Form of Regulation – Specific Procedures and Elements

EnergyAustralia is pleased to have this opportunity to clarify some of the specific elements of the WAPC model that it has presented for the Tribunal's consideration as it undertakes its review into the form of regulation to apply for the regulatory period commencing 1 July 2004.

Set out below are a number of the detailed elements of EnergyAustralia's proposal and, where relevant, differences between EnergyAustralia's approach and the model adopted by the Office of the Regulatory General (ORG)[1], which has served as the working model for which much of EnergyAustralia's proposed framework has been derived.

The following mathematical expression summarises EnergyAustralia's approach to the form of regulation . It should be noted that EnergyAustralia's approach is similar in most respects to that used by the ORG (whose model is included for completeness as Attachment 1.

$$(1+ CPI_t)(1-X_t)(1+S_t)(1+U_t) >= \frac{\sum_{i=1}^{n}\sum_{j=1}^{m} p_t^{ij} \, q_{t-2}^{ij}}{\sum_{i=1}^{n}\sum_{j=1}^{m} p_{t-1}^{ij} \, q_{t-2}^{ij}}, i=1,\ldots n; j=1,\ldots m$$

Where:

p^{ij}_{t-1} *Is the distribution tariff being charged in year* t-1 *for component* j *of tariff* i *;*

p^{ij}_{t} *Is the distribution tariff being charged in year* t *for component* j *of tariff* I *;*

q^{ij}_{t-2} *Is the quantity of component* j *of distribution tariff* i *that was sold in calendar year* t-2;

CPI_t *Consumer Price Index for calendar year* t

X_t *As determined at the regulatory review*

S_t *Is the service adjustment to the distribution price control in* calendar year t *for a given* distribution business; and

U_t *Is the pass through adjustment to the distribution price control in* calendar year t *for a given* distribution business.

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[1] As of 1 January this year the ORG became the Victorian Essential Services Commission.

Number of tariff baskets

EnergyAustralia believes that the most effective framework to ensure the preservation of the incentives to price efficiently, enable reasonable transition paths to efficient prices, where they do not currently exist, and to minimise regulatory administration costs, is to utilise a weighted average price cap (WAPC) with a single tariff basket.

By using a single tariff basket approach it removes the potential barriers to innovations in network tariffs that may arise if multiple tariff baskets were adopted. A multi-basket is likely to lock-in current customer class definitions, which would limit the capacity for DNSPs to introduce tariffs that target specific types of behaviour and usage patterns that are likely to appear in more than one customer class in an efficient and effective manner.

As an example, locking-in the existing definitions may prohibit effective demand management. It may become appropriate, particularly as energy driven appliances increase, that the current domestic customer class may be more appropriately expressed in terms of their demand. This would enable a more equitable allocation of network charges between heavy users that drive augmentations and smaller users that have reduced impact on the operation and configuration of the network.

EnergyAustralia also notes that the Tribunal has used side-constraints as a safeguard against any price shocks to potentially vulnerable customers. Although EnergyAustralia believes that the calculation of the actual constraint needs to be revisited, and that side constraints should not be necessary in the longer-term, it does not expect the Tribunal to abandon the use of side-constraints over the short-term.

This being the case, a single tariff basket would enable the Tribunal to implement the side constraint more easily and would reduce its impact on adjustments to the current customer class definitions. EnergyAustralia's proposal also avoids potential concerns of the regulators that multiple tariff baskets and redesigned customer classes may be used as a means of circumventing the side-constraint.

Composition of the "X" factor

In both the NSW and federal contexts there are two "X" factors that are used in economic regulation of electricity networks. Because of this care needs to be taken when referring to "X" factors and indeed for clarity it may be necessary in the future to redefine these so as to avoid potential confusion.

In the current context the comments provided refer to the overall "X" factor used to adjust the overall revenues/prices each year over the regulatory control period. These comments are not intended to be read in the context of the efficiency "X" factor that is used to drive improvements in the efficiency of operating and maintenance expenditure costs as part of the building block methodology.

The incorporation of potential price reductions or increases as a result of variations in demand into the "X" factor could easily decrease the level of transparency in the manner in which the value(s) have been arrived at.

Moreover, the relationship of demand to operating and capital costs is complex and dependent upon several variables, most notably network utilisation, and the location of demand changes. Network utilisation is critical in determining the impact of changes in demand on the cost of managing the network. The general relationship between utilisation, demand and costs are set out in the table below.

Utilisation	Demand change	Impact on capital costs	Impact on operating costs
High	Positive	High	Moderate to high increase
High	Negative	Nil	Marginal variation
Moderate	Positive	Positive	Moderate increase
Moderate	Negative	Nil	Marginal variation
Low	Positive	Low/moderate increase	Low/Moderate increase
Low	Negative	Nil	Marginal decrease

These relationships described above are general rules of thumb at best. The precise impact of changes in growth and the impact on the underlying cost of supply will depend heavily on the specific location of the changes in demand.

Indeed it is entirely possible for a situation where there is an:
- average utilisation that may be categorised as being low;
- overall reduction in the level of demand; and
- increased demand in a particular location that is subject to a binding constraint that needs to be alleviated.

In this circumstance there will be an increase in the capital costs of the network. An outcome that is contrary to the general assumption that can reasonably be expected based on average network statistics.

Therefore EnergyAustralia is cautious of any attempt to capture such complex and time specific relationships into a simple formula. Moreover EnergyAustralia does not believe that it is reasonable to simply assume that the cost per unit will decrease in all situations where there is an increase in demand. Indeed, it is quite likely that moderate changes in demand requiring network augmentation will increase the cost per unit due to the lower utilisation of the new infrastructure compared to the overall utilisation.

This is not to imply any capacity for optimisation of the network, rather it is a realisation that prudent capital expenditure will necessarily increase capacity of the network at fixed magnitudes, rather than an incremental increase that is an implicit assumption of a reducing price per additional unit scaling factor.

One additional issue that increasing the functionality of the "X" factor raises is whether it is appropriate to make adjustments to the mechanism based upon the form of regulation adopted.

The model proposed by EnergyAustralia does not include, nor require, any adjustment to the way in which the "X" factor is currently used in NSW. It is proposed, as is currently the case, that an efficiency "X" factor will be applied to the operating costs on an annual basis.

Moreover, the "X" in the price control formula remains merely a mechanism for ensuring the smooth transition of prices over the regulatory period to the target at the end of the regulatory period.

EnergyAustralia does not believe that any additional adjustments need to be made to the composition of the "X" due to a price cap being adopted. Indeed, it is clear from the manner in which the smoothing "X" is generated, that expected movements in demand are accounted for in the final value of the smoothing "X".

The elements of the building block framework include an explicit assessment of the anticipated changes in demand over the regulatory period. This is manifest in the capital expenditure program, and operating cost projections over the regulatory period.

In generating the appropriate smoothing "X" to apply to the change in prices over the regulatory period, the building blocks are converted into forecast prices with reference to the expected demand used in the calculation of the building blocks for each year. The resulting series of forecast prices is then converted into a smoothed series that delivers the same expected value, and final year prices.

Therefore, the resulting price path takes symmetric account of the expected changes in demand over the regulatory period. As the "X" factor calculated at the time of the determination incorporates forecast demand and consumption changes, any subsequent adjustment to the "X" factor in the annual price setting process would be unnecessary inappropriate and is therefore not supported

Use of historic and anticipated demand information

EnergyAustralia believes that the nature of economic regulation, and indeed requirements of the NEC, is such that demand forecasts will, and must for the foreseeable future, continue to be used regardless of the form of regulation adopted. However, the use of forecast information and the regulatory reliance on accurate forecasts can be mitigated in the implementation of the weighted average price cap model proposed by EnergyAustralia.

Regulatory reviews

It is clear that demand forecasts are inherent in the building block framework. Indeed the NEC requires that prices are foreword looking, ie that prices are designed to signal the future costs of providing the prescribed network services. Therefore, regulators in all Australian regulatory jurisdictions have incorporated the expected capital and operating expenditure requirements of meeting expected future demand levels.

Annual price resets

Under the weighted average price cap proposed by EnergyAustralia (and as noted in the previous section), the use of consumption forecasts will be limited to the setting of the building block components, and will therefore have no role in the annual price re-sets. Rather than using forecast consumption data it is proposed that historic consumption data be used to establish both the weights of the various tariffs and their final prices.

The time lag used in Victoria is understood to be two years. Adopting a reduced time lag may be beneficial, however the trade-off between accuracy and timeliness would need to be carefully examined. For instance, using a two year lagged actual methodology benefits from the fact that information is accurate and verifiable through audit processes, and requires little regulatory involvement to administer. However, the two-year lag may appear to be too long for practical incorporation into the calculation of the pricing approval process. Using multiple years of actual data may alleviate some concerns as this would tend to normalise the impact of any one year's data.

An alternative methodology where the latest information is adopted does allow the WAPC to incorporate timely data. EnergyAustralia believes that there are two possible options. The first option is to use a rolling set of actual consumption data. Although this is intuitively attractive there are two major issues that need to be considered.

One, it is likely, for at least part of the data set, that the information will be unaudited, and therefore the Tribunal will need to possess some measure of confidence in the processes used to generate the data. Moreover, in the resolution of any potential differences once the data has been audited will need to be addressed, and will either require the Tribunal to institute some correction mechanism, or be willing to accept some discrepancy as a trade-off for more timely information.

Two, this option has an inherent price comparability issue. Due to the required notification of pricing changes in the NEC and other regulatory instruments, the consumption data will cover more than one financial year. This is not an insignificant issue. Indeed, it creates a mix of pricing signals and customer responses, and it will result in partial data being used for new tariffs that were introduced at the previous price reset.

Therefore to negate the time series consistency problem, a second option is to use a combination of actual and estimated, or forecast, data to achieve a complete annual time series. This option is likely to require a correction mechanism of some description. Whether the remainder of the annual data is a forecast provided by the DNSP, or estimated by the Tribunal based upon the actual data available for the year to date, it is probable that some differences will arise.

As with the first option it is possible that the Tribunal would accept that this variance is the price of more timely data and would not impose a correction mechanism, however such a move does have major issues for both the Tribunal and the DNSPs. If a forecast from the DNSPs is used then there is always the potential that the forecast may be constructed to "game" the outcomes. Conversely if the Tribunal is setting the estimation based on the year to date figures there is significant risks to the DNSPs that needs to be compensated for, particularly as the period that the estimation will cover is the NSW winter peak.

The administrative costs and increased regulatory uncertainty generated from these options is significant, and is likely to outweigh any perceived benefits of shortening the lag in historic consumption data being used.

Compliance assessment

Although the method of compliance assessment is likely to be seen as an intuitive element of any form of regulation it is necessary for completeness that the assessment of compliance with regulatory determinations be covered.

Under current revenue cap frameworks the method of regulation and the determination relate solely to the amount of revenue that can be earned by the regulated business. The assessment of compliance under this framework is necessarily backwards looking in that compliance can only be established at the end of an interim control period (ie *ex post*), normally a financial year. This is because demand variability can alter the compliance of the regulated business with the control mechanism (ie revenue). Under this situation an error correction mechanism is required in order to maintain the integrity of the revenue control mechanism over the whole regulatory control period.

Price regulation, as proposed by EnergyAustralia, is forward looking (ie *ex ante*) with compliance being assessed before the commencement of a financial year and therefore will not need to have a correction mechanism. This is because demand variations will not impact on the price being charged, which is what compliance with the determination would be assessed against.

Correction mechanism

It is EnergyAustralia's contention that the incentives inherent in the weighted average price cap, the symmetric exposure to consumption and revenue variability, the reliance on actual levels of consumption from previous years for price setting and the assessment framework outlined above renders redundant the need for a correction mechanism.

Introducing new tariffs

EnergyAustralia submits that weights for new tariffs should be set by estimating the amount of consumption that would have been the case if the tariff had been implemented during the period over which the lagged actual data is collected. The weights for the tariff would then be calculated by reference to the lagged actual consumption for the other tariffs.

The introduction of new tariffs under EnergyAustralia's proposal is no more problematic than is currently the case under the revenue cap framework. Indeed, it is expected that the price and service reports that are currently developed would continue to be used under any new form of regulation. The benefit of such a report is that it provides clear indications of the proposed direction of tariffs and price setting policy. Indeed new tariffs are most likely to be foreshadowed in these annual reports. Therefore it is unlikely that any new tariff being proposed will be a surprise to the Tribunal or customers and there will, in most cases, be sufficient time for the Tribunal to become familiar with the proposed tariff and undertake some analysis of the expected take-up rates.

By approximating the amount of consumption for a new tariff using within the lagged actual data will improve the analysis of the weighting to apply to the tariff, particularly compared to the current arrangements. Currently, there is a need to approximate both the weight and total

expected sales for the upcoming year, the lagged approach reduces the number of assumptions that need to be made which therefore, are likely to improve the accuracy of the outcomes.

Therefore EnergyAustralia does not believe that a correction mechanism should be reintroduced into the WAPC framework to manage this single issue. Rather, some comfort should be derived from the Tribunal's existing administrative procedures, and the reduced margins for error in estimations by the use of lagged actual data.

Service standards

EnergyAustralia's position in relation to service standards potentially involves a minor difference with the approach adopted by the ORG. In particular EnergyAustralia recognises that the Tribunal will shortly commence a review into service standards. Hence, any attempt to expand the service standard component beyond recognising its place in the overall price control formula pre-empts both the focus and outcome of the Tribunal's deliberations.

At this stage it is unclear whether the findings of the Tribunal's review will recommend that service standards should have a specific escalation factor to account for the relative performance of the DNSP, or whether service standards will be accounted for using a building block approach.

Given this uncertainty EnergyAustralia has recommended that an "S" term[2] be incorporated into the price cap formula to ensure that it is available to the Tribunal if required. If the Tribunal decides that the escalation factor is not the appropriate approach then the "S" term could simply be set to zero. It is likely a more prudent approach to have an instrument within the price control formula should this ultimately be required.

Pass-through costs

A minor proposed difference between EnergyAustralia's preferred model for the WAPC and that adopted by the ORG is the mechanism for managing pass-through costs.

The ORG's current determination requires that, subsequent to receiving approval for the costs to be recovered from customers, the DNSPs must pass the costs to customers as a separate identifiable charge on their bill.

Although there may be arguments that such treatment increases transparency, it creates differential treatment for costs dependent upon when their value could be reliably measured, regardless of the probability that such cost will be incurred. In other words, if the cost information was known at the time of the determination it would not be excluded from the rest of the determination and price setting processes.

It is not clear that itemising the bill as per the ORG's determination, provides any greater pricing oversight than is achieved through the public processes adopted in NSW for pass-

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[2] EnergyAustralia's "S" term simplifies the ORG approach given the lack of guidance as to the approach likely to be adopted by the Tribunal.

through costs to date, in particular for FRC. Indeed, it is possible that there would be increased confusion regarding the nature of specific pass-through costs. Where the pass-through costs are included in subsequent determinations it is feasible that customers may inappropriately assume that the charges no longer apply.

EnergyAustralia notes that in the ORG's determination the wording of the pass-through costs provision tends to suggest that this process was established for the purposes of the pass-through of GST costs, and was not designed for other forms of costs such as full retail competition, etc.

Therefore, given that this mechanism appears to be for a specific event, the differential treatment of costs based merely on timing, and the potential confusion arising from the itemising of the charges on customer bills it does not support this mechanism. Rather EnergyAustralia's preferred approach is for public verification and approval processes to be adopted for the assessment of the efficiency and prudency of the costs. These costs would then be incorporated into the control mechanism via a specific "U" factor in the price control formula as outlined in attachment 1 below.

Transitional arrangements

As part of any change in the form of regulation there needs to be arrangements put in place to manage the transition, particularly where there remain some unresolved matters. However, these transitional arrangements should not diminish the underlying benefits and framework of the new form of regulation adopted. Otherwise the problems of the previous form of regulation will continue to haunt the industry for at least another regulatory period and the benefits of the new form of regulation are unlikely to be realised.

It is clear that there are no framework impediments to a P_0 adjustment to take account of both the current balance of the unders and overs account, and any unanticipated capital expenditure in the building block analysis at the commencement of the next regulatory period. The issue of the required form of transition will undoubtedly entail considerable discussion throughout the determination process.

The ORG in its latest determination made significant P_0 adjustments to the prices and revenues of the DNSPs in conjunction with the move to the WAPC. From this it is clear that there are no technical restrictions on the full and immediate application of the WAPC at the commencement of the next regulatory period.

The only major transitional issue that needed to be accounted for was the requirement for the ORG to carry-over correction mechanisms that applied to the last two years of the previous determination. Due to the lag effect inherent in the adjustment factor used by the ORG, in order to maintain the integrity of the correction mechanism it needed to be rolled forward for the first two years of the current determination. This can be seen by the adjustment to the "X" factor applied by the ORG regarding the reduced price per unit as consumption increases, which expires after 2003.

Side constraints

It is obvious from an examination of the ORG's re-balancing control that there is a material difference between the operation of side constraints in NSW and Victoria. The ORG has set a global restriction on the movement of tariffs, whereas IPART has adopted the approach of specifically protecting those classes of customers that it feels are most likely to be at risk of adverse pricing outcomes.

In response to this difference EnergyAustralia's preferred position is a continuation of the targeted protection of small residential customers. Indeed, the difference between the two approaches is similar in nature to the differences between flat and progressive taxation systems.

EnergyAustralia believes that by targeting the side constraint mechanism, it minimises the administrative burden on DNSPs, enables tariff re-balancing to occur in a more timely and effective manner for the remaining customer categories, and the nexus between the side constraint policy and implementation remains clear.

Transmission tariffs

Transmission use of system charges payable to provide distribution services should be recoverable by DNSPs on a "pass through" basis. Whilst transmission costs need to be reflected and recognised in the framework for the economic regulation of pricing for distribution services, that framework must also recognise that transmission costs are uncontrollable, and indeed there is a clearly defined process for tariff calculation in the NEC, that will shortly apply in NSW.

The Code clearly recognises that DNSPs have a right to recover their reasonable costs incurred through charges paid to transmission network service providers- see clause 6.10.5(7)(iii) of the Code. Given that transmission revenues are regulated by the ACCC, it is a rational assumption that the TUoS charges paid by the DNSPs are reasonable.

Furthermore, any side constraints imposed by one regulator that would limit the ability for a network business to rebalance its tariffs to implement transmission determinations from another regulator is clearly not supported on efficiency, administrative and policy grounds.

This is a relatively minor departure from the ORG's determination. However, it should be noted that in Victoria transmission costs are explicitly influenced by the decisions of the DNSPs. The Victorian DNSPs are responsible for the planning of connection works that the TNSP must undertake to enable them to manage their loads. Therefore in the Victorian context the DNSPs have a degree of control over the directly attributable transmission network costs that apply to their supply area. Without any such nexus in NSW it is inappropriate to implement pseudo price caps on transmission prices that may breach regulatory jurisdictional boundaries.
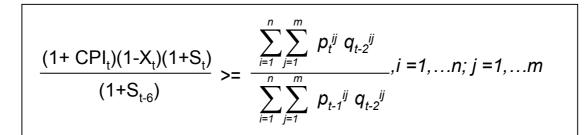
Given that the ACCC's determinations, rather than bilateral negotiations, will drive any efficiency savings in TUoS it is inappropriate to incorporate these costs as part of a DNSP's operating costs. Moreover, as indicated above, the NEC approaches TUoS incurred by DNSP's in terms of the recovery of costs as a specific and identifiable item, rather than as a

part of the operating costs. Given that the NEC envisages that TUoS falls into a cost recovery framework, and the move towards greater un-bundling of charges would tend to indicate that a more reasonable and transparent framework for managing TUoS is to simply leave it as a separate and identifiable pass-through item.

Attachment 1 – ORG Price Control Formula

$$\frac{(1+ CPI_t)(1-X_t)(1+S_t)}{(1+S_{t-6})} \geq \frac{\sum_{i=1}^{n}\sum_{j=1}^{m} p_t^{ij}\, q_{t-2}^{ij}}{\sum_{i=1}^{n}\sum_{j=1}^{m} p_{t-1}^{ij}\, q_{t-2}^{ij}}, i=1,\ldots n;\ j=1,\ldots m$$

Where:

p^{ij}_{t-1} *is the distribution tariff being charged in year* t-1 *for component* j *of tariff* i *;*

p^{ij}_{t-} *is the distribution tariff being charged in year* t *for component* j *of tariff* l *;*

q^{ij}_{t-2} *is the quantity of component* j *of distribution tariff* i *that was sold in calendar year* t-2;

CPI_t *Consumer Price Index for calendar year* t

X_t *As determined at the regulatory review*

S_t *is the service adjustment to the distribution price control in* calendar year t *for a given* distribution business*; and*

S_{t-6} *is the service adjustment to the distribution price control in* calendar year t-6 *for a given* distribution business*.*