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Dear Mr Khan

SCER request for advice on differences between actual and forecast demand in network regulation

The Standing Council on Energy and Resources (**SCER**) has requested the Commission's advice on a number of matters pertaining to the consequences of differences between actual and forecast demand in network regulation. Jemena thanks the Commission for the workshop that it held on 28 February and for the opportunity to make this submission.

The principal driver for the SCER's reference to the AEMC is current concern about the level of electricity prices. The investigation has 2 main strands:

- whether network service providers (**NSPs**) can and do change their capital expenditure (**capex**) plans, and hence the costs that they actually incur, in response to changes in forecast demand growth
- whether tariff control mechanisms currently applying are delivering intended outcomes.

NSP responses to changes in forecast demand growth

In summary, NSPs can and do change their capex plans in response to changes in forecast demand growth. However, those plans are not completely flexible. For example, it is usually not possible to re-scope, defer or discontinue large long lead-time projects once they are committed. Also, because capital costs are recovered over the life of an asset, which may be as long as 50 years, a change in capex today has a long term rather than a short term effect on prices.

Recent rule changes can be expected to result in measurable changes in regulatory outcomes and NSP behaviour. Those changes must be implemented and allowed to operate for some time before further rule changes are considered. The most recent rule changes have already led to a significant, unfavourable, change in perceptions of risk for the Australian regulated utilities sector.

How does capex affect prices?

The revenue and pricing principles in the National Electricity Law (**NEL**) state, among other things that:

- (2) A regulated network service provider should be provided with a reasonable opportunity to recover at least the efficient costs the operator incurs in—
- (a) providing direct control network services; and
- (b) complying with a regulatory obligation or requirement or making a regulatory payment.
- ...
- (6) Regard should be had to the economic costs and risks of the potential for under and over investment by a regulated network service provider in, as the case requires, a distribution system or transmission system with which the operator provides direct control network services.
- (7) Regard should be had to the economic costs and risks of the potential for under and over utilisation of a distribution system or transmission system with which a regulated network service provider provides direct control network services.¹

The Australian Energy Regulator (**AER**) is required to assess the NSP's costs by applying the building block method where the principal building blocks are indexation of the regulatory asset base, return on capital, depreciation, forecast operating expenditure, and the estimated cost of corporate income tax.² The amounts allowed by the AER in each of those building blocks for Jemena Electricity Networks (Vic) Ltd (**JEN**) for the current 2011-15 regulatory period are as follows:

Building block	"Allowance" (\$million, real \$2010)	Per cent of total	
Indexation of the regulatory asset base	106.6	11.5%	64.5%
Return on capital	321.1	34.7%	
Depreciation	169.0	18.3%	
Forecast operating expenditure.	296.3	32.0%	32.0%
Estimated cost of corporate income tax	32.6	3.5%	3.5%
TOTAL	925.6	100.0%	100.0%

It is clear that capital-related costs (at almost 2/3 of the total) dominate. Approximately \$476 million or 80 per cent of those costs are associated with the "sunk" capital that made up JEN's regulatory asset base at the beginning of the period, with the remaining 20 per cent attributable to capex forecast to occur during the period. The value of the regulatory asset base as at 1 January 2011 is \$764.2 million compared with forecast capex for the 2011-15 period of \$487.1 million (real, \$2010). Although forecast capex is over 60 per cent of the value of the regulatory asset base, it has only a relatively small effect on costs in the period in which it is spent because it is spent throughout the period and is recovered over the lives of the assets which may be as long as 50 years and so extend well beyond the current period.

What scope is there to change capex programs in response to changes in forecast demand?

The approved forecast capex for JEN for the 2011-15 regulatory period is categorised as follows:

¹ National Electricity Law, s. 7A.

² National Electricity Rules, s. 6.4.3.

Capex category	\$ million (real, \$2010)	Per cent of total
System – demand-related		
Reinforcement	98.4	20.2%
New customer connections	142.3	29.2%
Total demand-related	240.7	49.4%
System – non demand-related		
Reliability and quality maintained	52.8	10.8%
Environmental, safety and legal obligations	80.6	16.5%
Total non demand-related	133.4	27.4%
Total non-system	113.0	23.2%
TOTAL	487.1	

Total forecast capex for the period is divided almost equally between capex that is required to meet forecast demand growth and capex required for other purposes. Of the demand-related component, approximately 40 per cent is for reinforcement with the remaining 60 per cent being for new connections.

Expenditure decisions that JEN makes during a regulatory period are based on the JEN's view of demand at the time the decision is made, not the forecast determined by the regulator at the time of the review. JEN reviews its forecast at least annually. Smaller reinforcement works can be (and are) re-scheduled and/or re-scoped in response to changes in projected demand, however larger projects, such as zone substation upgrades, that have long lead times cannot be re-scoped, deferred or discontinued economically once committed. So, for those types of projects, a business cannot respond immediately to "sustained reductions in demand". On the other hand, expenditure that is directly related to connections themselves is very responsive to changes in demand.

The fact that such a large proportion of capex is growth-dependent is one reason why a price cap or yield form of control is more appropriate than a revenue cap for Distribution NSPs.

Capex reductions (relative to allowance) may arise from improved efficiencies in managing and delivering the capex program or as a result of changes to the program in response to a downward revision of the demand outlook. Any change in capex (relative to allowance) that occurs within a regulatory period has no effect on prices until the change is reflected in the regulatory asset base at the beginning of the next regulatory period. The change will then affect revenue requirements from that point on for the life of the asset which, as noted previously, can be as long as 50 years for some distribution assets.

Regulatory forecasts

It must be noted that the 5 yearly review process involves forecasting based on information and assumptions that may be "locked in" a year or more before the beginning of the new regulatory period. Regulatory allowances are no more than forecasts and long range forecasts at that when compared to normal business budgeting cycles. Moreover, the forecasts of both demand and expenditure generally represent only one view—that of the regulator. They are rarely "consensus" forecasts and certainly are not budgets or

contractually agreed amounts. Variances are inevitable. In terms of demand forecasts, this is illustrated by the history for JEN:

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Average Number of Customers (,000)												
- EDPR forecast	255.6	258.1	261.2	264.4	267.6	291.1	295.9	300.4	305.0	309.9	310.2	315.9
- Actual results	263.0	269.2	275.6	281.9	290.1	296.3	302.0	303.3	307.2	312.0	314.7	319.4
Difference Actual vs EDPR	7.4	11.0	14.5	17.5	22.5	5.2	6.1	2.8	2.2	2.1	4.6	3.5
Difference Actual vs EDPR (%)	2.9%	4.3%	5.5%	6.6%	8.4%	1.8%	2.0%	0.9%	0.7%	0.7%	1.5%	1.1%
Energy (GWh)												
- EDPR forecast	4,071	4,180	4,300	4,403	4,503	4,213	4,264	4,302	4,326	4,357	4,334	4,322
- Actual results	4,004	3,988	4,093	4,165	4,175	4,278	4,379	4,490	4,376	4,450	4,415	4,365
Difference Actual vs EDPR	-67	-192	-206	-238	-328	65	115	187	50	93	81	43
Difference Actual vs EDPR (%)	-1.6%	-4.6%	-4.8%	-5.4%	-7.3%	1.6%	2.7%	4.4%	1.2%	2.1%	1.9%	1.0%
System Peak Demand (MW)												
- EDPR forecast						884.1	908.0	927.3	945.8	962.8	989.0	1,017.8
- Actual results						815.1	867.4	950.0	1,010.9	957.8	1,008.2	847.9
Difference Actual vs EDPR						-68.9	-40.6	22.7	65.2	-5.0	19.2	-169.8
Difference Actual vs EDPR (%)						-7.8%	-4.5%	2.5%	6.9%	-0.5%	1.9%	-16.7%

Note: System peak demand data not available for 2001-05.

Incentives and the consequence of recent rule changes

For privately owned network businesses, and certainly for Jemena, capital is a scarce resource and there are strong drivers within the business to spend it efficiently and productively. The regulatory regime provides additional incentives for efficient expenditure.

The rule changes that came into effect in November 2012 introduce new and changed provisions that:

- give the AER greater discretion in the way that it assesses NSPs' expenditure proposals
- change the way in which the allowed rate of return will be determined
- include new contingent project, capex reopener, and regulatory investment test arrangements for distribution business
- extend the range of incentives that may be applied to NSPs to improve the efficiency of expenditure within periods.

In addition, the merits review regime is currently under review.

These are material changes that, together, can be expected to produce a measurable change in regulatory outcomes and in NSP behaviour. They will need to be implemented and allowed to operate for some time before their effects and effectiveness can be assessed. That assessment may indicate a need for further changes. In the meantime, there should be no further changes to the substance of those aspects of the regime. Regime stability and predictability are important to maintaining investor confidence.

Already the most recent rule changes have led to a significant and unfavourable change in perceptions:

Moody's Investors Service has changed its outlook on the Australian regulated utilities sector to negative.

The negative outlook reflects the increased uncertainty in the regulatory environment following the introduction of new rules in November 2012 that govern the revenue-setting process for the utility networks sector.

"The new rules challenge the sector's credit profile by reducing the predictability of regulated revenues. In our view, the increased emphasis on regulator discretion under the new rules will likely reduce revenue predictability in the future, particularly because there isn't a track record on how these powers will be exercised," says Spencer Ng, a Moody's Assistant Vice President and Analyst.

"At the same time, we believe the increase in regulator power to define the return-setting framework could result in lower regulated returns for the networks" adds Ng.³

Tariff control mechanisms

Jemena has contributed to and supports the submission which the 5 Victorian distributors have made to the Commission.⁴ In summary, we believe there is a compelling case for retaining weighted average price cap (**WAPC**) as the tariff control mechanism for Victorian distributors. The principal reason for this conclusion is that WAPC is the mechanism that is most consistent with realising the full benefits of variable pricing which is to be introduced in Victoria from 1 July this year.

Jemena further notes that, when introducing the initial electricity distribution pricing rules into the National Electricity Rules (**NER**) in 2006, the Ministerial Council on Energy (**MCE**), through its network policy working group, engaged the expertise of NERA Economic Consulting (**NERA**). Under the section on 'incentives under different forms of price control' of its final report to the MCE, NERA noted:⁵

In short, the implication is that the form of price control influences the extent to which DNSPs are motivated to price efficiently, but that neither form of control provides perfect incentives.

With regard to a revenue cap NERA states:⁶

Under a revenue cap form of price control, firms have little or no incentive to ensure that their prices are calibrated so as to reflect marginal cost or to avoid distorting customers' usage decisions. In fact the most likely motivation for firms subject to a revenue cap is to collect these revenues in a manner that generates the least amount of customer resistance. This is because revenue caps generally ensure that a DNSP will receive the maximum allowed revenue regardless of changes in customer numbers or consumption.

With regard to a WAPC, NERA states:⁷

Under a price cap form of price control, regulated firms face greater incentive to price efficiently because they are exposed to revenue sufficiency risk. The DNSP will need to

³ Moody's Investors Service, *Announcement: Moody's: Negative outlook on Australian regulated utilities*, Sydney, February 21, 2013

⁴ Letter from CitiPower, Powercor, SP AusNet, United Energy Distribution and Jemena dated 13 March 2013.

⁵ NERA Economic Consulting, *Distribution Pricing Framework, Network Policy Working Group*, December 2006, pp. 11-12.

⁶ Ibid.

⁷ Ibid.

ensure its prices are reflective of the marginal cost of service because where demand is less than forecast, the firm will not be able to recover the foregone revenue.

In recognition of the imperfections of both forms of price control the NER provides pricing principles to support the development of efficient prices.⁸ Nonetheless, it is preferable to have a combination of incentives—which are enhanced by a WAPC form or price control—and rules rather than rules alone. Such a combination is more in keeping with recent regulatory reforms to the rules around capital expenditure and related incentives.⁹ It would be a retrograde step to elevate Revenue Cap as the form of price control thereby reducing incentives and placing sole reliance on the rules to achieve efficient pricing.

If you wish to discuss this submission please contact me on (03) 8544 9053 or at robert.mcmillan@jemena.com.au

Yours sincerely

A handwritten signature in blue ink, appearing to read 'R McMillan', is positioned above the typed name.

Robert McMillan
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⁸ National Electricity Rules, clause 6.18.5.

⁹ AEMC, *Economic Regulation of Network Service Providers*, 29 November 2012.