CS Energy Ltd ABN 54 078 848 745
Level 21 Central Plaza 2
66 Eagle St Brisbane Qld 4000
GPO Box 769 Brisbane Qld 4001

T 07 3222 9333
F 07 3222 9300
W www.csenergy.com.au

15 June 2007

Attention: Paul Smith
Mr E. J. Hall
Chief Executive
Queensland Competition Authority
GPO Box 2257
BRISBANE Q 4001

cs energy
generations ahead

Dear Mr Hall,

CS ENERGY SUBMISSION TO THE QCA: GAWB REPORT ON THE FITZROY RIVER CONTINGENCY INFRASTRUCTURE

CS Energy welcomes the opportunity to provide comments and feedback on the Gladstone Area Water Board's "Submission to the Queensland Competition Authority (QCA) on the Fitzroy River Contingency Infrastructure".

CS Energy's submission is attached.

Yours sincerely

[redacted]

Paul Hyslop
GENERAL MANAGER NEW BUSINESS

Callide Power Station
PO Box 392 Biloela Qld 4715
T 07 4992 9329
F 07 4992 9328

Mica Creek Power Station
PO Box 1077 Mount Isa Qld 4825
T 07 4740 0700
F 07 4740 0710

Swanbank Power Station
Mail Service 460 Ipswich Qld 4306
T 07 3810 8800
F 07 3810 8777

CS ENERGY SUBMISSION TO THE GAWB REPORT ON THE FITZROY RIVER CONTINGENCY INFRASTRUCTURE

CS Energy is the largest single customer purchasing around 20,000 ML per annum through direct purchases for Callide B power station and indirect purchases for Callide C.

CS Energy has been generally supportive of efforts by the (GAWB) to enhance water system reliability in the Gladstone Area. However such efforts must be economically justified and it is CS Energy's view that the GAWB proposal does not provide that justification.

In September 2006, CS Energy provided a submission to GAWB on its Drought Management Plan which is enclosed for your information. In that submission CS Energy proposed that GAWB undertake early works on supply augmentation options where warranted as a means of delaying the need for commitments to augmentations until as late as possible. The idea inherent in this proposal was to develop augmentation options including undertaking long lead time but low cost planning efforts in order to reduce the time required to complete any reliability based augmentations if and when required. This provides the advantage of delaying final commitment decisions for such augmentations which may either never be required or may not be needed for many years into the future and allows GAWB to operate the Awoonga storage harder for longer without augmentation.

CS Energy notes that data supplied by GAWB in its Drought Management Plan, shows that the existing storage is in a sound position, even when assessed against the worst 10-year sequence on record. Hence there is no apparent urgency to undertake the augmentation with respect to the Fitzroy Pipeline.

Fitzroy Pipeline justification

In the September 2006 submission, CS Energy supported early augmentation work on the Fitzroy Pipeline based on the estimated cost at the time of $120-200 million. GAWB now estimates the total cost of the supply augmentation to be around $345 million. CS Energy is of the view that such a cost increase may substantially change the economic rationale for undertaking the Fitzroy pipeline supply augmentation including its ranking against alternatives and whether it is justified on a cost benefit basis.

The GAWB submission to the QCA does not appear to incorporate a cost-benefit analysis which CS Energy considers to be essential before committing to the early work program. Any such analysis must show that the Fitzroy option provides more benefits than costs and that it ranks higher than any reasonable alternative including demand management options. The GAWB submission undertakes a ranking of the known supply options using a coarse multi criteria analysis but does not provide a cost benefit analysis. GAWB does not appear to consider demand side options.

CS Energy considers that the QCA should require that GAWB undertake a full cost benefit analysis along with all reasonable alternatives, including demand side options, prior to considering this matter further.

Alternative options not considered

CS Energy is concerned that GAWB does not appear to have appropriately considered demand side options. CS Energy proposes two options in particular that should be considered by GAWB and the QCA.

Dry or hybrid cooling for power stations.

CS Energy expects that converting the Callide B and C power stations to dry cooling would be at least comparable with the Fitzroy option on a straight cost basis but offers additional economic benefits. Converting all four Callide power station units to dry cooling would provide approximately 20,000 ML per annum in Awoonga for other users. By paying for the dry cooling, GAWB would in effect buy back the water from Callide B and C in order to sell to alternate users or meet the reliability needs of other existing users.

The dry cooling option has the additional benefit that it could be implemented in four phases with each phase providing around 5,000 ML per annum. This is because each unit could be converted on an incremental basis. Hence rather than commit $345 million at the point that reliability needs to be enhanced, four separate decision points would be available over time, each costing approximately $50 million, and each yielding around 5,000 ML per annum.

Water Trading

CS Energy considers that establishing an appropriate arrangement for water trading within the Awoonga catchment would yield considerable savings in years in which water is scarce. The benefit of establishing water trading arrangements is that water would be transferred from lower value to higher value uses. Freedom to trade water entitlements would allow for the marginal value of water to be established, which in times of scarcity would result in demand reduction through either substitution or voluntary curtailment.

Demand reduction brought about through water trading will always be economically more efficient than either broad brush restrictions or system wide augmentations as water will be traded across the catchment at the same marginal value. Restrictions and supply augmentations do not recognise the different value placed on water reliability by different users.

Requirements

CS Energy considers that the QCA should require GAWB to include the dry cooling and water trading options in the full cost benefit analysis identified above. CS Energy is happy to work with GAWB on developing this for consideration as an alternative.

Early Work Program

CS Energy considers that the proposed preparatory work program is excessive and unnecessarily pre-emptive. It is unclear at this point in time that a commitment to the pipeline will be justified in the foreseeable future. Hence proposed expenditure commitments appear excessive at this point in the life of the pipeline's development. For example GAWB proposes expending $5.1 million on land acquisition in 2007/08, $6 million on engineering/investigations and $2.6 million on project management. A further $5 million is planned for unspecified asset creation. The level of these costs suggest that GAWB plans to undertake detailed design and route acquisition and project management in 2007/08.

As the urgency for supply augmentation does not exist, it is unclear why GAWB needs to commit to significant engineering design, project management and land acquisition costs in 2007/08. While some modest prefeasibility design and route selection work may be justified, expending a further $20.9 million at this stage has not been justified. Any such efforts need to be considered carefully against the associated costs (cost benefit basis) and where determined to be undertaken all effort should be made to minimise them. For example, if GAWB were concerned about long term land access, entering into say five or ten year options to purchase key sites would be a method of reducing outlays at this point in time while assuring land access in the event that the augmentation is committed.

CS Energy Ltd ABN 54 078 848 745
Level 21 Central Plaza 2
66 Eagle St Brisbane Qld 4000
GPO Box 769 Brisbane Qld 4001
T 07 3222 9333
F 07 3222 9300
W www.csenergy.com.au

Ref: 130/118/002/0001

22 September 2006

Mr Jim Grayson
Chief Executive Officer
GAWB Office
PO Box 466
Gladstone Q 4680

cs energy
generations ahead

Dear Jim

GLADSTONE AREA WATER BOARD DROUGHT MANAGEMENT PLAN

Thank you for providing CS Energy with the opportunity to review and comment on your proposed Drought Management Plan (DMP). CS Energy is the owner of the 700 MW Callide B power station and owns 50% of the 900 MW Callide C power station, both of which are located at Callide near Biloela. These two power stations have a combined contracted maximum supply arrangement with GAWB of 27,500ML/year or nearly 40% of the Awoonga Dam annual supply. The installation of the $18 million Stag Creek pipeline extension was instigated at the time of GAWB's last drought induced water restrictions in 2002/3 and commissioning the pipeline has resulted in transmission losses being reduced from 4,500ML/year to 1,500ML/year. CS Energy has reviewed the proposed DMP and has provided a number of comments and suggestions for the consideration of GAWB as set out below.

GAWB plan focus and Trigger Levels

GAWB's focus in the plan is stated to be the "timely least cost augmentation of supply to mitigate the effects of Drought". It is also noted that the plan uses a set of Trigger Levels based on time to failure using the average inflow calculated from the worst recorded ten year inflow sequence (1993-2003) as follows:

- At the 60 month Trigger Level to failure GAWB proposes action to access additional supply;
- At the 48 month Trigger Level to failure GAWB proposes a 10% across the board restriction of supply;
- At the 6 month Trigger level to failure GAWB proposes to cease supplying all but municipal customers.

It is CS Energy's view that the 60-month Trigger Level is excessive based on the drought mitigation options put forward in the draft plan. CS Energy considers that 60 Months Time Frame is inconsistent with the necessary risk coverage and the need to make realistic, reliable or economic decisions.

Supply augmentation versus demand restriction

GAWB states that for reasons detailed in the *Strategic Water Planning Study* (Nov 2004) it accepts customer representations that there is limited capacity for customers to operate with water supply restrictions. Consequently GAWB has focussed on supply side augmentation in the proposed DMP rather than on demand restrictions.

While CS Energy acknowledges that it has previously highlighted reliability of water supply as a major issue, this was always predicated on that reliability being provided at a reasonable and

commercially sound price. In the normal course of events CS Energy seeks and will continue to seek a level of reliability that allows it to appropriately develop plans for the operation and maintenance of its power stations.

However the electricity market in which these power stations operate is a spot market with a price settled in each half hour of each day and with prices reflective of season and time of use. Generally, in off peak and low load periods, prices sit not much above the marginal costs of these stations. In peak and high load periods these prices can be extremely high reflecting the relative scarcity of electricity supply. Hence in our view, the 10% uniform restriction on all users at the 48 month Trigger level is sub optimal as it may be possible for the power stations to offer greater and differentiated water savings at times of short supply over a range of Trigger Levels. The ability to offer greater savings would very much depend on the flexibility offered in using the remaining water allocation and would be expected to attract a significant discount reflecting the lower level of reliability supplied.

Hence rather than apply a uniform restriction of 10% at 48 months we recommend that GAWB be required to consult and negotiate with the major water users in order to establish the scope for water savings at various Trigger Levels assuming that an appropriate commercial discount will be offered in compensation.

Maximising value of augmentation options

CS Energy is supportive of the concept of using well thought out Trigger Levels to drive decisions that where feasible impose demand restrictions and expand supply assuming that the cost of the supply augmentation is reasonable. However CS Energy considers that the Trigger Level for supply augmentation options should be kept to an absolute minimum to avoid unnecessary commitment of a supply augmentation for drought management purposes. This is particularly relevant because once a supply side augmentation is committed, considerable additional costs will be borne by various customers, even though inflows may subsequently pick up and the augmentation may never be required. This is regardless of GAWB undertaking reasonable endeavours to defer costs in this situation.

CS Energy notes that GAWB's preferred supply augmentation is the Fitzroy pipeline option at between $120 and $200 million. It is also noted that GAWB considers that advance work could be completed to reduce the implementation time for this option to two years. GAWB currently proposes a Trigger Level of six months to failure at which point all industrial water consumption would cease. Prior to this point GAWB would have instituted a 10% restriction on all users at a Trigger level of 48 months. Hence the Trigger Level to failure for supply augmentation should reflect the minimum implementation time of the favoured supply augmentation and the minimum time required to avoid arriving at the six month Trigger Level. It is expected that this would be significantly less than 60 months.

Appropriateness of inflow sequence selection

CS Energy notes that GAWB has used an average of the worst inflow sequence on record. This appears to be an overly conservative set of inputs into the drought management model. As the worst 10 year inflow sequence over say 100 years of recorded data this has around 1% chance of occurring (or a one in 100 year sequence). However GAWB then uses an average rather than the actual historical sequence. The fourth year of the sequence is a very high inflow year of between five and six years of current annual demand. In using an average GAWB push the effect of these high inflows towards the back of the sequence and in effect draw forward the likelihood of failure. Hence the averaged inflow calculated from the worst 10 year sequence has less than 1% probability of occurring based on historical inflows.

As this sequence will be used to drive potential supply augmentations and restrictions, CS Energy considers that GAWB should construct more reasonable inflow sequences to drive the Trigger Levels that are reflective of the reliability of supply sought. Something in the order of 2% to 5% would appear to be a commercially sound planning regime.

cs energy
generations ahead

Organic demand growth

CS Energy notes that there are two aspects to the management of GAWB's obligations for water supply from Awoonga Dam. The first is augmentation of supply when the existing Awoonga Dam no longer has sufficient capacity to supply growing water demand. The second is the provision of augmented supply to avoid failure during extreme drought conditions.

While drought conditions may lead to a supply augmentation under the Trigger Level methodology, the augmented supply will also be available to meet increased demand under non drought conditions. GAWB should take this into account when proposing any charging regime for drought based supply augmentation.

Cost allocation

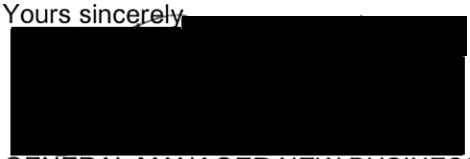
While GAWB has not specifically dealt with the issue in the DMP, the plan highlights that water users are provided with a differentiated level of reliability. Municipal users are the only users that will retain supply at the six month Trigger Level. Hence CS Energy proposes that GAWB establishes at the outset that it will develop a beneficiary pays approach to funding drought driven supply augmentations.

Water Trading

CS Energy sees water trading as the best way to regulate water in times of short-term scarcity such as drought. Trading would allow water to go to the highest value use.

CS Energy has been involved in water trading at its Swanbank power station. On a number of occasions it has traded its water to irrigators who have required an additional supply in dry weather to protect their investment in a crop that is nearing harvest. The irrigators were prepared to pay substantially more for this incremental water than the normal price paid to ensure their investment wasn't lost owing to a lack of rain at a critical time. CS Energy was willing to undertake the trade because the lost profits from marginal electricity generation was more than offset by profits from the trade. This facility is provided under SunWater's "Temporary Transfer" facility and is an arrangement whereby the two parties to the trade deal directly with each other. It is recommended that GAWB investigate the implementation of such a scheme for application at any time. However during a declared drought GAWB may consider it necessary to act as the water broker rather than just the facilitator.

Yours sincerely



GENERAL MANAGER NEW BUSINESS

Enquiries: Paul Hyslop
Telephone 07 32229360
Facsimile 07 32229353