Report
to

QUEENSLAND COMPETITION AUTHORITY

REVIEW OF ENERGEX'S REVISED CAPITAL AND OPERATING EXPENDITURE SUBMISSION

Final Report 20th April 2005

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1 EXECUTIVE SUMMARY

1.1 Scope

Following the draft determination by the Queensland Competition Authority (“QCA”), Energex made a revised submission to the QCA in respect to its requirements for Capital Expenditure (“CAPEX”) and Operational Expenditure (“OPEX”). This report reviews and analyses the revised forecasts and recommends efficient levels of CAPEX and OPEX.

Key inputs into the report were the Draft Determination by the QCA and the Electricity Distribution and Service Delivery Review (“EDSD”) Review.

1.2 Draft Determination

In its Draft Determination, the QCA made the following allowances for expenditure for Energex for the period 2005/06-2009/10:

Table 1-1: Draft Determination

	$M	COMMENT
CAPEX	2,665.9	$2,132.7m to be initially included in the revenue cap with provision to increase
OPEX	1,020.2	

All forecast figures are in millions of June 2004 dollars, totalled for the 5-year period.

The revised submission from Energex has been made in response to the expenditure for CAPEX and OPEX allowed for in the Draft Determination.

1.3 Electricity Distribution and Service Delivery Review

The EDSD Review made 44 recommendations in July 2004, and the Queensland Government has made a commitment that all of the recommendations will be implemented.

Key recommendations include the following:

- Introduction of minimum service standards;
- Introduction of Guaranteed Service Level (“GSL”) rebates;
- Targeted improvement to worst performing areas of the network;
- Investigation of options to improve performance of the Single Wire Earth Return (“SWER”) system;
- Reduction in load and voltage constraints;
- Improved maintenance programs;
- Improvements to the asset management systems;
- Adoption of more conservative planning criteria and improved network planning;
- Improved Contact Centre performance;
- Improved communications of outages to the public;
- Increased numbers of apprentices; and
- Improved performance monitoring and reporting.

Energex has committed to implementing all of the recommendations that apply to Energex. This will involve some additional network investment, in both OPEX and CAPEX.

As an outworking of the EDSD Review, the Government has introduced the Electricity Industry Code, effective from 1 January 2005, which will involve some additional OPEX.

1.4 OPEX

In its response, dated January 2005, to the December 2004 Draft Determination, Energex has accommodated the changes required by the July 2004 EDSD review as well as information obtained since the 2004 submission.

Energex's revised submission involves additional operational expenditure for:

- Implementation of recommendations from the EDSD report, relating to:
  - Customer communications (call centre);
  - Public safety requirements;
  - Guaranteed service levels;
  - Minimum service standards;
  - Worst performing feeders;
  - Vegetation clearance;
  - Preventative maintenance; and
  - Asset Inspections.
- Specific programs aimed at the 11 kV network, distribution substations and pole failures;
- Expenditure that had been omitted in the previous submission, such as additional street lighting, meter enquiries and support costs for meter reading;
- Reassessing some efficiencies identified by BRW that have since been demonstrated by Energex to have been taken into account in the forecasts;
- Adjustments of escalation factors; and
- Impact of the 2005 Enterprise Bargaining Agreement ("EBA").

The changes in OPEX are summarised in Table 1-2.

In general, BRW is of the view that Energex's revised forecast is reasonable, with the exception of the Electrical Safety Office ("ESO") levy and minor savings in transformer maintenance. BRW also believes that the provision for GSL payments within the regulatory OPEX Budget removes the incentive to improve customer service, and has therefore removed these costs from the revised forecast.

Table 1-2: Breakdown of OPEX Budget

AREA	$ M
Draft Determination	1,020.23
EDSD Increase	142.89
Escalation Increase	3.94
Incorrect Allocation (Meter Enquiries and Meter Reading)	37.05
Other Increases	18.42
OPEX EBA	39.54
Efficiency Savings – reduced from 2% to 1%	7.28
Revised BRW Forecast (including Non-DUOS Services*)	**1,269.36**

All forecast figures are in millions of June 2004 dollars, totalled for the 5-year period.
**Non-DUOS – Non Distribution-Use-of-System.*

Note - Revised Energex forecast is $1,288.91M over the five year period.

1.5 CAPEX

In line with recommendations contained in the EDSD Report, Energex has made significant changes to its system planning guidelines. BRW accepts that the adoption of the changed system planning guidelines will require some further CAPEX than that allowed for by BRW in its forecast contained in its Final Report of 14th December 2004.

Energex is still in the process of developing robust revised CAPEX forecasts. The revised submission contains some high level indications that Energex may need to spend more CAPEX than that recommended by BRW in its Final Report of December 2004. In the absence of detailed CAPEX forecasts and supporting material, BRW is unable to form a view as to how much additional CAPEX Energex may require. Energex has provided details regarding additional expenditure of $51.4M due to the new EBA, which BRW has reduced to $41.3M and included this in its forecasts.

Table 1-3: Breakdown of CAPEX Budget

AREA	$ M
Draft Determination (100%)	2,665.9
CAPEX EBA	41.3
Revised BRW Forecast	**2,707.1**

All forecast figures are in millions of June 2004 dollars, totalled for the 5-year period.

1.6 EBA

Coincident with the establishment of a new EBA in 2005 were a number of recommendations from the EDSD report requiring both distributors to develop a resource plan and implement a training strategy to overcome some specific difficulties. The EBA will restore parity with DNSPs in southern states.

Although the step change which results from the proposed EBA might at first sight appear generous, totalling $90.1M over the five year regulatory period, BRW appreciates the need to attract and retain staff in order to resource proposed capital and operational programs for the next regulatory period.

BRW considers that the forecasts of the additional costs associated with the new EBA are reasonable after the application of a reduction in the CAPEX component.

1.7 Resourcing

Energex has prepared a Regulated Workforce Plan that focuses on the projected workforce needs and the actions necessary to meet them. Energex has significantly increased its internal resources and is embarking on national and international recruitment programs.

Energex is changing its approach to contracting and plans to deliver an additional $200-300M of contract work per year. To assist in the change, Energex hired a consultant to develop a strategic approach to obtaining contracted services.

On the basis of its Regulated Workforce Plan and the progress to date in regard to staff increases and expenditure levels, BRW supports Energex's proposal for the QCA to increase the $2,133M for CAPEX allowed in the revenue cap up to the $2,665.9M recommended by BRW, with a further additional amount of $41.3M for the EBA, bringing the total to $2,707.1M. An assessment of Energex's capacity to resource higher levels of expenditure would depend on further work by Energex on workforce planning and on-going updates of expenditure and staff numbers.

2 SCOPE AND METHODOLOGY

2.1 Scope

Following the draft determination by the QCA, the distributors Energex and Ergon Energy, made revised submissions to the QCA in respect to their requirements for CAPEX and OPEX.

BRW's scope of works was as follows:

- Review and analyse the revised CAPEX and OPEX forecasts submitted by the two distributors, including on-site discussions with the distributors;
- Recommend efficient levels of CAPEX and OPEX;
- Assess key factors that could affect the capacity of the distributors to appropriately use the recommended expenditure; and
- Present the findings in a consolidated report to the QCA for each distributor.

2.2 Methodology

The review was conducted in five stages:

Stage one - Data Collection;

Stage two - "Desk Study" Review;

Stage three - Review of Significant Issues;

Stage four - Preparation of Draft Report ; and

Stage five - Preparation of Final Report (this report).

Unless stated otherwise, all figures contained in the report are in June 2004 dollars.

2.2.1 Data Collection

This stage involved gaining a detailed understanding of the changes that had occurred since the previous submission was prepared. A range of information was collected, collated, reviewed and cross-referenced as the foundation for detailed analysis. A number of site interviews were held with key personnel within Energex. Details of the site visits (for this and later stages) are contained in Section 10.1 and a list of key documents accessed (during this and later stages) is contained in Section 10.2.

2.2.2 "Desk Study" Review

This stage involved the detailed review of the information gained in Stage one. Factors considered included the following:

- The information contained in the QCA Draft Determination;
- The outworkings of the Electricity Distribution and Service Delivery Review (EDSD Review);
- Changes to operating, maintenance, augmentation and replacement strategies;
- Changes to planning processes;
- Network capacity and utilisation;
- Regulatory, safety and environmental compliance issues;
- Organisational changes;
- Changes to performance standards;
- Resourcing capability; and
- Assumptions underpinning Energex's forecasts of CAPEX and OPEX.

Outcomes from this stage were the identification of key issues and the identification of areas requiring further information. BRW has also drawn on its experience with other Distribution Network Service Providers ("DNSPs"), but has not directly used information provided to it on a commercial-in-confidence basis.

2.2.3 Review of Significant Issues

Significant issues identified in the earlier stages of the review were discussed with relevant managers within Energex to ensure that the Consultant correctly understood the issues and to gain further insights into the business.

2.2.4 Preparation of Draft Report

The findings, analysis and conclusions arising from the four preceding stages were collated and integrated into this draft report.

2.2.5 Preparation of Final Report

Comments received and issues raised from the Draft Report will be considered and used as input into the preparation of the Final Report.

3 DRAFT DETERMINATION

In its Draft Determination, Regulation of Electricity Distribution, December 2004, the QCA made the following allowances for expenditure for Energex (with only 80% of CAPEX incorporated into Energex's initial revenue caps):

Table 3-1: Draft Determination CAPEX

	2005/06	2006/07	2007/08	2008/09	2009/10	TOTAL
Asset Replacement	29.9	44.6	48.7	53.5	51.1	227.9
Demand Related						
Augmentations	243.3	285.5	275.7	273.4	274.6	1,352.4
Customer Initiated	123.5	136.1	149.8	162.7	170.5	742.6
Reliability Improvement	8.9	8.4	7.2	5.4	5.0	34.9
Other System	12.0	12.4	12.8	14.5	14.6	66.3
Non-System	66.7	46.4	55.8	36.7	36.2	241.8
Total CAPEX*	484.3	533.5	549.9	546.2	552.0	2,665.9

All forecast figures are in millions of June 2004 dollars.
**Excludes Tiers (b) and (c) expenditure.*

Table 3-2: Draft Determination OPEX

	2005/06	2006/07	2007/08	2008/09	2009/10	TOTAL
Maintenance	**147.0**	**158.2**	**160.5**	**164.2**	**167.2**	**797.0**
Inspection	18.4	22.5	23.1	23.8	24.1	111.9
Planned Maintenance	36.6	40.4	40.7	42.2	43.4	203.4
Corrective Repair	24.9	25.5	26.1	26.7	27.3	130.5
Vegetation Control	44.5	46.5	46.5	46.5	46.5	230.3
Operating	30.1	30.9	31.7	32.5	33.3	158.4
New Initiatives	2.2	2.2	2.2	2.2	2.2	10.8
Efficiency Savings	-3.6	-3.8	-3.9	-4.0	-4.1	-19.3
Non-Revenue Cap Services	13.9	14.3	14.7	15.0	15.4	73.3
Total OPEX*	**189.6**	**201.7**	**205.1**	**209.9**	**214.0**	**1020.2**

All forecast figures are in millions of June 2004 dollars.
**To be reduced by an amount equal to the (nominal) value of Energex's under-spend during the current regulatory period.*

The Draft Determination contained a number of key elements that are relevant in the consideration of the required levels of CAPEX and OPEX, as follows:

Demand Triggers

Each distributor's fixed revenue cap was established on the basis of an asset base and CAPEX and OPEX forecasts that reflect assumptions about future demand on the network. Under a fixed revenue cap, a distributor's annual revenue requirement remains the same regardless of the extent to which demand varies from the forecast. This is because any under or over recovery of revenue in a particular year will be recovered from / returned to customers through higher or lower prices in subsequent years.

While a distributor's revenue does not vary with divergences between forecast and actual demand, its capital and operating costs may. In order to increase investment certainty for Energex and Ergon Energy, by mitigating the cost risks associated with deviations in actual demand from that forecast, the EDSD Review (2004) recommended that the QCA consider alternative arrangements including, but not limited to, a flexible revenue cap based on variable demand levels.

The QCA proposes to apply triggers to the key network cost drivers of customer numbers (3% variance) and maximum demand (5% variance) for both Energex and Ergon Energy in the next regulatory period.

Cost Pass-Through Events

The QCA proposes to introduce a materiality threshold for consideration of cost pass-through of 1 percent of actual annual revenue per event, based on the regulated revenue in the year of the event. This would require a single event to have unforeseen costs of around $5M before being considered by the QCA for potential pass-through of these costs.

Pass-Through Mechanism for Major Customer Works

The Authority proposes to consider pass-through for large customer projects, with a cost in excess of $30M, that occur during the next regulatory period but were totally unanticipated.

Service Quality Incentive Scheme

The QCA does not propose to proceed with implementing its service quality incentive scheme at this time. The QCA will consider implementing the scheme once performance levels have improved and stabilised at a level consistent with broad community expectations.

Energex CAPEX

Due to concerns in regard to resourcing capability, the Draft Determination allowed for only 80% of the CAPEX (i.e. $2,132.7M) to be initially included in Energex's revenue cap, with provision for Energex to increase this amount (up to $2,665.9M) on demonstration of the need and capacity to wisely invest the full amount. The Draft Determination also provided the opportunity for Energex to demonstrate the need for a further increase, up to the amount originally requested by Energex (i.e. $3,376M), subject to certain conditions.

4 ELECTRICITY DISTRIBUTION & SERVICE DELIVERY REVIEW

An Independent Panel was established by the Queensland Government in March 2004 to undertake the EDSD Review. The Panel was required to examine certain matters relating to the electricity distribution services provided by Ergon Energy and Energex, including an assessment of reliability and levels of capital and operating expenditure and whether those factors together with existing or proposed internal systems will ensure reliable networks for the 21st century.

The Panel made 44 recommendations in July 2004, and the Queensland Government has made a commitment that all of the recommendations will be implemented. The Review recommendations cover the areas of reliability performance, customer service standards, network capacity, communications, workforce capability and the regulatory environment.

Key recommendations include the following:

- Introduction of minimum service standards;
- Introduction of GSL rebates;
- Targeted improvement to worst performing areas of the network;
- Investigation of options to improve performance of the SWER system;
- Reduction in load and voltage constraints;
- Improved maintenance programs, particularly in areas of preventative maintenance and vegetation management;
- Improvements to the asset management systems;
- Adoption of more conservative planning criteria and improved network planning;
- Increased system planning resources (Energex);
- Improved Contact Centre performance;
- Improved communications with the public in relation to outages;
- Increased numbers of apprentices; and
- Improved performance monitoring and reporting.

Energex has committed to implementing all of the recommendations that apply to Energex. This will involve some additional network investment, in both OPEX and CAPEX.

As an outworking of the EDSD Review, the Government has introduced the Electricity Industry Code, effective from 1 January 2005. The Code requires each distributor to:

- Prepare and publish an annual summer preparedness plan;
- Prepare and publish an annual network management plan;
- Use its best endeavours to meet set minimum service standards;
- Pay GSL rebates to customers where specific service levels are not achieved; and
- Monitor and report its performance against minimum service standards and GSLs, and audit its performance against minimum service standards.

5 OPEX

Energex proposes increased operational expenditure over the draft determination values based on the following prime factors:

- Additional planned OPEX activity as a part of their program to address the recommendations given in the EDSD report. These additional activities are discussed in the sections below;
- Additional planned OPEX activity arising from revised operational policy and practices, also a part of their program to address the recommendations given in the EDSD report;
- Expenditure that had been omitted in the previous submission, such as additional street lighting inspection, meter enquiries and support costs for meter reading;
- Salary and wages increases as a result of a new EBA; and
- Reassessing some efficiencies previously identified by BRW and used to reduce the relevant OPEX allowances in Energex's submission. These have since been demonstrated by Energex to have been taken into account in their expenditure estimates and hence have been deleted from the revised BRW forecasts.

The changes in OPEX are summarised in Table 5-1 and Table 5-2.

Table 5-1: Changes in OPEX Budget Compared to Draft Determination

AREA	DRAFT DETERMATION	REVISED Energex FORECAST	REVISED BRW FORECAST
Maintenance	797.06	962.83	962.72
Operating	158.41	197.32	189.93
New Initiatives	10.81	15.31	15.31
EBA Regulated DUOS	N/A	37.21	37.21
Efficiency Savings	-19.33	0.00	-12.05
Total OPEX (excl. Non-DUOS Services).	**946.96**	**1,212.66**	**1,193.11**
Non-DUOS Services	73.28	73.92	73.92
EBA Non-DUOS Services	N/A	2.33	2.33
Total OPEX (incl. Non-DUOS Services).	**1020.23**	**1288.91**	**1269.36**

All forecast figures are in millions of June 2004 dollars, totalled for the 5-year period.

Table 5-2: Breakdown of Revised BRW OPEX Forecast

AREA	$ M
Draft Determination	1,020.23
EDSD Increase	142.89
Escalation Increase	3.94
Incorrect Allocation (Meter Enquiries and Meter Reading)	37.05
Other Increases	18.42
OPEX EBA	39.54
Efficiency Savings – reduced from 2% to 1%	7.28
Revised BRW Forecast (including Non-DUOS Services*)	**1,269.36**

All forecast figures are in millions of June 2004 dollars, totalled for the 5-year period.

5.1 Policy and Practice Changes

Subsequent to the release of the Draft Determination in December 2004, Energex has reviewed its asset inspection and maintenance policy and practices and has implemented a number of changes. These changes are aimed at improving network reliability and safety and will contribute to meeting the performance targets set out in the EDSD report. The changes will require additional OPEX through more inspection activity and consequent higher levels of planned maintenance work.

Energex are in the process of implementing an N-1 planning philosophy across the network but consider that full implementation at the 11kV network level will take a longer time because of resource and CAPEX constraints. This will require more extensive operation and maintenance programs to be in place in the short term to manage the reliability performance until network augmentation can be done.

A particular focus of the Energex asset inspection review has been the Level 1 single pass asset inspection. While the inspection cycle has not been changed from the minimum regulatory requirement of five years, a number of changes to the inspection activities have been made including:

- Introduction of additional activities including:
    - Testing of line fault indicators for correct operation;
    - Visual inspection of waterway crossings and their signage;
    - Visual inspection of low voltage line pole-tops from ground level;
    - External visual inspection of low voltage underground pillars;
    - Clean-up of graffiti; and
    - Undertaking minor repairs.
- Increased focus on LV network inspection. In the past, distribution line inspection has previously been focused mainly on the high voltage assets, in particular, below ground inspection of poles. Much of the overhead low voltage network has not had a thorough inspection over recent years. However, the low voltage overhead network reliability performance is a significant contributor to SAIDI, SAIFI and CAIDI;
- More rigorous inspection of assets which are known to be affecting reliability including:
    - Air-break switches - Air-break switches had not been rigorously inspected and tested in the past. Switch malfunction and failure rates are increasing and affecting network reliability.
    - Distribution pole tops - Energex does not know exactly how many cross-arms it has as the pole is the lowest level item in their asset data base. More information is required about the size and state of the cross-arm population and this will be collected through more comprehensive inspections. Compact trident 11kV construction has been identified as having poor reliability performance and this will be targeted for conversion to a lower fault rating design on a case-by-case basis.
- Introduction of a more conservative approach to identification of defects. Replacement rates of assets such as poles and cross-arms have been unsustainably low based on historical figures and this logically has led to failure rates higher than industry norms.

BRW supports these changes that Energex has introduced at the policy and practice level and considers that they are consistent with good DNSP asset management. It can be expected that the revised policies will contribute towards overcoming the effects of previous under-inspection and reduced maintenance. In summary, increased expenditure is required for:

- Increased inspection activity; and
- Increased replacement rates to redress the underlying material and equipment failure rates.

The cost of these changes in policy is $110.9M.

5.2 Escalation Factors

Energex have agreed in principle with BRW's use of the Customer Escalation Factor ("CEF") and Network Escalation Factor ("NEF"). However, Energex has suggested that an NEF of 2.95%, which is equal to 50% of the expected demand growth, would be a more appropriate than the 2.5% or 42% of the expected demand growth used by BRW.

The application of the revised NEF results in an increase of approximately $3.0M to maintenance costs and $0.3M to operation costs over the regulatory period.

BRW accepts that the relationship between expected demand growth and operating cost growth (measuring the extent to which increased asset quantities require higher opex) is not precise. Energex has argued for a slightly higher NEF than proposed by BRW based on its experience and direct knowledge of the assets and the practical application of the work involved. BRW is prepared to accept the higher NEF given Energex's direct knowledge of the assets involved and the difficulty in accurately estimating the relationship between demand and OPEX.

The revised NEF has been applied in the development of the revised Energex forecasts for the OPEX categories summarised below. The revised forecasts will be discussed further in the following sections:

- Distribution Feeder;
- Distribution Poles;
- Distribution Pole Tops;
- Other Distribution Equipment;
- Distribution Special Projects;
- Sub-transmission Overhead ("OH") Feeders;
- Sub-transmission Poles and Structures;
- Sub-transmission Under Ground ("UG") Cables;
- Other Zone Substation ("ZSS") Equipment;
- ZSS Site; and
- Network Operations.

5.3 Revised OPEX Forecast

5.3.1 Distribution Feeder

As a result of the EDSD recommendations to improve the current 10% worst performing feeders, to ensure that sufficient funding is available for an effective preventative maintenance program and to resolve equipment failure issues on the 11 kV network, Energex has proposed substantial increases in spending on distribution feeder and pole top inspection and maintenance.

The 10% worst performing feeders represents 120 off 11 kV feeders, consisting of 83 urban and 37 short rural feeders. These feeders are targeted for attention over the next 5 years and have been selected on the basis of poor reliability, sensitivity of customers to interruptions, asset age and the environment in which they are situated.

The primary causes of the poor reliability of these feeders have been equipment failure, vegetation, storms and animals. Historical events have shown that there has been a gradual increase in recent years of urban and rural overhead feeder equipment failures related to ageing, and that replacement rates of key network items has been below that necessary to improve performance or even maintain it. Substantial increases in inspection, maintenance and replacement is warranted to arrest and reverse this trend.

The revised Energex forecast is shown in Table 5-3. The Base OPEX values incorporate the changes caused by the application of the revised NEF. This corresponds to an increase of approximately $1.23M over the regulatory period compared to the Draft Determination forecast. In response to the EDSD recommendations, Energex has also proposed an increase of $1.76M in feeder inspection and $10.79M in feeder planned maintenance over the five year regulatory period. The cost of planned maintenance is based on the historical proportion of inspection to planned maintenance costs.

BRW considers that the costs are reasonable, given that the inspections include all assets associated with the feeder on a time efficient single pass basis, and that the quality of inspection output is expected to be at an appropriately high level to support the required reliability and safety improvement as required by the EDSD recommendations.

Table 5-3: Distribution Feeder Expenditure – Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX						
Inspection	2.82	3.06	3.15	3.24	3.34	15.61
Planned Maintenance	3.47	3.58	3.68	3.79	3.9	18.43
Emergency Response	5.16	5.31	5.47	5.63	5.8	27.38
EDSD Increases						
Inspection	0.53	0.35	0.32	0.29	0.26	1.76
Planned Maintenance	2.16	2.16	2.16	2.16	2.16	10.79
Emergency Response	0	0	0	0	0	0
Total OPEX						
Inspection	3.35	3.41	3.47	3.53	3.6	17.37
Planned Maintenance	5.63	5.74	5.84	5.95	6.06	29.22
Emergency Response	5.16	5.31	5.47	5.63	5.8	27.38

All forecast figures are in millions of June 2004 dollars.

5.3.2 Distribution Poles

Energex does not propose to increase the work volume involved in distribution pole inspection. As discussed in the Section 5.2, Energex has accepted BRW's application of the NEF escalation factor to Distribution Pole OPEX activities, but has revised the NEF value from 2.5% to 2.95%. The revised NEF results in an increased inspection cost of approximately $0.4M over the regulatory period compared to the BRW's December 2004 report to the QCA. BRW accepts Energex's revised forecast.

Table 5-4: Distribution Poles Expenditure - Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX						
Inspection	7.31	7.53	7.75	7.98	8.22	38.80

All forecast figures are in millions of June 2004 dollars.

5.3.3 Distribution Pole Tops

Resulting from the EDSD report, Energex has proposed an increase in pole top inspections of $8.72M and pole top planned maintenance of $89.63M for the five year regulatory period. The revised forecast is shown in Table 5-5.

In addition to application of the revised NEF as described above, Energex has introduced a number of new programs to address overhead equipment failure as recommended be the EDSD. These include:

- Inspection of 5% of the pole top population using live line techniques;
- Improved inspection cycles of air break switches. This represents an additional 1200 over the next 5 years;
- As the expected life of crossarms is 20 years, initially it is necessary to increase the rate of replacement by up to 3 times the rate in 2004/05 with progressive increases in the rate in future years. An additional 82,000 crossarms are planned for replacement in this 5 year period. This includes the provision of 400 additional wide trident construction crossarms; and
- An additional 600 feeders are planned to be checked using thermal imaging techniques during the next 5 year period.

BRW considers that, with the improvements in inspection efficiency and targeting of specific problem areas on a planned basis, the proposed costs are reasonable.

Table 5-5: Distribution Pole Tops Expenditure – Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX						
Inspection	0.12	0.13	0.13	0.13	0.14	0.65
Planned Maintenance	5.06	5.21	5.36	5.52	5.69	26.84
EDSD Increases						
Inspection	0.5	0.73	0.72	0.83	0.82	3.60
Planned Maintenance	10.49	12.19	16.01	19.18	20.89	78.76
Total OPEX						
Inspection	0.62	0.86	0.85	0.96	0.96	4.25
Planned Maintenance	15.55	17.40	21.37	24.70	26.58	105.60

All forecast figures are in millions of June 2004 dollars.

5.3.4 LV Services

Energex has accepted BRW's previously proposed 10% savings in planned maintenance due to the CAPEX program to replace 40A services. There is no change to inspection cost. In response to the EDSD report, Energex proposes to spend an additional $2.54M on planned maintenance by replacing 34,000 LV claw type neutral clamps and active low voltage service clamps that have been identified as substandard. This will reduce the risk of electric shocks and unplanned outages.

BRW supports the additional programme of works associated with LV Services as it is in line with the EDSD recommendation to focus on planned maintenance of the overhead network. The associated cost is considered to be reasonable.

Table 5-6: LV Services Expenditure – Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX						
Inspection	2.55	5.9	6.04	6.19	6.33	27.01
Planned Maintenance	2.97	4.2	4.53	4.88	5.25	21.84
EDSD Increases						
Inspection	0	0	0	0	0	0
Planned Maintenance	0.26	0.5	0.74	0.6	0.44	2.54
Total OPEX						
Inspection	2.55	5.9	6.04	6.19	6.33	27.01
Planned Maintenance	3.23	4.7	5.27	5.48	5.69	24.38

All forecast figures are in millions of June 2004 dollars.

5.3.5 Other Distribution Equipment

Resulting from EDSD the recommendation to eliminate load and voltage constraints in the subtransmission network and HV network, Energex has developed a new policy to systematically read their maximum demand indicators. This is designed to reduce voltage complaints and blown fuse investigations resulting from overloaded transformers following the average demand growth of 10-15%. Previously this work has been done by Energex staff but now is planned to be done by contract. Each team involves two people for safety reasons.

Energex has examined other techniques for assessing demand growth, but has decided this is the most appropriate solution at the moment considering the current growth rate.

The additional Maximum Demand Indicators (“MDI”) readings are expected to incur an additional $9.95M planned maintenance cost over the five year regulatory period. At this stage, BRW considers this cost to be reasonable and the approach is the most practical. Efficiencies can be gained by the introduction of a Distribution System Management system for estimating loading at various points throughout the distribution network. This should be investigated further and implemented as soon as possible. BRW considers that the cost of implementing such a system would be less than the efficiencies gained.

Table 5-7: Other Distribution Equipment Expenditure – Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX						
Inspection	1.23	1.77	1.82	1.88	1.5	8.19
Planned Maintenance	2.97	3.69	3.88	4.09	3.83	18.46
Corrective Repair	22.05	22.7	23.37	24.05	24.76	116.93
EDSD Increases						
Inspection	0	0	0	0	0	0
Planned Maintenance	1.38	2.24	2.18	2.11	2.04	9.95
Corrective Repair	0	0	0	0	0	0
Total OPEX						
Inspection	1.23	1.77	1.82	1.88	1.5	8.19
Planned Maintenance	4.35	5.93	6.06	6.2	5.87	28.41
Corrective Repair	22.05	22.7	23.37	24.05	24.76	116.93

All forecast figures are in millions of June 2004 dollars.

5.3.6 Distribution Special Projects

Energex has not identified any further costs associated with Distribution Special Projects in its submission. It should be noted however that the forecast OPEX in this category is significantly less (approx. $5.0M over the regulatory period) than was identified by BRW in its December 2004 report. The reason for this discrepancy is that a number of the items which BRW assigned to this category have been reallocated by Energex. For example, BRW originally assigned reading of MDIs to this category whereas Energex has allocated these costs to Other Distribution Equipment.

Table 5-8: Distribution Special Projects Expenditure – Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX						
Inspection	0.51	0.54	0.59	0.68	0.79	3.11
Planned Maintenance	6.71	6.93	6.64	6.91	7.19	34.39

All forecast figures are in millions of June 2004 dollars.

5.3.7 Sub-transmission Overhead Feeders

Energex has not proposed any additional work in the Subtransmission Overhead Feeder OPEX category. However, the application of the revised NEF escalation factor results in a small cost increase of approximately $0.10M over the regulatory period, compared to the BRW December 2004 report. As discussed previously, BRW accepts this revised forecast.

Table 5-9: Sub-transmission Overhead Feeders Expenditure– Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX						
Inspection	1.19	1.26	1.30	1.35	1.40	6.50
Planned Maintenance	1.39	1.43	1.47	1.52	1.56	7.38
Corrective Repair	0.34	0.35	0.36	0.37	0.39	1.82
Emergency Response	0.28	0.29	0.29	0.30	0.31	1.47

All forecast figures are in millions of June 2004 dollars.

5.3.8 Sub-transmission Poles and Structures

Energex has introduced no additional work programmes in relation to the Sub-transmission Poles and Structures OPEX category. Again, the application of the revised NEF escalation factor results in a small increase of $0.07M over the five year regulatory period, which is accepted by BRW.

Table 5-10: Sub-transmission Poles and Structures Expenditure – Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX						
Inspection	0.25	0.26	0.29	0.27	0.31	1.38
Planned Maintenance	1.54	1.58	1.63	1.68	1.73	8.15

All forecast figures are in millions of June 2004 dollars.

5.3.9 Sub-transmission Underground Cables

In the December 2004 report, BRW suggested that Energex's current levels of underground cable patrol were excessive and recommended that these patrols be limited to cable end points. As such the forecast inspection OPEX for underground cables was reduced by $0.15M p.a. Following the December 2004 Draft Determination, Energex has provided BRW with additional information to support its current patrol levels. In particular, Energex believe that these patrols are a cost-effective means of improving supply reliability and preventing costly repairs in a network which is subject to high levels of growth and where many feeders do not have full N-1 redundancy. Given the critical role of the sub-transmission underground network in reliability performance, BRW accepts this position but urges Energex to address the N-1 redundancy issue as a matter of priority through CAPEX.

Energex has not introduced any new programs and has accepted BRW's position that replacement of ageing aluminium sheathed pressure cables will have a positive impact on reducing inspection, planned maintenance and corrective repair costs. However, Energex has suggested that a progressive reduction of up to 5% for inspection, 10% for planned maintenance and 15% for corrective repair is more realistic than that proposed by BRW (i.e. $2.45M in total). BRW accepts the justification for the revised savings.

Table 5-11 shows Energex's revised UG Cable OPEX forecast. The revised forecast represents a total increase of $1.04M over BRW's December 2004 report. This increase encompasses the additional costs described above as well as a small increase associated with application of the revised NEF escalation factor. BRW considers that the revised forecast is reasonable.

Table 5-11: Sub-transmission Underground Cables Expenditure– Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX						
Inspection	0.42	0.43	0.43	0.44	0.48	2.2
Planned Maintenance	3.33	3.58	3.61	3.64	3.66	17.83
Corrective Repairs	0.34	0.34	0.34	0.34	0.34	1.71

All forecast figures are in millions of June 2004 dollars.

5.3.10 ZSS Power Transformers

Energex has introduced no additional work programmes associated with the ZSS Power Transformer OPEX category. However, contrary to BRW's position and general industry practice, Energex has asserted that activities such as oil leak repairs and general transformer maintenance are important to achieve full asset useful lives and minimise impacts on safety and the environment. As such, Energex has reinstated the 20% savings proposed by BRW but capped its oil leak repairs at 50 units per year. The revised Energex forecast is shown in Table 5-12. BRW has considered Energex's position on this matter but maintains that Energex's activities in this area are excessive and that a 20% saving is not unreasonable. Compared to Energex's revised forecast, this corresponds to a small saving of $0.11M. The revised BRW forecast is shown in Table 5-13.

Table 5-12: ZSS Power Transformers Expenditure – Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX						
Inspection	0.44	0.47	0.41	0.53	0.47	2.31
Planned Maintenance	1.39	1.55	1.34	1.72	1.39	7.40

All forecast figures are in millions of June 2004 dollars.

Table 5-13: ZSS Power Transformers Expenditure – Revised BRW Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX						
Inspection	0.44	0.47	0.41	0.53	0.47	2.31
Planned Maintenance	1.28	1.48	1.31	1.75	1.46	7.29

All forecast figures are in millions of June 2004 dollars.

5.3.11 ZSS Circuit Breakers

Energex has proposed no new work programmes in relation to the ZSS Circuit Breaker OPEX category. However, application of the revised NEF results in an increase of approximately $0.97M over the December 2004 BRW forecast. As previously discussed, BRW accepts the application of the revised NEF.

Table 5-14: ZSS Circuit Breakers Expenditure – Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX						
Inspection	0.40	0.43	0.45	0.50	0.53	2.30
Planned Maintenance	2.39	2.8	2.59	2.32	2.47	12.57

All forecast figures are in millions of June 2004 dollars.

5.3.12 Other ZSS Equipment

No changes to the work program for this OPEX category have been proposed, but again the application of the revised NEF escalation factor result in a small cost increase of approximately $0.32M compared to the December 2004 BRW forecast.

Table 5-15: Other ZSS Equipment Expenditure – Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX						
Inspection	2.22	2.41	2.48	2.56	2.63	12.30
Planned Maintenance	1.14	1.15	1.17	1.20	1.22	5.88
Corrective Repair	3.33	3.42	3.52	3.63	3.74	17.64
Emergency Response	0.44	0.46	0.47	0.48	0.50	2.35

All forecast figures are in millions of June 2004 dollars.

Note - Discrepancies in categorisation lead to decreases in inspection and planned maintenance.

5.3.13 ZSS Secondary Equipment

Energex has not identified any changes to this OPEX category, so the original forecast, which was accepted by BRW has been maintained as shown in Table 5-16.

Table 5-16: ZSS Secondary Equipment Expenditure – Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX						
Planned Maintenance	3.06	3.58	3.62	3.82	4.40	18.48

All forecast figures are in millions of June 2004 dollars.

5.3.14 ZSS Site

Energex has accepted the December 2004 BRW forecast, as shown in Table 5-17, for the work associated with the ZSS Site OPEX category.

Table 5-17: ZSS Site Expenditure – Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX						
Inspection	0.01	0.01	0.01	0.01	0.01	0.05
Planned Maintenance	1.88	2	2.24	2.4	2.55	11.08
Corrective Repair	0.08	0.09	0.09	0.09	0.09	0.44

All forecast figures are in millions of June 2004 dollars.

5.3.15 Vegetation Management

Resulting from the EDSD recommendations to improve reliability in a reasonable timeframe, to improve the performance of the current 10% of the worst performing feeders and resolve equipment failures on 11kV feeders, as well as a new policy issued in 2004 with more specific guidelines from the Electrical Safety Office particularly with regard to overhanging trees, Energex has concluded that further emphasis on vegetation management will have a considerable impact on reliability, public safety and preparedness for the summer periods. An increase of $24.95M over the 5 year regulatory period has been proposed.

With regard to reliability, Energex has estimated that of the targeted improvement to reliability over the regulatory period, vegetation management improvements will contribute 6% to urban feeders and 3.5% for short rural feeders.

The revised forecast, shown in Table 5-18, proposes an additional spending of $24.95M over the five year regulatory period. This amount consists of:

- $2.1M p.a. to increase the clearance to powerlines; and
- $2.8M p.a. for targeted removal of up to 875 trees (per annum) which are potentially hazardous because they over hang lines.

It is noted that there is no change to the cycle times for vegetation management.

In addition to these programs, there has been increased 'spot' vegetation clearing tasks identified during pre-storm car and helicopter patrols, thermoscan and targeted line inspections where vegetation has grown into the clearance zone within the standard clearance cycle.

Further, with greater attention from the public following the storms of early 2004 there has been a significant increase in the number of customer initiated requests for private tree clearing near powerlines.

Energex is currently negotiating new contracts for vegetation management, and although costs for previous years have shown a tendency to increase, there are indications that costs per km in this new period will be less than previous years. This is an indication of improvement of efficiency of contractors and the management of the OPEX budget. Contracts are based on costs per km per area and there is an improved knowledge and control of the types of vegetation in each area.

BRW believes that with the improvement in performance of contractors, improved recording systems and a greater knowledge of specific areas that the costs submitted are reasonable. It is recommended that Energex pursues the training of contractors for live line clearing and that the method of recording and forecasting of vegetation costs at Ergon Energy be examined to obtain further efficiency improvements.

Table 5-18: Vegetation Expenditure – Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX	44.52	46.46	46.46	46.46	46.46	230.34
EDSD Increase	4.99	4.99	4.99	4.99	4.99	24.95
Total OPEX	49.51	51.45	51.45	51.45	51.45	255.29

All forecast figures are in millions of June 2004 dollars.

5.3.16 Street Lighting

An additional cost to the street lighting budget is to perform six monthly day time street light patrols which have not been done in the past. This has been necessary because PE cell controlled street lights have been found to failsafe to the 'on' position during storms. This was particularly evident during the severe storms during early 2004, and the increased awareness of energy efficiency by customers.

The additional cost associated with the new day time patrols is $4.05M over the five year regulatory period. This value reflects the contract variation implemented recently. BRW considers this increase to be justified. There is no increase in Street Lighting OPEX due to the EDSD report. The revised forecast is shown in Table 5-19.

Table 5-19: Street Lighting Expenditure – Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX	5.74	6.02	6.31	6.62	6.95	31.64
Additional OPEX - Day Time Patrols	0.81	0.81	0.81	0.81	0.81	4.05
Total OPEX	6.55	6.83	7.12	7.43	7.76	35.69

All forecast figures are in millions of June 2004 dollars.

5.3.17 Customer Service

In its previous submission, Energex forecast spending in this area of $48.75M over the regulatory period. BRW claimed that savings of $7.81 could be achieved because of CAPEX trade-offs. These included a reduction of:

- Loss of supply incidents by the uprating of supply fuses from 40 to 55 amps;
- Cold water complaints following the replacement K22 relays; and
- Electric shock investigations by the replacement of overhead services.

Following the Draft Determination, Energex has provided BRW with incident data which supports a reduced expected savings of $2.15M over the regulatory period. Based on this new information, BRW considers this revised forecast to be reasonable.

In addition, Energex has included an amount of $11.87M associated with the cost of managing meter enquiries. These costs were previously born by the retail business. As meters are regulated assets, for non-contestable customers, the costs should in fact be born by Energex's regulated business. The meter enquiry cost is considered by BRW to be reasonable.

There have been no new Customer Service programs proposed following the EDSD report. The revised forecast for Customer Service expenditure is given in Table 5-20.

Table 5-20: Customer Service Expenditure – Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX	9.21	9.52	9.84	10.17	10.52	49.25
Incorrect Allocation – Meter Queries	2.25	2.3	2.34	2.39	2.44	11.72
Total OPEX	11.46	11.82	12.18	12.56	12.96	60.97

All forecast figures are in millions of June 2004 dollars.

5.3.18 Network Operations

Energex has not introduced any new programs, has accepted BRW's application of the NEF and CEF escalation factors in relation to Network Operations as well as the expected savings associated with network automation improvements. However, a revised forecast (shown in Table 5-21) has been developed based on the revised NEF escalation factor as previously discussed. The resulting cost increase, accepted by BRW, is approximately $0.3M over the five year regulatory period.

Table 5-21: Network Operations Expenditure – Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX	11.81	12.14	12.47	12.81	13.16	62.39

All forecast figures are in millions of June 2004 dollars.

5.3.19 Levies

As a result of the additional EDSD recommendations, the Electrical Safety Office has advised of an increase in the levy to accommodate the increased activity associated with mitigating the electrical risk to electrical workers and the community. Energex has estimated this increase to be $0.15M over the regulatory period.

BRW has determined, with advice from the Department of Industrial Relations, dated 31 December 2004, that a more accurate estimate would be $4.83M for the year 2005/06 and in the absence of any other advice, BRW has held this constant over the regulatory period.

Table 5-22: Levies Expenditure – Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX	4.56	4.68	4.79	4.91	5.04	23.98
EDSD Increase	0.85	0.87	0.89	0.91	0.93	4.46
Total OPEX	5.41	5.55	5.68	5.82	5.97	28.44

All forecast figures are in millions of June 2004 dollars.

Table 5-23: Levies Expenditure – Revised BRW Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Total OPEX	4.83	4.83	4.83	4.83	4.83	24.13

All forecast figures are in millions of June 2004 dollars.

5.3.20 Call Centre

As a result of the EDSD recommendations, Energex has forecast an additional cost in this area of $9.01m over the regulatory period as shown in Table 5-24. This consists of an increase in staff at the Call Centre and a provision for GSL rebates:

- **Staff Level:** The staff increase is equivalent of 19.85 FTE at the call centre to achieve the target of answering 70% of calls in 20 seconds. This target was recommended by the review company Call Centre Development Pty Ltd and endorsed by the EDSD panel. Energex has acquired this increased staffing level and experience has shown that this target can be achieved. It represents 10.25% of the total Call Centre staff.
- **GSLs:** With the Electricity Industry Code, issued in December 2004, GSLs have been introduced and will be fully effective from 1st July 2005. GSL rebates are available to non-contestable customers where specific customer service standards have not been achieved.

  Energex has had a number of GSLs with rebates in operation for some time but with the introduction of the Electricity Industry Code and the increased publicity throughout the community, the impact is expected to provide the DSNPs with further incentive to improve performance but also increase claims for GSL based payments.

  The GSLs and associated rebates are as follows:

    - Wrongful disconnection - $100;
    - Failure to connect - $40 for each late day;
    - Customer reconnection - $40 for each late day;
    - Attention to loss of hot water supply - $40 for each late day;
    - Failure to keep appointments - $40;
    - Failure to give 2 days notice of planned interruptions - $20 or $50; and
    - Customers experiencing more than a specified number of interruptions or interruptions longer than a specified duration - $80.

Energex has included in its submission an amount of $1.5M for the regulatory period. Based on current performance indicators, they have estimated that their total GSL exposure would be closer to $5.0M over the regulatory period. However, the $1.5M is based on parts of the service level which they have deemed outside of their control (because of factors such as weather) but which don't fall into the exclusion category of the Electricity Industry Code.

It is BRW's view that:

- The additional staffing is reasonable; and
- To provide incentive to ensure expenditure is focussed on delivering both service reliability and financial outcomes, the allowance for GSL rebates should not be included. Instead, provision of the amount removes the incentive to improve customer service and rebates should be paid from business profits.

Based on these conclusions, the revised BRW forecast is for $40.05M across the five year regulatory period as shown in Table 5-25. The increased costs have been based on 19.85 FTE at $60,000 p.a. per FTE.

Table 5-24: Call Centre Expenditure – Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX	6.51	6.66	6.82	6.99	7.15	34.13
EDSD Increase	1.8	1.8	1.8	1.8	1.8	9.01
Total OPEX	8.31	8.46	8.62	8.79	8.95	43.14

All forecast figures are in millions of June 2004 dollars.

Table 5-25: Call Centre Expenditure – Revised BRW Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX	6.51	6.66	6.82	6.99	7.15	34.13
EDSD Increase	1.19	1.19	1.19	1.19	1.19	5.96
Total OPEX	7.70	7.81	8.01	8.18	8.34	40.05

All forecast figures are in millions of June 2004 dollars.

5.3.21 Meter Reading – Franchise

Energex does not propose any increase in Meter Reading OPEX due to the EDSD report. However, Energex has advised that the support cost of reading meters was inadvertently omitted from the previous submission. This additional cost is estimated to be $25.18 M over the regulatory period.

The full meter reading process is performed by Service Essentials as a service provider. As meters are considered a network asset it is agreed that the full cost of meter reading, including processing costs, should be paid by Energex. The actual cost in 2003/04 was $10.89M, therefore, it is BRW's view that the proposed cost for the period is reasonable. The revised forecast is shown in Table 5-26.

Table 5-26: Meter Reading Expenditure – Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX	6.12	6.27	6.42	6.57	6.73	32.10
Incorrect Allocation	4.8	4.92	5.03	5.15	5.28	25.18
Total OPEX	10.92	11.19	11.45	11.72	12.01	57.28

All forecast figures are in millions of June 2004 dollars.

5.3.22 Metering Dynamics

In relation to Metering Dynamics, Energex has made no further changes to its original forecast which was accepted by BRW in the December 2004 report.

Table 5-27: Metering Dynamics Expenditure – Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX	1.06	1.17	1.23	1.29	1.35	6.10

All forecast figures are in millions of June 2004 dollars.

5.3.23 New Initiatives

An additional cost to the previous submission by Energex is the cost associated with reducing the utilisation of the network to 60-65% levels by contracting for stand-by generation to be available during peak demands. It is noted that currently a number of these contracts are in place in areas where reliability during peak load times is very poor. The additional cost is estimated to be $4.5M over the regulatory period. This is initially $1.5M p.a. and diminishes to zero during the period as capital works are performed and the utilisation improves.

It is BRW's view that this position exists because of previous inappropriate planning criteria and although this is an acceptable method of overcoming the situation in the short term, the cost should be minimised by rapidly improving the capacity of the network. Under these circumstances, the cost is reasonable.

The revised forecast for the New Inititatives OPEX category is shown in Table 5-28.

Table 5-28: New InitiativesExpenditure – Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX - DSM	2.00	2.00	2.00	2.00	2.00	10.00
EDSD Increase - Additional DSM	1.50	1.50	1.00	0.50	0	4.50
Total OPEX - DSM	3.50	3.50	3.00	2.50	2.00	14.50
Base OPEX – Embedded Generator Payment	10.92	11.19	11.45	11.72	12.01	57.28

All forecast figures are in millions of June 2004 dollars.

5.3.24 Non-Distribution-Use-of-System Services

There has been a small increase of $0.64M in the forecast Non-DUOS services costs over the regulatory period based on the application of the revised NEF escalation factor.

Table 5-29: Non-DUOS Services Expenditure – Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Base OPEX	13.94	14.36	14.77	15.2	15.64	73.92

All forecast figures are in millions of June 2004 dollars.

5.3.25 Self Insurance

No additional costs associated with Self Insurance have been included in Energex's revised submission.

5.3.26 EBA Impacts

Energex has revised the expected outcomes of the forthcoming 2005 EBA agreement in light of the recommendations made in the EDSD report. As a result, the regulated OPEX forecast has increased by $37.21M across the regulatory period as shown in Table 5-30.

BRW considers this revised OPEX forecast to be reasonable as discussed further in Section 7.

Table 5-30: EBA Expenditure – Revised Energex Forecast (2005)

	05/06	06/07	07/08	08/09	09/10	Total
Regulated DUOS OPEX	4.30	6.94	8.65	8.65	8.65	37.21
Non-DUOS OPEX	0.28	0.43	0.54	0.54	0.54	2.33

All forecast figures are in millions of June 2004 dollars.

5.3.27 Regulatory Reporting

No additional costs associated with regulatory reporting have been included in Energex's revised submission.

5.4 Revised Efficient OPEX Program 2005/06 to 2009/10 – Summary

In the December 2004 report, BRW identified a number of potential savings in the Energex OPEX Program. Following the Draft Determination, Energex provided further information supporting the efficiencies which are incorporated into current maintenance and operations programs. This additional information has enabled BRW to reconsider its position in relation to potential efficiency savings as discussed below.

5.4.1 Single - Pass System Approach

In the previous report BRW had not been convinced 'that the potential savings due to the systems based (single - pass) approach had been fully factored into the budget'.

During this review this issue of concern has been clarified:

- The single - pass approach has been adopted for inspection of all HV and LV overhead lines. HV and LV line inspection personnel are now required to fully inspect assets within their particular competency. This includes testing the condition of poles, inspect cross arms, conductor, hardware, pole and ground mounted plant, HV earthing systems, fault indicators, service pillars, LV services, vegetation and carry out minor repairs; and
- Distribution and zone substation maintenance costs have been determined from work packages involving inspection and maintenance of multiple assets at each site.

Economies have been obtained by conducting inspections and maintenance with a single visit to sites and grouping together corrective actions identified to reduce travel times of maintenance crews.

Unit rates used for calculation of total costs have been determined from historical single - pass line and substation inspection and maintenance costs.

It is therefore acknowledged that the efficiencies forecast by BRW in the previous report have been taken into account and therefore no efficiency savings are appropriate in this area.

5.4.2 Inspection and Planned Maintenance Intervals

As stated previously BRW was of the view that savings of 1% could be achieved in the area of inspection and maintenance intervals.

Energex has shown that generally, with some minor exceptions, the intervals are in line with industry standards. These exceptions are:

- On load tapchanger selector switch maintenance;
- Cable route patrols; and
- Circuit breaker maintenance after automatic operations.

The policies adopted are based on sound principles involving their own experience in the environment in which they are situated. Considering some plant items and underground cables in particular are not always designed and operated with an N-1 redundancy, these policies should be constantly reviewed and benchmarked to obtain the optimum maintenance position.

Therefore the proposed 1% saving is not appropriate at this stage.

5.4.3 Efficiencies

In the previous review Energex had advised that a 1% efficiency saving had been factored into their estimates. BRW was of the opinion that there were other factors that had the potential to achieve further savings, including spread of hours, multi-skilling, starting on the job and reduced crew sizes, predicting that a total of 2% saving was achievable.

During this review BRW has determined that these efficiencies are being achieved, as illustrated by the absorption of part of the 4.5% p.a. increase included in the new EBA. This figure includes a CPI increase and an efficiency incentive increase.

In view of this, BRW accepts that the 2% saving should be reduced to the 1% factored into the original Energex budget.

A summary comparison between Energex's revised submission and BRW's OPEX forecast is shown in Table 5-31. The revised BRW forecast has been developed by subtracting the identified savings (in the ZSS power transformer planned maintenance, Levies, and Call Centre OPEX categories) from the appropriate Energex OPEX forecasts.

It is noted that:

- The tables in Chapter 5 will not sum to give the revised BRW forecast. This is because not all of the line items in the Energex OPEX budget fall into one of the categories defined by BRW. By subtracting identified savings from the Energex totals as described above, inaccuracies associated with these discrepancies are avoided.
- EBA impacts have been distributed across those categories which include a labour component; and
- Forecasts include an adjustment for resource ramp up which has also been distributed across the relevant categories.

Table 5-31: Draft Determination and Revised OPEX with Distributed EBA

	05/06	06/07	07/08	08/09	09/10	Total
DRAFT DETERMINATION						
Maintenance	147.04	158.19	160.48	164.17	167.19	797.06
Operating	30.06	30.89	31.67	32.48	33.32	158.41
New Initiatives	2.16	2.16	2.16	2.16	2.16	10.81
Total OPEX Before Efficiency Savings	**179.27**	**191.24**	**194.31**	**198.82**	**202.67**	**966.28**
Efficiency Savings (2%)	3.59	3.83	3.89	3.98	4.05	19.33
Total OPEX (excl. Non-DUOS Services)	**175.68**	**187.41**	**190.42**	**194.84**	**198.62**	**946.96**
OPEX for Non-DUOS Services	13.94	14.29	14.65	15.01	15.39	73.28
Total OPEX (incl. Non-DUOS Services)	**189.62**	**201.70**	**205.07**	**209.85**	**214.00**	**1020.23**
REVISED Energex FORECAST (2005)						
Maintenance	162.31	196.60	205.90	216.11	214.31	995.22
Operating	38.07	39.39	40.57	41.55	42.55	202.14
New Initiatives	3.66	3.66	3.16	2.66	2.16	15.31
Total OPEX Before Efficiency Savings	**204.04**	**239.65**	**249.63**	**260.32**	**259.02**	**1,212.66**
Efficiency Savings	0.00	0.00	0.00	0.00	0.00	0.00
Total OPEX (excl. Non-DUOS Services)	**217.86**	**236.65**	**245.63**	**253.50**	**259.02**	**1,212.66**
Total OPEX for Non-DUOS Services	14.23	14.79	15.31	15.74	16.19	76.25
Total OPEX (incl. Non-DUOS Services)	**218.27**	**254.44**	**264.94**	**276.06**	**275.21**	**1,288.91**
REVISED BRW FORECAST (2005)						
Maintenance	162.20	196.53	205.87	216.14	214.38	995.11
Operating	36.88	38.03	39.10	39.95	40.81	194.75
New Initiatives	3.66	3.66	3.16	2.66	2.16	15.31
Total OPEX Before Efficiency Savings	**202.74**	**238.21**	**248.13**	**258.74**	**257.34**	**1,205.16**
Efficiency Savings	-2.03	-2.38	-2.48	-2.59	-2.57	-12.05
Total OPEX (excl. Non-DUOS Services)	**200.71**	**235.83**	**245.65**	**256.16**	**254.77**	**1,193.11**
Total OPEX for Non-DUOS Services	14.23	14.79	15.31	15.74	16.19	76.25
Total OPEX (incl. Non-DUOS Services)	**214.94**	**250.61**	**260.96**	**271.90**	**270.95**	**1,269.36**

All forecast figures are in millions of June 2004 dollars.

6 CAPEX

6.1 Revised Submission

Energex's revised submission requests, in relation to CAPEX, that the QCA's Final Determination:

- Immediately increases the $2,132.7M allowed in the revenue cap up to the $2,665.9M recommended by BRW, based on Energex's resourcing plans, demonstrated success of its recent spend levels and the planning, resourcing and contracting steps already in place;
- Reconfirms that Energex will be able to re-open the CAPEX component of the revenue cap during the period; and
- In the light of present uncertainties and the latest demand growth indicators, does not prematurely impose either a 'cap' or a time constraint on the re-opening of the CAPEX component of the revenue cap.

The second and third items are beyond the scope of BRW's review and are not discussed further in this report. The first item is discussed further in Section 7.

6.2 Change in Planning Philosophy & Process

In line with recommendations contained in the EDSD Report; Energex has made significant changes to its system planning guidelines. Previously, Energex applied a probabilistic planning methodology based on a reliability and risk trade-off approach known as Reliability Assessment Planning ("RAP"). Energex is now applying a deterministic methodology (i.e. planned to N-1 criteria) to all bulk supply substations, zone substations and subtransmission feeders. RAP will continue to be used as a planning tool for the lower levels of the network.

Each bulk supply and zone substation will be monitored and analysed on a yearly basis to ensure that there is sufficient transfer capacity to cover a single credible contingency (N-1) using a 50% Probability of Exceedence ("PoE"). Plans for each substation are being developed and will be updated annually to ensure the network is capable of meeting a 10% PoE at each substation with system normal.

The target utilisation of zone and bulk supply substations is 60-65%, down from the current level of 75%. and the target utilisation of 11kV feeders is 80% at 10% PoE. The Minimum Service Standards for reliability are an urban and rural SAIDI of 110 and 220 minutes respectively.

Energex has initiated regular reading of Maximum Demand Indicators on distribution transformers to better understand the impacts of air conditioning loads and summer peaks, to identify transformers requiring augmentation and to underpin refinements to LV planning.

As discussed in more detail in Section 7.1, BRW notes that Energex has significantly increased its system planning resources, which BRW considers was a prerequisite for successful implementation of the changed planning philosophy.

Energex has a two-level planning process: the first level is a Network Strategic Plan that describes the expected pattern of major network development for the next 20 years, and the second level is a Network Development Plan that describes in detail projects and timeframes for the next five years. Energex is currently in the process of developing the Network Development Plan in line with the revised system planning philosophy. Energex will need to complete this plan in order to prepare robust revised forecasts of CAPEX. BRW accepts that the adoption of the changed system planning philosophy will require some further CAPEX than that allowed for by BRW in its forecast contained in its Final Report of 14th December 2004.

6.3 Maximum Demand

Energex based its original submission on a forecast growth in summer maximum demand (“MD”) of 5.9% over the period with a PoE of 50%, compared with the forecast made by McLennan Magasanik Associates Pty Ltd (“MMA”) of 5.3% growth (refer Table 2, Page iv of the MMA report). In its Final Report, BRW’s assessment of Energex’s CAPEX requirements was based on Energex’s MD forecasts and not those made by MMA (refer to Page 92 of BRW’s Final Report).

In its revised submission, Energex has maintained its forecast growth in summer MD of 5.9% over the period 2005/06 to 2009/10 at 50% PoE.

6.4 EBA CAPEX Impacts

Subsequent to its revised submission, Energex has forecast an amount of $51.4M of CAPEX for wage and salary increases arising from the EBA, spread as follows:

Table 6-1: Revised Submission EBA CAPEX Impact

	05/06	06/07	07/08	08/09	09/10	Total
EBA Increases	5.3	9.4	12.2	12.2	12.2	51.4

All forecast figures are in June 2004 dollars. (millions)

The quantum of the EBA increases and the allocation between OPEX and CAPEX are discussed in further detail in Section 7.

For the increases in CAPEX due to the EBA, Energex has based its estimates on a base of its original forecast of $3,287.8M. BRW has recalculated the EBA increment in line with the detailed split provided by Energex and the Draft Determination CAPEX (i.e. $2,665.9M), which would reduce the EBA increment to $41.3M, as shown in the following table.

Table 6-2: Breakdown of Revised Submission EBA CAPEX Impact

	05/06	06/07	07/08	08/09	90/10	Total
Refurbishment Driven Primary	0.110	0.271	0.281	0.275	0.245	1.182
Ageing Equipment	0.024	0.120	0.344	0.379	0.366	1.233
Pole Replacement	0.154	0.241	0.281	0.270	0.287	1.232
Total Asset Replacements	**0.288**	**0.632**	**0.905**	**0.924**	**0.898**	**3.647**
Demand Driven Primary	2.264	4.082	4.223	3.737	3.718	18.024
Distribution Augmentation	0.170	0.293	0.464	0.449	0.446	1.822
Demand Primary / Reliability Secondary	0.023	0.012	0.000	0.000	0.000	0.035
Demand Primary / Refurbishment Secondary	0.103	0.237	0.260	0.303	0.315	1.218
Land & Right of Way	0.033	0.029	0.032	0.029	0.029	0.153
Easements	0.080	0.123	0.137	0.127	0.128	0.596
Total Demand Related - Corporate	**2.672**	**4.776**	**5.117**	**4.646**	**4.636**	**21.848**
Customer Driven Primary	0.046	0.069	0.076	0.069	0.068	0.328
Domestic & Rural	0.394	0.617	0.713	0.679	0.707	3.111
Commercial, Industrial & Traction	0.204	0.320	0.370	0.352	0.367	1.615
Public Lighting	0.125	0.195	0.226	0.215	0.224	0.984
Service Connections	0.714	1.307	1.728	1.803	1.876	7.428
Total Demand Driven - Customer Related	**1.483**	**2.509**	**3.113**	**3.118**	**3.243**	**13.466**
Reliability/Quality Improvement	0.076	0.107	0.100	0.068	0.063	0.415
Total Reliability/Quality Improvement	**0.076**	**0.107**	**0.100**	**0.068**	**0.063**	**0.415**
Community Requirements	0.089	0.137	0.151	0.181	0.173	0.731
Other Works	0.149	0.232	0.265	0.250	0.258	1.155
Total System Other	**0.239**	**0.368**	**0.416**	**0.432**	**0.431**	**1.885**
TOTAL SYSTEM	**4.758**	**8.393**	**9.652**	**9.188**	**9.272**	**41.262**

All forecast figures are in June 2004 dollars. (millions)

Although not specifically requested by Energex, BRW has included the additional $41.3M in the forecasts.

6.5 Revised CAPEX Forecast

As discussed in Section 6.1, Energex is still in the process of developing robust revised CAPEX forecasts. The revised submission contains some high level indications that Energex may need to spend more CAPEX than that recommended by BRW. As stated in Section 6.1, BRW accepts that the adoption of the changed system planning philosophy will require some further CAPEX than that allowed for by BRW in its Final Report. In the absence of detailed CAPEX forecasts and supporting material, BRW is unable to form a view as to how much additional CAPEX Energex may require.

As indicated in Section 6.1, Energex has not at this stage requested additional CAPEX, but has requested that the 80% initial allowance for CAPEX in the revenue cap be increased to 100%. BRW has included the EBA increase in its revised CAPEX forecast.

Table 6-3: Revised Submission EBA CAPEX Impact

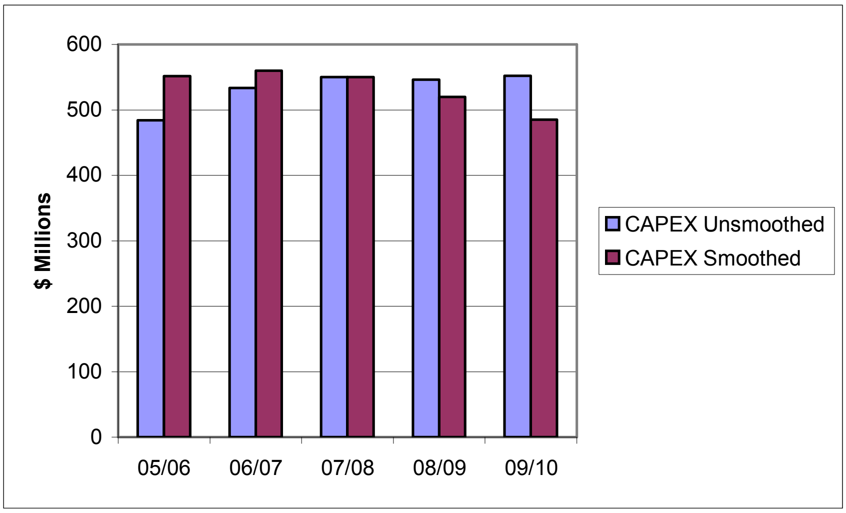
	05/06	06/07	07/08	08/09	09/10	Total
Draft Determination	484.3	533.5	549.9	546.2	552.0	2,665.9
EBA Increases - BRW	4.8	8.4	9.7	9.2	9.3	41.3
BRW Forecast CAPEX	**489.1**	**541.9**	**559.6**	**555.4**	**561.3**	**2,707.1**

All forecast figures are in June 2004 dollars. (millions)

6.6 Fall of Expenditure

In its revised submission, Energex has proposed a different fall of expenditure from BRW (based on the assumption of CAPEX of $2,665.9M) to prudently position Energex in the event that a higher CAPEX spend is shown to be necessary. BRW supports this approach, as it gives Energex more flexibility to increase its spending should that prove necessary. The effect of smoothing is shown in the following graph and tables:

Figure 6-1: Energex's Smoothed CAPEX.



All forecast figures are in millions of June 2004 dollars.

Table 6-4: BRW CAPEX Forecast - Unsmoothed

	2005/06	2006/07	2007/08	2008/09	2009/10	Total
Asset replacements	30.2	45.2	49.6	54.4	52.0	231.5
Demand Related – Corporate Initiated	245.9	290.3	280.8	278.1	279.2	1,374.2
Demand Driven – Customer Initiated	125.0	138.7	152.9	165.8	173.8	756.1
Reliability/Quality Improvement	9.0	8.5	7.3	5.5	5.1	35.3
System Other	12.3	12.8	13.2	14.9	15.0	68.2
Total System	**422.4**	**495.5**	**503.8**	**518.7**	**525.1**	**2,465.4**
Non-System Other	66.7	46.4	55.8	36.7	36.2	241.8
Total CAPEX	**489.1**	**541.9**	**559.6**	**555.4**	**561.3**	**2,707.1**

All forecast figures are in millions of June 2004 dollars.

Table 6-5: BRW CAPEX Forecast - Smoothed

	2005/06	2006/07	2007/08	2008/09	2009/10	Total
Asset replacements	46.3	49.0	47.2	46.1	42.9	231.5
Demand Related – Corporate Initiated	274.8	291.1	280.1	273.9	254.4	1,374.2
Demand Driven – Customer Initiated	151.2	160.1	154.1	150.7	140.0	756.1
Reliability/Quality Improvement	7.1	7.5	7.2	7.0	6.5	35.3
System Other	13.6	14.5	13.9	13.6	12.6	68.2
Total System	**493.0**	**522.1**	**502.5**	**491.4**	**456.3**	**2,465.4**
Non-System Other	66.7	46.4	55.8	36.7	36.2	241.8
Total CAPEX	**559.6**	**568.5**	**558.3**	**528.1**	**492.5**	**2,707.1**

All forecast figures are in millions of June 2004 dollars.

7 EBA

Coincident with the establishment of a new EBA in 2005 were a number of recommendations from the EDSD report requiring both DSNPs to develop a resource plan and implement a training strategy to overcome the difficulties associated with:

- An ageing workforce, particularly in the field;
- Lack of personnel to complete operational and capital work programs;
- Shortage of suitably trained personnel in Queensland; and
- A major risk that the networks may not be adequately maintained and augmented.

This EBA has been developed in conjunction with government bodies and Ergon Energy to overcome this position. Consideration has been given to other government instrumentalities and awards applying to NSW DSNPs.

The Table 7-1 supplied by Energex, shows the existing salary differences between typical workers in comparative DNSPs. BRW has confirmed the PowerCor figures.

Table 7-1: Comparative salaries of typical workers in differing DNSPs

	Hrs / week	Senior Linesperson	Senior Electrical Tradesperson (Substations)	Senior Testing/Commissioning Technician
Energex	36.25	$45,785 (TS4 SP 7.0)	$45,785 (TSP4 SP 7.0)	$50,441 - $65.896 (PP2 – PP4)
Ergon Energy	36.25	$46,122 (TSP4 SP 7.0)	$46,122 (TSP4 SP 7.0)	$50,841 - $66,382 (PP2 – PP4)
Proposed Energex & Ergon Energy		$50,672	$50,672	$55,538 - $71.688
ActewAGL	36.75	$50,057	$50,057	$50,057
ETSA	37.5 (4% min increase expected	$44,928	$50,440	$56,000 - $63,200
PowerCor		$49,677 (incr to $51,780 Sep 2005)	$52,628 (incr to $54,864 Sep 2005)	$60,283 (incr to $63,077 Jul 2005)
Energy Australia		$53,946	$58,411	$58,411 - $70,000

Agreement with unions and appropriate bodies is expected to be completed shortly and estimates for the next regulatory period have been based on an EDSD Network Recovery, Attraction and Retention Allowance and Payment.

The components of the revised submission consist of:

- An all purpose allowance paid to employees in the Technical Classification Stream of:
    - $54.37 per week on certification of the Agreement;
    - $90.62 per week on or after 16 February 2006; and
    - $110.55 per week on or after 16 February 2007.

- A payment to employees in the Administration and the Professional and Managerial Streams in recognition of their contribution to the EDSD network recovery program of:
  - $1,500 paid following certification of this agreement;
  - $1,000 paid following 16 February 2006; and
  - $500 paid following 16 February 2007.
- The impact of the EBA all purpose allowance on overtime estimated at 10%, and for 'on costs' such as superannuation, bonuses, leave at termination, workcover, etc. estimated at 30%.

The forecast costs for these components are summarised in Table 7-2.

Table 7-2: EBA Costs

	05/06	06/07	07/08	08/09	09/10	Total
EDSD Allowance Base Cost	5.72	9.03	10.94	10.94	10.94	47.56
Overtime Loading @ 10%	0.57	0.90	1.09	1.09	1.09	4.76
On Costs @ 30%	1.89	2.98	3.61	3.61	3.61	15.69
Leave Liability	1.17	3.60	5.76	5.76	5.76	22.05
EDSD Payment	1.32	0.66	0	0	0	1.97
Total EBA Forecast	**10.67**	**17.16**	**21.40**	**21.40**	**21.40**	**92.04**
DUOS OPEX	4.30	6.94	8.65	8.65	8.65	37.21
Non DUOS	0.27	0.43	0.54	0.54	0.54	2.33
Total EBA OPEX	**4.58**	**7.37**	**9.19**	**9.19**	**9.19**	**39.54**
Total EBA CAPEX	**6.09**	**9.79**	**12.21**	**12.21**	**12.21**	**52.53**

All forecast figures are in millions of June 2004 dollars.

As discussed in Section 6.4, BRW has reduced the EBA increment for CAPEX, as shown in the following table:

Table 7-3: EBA Costs - BRW

	05/06	06/07	07/08	08/09	09/10	Total
EBA OPEX Energex	4.02	7.08	9.19	9.19	9.19	38.66
EBA CAPEX Energex	5.34	9.42	12.21	12.21	12.21	51.40
Total EBA Energex	**9.35**	**16.50**	**21.40**	**21.40**	**21.40**	**90.06**
EBA OPEX BRW	4.0	7.1	9.2	9.2	9.2	38.7
EBA CAPEX BRW	4.8	8.4	9.7	9.2	9.3	41.3
Total EBA BRW	**8.8**	**15.5**	**18.9**	**18.4**	**18.5**	**80.0**

All forecast figures are in millions of June 2004 dollars.

Note that the base rate movement of 4.5% in wages has been absorbed with efficiency improvements. Also, capital and operating expenditure for each year of the regulatory period has been based on the proportion of capital and operating expenditure for the current year, ie, 57% for CAPEX and 43% for OPEX.

The cost of this EBA will be balanced against an agreement related to an acceptance of the principles of workplace change, use of contractors, flexibility and striving towards the objectives outlined in the EDSD Network Recovery Review and the Electricity Industry Code.

Although the step change which results from the proposed EBA might appear at first sight generous, totalling $80.0M over the five year regulatory period, BRW appreciates the need to attract and retain staff in order to resource proposed capital and operational programs for the next regulatory period.

Other factors which support the extent of the EBA increase include:

- The EDSD Review recommendations and the development of the Resourse Plan for the next 5-10 years to address the aging workforce and anticipated skill shortages;
- Support through participation with government organisations and Ergon Energy;
- The need to attract suitably skilled persons from the Southern states and other industries in Queensland; and
- The need to arrest the drain of contract workforce to other states because of higher pay rates in the main skill shortage areas.

BRW considers that the forecasts of the additional costs associated with the new EBA are reasonable, after the reduction of the CAPEX component as discussed in Section 6.4.

Table 7-4 shows a comparison of revised EBA forecast for Energex with that of Ergon Energy. Ergon Energy has additional costs due to the high use of external labour and parity costs amounting to $77.66M over the 5 year regulatory period. Therefore, with consideration to the number of employees impacted by the EBA, in particular those in the technical stream, the BRW revised EBA for Energex is comparable with that of Ergon Energy.

Table 7-4: EBA Costs – Comparison with Ergon Energy

	No. of Employees Impacted by the EBA			Submission for EBA by DNSP	BRW Revised EBA
	Technical Stream	Managerial and Admin. Stream	Total		
Ergon Energy	1600	1370	2970	184.4	155.4
Energex	1507	1350	2857	90.1	80.0

8 RESOURCING

In its Final Report, BRW expressed concerns regarding Energex's capacity to resource the required level of CAPEX and OPEX.

Energex has prepared a Regulated Workforce Plan 2005 – 2010 that focuses on the projected workforce needs and the actions necessary to meet them. The Regulated Workforce Plan represents the first phase of a two-phase Workforce Planning Project, and covers the following:

- Identification of Energex's current and future workforce capability requirements (skills, roles and resource levels) in order to build capability to deliver the Program of Work;
- Estimation and analysis of gaps between workforce demand and supply forecasts; and
- Development of strategies to close resource and capability gaps in the required timeframe by internal hiring where possible, with the shortfall to be met by contracting.

The second phase of the Workforce Planning Project, expected to be completed in 2005, will deliver strategies to address the ageing workforce and the attraction and retention of personnel in key job categories.

8.1 Internal Staffing

Energex has significantly increased its internal resources as follows:

- Increase in planning resources from 16 to 40 in the period from July to December 2004, thus addressing the EDSD Review Recommendation 34 that Energex's should increase its planning resources;
- Hiring of an additional 145 staff in the Technical Service Persons/Power Worker job categories between July 2004 and February 2005, and a further 23 apprentices converted to full time Tradespersons in January 2005; and
- Significant increase in apprentice intakes – 27 apprentices were taken on in January 2005, 37 in August 2004 and 40 in January 2005.

Other actions being taken by Energex include:

- An inter-state recruitment program based on broad recruitment advertising, targeted trade journal advertising and utilising specialist channels; and
- Commencement of a major international recruitment campaign, using a specialist international recruitment company.

Energex comments that it's resourcing efforts will benefit from the EDSD Allowances being incorporated into the current EBA negotiations.

Energex aims to increase its Network and key support staff by approximately 50% over the next five years. Without the results of Phase 2 of the Workforce Planning Project, BRW is not in a position to comment on the feasibility of Energex being able to achieve this target, which BRW considers to be stretching.

8.2 Contract

Energex is changing its approach to contracting and plans to deliver an additional $200-300M of contract work per year. To assist in the change, Energex hired a consultant to develop a strategic approach to obtaining contracted services. BRW considers that the strategies recommended by the consultant are sound and will greatly assist Energex to increase its use of contract resources. Energex has decided to utilise three broad approaches to the use of contract services:

- Continue to contract around $80M per year, largely utilising existing contracts (although larger, long-term vegetation contracts will replace the existing numerous smaller contracts);
- Utilise a design and construct alliance contract approach for over $200M per year for sub-transmission work; and
- Put in place longer term performance-based contracts for distribution work.

In line with the changed approach, Energex is in the process of letting contracts associated with two major projects – Citigrid (contracts totalling around $80M) and South West Brisbane (contracts totalling $18M).

8.3 Conclusions

Based on the more detailed Regulated Workforce Plan and the progress to date to implement the plan, BRW is confident of Energex's capability to resource total expenditure to BRW's recommended level of $3,897.0M. An assessment of Energex's capacity to resource higher levels of expenditure would depend on the outcomes from Phase 2 of the Workforce Planning Project and on-going updates of expenditure and staff numbers.

BRW supports Energex's proposal for the QCA to increase the $2,132.7M for CAPEX allowed in the revenue cap up to the $2,665.9M recommended by BRW with a further additional amount of $41.3M for the EBA, bringing the total to $2,707.1M.

9 GLOSSARY

ABS	Air Break Switch
ACR	Auto Reclosers
BRW	Burns and Roe Worley Pty Ltd
CAPEX	Capital expenditure
DNSP	Distribution Network Service Provider
Draft Determination	Draft determination, Regulation of Electricity Distribution
DSA	Distribution System Automation
DSM	Demand Side Management
EBA	Enterprise Bargaining Agreement
EDSD	Electricity Distribution and Service Delivery Review
ESO	Electricity Safety Office
GSL	Guaranteed Service Level
HV	High voltage
kV	Kilo volts i.e. 1,000 volts
LIMS	Load Information Management System
LV	Low voltage
MAIFI	Momentary Average Interruption Frequency Index
MD	Maximum Demand
MMA	McLennan Magasanik Associates Pty Ltd
MVA	Mega volt amps i.e.1,000,000 volt amps
MWh	Mega watt hours i.e. 1,000,000 watt hours
MW	Mega watts i.e.1,000,000 watts
MSS	Minimum Service Standards
Non-DUOS	Non Distribution-Use-Of-System
OH	Overhead
OPEX	Operating expenditure
OPGW	Optical fibre Ground Wire
PANEL	Independent Panel of the Electricity Distribution and Service Delivery Review
QCA	Queensland Competition Authority
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SCADA	Substation Control and Data Acquisition
SKM	Sinclair Knight Mertz
SNAPS	Sub-transmission Network Augmentation Plans
SWER	Single Wire Earth Return
UG	Underground
URD	Underground Residential Distribution

ZSS	Zone Substation

10 APPENDICES

10.1 Interviews

DATE & LOCATION	BRW PERSONNEL	KEY ENERGEX PERSONNEL	TOPIC
21/2/05 Brisbane	Ian Marks Graham Batcheler	Mike Griffin Martin Hoelscher Louise Dwyer Mike Gregg	Overview of changes since BRW review
21/2/05 Brisbane	Ian Marks Graham Batcheler	Martin Hoelscher Gary Taylor Mike Gregg	Planning Philosophy/Maximum Demand
21/2/05 Brisbane	Ian Marks Graham Batcheler	Martin Hoelscher Ken Pollock Mike Gregg	CAPEX Forecasts
21/2/05 Brisbane	Ian Marks Graham Batcheler	Neil Anderson Zoe Bulloch Peter Price Daryl Stevens Lyn Garred Melissa Davidson Mike Gregg	Resourcing
21/2/05 Brisbane	Ian Marks Graham Batcheler	Mike Griffin Louise Dwyer Mike Gregg	Wrap-Up & Debrief
24/2/05 Brisbane	Erika Twining	Sue Lee	OPEX Spreadsheets
25/2/05 Brisbane	Erika Twining Jeff Randles Bob Coulter	Mike Griffin Loise Dwyer Martin Hoelscher Paul Rainbird Chris Dunn Sue Lee	EDSD Recommendations
25/2/05 Brisbane	Erika Twining Jeff Randles Bob Coulter	Mike Gregg Paul Rainbird Paul Blackmore Sue Lee	Feeder inspection and maintenance / Street lighting additional costs
25/2/05 Brisbane	Erika Twining Jeff Randles Bob Coulter	Paul Rainbird Chris Dunn Sue Lee Mike Gregg	Vegetation
25/2/05 Brisbane	Erika Twining Jeff Randles Bob Coulter	Zoe Bulloch Lyn Garred Melissa Davidson Mike Gregg Louise Dwyer	EBA
25/2/05 Brisbane	Erika Twining Jeff Randles Bob Coulter	Jane Smith Sue Lee Katrina Atkinson Mike Swanston	Levies / Call Centre
25/2/05 Brisbane	Erika Twining Jeff Randles Bob Coulter	Paul Rainbird Martin Heilscher Sue Lee	MDIs / Additional Metering Costs
25/2/05 Brisbane	Erika Twining Jeff Randles Bob Coulter	Mike Griffin Tony Bennet Paul Rainbird Paul Blackmore Sue Lee	Efficiencies
25/2/05 Brisbane	Erika Twining Jeff Randles Bob Coulter	Mike Griffin Louise Dwyer	Wrap Up

10.2 Key Documents Accessed

Energex's Response to the "Electricity Distribution and Service Delivery for the 21st Century" Report, August 2004.

Energex Submission to the Queensland Competition Authority and its consultant Burns and Roe Worley, 21 January 2005.

Energex Submission to the Queensland Competition Authority and its consultant Burns and Roe Worley, 21 January 2005, Attachment A: Detailed OPEX Proposal.

Energex Product Codes and Inclusions, 16 November 2004.

Energex Regulated Workforce Plan 2005 – 2010 Submission to the Queensland Competition Authority, January 2005.

Meyrick and Associates and Pacific Economics Group, Benchmarking the Efficiency of Energex's Operations and Maintenance Expenditure, 19 November 2004.

Energex Treatment of Asymmetric Risks, February 2005.

QCA Draft Determination, Regulation of Electricity Distribution, December 2004.

Electricity Industry Code, January 2005.

Detailed Report of the Independent Panel, Electricity Distribution and Service for the 21st Century, Queensland, July 2004.

Energex Annual Network Management Plan, 200405 to 2009/10.

Strategic Approach to Contracted Services – Report by KPMG.

Final Report to QCA, Capital & Operating Expenditure Study for Distribution Network Service Providers in Queensland – Energex, BRW, 14 December 2004.

Energex Response to OPEX Questions .

Electrical Safety Office – Improving Electricity Distribution Entities' Vegetation Management Systems for a Safer Queensland.

Energex Strategic Plan for Summer 2004/05.

Energex EDSD in the 21st Century Recommendation – Progress Report, January 2005.

Energex Implementation of EDSD Recommendations – January 2005 Report.

Energex Project January – Identifying Opportunities for a Better Storm Response, 30 August 2004.

Standard Work Procedure – Development of Vegetation Management Plans for Overhead Transmission and Distribution Line Routes Document No. 6667-A4.

10.3 Consolidated OPEX forecasts

Table 10-1: Draft OPEX Determination

	2005/06	2006/07	2007/08	2008/09	2009/10	TOTAL
Maintenance Budget						
Inspection	18.43	22.54	23.07	23.80	24.08	111.92
Planned Maintenance	36.64	40.37	40.72	42.22	43.44	203.39
Corrective Repair	24.94	25.51	26.10	26.69	27.29	130.51
Emergency Response / Storms	9.01	9.26	9.52	9.80	10.09	47.68
Vegetation	44.52	46.46	46.46	46.46	46.46	230.34
Streetlights	5.74	6.02	6.31	6.62	6.95	31.64
Customer Service	7.77	8.03	8.30	8.59	8.89	41.57
Total Maintenance	147.04	158.19	160.48	164.17	167.19	797.06
Operating Budget						
Network Operations	11.81	12.11	12.41	12.73	13.05	62.10
Levies	4.56	4.68	4.79	4.91	5.04	23.98
Call Centre	6.51	6.66	6.82	6.99	7.15	34.13
Meter Reading - Franchise Customer	6.12	6.27	6.42	6.57	6.73	32.10
Metering Dynamic	1.06	1.17	1.23	1.29	1.35	6.10
Total Operating	30.06	30.89	31.67	32.48	33.32	158.41
New Initiatives Budget						
DSM Initiatives	2.00	2.00	2.00	2.00	2.00	10.00
Embedded Generators Payments	0.16	0.16	0.16	0.16	0.16	0.81
Total New Initiatives	2.16	2.16	2.16	2.16	2.16	10.81
Total OPEX Budget (excl. Non-DUOS Services)						
Before OPEX Efficiency Savings	**179.27**	**191.24**	**194.31**	**198.82**	**202.67**	**966.28**
Efficiency Savings (2%)	3.59	3.83	3.89	3.98	4.05	19.33
Total OPEX (excl. Non-DUOS Services)	**175.68**	**187.41**	**190.42**	**194.84**	**198.62**	**946.96**
Non-DUOS Services						
Recoverable	13.07	13.40	13.73	14.08	14.43	68.71
Temporary Builders	0.87	0.89	0.91	0.94	0.96	4.57
Total OPEX for Non-DUOS Services	13.94	14.29	14.65	15.01	15.39	73.28
Total OPEX Budget (incl. Non-DUOS Services)						
Total OPEX (incl. Non-DUOS Services)	**189.62**	**201.70**	**205.07**	**209.85**	**214.00**	**1020.23**

All forecast figures are in June 2004 dollars. (millions)

Table 10-2: Revised Energex OPEX Forecast with Distributed EBA

	2005/06	2006/07	2007/08	2008/09	2009/10	TOTAL
Maintenance Budget						
Inspection	18.74	25.78	26.57	27.56	27.40	126.05
Planned Maintenance	42.53	62.54	68.61	75.58	73.15	322.41
Corrective Repair	26.05	27.46	28.67	29.48	30.32	141.98
Emergency Response / Storms	9.38	9.82	10.19	10.41	10.64	50.44
Vegetation	47.74	52.33	52.42	52.92	51.92	257.33
Streetlights	6.59	6.90	7.21	7.52	7.85	36.07
Customer Service	11.27	11.77	12.24	12.63	13.03	60.94
Total Maintenance	**162.31**	**196.60**	**205.90**	**216.11**	**214.31**	**995.22**
Operating Budget						
Network Operations	12.37	13.03	13.59	13.93	14.28	67.21
Levies	5.42	5.54	5.68	5.81	5.95	28.41
Call Centre	8.31	8.46	8.62	8.79	8.96	43.14
Meter Reading - Franchise Customer	10.92	11.18	11.45	11.73	12.01	57.28
Metering Dynamic	1.06	1.17	1.23	1.29	1.35	6.10
Total Operating	**38.07**	**39.39**	**40.57**	**41.55**	**42.55**	**202.14**
New Initiatives Budget						
DSM Initiatives	3.50	3.50	3.00	2.50	2.00	14.50
Embedded Generators Payments	0.16	0.16	0.16	0.16	0.16	0.81
Total New Initiatives	**3.66**	**3.66**	**3.16**	**2.66**	**2.16**	**15.31**
Total OPEX Budget (excl. Non-DUOS Services)						
Before OPEX Efficiency Savings	**204.04**	**239.65**	**249.63**	**260.32**	**259.02**	**1,212.66**
Efficiency Savings	0.00	0.00	0.00	0.00	0.00	0.00
Total OPEX (excl. Non-DUOS Services)	**204.04**	**239.65**	**249.63**	**260.32**	**259.02**	**1,212.66**
Non-DUOS Services						
Recoverable	13.32	13.84	14.33	14.74	15.16	71.40
Temporary Builders	0.91	0.94	0.98	1.00	1.02	4.85
Total OPEX for Non-DUOS Services	**14.23**	**14.79**	**15.31**	**15.74**	**16.19**	**76.25**
Total OPEX Budget (incl. Non-DUOS Services)						
Total OPEX (incl. Non-DUOS Services)	**218.27**	**254.44**	**264.94**	**276.06**	**275.21**	**1,288.91**

All forecast figures are in June 2004 dollars. (millions)

Table 10-3: Revised BRW OPEX Forecast with Distributed EBA

	2005/06	2006/07	2007/08	2008/09	2009/10	TOTAL
Maintenance Budget						
Inspection	18.74	25.78	26.57	27.56	27.40	126.05
Planned Maintenance	42.42	62.47	68.58	75.61	73.22	322.30
Corrective Repair	26.05	27.46	28.67	29.48	30.32	141.98
Emergency Response / Storms	9.38	9.82	10.19	10.41	10.64	50.44
Vegetation	47.74	52.33	52.42	52.92	51.92	257.33
Streetlights	6.59	6.90	7.21	7.52	7.85	36.07
Customer Service	11.27	11.77	12.24	12.63	13.03	60.94
Total Maintenance	**162.20**	**196.53**	**205.87**	**216.14**	**214.38**	**995.11**
Operating Budget						
Network Operations	12.37	13.03	13.59	13.93	14.28	67.21
Levies	4.83	4.82	4.82	4.82	4.81	24.10
Call Centre	7.70	7.81	8.01	8.18	8.35	40.05
Meter Reading - Franchise Customer	10.92	11.18	11.45	11.73	12.01	57.28
Metering Dynamic	1.06	1.17	1.23	1.29	1.35	6.10
Total Operating	**36.88**	**38.02**	**39.10**	**39.94**	**40.80**	**194.75**
New Initiatives Budget						
DSM Initiatives	3.50	3.50	3.00	2.50	2.00	14.50
Embedded Generators Payments	0.16	0.16	0.16	0.16	0.16	0.81
Total New Initiatives	**3.66**	**3.66**	**3.16**	**2.66**	**2.16**	**15.31**
Total OPEX Budget (excl. Non-DUOS Services)						
Before OPEX Efficiency Savings	**202.74**	**238.21**	**248.13**	**258.74**	**257.34**	**1,205.16**
Efficiency Savings (1%)	-2.03	-2.38	-2.48	-2.59	-2.57	-12.05
Total OPEX (excl. Non-DUOS Services)	**200.71**	**235.83**	**245.65**	**256.16**	**254.77**	**1,193.11**
Non-DUOS Services						
Recoverable	13.32	13.84	14.33	14.74	15.16	71.40
Temporary Builders	0.91	0.94	0.98	1.00	1.02	4.85
Total OPEX for Non-DUOS Services	**14.23**	**14.79**	**15.31**	**15.74**	**16.19**	**76.25**
Total OPEX Budget (incl. Non-DUOS Services)						
Total OPEX (incl. Non-DUOS Services)	**214.94**	**250.61**	**260.96**	**271.90**	**270.95**	**1,269.36**

All forecast figures are in June 2004 dollars. (millions)

10.4 Consolidated CAPEX forecasts

Table 10-4: Draft CAPEX Determination

	2005/06	2006/07	2007/08	2008/09	2009/10	TOTAL
Asset replacements						
Refurbishment Driven Primary (Code 311400)	18.272	30.132	28.342	30.596	27.557	134.900
Ageing Equipment (Code 312400)	0.987	3.256	8.504	10.340	10.071	33.158
Pole Replacement and Pole Nailing (Code 312450)	10.668	11.201	11.873	12.585	13.466	59.793
Total Asset replacements	**29.927**	**44.588**	**48.719**	**53.521**	**51.095**	**227.851**
Demand Related – Corporate Initiated						
Demand Driven Primary (Code 311200)	209.889	253.465	238.317	232.572	233.213	1,167.456
Distribution Augmentation (Code 312650)	12.239	14.127	20.366	21.738	21.738	90.208
Demand Primary/Reliability (Code 311500)	2.676	0.956	0.000	0.000	0.000	3.631
Demand Primary/Refurbishment (Code 311600)	4.642	7.184	7.146	9.205	9.649	37.825
Land and Right of Way (Code 311700)	10.453	6.314	6.314	6.314	6.314	35.710
Easements (Code (311750)	3.379	3.446	3.514	3.582	3.649	17.570
Total Demand Related – Corporate Initiated	**243.277**	**285.492**	**275.657**	**273.411**	**274.563**	**1,352.400**
Demand Driven – Customer Initiated						
Customer Driven Primary (Code 311100)	4.500	4.500	4.500	4.500	4.500	22.500
Domestic & Rural (Code 312100)	55.744	58.53	61.458	64.53	67.757	308.019
Commercial, Industrial & Traction (Code 312500)	13.938	14.635	15.366	16.135	16.942	77.016
Public Lighting (Code 312600)	11.340	11.907	12.502	13.127	13.784	62.661
Service Connections (Code 312700)	37.962	46.574	55.965	64.395	67.554	272.450
Total Demand Driven – Customer Initiated	**123.484**	**136.146**	**149.791**	**162.687**	**170.536**	**742.645**
Reliability/Quality Improvement						
Reliability Improvement Primary (Code 311300) – Tier (a)	8.888	8.418	7.174	5.383	5.021	34.884
Total Reliability/Quality Improvement	**8.888**	**8.418**	**7.174**	**5.383**	**5.021**	**34.884**
System Other						
Community Requirements (Code 311800)	4.037	4.128	4.139	5.500	5.272	23.076
Other Works (Code 312200)	7.989	8.308	8.641	8.986	9.346	43.269
Total System Other	**12.026**	**12.436**	**12.779**	**14.486**	**14.618**	**66.345**
Total System	**417.602**	**487.080**	**494.121**	**509.489**	**515.834**	**2,424.125**

	2005/06	2006/07	2007/08	2008/09	2009/10	TOTAL
Non-System Other						
Land & Buildings	3.36	4.56	5.76	6	6	25.680
Furniture & Office Equipment	0.240	0.240	9.600	0.240	0.240	10.560
ICT	31.350	21.350	20.100	10.100	9.600	92.500
Vehicles	27.142	16.138	16.138	16.138	16.138	91.694
Tools & Equipment	3.330	3.330	3.330	3.330	3.330	16.650
Communication Equipment	1.275	0.775	0.875	0.875	0.875	4.675
Total Non-System Other	**66.697**	**46.393**	**55.803**	**36.683**	**36.183**	**241.759**
TOTAL CAPEX	**484.299**	**533.473**	**549.924**	**546.172**	**552.017**	**2,665.884**

All forecast figures are in June 2004 dollars. (millions)

Table 10-5: BRW CAPEX Forecast - Unsmoothed

	2005/06	2006/07	2007/08	2008/09	2009/10	TOTAL
Asset replacements						
Refurbishment Driven Primary (code 311400)	18.382	30.403	28.623	30.871	27.803	136.082
Ageing Equipment (code 312400)	1.011	3.375	8.848	10.719	10.437	34.391
Pole replacement (code 312450)	10.821	11.442	12.154	12.855	13.753	61.025
Total Asset Replacements	**30.215**	**45.220**	**49.625**	**54.445**	**51.993**	**231.498**
Demand Related -Corporate Initiated						
Demand Driven Primary (code 311200)	212.153	257.547	242.540	236.309	236.930	1,185.479
Distribution Augmentation (code 312650)	12.409	14.419	20.830	22.188	22.184	92.030
Demand primary/Reliability (code 311500)	2.698	0.968	0.000	0.000	0.000	3.666
Demand primary/Refurbishment (code 311600)	4.744	7.421	7.406	9.508	9.965	39.043
Land and Right of Way (code 311700)	10.486	6.344	6.346	6.343	6.343	35.862
Easements (code 311750)	3.459	3.569	3.652	3.709	3.778	18.166
Total Demand Related - Corporate Initiated	**245.950**	**290.268**	**280.774**	**278.057**	**279.200**	**1,374.248**
Demand Driven - Customer Initiated						
Customer Driven Primary (code 311100)	4.546	4.569	4.576	4.569	4.568	22.828
Domestic and Rural (code 312100)	56.138	59.147	62.171	65.209	68.464	311.130
Commercial, Industrial & Traction (code 312500)	14.142	14.955	15.737	16.487	17.309	78.630
Public Lighting (code 312600)	11.465	12.102	12.728	13.342	14.008	63.645
Service Connections (code 312700)	38.676	47.881	57.693	66.198	69.430	279.877
Total Demand driven - Customer Initiated	**124.967**	**138.655**	**152.905**	**165.806**	**173.780**	**756.111**
Reliability/Quality Improvement						
Reliability/Quality Improvement	8.964	8.525	7.274	5.451	5.084	35.299
Reliability Improvement Primary	**8.964**	**8.525**	**7.274**	**5.451**	**5.084**	**35.299**
System Other						
Community Requirements (code 311800)	4.127	4.265	4.289	5.681	5.445	23.807
Other Works (code 312200)	8.138	8.540	8.906	9.236	9.604	44.424
Total System Other	**12.265**	**12.805**	**13.195**	**14.918**	**15.049**	**68.231**
Total System	**422.360**	**495.472**	**503.773**	**518.677**	**525.106**	**2465.387**
Non-System						
Land and Buildings	3.360	4.560	5.760	6.000	6.000	25.680
Furniture and Office Equipment	0.240	0.240	9.600	0.240	0.240	10.560
ICT	31.350	21.350	20.100	10.100	9.600	92.500
Vehicles	27.142	16.138	16.138	16.138	16.138	91.694
Tools and Equipment	3.330	3.330	3.330	3.330	3.330	16.650
Communication Equipment	1.275	0.775	0.875	0.875	0.875	4.675
Total Non-System	**66.697**	**46.393**	**55.803**	**36.683**	**36.183**	**241.759**
Total CAPEX	**489.057**	**541.865**	**559.576**	**555.360**	**561.289**	**2,707.146**

All forecast figures are in June 2004 dollars. (millions)

Table 10-6: BRW CAPEX Forecast - Smoothed

	2005/06	2006/07	2007/08	2008/09	2009/10	TOTAL
Asset replacements						
Refurbishment Driven Primary (code 311400)	27.210	28.821	27.737	27.125	25.189	136.082
Ageing Equipment (code 312400)	6.877	7.284	7.010	6.855	6.366	34.391
Pole replacement (code 312450)	12.202	12.925	12.439	12.164	11.296	61.025
Total Asset Replacements	**46.288**	**49.029**	**47.186**	**46.145**	**42.850**	**231.498**
Demand Related -Corporate Initiated						
Demand Driven Primary (code 311200)	237.037	251.073	241.634	236.304	219.432	1185.479
Distribution Augmentation (code 312650)	18.402	19.491	18.758	18.345	17.035	92.030
Demand primary/Reliability (code 311500)	0.733	0.776	0.747	0.731	0.679	3.666
Demand primary/Refurbishment (code 311600)	7.807	8.269	7.958	7.783	7.227	39.043
Land and Right of Way (code 311700)	7.171	7.595	7.310	7.148	6.638	35.862
Easements (code 311750)	3.632	3.847	3.703	3.621	3.363	18.166
Total Demand Related - Corporate Initiated	**274.782**	**291.052**	**280.110**	**273.931**	**254.373**	**1374.248**
Demand Driven - Customer Initiated						
Customer Driven Primary (code 311100)	4.565	4.835	4.653	4.550	4.226	22.828
Domestic and Rural (code 312100)	62.211	65.894	63.417	62.018	57.590	311.130
Commercial, Industrial & Traction (code 312500)	15.722	16.653	16.027	15.673	14.554	78.630
Public Lighting (code 312600)	12.726	13.479	12.973	12.686	11.781	63.645
Service Connections (code 312700)	55.962	59.275	57.047	55.788	51.805	279.877
Total Demand driven - Customer Initiated	**151.185**	**160.137**	**154.117**	**150.717**	**139.956**	**756.111**
Reliability/Quality Improvement						
Reliability/Quality Improvement (code 311300)	7.058	7.476	7.195	7.036	6.534	35.299
Reliability Improvement Primary	**7.058**	**7.476**	**7.195**	**7.036**	**6.534**	**35.299**
System Other						
Community Requirements (code 311800)	4.760	5.042	4.853	4.745	4.407	23.807
Other Works (code 312200)	8.883	9.409	9.055	8.855	8.223	44.424
Total System Other	**13.643**	**14.451**	**13.907**	**13.601**	**12.630**	**68.231**
Total System	**492.955**	**522.144**	**502.515**	**491.430**	**456.342**	**2465.387**
Non-System						
Land and Buildings	7.084	4.928	5.926	3.898	3.845	25.680
Furniture and Office Equipment	2.913	2.026	2.437	1.603	1.581	10.560
ICT	25.516	17.750	21.346	14.039	13.848	92.500
Vehicles	25.294	17.596	21.160	13.917	13.728	91.694
Tools and Equipment	4.593	3.195	3.842	2.527	2.493	16.650
Communication Equipment	1.290	0.897	1.079	0.710	0.700	4.675
Total Non-System	**66.689**	**46.392**	**55.791**	**36.694**	**36.194**	**241.759**
Total CAPEX	**559.644**	**568.536**	**558.306**	**528.124**	**492.536**	**2707.146**

All forecast figures are in June 2004 dollars. (millions)