

Applying regulatory pricing principles in GAWB's 2025-30 pricing period

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1. Introduction

Synergies has been engaged by Gladstone Area Water Board (GAWB) to provide our opinion on its proposed approach to recover costs associated with forecast hydrogen customer-related augmentation capital expenditure in the 2025-30 pricing period.

1.1 GAWB's pricing proposal

GAWB has proposed that the cost of the following two capital expenditure projects associated with its hydrogen augmentation program should be allocated to a new 'Northern Raw Extension' pricing zone:

- Offline storage (OLS) pump station and storage upgrades (\$██████)
- Awoonga Dam pump station – pump redundancy improvements (\$██████).

The effect of establishing this new pricing zone will be that the cost of the two projects will be borne solely by new hydrogen customers connected to this zone and new zones downstream of it. These customers are mainly prospective hydrogen facilities, but in future could also include other customers connecting in the Aldoga industrial area at the northern end of GAWB's distribution network.

1.1.1 Nature of GAWB's investment

GAWB has advised that these two projects are part of the Short Term Network Augmentation (STNA) program that is required due to new, hydrogen-related water demand expected over the 2025-30 regulatory period.

Along with the extension of GAWB's current raw water delivery network, the STNA program of work also includes augmentation of the existing shared network assets. Importantly, the need for the augmentation of the existing Awoonga pump station and OLS, which have been triggered by the hydrogen-related demand, is being done to preserve the existing distribution network reliability levels not to increase them.

In other words, if it was not for the new water demand from hydrogen customers, GAWB would not have needed to undertake the two upgrade projects given forecast stable water demand of its existing customer base with an associated stable outage risk profile in terms of GAWB's delivery of water to them. Further, in light of the introduction of the hydrogen-related water demand, in the absence of the proposed upgrade projects, existing network reliability levels would decline to an unacceptably low level given GAWB's contractual commitments to its existing customers. This would primarily increase the outage risk for all customers due to reduced asset redundancy in the shared network.

GAWB has advised that the two upgrade projects may be needed at some future point in time if water demand of existing customers materially increases (noting this is not the case in the 2025-30 pricing period). Importantly, the need for a future upgrade and its timing are

both uncertain. In contrast, the large new hydrogen-related water demand brings forward the need for augmentation in the 2025-30 pricing period.

Subsequently, in its submission to the QCA on prices for the 1 July 2025 to 30 June 2030 regulatory period, GAWB proposed to capture the costs associated with the STNA program, including the two projects listed above in the four new pricing zones. The outcome of this approach is that the costs associated with this capex would be borne by the customers that triggered, and brought it forward, that is, the hydrogen proponents. GAWB's existing customers would not be required to pay for this new infrastructure.

1.2 QCA's Draft Report

Whilst accepting GAWB's approach for the remainder of the STNA program, the QCA's draft findings rejected GAWB's proposed approach for the capital works associated with the Awoonga pump station and the OLS project.

In support of its Draft Report, the QCA noted that:

- Given the upgrades to both facilities will occur in the same physical location as the original assets, GAWB's zonal pricing framework should allocate the cost of upgrades to the same pricing zones as the original assets.
- The proposed upgrades are designed to improve or maintain system-wide redundancy and resilience, which will provide a shared reliability benefit to all downstream customers.

For these reasons, the QCA stated that GAWB's cost allocation approach does not appear to be equitable, or consistent with its zonal pricing framework. As a result, the QCA allocated the costs of the two projects to the existing 'Awoonga to Toolooa' and 'Awoonga' pricing zones, with the associated costs of these projects to be shared across all existing and new customers.

The QCA noted that it welcomed further information from GAWB to justify an alternative allocation approach, which it would consider in its final report.

2. Regulatory pricing principles

The purpose of this section is to summarise our views on well-accepted regulatory pricing principles that are applied in relation to the provision of water, energy and transport infrastructure.

2.1 Regulatory pricing objectives

Prices play a key role in promoting economic efficiency through conveying information about the cost of service, co-ordinating activity through usage decisions (including managing capacity constraints or congestion) and enabling cost recovery, including remunerating investment.

There are a number of dimensions of economic efficiency which must be considered:

- *allocative efficiency* – is achieved where resources used to produce a set of goods or services are allocated to their highest valued uses (i.e. those that provide the greatest benefit relative to costs);
- *productive efficiency* – is achieved where individual firms provide their services at least cost; and
- *dynamic efficiency* – reflects a firm's ability to adapt and improve its productivity over time in response to changing markets, technologies, and customer preferences, including through new investment.

To achieve efficient pricing outcomes, principles for efficient pricing are typically based on the following concepts:

- prices should fall between a band set by cost-based floor and ceiling prices. The floor price reflects the incremental cost of providing the service and the ceiling price is based on the stand-alone cost of supply;
- within the floor/ceiling band, price discrimination is permitted to reflect the capacity to pay of the user – that is, having regard to their price elasticity of demand, to achieve minimal distortions to consumption relative to marginal cost pricing;
- the extent of price discrimination is typically constrained to ensure that price discrimination does not affect competition in dependent markets, with commercial negotiations between the service provider and customer usually the mechanism that is relied upon to ensure that the customer's willingness to pay is revealed in a manner that is meaningful for price setting; and
- multi-part tariffs can assist in enhancing the efficiency of pricing solutions by incorporating price signals that indicate the forward-looking costs of additional consumption and capacity.

These overarching pricing objectives and principles underpin the pricing principles developed by Australian economic regulators.

2.2 QCA's water pricing principles¹

The QCA has previously stated it considers that water prices associated with regulated monopoly water business activities should generally:

- Recover the efficient costs of providing the relevant services – prices should generally recover the efficient costs (including an appropriate return on and of capital) of service levels that are necessary to meet required service standards and other regulatory obligations.
- Signal the efficient use of the relevant services – prices should generally be structured to signal to customers the costs associated with their water use decisions.
- Signal the efficient scale and timing of augmentations in supply infrastructure – prices should generally signal to customers the costs of supply augmentation to encourage the efficient scale and timing of investments in new capacity.
- Reflect the appropriate sharing of risk – the level and structure of prices should enable regulated businesses to recover their prudent and efficient costs, subject to appropriate risk sharing between regulated businesses and their customers.

We note the QCA's focus on recovery of efficient costs and cost-reflectivity of prices as key principles. Further, that prices should ideally signal the efficient scale and timing of future water supply augmentations (to the extent that this is relevant), as well as an appropriate sharing of risk in relation to service provision (effectively the price and non-price terms upon which services are provided to users of the infrastructure).

In addition to economic efficiency, the QCA has also considered fairness objectives in determining infrastructure prices given the Queensland Competition Authority Act 1997 requires it to consider a variety of economic and non-economic goals.

The QCA has noted that there are no objective standards for fairness but in its view, it encompasses traditional social policy and equity concerns. Further, fairness may or may not be compatible with achieving economic efficiency objectives.

In this regard, the QCA notes that the 'user pays' or 'impactor pays' principles are an example of fairness and efficiency objectives being aligned because a user of a service that causes costs to be incurred should pay for the costs directly associated with their usage. This point is made very clearly in the QCA's Discussion Paper, Capacity Expansion and Access Pricing for Rail and Ports, as follows:²

¹ QCA (2021), Statement of regulatory pricing principles for the water sector, Final statement, April, p3

² Capacity Expansion and Access Pricing for Rail and Ports, Discussion Paper, page 3, QCA, April 2013

In considering the question of who should pay for use of capacity, a relevant economic efficiency pricing principle is cost causative pricing. Allocative efficiency requires prices to reflect marginal costs. If an entity's use of a service causes costs to increase at the margin, then for allocative efficiency to be achieved, the entity needs to face a price that reflects the marginal contribution of its use to cost.

In addition, the service provider is recompensed for the costs it incurs providing its services, which also satisfies efficiency and fairness objectives. Further, in its Discussion Paper, the QCA identifies that in certain circumstances where new users seek access that involves expansion of existing infrastructure, then the new users should pay a levy to existing customers from the benefits that new users derive from the existing infrastructure being in place.

In the absence of Queensland Government legislative requirements and/or social policy objectives, the QCA considers that economic efficiency should take precedence over the fairness objective in setting infrastructure prices.

2.2.1 Summary of regulatory principles

Regulatory pricing principles emphasise economic efficiency in relation to prices set for water infrastructure services that should reflect the efficient cost of service delivery and generally be structured to signal to customers the costs associated with their water use decisions. This may extend to signalling the future cost of capacity augmentation where it is relevant. Contributed asset costs should generally not be recovered through network prices.

Appendix A provides a high-level summary of relevant Australian, NZ and UK precedent about regulatory pricing principles that we have reviewed.

2.3 Application of regulatory pricing principles

The purpose of this section is to apply the regulatory pricing principles discussed in Section 2.2 to GAWB's proposed pricing approach for its two hydrogen-related capex projects in the 2025-30 pricing period.

The key considerations that are relevant to GAWB's proposed pricing approach are as follows:

- Hydrogen customers are the driver of the new investment – if it were not for the hydrogen customers the investments would not be made. In other words, this is a pricing issue 'with and without' new hydrogen customers, which has important implications for GAWB's existing customers and the efficiency of the prices that they pay in future for use of the water network infrastructure.
- The augmentation upgrade is not designed to enhance supply resilience for existing customers and, given the expected usage profile of the hydrogen projects, any

incidental benefit is unlikely to be material. Rather, existing reliability standards will be maintained.

- Regulatory pricing principles indicate that a beneficiary pays/cost causative pricing approach for infrastructure services will facilitate efficient investment decisions and asset usage, such that prices should send a signal to users of infrastructure services of the cost of their asset usage – allocating costs to customers who will gain no benefit from the new hydrogen-related investments is contrary to the beneficiary pays/cost causative pricing principles that the QCA has previously endorsed.
 - Or expressed differently, the costs (both extension and expansion) to meet the needs of the hydrogen customers represent the avoidable costs of supplying them; that is the efficient lower bound for their prices. Arguably, some allocation of common costs to the hydrogen customers would also be reasonable and result in efficient prices.
 - To the extent that a full allocation of the cost of the augmentation capex to hydrogen customers raises capacity to pay issues, then it raises a legitimate question about the economic basis of the investment and associated risk profile that GAWB and its existing customers would be asked to bear.
- GAWB has advised that the driver (intent) of the proposed two capex projects is not an increase in network reliability as suggested by the QCA – rather, the existing reliability standard of the water distribution network currently meets appropriate standards but needs to be maintained in the event of a large increase in water demand from new hydrogen customers (not from existing customers whose water demand is relatively stable).
 - That the shared network needs to be upgraded is not caused by existing customers and it would be economically inefficient (and contrary to the cost causative pricing principle) for any of the cost of this augmentation to be allocated to them.
- GAWB’s proposed pricing approach appropriately allocates the risk of the proposed new investments to the hydrogen customers – further, in Synergies view, given the nascent and uncertain nature of the hydrogen industry, the risk profile of the hydrogen-related investments is materially larger than for GAWB’s business as usual forecast replacement and other augmentation investments that will directly benefit existing customers.
- The fact that the upgrade will occur in the same physical location as original assets is irrelevant to the question of appropriate pricing and cost allocation. What matters is what drives the decision to invest to upgrade assets, which is a large forecast increase in water demand required by new hydrogen customers.

2.4 Conclusion

GAWB’s proposed creation of new pricing zones to allocate the full costs of the STNA

program, including the two augmentation capex projects discussed above, that is driven by new hydrogen customers is fully consistent with regulatory pricing principles, including those previously developed by the QCA.

We do not consider it would be economically efficient or equitable for these augmentation costs to be shared with existing customers who have not driven the need for the new investment nor will receive any material incremental improvement in reliability from the augmented infrastructure compared to what they currently receive.

A Regulatory pricing frameworks

We have reviewed a sample of regulatory pricing frameworks across the energy, water and transport sectors in New Zealand, Australia and the UK to assess how they incorporate the principles of efficient pricing design. The approaches are summarised in the table below. This shows that regulatory pricing frameworks are typically structured to reflect the principles for efficient pricing. The approach taken by GAWB is consistent with regulatory precedent.

Table 1 Regulatory pricing frameworks summary

| Jurisdiction/ sector | Regime/Regulator | Key elements of pricing principles |
|---------------------------|---|--|
| Energy | | |
| New Zealand - electricity | Electricity (transmission/distribution) | <p>Prices should be subsidy-free (i.e. should fall between incremental (floor) and stand-alone (ceiling) cost limits)</p> <p>Prices should reflect the impact of network use and service levels on economic cost</p> <p>Where prices that signal economic costs would not meet target revenues, the shortfall should be recovered by prices that least distort network use</p> <p>Prices should respond to customer requirements and enable negotiation</p> |
| Australia - electricity | National Electricity Rules – AER | <p><i>For distribution networks:</i></p> <p>Prices should, in aggregate, enable the full recovery of the efficient cost of providing the service</p> <p>Prices are to be established between floor and ceiling price limits</p> <p>Prices are to be based on the long run marginal cost of providing the service. Mark-ups to marginal cost (to enable full cost recovery by the service provider) should minimise the distortions to efficient pricing signals</p> <p>In setting prices, the service provider must consider the extent to which retail customers can mitigate the impact of changes in tariffs through their decisions about usage of services.</p> <p>The structure of each tariff must also be reasonably capable of:</p> <p>(1) being understood by retail customers that are or may be assigned to that tariff (including in relation to how decisions about usage of services or controls may affect the amounts paid by those customers) or</p> <p>(2) being directly or indirectly incorporated by retailers in contract terms offered to those customers</p> <p><i>For transmission networks,</i></p> <p>Transmission networks are subject to a prescriptive tariff structure and cost attribution methodology in relation to the provision of prescribed transmission services under a revenue cap control.</p> <p>The Transmission Network Service Provider must have separate prices for the following sub-categories of prescribed transmission service:</p> <p>(1) prescribed transmission use of system services (prescribed TUOS services) – locational component</p> <p>(2) prescribed TUOS services – non-locational component</p> <p>(3) prescribed common transmission services</p> <p>(4) prescribed entry services</p> <p>(5) prescribed exit services.</p> <p>The annual service revenue requirement for prescribed TUOS services (supplied at transmission connection points) is to be allocated between a locational and non-locational component either.</p> |

| Jurisdiction/ sector | Regime/Regulator | Key elements of pricing principles |
|--------------------------|--------------------------------|--|
| | | <p>(1) 50% to each component, or</p> <p>(2) an alternative allocation to each component, that is based on a reasonable estimate of future network utilisation and the likely need for future transmission investment, and that has the objective of providing more efficient locational signals to market participants and end users</p> <p>Prices for recovering the locational component of prescribed TUOS services must be based on demand at times of greatest utilisation of the transmission network by transmission customers and for which network investment is most likely to be contemplated. Locational prices are charged on a fixed demand (\$/kw) basis.</p> <p>The non-locational TUOS and prescribed common transmission services must use postage stamp prices (on a demand and/or volumetric basis) and the prescribed entry and exit services must use fixed dollar annual charges.</p> |
| | National Gas Rules – AER | <p>Prices should, in aggregate, enable the full recovery of the efficient cost of providing the service</p> <p>Prices are to be established between floor and ceiling price limits</p> <p>Prices are to have regard to the marginal cost of providing the service. Mark-ups to marginal cost (to enable full cost recovery by the service provider) should minimise the distortions to efficient pricing signals</p> |
| UK – gas and electricity | Electricity and gas - OFGEM | <p>Revenue cap regulation is applied</p> <p>Pricing rules are established for some services. Assessment is primarily based on the impact of the <i>change</i> in price, rather than an <i>in-principle</i> statement of pricing objectives.</p> |
| Transport | | |
| New Zealand - rail | n/a | |
| Australia - rail | National Access Regime - ACCC | <p>Prices should, in aggregate, enable the full recovery of the efficient cost of providing the service</p> <p>Prices are to be established between floor and ceiling price limits</p> <p>Price discrimination is permitted to maximise demand</p> <p>Limits on price discrimination can be applied within the same end market</p> |
| | Queensland Access Regime – QCA | <p>Prices should, in aggregate, enable the full recovery of the efficient cost of providing the service</p> <p>Prices are to be established between floor and ceiling price limits</p> <p>Price discrimination is permitted to maximise demand</p> <p>Limits on price discrimination can be applied within the same end market</p> |
| | WA Rail Access Regime - ERA WA | <p>Prices to be established between floor and ceiling price limits</p> <p>Price discrimination is permitted to maximise demand</p> <p>Limits on price discrimination can be applied within the same end market</p> <p>Prices should enable the full recovery of any costs of network expansion to meet customer requirements</p> |
| Water | | |
| New Zealand | n/a | |
| Australia | Bulk water - ACCC | <p>Prices should promote the economically efficient use of water infrastructure assets</p> <p>Prices should ensure sufficient revenue streams to allow efficient delivery of the required services</p> <p>Prices should reflect the principles of user pays</p> |
| | Bulk water - QCA | <p>Prices should enable the full recovery of the efficient cost of providing the service</p> <p>Prices should signal the efficient use of services</p> |

| Jurisdiction/ sector | Regime/Regulator | Key elements of pricing principles |
|-------------------------|--------------------|--|
| | | Prices should signal the costs associated with augmentation of water supply infrastructure |
| UK | Bulk water – OFWAT | <p>Revenue cap regulation is applied, with pricing rules established for some services</p> <p>Prices should promote key objectives, including fairness and affordability; environmental protection; stability and predictability; and transparency and customer-focussed service</p> <p>Prices should reflect the long term run cost of delivering the services</p> <p>Differentiation between small and large users of the same services can only occur to reflect cost impacts</p> |