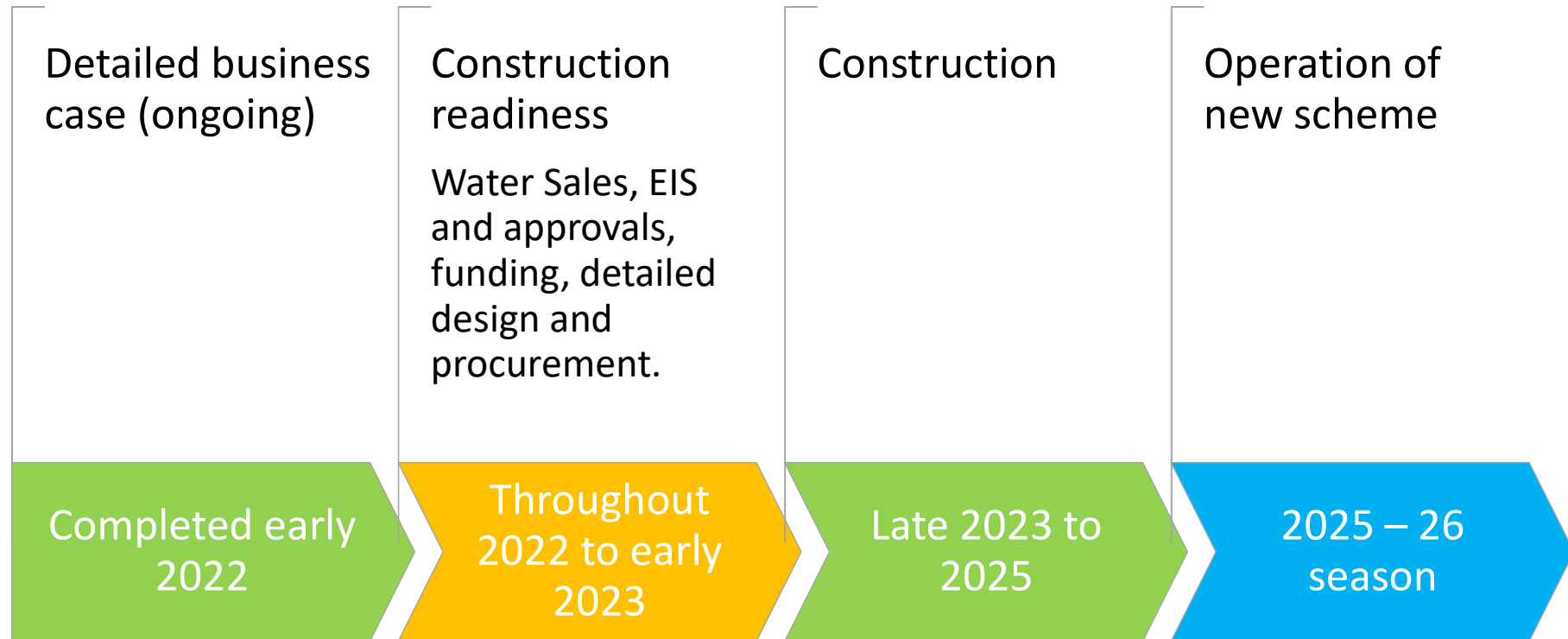
Deliver a detailed business case in 6-8 months



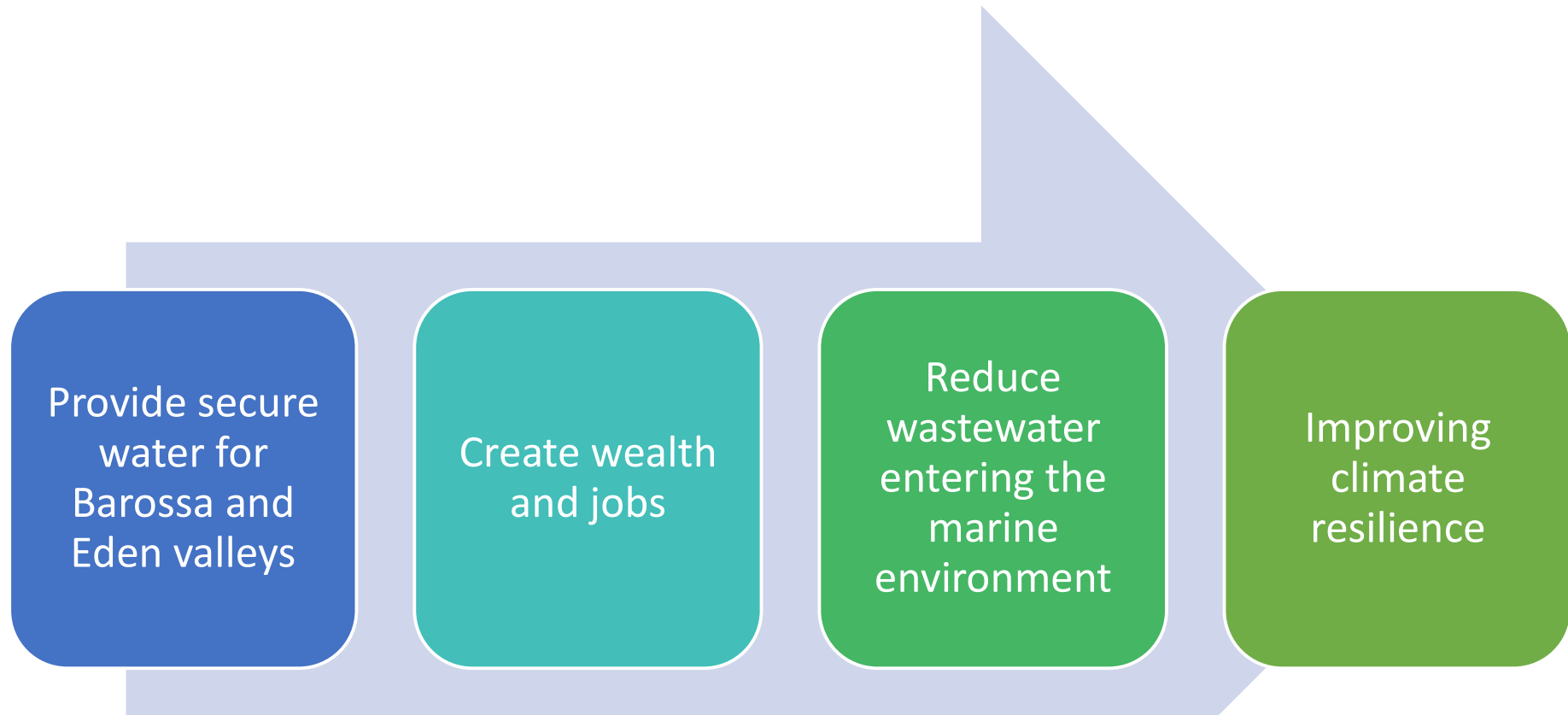
Leverage existing assets where feasible Work with government, growers and infrastructure owners

Indicative dates

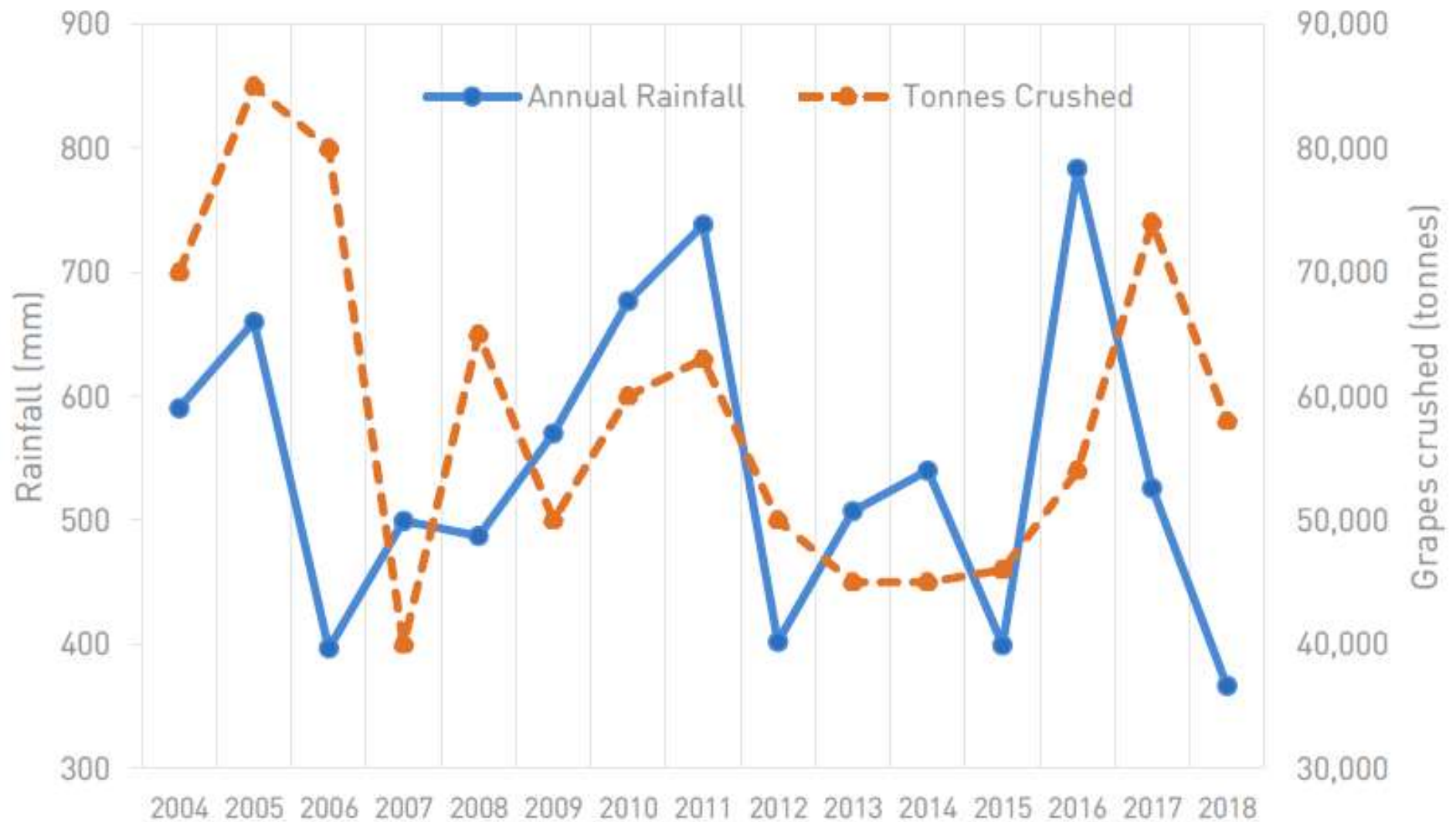
KBR indicative timeframes (based on previous experience in other states)



Project goals



High correlation between yield and annual rainfall



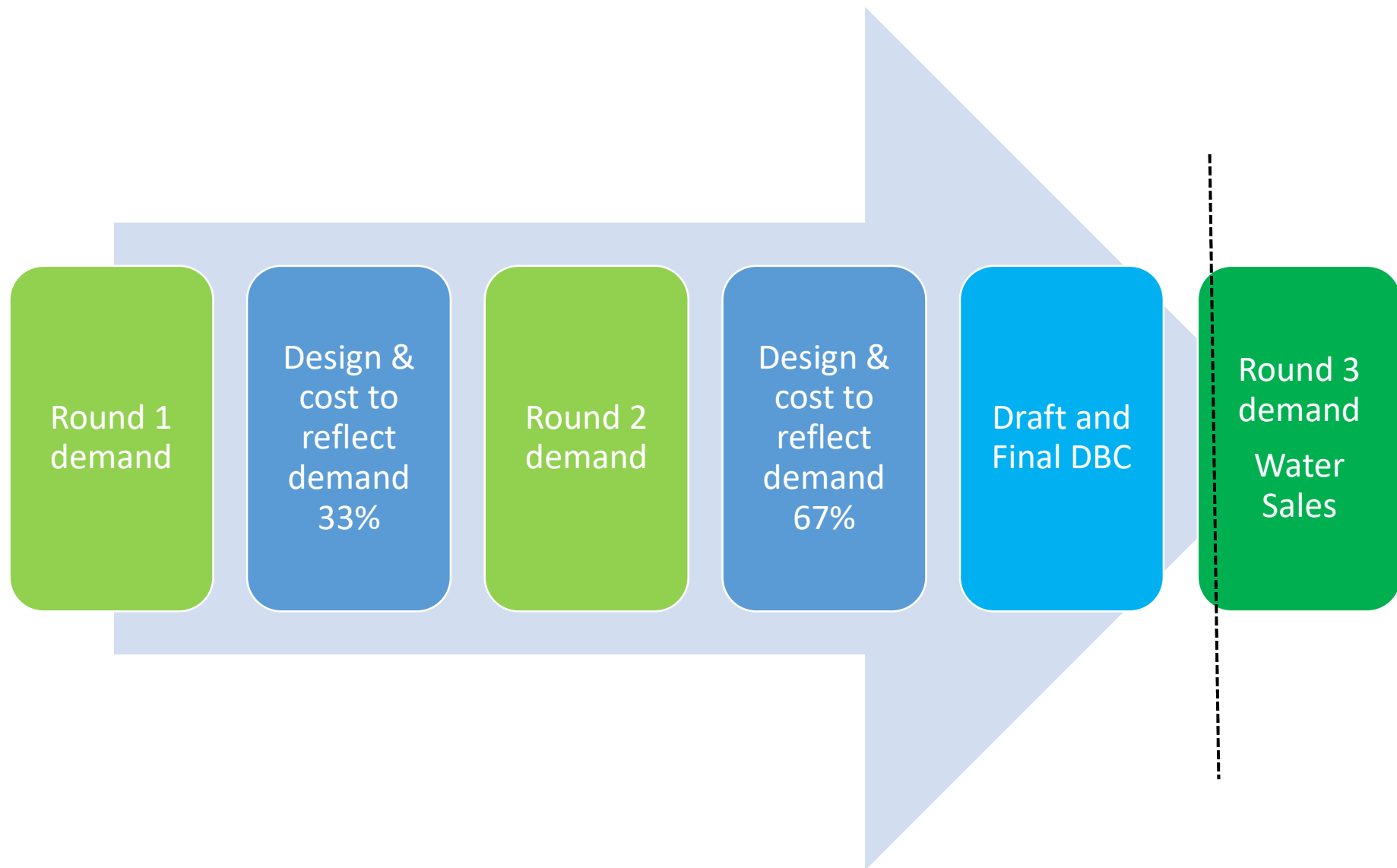
Climate Change

Average annual rainfall is projected to decline. Mid-range climate model projections – **decline 7% to 15% by 2050**

Average temperatures - **increase 1.4-1.7 degrees by 2050**

Significantly reduced streamflow within the Barossa

Our project delivery method is demand led



Key assumptions

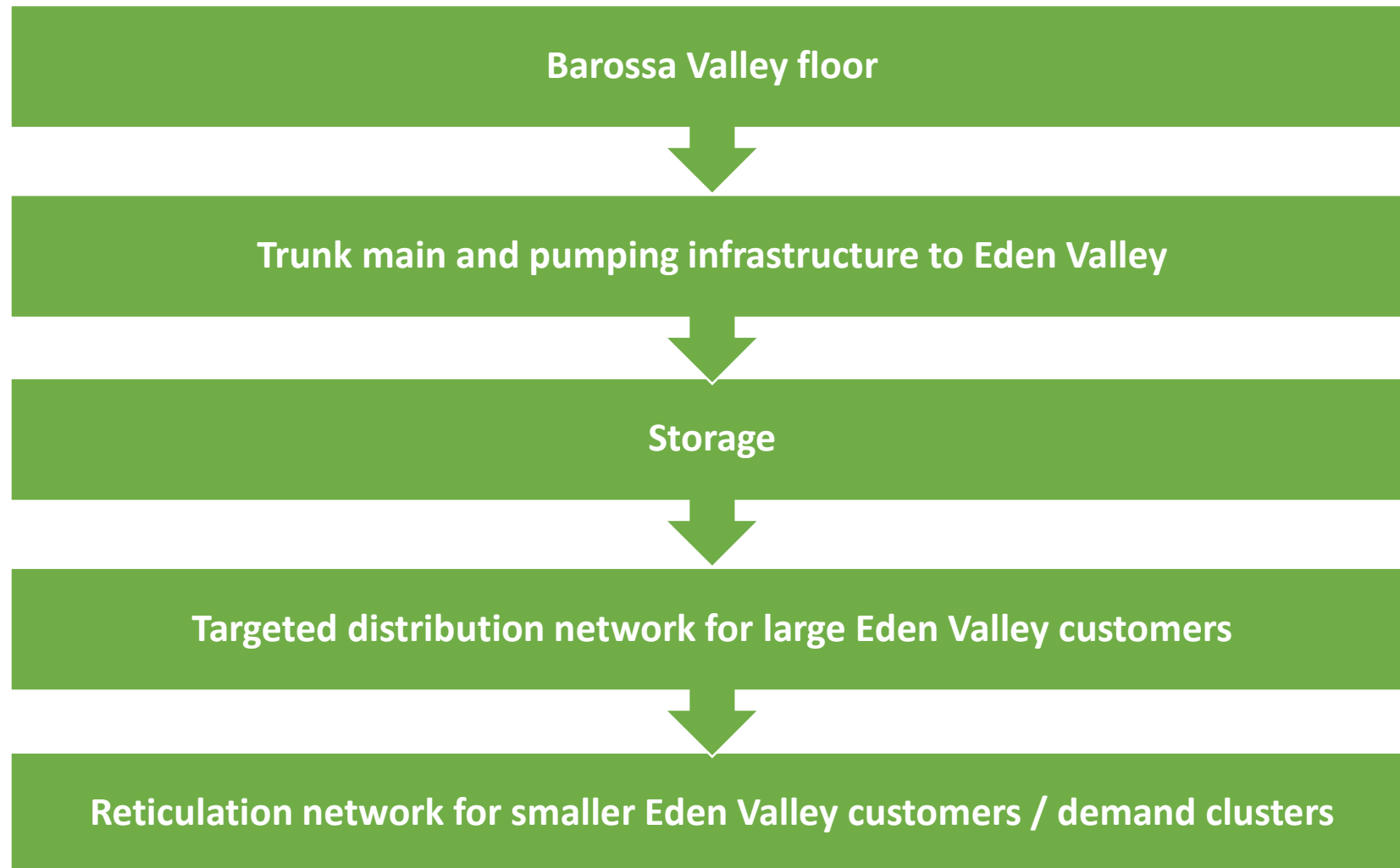
Australian
Government
funds 50%+
of capex

Volume of
demand
impacts price

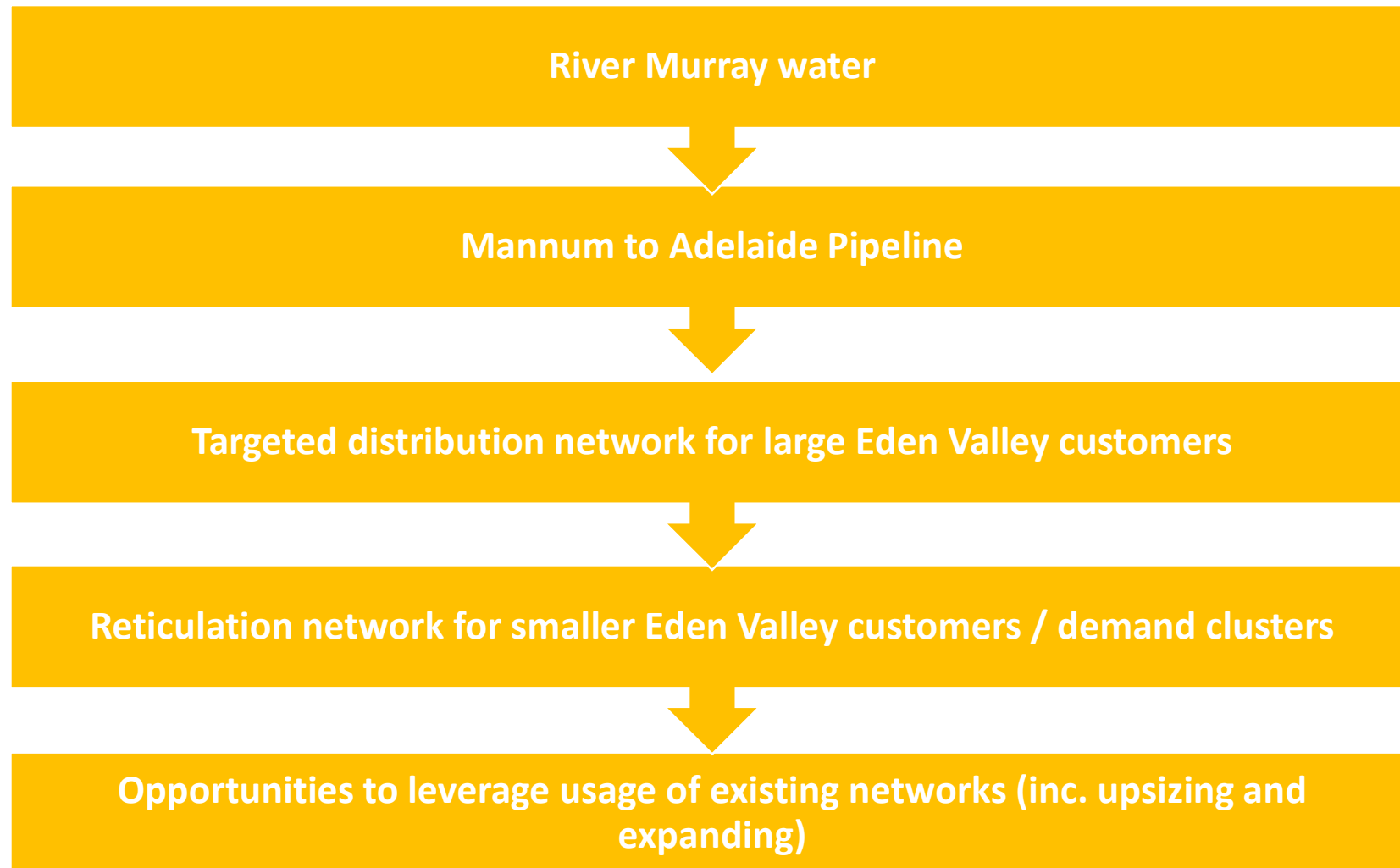
Owner and
operator of
scheme not
yet defined

Supply Sources & Design

BNW Design – Eden Valley



River Murray Design – Eden Valley



Indicative water product and water price trade-off

Indicative water product / treatment price trade-off

Water product	Salt content (ppm)	Total annual charge for treatment only (\$/ML)	Annual Charge saving if not 300-400ppm (\$/ML)
Very high	300-400	520	-
High	300-600	460	60
Medium	500-600	450	70
Low	700-800	390	130
Very low	900-1400		520

Note: Pre-concept – illustration only – no engineering to date

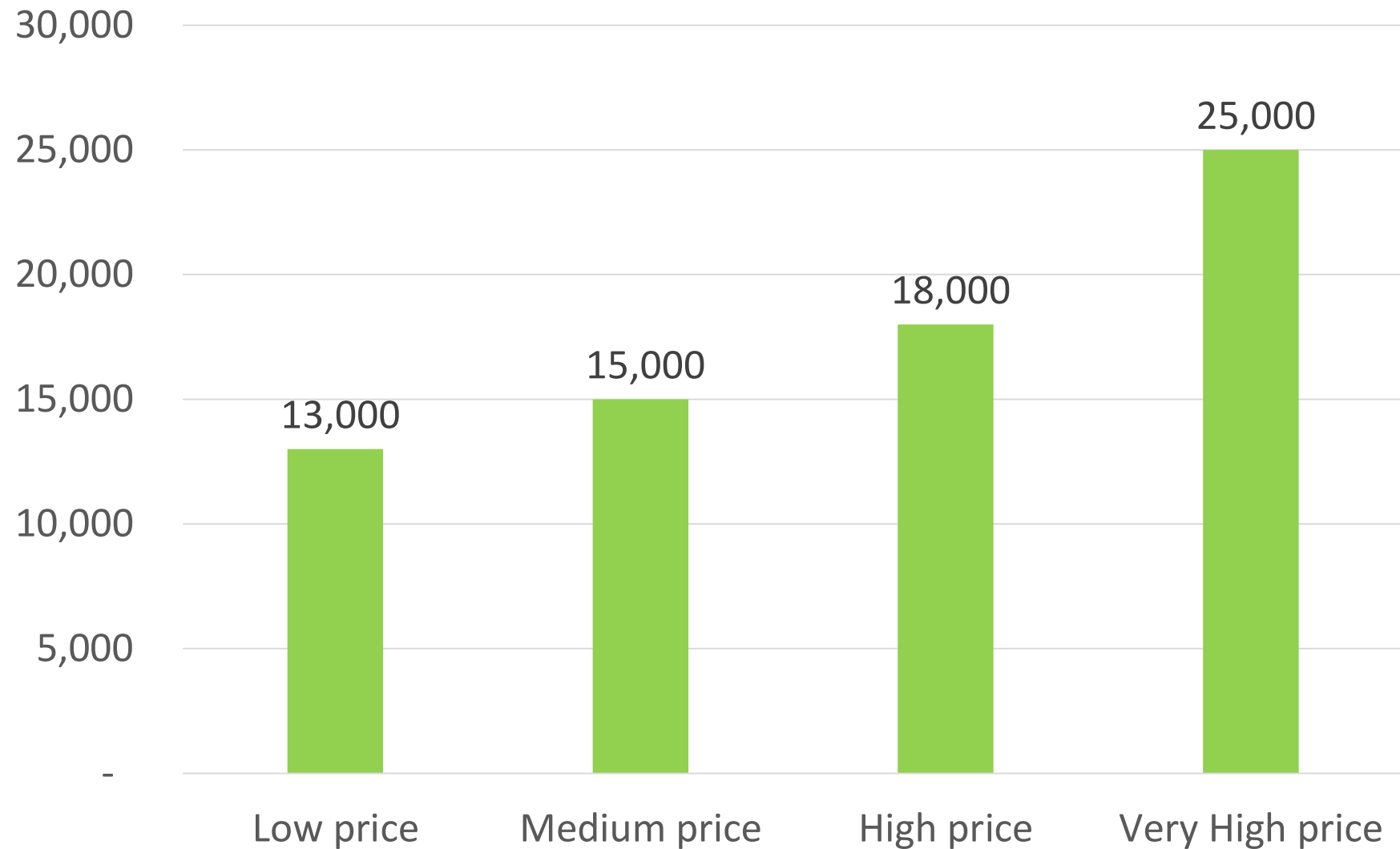
Indicative capital cost & Annual charges

Indicative capex – Full cost (no government funding)

BNW (Desalinated Bolivar supply) Scenario	Indicative volume of new demand (GL)	Total Direct Capital Expenditure - P90 (\$M)	Total Direct Capital Expenditure -P90 (\$/ML)
1. Low price	25	600	26,000
2. Medium price	20	543	30,000
3. High price	15	429	36,000
4. Very High price	10	296	50,000

Note: Pre-concept – illustration only – no engineering to date

Indicative customer capital price – Eden Valley (\$/ML)



Repayment period for customer capital prices

Payback period for capex	Customer capital price (\$/ML)	Draft repayment period (years)
Very low	4,000	2
Low	8,000	4
Medium	12,000	6
High	16,000	8
Very high	20,000	10

Round 1 indicative range of annual charges

Opex	Annual charge (\$/ML)
Very low	1,000
Low	1,500
Medium	2,000
High	2,500
Very high	3,000

Note: Pre-concept – illustration only – no engineering to date

Round 1 indicative capital price and annual charge summary

Payback period for capex	Customer capital price (\$/ML)	Annual charge (\$/ML)
Very low	4,000	1,000
Low	8,000	1,500
Medium	12,000	2,000
High	16,000	2,500
Very high	20,000	3,000

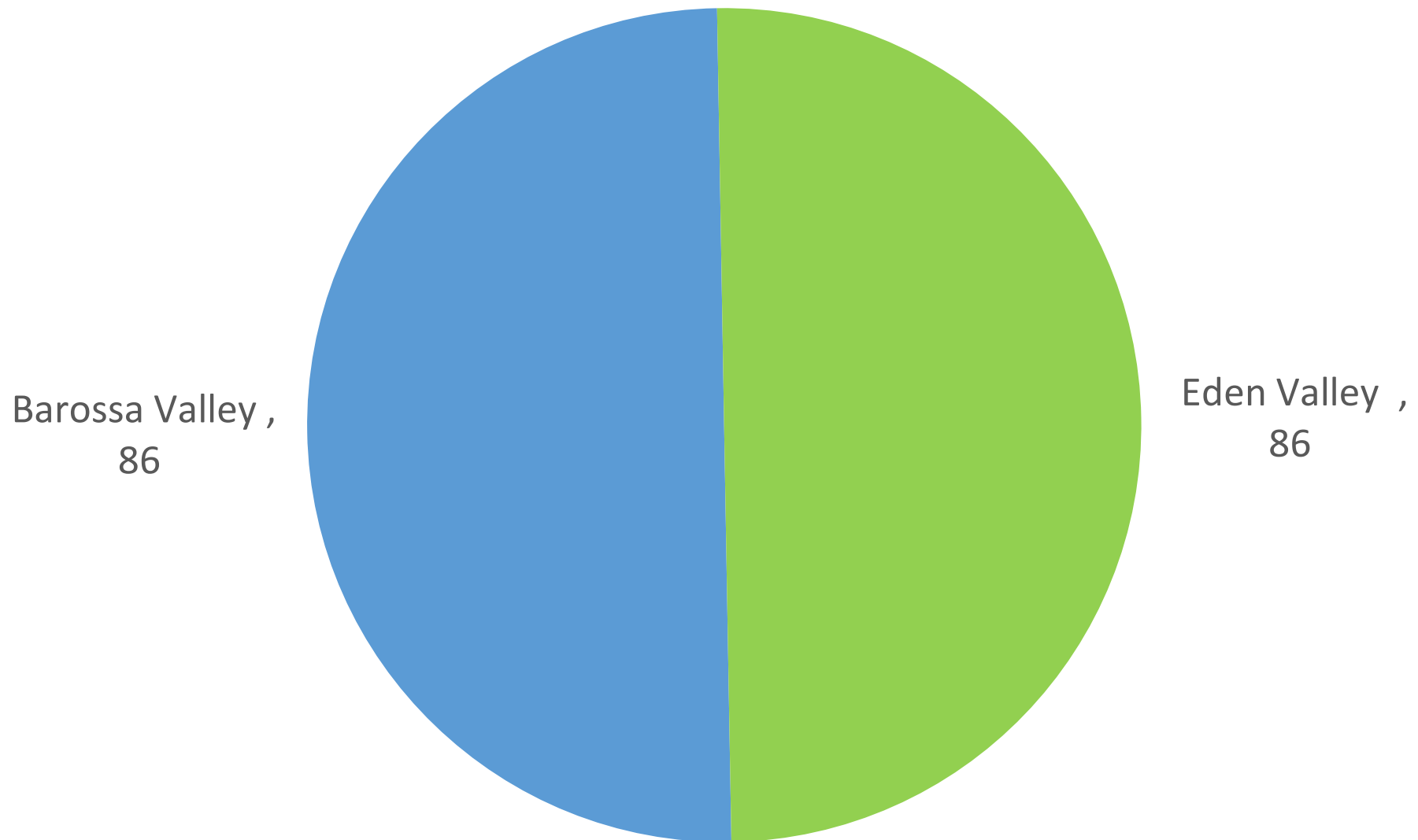
Round 1 Demand Assessment

DRAFT PRELIMINARY HIGH-LEVEL RESULTS – subject to change

Round 1 engagement summary

Additional email and web-based direct to customer contacts	No. of stakeholders
Attended one-on-one and small meetings conducted by KBR	42
No. of people who attended Presentation 1 & 2 - 29 Sept 2022	48
No. of people who attended Presentation 3 - 1 Oct 2021	43
BGWA individually emailed Round 1 Presentation and Updated EOI.	125
Round 1 Presentation & EOI distributed to Barossa Improved Grazing Group (BIGG) members in Barossa Zone (Eden and Barossa valleys) (horticultural, fodder, grapes)	350
Round 1 Presentation & EOI distributed to BGWA members via BGWA weekly update	500
Total	1,108
Story in "The Leader (13 Oct 2021)" local newspaper - Readership /Circulation	7,250
Upper limit no. of people engaged as part of Round 1 (overlap of direct & readership)	8,358

No. customers in each valley – Total = 172



Demand scenarios

Minimum

- Immediate need from 2025
- Noting change in climate (average rainfall decrease and average temperature increase)
- For example, 0.5-1ML per hectare

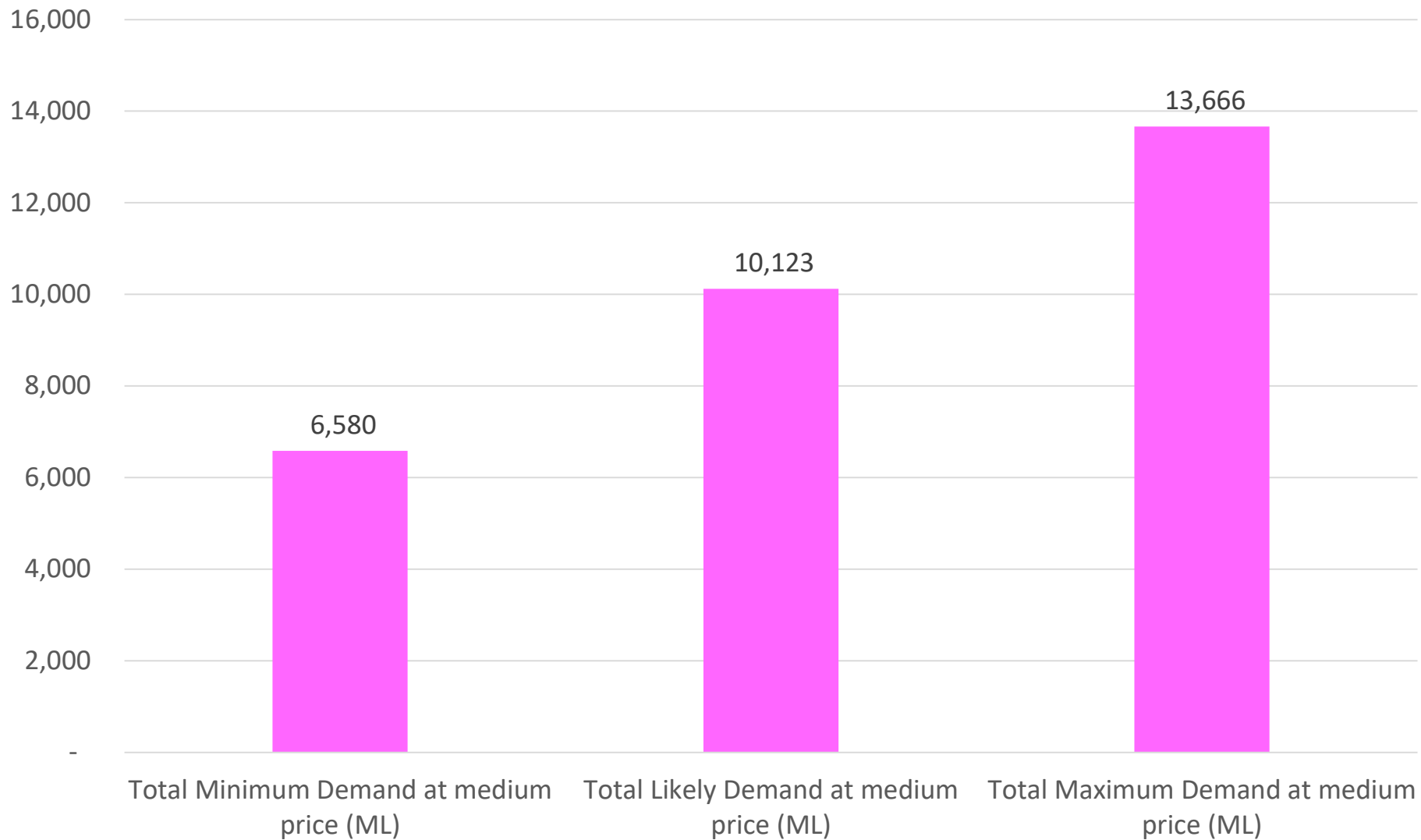
Likely

- Mid-point of immediate and maximum need for 5-20 years
- Assume mid-range change in climate (average rainfall decrease and average temperature increase)
- For example, 1-2ML per hectare

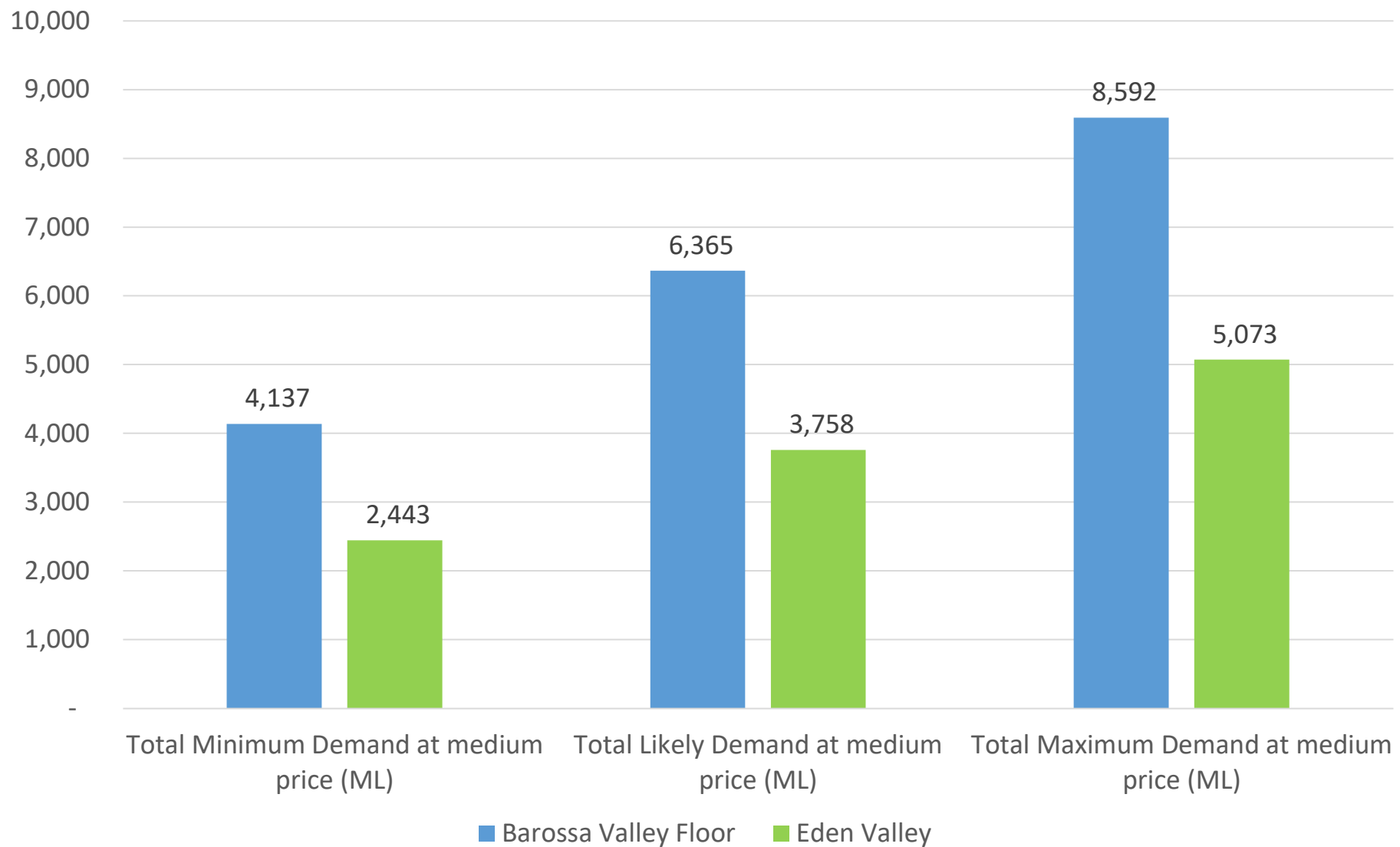
Maximum

- Dare to dream = growth scenario (buy land and expand)
- Maximum need for 25-50 years
- Assume pessimistic change in climate (average rainfall decrease >15% and average temperature increase >1.5 degrees)
- For example, 2-3ML+ per hectare

MIN, Likely & MAX demand - Medium price – Both valleys combined (ML)



Demand at medium price by valley (ML)



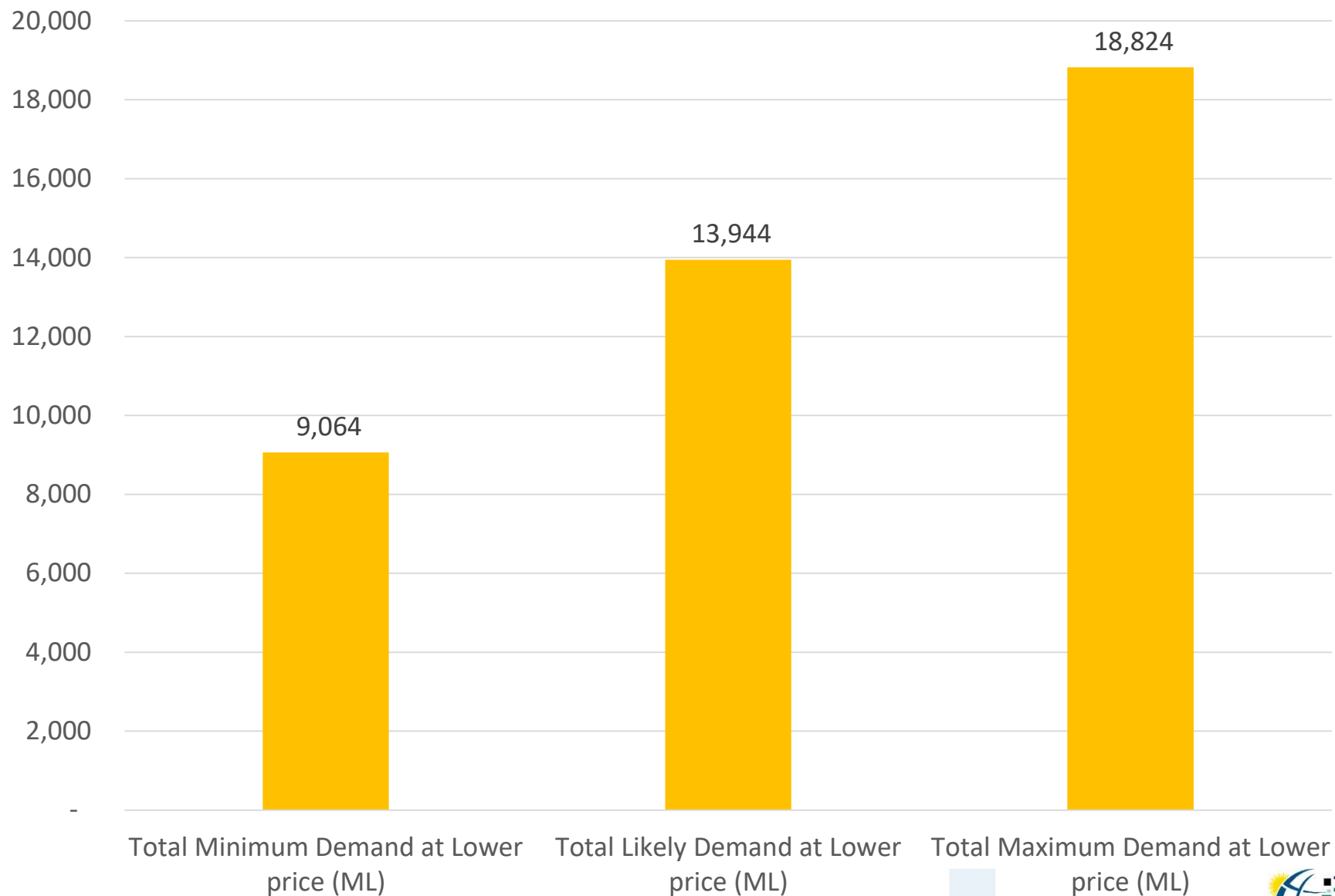
Price sensitivity

- Most prospective customers, in both valleys, evidence some capital price and operating cost sensitivity.
- It varies across the valleys
- Not all customers put demand at Very Low – Capex \$4,000/ML & annual charge of \$1,000/ML pa
- Not all customers put demand at Low Capex \$8,000/ML and annual charge of \$1,500/ML

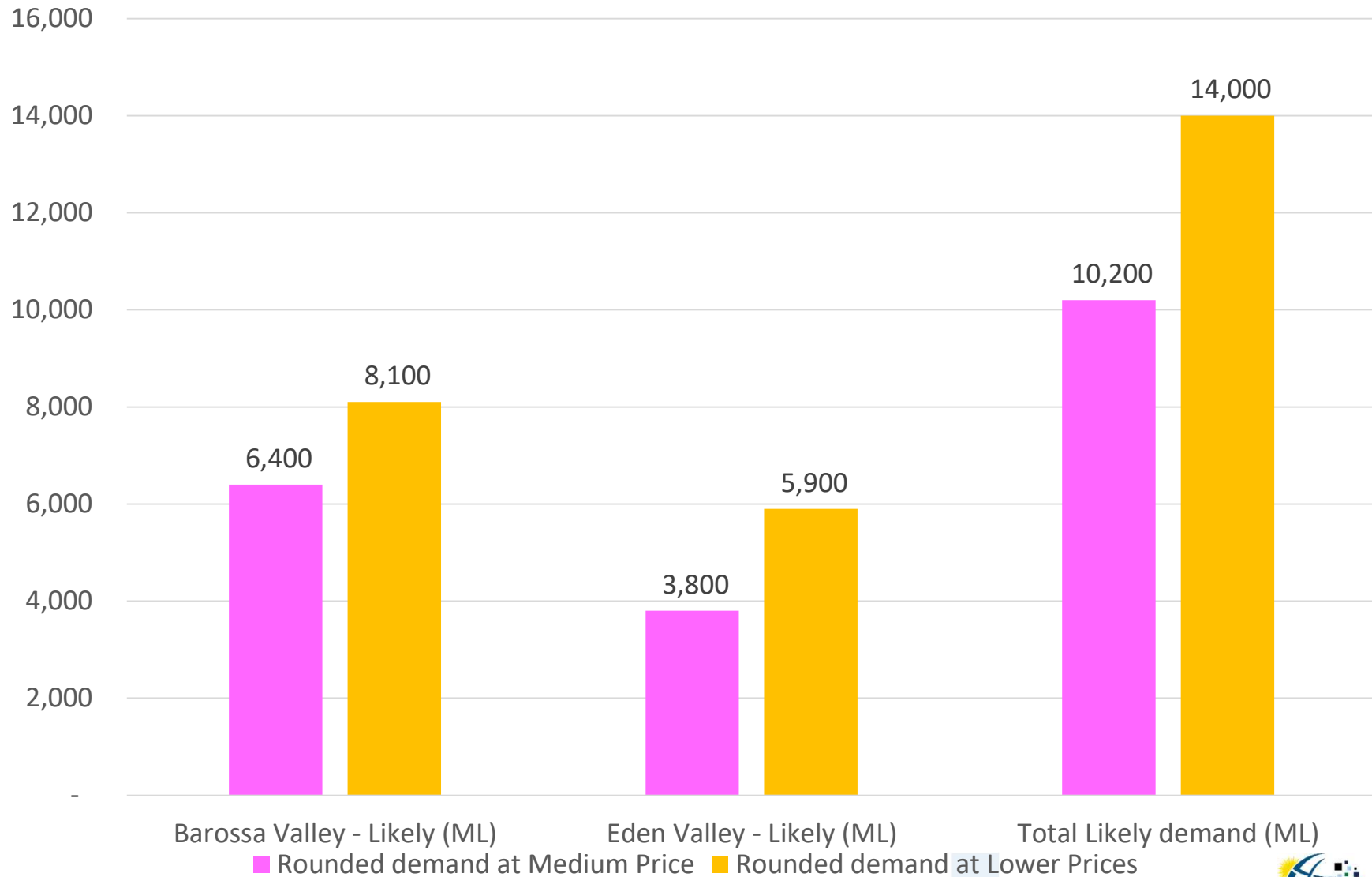
Increase in demand when price moves from medium to low / very low prices

Barossa	33%
Eden	58%

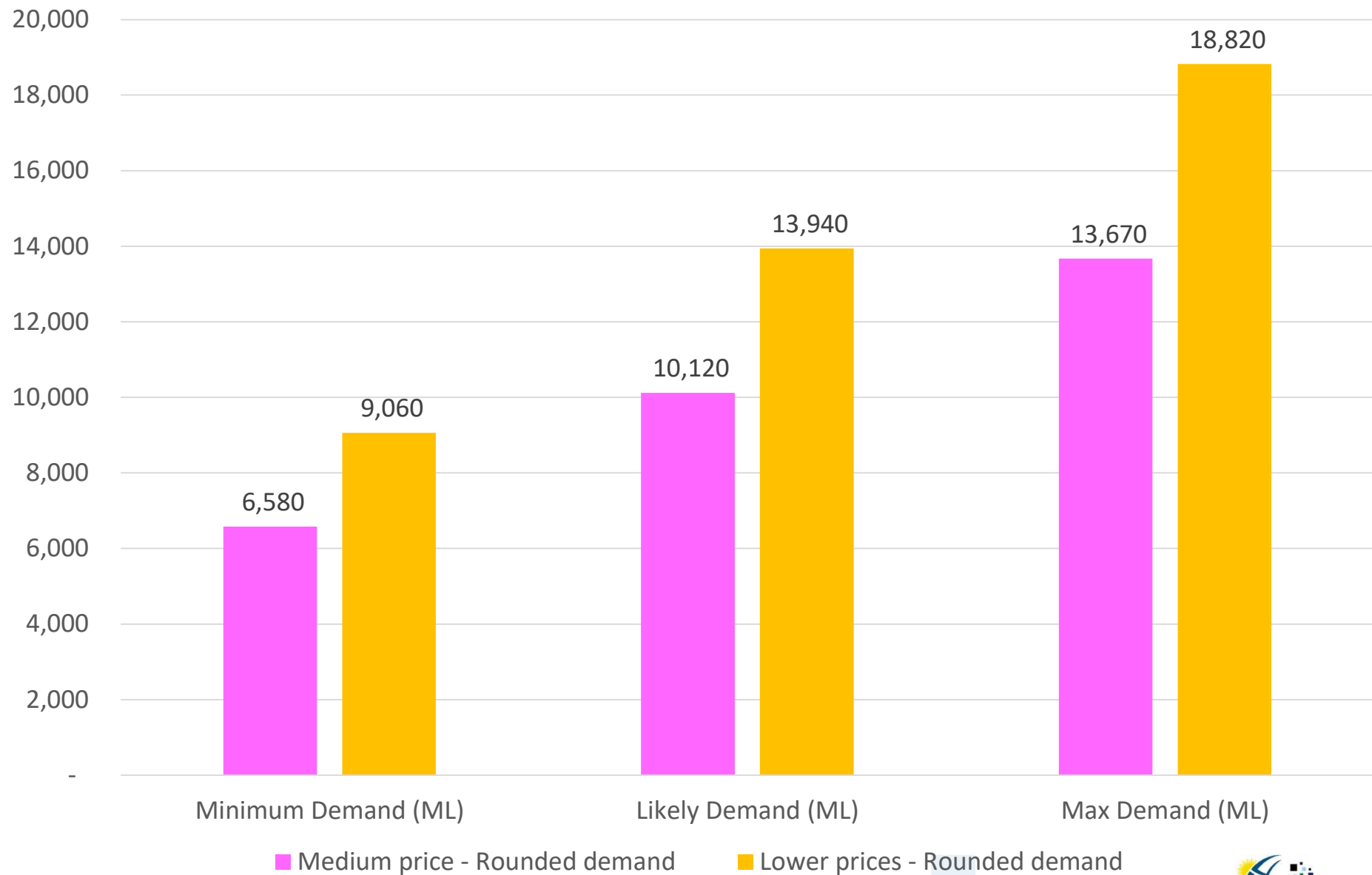
Likely demand at lower prices – Both valleys combined (ML)



Change in demand from medium to lower prices by valley (ML)



Demand - both valleys - at Medium and Lower Prices (ML)



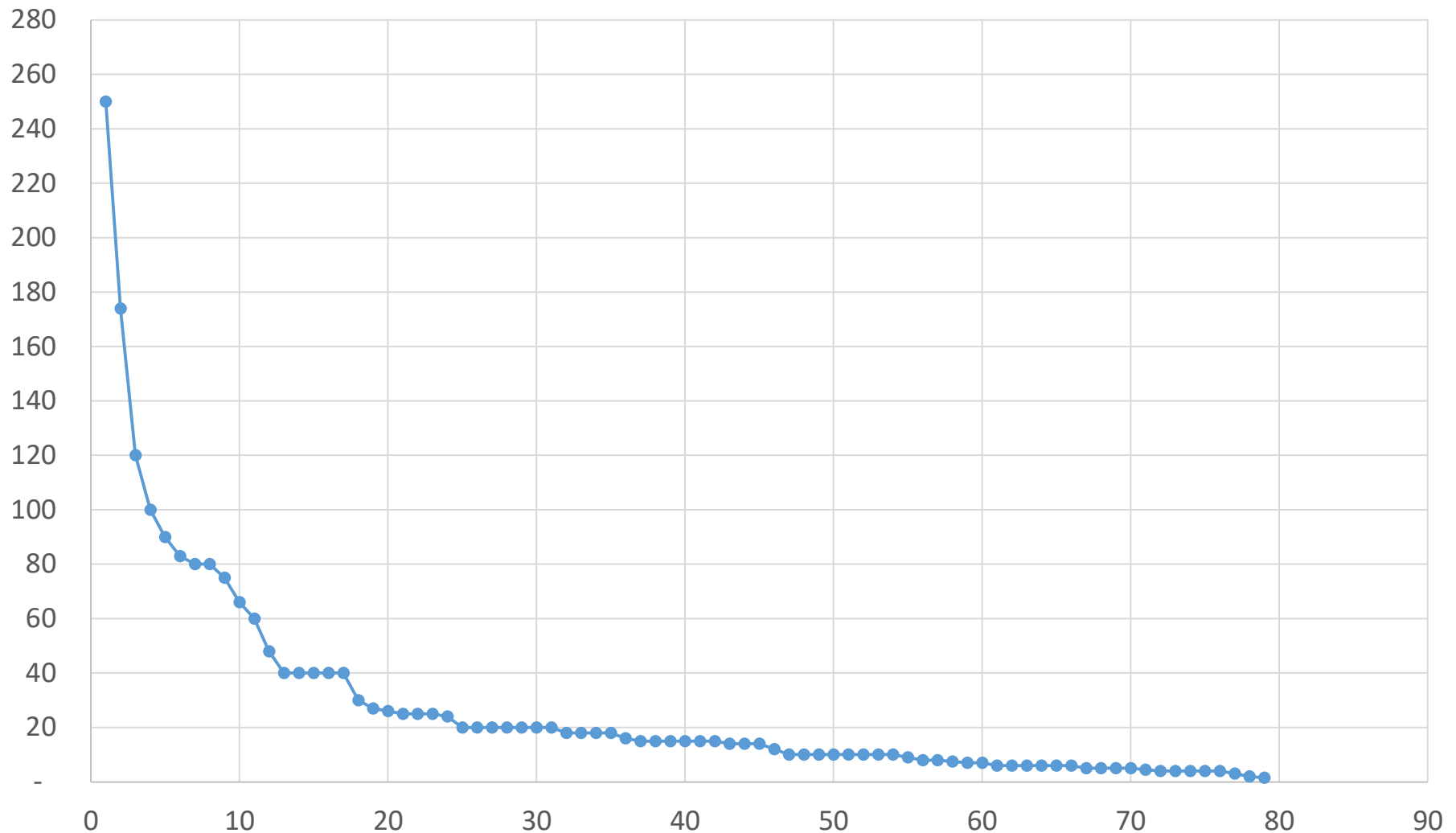
Eden Valley

Draft results – Customer size





Composition of Eden Valley likely demand (excl. Top 2)



Next steps

Strategies to maximise responses

KBR messages for stakeholders

Need more volume

Participation ~ 180
customers

Barossa Valley has
~90 customers

Eden Valley has
~90 customers

BIL has 170 EoIs on
Barossa Valley
floor

KBR seeking to
engage with **80
more Barossa
customers**

Aim to get volume,
design and cost
right.

Demand at middle price

Medium price of
\$12,000/ML capital
price and \$2,000/ML
pa annual charge)

At medium prices
demand is a bit low

Total likely demand
at medium price is
10.2 GL

Price Sensitivity

At lower prices of \$4,000 to \$8,000/ML capital price and \$1,000 to \$1,500/ML pa annual charge) **demand is higher**

Total likely demand at lower prices is 14 GL

What's in store for Round 2

Aspects to be covered in Round 2 demand assessment

Future economic benefits – Use of new water

One water quality per valley (address ppm, heavy metals and other contaminants)

One product = one capital price per delivery zone

Refine capital charge repayment period

One product = one annual charge per delivery zone

Fixed and variable annual charges

Aspects to be covered in Round 2 demand assessment

Balance of scheme and on-farm water storages

Minimum delivery days (50 day to 355 day)

Flow rate (volume over delivery days)

Winter delivery discount

Pressure (minimum and typical)

Potential recommendation on owner and operator of new assets

Contacts and Next steps

Contacts

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