

NT POWER GROUP PTY LIMITED

SUBMISSION TO

UTILITIES COMMISSION

CONCERNING

PAWA NETWORKS PRICING PRINCIPLES

MAY 2000

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1. SUMMARY

Comments On PAWA Submission To The Utilities Commission - “Principles For Establishing Network Prices”

NT Power believes that it is inappropriate for the tariff basis to be specifically calculated and approved by the Utilities Commission for the whole of the market both contestable and non-contestable markets. It is inappropriate that after the payment of NT Powers network tariffs, “that PAWA pick up the balance”.

NT Power believes that for PAWA to justify a significant proportion of the network tariff in the form of demand charges, it must make a clear case on actual system demand limitations. It should also make a statement about the areas where this limitation is significant and system upgrading is expected in the future.

- a. PAWA Networks should provide facts and justify this assertion,
- b. What would be the fact if PAWA policed the Load Factor requirement on customers. NT Power asserts policing load factors could avert capacity limitations significantly.
- c. Poor customer load factors have a significant impact on generation efficiency. To what extent is PAWA Networks proposing to influence customer behaviour through network tariffs and NOT using PAWA Generation and its pricing structure.

NT Power believes that the declining block tariff is too complex and causes the larger customers to pay in part for the low voltage system (ie a cross subsidy from HV to LV customers). An analysis of tariffs interstate shows on average demand tariffs account for 35.6%, fixed charges account for 2.5% and energy based charges 61.9% of network tariffs.

Under the 1988 agreements, PAWA does not have a fixed legal reserved capacity on the DKTS. The agreements between PAWA and NT Power provide PAWA Generation/Retail with the means for the transfer of its energy. In the same way as NT Power Generation is required to gain access to the PAWA Network.

It is against the competition principles that PAWA Networks attempts to charge for the costs properly attributed to PAWA Generation/Retail for the moving of its energy on the DKTS.

NT Power believes that this assertion is anti competitive and does not produce a level playing field. It is inappropriate that PAWA would be able to charge network users for **its own** access to NT Power’s assets,

NT Power is prepared to propose alternate arrangements on the DKTS;

A feature of each of the Alternatives above is the appointment of the UC to approve the terms of licence of easements for the DKTS after 2008. NT Power is prepared to meet with PAWA and the UC to discuss these alternatives.

Alternative A. - DKTS Initial Regulation Period (DKTS IR)

NT Power proposes that the DKTS be placed into an initial regulatory period, the terms of which are agreed between the participants and the NT Utilities Regulator.

Alternative B - NT Power Generation pays Cost as Determined by UC

NT Power proposes that the UC be appointed to determine an interim total revenue and the charges to be paid by NT Power Generation.

NT Power asks why the PAWA pricing objectives are different to the Code objectives. Are the PAWA objectives permitted or are they consistent with the Code objectives.

Comments On The Utilities Commission “Network Pricing Principles Discussion Paper”

The NT has an essentially monsoonal weather cycle. The wet/dry season cycle limits the ability for demand management. However, air conditioners run 24 hours a day both wet and dry season. Network operating costs vary little between peak (day time) and off-peak. Network maintenance is a year round function which although conducted in daylight can be allocated across the peak and off-peak time. As there are no network capacity constraints effected by the peak period, there is little need for a peak off-peak tariff structure.

Customers and system users are very concerned about tariff structure. We believe side constraints are required on the tariffs charged by PAWA Networks.

There is insufficient information to determine whether the pricing parameters are competitively neutral regarding proposal zones.

We agree that it is difficult to assess the appropriateness of an approach in the absence of information on the magnitude of the costs.

The network pricing principles does not deal with the requirement of PAWA to move onto a more efficient level.

2. COMMENTS ON PAWA SUBMISSION TO THE UTILITIES COMMISSION - “PRINCIPLES FOR ESTABLISHING NETWORK PRICES”

1. Network Tariffs basis should Apply to all Users

PAWA has proposed that the new network tariff arrangement will apply to the contestable market only. Thus only NT Power Generation is in reality effected by the form of the network tariffs. This is because PAWA Retail itself is the only other party which pays any network tariffs to PAWA Networks. NT Power believes that it is appropriate for the tariff basis to be specifically calculated and approved by the Utilities Commission for the whole of the market both contestable and non-contestable markets.

As the contestable customers as a generality, use a greater proportion of the HV system than the LV system. Consequently, the it can be expected that the asset base on which the contestable customers are to pay network tariffs are less. It can be expected that as an overall result, the network tariffs of the contestable customers is in fact less than the franchise customers. This can easily be checked by dividing the revenue cap for PAWA networks by the total energy sent out on the system. The tariff for contestable customers should be less than this average.

2. Network Pricing Principles to Effect all Participants

NT Power believes that in a truly competitive market all ring fenced market participants should be concerned about the process of establishing network tariffs. PAWA Retail should be concerned as to the form and content of the tariffs for both its contestable market customers and for its franchise customers.

As PAWA has sought to introduce network pricing principles which assert to influence the way in which customers are charged and hence the costs of electricity. As the pricing principles are expected to influence behaviour, NT Power would have expected that all generators would be interested in the effects of the proposals.

At a recent discussion, NT Power was disappointed that PAWA Generation and PAWA Retail were not represented.

3. Proposed Network Demand Tariff Principle Unsupported

The PAWA submission includes a significant tariff for demand based tariffs. PAWA's submission asserts that it is appropriate for the network charges to be used to influence consumer behaviour.

NT Power acknowledges that network tariffs can in fact be used to influence consumer behaviour. However, NT Power asks is the network tariff the appropriate forum for this to occur. PAWA's submission does not support this assertion and does not attempt to justify the proposed pricing principle.

A review of the tariff applicable to network services in the balance of Australia shows that the demand tariff is in fact charged by network provider. In some

cases this is offered as an alternative charge. PAWA may wish to consider the demand tariff as an optional network tariff. The attached table demonstrates that the majority of the tariff structures are biased toward the energy charge. In addition, there is a considerable difference between the HV and LV charges.

4. PAWA has not explained the Network Limitations

The Demand tariff structure can only be supported by an argument that the PAWA Network is in some ways constrained by system demand. PAWA does not provide any fact or argument to support this position.

NT Power believes that for PAWA to justify a significant proportion of the network tariff in the form of demand charges, it must make a clear case on actual system demand limitations. It should also make a statement about the areas where this limitation is significant and system upgrading is expected in the future.

5. Load Factors

NT Power understands that PAWA asserts that customer load factors are significant limitation. NT Power asks the following;

- d. PAWA Networks should provide facts and justify this assertion,
- e. What would be the fact if PAWA policed the Load Factor requirement on customers. NT Power asserts policing load factors could avert capacity limitations significantly.
- f. Poor customer load factors have a significant impact on generation efficiency. To what extent is PAWA Networks proposing to influence customer behaviour through network tariffs and NOT using PAWA Generation and its pricing structure.

6. PAWA Networks Proposed Declining Block Tariff

The declining block tariff is a proxy for the fact that larger customers use less of the network assets. This is particularly relevant where the customer is connected to the higher voltage systems. The declining block tariff merges the low voltage and high voltage customers into one more complex tariff structure.

NT Power believes that the declining block tariff is too complex and causes the larger customers to pay in part for the low voltage system (ie a cross subsidy from HV to LV customers). It is appropriate price signals to large customer to be connected on the higher voltage system then the tariff structure should take that into account. NT Power believes that the customer tariff structure should differentiate between whether they are a HV or LV customer. NT Power asks Does the declining block tariff meet the subsidy free objective.

NT Power has analysed the network tariff structures in operation around Australia. A copy of the analysis is attached as Appendix 2 to this document. The analysis shows that;

1. The use of a demand tariff is common but not universal,
2. That all operators implement a separate charge dependant on the customers voltage connection as being HV or LV.
3. The demand charge as a percentage of the total charge is 35.6% on average across all customers Australia as a whole. The energy charge accounts for 61.9% of the network charges and the fixed charge was 2.5% of the network charge. Although these percentages vary with customer size, the analysis shows that the variation around the average is small.

This analysis suggests that industry practice tends to support a demand network tariff on the lower side or less than the range of 40 to 60 % proposed by PAWA.

7. PAWA Claims DKTS Reserved Capacity

PAWA states that it has reserved capacity on the DKTS. The 1988 agreements do not in fact state any legal right to a reserved capacity on the DKTS. NT Power suggests that the Utilities Commission ask PAWA to prove this to be a fact by showing where in the documentation this reservation is stated.

In fact the 1988 agreements provide for NT Power Transmission which purchases energy from and re-sells energy to PAWA. NT Power Transmission is the user of the DKTS. These facts are contained in power purchase and sale agreements signed in 1988.

NT Power stands by its existing agreements with PAWA as an effective access agreement (for the past and the remaining life of these agreements). Having been signed some 10 years ago it is clear that NT Power recognises its prior commitment to transfer energy on the DKTS for PAWA ahead of any new party seeking access to the DKTS. It is clear from the agreements that neither has PAWA contracted all of the capacity of the DKTS nor in practice has it used all of its capacity.

8. PAWAs DKTS Contract for PAWAs Energy

The agreements between PAWA and NT Power provide PAWA Generation/Retail with the means for the transfer of its energy. In the same way as NT Power Generation is required to gain access to the PAWA Network.

It is against the competition principles that PAWA Networks attempts to charge for the costs properly attributed to PAWA Generation/Retail for the moving of its energy on the DKTS. NT Power believes that this structure is does not produce a level playing field. It is inappropriate that PAWA would be able to charge network users for **its own** access to NT Power's assets,

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- The act provides that if a retailer is to be granted a licence it is required to have reached an access agreement. NT Power *retail* is therefore required to reach an access Agreement with PAWA Networks for the Darwin Distribution system. However in contrast, PAWA has not done this as PAWA has internally 'allocated' the existing agreement for PAWA access to the DKTS to its *Network* division. This does not produce a level playing field.
 - This indicates that the PAWA divisions were not properly ring fenced at the time of the original PAWA restructure prior to competition commencing. The contracts with NT Power Transmission should be allocated as costs of PAWA Retail or PAWA Generation, NOT PAWA Networks. NT Power calls on the Utilities Commission to review the adequacy of PAWA ring fencing in this regard.
 - Any network user which wished to send energy along the DKTS will need to gain access via reaching an agreement with NT Power. NT Power stands ready to reach an access agreement with any potential new entrant to the electricity sector. It would be inappropriate for that user to then be charged for this by PAWA when that network user sought access to the PAWA distribution system.

NT Power submits to the Utilities Commission that any charge by PAWA to NT Power for the use of the DKTS is anti-competitive and an abuse of market power.

9. NT Power Proposed Treatment of DKTS in NT Market

Background

NT Power disagrees with the PAWA proposal for the DKTS. The DKTS is an essential part of the Darwin – Katherine transmission network.

1. It provides the ability to link the low voltage networks at Darwin, Katherine, Pine Creek and smaller towns along the line.
2. It allows PAWA Generation to schedule generation equipment more efficiently when it chooses to operate its Katherine Power Station, draw energy from Pine Creek or send energy south from its Darwin based generation assets.
3. It provides system security to PAWA allowing any of the above generation assets to supply into the Darwin or Katherine markets in the event of plant failure.
4. It provides security for the gas transmission assets should there ever be a fault in the gas transmission system at or near Darwin.
5. In addition, the DKTS provides the opportunity for generators other than PAWA Generation to send energy into the Darwin – Katherine contestable customer market.

To achieve these benefits, PAWA has signed certain power purchase and sale agreements with NT Power. In these agreements, NT Power moves energy and generally provides the above benefits to PAWA. These

agreements were signed in 1988 and PAWA pays a tariff for this in the order of \$5.5m per annum.

The amendments to the Trade Practices Act and the Competition Principle Agreement have caused State Governments to re-structure electricity industry across Australia and in the Northern Territory. The Northern Territory implemented changes and allowed competition from 1 April 2000.

The 1988 agreements between PAWA and NT Power are grandfathered under the Trade Practices Act from the effects of the industry restructure.

Notwithstanding this, NT Power recognises that the DKTS is an asset used by all participants in the NT electricity industry.

Return on DKTS as an Infrastructure Asset

The NT Power Group purchased the entity which owns the DKTS in 1998 on the strength of the existing contracts and the prospect of regulatory change. NT Power has attempted on many occasions to negotiate with PAWA a more equitable set of terms for the long term use of the asset.

NT Power as the owner and operator of the DKTS, presently has the option of seeking to have the DKTS regulated. An outcome of the regulation process is the establishment of an Access Regime. NT Power notes that the regulators are not able to set aside the existing PAWA – NT Power contracts as they are grandfathered.

NT Power has analysed the DKTS and the potential return that can be expected in a regulated regime. NT Power is of the view that the approved revenue cap on the DKTS will be substantially above that presently earned on the asset. Important factors included in the analysis of this include;

1. The short term of the existing assets where title to easements ends in 2008 and that NT Powers major competitor owns those easements limit the time on which NT Power can earn back its capital.
2. The fact that the investment in the NT high voltage transmission system would be subject of a higher cost of capital by virtue of its private ownership, the risks of doing business in the NT and the nature of the asset.
3. The move by regulators toward after tax returns to investors will dictate that available tax depreciation will be taken into account in determining return of capital and return on capital.
4. The allowance that regulators have regard to the amount invested in privately owned networks means that the amount invested rather than another valuation method will be applied in the first regulatory period. It is expected that NT Power will move to a valuation basis at some later date.

As the NT Access Code has not yet been approved by the NCC at this time, the potential date of coverage of the DKTS is likely to be some time in the next two years.

NT Power Proposals

In recognition of the changed state of the NT electricity industry, NT Power is prepared to propose alternate arrangements on the DKTS. NT Power is prepared to discuss and reach agreement on these proposals with industry participants under the auspices of the NT Utilities Commissioner.

A feature of each of the Alternatives above is the appointment of the UC to approve the terms of licence of easements for the DKTS after 2008. This is an important feature of the NT Power proposals as it provides NT Power some assurance of its tenure in the long term. Where implemented, NT Power would be comfortable that its investment was being protected and overseen by an independent regulator. NT Power would no longer have a need for its current legal action regarding the 1988 agreements.

Alternative A. - DKTS Initial Regulation Period (DKTS IR)

NT Power proposes that the DKTS be placed into an initial regulatory period, the terms of which are agreed between the participants and the NT Utilities Regulator. Under this DKTS IR, an Access Code be agreed between NT Power and The Utilities Commissioner and other interested parties having input. The Access Code will set out the terms on the DKTS access by all parties including the charges for usage across the entire Darwin – Katherine system. Proposed terms of the DKTS IR are as follows;

1. DKTS Access Regime to appoint NT UC as regulator,
2. Initial regulatory period to be to until 2008.
3. UC use DKTS value of 'cost' at inception and amortised along a path to 2008. In 2008, the DKTS to be valued per economic principles (eg DORC),
4. DKTS Access Regime to apply a revenue cap.
5. DKTS Access Regime to include payment by all parties for use based on the individual customers usage. Usage to be determined as a part of the Darwin – Katherine system as a whole. As discussed above, NT Power believes that the DKTS is an asset used as a part of the system as a whole. Consequently, NT Power believes that it is appropriate that all users in the system be charged for its use. This to be applied irrespective as to which ever retailer a particular customer is taking energy.
6. UC to be appointed to determine DKTS licence of easements from 2008.
7. PAWA includes its payments to NT Power for access to the DKTS in its Generation or Retail business.

The benefits of this structure are;

- a) the Utilities Commissioner determines the terms of access,
- b) the proper return on the investment in the DKTS is established on present applicable input assumptions,
- c) NT Power and PAWA each pay there proportion of costs of the use the the DKTS,

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- d) There is a level playing field for network charges for all customers on the system irrespective of which generator/retailer they purchase energy from.
 - e) Over the 8 years, the value of the DKTS is amortised to a valuation basis providing a 'glide path' to eventual asset valuation.

Alternative B - NT Power Generation pays Cost as Determined by UC

NT Power proposes that as an alternative to A above, the UC be appointed to determine the cost to be paid by NT Power Generation to NT Power Transmission for access to the DKTS. The terms of this proposal are as follows;

1. The UC is to establish an interim total revenue for NT Power Transmission across the total Darwin – Katherine system. The UC then determines the amount to be paid by NT Power Generation to NT Power Transmission based on its proportional use of the total Darwin – Katherine system.
2. NT Power Transmission to charge NT Power Generation a fee based on its use of the total Darwin – Katherine system.
3. The NT Power – PAWA 1988 agreements are treated as grandfathered. The UC to take into account these agreements to ensure that the NT Power Generation charges are based on a like for like basis as for PAWA taken across the system as a whole.
4. This structure will apply up and until replaced by an Access Code (as in Alternative A above or a formal NCC approved Access Code).
5. UC to be appointed to determine DKTS licence of easements from 2008.
6. If the UC establishes that the interim total revenue was equal to the current revenue of NT Power Transmission then a result could be a rebate to the current users of the DKTS.
7. An essential feature of the proposed resolution is for the UC to be appointed to determine DKTS licence of easements from 2008.

The advantages of this approach are;

- a) The existing agreements are not disturbed in any way,
- b) The amounts can be easily determined on a short timetable and implemented quickly. The DKTS access code issues may be addressed at a more considered timetable,
- c) The outcome will provide a level playing field on charges paid by PAWA and NT Power Generation.
- d) The outcome establishes some of the principles required for the DKTS IR implemented in due course.

NT Power remains prepared to meet with PAWA *under the auspices of the NT Utilities Commission* for informal or formal, discussions (be they arbitration, conciliation, adjudication, determination or other arrangements) for the purpose of settling the DKTS treatment in the NT Market.

10. PAWA Pricing Objectives

PAWA sets out its pricing objectives in Chapter 4 of its document. In summary using their headings these are;

- Economic signals,
- Revenue recovery,
- Simplicity,
- Stability,
- Equity,
- Prices should be subsidy free.

NT Power points out that these Pricing Objectives are different to those stated in the Electricity Networks (Third Party Access) Code. Section 63 of the Code sets out pricing objectives.

“63. Objectives of price regulation

Price regulation under this Part must be administered to achieve the following outcomes –

- (a) an efficient and cost-effective regulatory environment;
- (b) prevention of monopoly rent extraction by network provider;
- (c) promotion of competition in upstream and downstream markets and promotion of competition in the provision of network services where economically feasible;
- (d) regulatory accountability through transparency and public disclosure of regulatory processes and the basis of regulatory decisions;
- (e) reasonable certainty and consistency over time of the outcomes of regulatory processes; and
- (f) an acceptable balancing of the interests of the network provider, network users and the public interest.”

NT Power asks why the PAWA pricing objectives are different to the Code objectives. Are the PAWA objectives permitted or are they consistent with the Code objectives.

3. COMMENTS ON THE UTILITIES COMMISSION “NETWORK PRICING PRINCIPLES DISCUSSION PAPER”

Comments on Network Pricing Principles Discussion Paper April 2000-05-01
Issued by the Utilities Commission

1. The NT has an essentially monsoonal weather cycle. This means that the peak energy consumption is experienced in the wet season for the air conditioner load. This period has a peak demand some 120% above the dry season peak demand. The wet season is some 5 months long.
2. As the weather pattern is predominantly monsoonal, the daily peak/off-peak cycle common in southern markets is less pronounced.
3. The wet/dry season cycle limits the ability for demand management. However, air conditioners run 24 hours a day both wet and dry season. This daily peak to off-peak demand management is limited.
4. Where peak demand is used, how will the tariff be determined. Peak demand can vary from year to year significantly. Will the charges for the future be based on the last years peaks. Peak demand can vary significantly from year to year and month to month. The 1999/2000 figure could vary significantly to the current year. This could mean that there could be a significant difference to be dealt with in the current year.
5. Clause 3.1 PAWA Objectives. PAWA objectives should include not giving customers a ‘price shock’.
6. Clause 3.5 We agree that the cost of using the system could “reflect current and future costs of meeting additions to current loads, rather than the sunk costs of the system”. Where is this provided for in the Access Code.
7. Clause 3.8 We agree that further information on actual prices is required to properly assess the proposals.
8. Clause 3.8 Issue for Comment –
PAWA Networks have not provided sufficient information to assess pricing proposals.
9. Clause 3.9 Price fluctuations during the initial regulatory period do not meet the PAWA objective of price stability per clause 3.1.
10. Clause 3.10 Issues for Comment –
Customers and system users are very concerned about tariff structure. We believe side constraints are required on the tariffs charged by PAWA Networks.
11. Clause 1.2 Issues for Comment,
There is insufficient information to determine whether the pricing parameters are competitively neutral. We will need to understand where the regions will be drawn. NTPG is unable to determine if it being unfairly

treated until it knows; a) in which region its customers are located; and b) The bias of charges in those regions. It will charges be disproportionate to regions where NTPGs customers are located.

12. Clause 4.5 Issues for Comment,

We agree that it is difficult to assess the appropriateness of an approach in the absence of information on the magnitude of the costs. Allocation can be made on the basis of whether the customer is a high voltage or low voltage, is in Darwin or is in Katherine. To treat the southern customers as 'incremental' could mean that they bare a less charge for the whole system. Is this the case?

13. Clause 4.10 Issues for Comment,

Demand Charges. Demand charges are essentially a charge for generation. PAWA has not stated any specific system limitations. As there are no known near term limits on the existing network capacity generally, there is no rationale for the inclusion of a demand charge to limit use of the network. Potential augmentation will be required for the addition of new development projects which is generally contributed by the project developer. Darwin has previously had generation limitations, however this has recently been addressed.

There is a case for demand charges made by the generators. Where demand charges are used, the actual demand can vary significantly from month to month on seasonal or other reasons. As these charges are paid by the network user it may be difficult for the charges to be passed on to customers. Demand charges are not well understood in the NT. If applied Demand charges must be applied taking into account the traditional seasonal pattern in the NT. It would be inappropriate to charge a network user and/or customer for the peak demand reached once a year. If Demand charges are introduced these should be applied on a short basis eg monthly or weekly.

14. Fixed charges could discriminate against the smaller user including the network user, NTPG and its customers.

15. Clause 4.12 Issues for Comment,

Network operating costs vary little between peak (day time) and off-peak. Network maintenance is a year round function which although conducted in daylight can be allocated across the peak and off-peak time. As there are no network capacity constraints effected by the peak period, there is little need for a peak off-peak tariff structure. Generation, however may consider such a tariff structure.

16. Clause 4.14 Issues for Comment.

A declining block tariff structure is contested by NTPG. NTPG prefers a voltage based tariff as this is directly related to the energy taken by a customer. As the attached Appendix demonstrates, all network tariffs in Australia differentiate between the charge based on the voltage connection of the customer.

17. Clause 4.16 Issues for Comment,

We have insufficient information to assess the proposed zonal split. We would expect that the only network augmentation required is that of connection of new projects. This will be expected in outer zones and where the project developer will be expected to meet the connection cost. It is not clear as to what the rationale for the Inner and Outer regions of Darwin and Katherine should be charged separately. Is there a greater reliance on the HV or LV network system in either of these zones? The zonal structure will result in different charges for energy across the zone boarder. This from the users point of view will result in inequity.

18. Clause 4.18 Issues for Comment.

NT Power is not aware of any imminent system augmentation requirement. This charge should be left at a low level. In the long term, end users will be required to meet the costs of system augmentation. It is unclear why present users should be asked to met the costs of network upgrading for future users. There should be a defined path made clear to and accepted by the Utilities Commissioner for planned network upgrades. Once the network upgrade path is known, the fair and reasonable method of assigning costs can be uncovered. Again, PAWA needs to provide additional information to determine a reasonable outcome.

19. Clause 4.23 Issues for Comment.

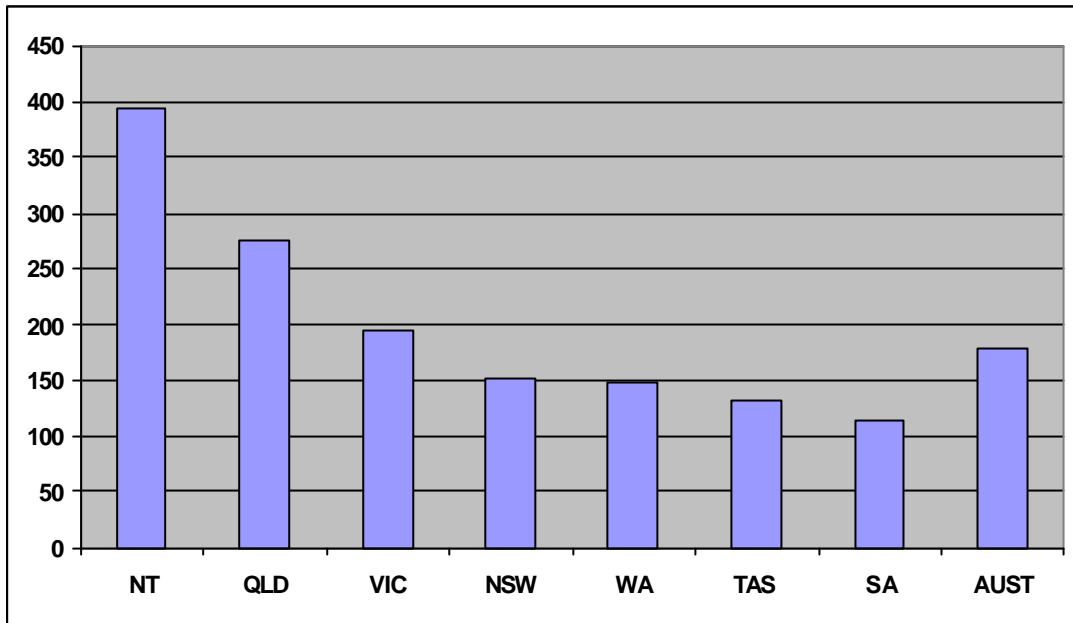
In the NT, energy constraints predominantly come from generation. This means that generation prices should be used as the tool for allocation of a scarce resource. The Network operation is a monopoly.

20. Clause 4.25 Issues for Comment.

Peak demand is primarily related to the weather pattern. Network constraints are not a major factor in peak demand. Generation is a major constraint for peak demand.

21. NT has the highest charges for network costs and lowest productivity in comparisons with other states.

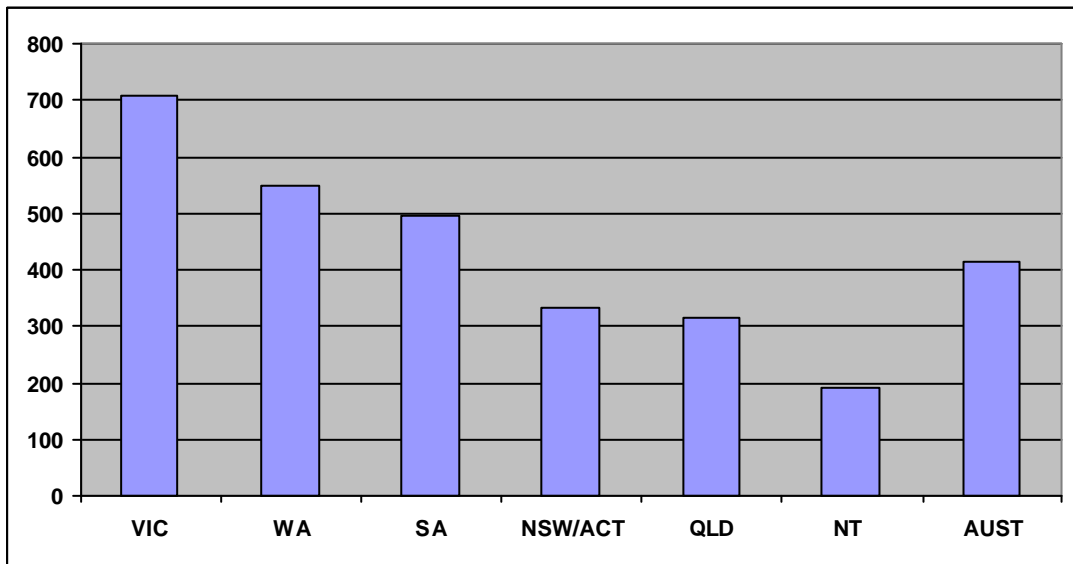
Figure 1: System average outage duration, NT compared to other jurisdictions, 1997-98 (minutes per customer per year) ¹



¹ System average outage duration is defined as total customer minutes interrupted per year divided by average total number of customers.

Source: Source: ESAA Electricity Australia 1999, Table 4.4, p. 58

Figure 2: Labour productivity in the distribution sector, NT compared to other jurisdictions, 1997-98, (customers per employee) ¹



¹ Labour productivity in the distribution sector is measured as average total number of customers divided by average total number of distribution full time equivalent employees.

Source: op cit, Table 4.4, p. 58

The network pricing principles does not deal with the requirement of PAWA to move onto a more efficient level. How can this be achieved. How can the network pricing principle be set to ensure PAWA is incentiveised to operate efficiently. What tariff or other penalties are made out against PAWA where it does not operate is network in a reliable manner.