

EnergyAustralia Distribution Revenue - D Factor submission 2009/10

INDEPENDENT ASSESSMENT OF DEMAND
MANAGEMENT AVOIDED DISTRIBUTION COSTS
AND REVENUE FOREGONE FOR 2009/10

- Final Report (Rev3)
- 23 February 2011



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Introduction

Sinclair Knight Merz (SKM) has been engaged by EnergyAustralia to undertake an independent assessment of its D Factor submission for the 2009/10 financial year. The Australian Energy Regulator (AER) in its NSW DNSP revenue decision commencing 2009/10 has continued the “D Factor” regime introduced by the NSW Independent Pricing and Regulatory Tribunal’s (IPART) in the previous 2004 distribution pricing determination. The “D Factor” adjustment mechanism to the weighted average price cap formula was introduced with the intention of neutralising potential regulatory disincentives to Distribution Network Service Providers (DNSP’s) implementing cost effective demand management (DM) measures.

The D Factor contains two adjustments:

- for the cost of implementing the DM measures [capped at “*avoided distribution costs*”, and sometimes referred to interchangeably as avoided distribution costs (ADC)];
- for lost revenues associated with the impact of reduced energy¹ volumes under a weighted average price cap regulation formula.

SKM has reviewed each of EnergyAustralia’s active DM programs for the 2009/10 period to assess the reasonableness and accuracy of the ADC and foregone revenue figures reported by EnergyAustralia. There were no new DM programs implemented by EnergyAustralia during 2009/10.

1.1 Scope and limitations

SKM has reviewed each of the DM programs reported by EnergyAustralia for the 2009/10 financial year in its document *EnergyAustralia D Factor Submissions for 2009/10 Costs and Foregone Revenues*.

SKM has not conducted this review as a formal audit, but rather as an independent assessment and verification as to the reasonableness and accuracy of the material presented in EnergyAustralia’s D Factor submission. Information provided by EnergyAustralia has largely been accepted in good faith, although some cross checking and comparison with other source documents was conducted. In general, the standard of the review has been “negative assurance”, including sampling of data and a focus on those elements with the highest materiality or risk.

SKM has focussed its review on the areas of greatest materiality. Where there were similar projects (for example multiple generator or PFC programs) SKM has identified one or more

¹ Including chargeable demand, capacity as well as energy volumes that affect billable DUOS charges



projects for more detailed review, and relied on the results of these reviews to represent other (generally smaller or lower risk) projects of a similar type.

Where factors are not material (for example *avoided distribution costs* where the net cost of a DM program are zero) SKM has given the figures a less detailed review, in order to focus on other factors with higher materiality or risk.

This report is intended as independent verification to the AER of EnergyAustralia's D Factor submission for 2009/10 in accordance with the scope and limitations set out, and should not be used for any other purpose or relied upon by other parties without the written consent of SKM.

1.2 SKM Qualifications and Independence

The IPART D Factor guidelines² ("the Guidelines") require DNSPs to verify aspects of their D Factor submission by way of an independent report, that is, a report conducted by "an organisation which is independent of the DNSP, does not have a commercial interest in the outcome and is suitably qualified in the field of work". SKM considers it meets these criteria. In particular:

- It is independent of EnergyAustralia, and is not aware of any potential conflicts of interest that would prevent it from independently assessing EnergyAustralia's D Factor submission;
- SKM has no commercial interest in the outcome of EnergyAustralia's D Factor submission;
- SKM considers it is suitably qualified, including:
 - SKM undertook a study into *Avoided Distribution Costs and feasibility of Congestion Pricing* for IPART as part of the 2004 determination process, that set out the principles adopted by the Tribunal in implementing the D Factor;
 - SKM undertook EnergyAustralia's D Factor review for the 2008/09 period;
 - SKM has undertaken numerous regulatory and compliance audits in Australia and overseas, including auditing reporting of STPIS data by TNSPs for the AER;
 - SKM is an accredited and trained auditor for demand side abatement projects under the NSW Greenhouse Gas Abatement Scheme (GGAS) and National Greenhouse and Energy Reporting Scheme (NGERS);
 - SKM has conducted estimates of DSM potential, and verification and summary reports of DSM investigations for the Demand Management and Planning Project (DMPP). This gives SKM a good understanding of realistic and practical levels of achievable DSM, facilitation and investigation costs, etc;

² The AER "*Final Decision – Demand management incentive schemes for the ACT and NSW 2009 distribution determinations*", February 2008 adopts the IPART 2004-09 D-Factor scheme guidelines



- SKM staff assisted DEUS in the development of the Demand Side Abatement Rule to the NSW GGAS used to quantify energy savings arising from demand management initiatives;
- SKM has audited a number of demand side abatement projects under the NSW GGAS;
- SKM has undertaken independent network planning and capital budget assessments of distribution service providers in Australia and overseas, and is experienced in assessing both the need for, and cost of, distribution augmentations.

1.3 General issues

The following “boundary issues” were identified by SKM in EnergyAustralia’s 2009/10 D Factor review:

- Weighted average cost of capital. EnergyAustralia has advised that per advice from the AER it has used the following WACC’s in calculating D-Factor parameters in its report:
 - For rolling forward Avoided Distribution Cost caps prior to 1 July 2009, the figure stated in the IPART Guidelines³ (9.7% for nominal pre-tax cashflows), being the WACC applied in the previous regulatory period.
 - For rolling forward the total 2009/10 D-Factor claim amount to 2011/12 equivalent revenue, the WACC from the AER Distribution Determination as Amended by the Australian Competition Tribunal (10.02% for nominal pre-tax cashflows).

SKM considers this treatment reasonable, in that the regulatory WACC in force for the given years are applied, however, the issue is flagged for the AER’s consideration.

1.4 “Roll forward” of Avoided Distribution Costs from previous years

SKM notes that EnergyAustralia has outlined a methodology it has developed in its report of “rolling forward” remaining⁴ Avoided Distribution Costs from previous years. The Guidelines do not explicitly address how this is to be carried out, and EnergyAustralia has adopted the principle of inflating the remaining ADC balance from the previous year by the nominal discount rate.

SKM has reviewed this approach, and considers it is reasonable and equivalent to carrying out two or more year’s discounted cashflow analysis in one go. If this year’s and last year’s DSM implementation costs had been considered last year, this year’s costs would be discounted under the AER methodology. Because the “reference point” for analysis has now been shifted by a year, “inflating” the unspent portion of the ADC cap from last year and not discounting this year’s DSM

³ *Calculation of Avoided Distribution Costs (2005)*, p3.

⁴ The remaining amount of “unspent” ADC after DSM implementation costs in previous years are deducted. That is, the remaining amount of DSM costs that can be recovered before the ADC cap on costs is reached.



costs will yield the same result. Because actual costs are by definition in nominal dollars, the nominal discount rate should be used.

As for previous D Factor reviews conducted by SKM, it recommends this approach be accepted, and understands that similar approaches have been adopted by other DNSPs and accepted by IPART and the AER in previous years.



1. Wollombi Generator – Extension 2

EnergyAustralia's Wollombi temporary generator – Extension 2 DM project was implemented to allow further deferral of a number of inter-related network projects required to address capacity and voltage limitation in the rural Wollombi network. The DM project consisted of continued use of the existing temporary generator installation to provide network and voltage support and allow quality of supply to be maintained while the network projects were deferred beyond September 2006 (the original date proposed for the extension 1 project).

EnergyAustralia proposes the following D Factor figures for 2009/10:

| Factor | Value (\$000) |
|---------------------------------|---------------|
| Avoided Distribution Cost Cap | \$103.3 |
| DM Implementation costs 2009/10 | \$248.3 |
| Avoided Distribution Cost Claim | \$103.3 |
| Foregone Revenue 2009/10 | \$0.0 |

SKM has previously reviewed EnergyAustralia documents and information sources for the first year this program was claimed. Items reviewed in previous years have not been re-assessed. SKM has reviewed any significant changes and current year costs, and formed a view on the items described in the following sections:

1.1 Avoided Distribution Costs

A network constraint exists

EnergyAustralia has identified load, voltage, and security of supply issues with the long (52km) 11kV feeder supplying Wollombi and surrounding areas. These have been previously reviewed by SKM, and based on the original assessment, and updated planning documents based on current situation, SKM is satisfied a network constraint existed and continues to exist.

The proposed network solution for this constraint is a series of 14 inter-related projects with a total network cost of \$4.2M. Due to the complex nature of the network, and long periods required to re-conductor long lengths of 11kV feeder, the project cannot feasibly be undertaken as a single project.

The cost of the network expenditure deferred is reasonable

SKM has previously reviewed the network costs associated with this project, and determined they are reasonable. This includes the use of temporary generators to support the network and provide alternate supply during re-conductoring works, and SKM notes the capital costs associated with



installing the generators, and operating them during periods associated with capital works, have been allocated to the capital and ADC calculations, rather than as DM Costs.

SKM has conducted a high level assessment of the revised network solution, and considers the costs proposed are reasonable. While the likely timing of the deferred solution is notably long (out as far as 2012), SKM recognises there are resource constraints in this region, and it is not considered realistic the works could be carried out sooner. On this basis, SKM considers the cost of the network solution and ADC to be reasonable.

It is noted that EnergyAustralia's costs for this project in 2009/10 have exceeded the ADC Cap, and thus EnergyAustralia is only claiming costs to the cap limit. This is considered appropriate.

DM Implementation costs are reasonable

DM costs relate to operation of the standby generators for the period of deferral of the network solution. The AER has previously accepted EnergyAustralia's rationale and approach to the use of DM to reduce risk associated with unavoidable delays in providing network solutions.

EnergyAustralia has been conservative in its allocation of costs to DM, and only allocated those costs above what would have been required for an optimal network solution. Where the generator operates in support of network capital works the costs associated with the generator leasing and fuel were allocated to the capital project. Costs are based on continuation of existing generator leasing agreements which were based on competitive market rates. On this basis SKM considers the DM Costs assessed by EnergyAustralia to be reasonable.

There is a link between the demand management project and network expenditure

In its review of EnergyAustralia's 2004/05 D-Factor submission SKM undertook a review of the nature and timing of the supply constraint, and the likely impact of the proposed DM projects. This review found the DM projects could reasonably be expected to achieve sufficient reduction in peak demand to mitigate the supply constraint and allow network expenditure to be deferred or reduced, and hence there was a link between the DM project and network expenditure.

SKM is satisfied there is a clear link between peak demand and network capital expenditure.

The demand management measure is targeted at reducing network expenditure

SKM is satisfied this project meets the criteria previously accepted by the AER for DM projects that reduce the energy at risk for projects that are deferred. In this instance, the original and extension projects fall under categories 2 and 3 proposed by Farrier Swier. As a credible supply side option exists, these costs have been used as the basis for determining ADC.



1.2 Foregone Revenue

EnergyAustralia has not claimed any foregone revenue for this project.



2. Warringah STS DM Project

EnergyAustralia's Warringah STS DM Project was implemented in 2007/08 to address impending capacity constraints at Balgowlah Zone and Warringah Subtransmission substations. The DM project consisted of a number of elements including load shifting, embedded generation, relocatable temporary generators, and customer power factor correction. These measures were considered capable of deferring the default network solution which would involve the construction of a new zone substation at a cost of \$42-45M.

EnergyAustralia proposes the following D Factor figures for 2009/10:

| Factor | Value (\$000) |
|---------------------------------|---------------|
| Avoided Distribution Cost Cap | \$8,965.0 |
| DM Implementation costs 2009/10 | \$841.9 |
| Avoided Distribution Cost Claim | \$841.9 |
| Foregone Revenue 2009/10 | \$0.1 |

SKM has previously reviewed EnergyAustralia documents and information sources for the first year this program was claimed. Items reviewed in previous years have not been re-assessed. SKM has reviewed any significant changes and current year costs, and formed a view on the items described in the following sections:

2.1 Avoided Distribution Costs

A network constraint exists

SKM has reviewed EnergyAustralia network planning documents that establish that Warringah subtransmission substation will exceed its rated capacity in winter 2009. There is limited capacity to transfer load to adjacent zones due to both 11kV and subtransmission constraints.

The proposed network solution for this project would be to bring forward the planned replacement 132/11kV Balgowlah zone substation to relieve Warringah STS.

The cost of the network expenditure deferred is reasonable

SKM has previously reviewed the network costs associated with this project, and determined they are reasonable. EnergyAustralia has based its assessment of ADC on the NPV of bringing forward the Balgowlah zone substation by two years, and using the proportional avoided network cost method as the DM solution does not completely remove energy at risk.

SKM has conducted a high level assessment of the revised network solution, and considers the costs proposed are reasonable. EnergyAustralia's ADC is based on a cost of \$59M for the new



zone. EnergyAustralia has used discounted cash flows over 15 years in accordance with the Guidelines to calculate the ADC for a 2 year deferral of this project, building on the ADC from the previous DM project to defer the project by 1 year.

DM Implementation costs are reasonable

DM costs relate to installation of temporary generators by EnergyAustralia and establishing network support agreements with several large customers in the area.

Total estimated costs for the program are considered reasonable and cost effective given the ADC. On this basis, and its understanding of the cost of implementing solutions of the type proposed, SKM considers this cost to be reasonable.

There is a link between the demand management project and network expenditure

EnergyAustralia's DM screening test identifies a number of possible DM solutions, and has selected the mix that most cost effectively targets peak demands on the Warringah STS. SKM has reviewed these assumptions and considers the DM projects will reduce peak demands and hence allow for the supply side solution to be deferred. SKM considers this link is clearly established in this case.

The demand management measure is targeted at reducing network expenditure

SKM considers the individual DM activities carried out under this program will reduce peak demand, and that the DM program design, targeting, and target amounts are such that it can be reasonably expected to reduce load at risk and hence make deferral of network expenditure reasonable.

2.2 Foregone Revenue

Sampling (if used) provides a reasonable estimate of actual foregone revenue

EnergyAustralia has used actual meter data showing the measured impact of the dispatch of generators for each participant, and as such there is no sampling involved. The calculation methodology removes weather and other spurious effects on the determined demand savings, which SKM considers appropriate. EnergyAustralia has used a linear interpolation of demand before and after load was transferred to the standby generators, which SKM considers reasonable.

Demonstrate link between DM and ACTUAL foregone revenue

When the DM reductions are dispatched, participating end users transfer their entire site loads to their standby generators, reducing the amount of energy supplied from the grid. Metered data from



before and after the transfer event was used to determine the amount of load supplied by the grid immediately prior and after the DM dispatch. Relevant DUOS rates have been used to calculate foregone revenue.

SKM has reviewed the calculations and considers them reasonable.



3. Greenacre – DM Project 2009/10

EnergyAustralia's Greenacre DM Project was implemented in 2007/08 to address capacity constraints at the adjacent Greenacre Park and Sefton Zone substations. Load growth and revised ratings meant these zones were both overloaded in 2008, and the required supply side solution could not be implemented prior to 2011/12.

The original DM project consisted of a number of elements including power factor correction, standby generators, commercial lighting efficiency, and temporary embedded generation. These measures reduce energy at risk at Greenacre Park and Sefton zone substations. Additional DM measures include a network support contract negotiated with Energy Response, to dispatch standby generators at a number of end-user sites.

EnergyAustralia proposes the following D Factor figures for 2009/10:

| Factor | Value (\$000) |
|---------------------------------|---------------|
| Avoided Distribution Cost Cap | \$4,996.3 |
| DM Implementation costs 2009/10 | \$723.4 |
| Avoided Distribution Cost Claim | \$723.4 |
| Foregone Revenue 2009/10 | \$1.0 |

SKM has previously reviewed EnergyAustralia documents and information sources for the first year this program was claimed. Items reviewed in previous years have not been re-assessed. SKM has reviewed any significant changes and current year costs, and formed a view on the items described in the following sections:

3.1 Avoided Distribution Costs

A network constraint exists

SKM has previously reviewed EnergyAustralia network planning documents that establish that Greenacre Park and Sefton zones would exceed allowable ratings in summer 2009/10. SKM accepts the revised rating for Greenacre Park is reasonable, and will increase firm capacity in this part of the network, but not sufficiently to eliminate the existing network constraint.

The cost of the network expenditure deferred is reasonable

The proposed network solution for this project would be to bring forward by three years a new zone substation with an estimated capital cost of \$51M. This project could not be implemented in the required time, and hence the DM project has been implemented to reduce substantial amounts



of load at risk. SKM has reviewed EnergyAustralia's logic in rolling forward the previously calculated ADC and considers their approach is reasonable.

DM Implementation costs are reasonable

DM costs incurred during 2009/10 relate to establishment of network support contracts, which SKM considers reasonable for this type of program.

Total estimated costs for the program over its life are estimated at \$1.25M, which are considered reasonable and cost effective given the ADC. Given the large amount of energy at risk at these zones, SKM considers the decision to mitigate this risk to be prudent.

On this basis SKM considers this cost to be reasonable.

There is a link between the demand management project and network expenditure

EnergyAustralia's DM screening test identifies a range of DM options that are coincident with the peak demands on two zones, and capable of reducing peak demand to reasonable levels.

SKM considers this link is clearly established in this case.

The demand management measure is targeted at reducing network expenditure

SKM considers the individual DM activities carried out under this program will reduce peak demand, and that the DM program design, targeting, and target amounts are such that it can be reasonably expected to reduce load at risk. Under the AER approved apportioning methodology, this approach will deliver ADC.

3.2 Foregone Revenue

Sampling (if used) provides a reasonable estimate of actual foregone revenue

EnergyAustralia has used actual meter data showing the measured impact of the dispatch of generators for each participant, and as such there is no sampling involved. The calculation methodology removes weather and other spurious effects on the determined demand savings, which SKM considers appropriate. EnergyAustralia has used a linear interpolation of demand before and after load was transferred to the standby generators, which SKM considers reasonable.

Demonstrate link between DM and ACTUAL foregone revenue

When the DM reductions are dispatched, participating end users transfer their entire site loads to their standby generators, reducing the amount of energy supplied from the grid. Metered data from before and after the transfer event was used to determine the amount of load supplied by the grid



immediately prior and after the DM dispatch. Relevant DUOS rates have been used to calculate foregone revenue.

SKM has reviewed the calculations and considers them reasonable.



4. Nelson Bay Relocatable 11kV Generators 2009

EnergyAustralia had previously employed temporary generators to relieve loads in Nelson Bay until new capacity to supply the area could be installed. Further load growth in the area has led to further capacity constraints, and EnergyAustralia has re-installed the temporary generators. Given the infrastructure that already existed at Nelson Bay for the generators, this is considered a prudent and cost effective option.

Because Nelson Bay is a remote peninsula, supply options require long line lengths to be constructed through sensitive areas, at significant cost. EnergyAustralia has considered DM options as an integral element of its planning process, which has enabled it to adopt a different and lower cost overall option to that which would have been possible without DM.

EnergyAustralia proposes the following D Factor figures for 2009/10:

| Factor | Value (\$000) |
|---------------------------------|---------------|
| Avoided Distribution Cost Cap | \$3,766.7 |
| DM Implementation costs 2009/10 | \$591.8 |
| Avoided Distribution Cost Claim | \$591.8 |
| Foregone Revenue 2009/10 | \$0.0 |

SKM has previously reviewed EnergyAustralia documents and information sources for the first year this program was claimed. Items reviewed in previous years have not been re-assessed. SKM has reviewed any significant changes and current year costs, and formed a view on the items described in the following sections:

4.1 Avoided Distribution Costs

A network constraint exists

EnergyAustralia's planning documents demonstrate that a constraint exists in the Nelson Bay area, requiring new overhead lines to supply new zone substations to meet forecast load growth.

The cost of the network expenditure deferred is reasonable

SKM has previously reviewed the network costs associated with this project, and determined they are reasonable.



The proposed network solution for this project would be a new 132kV feeder supply, coupled with a new zone substation, and ultimately a new 132/33kV subtransmission substation. The total cost is estimated at \$68.9m.

EnergyAustralia has considered DM options as an integral part of the planning for this area, which has allowed for a network solution that is some \$3.5M lower than what would be available without DM. SKM considers this to be a significant benefit of this project. The cost estimates for the preferred network option have been reviewed and are considered reasonable.

DM Implementation costs are reasonable

DM costs incurred during 2009/10 relate to contracted services, comprising the diesel generators rental from Aggreko. There were also costs related to project management and also site establishment and grid connection. The costs of standby generators have been previously reviewed and are considered reasonable.

Total estimated costs for the program over its life are considered reasonable and cost effective given the ADC. Given the large amount of energy at risk at these zones, SKM considers the decision to mitigate this risk to be prudent.

On this basis SKM considers this cost to be reasonable.

There is a link between the demand management project and network expenditure

EnergyAustralia's DM screening test identifies a range of DM options that are coincident with the peak demands, and capable of reducing peak demand to reasonable levels with modest operating hours for the generators.

SKM considers this link is clearly established in this case.

The demand management measure is targeted at reducing network expenditure

SKM considers the DM program will reduce peak demand to acceptable levels, and that it will allow for lower cost network options to be used.

4.2 Foregone Revenue

EnergyAustralia has not claimed any foregone revenue for this project.



5. Terrey Hills PFC and Generator Project

EnergyAustralia's Terrey Hills PFC and Generator Project DM Project was implemented in 2008/09 to address capacity constraints in the Sydney East STS area.

EnergyAustralia identified a combination of temporary generators and PFC installations that would provide sufficient DM capacity to enable the proposed network solution to be deferred by one year.

EnergyAustralia proposes the following D Factor figures for 2009/10:

| Factor | Value (\$000) |
|---------------------------------|---------------|
| Avoided Distribution Cost Cap | \$312.1 |
| DM Implementation costs 2009/10 | \$219.1 |
| Avoided Distribution Cost Claim | \$219.1 |
| Foregone Revenue 2009/10 | \$4.0 |

SKM has previously reviewed EnergyAustralia documents and information sources for the first year this program was claimed. Items reviewed in previous years have not been re-assessed. SKM has reviewed any significant changes and current year costs, and formed a view on the items described in the following sections:

5.1 Avoided Distribution Costs

A network constraint exists

SKM has reviewed EnergyAustralia network planning documents that establish that the Sydney East STS 33kV network would be constrained by 2009/10.

The cost of the network expenditure deferred is reasonable

SKM has reviewed the options considered, and costs estimated for the preferred network option, and consider they are prudent and efficient. The identified DM option is reasonable to allow the network option to be deferred, and the calculation of the value of this deferral has been reviewed and found to be reasonable.

On this basis, SKM considers the cost of the network solution and ADC to be reasonable.

DM Implementation costs are reasonable

DM costs incurred during 2009/10 relate to establishment of temporary generators and promotion of PFC, which SKM considers reasonable for this type of program.



On this basis SKM considers this cost to be reasonable.

There is a link between the demand management project and network expenditure

EnergyAustralia's DM screening test identifies a range of DM options that are coincident with the peak demands on the constrained 33kV network, and capable of reducing peak demand to reasonable levels.

SKM considers this link is clearly established in this case.

The demand management measure is targeted at reducing network expenditure

SKM considers the individual DM activities carried out under this program will reduce peak demand, and that the DM program design, targeting, and target amounts are such that it can be reasonably expected to reduce load at acceptable levels.

5.2 Foregone Revenue

Sampling (if used) provides a reasonable estimate of actual foregone revenue

EnergyAustralia has used actual meter data for all participants, and as such there is no sampling involved. The calculation methodology removes weather and other spurious effects on the determined demand savings, which SKM considers appropriate.

Demonstrate link between DM and ACTUAL foregone revenue

Installing power factor correction will directly lead to a reduction in billable demand, and EnergyAustralia's calculation methodology accurately determines foregone revenue based on actual DM program outcomes.



6. Willoughby STS DM Project

EnergyAustralia's Willoughby STS DM Project was implemented in 2008/09 to address capacity constraints in the Willoughby STS area that would require a new zone substation to meet forecast load growth.

The project consisted of three elements – a non-dispatchable network support agreement with a gas-fired cogeneration site, a dispatchable network support agreement with diesel standby generator sites, and a customer power factor correction program. The objective was to reduce demand on Willoughby Subtransmission Substation (STS) by 6.3MVA in summer 2009/10.

EnergyAustralia proposes the following D Factor figures for 2009/10:

| Factor | Value (\$000) |
|---------------------------------|---------------|
| Avoided Distribution Cost Cap | \$2,486.5 |
| DM Implementation costs 2009/10 | \$605.9 |
| Avoided Distribution Cost Claim | \$605.9 |
| Foregone Revenue 2009/10 | \$1.7 |

SKM has previously reviewed EnergyAustralia documents and information sources for the first year this program was claimed. Items reviewed in previous years have not been re-assessed. SKM has reviewed any significant changes and current year costs, and formed a view on the items described in the following sections:

6.1 Avoided Distribution Costs

A network constraint exists

SKM has reviewed EnergyAustralia network planning documents that establish that the Willoughby STS would be constrained by 2009/10.

The cost of the network expenditure deferred is reasonable

SKM has reviewed the options considered, and costs estimated for the preferred network option, and consider they are prudent and efficient. The identified DM option is reasonable to allow the network option to be deferred, and the calculation of the value of this deferral has been reviewed and found to be reasonable.

On this basis, SKM considers the cost of the network solution and ADC to be reasonable.



DM Implementation costs are reasonable

DM costs incurred during 2009/10 relate to the establishment of network support agreements and promotion of PFC, which SKM considers reasonable for this type of program.

On this basis SKM considers this cost to be reasonable.

There is a link between the demand management project and network expenditure

EnergyAustralia's DM screening test identifies a range of DM options that are coincident with the peak demands on the constrained network, and capable of significantly reducing energy at risk until a permanent network solution can be commissioned.

SKM considers this link is clearly established in this case.

The demand management measure is targeted at reducing network expenditure

SKM considers the DM activities carried out under this program will reduce energy at risk by approximately 60%, and that the DM program design, targeting, and target amounts are such that it can be reasonably expected to reduce load at risk to acceptable levels. EnergyAustralia has used the proportional avoided network cost approach to calculate ADC, which SKM considers reasonable in this case.

6.2 Foregone Revenue

Sampling (if used) provides a reasonable estimate of actual foregone revenue

EnergyAustralia has used actual meter data showing the measured impact of the dispatch of generators for each participant, and as such there is no sampling involved. The calculation methodology removes weather and other spurious effects on the determined demand savings, which SKM considers appropriate. EnergyAustralia has used a linear interpolation of demand before and after load was transferred to the standby generators, which SKM considers reasonable.

Demonstrate link between DM and ACTUAL foregone revenue

When the DM reductions are dispatched, participating end users transfer their entire site loads to their standby generators, reducing the amount of energy supplied from the grid. Metered data from before and after the transfer event was used to determine the amount of load supplied by the grid immediately prior and after the DM dispatch. Relevant DUOS rates have been used to calculate foregone revenue.

SKM has reviewed the calculations and considers them reasonable.



7. Adamstown DM Project

EnergyAustralia's Adamstown DM Project was implemented in 2008/09 to address capacity constraints in the Broadmeadow and Kotara zone substations area that would require a new zone substation at Adamstown to relieve the existing zones and meet forecast load growth.

EnergyAustralia identified a temporary generator solution that would provide sufficient DM capacity to reduce energy at risk at Broadmeadow. Options to completely eliminate load at risk and allow for further deferral of the new Adamstown zone were not identified.

EnergyAustralia proposes the following D Factor figures for 2009/10:

| Factor | Value (\$000) |
|---------------------------------|---------------|
| Avoided Distribution Cost Cap | \$2,326.0 |
| DM Implementation costs 2009/10 | \$434.6 |
| Avoided Distribution Cost Claim | \$434.6 |
| Foregone Revenue 2009/10 | \$0.0 |

SKM has previously reviewed EnergyAustralia documents and information sources for the first year this program was claimed. Items reviewed in previous years have not been re-assessed. SKM has reviewed any significant changes and current year costs, and formed a view on the items described in the following sections:

7.1 Avoided Distribution Costs

A network constraint exists

SKM has reviewed EnergyAustralia network planning documents that establish that the Broadmeadow and Kotara zones would be constrained by 2009/10.

The cost of the network expenditure deferred is reasonable

SKM has reviewed the options considered, and costs estimated for the preferred network option, and consider they are prudent and efficient. The identified DM option is reasonable to significantly reduce energy at risk (above firm rating of the existing supply).

SKM has reviewed EnergyAustralia's energy at risk analysis, and its application of the proportional avoided network cost method to account for the proposed solution achieving only a partial (88%) reduction in total energy at risk.

On this basis, SKM considers the cost of the network solution and ADC to be reasonable.



DM Implementation costs are reasonable

DM costs incurred during 2009/10 relate to establishment of the temporary generator, with total expected costs of \$650k over the project life, which SKM considers reasonable for this type of program.

On this basis SKM considers this cost to be reasonable.

There is a link between the demand management project and network expenditure

EnergyAustralia's DM screening test identifies a temporary generator solution to be the most effective option to relieve Broadmeadow zone, and capable of significantly reducing energy at risk until a permanent network solution can be commissioned. Options to reduce energy at risk at Adamstown were not considered viable, but the energy at risk from this substation was substantially lower.

SKM considers this link is clearly established in this case.

The demand management measure is targeted at reducing network expenditure

SKM considers the DM activities carried out under this program will reduce energy at risk by 88%, and that the proposed DM solution can be reasonably expected to reduce load at risk to acceptable levels. EnergyAustralia has used the proportional avoided network cost approach to calculate ADC, which SKM considers reasonable in this case.

7.2 Foregone Revenue

No foregone revenue has been claimed in 2009/10.



Summary and Conclusions

SKM has assessed EnergyAustralia's D Factor submission for 2009/10, and considers that overall it is reasonable and balanced. SKM has found no material errors in the calculation of avoided distribution costs or revenue foregone, based on a review of all DM projects.

Avoided distribution costs were found to be based on demonstrable network constraints and reasonable proposed network solutions and timing, and considered reasonable. The roll-forward of ADCs is considered to be based on a robust methodology and has been accurately calculated.

DM costs have been reviewed, and are considered reasonable and the result of considerable efforts by EnergyAustralia to reduce costs to efficient levels. Costs are rigorously tracked against individual projects, and have been verified from EnergyAustralia's financial system. Where allocations between projects, or between capital and DM costs (in the case of temporary generators), were necessary SKM found EnergyAustralia has been conservative and reasonable in apportioning costs to DM Costs claimed under its D Factor submission.

Foregone revenues have been calculated using detailed, accurate and conservative methodologies, using measured data wherever possible.

SKM considers the conditions requiring independent verification in the Guidelines have been met for each of the DM Projects discussed in this report. SKM recommends the total D Factor amounts below be accepted:

| Factor | Value (\$000) |
|----------------------------------|----------------------|
| Avoided Distribution Cost Cap | \$22,955.9 |
| DM Implementation costs 2009/10 | \$3,665.1 |
| Avoided Distribution Cost Claim | \$3,520.0 |
| 2008/09 Independent review costs | \$6.8 |
| Foregone Revenue 2009/10 | \$6.9 |

EnergyAustralia Personnel

In undertaking the review of EnergyAustralia's 2009/10 D Factor, SKM met with the following EnergyAustralia personnel:

- Neil Gordon, Manager – Demand Management;
- Paul Myers, Senior Consultant – Demand Management;
- Martin Cousins, Senior Project Manager – Demand Management;
- Pat Grant, Senior Project Manager – Demand Management;
- Jacqueline Brothers, Manager – Business Analysis Transactions and Reporting.