PROVIDING INCENTIVES FOR SERVICE QUALITY

IN NSW ELECTRICITY DISTRIBUTION

An Issues Paper

INDEPENDENT PRICING AND REGULATORY TRIBUNAL OF NEW SOUTH WALES

PROVIDING INCENTIVES FOR SERVICE QUALITY IN NSW ELECTRICITY DISTRIBUTION

An Issues Paper

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For price reviews/determinations, submissions are initially sought from agencies or relevant associations on their pricing proposals. These proposals are available about 4-6 weeks before the due date for public submissions to allow their consideration in the preparation of other stakeholder submissions.

Submissions from stakeholders must be received by 16 June 2003.

All submissions should be sent to: Providing Incentives for Service Quality in NSW Electricity Distribution Independent Pricing and Regulatory Tribunal PO Box Q290 QVB Post Office NSW 1230

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1 INTRODUCTION

The Independent Pricing and Regulatory Tribunal (the Tribunal) is currently undertaking a price review under the National Electricity Code (the Code), the results of which will come into effect on 1st July 2004. In November 2002, the Tribunal published an Issues Paper for this review, in which the Tribunal set out its view that it would be desirable to explicitly incorporate incentives for efficient levels of service quality into the regulation of network prices for the 2004 regulatory period. The advantage of linking price to service quality is that it helps avoid any incentive for a natural monopolist to reduce costs at the expense of service quality when faced with financial incentives to minimise costs.

On 11 April 2003, the DNSPs provided the Tribunal with their submissions for the 2004 Network Review. These submissions included details of DNSP views on the linking of prices to service quality, including the possibility of adding an S factor. The aim of this paper and subsequent consultation initiatives is to:

- seek views from stakeholders on DNSP high-level proposals to date (Chapter 2) and the main alternatives (Chapter 3); and
- set out further issues that will need to be considered if a service quality incentive mechanism *of any form* were to be introduced, and to seek views on alternative options (Chapter 4 onwards).

The outcomes of this consultation will feed into the draft determination, which will be released in November 2003.

1.1 **Process and timetable**

In addition to inviting responses to this issues paper, the Secretariat plans to conduct a workshop on service quality with the Service Standards Consultative Group, considering measures and mechanisms to create incentives for service quality through the network review, and inviting further feedback. An indicative timetable is provided below.

Action	Indicative timetable
Release issues paper	May 2003
Receive submissions from stakeholders	16 June 2003
Hold workshop	July 2003
Produce draft determination on service quality	November 2003
Submissions on draft determination	21 January 2004
Public hearing on draft determination	February 2004
Final report	March 2004

2 DNSP VIEWS

All DNSPs commented on the possibility of introducing an S factor with monetary incentives. None of the DNSPs supported its introduction at the 2004 review. EnergyAustralia, Integral Energy, and Australian Inland all supported the principle of linking prices to service quality as part of the network determination, but felt that it was not appropriate to introduce an S factor at the 2004 review. A primary reason given for this was the issue of data quality and availability.¹

Integral Energy noted that the report commissioned by the Tribunal from PB Associates, examining the availability and robustness of network reliability data among DNSPs, had identified data availability and accuracy limitations with current DNSP systems? DNSPs are currently implementing changes to their data collection systems which should improve data availability and robustness. However, DNSPs have noted that these changes will take some time, meaning that reliable data may not be available for some companies until around 2005/6.

Given these constraints, a number of DNSPs (EnergyAustralia, Integral Energy and Australian Inland) have suggested the possibility of conducting a '**paper trial**' of an S factor during the next regulatory period, with *no monetary incentives* attached.

Country Energy, while not in favour of an S factor, suggested that performance targets (without monetary incentives) might be set as data improves. Country Energy pointed to inaccuracies and inconsistencies in its historic data, and argued that were an incentive scheme to be introduced, the planned data collection improvements would be needed first. Country Energy suggested that the possibility of an S factor be reviewed at the next periodic review.

In the light of these data constraints, alternative approaches to introducing service quality incentives are discussed in this paper, including a discussion of the more detailed issues that will need to be addressed *whatever* form of S factor is considered.

¹ The need to have a clear understanding of the practical implications for incentives, and the additional complexity involved at a time when other significant changes such as the weighted average price cap are also being proposed were other key reasons cited by the DNSPs.

See PB Associates, *Review of NSW Distribution Network Service Provider's Measurement and Reporting of Network Reliability*, October 2002. PB found that the DNSPs were unable to generate data accurately at the level of disaggregation recommended by Steering Committee on National Regulatory Reporting Requirements (SCNRRR), ie, reliability data by feeder type (CBD, urban, rural short and rural long). PB Associates also found that the level of accuracy for reliability data for the network as a whole varied between companies, with a potential variation in information reliability of as much as -10 per cent to +30 per cent.

Further details of the DNSP views as set out in their April 2003 submissions to the Tribunal can be found in Appendix 2 and at www.ipart.nsw.au/submiss/ENR_DNSPs_03/.

The Tribunal seeks views from stakeholders on the DNSP proposals that an S factor with monetary incentives should not be introduced as part of the 2004 Network Review determination. Views are also sought on the proposals of some DNSPs that a 'paper trial' of an S factor be conducted during the 2004 regulatory period, allowing the possibility to introduce full monetary incentives at the next review, should the paper trial be successful.

3 ALTERNATIVES FOR CONSIDERATION

The Tribunal has indicated its view (for example in its November 2002 Issues Pape³) that it would be desirable to explicitly incorporate incentives for the provision of efficient levels of service quality into the regulation of network prices for the 2004 regulatory period. However, the Tribunal is also aware of current data limitations as set out in Chapter 2 and the PB Associates report, and the importance of robust data for meaningful service quality incentives. The Tribunal considers the issue of how to handle the transition from current to improved data to be of key importance.

The Tribunal considers the key alternatives for consideration with regard to the S factor in the 2004 Network Determination to be as follows:

- 1. the introduction of an S factor with **full monetary incentives**, using data that is already available, and switch/expand to incorporate other data as these become available (either part-way through the regulatory period or at the next regulatory review)
- 2. the introduction of an S factor with **reduced monetary incentives**, with the possibility of increasing these incentives in the future as data improves
- 3. the introduction of a '**paper trial**' S factor with no monetary incentives, as favoured by some DNSPs
- 4. lagging the introduction of any S factor, **postponing** the start date until (i) robust data are available at the levels of aggregation required (eg 2005/06), or (ii) the next regulatory review.

Further alternatives to an S factor are discussed in Chapter 5

The advantage of option 1 is that it in introduces incentives for service quality at the soonest possible date. However, the process of switching from one set of measures to another would need consideration (in order to help companies plan, it might be preferable to set out clearly in advance what measures would be applicable in the future, what target levels would be and what penalties would be payable for failure to meet those targets). The Tribunal also notes the risk that if data are poor, full monetary incentives may result in the provision of inappropriate signals.

A disadvantage of options three and four is that they delay the introduction of improved incentives for service quality. The third option ('paper only') could however allow any practical difficulties to be identified. Some incentive power might be attached to a paper trial if the results for each company were published (ie, moral suasion), albeit with qualifications regarding data accuracy.

Option 2 arguably presents a 'compromise' alternative, allowing some incentives for service quality, but limiting these in recognition of the fact that data accuracy needs to be improved. The Tribunal notes that the 'phasing-in' of monetary penalties in this way has been used in other jurisdictions, such as the Office of Gas and Electricity Markets (OFGEM) in the UK.⁴

³ IPART, Regulatory arrangements for the NSW Distribution Network Service Providers from 1 July 2004 - Issues Paper, November 2002.

⁴ See OFGEM, Information and Incentives Project, Developing the Incentive Scheme – Update, November 2001, and Information and Incentives Project Incentive Schemes: Final Proposals, December 2001.

The Tribunal seeks views from stakeholders on each of the options outlined above.

The remainder of this report considers more detailed issues that would need to addressed should an S factor be introduced at the 2004 Network Review, either in 'paper' form or with reduced or full monetary incentives. Comment is sought on the following key issues:

- what **measures** of service quality should be used? (Chapter 4)
- what **mechanisms** should be used to provide incentives for service quality through the network determination? (Chapter 5)
- if **target levels** for service quality are needed, how should they be set? (Chapter 6)
- how should **penalties/incentives** be set? (Chapter 7)

In considering each of these issues, it is the Tribunal's intention to draw on examples from other jurisdictions. These are referred to in the text, and further details are provided in Appendix 1.

4 CHOICE OF MEASURES

4.1 Types of service quality

As discussed in the November 2002 Issues Paper, there are three main aspects of service quality which could potentially be included in any service quality incentive scheme: service reliability (the reliability of the flow of electricity to the customer, generally measured by the frequency and duration of service interruptions), quality of supply⁵ (measures of how well the flow of electricity service customers), and customer service (measures of the quality of contact between customer and company). In the November 2002 Issues Paper, the Tribunal indicated that because of lack of data availability and difficulties in measuring quality of supply and quality of customer service, should any incentive mechanism be introduced, the Tribunal's intention is to focus on service reliability measures. The Tribunal did however note the scope for including such measures in future regulatory reviews. Company submissions have not commented in detail on this issue so far.

Options considered thus-far have focussed primarily on output-based measures and include:

- SAIDI System Average Interruption Duration Index ie, the average number of minutes off supply by customer
- SAIFI System Average Interruption Frequency Index ie, the average number of interruptions per customer
- CAIDI Customer Average Interruption Duration Index ie, the average interruption duration.

Use of these measures is consistent with the Steering Committee on National Regulatory Reporting Requirements (SCNRRR) standard measures.⁶ Data on these measures are already collected by the MEU at the aggregate and regional level, and are reported annually in its Electricity Network Performance Report.

Advantages of using these data as the basis for any service quality incentive mechanism include the fact that clear definitions are already established, companies already collect data against these measures, and companies are already introducing initiatives to collect these data at greater levels of disaggregation (by feeder type), so additional administration costs would be minimised.

A further potential measure of reliability performance is MAIFI, Momentary Average Interruption Frequency Index, which gives the average number of momentary interruptions per customer. The SCNRRR agreed in March 2002 that reporting of MAIFI should be optional at the discretion of jurisdictional regulators, given the fact that not all distributors are currently able to provide accurate data on this measure. It is for consideration as to whether it would be appropriate to collect data on MAIFI from companies (at the same level of aggregation as other reliability measures) once data collection systems allow this. We note

⁵ In this document, the term 'quality of supply' is used to refer to factors such as voltage and frequency fluctuations. Where the word 'quality' is used in other contexts, it can be interpreted in a more general sense.

⁶ The SCNRRR reliability measures are part of an agreed national regulatory reporting framework for electricity distribution and retailing businesses, set out by the Utility Regulators Forum. See *National Regulatory Reporting for Electricity Distribution and Retailing Businesses* – Utility Regulators Forum, March 2002, www.ipart.nsw.gov.au/pdf/SCNRRR_final.pdf.

for example Country Energy's comments that MAIFI may be of limited value relative to the extra costs involved in measuring it.

The Tribunal seeks comment on the choice of reliability measures for inclusion in any incentive scheme, and on whether MAIFI data should be collected, with the option to add it to any service quality incentive scheme in the future.

Views are also invited on whether it would be desirable to collect data on other aspects of service quality (and if so, which aspects) so that these elements could potentially be included in future regulatory reviews.

4.2 Customer preferences and priorities

A key determinant of the choice of measures for inclusion any service quality incentive scheme is customer preferences.⁷ Unless measures reflect the aspects of service quality that matter to customers, they will fail to create incentives for the optimal provision of service quality.

In recent years, a relatively large number of customer surveys on different aspects of service quality have been carried out by both regulated companies and regulators in the energy sector. These surveys provide useful insights into what customers see as the most important aspects of service quality. Examples include the study by Aurora in Tasmania (2002), the 2003 study by ESCOSA in South Australia, and a study by Integral Energy on service reliability in 2002.⁸ Further examples include surveys in the UK in connection with the last OFGEM periodic review, and surveys by CitiPower and Powercor in Victoria.

Findings from these studies have included the following:

- **importance attached to reliability** the studies reviewed to date suggest customers attach a high priority to reliability of supply. For example, in the recent study by Aurora Energy in Tasmania, customers were asked to say which aspects of service quality were more important to them. In addition to keeping prices low, the two other highest priorities identified by customers were provision of continuous supply and the restoration of power as quickly as possible.
- **priorities and values can vary with customer type.** Some studies suggest that business customers (particularly large business customers) typically are more willing to pay for reliability improvements than domestic customers.
- **mixed evidence on preferences regarding duration** *versus* **frequency of outages.** Some studies reported customers to favour more frequent but shorter interruptions over less frequent but longer interruptions, but other studies suggested the opposite.
- studies typically found that customers place **a significantly lower priority on minimising momentary interruptions** and 'flickers' (which can be due to voltage fluctuations).

⁷ Customer preferences can also inform the appropriate target levels for service quality incentive schemes. Target setting is discussed further in Chapter 6.

⁸ See www.energyregulator.tas.gov.au and www.escosa.sa.gov.au/resources/documents/030409-R-Final_CSReport . Integral Energy Report: *Consumer Research into Reliability Standards* – Integral Energy/KPMG, December 2002.

The Tribunal seeks views on the ways in which customer preferences and priorities can best be reflected in any service quality incentive mechanism introduced.

4.3 Data quality and availability: creating incentives for improvements

At the 1999 Network Review, the Tribunal stated that it was not at that stage possible to link service quality performance directly to the price determination, due to a lack of robust data. Since 1999, progress in improving data availability and robustness has been limited. Furthermore, the Tribunal notes that where progress has been made, it has largely been in response to regulatory interventions, including SCNRRR, and the Tribunal's commissioning of the PB report. The Tribunal therefore notes the possibility that further regulatory intervention may be needed to ensure that data quality and robustness improve over the course of the coming regulatory period, so that effective incentives for service quality can be introduced.

Current constraints on data availability and robustness have been discussed in Chapter 2 above, and in the PB Associates report. Given these limitations, consideration needs to be given to **how to create incentives for data quality improvements**, to ensure that company initiatives to improve data collection are adequate and delivered on time. Options for consideration include:

- **monitoring processes** companies might set out timetables for the introduction of data collection improvements, and provide details of what will be delivered. Companies may then report regularly on their progress against these timetables and delivery commitments. For example, we note the current work by the MEU in this area in the development of its 2002/03 Electricity Network Performance Report.⁹
- **monetary incentives/penalties** are a further option that might be considered, particularly if it was thought that monitoring alone is unlikely to provide sufficient incentives. These could range from publication of company progress against delivery targets to monetary incentives/penalties as part of any Sfactor. For example, in England and Wales, OFGEM included the provision of data to OFGEM-specified definitions and timetable as a new licence condition for each distribution company, with financial penalties payable under this licence condition, should companies fail to adhere to these requirements. Arrangements for data audit were also made a formal requirement through licence conditions.

The need to **avoid excessive administration costs and unwarranted micro-management** of company initiatives is noted. These factors should be taken into account when considering the most appropriate options for encouraging and monitoring progress with data quality and availability.

The Tribunal seeks comment on the most appropriate options for creating incentives for the delivery of data quality improvements.

⁹ For example, the MEU has requested that companies provide information on their progress in improving data quality and availability in relation to service reliability measures, including information of the costs of improvement, details of the planned improvement, and the expected timeframe. Companies are also required to provide a report by an independent appraiser, whose report must include information and comment on the status of projects planned to address the findings of the PB Associates report.

4.3.1 Arrangements for audit

In order to ensure compliance with reporting requirements, it is likely that data submitted by the DNSPs will need to be audited. Reliability data collected by the MEU are currently subject to independent appraisal by independent experts, appointed by the DNSPs, working to guidelines issued by the MEU. The extent to which additional auditing will be required will depend largely on the measures chosen for inclusion in any service quality incentive scheme and potentially, on the amount of revenue at risk.

4.4 Excludable events

Some aspects of service quality can be affected by events such as storms, bushfires, accidents and vandalism, raising the issue as to whether data used in any service quality incentive mechanisms need to be adjusted to account for incidents immediately outside the control of the company.

Making no exclusions from a quality incentive regime can be simpler to administer, and maximises the incentive for companies to limit the impact of 'external events' on service performance. However, it also exposes the company to potentially significant risk (where monetary incentives are involved), and can make comparisons difficult. Furthermore, even if a company takes all possible measures to mitigate the impact of external events, it will still be unable to avoid many external events having at least *some* impact.

Australian Inland and Country Energy commented on the issue of exclusions in its April 2003 submission, arguing that were an S factor to be applied, it would be essential to exclude any factors outside the direct influence of the DNSP from the incentive scheme.

In general, other regulators do include some form of provisions to exclude the impact of external events. OFGEM and the ESC allow the impact of an external event to be excluded if the electricity distributor can demonstrate that it was unable to mitigate the impact of this event. However, the Tribunal notes the trade-off between the administrative costs of assessing the case for events to be excluded, and the benefits. For example, ESCOSA 'considers it desirable to avoid these high regulatory costs by limiting excluded events'.¹⁰

The Tribunal has identified several options for dealing with excludable events which could be considered as part of this review. These options include:

- Adopting arrangements similar to those in Victoria and the UK, where companies can apply for exclusions in some circumstances, which are then assessed by the regulator.
- Adopting other existing industry standards/definitions where relevant/available, such as the Steering Committee on National Regulatory Reporting Requirements (SCNRRR) '3 minutes on SAIDI' for reliability measures in electricity.¹¹
- Using rolling averages (only feasible once historic, audited data are available).

¹⁰ Electricity Distribution Price Review: Service Standard Framework Initial Thoughts – ESCOSA, April 2003, p 20.

¹¹ For example, this definition will be employed in the 2002/03 MEU Electricity Network Performance Report. It excludes events from reliability statistics if the resulting outage exceeds an overall SAIDI impact of three minutes, provided the event was caused by an 'exceptional or third party event' that a DNSP could not reasonably be expected to mitigate. See *National Regulatory Reporting for Electricity Distribution and Retailing Businesses*, Utility Regulators Forum, March 2002.

- Use of 'deadbands' in any incentive mechanism introduced. For example, a regulator might allow companies' performance to deviate from a target by x% or an absolute amount, before the incentive mechanism is triggered. Deadbands are discussed further in section 5.3.4 below.
- Allowing companies to exclude a certain, pre-specified proportion of the impact of an event, so as to reduce risk but still provide incentives for companies to mitigate the impact as much as possible. This approach has been adopted by OFGEM, as discussed in section 5.3.1.
- Limiting the scope for companies to apply for exclusions, as ESCOSA is proposing, possibly taking into account the risk implications of this option when setting any penalty/reward caps.

The Tribunal seeks comment on whether certain events should be excluded from data used in any service quality incentive regime, and if so, what criteria for exclusion would be most appropriate. Comments are also sought on alternative ways to address the impact of exogenous events, including the possibility of having caps on the proportion of revenue that can be exposed to any service quality incentive scheme.

5 MECHANISMS

The Tribunal is currently considering alternative mechanisms for creating incentives for service quality through the network review determination. This section discusses key alternative options, each of which could be used either in isolation or in combination with other options.

5.1 Creating incentives via service quality expenditure schemes

As part of their information submissions to the Tribunal, each of the DNSPs has been asked to report its projected expenditure for the next regulatory period assuming service quality levels are held at current levels, and has also been invited to set out projected expenditure assuming a different level of service quality specified by the company. DNSP information submissions also include details of major projects to improve service quality and estimates of the impact on service reliability. By collecting this information and comparing it with what is achieved at the end of the next regulatory period, the Tribunal can encourage the DNSPs to meet their service quality targets. For example, should DNSPs fail to make the service quality investments outlined in the information requests, the Tribunal might consider whether any clawback of allowed expenditure was warranted at the next review.

Country Energy has suggested that its existing published standards of service could be used as the benchmark for assessing whether it has delivered the service standards it has proposed in its Network Review submission.

The Tribunal seeks views on the scope for creating incentives for service quality through its monitoring of service quality expenditure schemes. The Tribunal notes its commitment to avoiding micro-management of the DNSPs, and comments should be made within this context.

5.2 Data collection/monitoring/publication

Another way in which companies can be given incentives to provide adequate levels of service quality is through the collection and regular publication of data, which can be used to 'name and shame' any companies failing to meet service quality standards.

The Tribunal publishes operating statistics for electricity distribution and retail companies annually. Further service reliability statistics are published annually by the MEU, and will be published for gas from 2003. Issues for consideration include:

- extending the coverage of this information to incorporate other measures of service quality
- how to take account of the fact that as data collection systems improve, this may cause service quality statistics to appear worse. Country Energy has emphasised that any targets set would need to take this into account.

The Tribunal seeks views on the extent to which incentives for service quality can be created through the collection and publication of performance data.

5.3 S factor

As set out in the November 2002 Issues Paper, the Tribunal is currently considering the possibility of incorporating an S factor into the Network Review determination. An S factor would establish a direct link between the DNSPs weighted average price caps and DNSP performance relative to service quality targets.

The measures that might be used in an S factor given current data limitations have been discussed above. This section considers issues surrounding the form that an S factor might take.

Most DNSPs did not comment in detail on the precise form that an S factor might take. However, Country Energy made a number of suggestions including:

- Any S factor should be simple, clear and transparent.
- It should be structured so as to limit the financial risk to companies until more is known about likely outcomes. If an S factor were to be introduced, there should be no revenue at risk in the first three years.
- It should not be based on actual performance/performance changes in any single year due to the fact that reliability varies from year to year. Rolling averages or "steps" (deadbands) might be a way of addressing this.

5.3.1 What form should the S-factor take?

The ESC Approach

The approach taken by the ESC in 2000 was to add the S factor into the existing CPI-X price control formula (price control = (1+CPI)(1-X) using the following formula:

Price control = $(1+CPI)(1-X)(1+S_t)$ (1+S_{t-6})

Where S_i is the S factor for the year in question, and S_{t-6} is the S factor in the calendar year t-6. S in any one year is calculated by multiplying a pre-determined incentive rate for each key performance indicator and each network type by the performance gap (ie, the difference between target performance and actual performance) relative to the performance gap in the previous year, for that performance indicator and network type. The resulting 'mini Ss' for each performance indicator and network type are summed to give the S factor for that year. The formula for this calculation is as follows:

$$S_{t} = S = \frac{I_{i,n}}{R_{base year}} \cdot \left[\left(P_{target i,n,t-1} - P_{actual i,n,t-1} \right) - \left(P_{target i,n,t-2} - P_{actual i,n,t-2} \right) \right] \cdot 100$$

Where:

St	is the adjustment for the year in question, for the company in question,
	expressed as a percentage

I _{i,n} is the incentive rate for indicator i and network type n, for the company in question

Rbase year	is the revenue requirement for the base year of the control period ¹²
P _{target i,n,t-1}	is the company's performance target for indicator i and network type n in the previous year (t-1)
Pactual i,n,t-1	is the company's actual performance for indicator i and network type n in the previous year (t-1)

The fact that the S factor is driven off performance in the year just passed (t-1) compared to performance in the year before that (t-2) means that the S factor has a *relative* aspect to it – ie, it takes into account the extent to which the company has closed the performance gap between target and actual performance compared to the previous year. The ESC's targets for each company shift through time, becoming tougher as the regulatory period elapses meaning that the S factor also has an *absolute* aspect to it.

The ESC S factor runs off three key performance indicators (CAIDI, unplanned SAIFI and SAIDI). Different weightings are attached to each of these indicators: 100 per cent for unplanned SAIFI, 65 per cent for unplanned CAIDI and 25 per cent for planned SAIDI. Different weightings were attached to these different components of service quality to reflect the relative importance attached to them by customers.

Rather than look at these indicators at the aggregate level, the ESC mechanism disaggregates performance by network (feeder) type: CBD, Urban, Rural Long and Rural Short, to reflect the fact that differences in operating characteristics affect the levels of reliability that can realistically be achieved on different parts of the network. Targets are set on an individual basis, and therefore differ for each company for each feeder type. Incentive rates also differ between companies and by network type.

The ESC S factor is symmetric, with the potential penalties for underperformance equalling the potential incentives for outperformance. (The issue of symmetry is discussed further below.) Incentive rates are set so that the maximum amount of revenue at risk is less than one per cent per year.

The inclusion of the S₋₆ factor in the price control formula allows companies to retain the benefits of any service outperformance for five years. Similarly, any penalties are borne for five years. The incorporation of this feature is designed to ensure consistency with incentives for opex and capex efficiencies (the efficiency carryover mechanism) also introduced by the ESC for 2001-05. Failure to incorporate such a feature for service quality expenditure could have led to perverse incentives, as the reward for outperforming opex/capex projections would have exceeded the reward for outperforming service quality targets (it would also have exceeded the penalty for failing to meet service quality targets). It should be noted that the 'rolling' nature of this mechanism means that the decision on S factor targets and incentive rates in *this* control period, has carry-over effects into the *next* control period.

¹² In the case of the ESC determination, this was 2001.

Another important feature of the ESC S factor is that it is applied *annually* – both in terms of how performance against targets is calculated, and in terms of how adjustments to the price control are made, so that the impact on managerial incentives is ongoing and immediate.

The fact that the ESC approach is based on the *size of the gap* between target performance and actual performance also means that the incentives for companies to improve service quality are *continuous*. This contrasts with a situation where penalties or incentives operate only on a 'pass or fail the target' basis. Pass-fail incentives can lead to discontinuities in company incentives – ie, once the target has been passed, the company has no incentive to improve service quality further.

The OFGEM Approach

The OFGEM service quality scheme is made up of four main components¹³:

- 1. A **penalty of up to 1.75 per cent of revenue (annually)** for failure to meet targets on the **number and duration of interruptions**; Targets are set for the final year of the current control period (2004/05) by applying a specified percentage improvement to the 10 year linear historic trend.
- 2. A **reward** for companies that exceed their targets on number and duration of interruptions, based on the *rate of improvement* in performance (maximum reward set at **2 per cent of revenue as a one off**, rather than repeated, reward).¹⁴ In order to qualify for the maximum reward level, company performance must have improved at least 15 per cent over base level performance on the number of interruptions, and at least 20 per cent over base level performance on the duration of interruptions (companies receive a smaller, pro-rata amount if they exceed the targets but have improved by a smaller percentage amount).
- 3. A **penalty or reward of up to 0.125 per cent of revenue (annually)** for the **quality and speed of telephone response**. Quality and speed are assessed separately. Quality of response is measured by customer survey, and guidelines are provided to ensure that companies measure speed of response on a consistent basis. OFGEM reflected transitional issues and initial uncertainties by reducing the amount of revenue exposed to the quality of response measure in the first year, increasing it thereafter, and by only applying penalties for speed of response from the second year of the scheme. The penalty/reward is calculated as the incentive rate multiplied by the difference between the company's performance¹⁵ and the industry average performance.
- 4. A commitment to **reward frontier performance** (the best performing companies) at the next periodic review by setting frontier companies less demanding targets for future improvement at the next review (performance is to be assessed based on a model that aims to adjust for differences in the operating environments between companies).

¹³ See OFGEM, Information and Incentives Project, Developing the Incentive Scheme – Update, November 2001, and Information and Incentives Project Incentive Schemes: Final Proposals, December 2001.

OFGEM bases the reward on rate of improvement criteria to reflect the fact that the incentive was introduced in 2002, part way through a regulatory period – OFGEM felt that companies should not be rewarded for the remainder of the control period for exceeding 2004/05 targets if they had already met these in 2001/02.

¹⁵ 'Deemed' performance – given by the company's performance score plus the standard error.

Interesting features of the OFGEM approach include the following:

- **Phasing in of the monetary aspects** the total amount of revenue exposure in the first year (2002/03) was only 0.85 per cent, which will increase to 2 per cent for the subsequent years.
- The OFGEM approach is **not completely symmetric**. It contains both penalty and reward aspects, but these are applied on a different basis (as explained above).
- The incentive rates for performance on interruptions to supply are set such that companies can deviate from their targets by the same percentage before they lose the maximum amount of revenue possible on that measure.¹⁶
- On excludable events, OFGEM judged that planned interruptions should be included in the incentive scheme (ie, *not* excluded), as should interruptions caused by third party damage and embedded generators. **100** per cent of interruptions caused by the transmission network were *excluded* from number of interruptions figures, and 90 per cent of such interruptions were excluded from duration of interruptions figures. OFGEM argued that the 90 per cent exclusion provided companies with some risk protection, while still providing incentives for them to mitigate the impacts of transmission system interruptions where possible. Furthermore, the impact of 'exceptional events' can be excluded if companies make their case to OFGEM within a week of the incident happening, if auditors agree with the company assessment (working to pre-specified criteria of assessment, including the impact on customers, the predictability of the event, and the actions taken by the company to deal with the impact of the event).
- The OFGEM incentive scheme operates at the **overall level**, (rather than, for example, by feeder type).

ESCOSA Approach

ESCOSA's proposed approach to service quality regulation/incentives consists of three components:

- average service standards covering reliability of supply, quality of supply, and consumer service measures ESCOSA requires ETSA Utilities to use its 'best endeavours' to meet these standards on average for customers, and distribution price caps are set such that sufficient revenue is allowed to meet these standards
- guaranteed service levels
- a service incentive scheme, based on the percentage of consumers who experience reliability levels below a certain target (covering the number and duration of interruptions, as described in Appendix 1).

ESCOSA's proposals to introduce a service incentive scheme that encourages ETSA Utilities to target reliability improvements at the worst-served customers was based upon the results ESCOSA's customer survey, which revealed that the majority (85 per cent) of customers are happy with existing service reliability levels. ESCOSA is therefore interested in adopting a scheme which encourages reliability improvements for the remaining 15 per cent of customers who are unsatisfied with current reliability levels.

¹⁶ OFGEM argued that if this were not the case, the incentive regime would be considerably tougher for some companies than others.

ESCOSA's decision not to include quality of supply measures was based on the fact that the survey results pointed to low willingness to pay for improvements in this area. South Australian customers have however revealed a high willingness to pay for call centre performance, and ESCOSA intends to include call centre targets in its final incentive scheme. ESCOSA has indicated a preference to focus on call centre performance in times of a major outage event, as this is the time when customers are most likely to need to call the company.

ESCOSA has yet to set out proposals for precise targets, incentive levels, or the magnitude of any revenue exposed caps. However, ESCOSA intends to cap financial incentives at a level that does not exceed customer willingness to pay for the service **in** question (to avoid any 'gold plating' of the network). It has also indicated a preference for financial incentives that vary by regions.

The Tribunal seeks comment on the form that the S factor should take, and on the extent to which features of the S factors discussed above are applicable in the NSW context. Comments are also sought on any alternative forms that the S factor might take.

5.3.2 Should mechanisms be symmetric?

An S factor can be applied either in the form of penalty only (as implemented by OFGEM from 2000-2002) or a combination of penalty and reward. Where a combination of penalty and reward is used, it can either be in a purely symmetric form (as adopted by the ESC) where the scope for penalties exactly mirrors the scope for rewards, or in an asymmetric form (as adopted by OFGEM from 2002 and by the Office of Water Services (OFWAT) in 1999¹⁷) where there may be some reward, but of a different magnitude/under different conditions to those that apply for penalties.

The advantages of an S factor that incorporates rewards as well as penalties are that it provides an incentive for companies to exceed their targets, rather than just to meet them. If the S factor consists of penalties only, companies will be have incentives to meet their performance targets, but to make no further efforts to exceed them, even where the customers might value further improvements. An additional advantage of an S factor that has *symmetric* penalties and rewards is that it avoids any asymmetric risk to companies.

However, the application of an S factor with both penalties and rewards may not be appropriate in all circumstances. For example, if service standards are already at or close to optimum levels, applying an incentive for companies to increase performance further may result in service quality levels that exceed preferred levels.

The Tribunal seeks views on whether any mechanism adopted should reward as well as penalise companies depending on service quality performance, and if so, should the incentive rates for rewards be of the same magnitude as the incentive rates for penalties?

¹⁷ OFWAT's 1999 final determinations imposed S factor penalties of up to -1 per cent, with maximum rewards limited to +0.5 per cent. OFWAT's recent review of the S factor (*Linking service levels to prices* – OFWAT February 2002) has concluded that asymmetric incentives should be retained. OFWAT cited the results of their customer survey in support of this decision - the survey revealed that customers were generally content with existing service levels, leading OFWAT to conclude that there was no reason to increase the incentive to improve services.

5.3.3 When should price adjustments be made?

If an S factor is to be introduced, there appear to be two main options for the timing of price adjustments:

- on an annual basis, following the assessment of performance in the previous year relative to target
- at price reviews only, ie at the same time as the X factor is adjusted;

This issue has been examined by, for example, OFWAT in the UK.¹⁸ OFWAT noted that an annual adjustment *'could provide a more immediate and powerful incentive on companies than an adjustment made every 5 years'*. OFWAT therefore chose to adopt a system that assesses company performance against service level targets on an annual basis, but which only makes actual price adjustments at price reviews (ie, prices for the next five years are adjusted depending on performance over the last five years).¹⁹ OFGEM also makes price adjustments for service quality performance only at price reviews. This position contrasts with that of the ESC, which adjusts prices on an annual basis for the S factor.

The views of these other regulators point to the strong incentive arguments for applying penalties that encourage managers to meet (and, where appropriate, exceed) service quality targets in every year of the control period, to avoid, for example, any incentives to delay quality improvements until the last year of the regulatory period.

A further issue for consideration is the potential impact on company revenue flows of the two alternatives discussed above. When considering this issue, it will be important to bear in mind the interactions with the decision on excludable events (see section 4.4).

The Tribunal seeks views on the relative advantages of a system that provides incentives for companies to meet/exceed service quality targets in every year of the control period, as opposed to for the period as a whole. Views are sought as to whether applying monetary penalties on an annual, as opposed to five-yearly basis would further strengthen these incentives.

5.3.4 Use of dead bands

Deadbands are areas within which variations in a company's performance does not lead to any incentive/penalty payments. Examples include an S factor which is not activated until a company's performance falls outside a specified range (in absolute or percentage terms). Deadbands provide one option for accommodating fluctuations in performance that arise due to factors outside a company's control (as discussed in section 4.4).

Arguments for deadbands might also be made where data are relatively inaccurate, meaning that small differences in performance might reflect data inaccuracies rather than differences in actual performance, making penalties/rewards for small changes in performance inappropriate. Indeed, deadbands might be used to give companies incentives to improve the accuracy of their data, for example by applying an asymmetric deadband that prevents companies from being rewarded for small improvements in service quality, but does not provide any protection from the downside of having to make payments for perceived poor

¹⁸ OFWAT, *Linking service levels to prices*, February 2002.

¹⁹ The UK water sector appeals process for price determinations provided a further complication to applying S factor penalties on an annual as opposed to five yearly basis.

performance (where it might, in fact, be due to inaccuracies). This may however have a negative impact on regulatory risk.

However, a disadvantage of deadbands is that they introduce distortions to incentives. For example, if a company knows its performance level is well within a deadband area it has no incentive to make further efforts to improve its service quality. They can arguably add complexity to a scheme, and reduce transparency.

The Tribunal seeks views on whether the incentive and complexity disadvantages of deadbands exceed the advantages.

6 TARGET-SETTING

As noted by Country Energy, in order for companies to be able to respond effectively to service quality incentives, and to plan their activity for the coming control period, it is important that clear targets are set out in advance.

6.1 Alternative approaches to target-setting

A number of options are available as a basis for target setting. This section discusses the pros and cons of the main alternatives.

6.1.1 Company-specific targets

Performance targets do not have to be the same for all companies. Indeed, there are strong arguments for targets to differ between companies, particularly to reflect differences in operating environments.²⁰ Company-specific targets can also be used to reflect the impact of historic or 'inherited' factors that can affect companies' service quality performance.

Company Own Targets

One option is to ask companies to set their own targets for any service quality incentive mechanisms. An advantage of this approach is that companies are generally the best-informed as to what levels of service quality they can realistically achieve over the coming years.

In their information submissions to IPART, DNSPs have been asked to set out the forecast levels of SAIDI, SAIFI and CAIDI that correspond to their forecast expenditure on service quality expenditure projects. Companies have been invited to provide both 'base' levels of service quality and any alternative levels of service quality specified by the company. It is possible that these targets to form the basis for company targets. Details of company proposals are provided in Appendix 3.

A disadvantage of this approach is that companies may have incentives to understate their true scope for service quality improvements, in order to make targets easier to achieve, thereby reducing the risk of incurring any penalties, and maximising the risk of obtaining any positive incentive payments if an S factor is symmetric. In order to avoid this possibility, the Tribunal might make an assessment as to whether any adjustments are needed to company projected targets and/or make a decision as to whether the 'base' or 'enhanced' targets proposed by the companies are the most appropriate basis for target setting. In order to do this the Tribunal might draw on the information sources discussed in the next two sections. Such an approach was adopted, for example, by the ESC in setting targets for its S factor in the 2001 Electricity Distribution Price Determination.

Company Historic Performance

Targets could be set based on company historic performance, using information on recent levels of performance, and longer term trends in improvement. Advantages of this approach are that it takes into account implicitly the operating characteristics of the company in question. Disadvantages include the fact that historic performance does not always provide an accurate guide to the scope for future performance, particularly if technology changes, or

²⁰ This point was raised, for example, by Country Energy in its submission.

if in the past companies faced lower incentives to improve service quality. A further complication arises if data are not readily comparable over time, for example if new data collection methods are being introduced (as is the case currently for the DNSPs).

If historic performance data are used to inform future targets, it is important to ensure that targets are not based on a year when performance was atypical (perhaps due to external events such as fires and storms). This might be avoided by looking at performance over several years, rather than any one year in isolation.

6.1.2 Comparative targets

From a theoretical perspective, targets for service quality performance that are set relative to the performance of other companies (ie, in some form of service quality benchmarking) give strong incentives to improve performance.²¹ For example, if targets are set at the average industry performance level, companies are rewarded for performance above that average, and penalised for performance below the industry average. Companies will have incentives to improve service quality as much as possible, in the hope of providing an above-average service, and therefore enjoying a higher rate of return. This mechanism replicates the incentives that would be seen under a theoretical perfect competition model.

A further advantage of comparative targets is that they can make the target-setting process relatively easy, if all that is done is take the industry average.

However, pure benchmarking approaches such as these have a number of practical disadvantages. For example, in order to allow for differences in company operating environments, some form of adjustments/normalisation will be needed. In other contexts, some regulators (eg OFWAT, and the Dutch electricity regulator Dte) have attempted to make such adjustments by developing models that make such allowances. However, it is important to note that making such adjustments in a robust way can be difficult. Normalisation models are generally imperfect, particularly where the factors impacting on costs are not readily quantifiable. It is particularly difficult to evaluate the validity of any normalisation process before robust and consistent data are available (which is currently the case with the DNSPs). A potential alternative suggested by Country Energy would be for company targets to reflect the comparative performance of "peer companies" across Australia with similar operating characteristics.

It is noted that the incentives created by a pure benchmarking approach are not necessarily appropriate in all circumstances, where performance is already close to optimum levels. The reason for this is that while companies have incentives to maximise service quality performance, this may lead to them providing levels of service that exceed customer willingness to pay. The only way to address this might be to introduce some form of cost ceiling for service quality improvements.

A further disadvantage of a benchmarking approach to setting service quality targets is that it provides disincentives for the sharing of best practice, plus, potentially, the sharing of resources to deal with emergencies that impact on service quality (such as storms). It can also increase company uncertainty with regard to investments in service quality, as the return the company receives on its investment depends on the performance of other companies, not just the company's own performance against a pre-defined target.

²¹ See for example, Vickers J, *Concepts of Competition*, Oxford Economic Papers, Vol 47(1), 1995.

A further way in which comparative information can be used, that overcomes the difficulties outlined above concerning different operating environments, is to examine how a company's own targets for the next regulatory period alter its position relative to other companies. For example, if a company proposes targets that would see it move from an above average performance to a below average performance relative to other DNSPs, this would imply that the company in question was making slower progress than the other DNSPs, which may warrant further investigation. (Such a situation would not automatically mean that the company's progress was unsatisfactory – for example companies that are already close to best practice in terms of service quality provision would be expected to make slower progress in terms of further improvements than other companies that have greater scope for 'catch-up'.) For example, analysis of how company targets would change company positions relative to other companies over the coming regulatory period were analysed by the ESC when deciding appropriate targets for its S factor.

Experience from other jurisdictions suggests that regulators often use a combination of approaches to help inform service quality targets. Research by the Tribunal to date has not identified any regulators that use a pure benchmarking approach to service quality regulation. For example, the ESC, OFGEM and OFWAT use a combination of comparative and company-specific information. The New Zealand Commerce Commission is also proposing using a combination of company trend analysis and data from other companies to establish quality thresholds for its proposed incentive scheme.²² The need to relate targets to operating and capital expenditure allowances for service quality delivery must also be taken into account carefully.

The Tribunal seeks views on the most appropriate approach to target-setting, and particularly on the following:

- Do the pros and cons of alternative approaches to target setting detailed above suggest that the most appropriate approach might involve a combination of information sources?
- Do the fact that companies operate in significantly different operating environments mean that company-specific, rather than relative targets are appropriate for NSW DNSPs, particularly with current information levels?

6.2 How ambitious should targets be?

A further issue for consideration is the extent to which targets should allow for substantial improvements in service quality over the coming regulatory period. Factors to bear in mind include:

- Current service levels, and how close these are to what might be regarded as optimum service levels in terms of customer expectations/willingness to pay.
- The impact of alternative target levels on the amount of company regulated revenue exposure (this will also depend on incentive/penalty levels which are discussed in Chapter 7).
- Should targets be at fixed levels for the duration of the regulatory period, or should targets become progressively tougher over time (as adopted by the ESC), and if so, at what rate?

²² New Zealand Commerce Commission, *Regulation of Electricity Lines Businesses Targeted Control Regime Implementation Details – Draft Decisions*, 31 January 2003.

• Is independent review of targets required to verify how challenging they are?

Targets will also need to reflect the fact that if companies are conducting significant amounts of work to improve long term reliability, this is likely to involve short term increases in planned interruptions and minutes off supply. It is important that targets do not provide disincentives for companies to conduct necessary maintenance and improvements work.

The Tribunal seeks views on what the appropriate levels for targets should be, and whether/how these should move during the regulatory period. Views are also sought on ways in which any disincentives to conduct maintenance and improvement work can be avoided.

7 PENALTY/REWARD SETTING

7.1.1 The basis for penalty/reward setting

Should the Tribunal decide to introduce an S factor, it will want to ensure that any penalties and rewards associated with that S factor are large enough to be meaningful, but not so big as to impose excessive risk on the companies, or to exceed likely customer valuations.

One possible approach to the setting of penalty/rewards (incentive rates) is to relate them to customer willingness to pay for the target level of service quality in question. While this has attractive theoretical advantages, in practice, it can be difficult due to the fact that willingness to pay varies significantly between customer types and by time of day and season.²³ These difficulties are added to by the fact that there is no 'market' for quality of service, so any estimates have to rely on survey data. These difficulties were noted for example in Country Energy's submission. However, even if it is not practical to set penalties/rewards based precisely on customer willingness to pay, the relative priorities customers attach to different aspects of service reliability indicators. For example, under the OFGEM S factor, the potential penalties for poor performance on reliability (frequency and duration of interruptions) are greater than those for poor performance in the speed and quality of telephone response.

An alternative approach is to relate penalties/rewards to the relative costs to the company of carrying out the work needed to deliver the level of service quality in question. In theory, any incentive scheme should ensure that the total costs of failure to deliver target levels of service quality exceed the costs of delivering that level of service quality. In order to ensure this, it would be necessary to set any incentive rates accordingly, and to consider carefully any interactions with other incentives created by the network determination. For example, were an efficiency carryover mechanism to be introduced of operating/capital expenditure, it would be necessary to ensure that the S factor made similar allowances. However, it will also be important to bear in mind the impacts on the proportion of revenue at risk, and arguments to limit revenue exposure, particularly in the early years of any incentive scheme.

7.1.2 Caps on penalties and rewards

A further consideration for a regulator imposing an S factor is whether any cap should be placed on the total amount of company revenue that can be exposed to the incentive/penalty mechanism. Advantages of having a cap on penalties include the fact that it puts an upper boundary on the level of risk to which the company is exposed. This might be considered important in an environment where there is considerable uncertainty, for example, where factors outside a company's control can have a significant impact on penalty/incentive levels, or where current data availability and quality make future performance uncertain. A cap on rewards might also be considered attractive in that it provides a way to prevent companies from having incentives to continue to improve service quality beyond optimal levels.

²³ This point has been illustrated by recent customer surveys on service quality, including a pilot study by the DNSPs/KPMG, and a study focussing on service reliability levels commissioned by Integral Energy.

A percentage of revenue cap, as opposed to an absolute cap, has the advantage of taking into account the fact that companies are different in size, meaning that an absolute cap would have greater proportional impacts on some companies than on others. Examples from other jurisdictions of the imposition of a percentage cap on the maximum amount of revenue that can be exposed to the S factor include OFGEM's downside cap of 2 per cent from 2003/04 and upside one-off cap of 2 per cent in five years (see section 5.3.1) and OFWAT's cap of -1 per cent to +0.5 per cent. The ESC also conducted research into the likely impact of incentive rates and target levels on company revenues, before introducing its S factor from 2001.

7.1.3 Other considerations

In setting the incentive rate the Tribunal will also need to consider the relationship between the output measures included in the scheme. For example, if companies face incentives to reduce the frequency of interruptions, this is also likely to reduce the total number of minutes that customers are off supply. These relationships mean that imposing incentives/penalties based on one measure may have a greater than proportional impact on service quality as a whole.

Chapter 5 raised the issue of transitional arrangements, including the possibility of phasingin and S factor monetary penalties/rewards, for example by reducing the amount of revenue exposed in the early years, and increasing it as more accurate data become available, or by adopting an initial 'paper trial'.

The Tribunal invites comment on the appropriate basis for the setting of any penalties and rewards. In particular, views are sought on the attractiveness of having a percentage cap on the amount of revenue exposed to any penalties/rewards, and if such a cap is favoured, views on the appropriate size (especially given current data robustness).

7.1.4 Links to the Guaranteed Customer Service Standards scheme

When considering whether/how to provide incentives for service quality through the network review, the question arises as to whether such incentives are necessary, given that some incentives already exist for DNSPs to improve service quality for the worst-served customers through the Guaranteed Customer Service Standards (GCSS) scheme.

The GCSS scheme sets minimum levels of service quality that DNSPs are required to provide to every customer, covering aspects such as timely provision of connections and appointment keeping. For several of these minimum standards, DNSPs are required to pay compensation to individual customers if they fail to meet the standards. The Tribunal is currently undertaking a review of the GCSS scheme, (along with a review of operating statistics reported and published, which also cover aspects of service quality).²⁴

GCSS therefore already provides *some* form of monetary incentive for DNSPs on service quality. However, the Tribunal has identified a number of arguments that suggest GCSS alone is likely to provide insufficient incentives for companies to provide optimal levels of service quality, including:

• GCSS focuses on providing companies with incentives to improve service to the *worst* served customers. As such, it sets *minimum* standards for service quality and

²⁴ Details of this scheme can be found at www.ipart.nsw.gov.au/pdf/DP61.pdf.

encourages companies to meet these standards. It does not provide incentives for companies to improve service quality beyond these minimum standards.

- Not all aspects of service quality are covered by GCSS monetary penalties. It is also possible that GCSS may not create incentives for minimum levels of performance on all the aspects of service quality that a regulator may be concerned with. Examples include telephone answering, which may be an important aspect of service quality for customers, but which it would be difficult to compensate at the individual customer level. While DNSP performance on measures such as telephone answering is currently monitored and published in NSW, no monetary incentives actually apply.
- Not all incidents of sub-standard service quality will be captured in GCSS. For example, current information reporting limitations mean that in NSW electricity customers only currently receive GCSS payments to which they are entitled if they claim for them. The fact that not all customers will claim for such payments (and indeed, that not all customers are aware of the payments) reduces the impact of the incentives.

A number of regulators in other jurisdictions, including the ESC and OFGEM, combine GCSS-style incentives with incentives applied directly through the review determinations.

APPENDIX 1 MEASURES USED IN SERVICE QUALITY INCENTIVE SCHEMES IN OTHER JURISDICTIONS

As part of its assessment of what service quality measures would be most appropriate for inclusion in any service quality incentive scheme, the Tribunal is assessing measures used in other jurisdictions. Experience form other jurisdictions can provide useful insights into issues such as:

- What aspects of service quality should be reflected?
- What measures best reflect these aspects of service quality?
- How many measures should be used in any incentive scheme?

A1.1 Essential Services Commission (ESC) Victoria

The ESC introduced an S factor as part of its price determination for 2001-05. The S factor is based on the following measures (key performance indicators):

- unplanned interruption frequency (SAIFI)
- unplanned interruption duration (CAIDI)
- planned minutes off supply (SAIDI).

Unplanned SAIDI was not included in the S factor, as it was felt that by creating incentives for companies to reduce unplanned SAIFI, this provided an indirect incentive for companies to reduce unplanned SAIDI too (ie, if the frequency of unplanned interruptions falls, it is likely that the total minutes off supply per customer will also fall, unless interruptions are becoming significantly longer, which would be reflected in the CAIDI measure).

In its draft determinations, the ESC proposed including momentary interruptions as a further key performance indicator in the S factor. This was removed at final determinations (due to data quality and availability difficulties) but the ESC stated its intention to monitor company performance against this measure.

The ESC's S factor proposals are discussed further in section 5.3.1.

A1.2 OFGEM UK

In June 2000, as part of its Incentives and Information Project (IIP), OFGEM published its proposals on the output measures to which direct financial incentives should apply for electricity distribution:

- number of interruptions to supply (interruptions under 3 minutes not included)
- duration of interruptions to supply (interruptions under 3 minutes not included)
- speed and quality of telephone response.

OFGEM also monitor a number of other measures including frequency of interruptions under 3 minutes, although no incentives/penalties are applied to these measures.

In addition, OFGEM has set out a framework for monitoring *medium term* performance. The aim of medium term performance monitoring is to try and avoid any incentives for companies to improve short term performance at the expense of medium term performance (eg postponing maintenance work because it means service interruptions). The OFGEM framework includes a proposed requirement that companies report on fault rates and causes on different asset types over time, and provide details of initiatives to tackle any adverse trends observed or forecast. OFGEM is also considering requiring companies to provide some activity-based information, particularly where an asset type is performing poorly – this information might include the number of asset types repaired or maintained. No monetary incentives/penalties are attached to these data, but they are collected and monitored.

A1.3 Essential Services Commission Of South Australia (ESCOSA)

In April 2003, ESCOSA released a paper setting out its initial thoughts on the framework for regulating and providing incentives for service quality as part of the Electricity Distribution Price Review.²⁵ ESCOSA is proposing a service incentive scheme that is based on service reliability, but instead of adopting absolute targets for measures such as SAIDI and SAIFI, it proposes that targets take the following form:

- percentage of consumers who experience more than x interruptions per regulatory year
- percentage of consumers who experience more than y minutes of interruptions per regulatory year and
- percentage of consumers who experience a longest interruption of more than z minutes over the past regulatory year.

The intention is that this format should encourage ETSA Utilities to focus on improving reliability standards for the worst-served customers. ESCOSA's proposals are discussed further is section 5.3.1.

²⁵ ESCOSA, Electricity Distribution Price Review: Service Standard Framework – Initial Thoughts, April 2003.

A1.4 Possible Lessons/Observations

Observations from the experience in other jurisdictions include:

- The number of measures incorporated into the S factors described above is limited. An advantage of such an approach is that it limits the complexity of the scheme, which should also minimise administration costs for company and regulator alike. Disadvantages include the fact that not all aspects of service quality that are potentially important to consumers can be included. Care must be taken to avoid any incentives for companies to concentrate only on aspects of service quality included in the Sfactor, to the detriment of other aspects of service quality that are not included. Combining any S-factor with monitoring of other aspects of service quality might be one way to avoid such incentives. OFGEM's monitoring of medium term performance provides such an example.
- Schemes reviewed attach a major focus to service reliability. This is consistent with the Tribunal's proposal in the November 2002 Issues Paper, that any S factor included in the 2004 Network Determination should focus on service reliability.
- Momentary interruptions are not currently included as S factor measures (the difficulties of accurate measurement of momentary interruptions are noted).

APPENDIX 2 DNSP VIEWS

The DNSPs set out their initial views on incentives for service quality in the Network Review in their April 2003 submissions.²⁶ Key points made by the companies included the following.

- Australian Inland –'recognises the need to incorporate additional factors into the price control formula' but considers it likely that introducing such mechanisms in the short term would be very difficult. Australian Inland (AI) argues that it would be difficult to define any base levels of service and to measure deviations from those service levels 'on a consistent and credible basis', and that the small AI population is likely to make this particularly difficult. AI argues that were an S factor to be applied, it would be essential to remove any factors outside the direct influence of the DNSP from reliability performance figures. Overall, AI does not support the introduction of an S factor for the coming regulatory period, but instead argues that DNSPs should undertake 'detailed data collection and modelling' to provide a basis for the possible introduction of a reliability S factor in the future.
- **Country Energy** not supportive of the introduction of an S factor or any minimum standards for service reliability. Country Energy (CE) suggested setting targets (with public disclosure but no monetary penalties) once reliable data are available. CE pointed to the current data availability and accuracy limitations, and argued that were an S factor to be introduced, the improvements to data systems that companies are currently undertaking would have to be completed first. CE made a number of practical suggestions on issues such as the basis for target setting and choice of measures (see section 2 of the CE submission).
- EnergyAustralia supports the idea of linking prices to service quality in principle, including an explicit S factor. However EnergyAustralia (EA) does not believe that it would be appropriate to implement an S factor as part of the coming review, as this would lead to extra complexity at a time when DNSPs are already implementing a major change in the form of the weighted average price cap. EA also argues that the significant time and data requirements for the introduction of a robust S factor make it inappropriate for the coming regulatory period. EA therefore favours a 'paper trial' in collaboration with IPART, which (depending upon the results of the trial) would establish the basis upon which a service quality incentive framework could be built for future regulatory periods.
- **Integral Energy** supports the idea in principle of linking price and quality of service. 'Integral would support the Tribunal in providing appropriate incentives that facilitate the best price and service mix outcomes for customers.' However, Integral notes the need for consistent information, and given the results of the PB Report (the need for improvements in data quality and availability, and the fact that companies are currently undertaking initiatives to improve data systems) Integral suggests that a 'zero dollar' S factor (ie, a paper trial) be adopted during the coming regulatory period, to ensure that incentives and measures are well understood, allowing a full S-factor to be potentially introduced at the next price control review once companies have introduced their new data systems.

²⁶ Copies of these submissions are available at http://www.ipart.nsw.gov.au/submiss/ENR_DNSPs_03/

APPENDIX 3 DNSP SERVICE RELIABILITY PROPOSALS

This appendix provides brief details of company proposals for service reliability levels for the coming regulatory period. Further details of company submissions are available at www.ipart.nsw.au/submiss/ENR_DNSPs_03/.

- EnergyAustralia has provided a base case for service quality, in which reliability levels *on average* remain broadly constant²⁷, with improvements focused on the worstperforming parts of the network. EnergyAustralia has also provided an 'enhanced case', under which reliability levels improve by 10 – 15 per cent by the end of the regulatory period. EnergyAustralia estimates the additional capex costs associated with these enhanced service levels to be \$250m. Further details of each service quality scenario are provided in Section F of EnergyAustralia's submission, including an indicative 'constrained' scenario if opex and capex on service quality were to be reduced.
- Integral Energy has provided a base case for service quality in which would deliver a reduction in total SAIDI from an average of 142 in 2004/5 to 114 in 2008/9 (with unplanned SAIDI falling from an average of 114 to 92 and planned SAIDI from 28 to 22 in the same period). This contrasts with a rise in unplanned SAIDI during the last regulatory period from 84 in 1999/00 to a forecast 119 for 2003/4. The planned improvements would bring average unplanned SAIDI for the 2004-09 period as a whole back down to the average observed in 1999-03 (103). The base case would also deliver a reduction in the average customer's load at risk for the period 2004-09 to approximately the same level at the end of the 1999 control period (250MVA), and to 150MVA thereafter. (Further details are provided in Chapter 6 of Integral Energy's submission, including details of the implications for weighted average remaining life of assets.)

Integral Energy has also provided a 'reduced risk' scenario, which is not expected to yield any significant changes to system reliability figures in the next control period, but would improve reliability in the longer term. The reduced risk scenario also further reduces customers' load at risk to 100MVA by the end of the next regulatory period, and the weighted average remaining life of assets would also fall. Integral has estimated the extra capex costs associated with the reduced risk scenario at \$317.1m, with extra opex costs of approximately \$8.5m.

• **Country Energy** and **Australian Inland** have not included enhanced service levels in their submissions. Country Energy's base case scenario focuses particularly on improvements to the worst performing parts of the network.

²⁷ In recent years, reliability levels have fluctuated but have shown no strong trend. (See for example EnergyAustralia's submission, p 87.)