Energy Action Group

Submission to the ACCC SPI /PowerNet Revenue Cap Application

June 12th 2002.

Introduction

This submission would have been timelier, if the Victorian and National electricity consumers had access to some financial resources.

The Energy Action Group is concerned that load growth is a major driver of network investment. The SPI PowerNet Revenue Cap Application shows that load growth adds $145m of the total projected capital expenditure of $387m.

Load growth not only adds to the costs of energy but also significantly adds to consumer costs as investment in new assets to supply load growth feeds into transmission company revenue requirements. The Victorian ORG (now ESC) allocated $1b to the 5 Victorian Distribution businesses in the Distribution Price Determination 2001-5 for new consumption over and above the $1b it allowed for existing O&M needs. The National Electricity Market Code fails to effectively address this issue and by default strongly rewards loads growth. Both the SPI PowerNet and ElectraNet ACCC determinations provide an important vehicle to address the shortcomings in the NEM Code on the issue of Demand Management and alternative network investment options.

The addition of a significant volatile load as a consequence of summer peak energy consumption continues to create major problems across the NEM. The introduction of gas fired electricity generation, particularly in Victoria to meet this projected load, places an increasing pressure on the SPI PowerNet transmission system.

One recurring theme in the VENCorp Annual System Planning Review is the comment that transmission constraints and the impacts of load growth can be fixed by

- augmentation and capital investment;
- implementing a Demand Management Program[1]; or
- adding embedded generation to the sub transmission/distribution system[2],

[1] The 2000 and 2001 attempts by VENCorp and Victorian Government Demand Management were halfhearted and amateurish and failed to achieve any long-term changes in behaviour or a sustained commitment from consumers.

Augmentation of the transmission system appears to be the most preference in Victoria, New South Wales and South Australia.[3] The current institutional arrangements of a separate Independent System Operator and asset owner in Victoria strongly inhibit PowerNet from adopting a Demand or load management role in the NEM.

It is clear that the VENCorp electricity ISO arrangements and the SPI PowerNet Submissions need to be considered in parallel. There is a strong case to consider re-integrating the electricity component of VENCorp responsibilities back into the SPI PowerNet business. There is, for instance, substantial duplication of resources in both organisations. VENCorp plans and manages the transmission system while under the current arrangements SPI PowerNet owns but doesn't control the use of its assets.

It is unfortunate that the SPI PowerNet / VENCorp Service Agreement was not part of the SPI PowerNet application. This Service Agreement is an important part of the management arrangements for the Victorian region and it is difficult/impossible to assess the full set of cost drivers without it. This agreement minimises SPI PowerNet's ability to manage the network assets. If anything goes wrong SPI PowerNet wears much of the consequences without the control.

A single Independent System Operator/Asset Manager should be able to provide significant cost economies when compared to the current VENCorp/SPI PowerNet arrangements. The question needs to be asked as to whether the current dispatch and system control arrangements give the best outcome for consumers and distribution companies. The possibility of splitting the electricity Independent System Operator/planning function from VENCorp gas operations should be considered as part of the joint review of the SPI PowerNet Revenue cap arrangements.

Complex far reaching interrelated decisions.

The ACCC Electricity Group is currently faced with a complex number of interrelated decisions around the future structure of the National transmission system. The failure to consider each decision in relation to the others will cause problems well into the future for the transmission asset owners and the market.

This Determination, coupled with the ElectraNet Determination and the NECA Hybrid Interconnector Determination, provides the opportunity to ACCC to reduce market complexity. There is a common myth held by economists that all functions of the NEM need to be subjected to competitive pressures. The SPI PowerNet application shows that there are a number of projects, particularly the introduction of several independently owned and dispatched hybrid interconnectors and dynamic capacitor banks that are argued (wrongly in our view) to enhance the NEM transmission system.

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[2] The 150 MW AGLE Somerton gas turbine plant is the first example of this option being implemented in Victoria by a retail/ distribution company.

[3] Powerlink, not NEMMCo has in place an arrangement with several generators to ensure a secure supply to Northern Queensland for instance.

EAG rejects the notion that NEMMCo dispatchable hybrid interconnectors and dynamic capacitor banks will enhance the market. EAG is strongly of the opinion that the development of dispatchable transmission adds to market complexity, strongly adds to costs and increases the ability of market participants to game the system. Generators for instance, can legally game the hybrid interconnector's dispatch to lift the pool price, if they know the SPD engine dispatch price for the hybrid. The introduction of independently owned hybrid interconnectors to the market will clearly cost consumers, will not introduce competitive pressures and will further reduce the ability of the transmission companies to control their assets.

The questions that the Commission needs to resolve are how much and what control will consumers and retailers have over their costs, particularly if the NEM Rules and Codes and the Network Control Ancillary Service Payment market are complex and non transparent. Accepting the current arrangement between SPI PowerNet and VENCorp and the NECA Hybrid interconnector Code Change proposals add to market complexity and increases consumer and retailer risk.

This Determination needs to simplify the institutional arrangement between VENCorp and SPI PowerNet. One consideration should be the amalgamation of the two organisations and rejecting the Hybrid Interconnector Code Change proposals before the Commission.

One of ACCC objectives should be to decrease market complexities so as many market participants and consumers can continue to benefit from the reform process. The current trend to add complexity to the NEM greatly increases arbitrage and gaming opportunities for participants.

At the end of the day, consumers need to continue to support the reform program. Increasing the complexity of the NEM ensures that the underwriters (consumers) only get suspicious when then they see more arbitrage opportunities being added with each new ACCC Code Change and Revenue Cap determination.

One independent analysis of the projected ACCC PowerNet Determination, Fitch (2001*), Transmission Regulatory Risks for Australian Utilities,* Global Power Australia, Special Report 28th November, international rating agency, acknowledged four variables.

1) **WACC Risk-** Fitch suggests that refinements of the WACC may lower the returns to the Transmission Network Service Provider.

2) **Funding Mismatch Risk** -The problems of Funding Mismatch Risk are minimised with the relatively low interest rates available to borrowers in the Australian capital markets particularly in relation to the ACCC and other regulator WACC determinations. The funds that need to be borrowed to meet the capital work program proposed in the Revenue Cap Application are relatively small for a business of PowerNet size.

3) **New Investment Risk -**The load growth in both the Victorian and South Australian transmission systems means that the TNSP has to build and refurbish their systems to meet the projected load growth. The capital

investment needed to increase transmission capacity is relatively small particularly when compared to the size of the Regulatory Asset Base The relative small size of the investment minimises this risk.

4) **Stranded Asset Risk.** -The failure to implement any effective Demand Management across the NEM means that there is little likelihood of any medium term asset stranding.

VENCorp / SPI PowerNet Efficiency

This Determination and the ACCC annual review of budget provide the only efficiency drivers on the VENCorp Electricity Group. Whilst the Energy Action Group has some regard for the in-house expertise within VENCorp, VENCorp, in conjunction with the Victorian Government Energy Projects Unit has been remarkably slow in solving/managing Demand, Load Management and the introduction of embedded generation in the Victorian region of the NEM.

This arrangement has failed to deliver any alternatives to system augmentation to meet future load growth. The VENCorp/Victorian Government efforts to encourage load management and Demand Management have been far too little, far too late and then very poorly implemented. The one saving grace in the Victorian region of the NEM has been the performance of the SEC Smelter Trader and their management of the Portland Smelter load.

DORC

The EAG endorses the argument put by David Johnstone *(2001), Replacement Cost Asset Valuation and Regulation of Energy Infrastructure Tariff, The Problems with* DORC Department of Accounting and Finance, University of Woolongong, December. This paper provides a strong critical analysis of the DORC methodology used/accepted in the ACCC building block approach to pricing regulation. Johnston's paper provides the basis of EAG's comments on DORC and the Regulatory Asset Base (RAB).

Energy Action Group takes the strong position that the RAB is adjusted from the start of the first regulatory period not at the next/or every price reset revenue application period. Any changes to the opening RAB other than the addition of capital investment and reduction due to depreciation lead to significant gaming opportunities by the owner. This problem is illustrated by the constant revisions of the New Zealand distribution and transmission RAB. A single line in the sand, the initial RAB provided regulatory certainty to consumers and the relatively easy measurement of changes to the RAB.

In the case of the privatised/rental transmission businesses, they were sold/leased on the basis of the initial RAB. Increasing the size of the RAB provides a substantial free bonus to the owner/leaser at consumers' expense.

The last 18-month round of electricity and gas applications to ACCC has a number of common themes associated with proponents trying to increase the size of their asset base. This is a critical issue for consumers given that the regulatory building block approach puts such a strong emphasis on return on (interest), and return of assets

(depreciation). These two building blocks contribute around 80% of the total revenue to the business.

The SPI PowerNet Application wishes to roll $257m worth of easements and terminal station sites into the DORC asset base. Given a current nominal WACC of 10% Victorian consumers will have to pay $25.7m/a or $128.5m over the 5 years regulatory cycle.

It is unusual for easements to depreciate in value: in most cases they actually appreciate. There are a number of examples where easements have been used by the asset owner to increase their revenue stream by leasing part of their easements to third parties.

The addition of unvalued assets from corporate establishment and the initial RAB is a further attempt to increase the size of the asset base at some cost to consumers. The purchasers or renters of the DORCed assets were supposed to carry out due diligence before they bought or rented those assets/businesses. Discovering that some assets were not on the register at the time of sale should be discounted in this and future regulatory determination. The initial/opening asset base should be the line in the sand in making regulatory determinations if consumers are to get close to a fair deal!

It is also clear that SPI PowerNet has to have a significant inventory of spares: given the nature, loading and the age of the existing asset base and equipment, this sum is part of the price of running a transmission network. The decision to refurbish the aging asset base, particularly the protection and SCADA system, will also help to sustain system security, safety and reliability.

The use of contracting out has a short term cost benefit that is creating a significant, longer-term problem for sustaining the industry skills base. EAG wants a contribution for the skills base specifically recognised in the DORC, plus an ongoing recurrent commitment by SPI PowerNet to sustaining the skills base. EAG suggests that an additional amount of $3m to $4m be added into the asset base for the purpose of recognising the industry's skills base. EAG further believes that the determination should further support the development of the industry skills base with an addition of a further $ 400,000pa contribution to Opex expenditure to ensure that SPI PowerNet employ a number of graduate engineers and apprentices and to retrain the existing workforce to sustain the industries skills base. The Determination needs to add an additional industry performance requirement, based on criteria that assess skills levels and training of appropriate skills. e.g. the number of engineers and number of new graduates, technical staff, linesmen and apprentices.

EAG however has significant difficulty in accepting the expenditure of $70,000 (possibly $ 350,000 over 5 years) for the senior executive replacement program and suggest that ACCC rejects any expenditure for this purpose in the Determination

Some observations on WACC determinations and increasing DORC

The new game in town is regulated businesses hiring hotshot consultants to game/interpret the WACC equation. This makes good sense from the proponent's perspective. Currently a number of the regulated businesses are spending several hundred thousand dollars to increase the return from the WACC determination of the business by many millions of dollars over the regulatory cycle. The incentive is further enhanced when a Determination provides a generous allowance for the business to participate regulatory affairs.

The current GasNet, SPI PowerNet and ElectraNet applications all appear to have adopted the same strategy.

The SPI PowerNet submission to ACCC contained an appendix by Officer R. R. (2002), *A Weighted Average Cost of Capital for a Benchmark Australian Electricity Business,* A Report to SPI PowerNet, 28 February. Table 5 illustrates infrastructure and utility beta's whilst Table 7 on page 23 indicates the various regulatory differences in WACC over a recent period.

Whilst the ElectraNet submission contained an attachment NECG (2002) *Analysis of the weighted average cost of capital for ElectraNet SA,* Submission to the ACCC by Network Economics Consulting Group April 11,Table 5 page 24 provides a similar analysis.

The basis of EAG opposition to changing the market and risk factors and the debt to equity relationship is that it enables a regulated entity to game/manage the WACC equation by changing the these factors each regulatory cycle to their own advantage.

If the Commission were to accept the need to change the WACC equation in a manner recommended by both the proponents, Officer and NECG, then the following scenario would occur. Let us take a hypothetical increase in the Post Tax WACC of 0.1%, using the SPI PowerNet asset base of $1.714b. The 0.1% change in WACC would have yielded a business like SPI PowerNet $17m pa, and over the 5 year regulatory cycle, this change would yield another $85m.

If however ACCC agrees to increase the DORCed asset base as requested in the SPI PowerNet Application to $2089m and again the WACC was increased by 0.1 % then the business would receive a further $3m pa or $15m for the 5 year regulatory cycle.

The overall benefit to SPI PowerNet of accepting the increase in DORC and accepting a 0.1% increase would be a revenue increase of $20m pa or $100m over the regulatory cycle. Good odds for gaming/managing the ACCC WACC formula.

The point that EAG wishes to make is that promoting a change in the WACC and increasing the DORCed asset base provide a substantial yield to the regulated business for a small investment in consultant's fees and ACCC time.

There is a clear need for all of the Regulators involved across the NEM to provide a clear statement of the WACC formula for regulated businesses. This will establish a single equation and the businesses will then game changes in the business cycle, not every ACCC determination. They can then adjust their structure to the best debt to equity mix to suit their individual businesses.

The businesses can respond to the drivers present in the determination and behave accordingly. If the Commission continues to change the WACC formulation then the businesses will continue to game the determination process.

The use of a real WACC on a real DORCed asset base ends up giving the regulated businesses an extremely good nominal rate of return on investment by almost any standard. The regulated businesses gain significant benefits over any unregulated business in a period of high or relatively high inflation. Currently the nominal WACC for regulated businesses is running at over 10%. There are no comments in the contributions from the companies and their proponents in the current debate acknowledging the positive benefits of an inflation-indexed WACC.

EAG has noted the ElectraNet, SPI PowerNet and GasNet forum "Key WACC Issues in the *Regulation of* Electricity *and Gas Transmission on Monday 24th* of June 2002", and is of the opinion that ACCC should have run a similar forum. EAG amongst a number of community-based organisations has not been invited to this forum.

It is worth mentioning that the consultancy expenses for the WACC submissions like those for DORC can/will be run against the companies Opex expenses for regulatory matters.

Forecasts

It has never been easy to forecast energy consumption, particularly electricity consumption.

It is worth noting that in the first regulatory cycle for the Victorian SPI PowerNet Revenue Cap Access Arrangement/Revenue Cap, the actual sales were higher than those forecast in the first Victorian Tariff order. In the case of GasNet the actual sale of energy was lower than those forecast in the Access Arrangement/Tariff Order, due to warmer temperatures than those predicted in the forecasts of the time.

The Victorian gas industry Effective Degree Day (EDD) approach has been able to deliver reasonably accurate day of use gas forecasts over many years. The EDD approach works well for cool and cold temperatures. In contrast the Short Term Projected Assessment of System Adequacy STPASA has shown an increasing error level as the temperature increases particularly when there a consecutive days of high temperature during the working week.

One of the significant problems associated with the electrical industries load forecasting abilities is lack of knowledge of consumer appliance purchasing and consumption behaviour. This is compounded by the lack of understanding on the complex issues relating latent heat, temperature and humidity (Psychrometrics). The relationship between Psychrometric conditions, transmission and generation performance at high temperatures temperature over 38 degrees Celsius. These then

further compound with the urban heat island effect, plus the existing poor thermal performance from the building stock particularly after several 40 degree Celsius days during the working week when the building stock builds up heat.

It is clear from all the system planning documents and the installation of Reactive Capacitor Banks that the Reactive Power load has dramatically increased as a result of the changes in summer load patterns particularly the substantial increase in air conditioning and power flows across the interconnected system. Reactive Power is not paid for in the energy only market but it is treated as part of Transmission Loss Factors.

SPI PowerNet has minimal control over the power flows and consumer demand. Their revenue cap is dependant on forecasting demand. Their revenue stream is vulnerable to forecasting risks particularly if is no adjustment mechanisms in place to compensate/penalise them for the revenue loss/gain if the actual load is lower/higher than the ACCC Determined Revenue Cap arrangement. ACCC needs to give some consideration of the risks of over and under forecasting load and particularly the System Maximum Demand forecast which determines the transmissions investment to meet load growth.

Conclusion

The challenge facing the ACCC is to make the right decision. This decision has to ensure that SPI PowerNet can make a sufficient return on investment and at the same time ensure that there is capital investment to the forecast load growth over the regulatory period as well as ensuring the refurbishment of an aging asset base.

SPI PowerNet owns but does not control the asset base.

The SPI PowerNet Determinations need to make a strategic set of decisions

- ensure that minimum changes occur to the WACC equation and the methodology for determining WACC is consistent across the Commonwealth

- ensure that newly discovered assets are not rolled into the asset base and that easements are excluded from the asset base.

- reject any attempt by the proponent to adjust the initial RAB

- minimise market complexity and possible gaming opportunities that will be created by the move to introduce hybrid interconnectors and other exotic transmission arrangements into the NEM. A single asset owner in each region simplifies the management of transmission assets.

- assess the costs and benefits of integration the system planning function back into the transmission businesses.

- address the problems evident in both Victoria and South Australia jurisdictions where the only viable solutions to transmission augmentation Load Management, Demand Management and embedded generation are discounted as the market based solution. Currently in both Victoria and South

Australia there are minimal mechanisms that can facilitate either Demand Management or ensure that embedded generation can compete with transmission augmentation as an option for system development

Load Management[4], Demand Management and embedded generation need to be treated in an equal manner to transmission augmentation in meeting load growth requirements. A mechanism needs to be developed to ensure that all 4 options can compete equally. Currently the only viable option is transmission augmentation.

- make provision for SPI PowerNet to develop and sustain an employee and industry skills base.

John Dick
Vice President,
Energy Action Group,
PO Box 136,
North Melbourne 3051.
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[4] Interval metering with powerline communications provides the potential to directly manage load. Part of a consumers load can be switched off at times of high demand. If enough consumers use this technological options or enough load is interrupted there will be less price volatility and the costs of system augmentation will be stopped or deferred.