

**Comments on the Australian Energy
Regulator's proposed incentive scheme for
electricity distribution network operators**

**Submission to the Australian Energy Regulator
by the**

**ACT Planning & Land Authority as Technical Regulator under the
Australian Capital Territory *Utilities Act 2000***

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Introduction

The Australian Energy Regulator (AER) is proposing the development of a service target performance incentive scheme for electricity distribution utilities, and has sought the view of the ACT's Utilities Technical Regulator, the ACT Planning and Land Authority (ACTPLA), on the proposed scheme.

It is noted that the AER service incentive scheme will not be introduced in the ACT and NSW until data collection and analysis of service performance over the 2009-14 period has been completed.

ACTPLA's role as Technical Regulator

ACTPLA is the 'Technical Regulator' under Part 5 of the ACT's *Utilities Act 2000*, and is responsible for the technical regulation of utility network infrastructure, including the electricity distribution network.

As Technical Regulator, ACTPLA is interested in ensuring that AER decisions do not adversely impact on the capacity or willingness of the electricity distribution network provider in the ACT (i.e. ActewAGL) to provide for appropriate levels of network asset renewal and preventative maintenance. This is necessary if ActewAGL is to manage the physical network assets to an acceptable standard and maintain the serviceability of those networks, i.e. the safe and effective long-term management of the infrastructure for delivering essential utility services to the ACT community.

In February 2008 ACTPLA initiated discussions with key stakeholders aimed at developing proposals for reform that will provide a more effective and transparent framework for technical regulation of utility services, including electricity distribution, in the ACT.

While as Technical Regulator ACTPLA has a concern with the investment and maintenance needed to ensure long-term network serviceability, it also has a more immediate responsibility for ensuring regulated utilities comply with relevant technical standards and technical codes.

The AER focus under the proposed incentive scheme appears to be on short-term improvements in reliability, quality and customer service performance via incentive payments. AER specifically excludes long-term major events which can be caused by under investment and maintenance (2.5 beta method).

Role of incentives

The AER has been required to develop an incentive scheme for reliability, quality and customer service. The scheme should ensure that AER pricing regulation of electricity distribution network service providers is not at the expense of service performance for customers. This requirement recognizes that price regulation can lead to under-investment in reliability, quality and customer service.

The National Electricity Law requires that the AER takes into account the need to ensure that the scheme's incentives are sufficient to offset any financial incentives the service provider may have to reduce costs at the expense of service levels.

However, it is not clear that the level and structure of incentives proposed by AER meets this requirement. Indeed, incentives tied to performance indicators may have unintended impacts which will vary with the strategic orientation of the network provider (Rajagopalan, 1997).

Incentives, misallocation and market failure

The Technical Regulator has carried out three audits of aspects of the ACT electricity distribution network within the past two years to determine whether or not the network service provider is meeting its obligations under its own management plans. In each of these audits (covering timber power poles, minipillars and substations), it was found that maintenance and replacement practices had fallen to unacceptable levels.

In the ACT, the distribution utility produces an asset management plan which details (with notable exceptions) the maintenance policy for each item of equipment. It has been the regulator's experience that much of these assets are only 'maintained' if faulted or damaged or, in some significant cases, defective assets were not being tested by the utility in accordance with its own standards. Some of these problems had resulted in potentially serious risks to the safety of consumers and network workers.

In our experience there is thus evidence to suggest that the down grading of maintenance levels in the electricity distribution sector is already occurring. In the monopoly position of the distribution network provider in the ACT, it has largely been the intervention of the Regulator that has focused the utility's attention on long term sustainability and on certain other network management and safety obligations.

The AER incentive scheme could in theory operate concurrently with minimum service and performance standards that the Technical Regulator may apply. However, there is a real potential that the incentive scheme could encourage the network provider to focus on investments and maintenance which are cheaper than paying AER's under-performance fines, at the expense of investment and maintenance that would be more appropriate to long-term network serviceability.

The AER reliability performance indicators focus incentives on short-term impacts within the regulatory period and specifically exclude major service disruptions. This may encourage service providers to place a lower priority on the avoidance of long-term major events, or more likely, a lower priority on preventative maintenance and well sequenced asset renewal leading to an incremental decline in serviceability. A marginal improvement in short-term efficiency may therefore not compensate for the large cost of long-term declines in asset performance.

The AER incentive scheme focuses rewards and punishments on average performance which will encourage investment and maintenance activities away from servicing costly customers. This will exacerbate inequity of service performance. The Guaranteed Service Level component of the scheme is unlikely to overcome this problem because in many cases it will be more profitable to pay the penalty than provide the guaranteed service level. This is an unusual use of the word 'guaranteed'. As electricity is an essential service, guaranteed should mean guaranteed in its strong sense (i.e. assured, definite). While using estimates of 'marginal willingness to pay' for the GSL penalty may appear to provide economic efficiency, it may really be promoting opportunities to increase profitability by reducing service standards.

The AER incentive scheme as proposed could undermine the importance and effectiveness of clearly specifying service standards and public reporting against these standards. The scheme may make network providers less accountable for the level of service they provide. The literature on the experience with performance indicators tied to incentive payments is that while this provides an external motivation to maximise the financial rewards it damages intrinsic motivation to improve performance. Effort is focused narrowly on the measured and rewarded performance, while activities which support overall network

reliability or long-term performance are reduced or cut out altogether. For example the AER's GSL scheme allows service providers to purchase an exemption from providing service performance to certain customers. It places a premium on economic efficiency at the expense of equity. The AER incentive scheme needs to include both financial (external) and non-financial (intrinsic) incentives to maintain and improve service performance (Frey and Osterloh 2002).

The service standards and public reporting under the AER incentive scheme should include reference to asset management plans, including long-term investment and maintenance, which are comparable across electricity service providers and enable a comparison against best practice and any future national benchmarking. The AER's reliability performance indicators focus on continuous yearly improvements, however, in our experience unless close attention is paid to the cumulative effect of seemingly 'minor' negative shifts in asset maintenance, such incremental running down of maintenance has the potential, if unchecked, to lead to substantial 'catch-up' costs to reverse network deterioration or even the possibility of major system failure events.

These technical regulation issues are outside of the immediate scope of the AER's responsibilities and require long-term network asset planning outside the year-on-year economic performance indicators. However, it has been the experience of the ACT utility regulators, i.e. Technical Regulator (ACTPLA) and the Independent Competition and Regulatory Commission (ICRC), that it is difficult at times to make a clean separation between technical and economic regulation (e.g. overlaps between levels of network maintenance and the quality of customer service). It is therefore important that consistent, on-going liaison is established between AER and the State and Territory energy utilities technical regulators.

The common set of agreed measures in AER's national public reporting regime could be an appropriate place for cross-referencing against network service providers asset management plans and measures of network technical performance. Short-term reliability incentive payments should be contingent on network service providers having provided asset management plans to the relevant jurisdictional regulators, which would be able to review these plans and audit their implementation.

Pricing decisions by the AER will naturally take account of the capital and maintenance investment required by such plans. Where extra investment and maintenance is required to carry out work that should have been done in accordance with a plan but has not, any additional funding should come from network distributor's profits and not from consumers via pass through mechanisms for prices, especially where the under investment was associated with higher profits.

Regarding the symmetry of payments and penalties, research on economic valuation shows that possession is valuable in itself. This means that giving up an existing service standard is more costly to consumers than the value of getting the service standard. This is very evident in the strenuous complaints about loss of service versus fewer complaints about existing low service. AER might consider asymmetric payments to reflect this.

Safety and security of electricity supply are not services that consumers normally consider in a pricing framework. Typically these are viewed as minimum standards where the standard is the level of safety and security currently enjoyed. AER might also consider asymmetric payments to reflect this.

Performance indicators for quality of supply are not included in the AER scheme. Such indicators generally relate to aspects of the network technical performance. One of the major (and most meaningful) performance indicators for quality of supply applicable to

electricity distribution networks is the level of voltage at customers' terminals. It is easily measured and could be considered for inclusion in the AER's national public reporting regime. A period of voltage being supplied below or above statutory limits is not classified as 'loss of supply'. It is therefore not reportable. The consequence for the customer when receiving voltages outside the statutory limit is onerous as it can impose a significant external cost on those consumers. Low voltage leads to the possible burning out of motors in appliances such as refrigerators and washing machines. Above limit voltage can cause premature malfunctioning of lighting and control equipment. In this instance there is clear market failure, as unfortunately few customers would be aware that the voltage to their premises was too high or too low, or even aware of the consequences of this. Customers would therefore be unlikely to complain.

In the ACT, the electricity distribution utility has a statutory obligation under the ACT Supply Standards Code to monitor voltage levels and report annually to the Technical Regulator, although it appears to have moved to relying on data derived from the number of customer complaints received, which are few, as the basis of this 'monitoring'.

Conclusion and General Principles

As Technical Regulator, ACTPLA asks AER to ensure that any incentive scheme adopted will not have negative, unintended impacts on the long-term network serviceability.

In particular, great care should be taken to ensure that incentive schemes do not provide an opportunity to maximise short-term financial rewards *at the expense of under investment in infrastructure maintenance and capital renewal*. Any incentives provided should be contingent on the network service provider demonstrating to the relevant jurisdictional regulators that adequate maintenance and investment is being maintained at a level sufficient to guarantee long-term serviceability.

From a technical regulation perspective, the broad objective should be to ensure the

- (1) serviceability of utility networks over the long-term; and
- (2) effective deployment by the utility of technical skills and management systems to deliver the required performance.

In this context:

Serviceability of a network means the ability of the physical infrastructure of the network, in terms of its sizing, nature and condition to provide required performance.

Required performance means the delivery of utility services to required technical standards in relation to:

- health and safety of utility workers, customers and the protection of public and private property,
- provision of utility services to customers and for any relevant community service obligations; and
- environmental performance.

To comply with this objective a utility must maintain an adequate level of expenditure for network creation, operation, maintenance and renewal.

The Technical Regulator believes that the following general principles should apply to regulatory decisions that will impact on pricing:

- The utility should be required to maintain network serviceability at least at a stable level.
- Where serviceability has declined, the catch-up should be funded by the utility, not through price increases.
- The pricing structure may need to make special provisions for a utility's regulatory compliance requirements, but only where those requirements are newly introduced or tightened since the previous price determination.
- Maintenance of network serviceability is a core utility responsibility, and price increases should not be permitted for the purpose of maintaining compliance with pre-existing regulatory requirements and technical standards. If a regulator focuses attention on a particular aspect of compliance, this should not be seen as a tightening of the regulatory framework.
- In allowing for any necessary capital works, including new works, capacity augmentations and infrastructure renewals, the regulator should be satisfied on the basis of an ex-ante analysis that the proposed budget or Asset Management Plan line items represent the least cost options, on an all-of-life costing basis. In particular for maintaining network serviceability, the work items should constitute the least all-of-life cost mix of proactive versus reactive maintenance and renewals.
- A mechanism should be in place to ensure that funds allocated or sanctioned for asset renewal and maintenance in a price determination are spent in accordance with a utility's proposed use as submitted in the determination, unless a more efficient way of achieving the same outcome is subsequently established and approved by the regulators.

References

Frey, Bruno S. and Margit Osterloh (eds.) (2002) *Successful Management by Motivation: Balancing Intrinsic and Extrinsic Rewards*. Berlin, Heidelberg and New York: Springer.

Rajagopalan, Nandini (1997) 'Strategic orientations, incentive plan adoptions, and firm performance: evidence from electric utility firms', *Strategic Management Journal*, Vol. 18, No. 10.
