Coalstoun Lakes Water Round 2 Demand Assessment

14 to 16 September 2021

Updated 20 September 2021

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Purpose – Round 2 Demand Assessment

Update on Coalstoun Lakes Water – Detailed Business Case

Explain Round 2 -Letter of intent form (not legally binding)

Round 2 – Letter of Intent due **30** September 2021





Demand assessment process – 3 phases

Steps	Legal status	When
Round 1 – Expressions of Interest	Not binding	March – April 2021 (completed)
Round 2 – Letters of Intent	Not binding	September 2021 (now)
Round 3 – Binding Water Sales	Binding contract	During 2022 (after detailed business case)



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Timelines

Detailed business case (ongoing)	Construction readiness Binding water	Construction	Operation of new scheme
	sales, Environmental Impact Statement and approvals		
Completed early 2022	Throughout 2022	2023 & 2024	2025



Governance / Ownership





Mallawa



CLW favours water infrastructure being owned by a private entity (e.g. Coalstoun Lakes Water Pty Ltd)

Assets owned and controlled by customers

Governance options are considered as part of this detailed business case process

We recommend.

The Queensland Government decides prior to Round 3 - Binding water sales.

Four SunWater irrigation distribution schemes are now locally owned and managed.

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Round 1 – Demand Assessment

Results



Round 1 water product and prices

Customers were offered one product:

 Medium priority water

 80% monthly reliability.

Low (\$/ML)	Medium (\$/ML)	High (\$/ML)			
1,000	2,000	3,000			
Annual water charges (network only / excluding bulk)					
50	150	200			
50	100	200			
100	250	400			
	Low (\$/ML) 1,000 etwork onl 50 50 100	Low Medium Medium			

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Reminder of Round 1 – Meetings



Open and public process

Focussed on 172 stakeholders in local community



Three public meetings in Coalstoun Lakes, Biggenden and Byrnestown (Feb / Mar 2021)



Round 1 demand assessment (Mar / Apr 2021) Meeting at Coalstoun Lakes Hall – Consultant on Zoom due to Covid

Round 1 – Expression of Interest form and slides sent to 172 local contacts.



Round 2 wider process may increase demand



Round 1 Demand Assessment - Results



Round 1 Demand Assessment – Volume and Revenue

	Result	Customer capital investment in scheme	Recommended
No. of customers	50		
Demand at capex price of \$1,000/ML	45,000 ML	\$45 million	No
Demand at capex price of \$2,000/ML	30,000 ML	\$60 million	Yes
Demand at capex price of \$3,000/ML	11,000 ML	\$33 million	No



Round 1 Demand Assessment – Results (cont')

Sale or lease of local land

- 20 local landowners are open to leasing or selling land if market conditions favorable.
- Land area available maybe 1,100 hectares or 30% of area farmed by respondents.











Customer capital contributions - Supply constrained to 25GL (\$ million)



Proud history, bright future.

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Implications of Round 1 for Round 2

Round 1 suggests customer capital price of \$2,000–2,500/ML upfront capital price for medium priority water



Medium priority water for annual crops (e.g., peanuts, cotton and other cash crops) High priority water for perennial crops (e.g., orchards)

Round 2 offers two water products to meet this demand.







Scheme layout based on Round 1 Demand

- Mainline is Paradise Dam via Didcot to Coalstoun Lakes
- West wing to Byrnestown
- East wing to Biggenden



Hydrology assessment

Badu Advisory – Tom Vanderbyl

Modeller – Owen Droop





Hydrologic modelling



Hydrology modelling has been completed Using DRDMW's IQQM daily flow model.



Simulating performance over a 118-year period

Testing compliance against Burnett Water Plans



Volume of water allocations (cont')

Product	Maximum volume of water allocations permitted to be located in zone GZ under the water plan	Volume of water allocations located in zone GZ (SOLD)	Maximum allocations potentially available for the Project from zone GZ (UNSOLD)	Assumed volume of Burnett Water water allocations available for the Project from zone GZ after allowing for future water needs of Bundaberg
High priority water	20,000 ML	500 ML	17,000 ML	7,500 ML
Medium priority water	41,235 ML	3,135 ML	38,100 ML	37,500 ML
Total	61,235 ML	3,635 ML	55,100 ML	45,000 ML



Taken from Paradise Dam to supply the project



High priority water allocations: 7,500 ML (at 99% reliability)



Medium priority water allocations: 37,500 ML (at 90% reliability)



Total volume of water allocations: 45,000 ML



Product	Long-term monthly reliability specified in the water plan	Which means
High priority water allocations	99%	 Monthly high priority water demands are 100% met: 1,401 out of 1,416 months modelled over 118 year historical period
Medium priority water allocations	90%	 Monthly medium priority water demands are 100% met: 1,274 out of 1,416 months modelled over 118 year historical period





Hydrological modelling results

All environmental flow objectives were met All water allocation security objectives were met

Supplying 45,000 ML to the project from Paradise Dam is possible now or if the dam is raised. The Queensland Government will decide on the future of Paradise Dam in late 2021 / early 2022



Engineering completed since Round 1

Design and costings

Chris Thompson and David Mohr, Pinion Advisory



Engineering – 180-day scheme – Recommended

Scheme 1: Developed a 9 month or 270-day delivery scheme capable of piping 30 GL from Paradise Dam to customers Scheme 2: Based on agronomy and need to future proof, developed a 6 month or 180-day delivery scheme for 30GL. More flexible + higher flow rates.

Scheme 3: 180-day delivery for 45GL to estimate cost if larger Round 2 demand. Scheme is flexible + higher flow rates + cheaper \$/ML than 30GL scheme

180-day scheme is recommended as it does not cost materially more.



Capex comparison of three schemes

	Low (\$ million)	Medium (\$ million)	High (\$ million)
Scheme 1 - 270 days 30GL	160	210	280
Scheme 2 - 180 days 30GL	190	250	330
Scheme 3 - 180 days 45GL	255	350	470



Includes 20% contingency (equivalent to P90) or conservative estimates.

Actual capital costs are likely to be lower.

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Opex comparison of three schemes

Scheme 1	Coalstoun Lakes Tariff	Low (\$/ML)	Medium (\$/ML)	High (\$/ML)
270 day	Fixed	63	81	115
30GL	Variable	96	119	136
	Total - Rounded	160	200	250

Scheme 2	Coalstoun Lakes Tariff	Low (\$/ML)	Medium (\$/ML)	High (\$/ML)
180 day	Fixed	95	101	135
30GL	Variable	95	119	135
	Total - Rounded	190	220	270

Scheme 3	Coalstoun Lakes Tariff	Low (\$/ML)	Medium (\$/ML)	High (\$/ML)
180 day	Fixed	85	91	125
45GL	Variable	95	119	135
	Total - Rounded	180	210	260
27 Presentation Text Additional Text		Proud history, bright future.	©2019 KBR Inc. All Rights Reserved.	KBR

Features of 180-day pipeline scheme

Engineering by Pinion Advisory

David Mohr and Chris Thompson



Features of 180-day scheme design

Customers can access water most of the year (except during shutdown).



The scheme will operate 355 days per year (10 days shutdown for maintenance).



But allows customers to take the total volume of their allocation in 180 days = higher flow rates = if needed.

Pumping is 24 hours per day



Scheme Customer Outlets



Flowmeter - read by scheme operator once-twice per year





Flow rates in 180-day scheme without rostering

Maximum Flow Rate (180 days)	Nominal entitleme nt (ML pa)	Days of operation (days per annum)	Max flow rate (ML per day)	Max flow rate KL per hour	Max flow rate Litres per second (L/s)
1	2,500	180	13.89	579	160.8
2	1,000	180	5.56	231	64.3
3	500	180	2.78	116	32.2
4	180	180	1.00	42	11.6
5	100	180	0.56	23	6.4
6	50	180	0.28	12	3.2
7	25	180	0.14	6	1.6
8	10	180	0.06	2	0.6



New slide - Flow rates in 180-day scheme with rostering

Maximum Flow Rate (180 days)	Nominal entitlement (ML pa)	Minimum flow rate Litres per second (L/s) - No Rostering	Maximum Flow Rate with Rostering (L/s)
1	1080	69.4	208
2	500	32.2	96
3	360	23.1	69
4	180	11.6	35
5	100	6.4	19
6	50	3.2	10
7	20	1.3	4



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Pressure provided by 180-day scheme

At farm outlet	PSI	КРА	Bar	What can you run off this pressure?
Minimum guaranteed pressure	7	50	0.5	Flow into on-farm storage, require a pump for any irrigation
Typical pressure ^	44	300	3	Sufficient for direct medium pressure sprinkler (center pivot) & drip irrigation



Round 2 – Customer Capital Price

Pinion Advisory estimates

David Mohr and Chris Thompson



Competitive environment for project funding



Nationally there are about 100 projects being considered for funding.

In 2021, the State Government sent 14 funding applications to the Australian Government.

In 2022, CLW will lodge a competitive (Top 3) construction funding request with government.

Customers paying a significant share of capital costs will increase this project's chance of obtaining government approval and grant funding.



Permanent Trades of HP in relevant schemes (\$/ML)

Scheme	Low Price (\$/ML)	Medium Price (\$/ML)	High Price (\$/ML)	Reliability	Existing or proposed
Emerald Water Supply Scheme	3,000	3,500	4,000	95%	Existing
Hughenden Irrigation Project	3,900	4,200	4,500	98%	Proposed (DBC)
Granite Belt Irrigation Project	6,000	6,000	6,000	85%	Proposed (Post DBC)
Atherton – Mareeba Dimbulah Water Supply Scheme	4,000	5,100	6,200	95%	Existing
Average	4,200	4,700	5,200	93%	



Adjusted value of HP in relevant schemes (\$/ML)

Relevant Schemes	Low Price for HP (\$/ML)	Medium Price for HP (\$/ML)	High Price for HP (\$/ML)	Adjuste4d Reliability
Emerald Water Supply Scheme	3,100	3,600	4,200	99%
Hughenden Irrigation Project	3,900	4,200	4,500	99%
Granite Belt Irrigation Project	7,000	7,000	7,000	99%
Atherton – Mareeba Dimbulah Water Supply Scheme	4,200	5,300	6,500	99%
Average - Rounded	4,600	5,000	5,600	99%
Range of adjusted HP price options for Coalstoun Lakes	4,600	5,000	5,600	99%

Recommended price for Coalstoun Lakes: \$4,500/ML once-off upfront for High Priority.



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What do customers contribute as a portion capex in other new schemes?

Name	Water product / priority	Volume of Demand for water Product (ML)	Customer capital price (\$/ML)	Customer capital contribution (\$M)	Total capex of scheme (\$M)	Customer contribution to capex (%)
Granite Belt Irrigation	High	3,900	6,000	23.4	100	23%
Water for Warrill Ltd	High	15,000	2,500	37.5	150	25%
Lockyer Valley Irrigation Project	Medium	34,000	1,500	51.0	200	26%
Barossa New Water	High	15,000	10,000	150.0	375	40%



Should Coalstoun Lakes customers pay 30%?

Water product / priority	Reliability of water product (% per month)	Volume of Demand for water Product (ML)	Customer capital price (\$/ML)	Customer capital contribution (\$M)	Total capex of scheme (\$M)	Customer contribution to capex (%)
Medium	90%	23,000	2,000	46	250	18%
High	99%	7,000	4,500	32	250	13%
		30,000		78		31%

 \$2,000/ML for medium priority allows customers to raise approximately ~30% of capex (30-45GL).





Should Coalstoun Lakes customers pay 35%?

Water product / priority	Reliability of water product (% per month)	Volume of Demand for water Product (ML)	Customer capital price (\$/ML)	Customer capital contribution (\$M)	Total capex of scheme (\$M)	Customer contribution to capex (%)
Medium	90%	23,000	2,500	57.5	250	23%
High	99%	7,000	4,500	31.5	250	13%
		30,000		89.0		36%

 Recommended: \$2,500/ML for medium priority allows customers to raise approximately ~35% of capex (30-45GL).





Summary of customer capital prices

Price recommendation

- CLW goal is to raise 35% of capital costs to give this project its best chance of success.
- High priority price \$4,500/ML upfront based on other schemes and 99% reliability.
- Medium priority price \$2,500/ML upfront based on other scheme comparisons and 90% reliability.

Consider opex



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Round 2 – Annual charges

Pinion Advisory estimates David Mohr and Chris Thompson



Medium priority

- Part A = \$40/ML
- Part B = \$1/ML

High priority

- Part A = \$100/ML
- Part B = \$1/ML



Total Annual Charges for Scheme 2 – 180-day 30GL

Bulk charge (Sunwater)	Medium priority (\$/ML)	High priority (\$/ML)
Fixed	40	100
Variable	1	1

Delivery charge (CLW)	Medium priority (\$/ML)	High priority (\$/ML)
Fixed	100	100
Variable	119	119

Total annual charge (Bulk + Delivery)	Medium priority (\$/ML)	High priority (\$/ML)
Fixed	140	200
Variable	120	120
Total	260	320



Summary of capital prices and annual charges

Round 2 – Letter of Intent



45 | Presentation Text | Additional Text

Golden Ticket: Round 2 prices for each water product

Medium Priority

Capex

 Customer capital price \$2,500/ML

Annual charges (incl. bulk)

- Fixed = \$140/ML
- Variable = \$120/ML
- Total = \$260/ML

High Priority

Capex

 Customer capital price \$4,500/ML

Annual charges (incl. bulk)

- Fixed = \$200/ML
- Variable = \$120/ML
- Total = \$320/ML

Prices subject to change in Round 3

Depends on volume of contractual demand and other assumptions.



Round 3: Water sales – Timing of capital payments

Payment	Price paid by customer	When
First deposit: 2% of price upon signing water sales contract (refundable)	 MP \$50/ML HP \$90/ML 	Early-mid 2022
Second deposit: 8% once government funding is unconditional	 MP \$200/ML HP \$360/ML 	Late 2022 / Early 2023
Final payment : 90% upon practical completion of construction	 MP \$2,250/ML HP \$4,050/ML 	Late 2024 / Early 2025
Water bills: Operation of scheme	 Fixed and variable annual charges 	2025 onwards



Next steps



Provide Round 2 -Letter of Intent form Customers return Letter of Intent **30 September 2021**



Thank you

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