

Utilities Commission note

The party making this submission has been employed by various electricity entities both in the NT and other Australian jurisdictions.

As this submission is being made as an interested private individual in the interest of promoting informed discussion; this party has requested that their identity be kept confidential.

▶ SUBMISSION ON POSSIBLE REVIEW OF CERTAIN REGULATORY INSTRUMENTS

In Response to Issues Paper

▶ Interested Private Individual ▶ 18/10/2007

SUBMISSION ON POSSIBLE REVIEW OF CERTAIN REGULATORY INSTRUMENTS

In Response to Issues Paper

Issue: (1) Is there any disagreement with the Commission's views regarding the nature and extent of current regulatory deficiencies and their implications for the Commission? If so, why?

I agree with Commission's view per my following detailed comments in response to the Issues Paper

System planning and control

1.5 A number of important system control and market administration functions remain within the sole supplier (Power and Water), and formal procedures for managing the level of reserve capacity (including the critical issue of how investment in new capacity is determined) are absent. Indeed, the current arrangements in the Territory are distinctive in that:

- the responsibilities, accountabilities and powers of the main participants with regard to system planning and reliability – the system controller, Power and Water Generation, Power and Water Networks and the Commission itself – are largely undefined; and*
- there is limited recognition regarding the desirability of separating public interest responsibilities from commercial interests.*

The structure of the Power and Water Commission into Business Units currently leaves no Unit with a business case for supplying and planning for certain vital elements of the electricity system, for example generation spinning reserve capacity and production of reactive power.

- Spinning reserve allows on line generation to absorb system faults and contingencies but represents a cost in fuel and maintenance and requires a risk and cost / benefits analysis to decide the applicable level – less than n-1, n-1, n-2, etc. If power purchase agreements between generation and retail business units were only for customer consumed energy plus losses there would be no accounting for spinning reserve. A second method of ensuring the power system does not collapse completely under contingency events, is the shedding of load in staged amounts to allow the system to recover. This method is highly disruptive to a proportion of the customers, usually used to cover extraordinary events rather than a normal operating regime and raises the question of equitable sharing of the disruption to the power supply. Another method to reduce load by small amount is voltage reduction but this is usually an emergency measure with only a limited reduction available while staying within prescribed limits.

I believe that PAWC should not be the entity deciding the level of spinning reserve being funded by electricity consumers (as the cost is passed through in tariffs), but rather the Utilities Commission - perhaps using any available applicable NEM models. I believe that the Utilities Commission should also be more active in overseeing PAWC performance with regards to reliability and more actively involved in aspects such as load shedding schedules and voltage reduction.

- Reactive power is an inherent nature of the customer load and must be supplied from some source. Customer load site power factor correction can decrease the requirement but not totally eliminate it. Capacitor banks embedded in the distribution, sub transmission and/or transmission system can also decrease the requirement to supply it from generation sources. The local capacitor banks represent both increased line transfer capacity (an advantage to the transmission or network operator) and increased efficiencies to the generator.

These elements may be best isolated and regulated as public interest responsibilities with such regulation allowing for equitable opportunity for other parties to invest and operate. Spinning reserve capacity would also need to be subject to guarantee of on line plant capacity at the time, to actually be deliverable on demand. Efficiencies and/or savings as well as better reliability may be gained through opening up the market to supply spinning reserve and reactive power. Private investment could decrease the burden on NT Government capital expenditure.

1.6 The way power system planning and reliability are managed in the NT electricity market gives rise to concerns regarding the operation, planning and reliability of the Territory power system. It may also directly discourage competition.

As stated before with no business case to address these issues the fragmented business units of the Power and Water Corporation have no business reason to plan and operate for the best outcomes for reliability of power supply on a system wide basis. Location of generation is another area which is being totally left to PAWC with no external or market input.

Generation barriers to entry

1.10 A new long-term gas contract is in place, with every indication that Power and Water in effect has exclusive rights to the available gas. A new power station has been committed by Power and Water that will add 35MW of capacity to the Darwin-Katherine system in 2007-08 and again in 2010-11. The Commission's 2006 Power System Review projected that, as a result, there will be sufficient capacity to maintain reserves in excess of N-1 through to 2015-16. Until then, any new competitor will face the prospect of entering a market with a single incumbent supplier holding excess capacity (recognising that the emergence of new unanticipated load is always possible).

- Although gas volumes may be sufficiently planned for, effective gas delivery may not. With newer aero-derivative gas turbines requiring approximately twice the gas pressure of the older industrial turbines combined with the daily and seasonal peaks and troughs of the system power load, periods may be encountered when adequate gas cannot be delivered to the generation node where it is required. Operation of some plant on liquid fuel to maintain supply has a major associated cost that must be met by some mechanism and the capability as well as the increased fuel price should be recognised as an ancillary service payment.
- Other generators would take the proportional load and gas requirement away from PAWC thus only affecting the overall requirement nominally with regard to

relative efficiency, although if appropriately sized combined cycle plant were encouraged it may reduce gas requirement.

- The daily and seasonal peaks of the system power load due to a large air conditioning load, coincide with a decrease in generator output due to the hotter less dense intake air. Evaporative air cooling of the generator intake air is also less effective, as this is also the period of very high relative humidity. This could result in the situation where although the annual energy requirement is met or exceeded by available generation, periods of the year when demand is at its greatest they are not. Blade fouling can also decrease turbine output over time and requires routine washing to return full capacity. Operational loading may not allow this to be performed thus reducing both output and reserve capacity. The newer lighter aero-derivative turbines as selected as the latest plant additions, although more fuel efficient are far less stable under fault conditions and power swings because of their lack of inertia. This can be a problem during the 'build up' which as well as being the period of highest load, highest humidity and lowest machine output, is also the storm season when most power system faults occur on the overhead distribution, sub transmission and transmission system.

1.11 From a potential generator-entrant's perspective, additional challenges include:

- *the nature of the load-following requirements and the out-of-balance settlement arrangements associated with the NT's bilateral contracting framework, as well as the market for ancillary services and the requirements for adequate reserves or standby generation; and*
- *whether the power system control function would be exercised by Power and Water on a transparent and fair basis to all generators.*
- The load following and out of balance requirements are advantageous to neither PAWC nor other market contestants. Frequency control of the network would best be a *fee for service* ancillary service that could be shared amongst applicable plant of all generators, or tendered for from one supplier. Energy balance from metered supply against metered consumption with allowance for

losses over a billing period would allow for all available plant to be scheduled most economically. This would require regulation and protocols with the Power System Controller to achieve. As an example during the low load part of the year it would not be beneficial to any party to run their generation at very reduced loadings overnight to supply respective parts of the same overall load when one source of generation could supply the load efficiently.

Standby generation reserves should be subject to guarantee curves for time of use and may be more efficiently managed from a whole of system perspective rather than forcing a situation of an excess of capacity from a number of possible suppliers or a lucrative sideline for an incumbent supplier with an excess of capacity. Other generation market participants will take PAWC market share increasing the system plant availability. A fair market structure for available generation is required.

- The Power System Controller function is a licensed function and should be highly regulated to ensure transparency and fairness to all participants. This requires the regulated components to be fairly rigidly defined and ring fenced to allow the function to reside with the licensee amongst other non-regulated functions, due to the small scale of the NT electricity system. These areas should include oversight and management of the nominated generation reserves, equitable loading of all generators with respect to frequency control, voltage support through reactive loadings (either from generator or operation of capacitors), economic operation to overall market share, and availability. Standard fees for service should be determined and charged to all system participants to fund this and allow the subsidisation inherent in a government corporation to be enjoyed by all market participants if the license remains with PAWC System Control (a logical place).

Retail barrier to entry

1.12 Currently, there are no publicly observable de facto contracts or service level agreements in place between Power and Water's generation and retail arms defining Retail's terms of purchasing of wholesale energy from Generation.

1.13 If a stand-alone retailer was to seek entry into the NT electricity market (or a large contestable customer seek to directly source wholesale power), they face at least two major hurdles:

- trying to understand the exact nature of the bilateral contracting framework currently in place and the equality of regulatory treatment afforded a new retailer (or customer) compared to Power and Water Retail; and*
- having sufficient comfort that the ring-fencing processes in place are effective enough to ensure they obtain access to wholesale energy on competitively-neutral commercial terms from Power and Water Generation.*

Both PAWC's Retail and Generation business units derive considerable effective subsidisation from sharing NT Government economy of scale and service support, for example payroll services by DCIS, and vehicle management by NT Fleet. They also access other areas of PAWC for example - networks, technical services, system control, corporate and legal services, either under service level agreements or without. These factors should be incorporated into any purchase agreements to allow competition from other sources. Under a correctly structured ring fencing regime it should be possible for another generator to compete to supply energy to PAWC retail and conversely another retailer to source energy from PAWC generation at fair market prices. This may actually be a preferable outcome to other generators coming into the market with excess generation capacity causing under utilisation of some plant as any market share they derive will be excised from the PAWC.

Issue: (2) Is there any disagreement with the Commission's views regarding the nature and extent of prospective policy developments and their implications for the Commission? If so, why?

I find it difficult to agree or disagree with Commission's view per my following detailed comments in response to the Issues Paper

Prospects for regulatory change

2.3 *NT Treasury has advised that it is in the process of:*

- *developing a Policy Paper setting out the terms and conditions for transitioning to the national regime;*
- *undertaking targeted consultation with national energy market bodies (the Australian Energy Regulator (AER), the Australian Energy Markets Commission (AEMC) and the National Electricity Market Management Company (NEMMCO)); and*
- *planning consultation with NT users (in the 4th quarter of 2007) with a view to the Government making a final decision in the first half of 2008.*

2.4 *As a result, there is a very real possibility that regulatory jurisdiction for the NT electricity market will migrate to national arrangements any time after mid-2008. The Commission has advised the Government that it sees considerable merit in this possibility from a regulatory administration point of view.*

2.5 *In investigating the move to the national energy regime, all parties recognise that some modifications to the national regime are likely to be required to accommodate Territory-specific circumstances (notably its non-interconnectivity with the national grid and its small scale), at least until such time as market conditions in the NT support full transition.*

2.6 *It is understood that NT Treasury is currently undertaking negotiations that seek to:*

- *determine the need for regime exemptions; and*
- *agree on exemptions and associated review mechanisms.*

Without anything definite or any detail it is impossible to second guess any outcome.

2.9 Of the actions/initiatives that could be undertaken by the Commission to address current regulatory deficiencies in the NT electricity market, the Commission concedes that those addressing deficiencies in the following areas seem most likely to be overtaken by the NT Government's reforms (including the NT's migration to the national energy regime):

- third-party access to networks and associated access price regulation (outside the scope of this Paper);*
- Power and Water's de facto responsibility for power system planning and reliability; and*
- system control issues. 2.10*

2.13 In these circumstances, the Commission could be remiss if it continues to defer the exercise of its existing powers in such areas on the grounds that the NT will soon be joining the national regulatory regime.

I feel it would be remiss of the Commission if it continues to defer the exercise of any of its existing powers in such areas on the grounds that the NT may soon be joining the national regulatory regime under uncertain exemptions.

I feel that the Commission has an obligation to act within the full scope of its powers in all areas of its responsibilities until any other regulatory regime supersedes it and acknowledges that it has acted with too light a hand with the result that competition in the NT Electricity market is nonexistent.

Implementation of a fairer market structure, even if some measures are only interim until a national structure is implemented, will lessen the impact of those changes and if done correctly the market may require no further adjustment.

Issue: (3) Is there any disagreement with the Commission's proposal to undertake a major review of the NT electricity ring-fencing code and to develop certain contestable pricing guidelines? If so, why?

I agree with Commission's view per my following detailed comments in response to the Issues Paper

COMMISSION'S PREFERRED APPROACH

Implications for the Commission

3.11 Where any current regulatory deficiencies relate to market conduct discouraging entry by other service providers, the main instrument available to the Commission is its ring-fencing code making powers. On the other hand, where any current regulatory deficiencies relate to market conduct towards end-users in 'contestable' sectors, the main instrument available to the Commission is its guideline making powers in conjunction with its investigatory powers.

3.12 Hence:

- deficiencies arising because of inadequate operational separation between Power and Water's monopoly and contestable business units could be addressed by strengthening and fine-tuning the ring-fencing code; and*
- deficiencies arising because the activities of Power and Water's deregulated 'contestable' businesses still operate with considerable market power could be addressed by exercise of the Commission's guideline-making powers in conjunction with its investigatory powers.*

Revamp of the NT electricity ring-fencing code

3.13 In particular, the Commission sees the need to address certain market barriers to entry confronting potential entrants because of Power and Water's vertical integration by undertaking a comprehensive revamp of the NT Ring-fencing Code. This could see the Code incorporating – particularly in the absence of legal separation between Power and Water's various businesses – the requirement for (the equivalent of):

I believe that it is in the interests of the NT electricity consumer, NT Government, PAWC and possible market entrants to have an access regime, which disrupts the efficient delivery of electricity services as little as possible and has the least economic impact on what small economies of scale exist in the NT electricity system. I therefore agree that legal separation of PAWC functions would be unnecessary if all contestable areas were identified and adequately ring fenced to allow effective competition on a level playing field.

The current system has failed with the one market contestant in generation and retail forced out by a number of issues. The only transmission line in the system has reverted from private operation back to the PAWC with only the Katherine Power Station capable of voltage support at that end of the system thus limiting transfer capacity in contingency events with no PAWC business unit with a business case to provide it. There is little opportunity for private investors to take the weight off the NT Government for major budget spending on building and operating infrastructure.

- *purchase agreements between Power and Water's generation and retail businesses;*
- *access agreements between Power and Water's network and retail businesses;*
- *operational protocols between Power and Water's system control and generation businesses;*
- *coordination agreements between Power and Water's franchise and contestable retail businesses; and*
- *standing offers/reference prices/proforma contract structure between Power and Water and third-party retailers and generators.*

- Purchase agreements between PAWC's generation and retail businesses should take into account all pricing factors and be given a weighting to make them fair market prices that could be competed against by other participants.
- Access agreements between Power and Water's network and retail businesses should also ensure that retail pay fair market prices for services including service level agreement functions to ensure that retail is bearing the same market forces as any other participant retailer. This could also open up the market for retail ancillary services to the private sector.
- Operational protocols between Power and Water's system control and generation businesses should be highly regulated and rigidly defined and the service available to other generation participants. The costs associated with the power system controller functions should be identified and a fixed fee for service charged to all participants – generators, retailers and networks.
- Coordination agreements between Power and Water's franchise and contestable retail businesses are desirable in the short term, with a timeframe implemented to full retail contestability.
- Standing offers/reference prices/proforma contract structure between Power and Water and third-party retailers and generators should all be subject to strict oversight to ensure fair market pricing to eliminate any NT Government / internal PAWC cross subsidisation giving PAWC business units an unfair market advantage.
- The important system wide issues of spinning reserve and reactive load provision are not implicitly covered in these measures and I believe that they should be addressed by the Commission in the first instance, regardless of what provision may come into effect in the future.
- The load following and out of balance requirements should be replaced with a new system that is in the interests of all parties for the most efficient and least disruptive operation of all plant on the system with a fair market structure established for the trading of excess generation for availability purposes.

I believe that to work, the Commission's preferred approach is going to have to be very detailed in every respect. Although long term forecasts may appear sufficient, day to day reliability of supply in regards to generation capacity, gas delivery, operational reserve, and load transfer capacity will see significant reliability problems during the high loads and storms associated with the 'build up'.

Implementation of a fairer market structure, even if some measures are only interim until a national structure is implemented, will lessen the impact of those changes and if done correctly the market may require no further adjustment.