Advanced Metering Infrastructure

2012-15 Budget and Charges Application

AER's Preliminary View on Amendments pursuant to the Australian Competition Tribunal's Orders

Supplementary Submission on AMI Project Costs

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SP AusNet
A member of Singapore Power Group

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1 Context and purpose of this supplementary submission

In the course of reviewing SP AusNet's Reconsideration Submission (dated 5 June 2012) and SP AusNet's Submission (dated 14 September 2012) on the AER's Preliminary View, the AER sent an email to SP AusNet on 30 November 2012 seeking answers to three questions. The AER's email also outlined the AER's then current view that:

- the overall quantum of switching costs is unlikely to materially change from that estimated by the AER in its Preliminary View; and
- based on the further information that has come to light, the AER might consider that a reasonable business in SP AusNet's circumstances would have incurred no switching costs in 2012-15. Rather, these would have been incurred in 2011.

The AER's email noted that before determining its views on these issues, the AER thought it appropriate to provide SP AusNet with an opportunity to comment.

SP AusNet submitted its response to the AER's 30 November 2012 email on 14 December 2012. In addition to the information set out in that response, SP AusNet wishes to note its ongoing concern that the AER's preliminary and subsequent views appear to be based on a misunderstanding of the different operating structures and organisational arrangements adopted across the industry to implement the AMI project. This misunderstanding may be leading the AER to draw invalid cost comparisons of various AMI project activities across the Victorian DNSPs.

The purpose of this supplementary submission is:

- to reiterate that the AER is in error when it directly compares SP AusNet's and Powercor's AMI costs at an activity level; and
- to provide a valid comparison of the total AMI program costs of SP AusNet and Powercor.

This submission is structured as follows:

- Section 2 provides a recap of SP AusNet's position in response to the AER's Preliminary View.
- Section 3 provides an overview of the key differences between SP AusNet and the other DNSPs in terms of the design and delivery of their AMI programs. This information highlights the difficulties in comparing the costs incurred by different DNSPs for specific AMI activities.
- Section 4 presents a comparison of the total AMI rollout costs of SP AusNet and Powercor, after making the adjustments required to enable a valid cost comparison.
- Section 5 presents concluding comments.

2 Recap of SP AusNet's position

To assist it in preparing its response to the AER's Preliminary View, SP AusNet engaged DNV KEMA ("KEMA") as an independent expert to undertake a cost benefit analysis of the technology options open to SP AusNet at the reconsideration date. KEMA's AMI and Smart Grid team is a worldwide leader in planning, designing, and implementing advanced communications, AMI, distribution and substation automation and Smart Grid utility systems.

KEMA's report was provided to the AER as part of SP AusNet's 14 September 2012 submission on the AER's Preliminary View. The KEMA report identified a number of problems with the AER's Preliminary View (and the Energeia Report relied upon by the AER) that materially affect the validity of the AER's conclusions. A key finding made by KEMA that undermines the AER's conclusions is that the Mesh solution cannot be implemented in the timeframe proposed by Energeia. KEMA proposed a realistic implementation timetable. SP AusNet submitted that a prudent business would plan on the basis of KEMA's advice regarding an achievable implementation timetable.

KEMA provided a very detailed assessment of the two alternative technology options. KEMA's assumptions and approach are explained fully in its report and accompanying models, which were provided to the AER. SP AusNet continues to regard the KEMA report as highly reliable, and considers that it provides a sound and well-substantiated basis on which a prudent company would have chosen between the alternative options.

The analysis prepared by KEMA showed that the total present value cost (over 15 years) to SP AusNet of adopting a Mesh solution exceeds that of the WiMAX option by $48.6 million. This difference comprises:

- the costs to switch from WiMAX to Mesh of $56.8 million; minus
- the lower capital expenditure and operating costs of WiMAX compared to Mesh over 15 years of $8.2 million.

SP AusNet submitted that the AER has failed to establish that SP AusNet's decision to continue to incur WiMAX related expenditure over the 2012-15 budget period is a substantial departure from the commercial standard given the independent expert evidence provided by KEMA, which showed that:

- the Energeia modelling of the Mesh radio and WiMAX costs is incorrect, unreliable and relies on information that would not have been available to SP AusNet as at the reconsideration date of 28 February 2011; and
- a proper analysis of the two options, based on reasonable assumptions and restricted to the 28 February 2011 information, shows that the least cost option for SP AusNet was to continue with the proposed WiMAX expenditure.

3 Key differences between SP AusNet and other DNSPs, and implications for cost comparisons

SP AusNet chose a WiMAX communications technology for its AMI program, while all other Victorian DNSPs chose Mesh radio. This factor naturally gives rise to differences between SP AusNet and the other DNSPs in terms of the costs of specific activities within the AMI project. However, a further significant difference is the organisational arrangements adopted by the DNSPs to deliver the AMI program. Specifically, SP AusNet is the only DNSP that has implemented the AMI project on a "stand-alone" basis, which is an important aspect of SP AusNet's particular circumstances that must be taken into account in the AER's reconsideration. In contrast to SP AusNet's circumstances:

- The common ownership of CitiPower and Powercor enabled these two DNSPs to run a single AMI project, and to split the total costs of the project over two separate businesses.

- United Energy (UED) and Jemena Electricity Networks (JEN) sought economies of scale through the establishment of a joint project and cost sharing arrangements.

SP AusNet's circumstances are such that it did not have the opportunity to share project costs with any other businesses. Therefore, in establishing and delivering the AMI project, SP AusNet has incurred costs for a variety of activities on a stand-alone basis, whereas the other four DNSPs have shared the costs across two AMI projects. In light of these differences, SP AusNet's submission of 14 September 2012 noted that it is inappropriate to adopt other distributors' costs in estimating the costs to SP AusNet of implementing a Mesh solution. In this regard, KEMA made the following observation in its report[1]:

> *"The use of other proxies for IT systems does not reflect SP AusNet's costs as other distribution businesses have the ability to share costs where a single solution has being utilised by two utilities (i.e. Citipower / Powercor and Jemena / UED). DNV KEMA also has a concern that the other distributors, which are used as proxies, may have different cost allocation methodologies that makes direct comparison of individual line items difficult. This emphasises the importance of focussing on the total cost of the solutions in making any comparisons."*

SP AusNet also noted in its submission of 14 September 2012 that adopting other distributors' costs fails to give adequate regard to the circumstances of SP AusNet as required by clause 5I.8 of the Order. It is also inconsistent with the reasons of the Tribunal at paragraph 130, where the AER's previous approach of determining what costs are not prudent by reference only to the Mesh costs of the other businesses was found to be an error of fact.

SP AusNet stands by the views expressed in its 14 September 2012 submission in relation to these matters.

[1] KEMA, Assessment of AMI Communication Options, 14 September 2012, page 3.

As highlighted in the Tribunal's findings, the AER must recognise SP AusNet's particular circumstances at the time of the reconsideration. To account properly for the different circumstances of the businesses, the following factors need to be considered in making cost comparisons:

- IT cost sharing arrangements that benefit distributors that have joint programs.
- Purchasing power of meters due to economies of scale in meter volumes.
- Differences in exchange rates, noting SP AusNet's decision to hedge its exchange rate.
- Other cost sharing arrangements – including project management office (PMO), meter data management and reading, customer service and control room operations – which benefit distributors that have joint programs.
- Differences in the treatment of debt and equity raising costs.

These factors are examined in Section 4 below, which sets out a comparison of the total costs of SP AusNet's and Powercor's AMI programs on a stand-alone basis.

4 Total AMI rollout cost comparison between SP AusNet and Powercor

4.1 Introduction

This section of the submission sets out the adjustments required to enable a valid comparison of the costs of SP AusNet and Powercor across the whole of the AMI program.

Before examining the adjustments that enable a valid comparison of costs, it should be noted that in addition to the differences described in section 3, the DNSPs also have different AMI expenditure profiles over the period from 2006 to 2015. Accordingly, it is not possible to make cost comparisons in relation to a particular year as genuine cost differences may be conflated with different cost profiles.

Tables 1 and 2 below show Powercor's and SP AusNet's total AMI rollout expenditure (in real 2008 dollars) before any adjustments are made to facilitate a valid comparison of the two sets of costs.

Table 1: Powercor proposed expenditure (unadjusted)

Real 2008 $M	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Powercor capex	0.35	2.95	11.35	34.69	93.93	98.87	107.57	73.06	15.22	12.08	**450.06**
Powercor opex	1.62	5.97	9.57	23.64	18.77	23.30	22.77	21.41	20.00	19.83	**166.88**
Powercor expenditure	**1.97**	**8.91**	**20.93**	**58.32**	**112.70**	**122.17**	**130.34**	**94.46**	**35.22**	**31.91**	**616.94**

Notes:
1. 2006-11 values – Powercor AMI Budget and Charges Determination 2009-11, October 2009.
2. 2012-15 values – Powercor Amended Submitted Budget, August 2011.

Table 2: SP AusNet proposed expenditure (unadjusted)

Real 2008 $M	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
SP AusNet capex	-	3.85	10.03	36.76	83.58	86.64	155.26	82.85	6.42	3.42	**468.83**
SP AusNet opex	1.09	3.42	8.00	25.85	37.45	45.21	40.62	38.92	24.41	23.98	**248.96**
SP AusNet expenditure	**1.09**	**7.27**	**18.04**	**62.61**	**121.03**	**131.86**	**195.88**	**121.77**	**30.84**	**27.40**	**717.78**

Notes:
1. 2006-11 values – SP AusNet AMI Budget and Charges Determination 2009-11, October 2009.
2. 2012-15 values – SP AusNet Amended Submitted Budget, August 2011.

A crude comparison of the data presented in Tables 1 and 2 suggests that SP AusNet's total expenditure is 116 per cent of Powercor's expenditure over the life of the AMI project. However, as previously noted, various adjustments must be made in order to facilitate a valid comparison of the overall costs of the AMI programs of SP AusNet and Powercor. These adjustments are described in the following sections.

4.2 Adjustments for cost sharing arrangements

As noted in section 3, the sharing of project activities and costs has enabled each of UED, JEN, CitiPower and Powercor to obtain savings in relation to IT costs; PMO costs; and shared overheads. These distributors have also obtained economies of scale through increased purchasing power that was not available to SP AusNet.

IT system costs do not increase in a linear fashion with meter numbers. In fact, IT system costs increase in a stepped fashion as the volume of transactions increases. In the context of the AMI project, it is a reasonable working assumption that the costs for a stand-alone business such as SP AusNet would not be materially lower than the combined costs faced by UED/JEN or CitiPower/Powercor.

In Powercor's case, that company has shared its AMI IT capital and operating expenditure with CitiPower. In order to compare SP AusNet's and Powercor's AMI expenditure, these shared costs must be included in Powercor's total expenditure to ensure that the economies of scale are accounted for properly.

Table 3 below sets out CitiPower's IT operating and capital expenditure.

Table 3: CitiPower's IT expenditure

Real 2008 $M	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
CitiPower IT capex	0.35	1.69	6.81	12.39	11.18	8.72	8.34	4.27	3.18	2.18	59.11
CitiPower IT opex	-	-	-	1.49	2.43	2.58	3.31	3.49	3.12	3.16	19.60
CitiPower IT expenditure	**0.35**	**1.69**	**6.81**	**13.88**	**13.62**	**11.30**	**11.65**	**7.76**	**6.30**	**5.34**	**78.70**

Notes:

1. *IT Capex (2006-11) – CitiPower Charges Application template, Final Determination, October 2011.*
2. *IT Capex (2012-15) – CitiPower 'Amended Submitted budget', Final Determination, August 2011, page 248.*
3. *IT Opex (2006-11) – CitiPower Revised Budget, August 2009.*
4. *IT Opex (2012-15) – CitiPower 'Amended submitted budget', Final Determination, August 2011, page 274.*

Table 4 shows CitiPower's IT operating and capital expenditure, which is added to Powercor's expenditure (also shown) to produce an estimated total expenditure for Powercor after adjusting for IT cost sharing arrangements only.

Table 4: Powercor expenditure and CitiPower IT expenditure

Real 2008 $M	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Powercor expenditure	1.97	8.91	20.92	58.32	112.7	122.17	130.34	94.46	35.22	31.91	**616.94**
CitiPower IT opex and capex	0.35	1.69	6.81	13.88	13.62	11.30	11.65	7.76	6.30	5.34	**78.70**
Powercor expenditure and CitiPower IT expenditure	**2.32**	**10.61**	**27.74**	**72.20**	**126.32**	**133.47**	**141.99**	**102.22**	**41.52**	**37.26**	**695.64**

Table 4 shows that SP AusNet's total expenditure over the 2006-15 period ($717.78 million - refer to Table 2) is 103 per cent of Powercor's expenditure when CitiPower's IT operating and capital expenditure are included in Powercor's costs ($695.65 million).

Other cost sharing arrangements between CitiPower and Powercor have not been accounted for in this comparison. These include but are not limited to: PMO, meter data management and reading, customer service, and control room operations (NOC).

4.3 Other adjustments

There are 3 distinct and well documented differences between the Powercor and SP AusNet AMI rollout expenditure that must also be considered to ensure a true comparison of total project costs. These are as follows:

- ***Exchange rate:*** SP AusNet hedged an exchange rate of $0.80 AUD/USD in 2010, while Powercor assumed an exchange rate of $1 AUD/USD for the life of the AMI program. This exchange rate difference affects meter equipment capital expenditure, which is denominated in US dollars for both distribution businesses.

- ***Capital raising costs:*** SP AusNet's AMI expenditure includes debt and equity raising costs, while Powercor excludes this cost category.

- ***Meter volumes:*** SP AusNet has 84 per cent of Powercor's meter volume, therefore Powercor's meter capital expenditure must be adjusted to take this difference into account.[2]

Table 5 below presents an estimate of Powercor's total expenditure adjusted for meter volumes and including CitiPower IT expenditure.

[2] It is noted that according to the AER's Final Determination, Powercor has 859,709 AMI meters; SP AusNet has 722,464 AMI meters.

Table 5: Powercor (capex adjusted for meter volumes) and CitiPower IT expenditure

Real 2008 $M	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Powercor (adjusted) capex	0.35	2.95	11.35	33.03	82.70	86.73	95.01	64.04	14.26	11.12	**401.55**
CitiPower IT capex	0.35	1.69	6.81	12.39	11.18	8.71	8.34	4.27	3.18	2.18	**59.11**
Powercor opex	1.62	5.97	9.57	23.64	18.77	23.30	22.77	21.41	20.00	19.83	**166.88**
CitiPower IT opex	-	-	-	1.49	2.43	2.58	3.31	3.49	3.12	3.16	**19.59**
Powercor (adjusted expenditure) + CitiPower IT expenditure	**2.32**	**10.61**	**27.74**	**70.54**	**115.09**	**121.32**	**129.44**	**93.21**	**40.56**	**36.30**	**647.13**

Table 5 shows that when Powercor's expenditure is adjusted to reflect SP AusNet's meter volumes, and to include the IT costs shared with Citipower, Powercor's total expenditure over the 2006-15 period is estimated to be $647.13 million. Table 6 below derives a comparable estimate of SP AusNet's total expenditure over the same period, after adjusting for the different exchange rates applicable to SP AusNet and Powercor, and to reflect the different treatments of capital raising costs adopted by the two companies.

Table 6: SP AusNet total expenditure (adjusted for exchange rate difference and capital raising costs)

Real 2008 $M	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Adjusted SP AusNet total expenditure	1.09	7.27	18.04	61.20	113.45	118.49	179.52	110.85	29.53	26.21	**665.64**

Tables 5 and 6 show that when appropriate adjustments are made to enable a valid comparison of the total AMI program costs over 2006 to 2015, SP AusNet's total expenditure ($665.64 million) is estimated to be 102 per cent of Powercor's expenditure ($647.13 million). As previously noted, this comparison does not take into consideration the impact of other cost sharing arrangements between Powercor and CitiPower.

4.4 Ongoing costs after 2015

A comparison of the total AMI project costs of SP AusNet and Powercor should include the ongoing costs of the program after completion of the initial roll-out. SP AusNet considers that AMI program costs in 2015 are a reasonable indication of ongoing costs after that date. Table 7 provides a comparison of Powercor's and SP AusNet's forecast 2015 expenditure – adjusted for the differences in meter volumes, exchange rates and capital raising costs.

Table 7: 2015 forecast AMI expenditure

Real 2008 $M	2015
Powercor expenditure (adjusted for meter volumes) and CitiPower IT expenditure	36.30
SP AusNet expenditure (adjusted for exchange rate difference and debt raising costs)	26.20

This comparison shows that SP AusNet's forecast ongoing costs are 72 per cent of Powercor's forecast ongoing expenditure (including CitiPower's IT expenditure).

5 Conclusion

The AER's Preliminary View and subsequent views expressed in its email of 30 November 2012 may be based on an incorrect assumption that SP AusNet could deliver certain components of the AMI project for the same costs as those reported by Powercor. There are significant differences between SP AusNet and Powercor in terms of opportunities for cost sharing, and the design and delivery of their AMI programs. These differences reflect the particular circumstances of the companies, and they make it impracticable to compare the costs of individual activities or line items across companies. It is therefore inappropriate for the AER to adopt other distributors' costs in estimating the costs to SP AusNet of implementing a Mesh solution without making appropriate adjustments.

SP AusNet's submission of 14 September 2012 included a detailed independent expert report prepared by KEMA. The KEMA report set out a proper analysis of the Mesh radio and WiMAX options, based on reasonable assumptions and restricted to the information available at the reconsideration date. The analysis showed that the least cost option for SP AusNet was to continue with the proposed WiMAX expenditure.

Should the AER wish to continue to benchmark SP AusNet's and Powercor's AMI expenditure, then any comparisons must be made at the level of total costs of the companies' AMI programs. In addition, appropriate adjustments must be made for the effects of IT cost sharing arrangements available to Powercor, and differences in meter volumes, exchange rates and the treatment of capital raising costs. The analysis set out in this supplementary submission shows that when these adjustments are made, SP AusNet's total AMI program costs are not materially greater than those of Powercor.