



Energex Limited

ABN 40 078 849 055

**APPLICATION
FOR
ADDITIONAL CAPITAL EXPENDITURE
OCTOBER 2006**

PART A – APPLICATION

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EXECUTIVE SUMMARY

The Queensland Competition Authority's (the Authority's) 2005 Final Determination included a capital expenditure (capex) off-ramp mechanism to allow (subject to the Authority's approval) the pass-through of:

- ◆ capex above that approved in the Final Determination which relates to obligations arising from the Electricity Distribution Service Delivery (EDSD) Review; and
- ◆ capex specifically excluded from the revenue cap at the time of the Final Determination on the recommendation of the Authority's consultants, Burns and Roe Worley (BRW).

The Authority indicated that further planning and analysis of Energex's capex needs would be required in support of a claim under the capex off-ramp mechanism, and proposed that up to a further \$720 million would be considered, to a total capex program of \$3.427 billion.

Energex has undertaken detailed analysis following the 2005 Final Determination to fully scope its capex requirements to 2010, in light of obligations to meet statutory requirements and government policy directives which flowed from the EDSD Review. Energex believes that the revised capex program is technically required to make substantial progress toward delivering the service obligations arising from the EDSD Review.

The proposed program demonstrates Energex's commitment to delivering an affordable, safe and reliable electricity supply to its customers by implementing, in a timely and efficient manner, the recommendations of the EDSD Review.

Energex has undertaken substantial analysis involving consideration of a range of different capex programs, both over the five year period to 2010, and out as far as 2015. The results of this analysis showed that:

- ◆ a capital expenditure program of \$2.707 billion, consistent with the funding provided in the Final Determination, did not make adequate inroads in terms of achieving EDSD recommendations as it is predominantly directed towards the delivery of natural load growth¹; and
- ◆ additional capex up to \$3.427 billion provides greater gains toward achieving EDSD recommendations, particularly in terms of having a more reasonable technical base to achieve N – 1 security within the next regulatory period.

A larger capex spend would deliver EDSD outcomes to customers more rapidly, however, a level of capital expenditure beyond \$3.427 billion is not provided for in the Authority's conditions for the capex off-ramp pass through mechanism.

Accordingly, this capex Application is seeking approval for an additional \$720 million, which includes **\$643 million** of system capex and **\$77 million** of non-system capex. The capex components making up this Application are included in Table 1. Energex's technical explanation for the additional capex links the forecast physical and performance outcomes, in terms of EDSD service obligations, to the additional capex.

In this Application, Energex is seeking to demonstrate that it meets the various tests proposed by the Authority in its Final Determination, namely:

- ◆ it needed to spend more in total on capex than assessed by BRW (up to its total original forecasts);

¹ Increasing existing network capacity for growth and connecting new customers.

- ◆ it was able to undertake this investment wisely;
- ◆ the proposed expenditure had not already been included in Energex's capital expenditure forecasts for the period and was either new expenditure necessary to meet its ESDS-related obligations or a reinstatement of capex specifically excluded by BRW; and
- ◆ that cost pass-through during the regulatory period, rather than including the assets in the asset base at the end of the regulatory period, was reasonable and justified.²

The **need to spend more** in total capex than BRW's forecast in the Final Determination stems from the fact that Energex's capex submissions to the Authority at that time did not address ESDS obligations. This was acknowledged by the Authority in its Final Determination.

Energex now has a detailed plan for meeting these obligations, which includes:

- ◆ meeting service targets, such as reliability, N – 1 standards and demand utilisation; and
- ◆ bringing non-system capex to a level that will allow the effective and efficient delivery of system capex.

Detailed information supporting this view is contained in Section 2.

Energex believes it is able to **undertake this additional investment wisely** as it has the necessary resources in place to deliver the additional capex, and appropriate policies and procedures for ensuring it undertakes prudent and efficient investment.

By way of example, since July 2004, Energex has significantly increased its planning resources and field staff (including trades people and power workers). This expanded workforce has enabled Energex to undertake a \$747 million³ capex program in 2005/06, an expenditure level significantly above previous years and consistent with its need to spend \$3.427 billion over the full five year regulatory period.

Since the ESDS Review and the Authority's Final Determination, Energex has also reviewed its planning policies and procedures, and has implemented thorough planning and investment processes to ensure that future network investment is undertaken in a systematic, prudent and efficient manner. Energex considers that the improved planning process provides assurance that the proposed capex program is both technically and productively efficient, in that it identifies the engineering requirements best able to meet Energex's service obligations, while seeking to minimise the total cost of the capex program.

This position is supported by Energex's own high level benchmarking of the proposed capex program relative to other Australian distributors, which demonstrates that the proposed program is comparable with other distributors' costs.

These issues are further explored in Section 3.

Energex has reconciled this Application with the Final Determination in order to **demonstrate that the additional capex is new capex**, i.e. it is not included in the currently funded work program. In completing this reconciliation Energex has identified the continuing projects as well as the changes necessary to deliver reliability, capacity and service improvements for customers. This issue is discussed in Section 4.

Energex acknowledges that the additional capex requested will result in price increases for customers. However, Energex believes that it is **reasonable to recognise the additional capex in network tariffs in the current regulatory period**, as this provides a balance between the

² Queensland Competition Authority (April 2005), *Final Determination – Regulation of Electricity Distribution*, p.91.

³ In 2005/06 dollars, actual headline capital expenditure, which includes allocated non-system asset depreciation of \$22 million in accordance with Energex's accounting practices.

interests of customers and Energex. In particular, recognising the capital program within the current regulatory period is consistent with the principle of investment certainty recommended by the EDSD Review, in addition to being consistent with a number of principles of the National Electricity Rules, including:

- ◆ prices to customers are reflective of true costs, thereby giving customers efficient pricing signals for the consumption of electricity; and
- ◆ providing an appropriate return on investment.

Energex has assessed the impact on an average domestic customer to be around \$42 per annum, or less than \$1 a week per household, for a three year period. Energex is of the view that this is very reasonable when considered in light of the benefits delivered to customers through the improvement in network reliability and capacity availability that this will fund. Importantly, Energex's DUOS prices inclusive of the capex requested in this Application will still remain below the average for all Australian distributors. These issues are outlined in Section 6.

In summary, Energex believes that this Application sets out a clear explanation of the technical need for a capex spend of \$3.427 billion to 2009/10, and has addressed the Authority's capex off-ramp conditions. Energex now requests the Authority consider this Application.

1 BACKGROUND TO THE APPLICATION

The Queensland Competition Authority (the Authority) released its Final Determination for the Regulation of Electricity Distribution in April 2005. This Final Determination established revenue caps for Energex's regulated electricity network in South East Queensland for the five year period 2005/06 to 2009/10. At the time of finalising the Determination, there were several critical issues that impacted on the regulatory arrangements which were to apply to Energex. In particular, the Electricity Distribution Service Delivery (EDSD) Review, initiated by the Queensland Government, released its findings and key recommendations shortly before the Final Determination.

1.1 EDSD Review

The EDSD Review was formed in March 2004 in response to public concerns regarding the performance of Queensland's distribution networks during a series of extraordinary storm and hot weather events that occurred in January and February 2004.

The EDSD Review made 44 recommendations. The major recommendations relating to the substantive findings of the EDSD Review were:

- ◆ **minimum service standards** should be mandated;
- ◆ the Government and the Authority should consider alternative arrangement for increasing the distributors' **investment certainty** during a regulatory period;
- ◆ the distribution authorities should include a requirement to meet a **standard equivalent to N – 1** for bulk and zone substations, and for their sub-transmission systems;
- ◆ Energex should reduce its **system utilisation** to around 60% to 65%;
- ◆ planning in high growth urban areas should be based on a **10% probability of exceedence** (PoE 10) weather assumption;
- ◆ the distributors should publish an **annual network development plan**; and
- ◆ the distributors should develop **resource plans** for the next 5 to 10 years.⁴

In response to the EDSD Review, the Queensland Government released an Action Plan⁵ which set down Energex's service obligations, consisting of:

- ◆ mandatory **minimum service standards** (MSS) for reliability;
- ◆ a requirement to adopt more conservative planning assumptions, so that if assets fail there will be sufficient back up capacity to ensure that customers don't lose supply (often referred to as the equivalent '**N – 1**' planning requirement);
- ◆ reductions in **system utilisation** to around 60% to 65% for bulk supply stations and 50% to 55% for zone substations;
- ◆ delivery of an effective **maintenance** program;
- ◆ a requirement to base network planning outcomes on analysis that acknowledges the potential for very hot weather. The EDSD Review recommended using a **10%**

⁴ Independent Panel (July 2004), *Electricity Distribution and Service Delivery for the 21st Century*, Summary Report, pp.28 – 30.
⁵ Queensland Government (August 2004), *An Action Plan for Queensland Electricity Distribution*.

probability of exceedence (PoE 10) weather assumption, which effectively requires a greater continging capacity be built into the system; and

- ◆ the development of an **annual network management plan** to increase the level of rigour and transparency in capital and maintenance expenditure planning and delivery.

Energex's response to the EDSD Review is encapsulated within *The Powerful New Deal for Electricity Customers in South East Queensland*, which includes a detailed plan for addressing these objectives. A number of the action items in this plan have already been implemented and Energex is seeing the benefits of those changes now, particularly in its planning and resourcing strategies. However, Energex recognises that many of these issues cannot be rectified quickly, requiring a long term commitment before all identified problems will be fully resolved. Initial efforts by Energex focused on resources and network capacity. Initiatives are now progressing to improve the reliability of the network.

1.2 Final Determination

Energex believes that the factors arising from the EDSD Review created substantial uncertainty for the Authority in the preparation of its Draft and Final Determinations regarding whether Energex possessed:

- ◆ sufficient **physical resources** to efficiently deliver the capital expenditure (capex) and operating expenditure (opex) proposals; and
- ◆ the **technical and planning capacity** to produce a prudent and efficient capex and opex program, which would meet the new service obligations arising from the EDSD Review.

These concerns were reinforced by the Authority's technical consultants, Burns and Roe Worley (BRW).

The combination of these factors resulted in the withholding of part of Energex's capex proposal of \$3.376 billion in the Authority's Draft Determination. The Authority approved expenditure of \$2.207 billion, recognising that \$2.707 billion could be technically justified, but that the ability to resource this work was questionable. The Authority also proposed a mechanism that would allow Energex the opportunity to seek additional capex as a within period adjustment, where it could demonstrate that such capex satisfied specific conditions, particularly, that any new investment was needed to meet the service obligations set by the Queensland Government. This would take Energex's aggregate capex allowance for the period beyond \$2.707 billion up to Energex's original capex submission of \$3.427 billion (approved \$3.376 billion plus \$0.051 million for EBA allowance).

There was an opportunity for Energex to update capex forecasts between the Authority's Draft and Final Determinations based on satisfactorily addressing the concerns raised by BRW and the Authority in the Draft Determination. However, Energex elected not to update the capex program to include additional expenditure to meet the service obligations arising from the EDSD Review recommendations, but instead focused on demonstrating that it could resource the \$2.707 billion Program of Work.

Energex's decision to focus on justifying its ability to resource the \$2.707 billion capex program was a conscious one, given that the Authority's Draft Determination included the capex off-ramp mechanism. Energex supported this mechanism in principle because it provided assurance that the technical debate on whether further capex was needed to 2009/10 could be had when there was more adequate information on network performance and investment need, and Energex could demonstrate its capacity to deliver an increased capex program.

The Authority noted the outcomes from Energex's approach in its Final Determination:

“In its post Draft Determination Submission, Energex concentrated its efforts on establishing its capacity to undertake the BRW assessed level of expenditure and did not fully address the potential costs associated with implementing the EDSD recommendations (Ergon addressed these requirements).”⁶

As a result, Energex’s expenditure proposals to the Authority in 2004 and 2005 did not include projects and proposals to fully address the service obligations arising from the EDSD Review recommendations.

1.3 Purpose of this Application

Since the release of the Final Determination in April 2005, Energex has conducted a detailed examination of what is required in order to meet EDSD requirements, and further reviewed various aspects of its operations, including resourcing and planning methodologies.

The results show that for Energex to meet the service obligations arising from EDSD, in addition to customer response obligations, the network requires an increase in capex investment beyond the \$3.427 billion maximum set within the existing regulatory arrangements. However, this Application only seeks recognition of \$720 million in capex, which includes \$643 million in system and \$77 million in non-system capex. The limitation of the Application to the \$720 million additional capex as per the requirements of the Final Determination reflects the following considerations:

- ◆ growth capex for new connections, particularly Commercial and Industrial customers, will be greater than the capex allowance approved in the Authority’s 2005 Final Determination. Energex understands that this type of capex, while a legal obligation, does not qualify for recognition under the capex off-ramp mechanism. Accordingly, none of this additional capex expenditure is included in this Application. Energex is exploring other alternative options to have the additional capex associated with new connections recognised as per EDSD Review recommendation 4⁷; and
- ◆ in the 2005 Final Determination process, BRW, the Authority’s technical consultants, disallowed Energex’s proposed capex relating to large customer initiated works where Energex had not identified detailed projects. Accordingly, Energex has not included any claims for additional capex for projects that are un-defined at the time of this Application. However, Energex is now aware that a number of such projects are likely to arise over the next few years.

Additionally, there are significant changes occurring within the Australian energy sector, notably the introduction of a national energy regulator, and in the Queensland energy market, particularly the introduction of Full Retail Contestability (FRC). This Application does not include any costs associated with FRC.

A further breakdown of the additional \$720 million capex program is provided in Table 1.

⁶ Queensland Competition Authority (April 2005), *Final Determination – Regulation of Electricity Distribution*, p.91.

⁷ Independent Panel (July 2004), *Electricity Distribution and Service Delivery for the 21st Century*, Detailed Report – Appendix 6, p.48. Recommendation 4 – “Government, the QCA and the distributors form a working group to consider how customer connections can be better managed in the next regulatory period, including the option of having these works regulated under a light handed regime outside the AARR, or not regulated at all.”

Table 1. Additional System and Non-System Capital Expenditure (\$ million, June 2004) Compared to 2004 adjusted for EBA

	2005/06	2006/07	2007/08	2008/09	2009/10	Total	Total Request
Asset Replacements	9.494	2.313	15.135	20.710	17.565	65.219	
Demand Related – Corporate Initiated	23.434	53.467	84.258	108.281	145.376	414.817	
Demand Related – Customer Initiated	0.921	14.703	19.768	4.591	0.073	40.057	
Reliability Improvement	0.459	0.387	28.232	48.506	46.442	124.027	
Other System	-	-	-	-	-	-	
Total System	34.309	70.871	147.393	182.089	209.457	644.119	643.000
Non-system	36.492	39.463	(9.612)	(0.065)	11.859	78.137	77.000
Total	70.801	110.334	137.781	182.024	221.316	722.256	720.000

Energex understands that the Authority will consider this Application for capex pass-through if it can demonstrate that Energex has been able to satisfactorily address the four conditions of the capex off-ramp mechanism, which include:

- ◆ it needed to spend more in total on capex than assessed by BRW (up to its total original forecasts);
- ◆ it was able to undertake this investment wisely;
- ◆ the proposed expenditure had not already been included in Energex's capital expenditure forecasts for the period and was either new expenditure necessary to meet its EDSD-related obligations or a reinstatement of capex specifically excluded by BRW; and
- ◆ that cost pass-through during the regulatory period, rather than including the assets in the asset base at the end of the regulatory period, was reasonable and justified.⁸

Energex has addressed each of these conditions in Sections 2 to 6 of this Application.

In addition, Energex has considered the revenue and price implications from the approval of increasing its capex allowance by \$720 million, in particular in terms of the impact on customers through network tariffs and improved services. These issues are further explored in Section 6.3.

To assist the Authority in its assessment, Energex has also included supporting information, including:

- ◆ Appendix A: Energex's detailed annual forecasts of the proposed capex program;
- ◆ Appendix B: Details of Energex's proposed additional non-system capex;

⁸ Queensland Competition Authority (April 2005), *Final Determination – Regulation of Electricity Distribution*, p.91.

- ◆ Appendix C: Energex's N – 1 planning philosophy;
- ◆ Appendix D: Energex's most recent Annual Network Management Plan; and
- ◆ Appendix E: Energex's policies for choosing prudent and efficient network investment options.

Part B of the Application contains commercially sensitive information regarding, balance sheet and financing impacts on Energex. Energex submits Part B of this Application on a commercial-in-confidence basis.

2 DEMONSTRATE INVESTMENT NEED

This section demonstrates how Energex believes that it meets the first condition of the Authority's capex pass-through mechanism – that there is a technical need for more network investment.

Since the EDSD Review and the Authority's Final Determination, Energex has undertaken extensive business and network planning. Energex's "Direction Setting and Planning Process 2005":

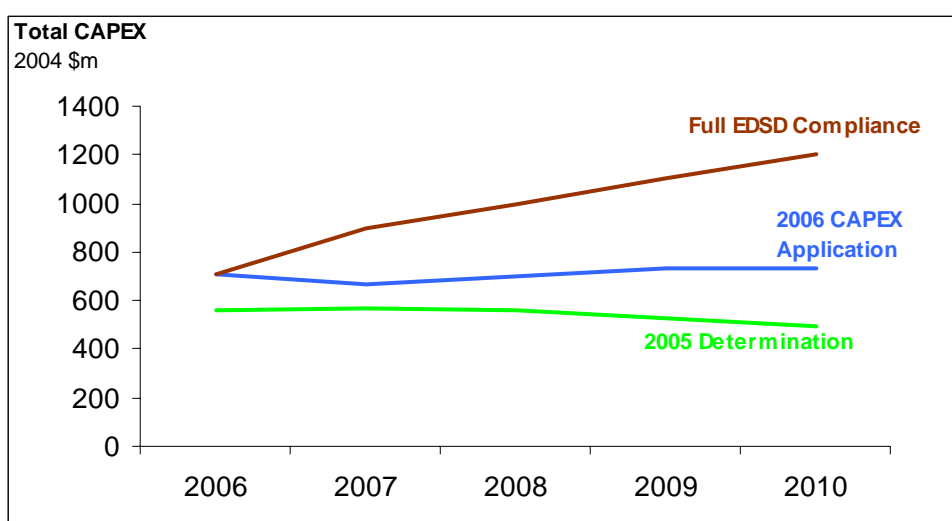
- ◆ closely examined the Government's Action Plan for achieving the EDSD Review requirements by 2010;
- ◆ assessed the level of capex spend that would be needed to meet the service obligations set for Energex; and
- ◆ analysed the likely network performance outcomes and operational risks relating to the delivery of these service obligations, through testing three alternative capex scenarios for the period to 2009/10.

Energex examined the impact from a range of capex program scenarios on network security and reliability, and prices paid by customers. The three options modelled were:

- ◆ a base case scenario which is the current approved capex program of \$2.707 billion, consistent with the Authority's Final Determination;
- ◆ a medium case scenario which targets a capex program of around the \$3.427 billion; and
- ◆ a high or accelerated capex program in the order of \$5.000 billion, which is forecast to deliver the full EDSD compliance program by 2009/10.

The medium scenario includes the additional \$720 million capex requested in this Application. The following graph presents the annual capex spend under each of these three scenarios.

Figure 1. Annual Capex Spend Scenarios, 2005/06 to 2009/10



In each scenario modelled, the additional capex (above the current \$2.707 billion allowance) was used to fund programs and projects to meet Energex's service obligations arising from the EDSD Review, including:

- ◆ meeting service targets, such as reliability, N – 1 standards and demand utilisation;
- ◆ conductor replacement initiatives;
- ◆ improving the current 10% of worst performing feeders (which have more than double the duration of outages than the Energex average) with the objective of bringing them within 50% of the Energex average; and
- ◆ reducing in-service pole failures on a 3 year rolling average from 17 to 7 failures per annum (20% per annum).

Energex's analysis has shown that significant system capex is necessary to meet all EDSD obligations, that is, to bring network reliability and utilisation to the set statutory requirements and deliver network security improvements. More details on the outcomes identified from Energex's capex forecasting and planning to 2010 and beyond are provided within this document and Appendix A.

2.1 System Capex

The forecast impact of the alternate system capex spend programs on Energex's service obligations are outlined in the balance of this section.

2.1.1 Minimum Service Standards (MSS)

The Queensland Government introduced minimum service standards (MSS) as part of the Queensland Electricity Industry Code (EIC) in January 2005. The MSS set a minimum level of reliability, by type of feeder (i.e. CBD, urban and short rural), that customers are entitled to receive. These are set out in Table 2.

Table 2. Energex Network Minimum Service Standards

	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
SAIDI¹ (minutes)						
CBD	20	20	20	20	20	20
Urban	162	155	145	134	122	110
Short Rural	272	265	255	244	232	220
SAIFI² (number)						
CBD	0.33	0.33	0.33	0.33	0.33	0.33
Urban	1.78	1.73	1.64	1.54	1.43	1.32
Short Rural	2.84	2.77	2.70	2.63	2.56	2.50

1. System Average Interruption Duration Index.

2. System Average Interruption Frequency Index.

To determine what was needed to achieve the MSS by 2010, Energex forecast the SAIDI and SAIFI gains under each capex program and its agreed opex program of \$1.269 billion (as per the Final Determination). Energex then undertook sensitivity testing to determine the probability of meeting the MSS by 2010. The probability analysis was based on forecasting gains in SAIDI and SAIFI from reliability specific investment, as well as investment for N – 1 compliance and programs targeting 10% of worst performing feeders.

Figure 2 and Figure 3 show the results of Energex's analysis for urban and rural MSS targets. (CBD performance is well ahead of target and accordingly specific expenditure to improve reliability further in this area is not proposed.) It is important to note that there can be considerable variability between actual and expected reliability gains from various capex and

opex programs. Accordingly, when targeting the MSS, Energen aims to achieve reliability gains ahead of the MSS, which provides Energen with greater probability of ensuring that customers' experience the MSS as set down by the EIC.

Figure 2. Historical and Forecast Urban SAIDI Performance

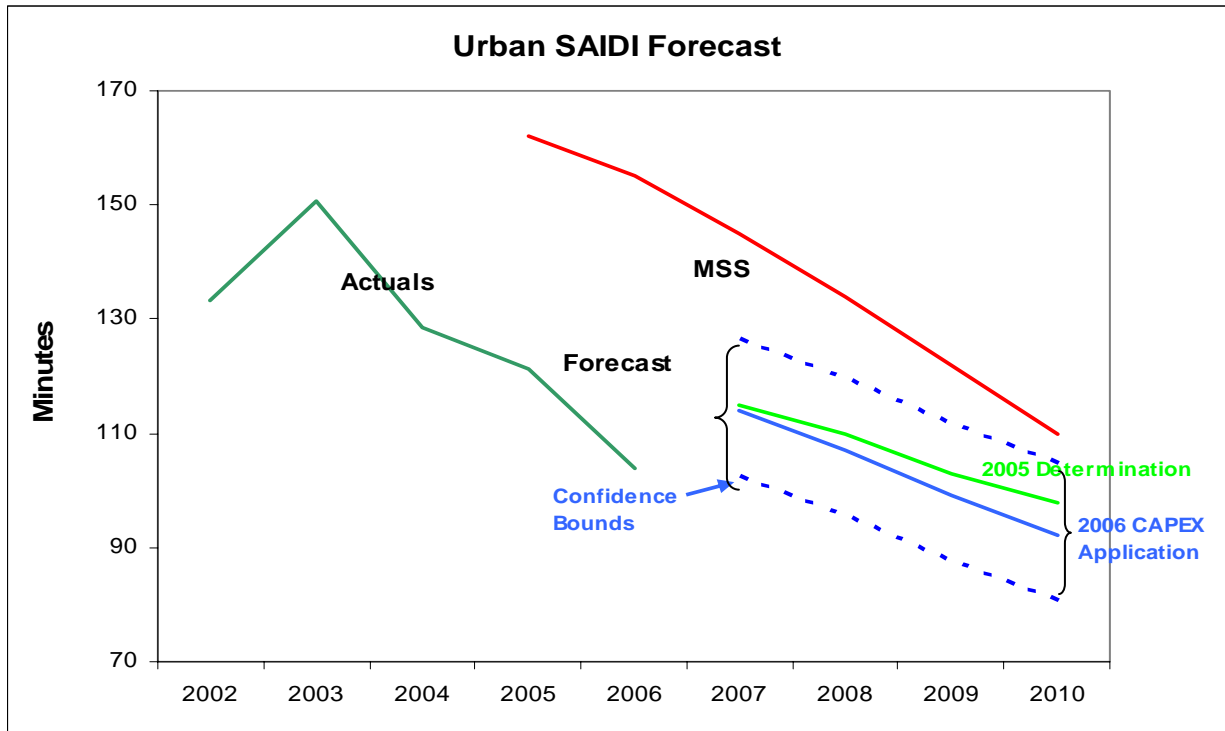
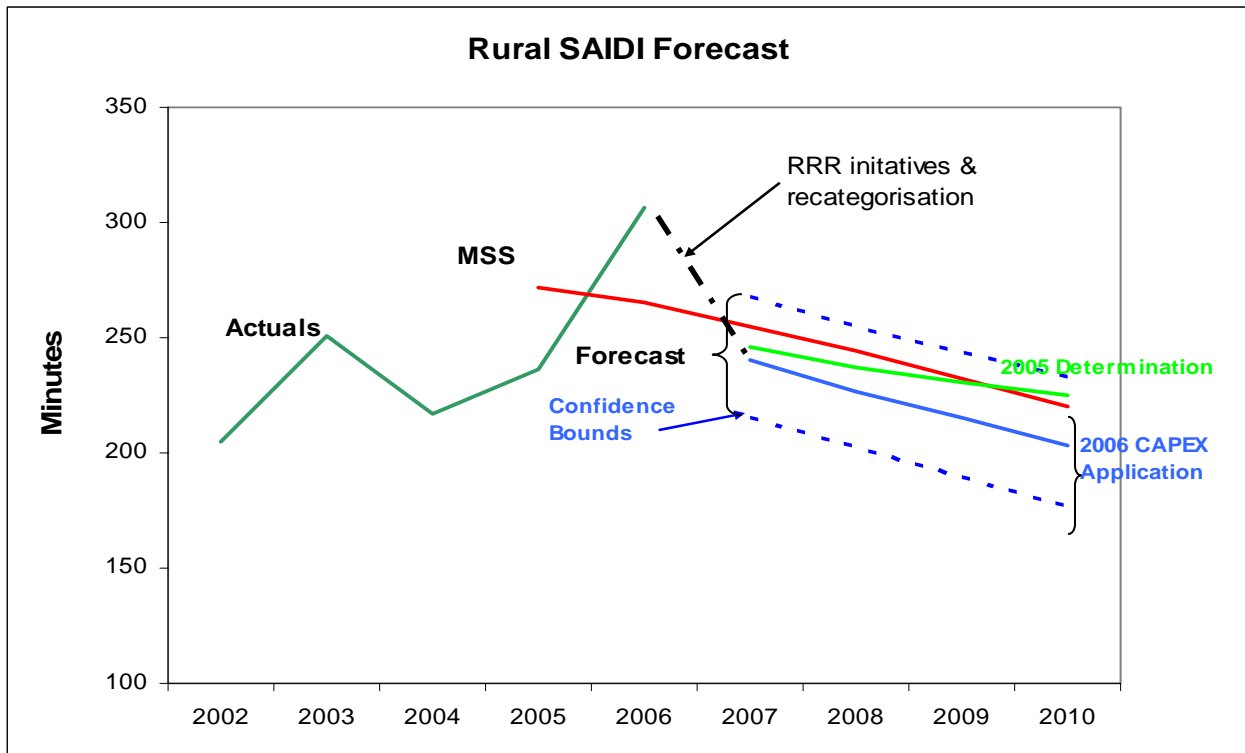


Figure 3. Historical and Forecast Rural SAIDI Performance⁹



⁹ RRR – Rural Reliability Response, specific reliability programs to address current short rural network issues.

Table 3 details the expected reliability gains that are forecast to be generated by Energex's capex spend in new bulk supply and zone substations.

Table 3. Energex's Forecast Reliability Gains from 11kV Investments Arising from New Substation Installations

	2005/06	2006/07	2007/08	2008/09	2009/10
Urban 11kV feeders					
Number of new feeders	nil	41	17	33	83
Minutes gained	nil	nil	2	0.8	1.4
Short Rural 11kV feeders					
Number of new feeders	nil	8	nil	17	14
Minutes gained	nil	nil	2.7	nil	5

In addition there are further reliability gains on the short rural and urban feeders from the proposed additional \$124.970 million capex investment in the 11kV network. These distribution reliability projects are forecast to deliver a reliability improvement of:

- ◆ 13 minutes of SAIDI on the short rural network; and
- ◆ 5.5 minutes of SAIDI on the urban network.

This analysis shows that in relation to urban SAIDI, Energex's proposed system capex is expected to provide improvements that will meet the minimum required standard, including allowing for possible variability in results caused by factors outside of Energex's control. In relation to rural SAIDI, the results show that the forecast result is better than the minimum required standard, however there is a some probability that the standard will not be met if conditions (such as storms) are worse than average.

2.1.2 Network security

The Queensland Government's Action Plan requires Energex to achieve industry best practice security of supply for its network. Network security in N – 1 terms requires the electricity distribution network, particularly the critical shared elements of the network, to have sufficient capacity to enable the transfer of load in the event of a specific element failing, without loss of supply to customers.

N – 1 is a measure of network security which is based on:

- ◆ current and forecast load (50POE) for that part of the network;
- ◆ emergency capacity of the physical network assets installed; and
- ◆ the network effects associated with transferring load across the system.

Energex defines N – 1 compliance to be:

*"50 PoE forecast load not to exceed ECC [Emergency Cyclic Capacity] for credible single contingency."*¹⁰

Further information on the N – 1 planning philosophy is provided in Appendix C and Appendix D (Annual Network Management Plan).

Energex amended its planning guidelines in mid-2004 to reflect an N – 1 planning philosophy. The revised planning guidelines were used to prepare the 2005 and 2006 Program of Work. This

¹⁰ Energex, *Annual Network Management Plan 2006/07 to 2010/11*, July 2006, p.19.

has resulted in more than 80 project approvals for over 1,700 MVA of additional substation capacity since this time. The additional capacity means that the proportion of bulk substations that are N – 1 compliant increased from 25.0% in 2003/04 to 41.2% in 2005/06. Similarly, the proportion of zone substations that are N – 1 compliant has increased from 25.8% to 32.5% over the same period.

Figure 4 shows the proportion of bulk and zone substations expected to be compliant with N – 1 to 2009/10 under the \$2.707 billion capex program and the proposed \$3.427 billion capex program.

Figure 4. Forecast Zone and Bulk Supply Substation Compliance with N – 1

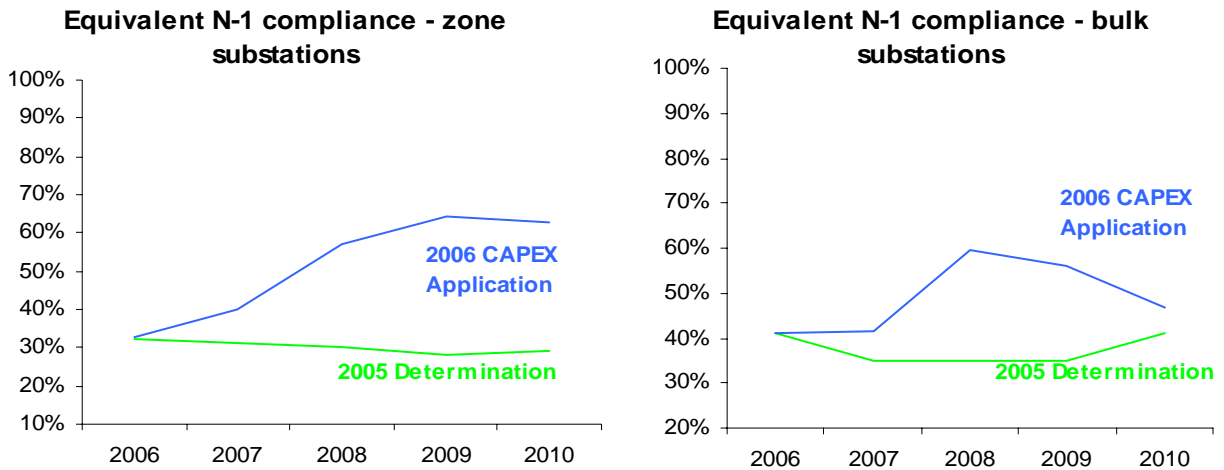


Table 4 details the expected N – 1 gains by zone and bulk supply substations from the \$2.707 billion capex program and the additional \$720 million capex requested in this Application.

Table 4. Energex's Forecast N – 1 Gains Zone and Bulk Supply Substations from Capex Spends

	2005/06	2006/07	2007/08	2008/09	2009/10
\$2.707 Billion Capex					
Bulk Supply Substations					
Total Substations	34	34	34	34	35
Number N – 1 Compliant	14	12 ¹¹	12	14	14
% Compliance	41%	35%	35%	41%	40%
Zone Substations					
Total Substations	200	207	212	217	219
Number N – 1 Compliant	65	64	63	66	64
% Compliance	33%	31%	30%	28%	29%
\$3.427 Billion Capex					
Bulk Supply Substations					
Total Substations	34	36	37	39	40
Number N – 1 Compliant	14	15	22	22	19
Gain over \$2.7B (Number) ¹	nil	3	10	8	7
% Compliance	41%	42%	59%	56%	47%
Gain over \$2.7B (%)	nil	+ 7%	+ 24%	+ 15%	+ 7%
Zone Substations					
Total Substations	200	207	213	218	250
Number N – 1 Compliant	65	83	122	140	157
Gain over \$2.7B (Number) ¹	nil	19	59	74	93
% Compliance	33%	40%	57%	64%	63%
Gain over \$2.7B (%)	nil	+ 9%	+ 27%	+ 36%	+ 34%

1. The gain is the sum of the new substations (all compliant) and the reduction in the number of existing substations that are not compliant.

The additional \$720 million in capex is forecast to improve N – 1 compliance of zone substations to 63%, and bulk substations to 47%, which is a significant improvement relative to current levels. This is despite the constraint on the rate of improvement caused by continued high levels of demand growth, particularly the underlying impact on bulk substations.

In summary, Energex's planning outcomes show that the proposed \$3.427 billion capex spend provides a significant improvement in N – 1 compliance for bulk and zone substations compared to a \$2.707 billion capex spend.

2.1.3 Demand utilisation

The EDSD Review recommended that Energex reduce network utilisation to at least 60% to 65% on the basis that this represents "good industry practice".¹² Further to this, the Queensland Government Action Plan requires that Energex reduce asset utilisation of bulk supply substations to between 60% and 65% and also reduce the utilisation of zone substations to between 50% and 55%.¹³

¹¹ The number of N – 1 compliant bulk supply substations declines in this financial year due to the impact of load growth on capacity needed to comply with N – 1.

¹² Independent Panel (July 2004), *Electricity Distribution and Service Delivery for the 21st Century*, Summary Report – Appendix 6, p.50.

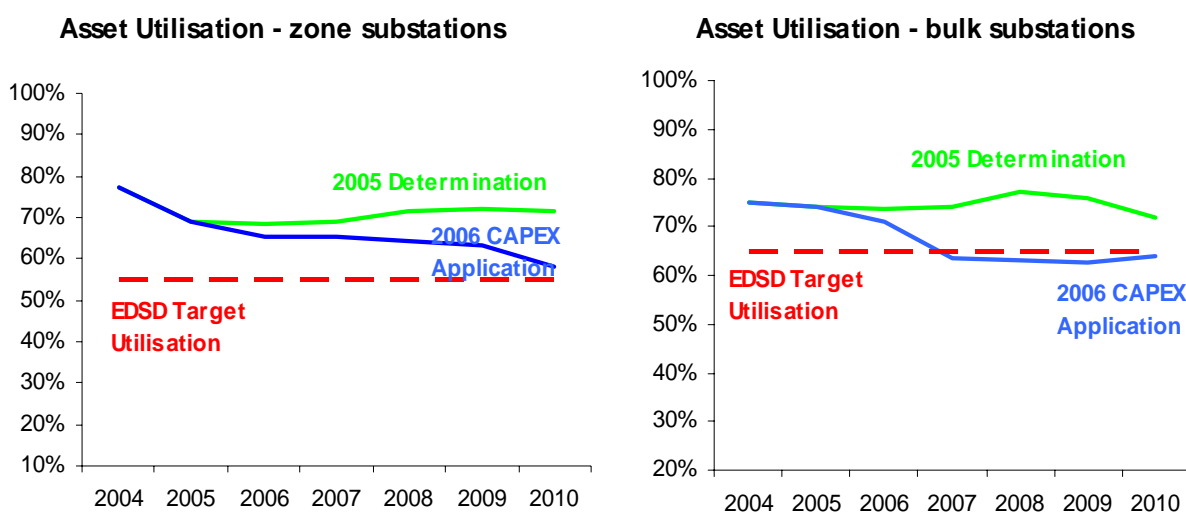
¹³ Queensland Government (2004), *An Action Plan for Queensland Electricity Distribution*.

While the ESDS Review recommended action for both utilisation and system security (i.e. N – 1), average substation utilisation will improve as an indirect result of Energen delivering the N – 1 improvement target for zone and bulk supply substations.

Energen’s modelling shows that the additional \$720 million capex will meet the network utilisation recommended in the ESDS Review and the actions included in the Queensland Government Action Plan. Analysis of utilisation under \$2.707 billion capex program shows that network utilisation would remain around 70% at the end of the current regulatory period.

Figure 5 illustrates the network utilisation levels under the \$2.707 billion and \$3.427 billion capex programs.

Figure 5. Average Demand Utilisation – NPR (%)

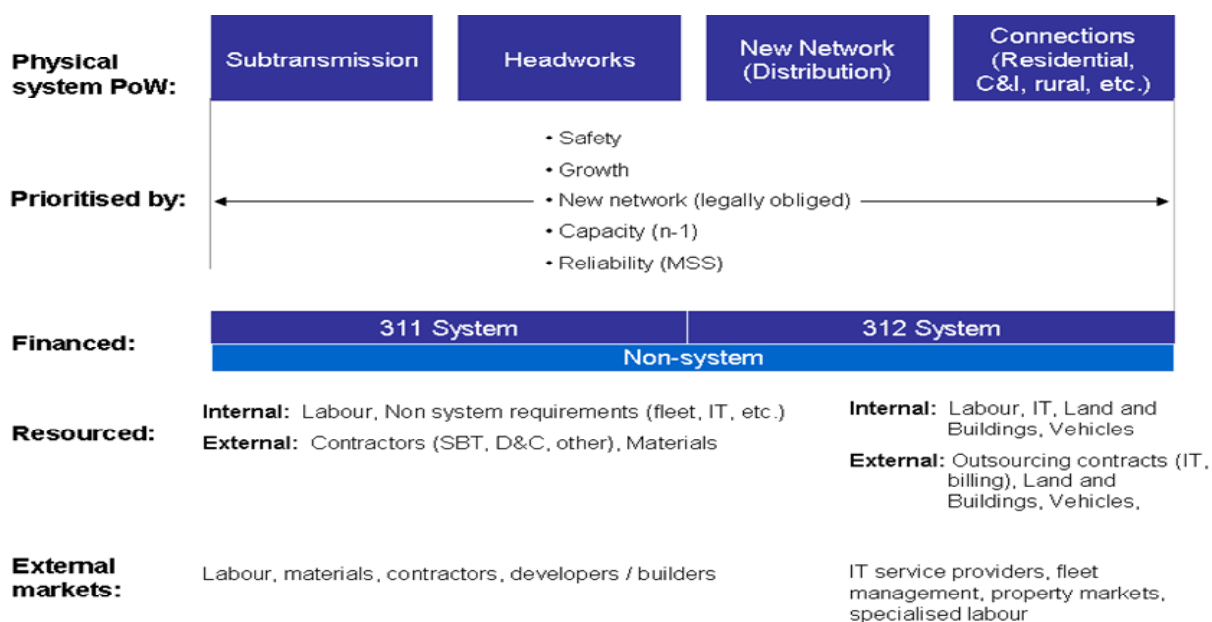


2.2 Non-system capex

Non-system capex is integral to investment in the electricity distribution network. Non-system capex enables the delivery of system capex (as well as operating and maintenance activity on the network) through the provision of complementary assets, such as specialised vehicles, communications systems, and information technology.

Figure 6 illustrates how non-system capex supports the effective delivery of system capex.

Figure 6. Energen's value chain – How Non-system Capex Supports System Capex



As stated previously, Energen's Application seeks additional non-system capex of \$77.000 million to support its system expenditure program. Table 5 details the non-system capex requested.

Table 5. Additional Non-System Capex in \$3.427 billion Capex Program, by Type (\$ 2004 million)

Non-System Category	2005/06	2006/07	2007/08	2008/09	2009/10	Total	Total Request
Fleet	15.434	18.897	-1.786	-1.404	2.144	33.285	
Tools & Equipment	10.162	6.318	2.863	2.908	2.876	25.127	
Property	10.896	14.248	-10.689	-1.569	6.839	19.725	
Total Non-System	36.492	39.463	-9.612	-0.065	11.859	78.137	77.000

The reason for the increase in non-system capex is that:

- ◆ it supports the additional system capex requested; and
- ◆ Energen's original 2004 non-system capex proposal, as accepted by the Authority, under-estimated the requirement for non-system capex to support EDSD related works.

Energen considers that the proposed increase in non-system capital is warranted, to enable the total system capex to be delivered. Details of each component of the proposed expenditure follow.

The network **fleet** consists of all vehicles used in the delivery of network services. The fleet costs included in the Final Determination were under-estimated as Energen had not appropriately allocated the fleet cost to the Network business units. Further, additional vehicles are required to support the increased workforce and system capex. The safety of the fleet has also been enhanced, with a greater number (and proportion) of elevated work platform (EWP) vehicles, which has increased fleet costs.

Additional **tools and equipment** are required to support the increased workforce and system capex. These additional costs were not included in the original submission to the Authority. Further, Energex has undertaken significantly greater investment in mobile generators than originally forecast. These additional mobile generators facilitate the achievement of minimum service standards by providing continuity of supply during planned network upgrade works.

The non-system **property** assets include land and buildings for depots and hubs, and support the operations of the field workforce. The additional property assets are required to provide new and expanded sites to locate the increase in the workforce. Further, the additional investment in new locations will improve the network response times as the new depots are located in key growth areas of Energex's distribution network.

2.3 Summary

Energex submits that the above analysis demonstrates that it will not make adequate progress toward meeting most of its EDSD commitments under the level of capex approved in the 2005 Final Determination. Importantly, under this level of expenditure, the proportion of zone and bulk supply substations that are N – 1 compliant will remain well below targets, and in fact are forecast to fall due to the ongoing impact of growth. Energex has shown that an increase in capex by \$720 million to \$3.427 billion provides a significant technical improvement.

In addition, under the \$2.707 billion capex program the probability of Energex making the needed reliability gains to achieve MSS is significantly lower than under the comparable \$3.427 billion capex program.

The request for recognition of the additional \$720 million of capex would therefore allow Energex to make substantial progress towards meeting the EDSD obligations in the current regulatory period.

3 ABLE TO UNDERTAKE THE INVESTMENT WISELY

The Authority requires that Energen demonstrate it is able to undertake any increase in investment wisely. Energen understands that the Authority will examine this condition of the capex pass-through mechanism by examining whether:

- ◆ Energen has the necessary resources to deliver the capex program (i.e. is able);
- ◆ Energen has implemented policies and procedures to ensure that it undertakes only prudent and efficient investment (i.e. will invest wisely); and
- ◆ Energen’s proposed cost base from the additional capex is comparable with other electricity distribution businesses.

The remainder of this section sets out Energen’s demonstration of these tests.

3.1 Ability to resource the additional capex

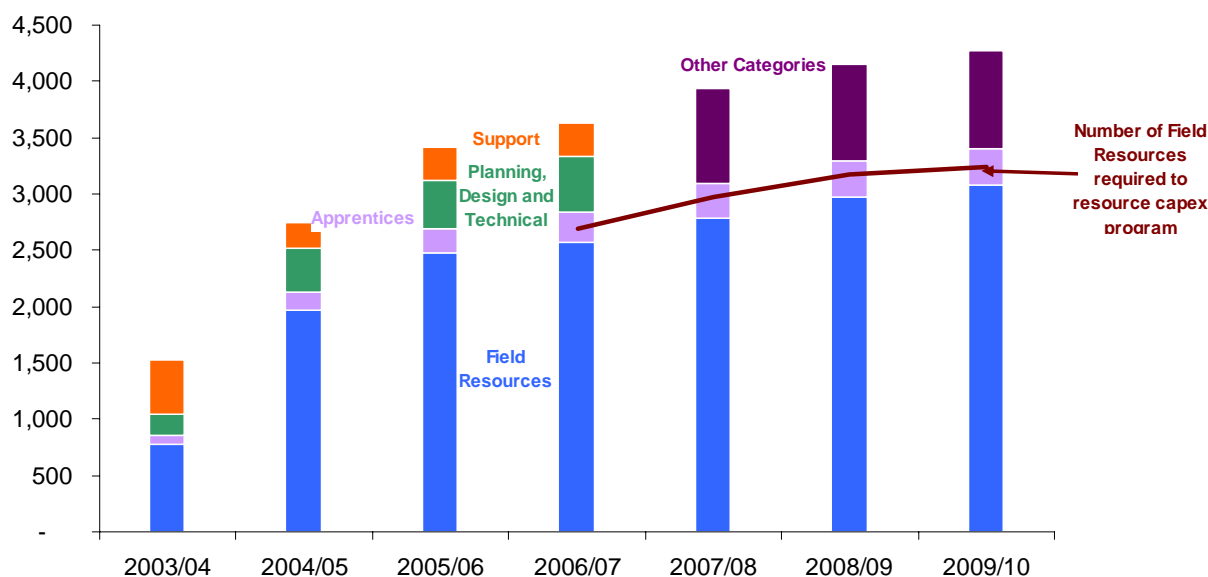
In the Authority’s Final Determination, Energen was able to demonstrate that it could resource the BRW recommended total capex spend of \$2.707 billion to 2009/10. Since this time, Energen has further expanded its workforce and updated its Workforce Plan to demonstrate its ability to resource its proposed increased Program of Work out to 2010.

In 2004/05, Energen’s system capex was \$526 million, increasing to \$645 million in 2005/06¹⁴. The current annual rate of capex supports a total capex profile to 2009/10 of \$3.427 billion. Energen has achieved this higher spend level through its significantly expanded workforce.

Recent and proposed increases in Energen’s resource capabilities are illustrated in Figure 7.

Figure 7. Breakdown of Regulated Workforce Plan from 2005 to 2010

Break down of Regulated Workforce plan from 2005 to 2010 by FTE



¹⁴ In dollars of the relevant financial period, 2004/05 actual capex spend in 2004 \$ was \$516 million less depreciation adjustment of \$18.2 million, which makes the Authority equivalent capex spend for 2004/05 \$497 million. For 2005/06 actual capex spend in 2004 \$ is \$618 million less depreciation adjustment of \$17.4 million, which makes the Authority equivalent capex spend for 2005/06 \$600.6 million.

Having reviewed the Workforce Plan against the \$3.427 billion capex program, Energex is confident it can deliver the necessary resources for this program.

The key changes to the workforce are:

- ◆ **planning resources** – In accordance with the EDS Review recommendations, Energex has increased its planning resources¹⁵ by 150 per cent, from 16 staff in July 2004 to 40 in 2005/06. This has provided the resources necessary to prepare the detailed capex program included as part of this Application; and
- ◆ **field workforce** – Energex has prepared a detailed resource plan in conjunction with the capex plan. Since July 2004, Energex has recruited more than 450 field staff (including trades people and power workers). In 2005/06, an additional 84 apprentices were recruited, taking the total number of apprentices to 218 (as at May 2006). These internal resources are supplemented by a significantly expanded contractor base.

The primary elements of Energex's strategy to achieve continued growth in workforce capability and capacity are the continuation of:

- ◆ **recruitment** campaigns, where appropriate, to attract skilled workers;
- ◆ enhancements to **training and placement strategies** to ensure new staff are fully productive as quickly as possible;
- ◆ **apprentice**¹⁶ intakes to provide future tradesperson resources; and
- ◆ investment in **upstream capability development** programs such as paraprofessional traineeships and a graduate engineer development program.

Further details of Energex's resourcing policies and procedures are provided in Section 17 of the Annual Network Management Plan (Appendix D).

3.2 Policies and procedures to ensure wise investment

The Authority's Final Determination listed the following concerns regarding Energex's ability to deliver a capex program greater than \$2.707 billion:

- ◆ insufficient rigour of planning and forecasting processes;
- ◆ inability to substantiate forecasts;
- ◆ ineffective budgeting processes; and
- ◆ insufficient detail in the resource plan.¹⁷

Similar conclusions were reached by the EDS Review.

In response to these findings, Energex undertook an extensive review to improve network planning and investment processes to ensure that future network investment is undertaken in a systematic, prudent and efficient manner. This, in turn, ensures that network investments are based on a planning solution that addresses system limitations in a least cost manner, taking into account (over a reasonable planning horizon):

- ◆ forecast load;

¹⁵ Energex currently has: 19 Planning Engineers, 11 Planning Para-Professionals, 3 Planning Analysts and 8 Planning Managers with Technical Qualifications.

¹⁶ Energex's total apprentice pool is currently at 220 persons, consisting of: first year 42; second year 80; third year 60; and fourth year 38.

¹⁷ Queensland Competition Authority, *Final Determination – Regulation of Electricity Distribution*, April 2005, pp. 71 – 72.

- ◆ load transfer options;
- ◆ demand side management options;
- ◆ contingency plans and expected risks from contingency plans; and
- ◆ any resource and / or material constraints.

Energex now has a more thorough planning process and the quality of each step in that process has improved. Energex engaged SKM to undertake a review of Energex's processes for evaluating and prioritising capex programs. Based on their analysis of Energex's allocation and prioritisation of capex over the current regulatory period, SKM concluded that Energex's capex program was prudent and warranted.¹⁸

The key changes have included:

- ◆ planning resources – an increase in number of planning engineers from 16 full time equivalents (FTEs) to 40 FTEs;
- ◆ substation demand forecasts – incorporation of weather adjusted forecasts, with POE 50 forecasts to not exceed Emergency Cyclic Capacity (ECC) for credible single contingency;
- ◆ substation demand forecasts – POE 10 forecasts do not exceed Normal Cyclic Capacity (NCC) during extreme (hot) weather events;
- ◆ feeder demand forecasts – incorporation of weather adjusted forecasts, with POE 50 forecasts to not exceed ECC for credible single contingency for transmission feeders;
- ◆ network limitation analysis – technical limitation addressing N – 1 planning philosophy, and requirements of the National Electricity Rules (NER);
- ◆ Network Strategic Plan – with additional planning resources, the Network Strategic Plan has been updated and continuously monitored;
- ◆ Network security (Development Plan), reliability, technology and contingency plans – these sub-plans set out investment approaches for a range of projects to address the noted network limitation. In simple terms, these documents provide tactical solutions for addressing network limitations in relation to security (N – 1), reliability (meeting MSS and improving the reliability experience of customers), technology (building a smart electricity distribution network), and contingency management (including risk mitigation strategies) (see Appendix D for more details); and
- ◆ proposal updates – these can occur as a result of ongoing review within the planning and investment process, and also as a function of Energex now being required to undertake consultation with the market to seek non-network investment solutions for proposed network investments greater than \$10 million.

Appendix C provides further information on Energex's planning policies and procedures, while Appendix E provides further information on Energex's processes for prudent and efficient capex.

¹⁸

3.2.1 Planning drivers

Energex's planning and investment are not just determined by the legal requirements or Energex's vision for the electricity distribution network and the way that energy is delivered to customers. A substantial driver is the current 'state' of the electricity distribution network. For instance, between 2004/05 and 2006/07, Energex's Program of Work has largely reflected the priority to install significant amounts of capacity in key areas of the existing electricity network to meet customer demand. The spend in this category reduces after this time, reflecting that, in subsequent years, the network planning and investment priorities will be more effectively addressed by building 'new' network.¹⁹

The switch from expanding existing capacity to building new network can be seen in the uplift in capex spend that occurs in the 'demand reliability' category of Energex's Program of Work from 2007/08 to 2009/10. This capex category addresses demand by building new network, which also improves reliability by having more feeders with less customers per feeder.

3.2.2 Regulatory tests

In addition to Energex's internal policies and procedures, clause 5.6.2 of the National Electricity Rules (NER) requires distributors to undertake an economic cost effectiveness analysis for major capex projects²⁰ to identify options that meet the technical requirements of schedule 5.1 of the NER, which then forms the basis for consulting with the market to determine whether there are any non-network or other investment options. Energex expects to or is currently undertaking 43 regulatory tests covering in the order of \$690 million of capital network investment to 2010. This means that some 20% of the proposed capital investment in the network will be subject to a transparent public consultation process, which will be based on an economic cost effectiveness analysis of all possible options (including supply, demand and generation).

Energex's Planning Guidelines provide further guidance for staff undertaking regulatory tests for major projects (see Appendix E).

3.3 Economic dimensions of demonstrating wise investment

The various changes to Energex's planning processes and policies noted above combine to result in a significant overall improvement in the robustness of the planning cycle. In particular, Energex is of the view that the changes support a conclusion that the \$720 million additional capex requested represents an efficient spend with regard to:

- ◆ technical efficiency or greatest impact in terms of improved network performance; and
- ◆ productive efficiency or least cost solution.

Energex's approach is to demonstrate technical efficiency by identifying the range of plausible network options and then selecting the most efficient engineering solution to meet performance targets over a reasonable planning horizon. At the network level, technical efficiency is achieved where the proposed technical (planning and investment processes) plan sets out the engineering requirements best able to meet the statutory and policy requirements covering service obligations as set by the Queensland Government. Productive efficiency is demonstrated when the total costs of the proposed capex spend to implement the technical plan is minimised with regard to the business environment, i.e. available resources, financing issues, and other external drivers.

¹⁹ Critically, between 2004/05 and 2006/07, while Energex builds capacity within the existing network by augmentation works this allows the substantial process of purchasing land, gaining easements and wayleaves for the new network build which will occur between 2007/08 and 2009/10. Moreover, the *Integrated Planning Act*, and the requirement to do regulatory tests to a much lesser extent, ensures that when making any substantial new investment Energex must schedule a lead time of up to 2 years to ensure compliance with all of the relevant infrastructure and local government planning requirements.

²⁰ Major capex projects are defined as those with a cost of \$10 million or greater.

In this section, Energex outlines how the proposed \$3.427 billion capex program is technically and productively efficient. This section also highlights that technical and productive efficiency should be considered together.

3.3.1 Technical efficiency – selecting the most appropriate solutions to produce the best network outcomes

For the Authority to pass through Energex's additional capex to customers, it must be satisfied that Energex's additional capex is technically efficient. In summary, Energex's position is that the \$3.427 billion capex program is technically efficient because:

- ◆ the program has been developed by a systematic planning and investment process (as outlined in Section 3); and
- ◆ the balanced program has been tested to ensure it will provide optimum benefit in terms of improved quality of services, including:
 - increasing the proportion of bulk supply and zone substations that are N – 1 compliant;
 - providing enhanced probability of achieving MSS targets by 2010; and
 - reducing the level of network utilisation.

Energex's detailed planning processes capture and rigorously assess all relevant options against defined criteria, and are targeted at the best possible network outcomes for customers. Projects and programs developed through this planning process therefore represent a robust test for technical efficiency.

3.3.2 Productive efficiency – least cost network solutions

Productive efficiency requires that, given the market and timeframe, there be no other feasible lower cost combination of inputs that provides a given level of output. Energex believes that the proposed combination of capex and opex included in Energex scope of work with the \$3.427 billion capex program represents a least cost combination of inputs to achieve the desired network outcomes.

It is difficult for a regulated monopoly to demonstrate productive efficiency as there is no process whereby costs are minimised as a function of competition between industry participants. Accordingly, Energex considers one approach to assuring that current cost proposals approximate a productive efficient outcome is to compare the proposed costs to similar business operations. In the balance of this section, Energex provides a summary of its findings from this comparison.

3.3.2.1 Benchmarking costs

The regulation of electricity distributors through incentive-based pricing arrangements has seen the extensive use of benchmarking in the setting of 'efficient' costs within the building blocks used to determine the cost to serve. Despite this, there has been no standard model developed to analyse network cost performance. Instead, benchmarking of regulated businesses often consists of partial indicators focused on specific cost components, i.e. operating costs per customer or capital costs per kilometre of line.

Energex's approach to benchmarking the \$3.427 billion capex program, including system and non-system capex, has been to examine its costs and expected network outcomes against a peer group through the use of partial measures in terms of historic, current and forecast costs. The relevant comparator group used was AGL, Citipower, Energy Australia, Integral Energy and Ergon Energy. These distributors were chosen because:

- ◆ similar customer densities – AGL, Citipower, Energy Australia, and Integral Energy; and
- ◆ similar legal environments – all distributors are subject to economic and technical regulation, but importantly AGL and Citipower distribution licences allow the use of probabilistic planning philosophy with the targeting of reliability standards – the same planning philosophy as Energex’s prior to EDSD, while Energy Australia, Integral Energy and Ergon Energy are in the same position as Energex in terms of moving from a probabilistic planning philosophy to a deterministic planning philosophy.

Figure 8 presents results from the benchmarking analysis by comparing Energex’s cost base to other Australian electricity distributors on the key measure of cents per kWh for distribution use of system tariffs in 2006/07 and 2009/10. At a higher level this measure captures the relevant costs for electricity distribution businesses. Accordingly, Energex considers this to be an appropriate measure to illustrate that despite the increase in the capex program to \$3.427 billion, Energex’s total cost base remains comparable to other Australian electricity distributors.

Figure 8. Energex compared to Other Australian Electricity Distributors: cents per kWh DUOS Tariff 2006/07 and 2009/10 Indicative Residential Customer

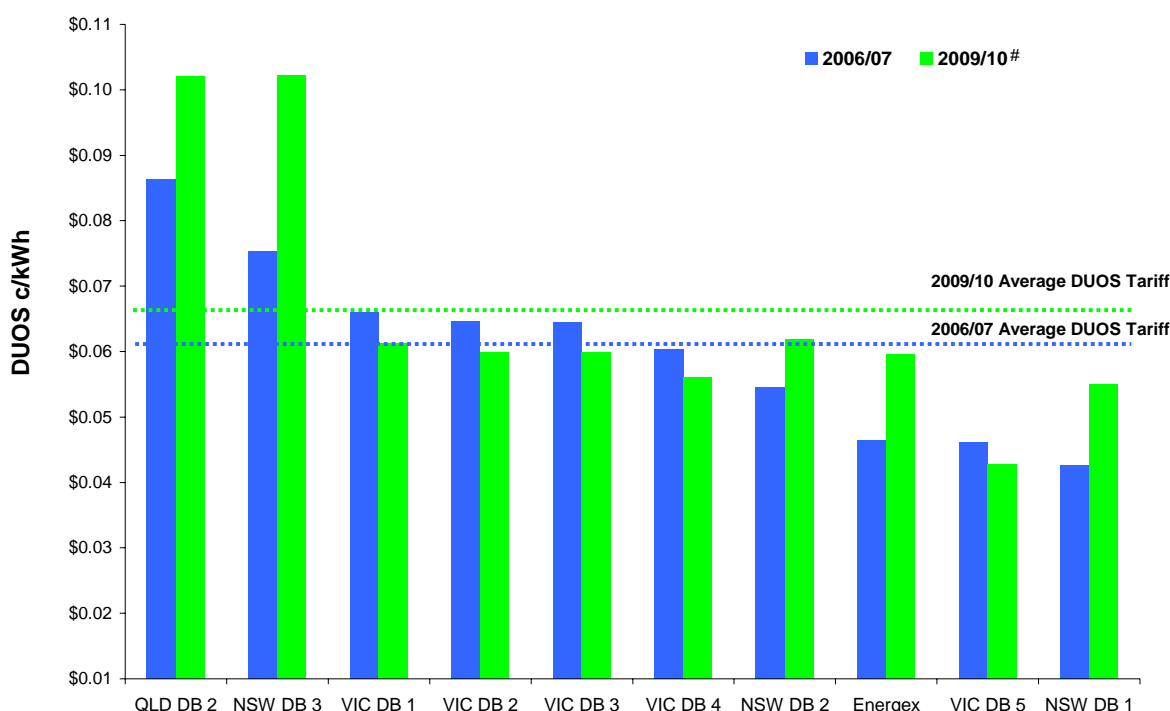
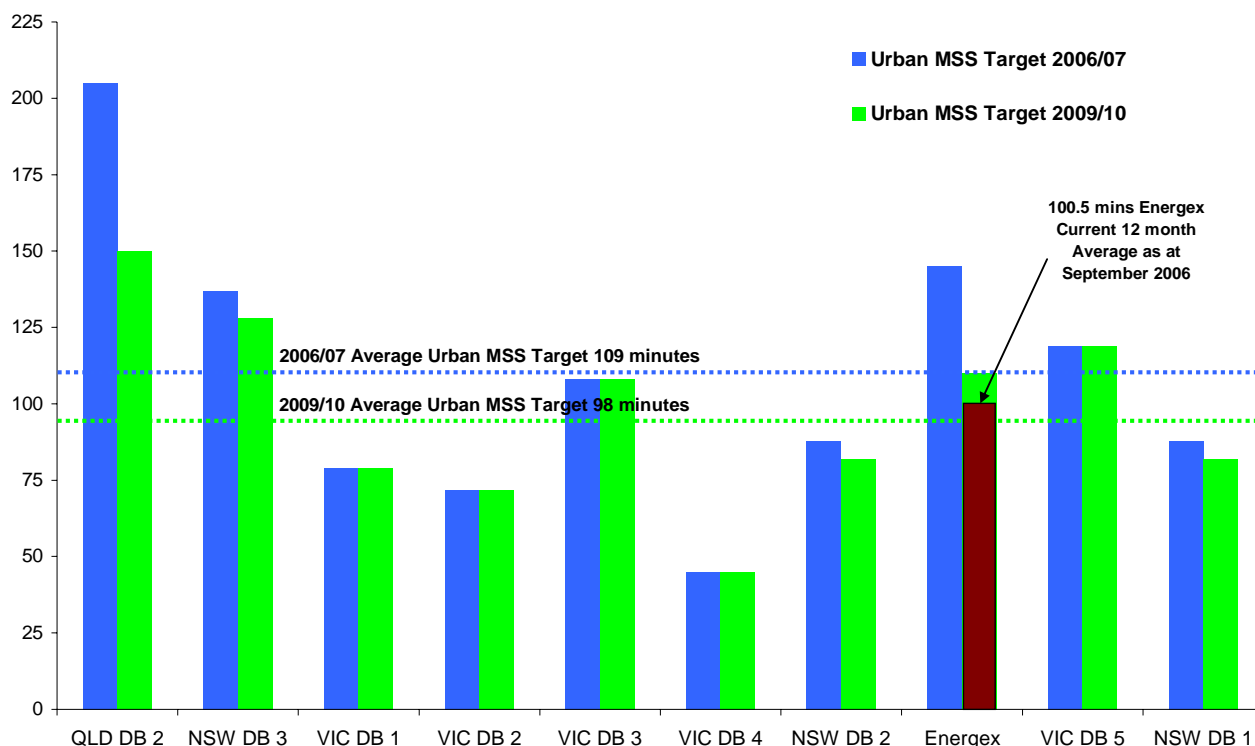


Figure 8 is complemented by the comparison of the reliability performance and targets across the same electricity distributors. Figure 9 illustrates the minimum service standard (MSS) targets for the urban networks for the same electricity distributors, and based on the \$3.437 billion capex spend path, the gap between Energex’s service quality performance and the industry average closes significantly.

Figure 9. Energex compared to Other Australian Electricity Distributors: SAIDI minutes for Urban Network Minimum Service Standards 2006/07 and 2009/10



In summary, this high level benchmarking demonstrates that Energex's forecast system and non-system capex program:

- ◆ result in network prices (distribution only) which are still below the Australian average; and
- ◆ significantly improves the relative performance of the Energex network compared to the industry average.

Energex's study also showed that the level and movement in Energex's capex program was similar to what is being experienced by the electricity distribution businesses included within the study. Further, an Energex commissioned study by SKM found that its capex program was consistent with benchmarks for comparable distribution businesses.²¹

²¹ SKM (2006), *Review of Energex Program of Work 2005/06 – 2009/10*, Final Report.

3.4 Summary

In this section Energex has outlined:

- ◆ how it is able to resource the proposed additional capex to 2010 and into the next regulatory period;
- ◆ that its planning and investment practices have improved markedly since the time of the 2005 Final Determination, and ensure prudent and efficient investment in the network; and
- ◆ that the level of Energex's forecast total capex will result in price and service quality impacts that are well within the bounds of current industry practice.

4 DEMONSTRATE NEW CAPEX ONLY

This section demonstrates that the capex included for consideration in this Application is not included in the capex forecasts approved by the Authority in the Final Determination. Rather this is new capex required to assist in meeting Energen's EDSD obligations and / or constitutes reinstatement of capex specifically excluded by BRW.

This section provides the detail to support the additional capex forecasts as set out in Table 1. Table 6 is a repeat of Table 1 and is included for ease of comparison.

Table 6. Additional System and Non-System Capital Expenditure (\$ million, June 2004) Compared to the 2004 Capex adjusted for EBA Allowance

	2005/06	2006/07	2007/08	2008/09	2009/10	Total	Total Request
Asset Replacements	9.494	2.313	15.135	20.710	17.565	65.219	
Demand Related – Corporate Initiated	23.434	53.467	84.258	108.281	145.376	414.817	
Demand Related – Customer Initiated	0.921	14.703	19.768	4.591	0.073	40.057	
Reliability Improvement	0.459	0.387	28.232	48.506	46.442	124.027	
Other System	-	-	-	-	-	-	
Total System	34.309	70.871	147.393	182.089	209.457	644.119	643.000
Non-system	36.492	39.463	(9.612)	(0.065)	11.859	78.137	77.000
Total	70.801	110.334	137.781	182.024	221.316	722.256	720.000

The remainder of this section provides in detail the new or reinstated capex (system and non-system capex) that Energen is seeking to have recognised within the current regulatory period.

4.1 System Capex

Energen is seeking recognition of an additional \$643.000 million in system capex to 2009/10. The proposed additional system capex includes capex disallowed by the Authority's consultants, BRW, and new system capex, which is forecast to contribute to Energen meeting the service obligations arising from the EDSD Review.

The balance of this sub-section on system capex sets out, by the Authority's capex categories, the proposed reinstated or new capex linked to EDSD Review recommendations or the Queensland Government Action Plan.

4.1.1 Asset Replacement

A key recommendation emerging from the Queensland Government's Action Plan for Queensland Electricity Distribution was the requirement that:

"Energex will aim to reduce in-service pole failures to zero over the next 5 years".²²

The Queensland Government's recommendation was a response to the EDSD Review recommendation 23, which required Energex to reduce the three year rolling average of in-service pole failures to a significantly lower level, and with the goal of eliminating in-service pole failures given the associated safety issues.²³

To achieve this outcome Energex has to replace or reinstate poles, particularly those poles in excess of 45 years of age. Energex's assessment of pole replacements to achieve the EDSD Review recommendation will require the replacement or reinstatement of an additional 13,315 bush poles. Energex estimates that this will require additional capex of \$36.753 million (2004 \$) to 2009/10.

Energex's capex submission to BRW and the Authority in June 2004²⁴ proposed a capex sub-program for pole replacement of \$117.800 million (\$115.392 million in original terms, the difference reflects the inclusion of the EBA allowance). BRW rejected around \$56 million of this proposed program, which set an approved capex funded allowance of \$97.800 million.

Accordingly, Energex is seeking to have the \$36.753 million for pole replacement reinstated on the basis that:

- ◆ the requested additional capex is EDSD Review related; and
- ◆ it re-instates capex previously disallowed by BRW.

Included in this expenditure category is the reconductoring of distribution (11kV) Feeders to remove 7/064 copper conductor. As described in section 4.1.2 below, there is a specific EDSD recommendation and action to remove and replace 7/064 copper conductor within the distribution network. The 20 conductor replacement projects in the category total \$28.466 million in expenditure.

4.1.2 Demand Driven Corporate Initiated

Energex is seeking recognition for an additional \$414.817 million in new EDSD-related capex in this capex sub-program. Appendix A provides a comprehensive, detailed listing of the new projects to be funded by this additional capex.

The additional capex of \$414.817 million is expected to deliver the following service quality improvements to 2009/10:

- ◆ 5 new Bulk Supply Substations, which are forecast to improve utilisation by 7.7% to 64%, and increase Energex's N – 1 compliance for bulk supply substations by 7% to 47%;
- ◆ 31 new Zone Substations, which are forecast to improve utilisation by 13.4% to 58.2%, and increase Energex's N – 1 compliance for zone substations by 33.6% to 62.8%²⁵;

²² Independent Panel (July 2004), *Electricity Distribution and Service Delivery for the 21st Century*, Summary Report – Appendix 6, p.51.

²³ Independent Panel (July 2004), *Electricity Distribution and Service Delivery for the 21st Century*, Summary Report – Appendix 6, p.51.

²⁴ Energex, (June 2004), Submission to Burns and Roe Worley and the Queensland Competition Authority: Capital and Operating Expenditure Proposals 2005-06 to 2009-10, page 26.

²⁵ Starting point 2004/05 with gains to 2009/10.

- ◆ 39 new short rural and 174 new urban 11kV feeders, which is a direct investment outcome driven by the construction of new bulk supply and zone substations;
- ◆ forecast short rural SAIDI improvement of 7.7 minutes to 2009/10 from new 11kV feeders, which results in reducing the number of customers per feeder; and
- ◆ forecast urban SAIDI improvement of 4.1 minutes to 2009/10 from new 11kV feeders.

The forecast improvements to utilisation, N – 1 compliance and SAIDI improvements from the proposed additional \$414.817 million of demand driven corporate initiated capex is consistent with ESDS Review recommendations 17 and 18²⁶, which requires N – 1 compliance on bulk supply and zone substations, and reduced asset utilisation, respectively. Importantly, the additional capex in this sub-program ensures that Energex progresses towards meeting the Queensland Government's Action Plan for Queensland Electricity Distribution's recommendations and scheduled timing of milestones for achieving N – 1 compliance and asset utilisation for substations.

Energex is also seeking recognition of an additional new \$7.813 million of capex within the demand driven corporate initiated sub-program. The proposed new capex will be expended on replacing 92 km of voltage conductor to 2009/10, which is consistent with the requirement of ESDS Review recommendation 13. The ESDS Review recommended:

"Energex and Ergon Energy put strategies in place to replace their ageing 7/064 copper conductors in order to reduce voltage drops. This will also have the advantage of allowing the distributors to carry out more live line work, leading to reduced SAIDI."²⁷

In summary, Energex is seeking to have the proposed additional capex of \$414.817 million for demand driven corporate initiated recognised in the current regulatory period on the basis that:

- ◆ the requested additional capex is new; and
- ◆ it can be directly linked to meeting service obligations arising from the ESDS Review recommendations.

4.1.3 Demand Driven – Customer Initiated

Energex is seeking to have specific customer driven projects of \$40.057 million reinstated. In Energex's June 2004 capex submission to the Authority, \$63.700 million²⁸ was requested for head works to supply large customer requested loads. The capex sub-program identified specific projects for the first two years of the regulatory period, but did not include specific projects for the remaining years. On this basis, BRW recommended that the Authority only allow Energex \$22 million.

Energex has now identified specific projects for this capex sub-program to support the reinstatement of an additional \$40.057 million capex, which will take the total capex allowance for this sub-program to \$62.100 million.

Appendix A provides details on the projects to be funded by the reinstated Demand Driven – Customer Initiated capex.

²⁶ Recommendation 17: "ENERGEX be required to maintain "N-1" on all bulk supply sub-stations, zone supply sub-stations and sub-transmission feeders. Critical high voltage feeders should also meet "N-1" with the exception of those where ENERGEX can provide satisfactory evidence that this does not put significant numbers of customers at risk. Where ENERGEX chooses to use interconnection to provide "N-1" capacity for single transformer bulk or zone supply sub-stations, it should be required to demonstrate that there is adequate transfer capability to meet "N-1" in a timely manner. "

Recommendation 18: "ENERGEX should reduce its asset utilisation to a level consistent with good industry practice (ie. 60% to 65%). ENERGEX should be required to develop a detailed programme to demonstrate how it intends to return to this prudent level of utilisation over the next regulatory period."

²⁷ Independent Panel (July 2004), *Electricity Distribution and Service Delivery for the 21st Century*, Summary Report – Appendix 6, p.49.

²⁸ Energex, (June 2004), Submission to Burns and Roe Worley and the Queensland Competition Authority: Capital and Operating Expenditure Proposals 2005-06 to 2009-10, page 21.

4.1.4 Reliability Improvement

To meet the MSS obligations set out in the EIC, Energex must make investments in the electricity distribution network to improve reliability and service quality. Energex has designed, planned and costed a range of reliability and service quality improvement initiatives, which are specifically targeted at the 11kV backbone of Energex's network.

These reliability and service quality improvement initiatives are supported by specific projects, and are estimated to cost an additional \$124.027 million to 2009/10. The additional capex will deliver the following extra distribution reliability projects:

- ◆ 56 in 2007/08;
- ◆ 69 in 2008/09; and
- ◆ 67 in 2009/10.

The additional capex spend is forecast to deliver a reliability improvement of:

- ◆ 13 minutes of SAIDI on the short rural network; and
- ◆ 5.5 minutes of SAIDI on the urban network.

These reliability improvements will assist Energex in achieving its legal obligation to ensure that, by 2009/10:

- ◆ short rural network customers experience a minimum quality of service as measured by SAIDI of 220 minutes (down from 265 minutes in 2005/06) and SAIFI or frequency interruption of 2.50 times in the year (down from 2.77 times in 2005/06); and
- ◆ urban network customers experience a minimum quality of service as measured by SAIDI of 110 minutes (down from 155 minutes in 2005/06) and SAIFI or frequency of interruption of 1.31 times in the year (down from 1.73 times in 2005/06).

Energex's requested additional capex for reliability and quality improvement capex sub-program will also contribute to improving the SAIDI and SAIFI performance of the 10% of worst performing feeders (WPF). By improving the reliability performance of the WPF group, Energex will be addressing EDSD Review recommendation 10, which required Energex to:

"...develop a program for improving the current 10% of worst performing feeders (which have more than double the duration of outages than the Energex average) with the objective of bringing them within 50% of the Energex average."²⁹

Appendix A provides details on the projects to be funded by the new Reliability Improvement capex.

²⁹

Independent Panel (July 2004), *Electricity Distribution and Service Delivery for the 21st Century*, Summary Report – Appendix 6, p.49.

4.2 Non-system capex

Energex is seeking recognition of an additional \$77.000 million in non-system capex to 2009/10. The proposed additional non-system capex is all new capex to support the delivery of the ESDS obligations, and also reflects that Energex's original 2004 non-system capex proposal, as accepted by the Authority, significantly under-estimated the requirement for non-system capex.

The balance of this sub-section sets out the proposed new non-system capex by non-system capex by program. Further details on the proposed new non-system capex are provided in Appendix B.

4.2.1 Fleet assets

The 2004 Submission included a total Energex fleet capex forecast of \$91.692 million. This forecast was based on the nominated fleet replacement criteria and the purchase of an additional 90 trucks to meet the increase in staff numbers necessary to deliver the investment on the network.

In determining the capital costs for the additional 90 trucks, Energex inappropriately allocated costs to the non-regulated part of the business, effectively short funding the regulated fleet program by some 14 trucks (or \$2.520 million).

Energex is seeking recognition for an additional \$33.285 million (\$2004) in new capex in this non-system capex sub-program.

The additional capex of \$33.285 million will fund the shortfall noted above and deliver the new fleet required to support the additional staff numbers necessary to deliver the Program of Work (POW), specifically an additional (i.e. new):

- ◆ 152 trucks;
- ◆ 53 utilities; and
- ◆ 31 light fleet.

The requested non-system capex is critical to the delivery of system capex as it provides sufficient resources that enable Energex's labour resources to effectively carry out the necessary system capex, which in turn, delivers direct improvements to service obligations arising from the ESDS Review.

4.2.2 Tools and Equipment

The 2004 Submission included Energex's forecast for tools and equipment of \$3.300 million per year, with a total of \$16.500 million for the regulatory period. This level of expenditure was based on historical activity and did not include adequate allowance of the provisioning of new staff to deliver the POW and for the generators necessary to deliver the service reliability outcomes from the ESDS review.

Energex is therefore seeking recognition for an additional \$25.127 million in new tools and equipment capex. This additional capex will allow Energex to adequately equip new staff and deliver the necessary generator fleet, as well as replace and upgrade existing tools and equipment.

4.2.3 Property

The 2004 Submission included \$39.600 million for the land and buildings and furniture and office equipment programs. At the time, this estimate did not adequately allow for the additional staff and fleet that Energex would require to meet the ESDS obligations.

Energex is therefore seeking recognition of an additional \$19.725 million (\$2004) in new property capex. This additional non-system capex will provide:

- ◆ a new depot at Underwood (constructed in 2005/06);
- ◆ a further two new operational depots; and
- ◆ extensive extensions of facilities at two existing depots.

Energex has had to make significant extensions of existing property facilities to accommodate the increased workforce. In June 2004, there were 1,256 staff in Energex's Asset Services Division. These staff along with additional administrative and support staff were responsible for carrying out the work necessary to operate, maintain and augment the electricity distribution network. As such these staff were located in depots and offices throughout south east Queensland (excluding the Corporate Office). By comparison in August 2006, Energex has 1,850 staff in the Energy Delivery Division (previously known as the Asset Services Division in early 2006) and this number will increase as per Energex's Workforce Plan.

4.3 Summary

This section outlines that the additional system and non-system capex that Energex requires within the current regulatory period to meet its ESDS obligations is new. The new system capex amounts to \$643.000 million, and contributes to meeting the following service obligations: compliance with MSS; N – 1 network security outcomes; and average network utilisation. The additional non-system capex of \$77.000 million is needed to support the delivery of the system capex and current opex programs (the opex program has not changed as a result of this Application). In particular, the non-system capex will provide additional:

- ◆ specialised fleet vehicles to enable personnel to complete network augmentation, operation and maintenance activities;
- ◆ electricity tools and equipment to enable personnel; and
- ◆ property assets including land and buildings for depots and hubs to support the field operations.

5 OTHER FACTORS IMPACTING ON BUILDING BLOCKS

5.1 Opex efficiencies

An important element of the Authority's capex pass-through mechanism is that in assessing the merits of passing through additional capex, there will also be an assessment of whether the additional capex will drive savings in opex. Energex has therefore examined:

- ◆ whether any efficiencies have arisen in opex to date as a result of the ramp-up in capex which has already occurred, and whether these should be used to off-set the DUOS price increases that arise from the approval of the additional capex – which supports the notion of price stability and equity between Energex and end-users (see Section 6 for further discussion); and
- ◆ whether the proposed additional capex will provide any future savings in opex – the opex and capex trade-off.

As at the end of financial year for 2005/06, Energex's actual operating expenditure was \$219.700 million, compared to the Authority's approved opex allowance of \$211.000 million³⁰. Currently, there are no existing opex efficiencies which may be used to offset DUOS price increases resulting from the pass-through of the additional capex.

Energex has undertaken a high level analysis to determine whether the increased level of capex on the distribution network will reduce opex activities, hence, opex compared to the Authority's allowance. This analysis showed that, in real terms, the opex could be expected to increase by a net \$13.600 million per annum over the regulatory period.³¹ This outcome results from the three factors:

- ◆ a need to provide for opex associated with new assets;
- ◆ reductions in opex resulting from the retirement of ageing assets; and
- ◆ opex adjustment for ageing of the remaining asset stock.

Energex expects to accommodate any increase in actual opex from the increase in capex spend within the current allowance.

5.2 Summary

Energex's request for additional capex to \$3.427 billion is not expected to reduce Energex's opex spend to 2009/10. External advice suggests that Energex is actually likely to experience an increase in opex costs as a result of the increased capital spend. Currently, Energex's actual rate of opex spend has been consistent with the annual opex allowance provided by the Authority's Final Determination.

³⁰ The operating and maintenance expenditure number quoted do not include non-DUOS costs.

³¹ SKM (2006), *Review of Energex Program of Work 2005/06 – 2009/10*, Final Report.

6 JUSTIFICATION OF PASS THROUGH IN THE CURRENT REGULATORY PERIOD

In preceding sections, Energex believes that it has demonstrated that the proposed aggregate capex program of \$3.427 billion to 2010 represents an appropriate outcome because:

- ◆ it is forecast to provide an optimal technical solution to meeting the service obligations arising from the ESDS Review;
- ◆ the estimated project costs are considered efficient as they provide the forecast optimal technical outcome to be delivered by the most feasible combination of inputs. This is supported by Energex's planning and investment processes, which continually ensure that the technical solution and estimated project cost reflects up to date data on network performance;
- ◆ in meeting the minimum service obligations, the quality of services experienced by customers will improve; and
- ◆ the program improves Energex's capacity to deliver its service obligations to a reasonable level.

In this section Energex outlines its case for a within period adjustment to customer prices to reflect additional capex of \$720 million to 2009/10.

It is structured as follows:

- ◆ Section 6.1 sets out the revenue increases that will be driven by the additional capex program;
- ◆ Section 6.2 outlines the reasons why the Authority should allow Energex's annual revenues to be adjusted within the current regulatory period; and
- ◆ Section 6.3 sets out how DUOS pricing will recover the increase in annual revenues.

6.1 Revenue implications

The revenue impacts for Energex from the additional capex application flow from the return on capital and return of capital components of the cost of service building blocks used to determine Energex's total cost base. To financial year 2009/10, Energex estimates that the difference between the current approved revenues and the amended revenues to include the additional capex program is \$192 million³² (nominal dollars).

This estimate was determined using a building block model, consistent with the Authority's 2005 Final Determination. The following table presents a comparison of the current annual revenue cap and the annual revenues arising from additional capex.

³²

The actual difference between the current approved revenue caps and the revenue caps that would apply if the Authority approves the additional capex Application will be determined by how under and over revenue recovery is treated as per the annual pricing review process.

Table 7. Current and Proposed Revenues (\$ million, nominal , no smoothing)

	2005/06	2006/07	2007/08	2008/09	2009/10
Approved revised smoothed AARR ¹	626.8	699.2	779.9	870.0	916.3
Target DUOS Revenue ³³	--	--	745.4	840.0	893.3
Proposed AARR under this Application	--	--	837.0	923.9	997.1
Target DUOS Revenue	--	--	802.5	893.9	974.1
Increase on Target DUOS Revenue	--	--	57.1	53.9	80.8
Increase on Approved Target DUOS Revenue (%)	--	--	7.7%	6.4%	9.0%

1. QCA Final Determination (p.172 and 177) and Authority correspondence to Energex 23 March 2006.

Revenue foregone in 2005/06 and 2006/07 has been indexed by the regulated rate of return on capital.

6.2 Basis for passing through revenue within the current regulatory period

This section demonstrates why it is appropriate for the additional capex to be recognised in the revenue cap in the current regulatory period. Specifically, Energex believes that allowing the capex to be recognised in the current regulatory period is appropriate as it effectively balances the interests of customers and Energex by:

- ◆ ensuring that customers face a price that reflects the efficient costs associated with delivering services with higher standards of quality;
- ◆ setting prices which are fair and reasonable; and
- ◆ providing Energex with the certainty of an appropriate return on prudent and efficient network investment, which is consistent with the requirements of the NER, by maintaining the business' incentive to continue making prudent and efficient network investment.

In addition, the recognition of the additional capex within the regulatory period will meet EDSD Review recommendation 3³⁴, which looked to increase Energex and Ergon Energy's investment certainty during the regulatory period relating to new investment in the network beyond the allowed capex.

Each of these issues is considered in the remainder of this Section.

³³ As per the Authority's regulatory arrangements, each financial year Energex's approved AARR is adjusted to take account of: any over/under revenue recovery from the previous financial year(s); and the revenue earned associated with non-DUOS services. For 2007/08, Energex is proposing to adjust its AARR by \$18.5 million for previous over recovery of revenue (\$13.5 million in 2004/05, \$5 million in 2005/06), and \$16 million for non-DUOS services. For 2008/09, Energex is proposing to adjust its AARR by \$13 million for previous over recovery of revenue in 2005/06, and \$17 million for non-DUOS services. For 2009/10, Energex is proposing to adjust its AARR by \$5 million for previous over recovery of revenue in 2005/06, and \$18 million for non-DUOS services.

³⁴ Independent Panel (July 2004), *Electricity Distribution and Service Delivery for the 21st Century*, Summary Report – Appendix 6, p.48.

6.2.1 Cost reflective prices

The principle that prices should be cost reflective is fundamental to the ongoing efficacy of the regulatory contract. This principle is included in the network pricing principles set out in Chapter 6 of the NER and in Energex's approved Network Pricing Principles. Further, the need for cost reflective pricing is also recognised as an important pricing principle by the Authority. In its 2005 Final Determination, the Authority required Energex to adopt:

- ◆ cost reflective prices immediately for franchise customers and those contestable customers that were (at that time) paying prices above the cost reflective network prices; and
- ◆ a price path that would move customers paying prices below the cost reflective network prices to a cost reflective tariff by the end of the regulatory period, subject to the price impacts this creates.³⁵

The NER also highlight the importance of cost reflective network tariffs:

"... to facilitate the competitive market, by providing equitable access to the network and ensuring that appropriate investment in the network takes place in the longer term."³⁶

There are a number of reasons why the additional capex currently being expended should be passed through to customers during the current five year regulatory period. Customers will benefit from higher quality services, in terms of improved reliability of the network and improved responsiveness to network outages, and should therefore pay DUOS prices which reflect the full cost of this service. That is, customers should be exposed to the full cost to serve.

Accordingly, to avoid any future subsidisation, Energex considers it appropriate that efficient and technically required costs be passed through to customers on a timely basis.

A further reason for passing through costs to customers is that it promotes rational decision making by end users. For example, for contestable customers consuming over 100 MWH per annum:

- ◆ when buying or building electricity dependent plant, equipment or production processes, the firm could choose a less energy efficient option than otherwise would be the case;
- ◆ there may be a delay or deferral of demand side management initiatives to reduce future electricity consumption; or
- ◆ the firm may choose electricity rather than alternative energy sources, such as natural gas, due to the electricity price not fully reflecting costs, which can impact on location and production technology decisions.

For franchise customers, the impact is less transparent due to the franchise tariff arrangements but the principle that these prices need to fully reflect costs is just as compelling. In particular, the improved quality of electricity services which are occurring as Energex implements actions in response to the ESD Review will largely be experienced by this customer group, reinforcing that it is legitimate for these customers to pay the true cost of supply.

In addition, the Queensland Government's decision to introduce Full Retail Contestability (FRC) provides a further reason for allowing a within period adjustment to Energex's revenues. Currently, final energy prices to customers reflect an outcome of a regulated retail tariff that ensures that a franchise customer faces the same prices wherever they reside in Queensland.

³⁵ Queensland Competition Authority (2005), *Regulation of Electricity Distribution*, Final Determination, p.180.

³⁶ National Electricity Rules, Schedule 6.7, p.123.

Once FRC occurs, it will be vital that customers face their true network cost of supply to ensure that competition is not distorted.

In addition, Energex considers that there may be substantial long term impacts on the future of demand side management should any price inefficiency or subsidy arrangement exist. Cost reflective DUOS tariffs represent a critical starting point for demand side management. That is, for end users to commence the process of examining the cost and benefits of demand side management they must face their true costs of energy supply.

Energex is currently in the process of preparing its strategy setting the objectives, scope and elements of its approach to DUOS pricing. Energex's Medium Term Pricing Options Analysis will take into account the medium to long term impacts generated by Energex's future capex programs.

Another important reason for passing through costs in the current regulatory period is that Energex is expecting to spend up to a further \$4 billion in capex between 2010 and 2015 to deliver all EDSD recommendations (in addition to the increased spend in this regulatory period), based on continued high levels of growth projected to 2026. This will constrain the ability of the regulator at the time to seek a revenue "catch up" associated with the current capex in future regulatory periods. Accordingly, Energex considers that to avoid price shocks at some future point, it is in the long-term interest of customers that they face cost reflective prices as soon as possible.

In summary, there are a number of compelling reasons for passing through Energex's proposed increase in capex to customers in the current regulatory period.

6.2.2 Fair and reasonable price for customers

While the economic arguments for passing through increased costs to end customers are strong, Energex recognises that it is also reasonable to assess whether the prices that result can be considered fair for customers. This involves an examination of:

- ◆ the size of the price changes relative to those faced by customers in other jurisdictions; and
- ◆ the impact of these changes on an average customer's bill.

Each of these matters is discussed in turn.

6.2.2.1 Price increases in other jurisdictions

To establish what represents a fair and reasonable price increase, Energex reviewed several recent regulatory decisions, including:

- ◆ recent Authority decisions in relation to electricity (Ergon Energy), rail, ports, and water; and
- ◆ recent electricity distribution determinations undertaken by other Australian regulators.

The purpose of the review was to identify:

- ◆ the scope of an allowed price movement, particularly in light of any large change in expenditure program, e.g. in the initial year of a Determination or Access Arrangement period; and
- ◆ an acceptable range for annualised changes in prices.

Price increases and decreases were considered in absolute terms on the basis that cost reflective prices means that prices may need to be adjusted either upwards or downwards to achieve this goal.

A summary of the price impacts of recent regulatory decisions by the Authority is outlined in Table 8.

Table 8. QCA Recent Regulatory Decisions/Determinations – Allowed price increases

Regulator	Sector/Business	Year of Decision	Initial Year Price Increase % (Real)	Annual Price Increases % (Real)
QCA	Electricity distribution (Ergon Energy)	2005	24.3	-0.2
QCA	Electricity distribution (Energex)	2005	4.2	3.0
QCA	Rail infrastructure (Queensland Rail)	2006	-5.0	-4.5 to -5.0
QCA	Ports (DBCT)	2005 & 2006	n/a	2.5

A further breakdown of the Authority's 2005 Determination for Ergon Energy shows an initial revenue increase of 30.8% for franchise customers in 2005/06, and a 19.3% increase for contestable customers, subject to the price constraint for individual contestable customers.³⁷

The same exercise was undertaken for Decisions/Determinations covering electricity distribution networks in other jurisdictions. Table 9 presents the findings from this review.

Table 9. Other Regulators: Recent Electricity Network Regulatory Determinations – Allowed price increases

Regulator	Sector/Business	Year of Decision	Initial Year Price Increase % (Real)	Annual Price Increases % (Real)
IPART	Electricity distributors (Energy Australia, Country Energy, Integral Energy and Australian Inland)	2004	7.0	1.6 to 4.5
ESC	Electricity distributors (AGLE, TXU, CitiPower, Powercor, United Energy)	2005	-3.8 to -17.3	-2.5
ICRC	Electricity distributors (ActewAGL)	2004	-6.8	0
ESCOSA	Electricity distributors (ETSA Utilities)	2005	-4.0	0
IPART	Electricity distributors (Energy Australia, Country Energy, Integral Energy) (pass-through application)	2006	0.4 to 8.0	2.9 to 10.2

Energex's review highlights that:

- ◆ price increases of up to 24.3% and decreases of up to 17.3% in a single year have previously been approved;
- ◆ in absolute terms, the average initial year price movement based on observed decisions is 8%; and
- ◆ the range of annual price increases is between 1.6% and 10.2%, while for price decreases the range is between 0.2% and 5.0%.

³⁷

Queensland Competition Authority (2005), *Regulation of Electricity Distribution*, Final Determination, p.179.

Energex has used these examples as indicative of what is reasonable in managing the pass-through of DUOS price increases.

6.2.2.2 Customer cost impacts

An important element in considering whether price impacts are fair and reasonable is to look at the cost impact on the customer's final energy bill as a result of the price increase.

In 2007/08, the estimated average cost to a standard residential household for electricity, that is energy, transportation costs and retailer costs, is around 11-12 cents per kWh³⁸. The cost of using the electricity distribution network in 2007/08 (including the additional capex in this Application) for this level of electricity consumption is estimated to be 5.2 cents per kWh or 46% of a standard residential household's final energy bill.

Energex examined the different impacts on the final energy bill from the range of capex scenarios by adopting a number of assumptions relating to: potential movements in retail tariffs; and the price of transmission network use of system charges.

Energex's analysis shows that the impact on a final residential user's bill (of the DUOS price change to deliver the additional capex) is an additional \$37.43 of DUOS charges in 2007/08, \$40.80 in 2008/09 and \$47.95 in 2009/10 for the proposed total \$3.427 billion capex program (a total of \$126.18 per user³⁹). This equates to around \$11 per quarterly bill, or less than \$1 per week.

6.3 Energex's proposed pricing arrangements

In this section Energex sets out the proposed changes to DUOS tariffs to deliver the within period adjustment to revenues to 2009/10 to ensure that customers pay a reasonable price for improved quality of electricity distribution services.

To pass through the additional capex of \$720 million, Energex is proposing a balanced approach to increasing DUOS tariffs which consists of: an initial increase to 2007/08 DUOS tariffs, subject to the Authority's existing price constraints for customers in the contestable market; and the setting of tariff paths to 2009/10 for each customer group that ensures sufficient revenue recovery while complying with the Authority's price constraints.

In percentage terms the 2007/08 proposed DUOS tariff increases (nominal) will be:

- ◆ Individual Calculated Customers (ICC) at 7.2%;
- ◆ Connection Asset Customers (CAC) at 7.3%;
- ◆ Standard Asset Customers (SAC) consuming more than 100 MWh at 9.0%; and
- ◆ Standard Asset Customers (SAC) consuming less than 100 MWh at 12.5%.

Energex's proposal is broadly consistent with the Authority's 2005 Final Determination in terms of price constraints, while the proposed DUOS tariff increase for the SAC customer groups is below that allowed in 2005/06 for Ergon Energy (a DUOS tariff increase of 30.8%). Importantly, the initial year increase simply reflects the revenue not yet recovered but arising from the actual capex spends of 2005/06, 2006/07 and the proposed capex for 2007/08, i.e. the initial year increase in 2007/08 reflects a "catch-up" increase.

Additionally, the proposed DUOS tariff increase to apply to the SAC group reflects Energex's understanding of the current regulatory environment where there is no price constraint for this

³⁸ Assumes 10,000 kWh of consumption per annum and annualised bill of around \$1,200 per annum.

³⁹ These estimates of cost impacts relate only to the DuOS component of an average 10,000kWh per annum energy user's bill.

customer group. With the Queensland Government's introduction of FRC for all distribution customers, all customers then become potentially 'contestable' making any DUOS tariff increase post FRC theoretically subject to the current price constraint for contestable customers. Energex's price and revenue modelling shows the potential for substantial delays in the movement of prices to cost reflectivity in the absence of timely action.

Table 10 outlines in cents per kWh (average measure of proposed DUOS tariff increase) and percentage terms the proposed DUOS tariff increases by customer group to pass through the additional capex of \$720 million to Energex's revenues within the current regulatory period.

Table 10. Proposed DUOS Tariffs for \$3.427 billion Capex Program to 2009/10

	2007/08 Average c/kWh	2007/08 % increase (nominal)	2008/09 Average c/kWh	2008/09 % increase (nominal)	2009/10 Average c/kWh	2009/10 % increase (nominal)
ICC	1.094	7.2	1.172	7.1	1.219	4.0
CAC	1.575	7.3	1.690	7.3	1.813	7.3
SAC > 100MWH ⁴⁰	3.403	9.0	3.633	6.8	3.869	6.5
SAC < 100MWH	4.758	12.5	5.111	7.4	5.369	5.1

Importantly, Energex's comparison of DUOS only tariffs at 2006/07 and forecast for 2009/10 across Australian electricity distributors (refer to Figure 8) shows that despite the revenue increases as a result of this Application, Energex's customers are paying well below the Australian average for electricity distribution services.

6.4 Summary

In this section Energex has outlined reasons why the additional capex of \$720 million should be included as a within period adjustment to Energex's approved revenues to 2009/10. If the Authority accepts Energex's technical arguments that more capex is required to deliver higher quality services to customers, as measured by meeting service obligations from the EDSD Review, such as improved reliability of services (MSS), and increased N – 1 network security, then it is important that Energex's revenues and DUOS prices be adjusted to reflect that the improved quality of service is being delivered at an additional cost to Energex.

In the absence of a within period adjustment, Energex will be recovering a revenue stream that is not consistent with the efficient costs of delivering electricity services (by \$192 million). Such an outcome would be potentially inconsistent with:

- ◆ the EDSD recommendation relating to investment certainty;
- ◆ the regulatory principles contained in the NER; and
- ◆ the Authority's April 2005 Final Determination which required cost reflectivity in DUOS prices.

In addition, Energex's forward planning is indicating that the capex program for the five years between financial years 2011 and 2015 will need to be approximate \$4 billion. A further increase in network tariffs will be required at this time. Any delay in recognised current costs will compound these future price increases.

Energex considers that its proposed approach is a reasonable basis for revenue recovery within the current regulatory arrangements as the proposed DUOS price adjustments comply with the current side constraints, and is proposes DUOS price increases consistent with other regulatory decisions.

⁴⁰ The overall proposed tariff increase for this customer group incorporates a side-constrained tariff increase of 7.3% for contestable SACs > 100MWH and an unconstrained tariff increase to those customers that have elected not to enter the market.

7 CONCLUSION

A capex program of \$2.707 billion, as per the Final Determination, does not allow Energex to make any adequate inroads in terms of achieving EDSD recommendations. Significantly more capex is required in the current and subsequent regulatory periods.

Energex is requesting the reinstatement of \$720 million of additional capex, consisting of \$643 million in system capex and \$77 million in non-system capex in accordance with the terms of the 2005 Final Determination.

The \$3.427 billion total capex program will not fully meet EDSD, particularly in regard to N – 1 compliance, by 2009/10; however, Energex considers that this program will make substantial progress towards meeting EDSD outcomes.