



**Energex Application for Capital
Expenditure Cost Pass-through**

Final Decision

March 2007

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1. OVERVIEW

In its 2005 *Final Determination: Regulation of Electricity Distribution*, the Authority included forecast capital expenditure of \$2.7 billion rather than the \$3.4 billion proposed by Energex. At that time, Energex was unable to provide sufficient detail to support its proposed capital expenditure program of \$3.4 billion. The Authority was also advised by its technical consultant that it was not clear that Energex had the capacity to undertake its proposed capital expenditure program and that the most that could be delivered with certainty was a lesser amount of \$2.7 billion (in itself a significant step up from Energex's historic capital expenditure).

At the same time, the Authority did not want a situation to develop where Energex was lacking the financial capacity to undertake necessary expenditure during the regulatory period. To avoid such an outcome, the Authority provided scope for Energex to seek to pass-through the costs associated with additional capital expenditure during the current regulatory period, up to its original forecast of \$3.4 billion, provided that expenditure met certain criteria, as set out in the 2005 Final Determination.

On 11 October 2006, Energex submitted an application to the Authority for the pass-through of costs associated with an additional \$720 million of capital expenditure. Should the Authority approve this application, forecast capital expenditure would increase to \$3.4 billion over the current regulatory period, equal to the amount initially proposed by Energex as part of the regulatory reset in 2005.

The Authority placed a notice in the *Australian Financial Review* and the *Courier Mail* on 1 November 2006 advising stakeholders of the receipt of this application and seeking submissions. Subsequently, submissions were received from the Queensland Treasury, the Queensland Consumer's Association, the Griffith University Centre for Credit and Consumer Law (CCCL), the Energy Users Association of Australia (EUAA) and TRU Energy.

The Authority's consultant, WorleyParsons, assessed Energex's application and was of the view that all of Energex's proposed system capital expenditure was justified and deliverable in terms of the criteria established by the Authority in its Final Determination. However, WorleyParsons was of the view that only \$3.1 million of the proposed non-system capital expenditure met the set criteria.

In preparing its cost pass-through application, Energex had not provided an exhaustive list of projects that it believed were eligible to be considered under the cost pass-through criteria. Rather, it had limited its total application to the maximum amount (\$720 million) that the Authority had established it would consider for pass-through. WorleyParsons identified that Energex had additional system capital expenditure projects that had not been initially included in its pass-through application more than sufficient to replace the non-conforming non-system expenditure. Rather than delay consideration while Energex submitted a revised application, the Authority had WorleyParsons assess that additional system capital expenditure on the same basis it had assessed all other expenditure and accepted the replacement of all but \$3.1 million of non-system capital expenditure with new system capital expenditure that met the established criteria for pass-through consideration.

On this basis, WorleyParsons verified that Energex had identified \$720 million in additional capital expenditure that was consistent with the Authority's criteria for cost pass-through as set out in the 2005 Final Determination and that Energex was capable of delivering the identified projects and expenditure in the time frames proposed.

In its Draft Decision, the Authority proposed to accept Energex's additional capital expenditure (as revised during the WorleyParsons assessment) as meeting the criteria established in the 2005 Final Determination for the pass-through of costs associated with that expenditure during the current regulatory period.

Based on the same assumptions and parameters used in the Authority's 2005 Final Determination, the Authority has determined the total potential revenue impact associated with the increase in capital expenditure to be \$108.1 million (nominal) over the regulatory period.

However, under the revenue cap form of regulation applying to Energex, the Authority makes annual adjustments to Energex's aggregate annual revenue requirement (AARR) for the forthcoming year in order to correct (primarily) for any over- or under-recovery of revenue in previous years. In this regard, Energex over-raised revenue in 2004-05 and 2005-06 and the Authority would normally be seeking to reduce its future AARRs to return this revenue over-recovery to customers in future prices.

When combined, the increase in revenue required to pass-through the costs associated with Energex's proposed additional capital expenditure and the reduction in revenue which was to have been made to return previous over-recoveries of revenue, the net effect on Energex's future revenue was a requirement for an additional \$80.7 million over the remaining three years of the current regulatory period. This equated to an additional \$54.8 million of revenue in net present value terms.

Consistent with the stated intention in its 2005 Final Determination, the Authority proposed that Energex be permitted to recover this additional revenue over the remainder of the current regulatory period to 2009-10. This approach was also consistent with the EDSD Review recommendation that the Authority seek to provide greater investment certainty to distributors and ensure that they have sufficient funds available to enable them to undertake necessary investment in future years.

The revised revenue requirements for Energex over the remainder of the regulatory period are shown in Table 1. To reduce year to year volatility in the revenue requirement whilst maintaining its value in real terms, the Authority smoothed the proposed AARRs.

Table 1: Current and Smoothed AARRs – 2005-06 to 2009-10 (\$m nominal)

	<i>2005-06</i>	<i>2006-07</i>	<i>2007-08</i>	<i>2008-09</i>	<i>2009-10</i>	<i>Total</i>	<i>NPV</i>
Current AARR	626.8	692.1	779.9	870.0	916.3	3,885.1	3,013.2
Smoothed Final AARR	626.8	692.1	779.7	878.5	989.8	3,966.9	3,068.0
Per cent change		10.4	12.7	12.7	12.7		

Based on the forecast consumption growth used for the 2005 Final Determination, the Authority estimated that the smoothed AARR would result in Energex's prices growing by 8.2 per cent each year on average (in nominal terms) over the remaining three years of the regulatory period. This compared with the current forecasts of annual growth in prices in the remaining three years of 5.4 per cent.

While there would be an impact on prices over the remainder of the regulatory period, the benefits of this additional expenditure would also start to accrue in this same time frame as Energex's network delivered improved reliability levels to all customers. The Authority therefore considered it appropriate that the costs associated with the additional capital expenditure should be passed through to customers over the remaining three years

of the regulatory period. Had Energex been able to provide the information it provided in its pass-through application in support of its capital expenditure program at the time of the Authority's 2005 review, this capital expenditure would have been included in the 2005 Determination from the start and prices would have been somewhat higher throughout the entire regulatory period. The Authority provided Energex with this pass-through option in recognition of the considerable uncertainty that surrounded Energex's capital expenditure requirements at the time. Allowing the costs to be passed through now is consistent with that concern and the purpose of providing the pass-through mechanism.

In its Draft Decision, the Authority proposed that, while the current side constraint of CPI + 4.5% will continue to apply to underlying network prices for Energex's contestable customers, price increases resulting from the pass-through of the costs associated with the additional capital expenditure would not be subject to the side constraints. The additional expenditure had been deemed necessary to ensure acceptable network security and all customers should bear their fair share of the associated costs.

In response to its Draft Decision, submissions were received from the Griffith University Centre for Credit and Consumer Law (CCCL), Energex and Origin Energy.

While these submissions raised some interesting issues, particularly in relation to the impact of allowing the pass-through of these additional capital costs on the, yet to be devised, Electricity Cost Index, the Authority was not persuaded to change its view on this cost pass-through application. It is a distribution issue to be dealt with in accordance with the criteria set out in the Authority's 2005 Final Determination.

As a result, the Authority has decided to maintain the position presented in the Draft Decision, which was to accept Energex's proposed additional capital expenditure (as revised in light of the WorleyParsons' assessment) as meeting the criteria established in the 2005 Final Determination and approve the pass-through of costs associated with an additional \$720 million of capital expenditure during the current regulatory period.

2. INTRODUCTION

2.1 EDSO Review and the Authority's 2005 Final Determination

Following serious power outages in early 2004, the Government appointed an independent panel to review the state of both the Energex and Ergon Energy distribution networks [Electricity Distribution and Service Delivery (EDSD) Review].

The EDSO Review found that, inter alia, the Energex network was operating at an unacceptably high utilisation level and was unable to absorb the pressures created by severe weather events.

The EDSO Review put forward a number of recommendations to address the situation. The Government accepted all EDSO Review recommendations.

Preparation of the Authority's 2005 Final Determination coincided with the EDSO Review.

2.2 The Authority's 2005 Final Determination

At the time of preparing its 2005 Final Determination, the Authority recognised that there was significant uncertainty surrounding likely future costs, particularly in relation to the costs of implementing the Government's response to the EDSO Review.

The difference between the forecast capital expenditure included in the Final Determination (\$2.7 billion) and that which Energex believed may be needed (\$3.4 billion) was significant. At that time, the Authority considered that Energex had not provided sufficient detail in support of its proposed \$3.4 billion in capital expenditure. In addition, Energex was only able to demonstrate that it could adequately resource the \$2.7 billion of expenditure proposed by the Authority's consultant rather than the \$3.4 billion in capital expenditure Energex had proposed. To ensure that customers did not suffer a shortfall in service quality due to a lack of financial capacity within Energex, the Authority included a specific pass-through mechanism in the Final Determination which applied to the gap of \$720 million between the amount of capital expenditure included for Energex and that which Energex proposed.

By including this pass-through mechanism, the Authority recognised the EDSO Review recommendation that the Authority provide greater investment certainty to the distributors and consider approaches to introduce a greater degree of flexibility into the next regulatory arrangements.

The terms of the pass-through mechanism require Energex to clearly establish that:

- it needed to spend more in total on capital expenditure than included in the 2005 Final Determination (up to its total original forecast of \$3.4 billion);
- it was able to undertake this investment wisely;
- the proposed expenditure had not already been included in Energex's capital expenditure forecasts for the period and was either new expenditure necessary to meet its EDSO obligations or a reinstatement of capital expenditure specifically excluded in the 2005 Final Determination; and
- that cost pass-through during the regulatory period, rather than including the assets in the asset base at the end of the regulatory period, was reasonable and justified.

The Authority also indicated at the time that it would seek public comment on any pass-through application under this mechanism.

3. ENERGETX COST PASS-THROUGH APPLICATION

3.1 Energetx's proposed additional capital expenditure

On 11 October 2006, Energetx submitted an application for the Authority to approve the pass-through of costs associated with an additional \$720 million of capital expenditure during the regulatory period. Such an amount of capital expenditure would increase the existing \$2.7 billion already included in the 2005 Final Determination to Energetx's original forecast of \$3.4 billion. Details of these costs are provided in Table 2 below.

Table 2: Energetx's Additional Capital Expenditure – 2005-06 to 2009-10 (\$m)

<i>Type of expenditure</i>	<i>2005-06</i>	<i>2006-07</i>	<i>2007-08</i>	<i>2008-09</i>	<i>2009-10</i>	<i>Total</i>
Asset replacement	9.5	2.3	15.1	20.7	17.6	65.2
Demand related	23.4	53.5	84.3	108.3	145.4	414.8
Reliability improvement	0.9	14.7	19.8	4.6	0.1	40.1
Other system	0.5	0.4	28.2	48.5	46.4	124.0
Total System	34.3	70.9	147.4	182.1	209.5	644.1
Non-system	36.5	39.5	-9.6*	-0.1*	11.9	78.1
Total	70.8	110.4	137.8	182.0	221.3	722.3**

Note: All figures are in June 2004 dollars.

** A negative number indicates that Energetx is forecasting an expenditure lower than that contained in the Authority's 2005 Final Determination.*

*** While Energetx identified capital expenditure marginally in excess of the maximum \$720 million provided for in the pass-through mechanism, the actual amount requested was limited to the \$720 million.*

Energetx argued that the additional capital expenditure was necessary to implement the EDSD recommendations, particularly in terms of having a more reasonable technical base to achieve "N-1"¹ security within the next regulatory period. While Energetx argued that capital expenditure in excess of its original request of \$3.4 billion would deliver EDSD outcomes to customers more rapidly, it conceded that capital expenditure beyond the original \$3.4 billion was not provided for as part of the Authority's 2005 Final Determination.

3.2 Stakeholder comments in response to Energetx's application

In response to Energetx's application to pass-through the costs associated with this additional capital expenditure, submissions were received from Queensland Treasury, the Queensland Consumer's Association, the Griffith University Centre for Credit and Consumer Law (CCCL), the Energy Users Association of Australia (EUAA) and TRU Energy.

Queensland Treasury expressed its strong view that the regulatory framework should provide Energetx with sufficient capital expenditure to enable it to meet its EDSD obligations.

The Queensland Consumer's Association recommended that, given the complexity of Energetx's application and the magnitude of the pass-through, the Authority should issue a

¹ "N-1" is the accepted industry planning policy for major system assets. This means, when assets fail, there is spare capacity in the system to switch load to maintain customers' supply

Draft Decision for public consultation. The Association also recommended that the consultation process include a stakeholder workshop.

The CCCL did not comment directly on Energex's application, but rather endorsed the Queensland Consumer's Association submission.

The EUAA expressed concern at the amount of capital expenditure required by Energex and argued that customers should not be subjected to piecemeal increases in network charges throughout a regulatory period.

The EUAA also questioned whether the pass-through provisions in the 2005 Final Determination applied only to system-related capital expenditure and thus excluded the non-system capital expenditure proposed in Energex's application.

Further, based on past expenditure, the EUAA questioned Energex's ability to deliver the proposed capital expenditure program in a timely fashion. The EUAA suggested that an assessment of the timely delivery of Energex's capital expenditure projects and service delivery performance to date was required, as forecast service improvement gains could not be delivered if projects were not completed on time.

The EUAA suggested that there should be no pass-through of costs associated with additional capital expenditure unless Energex could demonstrate that it was delivering its current capital expenditure program in a timely and efficient manner.

The EUAA expressed its disappointment that no operating expenditure efficiencies were identified by Energex to offset DUOS price increases resulting from the proposed additional capital expenditure.

TRU Energy suggested that the price impacts proposed by Energex were unreasonable. TRU Energy also noted that the Authority's decision was not designed to provide an opportunity for a revisit of the 2005 Final Determination and, therefore, TRU Energy concluded that it was unreasonable to include the non-system component of Energex's application. Finally, TRU Energy considered that, to mitigate the impact on network customers including retailers, it would be reasonable to extend the pass-through into the next regulatory period.

3.3 WorleyParsons' assessment of Energex's additional capital expenditure

Following receipt of Energex's pass-through application the, Authority commissioned WorleyParsons (formerly Burns Roe Worley (BRW)²) to provide an independent assessment of whether the \$720 million capital expenditure proposed was consistent with the pass-through conditions set out in the Authority's 2005 Final Determination. The terms of reference for the consultancy required WorleyParsons to:

- fully reconcile forecast capital expenditure accepted as part of the Authority's 2005 Final Determination with Energex's proposed capital expenditure to determine whether any previously accepted projects have been included in the \$720 million capital expenditure program or if there has been any reconfiguration of previously accepted capital expenditure away from EDSD-related capital expenditure to allow for its inclusion in this proposal;

² The Authority had commissioned Burns Roe Worley to provide an assessment of the DNSPs capital and operating expenditure as part of the 2005 Final Determination.

- assess the extent to which the proposed capital expenditure is necessary to meet Energex’s ESD-related obligations having regard to best practice standards for efficient maintenance and utilisation of network assets, the existing network infrastructure in terms of current and projected capacity, current condition and renewal requirements and asset utilisation or is a reinstatement of capital expenditure specifically excluded in the 2005 Final Determination;
- assess whether Energex has demonstrated that it has the capacity to resource its proposed additional capital expenditure having regard to capital expenditure levels already accepted for the current regulatory period;
- assess the reasonableness of linkages between proposed projects, timing, the prudence of the project and identifiable ESD-related outcomes;
- where expenditure meets the pass-through requirements, provide an opinion on the efficiency of that capital expenditure over its life-cycle; and
- assess the proposed capital expenditure on the basis of the demand growth accepted by the Authority as part of its 2005 Final Determination.

During the course of its review, WorleyParsons identified some concerns with the information initially provided by Energex, particularly in regard to the inflation factors applied. Energex had used a constant inflation rate of 2.76 per cent to convert costs to real 2004 dollars, instead of the rates used by the Authority in the 2005 Final Determination. Energex subsequently provided a revised capital expenditure program as summarised in Table 3. The quantum of the requested capital expenditure was unchanged by the revision.

Table 3: Energex’s Revised Additional Capital Expenditure – 2005-06 to 2009-10 (\$m)

<i>Type of expenditure</i>	<i>2005-06</i>	<i>2006-07</i>	<i>2007-08</i>	<i>2008-09</i>	<i>2009-10</i>	<i>Total</i>
Asset replacement	7.8	2.3	15.3	21.8	18.6	65.7
Demand related	15.2	35.4	94.0	114.5	153.4	412.6
Reliability improvement	1.5	14.8	19.9	4.6	0.1	40.9
Other system	0.5	0.4	28.4	48.9	46.8	125.0
Total System	25.0	53.0	157.7	189.7	218.9	644.2
Non-system	37.0	39.1	-10.2*	0.8	12.9	79.7
Total	62.0	92.1	147.5	190.6	231.8	723.9**

Note: All figures are in June 2004 dollars.

** A negative number indicates that Energex is forecasting an expenditure lower than that contained in the Authority’s 2005 Final Determination.*

*** While Energex identified capital expenditure marginally in excess of the maximum \$720 million provided for in the pass-through mechanism, the actual amount requested was limited to the \$720 million.*

The results of WorleyParsons’ assessment of Energex’s revised additional capital expenditure against the pass-through criteria are provided in Table 4.

Table 4: WorleyParsons' Additional Capital Expenditure – 2005-06 to 2009-10 (\$m)

<i>Type of expenditure</i>	<i>2005-06</i>	<i>2006-07</i>	<i>2007-08</i>	<i>2008-09</i>	<i>2009-10</i>	<i>Total</i>
Asset replacement	7.8	2.3	21.6	21.8	18.6	72.1
Demand related	17.0	42.0	103.7	123.7	180.9	467.3
Reliability improvement	1.5	15.0	20.1	4.7	0.1	41.4
Other system	0.5	0.4	28.5	52.3	54.5	136.1
Total System	26.7	59.8	173.8	202.5	254.1	716.9
Non-system	3.1					3.1
Total (WP)	29.9	59.8	173.8	202.5	254.1	720.0
Total (Energenx)	62.0	92.1	147.5	190.6	231.8	720.0*

Note: All figures are in June 2004 dollars.

** Actual amount requested is less than the sum of the annual capital expenditure amounts.*

WorleyParsons indicated that the Energenx network currently falls far short of meeting the standards detailed in the EDSO Review and that considerable capital expenditure was required to restore the Energenx system to a basic level of system performance. WorleyParsons noted that Energenx had more EDSO compliant and necessary capital expenditure projects than those included in its pass-through application, but that Energenx had limited its application to the \$720 million maximum value that the Authority had set in its Final Determination.

System capital expenditure

WorleyParsons conducted a detailed audit of the individual system capital expenditure projects comprising the Energenx pass-through application. The projects were compared against those originally submitted by Energenx as part of the 2005 Final Determination. WorleyParsons concluded that the Energenx application did not include any projects previously included by the Authority in the 2005 Final Determination and that there had been no reconfiguration of previously accepted capital expenditure away from EDSO-related capital expenditure (thereby providing Energenx with more EDSO-related capital expenditure to include in the pass-through application).

In reviewing the proposed system expenditure, WorleyParsons examined Energenx's maintenance practices and concluded that none of the additional capital expenditure requested by Energenx was a result of inefficient maintenance practices. WorleyParsons indicated that, since the 2004 review by BRW, Energenx had taken steps to improve its maintenance practices and, in particular, Energenx had established a Maintenance Standards Group which applied failure mode analysis to update Energenx's maintenance policies. This approach involved life cycle risk analysis which WorleyParsons considered represented best industry practice.

WorleyParsons cross-referenced the proposed system capital expenditure against Energenx's EDSO obligations and concluded that the proposed capital expenditure was necessary to meet these EDSO obligations. Further, WorleyParsons indicated that, in developing its proposed capital expenditure program, Energenx had given appropriate planning consideration to the existing network infrastructure in terms of current and projected capacity, current condition and renewal requirements and asset utilisation.

WorleyParsons assessed the efficiency of Energenx's proposed system capital expenditure program and concluded that:

- the labour rate estimates used by Energex to derive capital expenditure forecasts was reasonable and Energex’s material costs were at or lower than market prices;
- Energex’s approach to preparing cost estimates was consistent with that applied by other electricity utilities and that the accuracy of Energex’s estimates was reasonable;
- Energex had appropriately considered the life-cycle of its assets and was not taking only a short-term view (which could result in inefficient capital expenditure forecasts);
- Energex had adequately considered non-network solutions and had not proposed capital expenditure in lieu of more cost-effective non-network solutions. While non-network alternatives, such as the potential to contract for distributed (embedded) generation and demand management to defer or reduce network capital expenditure, were not considered by Energex at the individual project level, they were considered as part of the Summer Preparedness Plan;
- Energex had given appropriate consideration to demographic circumstances in preparing its capital expenditure submission. Although the demographic circumstances were not considered for individual projects in most cases, they were taken into account at a high level in network planning studies; and
- Energex had appropriately considered the existing infrastructure and renewals requirements and asset utilisation in assessing and approving capital projects.

In its review undertaken in 2004 for the 2005 Final Determination, BRW concluded that Energex’s approach to system planning had not been effective due to inappropriate planning criteria and insufficient planning resources. In 2006, WorleyParsons found that Energex had addressed both of these issues. The system planning guidelines had been amended and the system planning resources had been significantly increased, in line with the recommendations made by the EDSR Review.

Consistent with EDSR Review requirements, Energex’s revised general security standard was now based upon the deterministic “N-1” planning. This “N-1” planning criteria was applied to all bulk supply substations, zone substations and subtransmission feeders. In applying this standard, Energex had specified planning criteria for the various components of the network. WorleyParsons concluded that Energex’s approach to system planning was consistent with the recommendations of the EDSR Review.

In order to assess the reasonableness of the timing of proposed projects, WorleyParsons reviewed 25 individual capital expenditure projects to confirm that the proposed timing was consistent with loading limitations. WorleyParsons found that, in all cases, the proposed project timing was consistent with the loading limitations (in many cases, earlier project completion could be justified in order to comply with EDSR recommendations but was restricted by the backlog of works). WorleyParsons concluded that Energex had appropriately prioritised the proposed projects within the program of works.

The Terms of Reference required WorleyParsons to assess the proposed capital expenditure on the basis of the demand growth accepted by the Authority as part of its Final Determination. WorleyParsons found that Energex had based its program of works on demand estimates that were slightly higher than those implicit in the 2005 Final Determination. At WorleyParsons’ request, Energex subsequently prepared load forecasts based on the lower demand estimates consistent with the 2005 Final

Determination. WorleyParsons compared the load forecasts and concluded that there were no projects that needed to have their commissioning dates altered as a result of the slightly lower forecasts required under the 2005 Final Determination.

Non-system capital expenditure

WorleyParsons did not accept the majority of Energex's proposed non-system capital expenditure as being consistent with the cost pass-through requirements set out in the 2005 Final Determination.

At the time of the 2005 Final Determination, the Authority accepted the majority of Energex's forecast non-system capital expenditure. In particular, the Authority provided for the levels of expenditure requested by Energex in the areas of vehicles and tools and equipment. Energex had based its 2004 submission on the equivalent level of spending as that now requested (\$3.4 billion). In requesting additional funding for both these categories of non-system expenditure, Energex was implicitly arguing that it had significantly under-estimated the requirement for non-system capital expenditure in its 2004 submission.

The Authority's 2005 Final Determination states that any request for additional expenditure is limited to "*reinstatement of those matters specifically rejected by BRW and new projects required to implement the EDSD recommendations*". WorleyParsons concluded that the under-estimation of expenditure for vehicles and tools and equipment was not consistent with this requirement and that it was therefore not able to recommend the proposed additional expenditure on these items.

In its 2005 Final Determination, the Authority allowed \$25.7 million for property works, a reduction of \$3.1million from that originally requested by Energex. That expenditure was disallowed on the basis of the lower total capital spend (and therefore a smaller workforce) than that proposed by Energex. WorleyParsons proposed that this amount (\$3.1 million) should now be reinstated given the present expansion of Energex's workforce.

In view of the above, WorleyParsons assessed that all but \$3.1 million of the \$77 million claimed by Energex for additional non-system capital expenditure was outside the Authority's pass-through guidelines and was therefore not recommended.

Additional system capital expenditure

During WorleyParsons' assessment of Energex's proposed non-system capital expenditure, it became apparent that the expenditure may not be consistent with the pass-through criteria set out in the 2005 Final Determination. Consequently, Energex submitted information on 45 additional system capital expenditure projects that could be substituted for the non-system capital expenditure were it not accepted by the Authority. WorleyParsons assessed all of these additional projects to determine whether they were consistent with the capital expenditure pass-through requirements set out in the 2005 Final Determination. WorleyParsons determined that:

- the projects were needed, were capable of being delivered and were linked to achieving identified EDSD recommendations;
- none of the additional projects were previously accepted in the 2005 Final Determination; and

- none of the projects represented a reconfiguration of previously accepted capital expenditure away from EDSO-related capital expenditure.

Accordingly, WorleyParsons concluded that all of the additional projects proposed by Energex in lieu of non-system works would meet the Authority's pass-through requirements.

Resourcing

The Authority's Terms of Reference also required WorleyParsons to assess Energex's capacity to resource its proposed additional capital expenditure, not just from a technical feasibility perspective, but also whether the programs could be effectively delivered having regard to the capital expenditure levels already included for the current regulatory period.

At the time of the Authority's 2005 Final Determination, Energex was able to demonstrate that it could resource forecast total capital expenditure of \$2.7 billion to 2009-10. Since that time, Energex has further expanded its workforce and updated its annual Workforce Plan consistent with its proposed increased program of work out to 2010. The plan takes into account factors such as the need for support for the regulated business by other parts of the organisation, retention of staff, skill sets required to deliver the program of work, recruitment strategies, use of contractors, apprentice intakes, and the training and development of staff.

More specifically, Energex has recently instituted a number of key changes to its workforce, including:

- in accordance with the EDSO Review, increasing its planning resources by 150 per cent, from 16 staff in July 2004 to 40 in 2005-06. This has provided the resources necessary to prepare the detailed capital expenditure program included as part of its submission; and
- preparing a detailed resource plan in conjunction with the capital expenditure plan. Since July 2004, Energex has recruited more than 450 field staff (including trades people and power workers). In 2005-06, an additional 84 apprentices were recruited, taking the total number of apprentices to 218 (as at May 2006). These internal resources were supplemented by a significantly expanded contractor base.

WorleyParsons reviewed the linkages between the labour requirements to deliver the proposed program of work and the projected resource increases proposed in the Workforce Plan and concluded that the Workforce Plan, together with an achievable increase in external contract resources, would be sufficient to deliver the proposed program of work. Further, WorleyParsons suggested that this view was supported by Energex's recent increase in system capital expenditure from \$526 million in 2004-05 to \$645 million in 2005-06.

4. QCA DRAFT DECISION

In its Draft Decision, the Authority proposed to approve the pass-through of costs associated with an additional \$720 million of capital expenditure.

4.1 Expenditure

In its Draft Decision, the Authority agreed with WorleyParsons (and a number of stakeholders) that the majority of the non-system capital expenditure proposed by Energex did not meet the pass-through criteria set out in the 2005 Final Determination.

The pass-through facility was not intended to provide an opportunity for Energex to revisit forecasts accepted as part of the 2005 Final Determination. Forecasts accepted in the 2005 Final Determination are effectively locked in place for the entire regulatory period. This is common practice in infrastructure regulation as it provides a degree of certainty during the regulatory period to both customers and distributors. To be considered for pass-through, proposed capital expenditure must represent a reinstatement of those matters specifically rejected in the 2005 Final Determination and new projects required to implement the EDS Review recommendation.

The Authority also acknowledged stakeholders concerns regarding the amount of additional capital expenditure required, but noted that the Authority was obliged to consider the obligations imposed on Energex by the EDS Review. Queensland Treasury argued that Energex should be provided with sufficient capital expenditure to enable it to meet its EDS Review obligations.

The WorleyParsons' assessment highlighted the poor state of the current Energex network and the significant additional expenditure required to address Energex's EDS Review obligations. In particular, WorleyParsons found that "...considerable capital expenditure is required to restore the Energex system to a basic level of system performance" and concluded that "...the list of EDS compliant and necessary capital projects is much longer than the total of the \$720 million" requested by Energex.

However, the Authority's 2005 Final Determination limits the amount of additional capital expenditure Energex can seek cost pass-through for during this regulatory period to \$720 million, taking total capital expenditure to the \$3.4 billion originally proposed by Energex. However, this in no way stops Energex from spending more than the \$3.4 billion during the regulatory period. Provided this expenditure was deemed prudent, Energex should expect that such capital expenditure would be rolled into the regulatory asset base at the next regulatory reset.

Given WorleyParsons' assessment of the Energex network and its finding that significantly more expenditure than currently proposed is required for Energex to meet its EDS obligations, the Authority proposed to accept additional system capital expenditure in lieu of the non-system capital expenditure that was not accepted. In reality, Energex could have revised its pass-through application to include the additional system capital expenditure and exclude its proposed non-system capital expenditure. By accepting this substitution the Authority was avoiding unnecessary delay. WorleyParsons subjected this additional system capital expenditure to the same assessment process as the originally proposed system capital expenditure and found that it met the Authority's criteria for cost pass-through.

A particular concern for the Authority and a number of stakeholders is Energex's capacity to resource the additional capital expenditure. The lack of an appropriate resource plan was a key consideration in the Authority's rejection of Energex's original capital

expenditure forecasts in the 2005 Final Determination. The WorleyParsons' assessment specifically addressed Energex's ability to effectively resource the additional capital expenditure proposed, having regard to Energex's existing capital expenditure forecasts. WorleyParsons concluded that, based on recent capital expenditure and Energex's improved resource planning, it was confident that Energex could resource the proposed program of work.

The Authority accepted WorleyParsons' assessment and proposed to include the following additional capital expenditure.

Table 5: Energex Additional Capital Expenditure – 2005-06 to 2009-10 (\$m)

	<i>2005-06</i>	<i>2006-07</i>	<i>2007-08</i>	<i>2008-09</i>	<i>2009-10</i>	<i>Total</i>
Total (QCA)	29.9	59.8	173.8	202.5	254.1	720.0
Total (Energex)	62.0	92.1	147.5	190.6	231.8	720.0*

Note: All forecast figures are in June 2004 dollars.

** Actual amount requested is less than the sum of the annual capital expenditure amounts.*

4.2 Revenue

Having assessed Energex's capital expenditure application against the criteria set out in the 2005 Final Determination, the Authority translated the additional capital expenditure into corresponding adjustments to Energex's Aggregate Annual Revenue Requirement (AARR) to determine the likely impact on revenue and hence prices. The revenue impact of the additional capital expenditure reflected the required return on capital and return of capital associated with that additional capital expenditure. Based on the same parameters used in the 2005 Final Determination, the Authority determined the total revenue impact associated with the increase in capital expenditure to be \$108.1 million (nominal) over the regulatory period.

The additions to Energex's AARRs resulting from the additional capital expenditure are provided in Table 6.

Table 6: Additional revenue and revised AARRs – 2005-06 to 2009-10 (\$m nominal)

	<i>2005-06</i>	<i>2006-07</i>	<i>2007-08</i>	<i>2008-09</i>	<i>2009-10</i>	<i>Total</i>	<i>NPV</i>
Current AARR	626.8	692.1	779.9	870.0	916.3	3,885.1	3,013.2
Additional revenue from pass-through	1.3	5.1	15.4	32.5	53.9	108.1	76.8
Revised AARR	628.0	697.2	795.4	902.5	970.2	3,993.3	3,090.1

Given the timing of this application, any recovery of additional revenue was only able to be made over the remaining three years of this regulatory period. Accordingly, any additional revenue identified for 2005-06 and 2006-07 needed to be incorporated into the remaining three years. To maintain the time-value of this expenditure, the Authority rolled forward these amounts by the weighted average cost of capital (WACC) and incorporated them into the additional revenue for 2007-08. The revised additional revenue is provided in Table 7.

Table 7: Additional revenue and revised AARRs – 2005-06 to 2009-10 (\$m nominal)

	2005-06	2006-07	2007-08	2008-09	2009-10	Total	NPV
Current AARR	626.8	692.1	779.9	870.0	916.3	3,885.1	3,013.2
Additional revenue from pass-through	0	0	22.4	32.5	53.9	108.8	76.8
Revised AARR	626.8	692.1	802.4	902.5	970.2	3,993.9	3,090.1

There are a number of adjustments to Energex's AARR that are made annually by the Authority to determine the AARR for the following year. These largely reflect any under- or over-raising of revenue in previous years. This is a feature of the revenue cap form of regulation applied to Energex. In 2004-05 and 2005-06, Energex exceeded its approved annual revenue caps and, under the existing revenue cap form of regulation, is required to return this revenue over-recovery to customers through reductions to future revenue caps.

The return of this previous revenue over-recovery would offset to some extent the impact of the revenue adjustment required under this cost pass-through decision. The net effect of these adjustments is shown in Table 8.

Table 8: Revised AARRs adjusted for previous revenue over-recovery (\$m nominal)

	2005-06	2006-07	2007-08	2008-09	2009-10	Total	NPV
Current AARR	626.8	692.1	779.9	870.0	916.3	3,885.1	3,013.2
Additional revenue from pass-through	0	0	22.4	32.5	53.9	108.8	76.8
Less adjustment for previous revenue over-recovery	0	0	28.1	0	0	28.1	22.0
Net additional revenue	0	0	-5.7	32.5	53.9	80.7	54.8
Final AARR	626.8	692.1	774.3	902.5	970.2	3,965.8	3,068.0
Per cent increase in Final AARR over previous year		10.4	11.9	16.6	7.5		

After adjusting for previous revenue over-recovery, the net additional revenue required by the proposed capital expenditure pass-through was \$80.7 million (\$54.8 million in NPV terms).

4.3 Transitioning to the next regulatory period

In order to reduce volatility in annual revenues and resulting prices to customers, it has become common practice to smooth the AARRs over the regulatory period. The purpose of smoothing is to ease the transition in distribution prices from the current regulatory period to the next.

In considering any revenue smoothing, the Authority was faced with conflicting objectives. On the one hand, it was conscious of the requirements of the distributors for a reasonable rate of return on their investments and the necessity for them to have adequate

resources to undertake needed investment in their networks. At the same time the Authority was conscious of the need to have regard to the impact of price movements on customers.

Table 9 shows the effect on Energex's AARRs of smoothing the additional revenue over the last three years of the regulatory period (from Table 8) to eliminate year to year volatility while still returning the same net present value of additional revenue over the regulatory period.

Table 9: Smoothed AARRs – 2005-06 to 2009-10 (\$m nominal)

	<i>2005-06</i>	<i>2006-07</i>	<i>2007-08</i>	<i>2008-09</i>	<i>2009-10</i>	<i>Total</i>	<i>NPV</i>
Current AARR	626.8	692.1	779.9	870.0	916.3	3,885.1	3,013.2
Final AARR (Table 8)	626.8	692.1	774.3	902.5	970.2	3,965.8	3,068.0
Smoothed Final AARR	626.8	692.1	779.7	878.5	989.8	3,966.9	3,068.0
Per cent increase in Smoothed AARR over previous year		10.4	12.7	12.7	12.7		

The smoothed AARRs resulted in annual revenue growth of 12.7 per cent per annum for each of the three remaining years of the current regulatory period, whilst maintaining the net present value of the revenue stream. While the resultant 2009-10 AARR of \$989.8 million was higher than the corresponding unsmoothed 2009-10 value, the difference was not significant and it was unlikely that costs would be declining significantly in the early years of the next regulatory period.

The implied price impact associated with the proposed smoothed AARR is provided in Table 10. The price path associated with the current AARR is also provided for comparison.

To determine price effects, the impact of demand growth and inflation needs to be removed from the AARRs to gain an understanding of the likely real price changes implied by the smoothed AARRs. The 'prices' in Table 10 are calculated by dividing each of the AARRs by the forecast level of electricity consumption to arrive at an average cent per kilowatt hour (c/kWh) price.

This is a notional price only and will mask significant differences across and within customer groups. As such, the prices presented in Table 10 provide a high level indication of aggregate price changes.

Table 10: Implied Average Nominal and Real Price Changes

	2005-06	2006-07	2007-08	2008-09	2009-10	Ave last 3 yrs
Forecast consumption (GWh)	20,480	21,305	22,250	23,170	24,085	
Current price paths						
Current AARR (\$m)	626.8	692.1	779.9	870.0	916.3	
Implied nominal price (c/kWh)	3.061	3.282	3.505	3.755	3.804	
Annual percentage change (%)	6.5	7.2	6.8	7.1	1.3	5.4
Implied real price (c/kWh)	2.978	3.108	3.230	3.368	3.320	
Annual percentage change (%)	3.7	4.4	3.9	4.2	-1.4	2.6
Price paths with additional capital expenditure						
Smoothed Final AARR (\$m)	626.8	692.1	779.7	878.5	989.8	
Implied nominal price (c/kWh)	3.061	3.248	3.504	3.792	4.109	
Annual percentage change (%)	6.5	6.1	7.9	8.2	8.4	8.2
Implied real price (c/kWh)	2.978	3.076	3.230	3.400	3.586	
Annual percentage change (%)	3.7	3.3	5.0	5.3	5.5	5.2

Table 10 indicates that the smoothed AARR incorporating the proposed capital expenditure pass-through results in Energen's prices growing in nominal terms by 8.2 per cent each year on average over the remaining three years of the regulatory period. This compares with forecast annual growth without the capital expenditure pass-through of 5.4 per cent.

Side constraints

In its 2005 Final Determination, the Authority adopted a side constraint on the annual movement in prices for individual contestable customers of CPI + 4.5% for Energen. To facilitate movement to cost reflective distribution prices, no side constraints were placed on franchise customers.

In its Draft Decision, the Authority proposed that, while this side constraint would continue to apply to underlying network prices for contestable customers, price increases resulting from the pass-through of the proposed additional capital expenditure would not be subject to the side constraints. As the additional capital expenditure covered by the pass-through application would benefit all customers and had been deemed necessary to ensure acceptable network security, all customers should carry their fair share of these costs. The side constraints were not intended to protect some customers and disadvantage others.

4.4 Timing of revenue recovery

The final criteria set out in the 2005 Final Determination required Energen to establish that cost pass-through during the regulatory period, rather than including the assets in the asset base at the end of the regulatory period, was reasonable and justified.

Clause 6.10.5 of the *National Electricity Rules* requires that a jurisdictional regulator must take into account each DNSP's revenue requirements during the regulatory period, having regard for issues such as:

- price stability; and
- provision of a fair and reasonable risk-adjusted cash flow rate of return on efficient investment.

Energex has argued that it was reasonable to recognise the additional capital expenditure in network tariffs in the current regulatory period, as this provided a balance between the interests of customers and Energex. Energex argued that recognising the capital program within the current regulatory period was consistent with the principle of investment certainty recommended by the EDSR Review, in addition to being consistent with a number of principles of the National Electricity Rules, including that:

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

Both the EUAA and TRU Energy raised concerns regarding the recovery of additional capital expenditure costs by Energex. The EUAA argued that customers should not be subjected to piecemeal increases in network charges throughout a regulatory period, while TRU Energy considered that, to mitigate the impact on network customers, it would be reasonable to extend the passage of the pass-through into the next regulatory period.

However, the Authority was of the view that, at the time of the 2005 Determination, there was considerable uncertainty regarding Energex's capital expenditure requirements and the EDSR Review and the Authority's own consultants had expressed concern about Energex's maintenance program and planning capacity. Had this not been the case and had Energex been able to support its expenditure forecasts at that time as it had now done, this additional expenditure would have been included in the 2005 Determination at the outset. The cost pass-through provision was designed to provide Energex with an opportunity to recover that lost opportunity during the current regulatory period should it be able to get its house in order.

In its Draft Decision, the Authority noted that, while there would be an impact on prices over the remainder of the regulatory period, the benefits of this additional expenditure would also start to accrue in this same time frame as Energex's network delivered improved reliability levels to all customers. The Authority therefore considered it appropriate that the costs associated with the additional capital expenditure should be passed through to customers over the remaining three years of the regulatory period. This view was also consistent with:

- the EDSR Review recommendation that the Authority seek to provide greater investment certainty to distributors during the regulatory period;
- the Authority's general objective of promoting cost reflective pricing; and
- recognition of Energex's legislative obligation to implement a number of the EDSR Review recommendations by the end of the current regulatory period.

Furthermore, the Authority considered the impact on prices was reasonable given the circumstances.

In addition, having provided the cost pass-through mechanism in the 2005 Final Determination and having subsequently assessed that there was indeed additional capital expenditure which met the criteria established in the Determination, to not allow the

associated costs to be passed through to customers during the current regulatory period would be to treat this capital expenditure no differently to any other over expenditure which would be assessed in the next regulatory review. Furthermore, to do so would defeat the purpose of providing the pass-through mechanism in the Final Determination.

5. SUBMISSIONS IN RESPONSE TO THE DRAFT DECISION

In response to the Draft Decision, the Authority received submissions from the Griffith University Centre for Credit and Consumer Law (CCCL), Energex and Origin Energy.

The CCCL stated that, while it acknowledged that it was necessary for Energex to have the financial capacity to meet its EDSD requirements, it was concerned about the impact any increase in allowed capital expenditure costs would have on distribution prices and how this would impact the Electricity Cost Index (ECI) and therefore the uniform tariff.

While this is an important issue, the decision confronting the Authority is a distribution issue that must be addressed in the context of the provision in the 2005 Final Determination. The intention established there was to, in effect, revisit the level of capital expenditure that was reasonably required by Energex given the requirements stemming from the EDSD Review and the uncertainty surrounding Energex's capital expenditure program at the time. The possible impact of this current decision on the yet to be developed Electricity Cost Index and therefore the uniform tariff needs to be addressed in that latter context and not here.

In its submission, Energex accepted that the Authority had undertaken its assessment consistent with the principles established in the Authority's Final Determination. At the same time, Energex reiterated its view that even this revised level of capital expenditure may be less than it needed to meet all of its EDSD obligations.

Origin Energy raised a number of concerns in its submission. Origin was concerned that the terms of reference provided to WorleyParsons for the Energex cost pass-through assessment did not make explicit reference to an assessment of the productive and technical efficiency of the proposed capital expenditure. Origin Energy considered that it was imperative that Energex's capital expenditure was efficient and sought confirmation of the efficiency of the proposed costs in the Authority's Final Decision.

In fact, the Authority's consultant was required to provide an opinion on the efficiency of assessed projects. WorleyParsons undertook an assessment of efficiency having regard to the existing infrastructure and renewals requirements, asset utilisation and the potential for demand management and/or embedded generation solutions to defer capital expenditure. WorleyParsons was of the view that the projects assessed were efficient and necessary.

Origin Energy was also concerned that the fragmented nature of the allocation of the additional capital expenditure could create the potential for a misallocation of costs between previously approved and new capital expenditure projects. Origin Energy also sought confirmation that proposed new capital projects would be tracked to budgeted completion.

The Authority agrees with Origin that the possibility of 'double dipping' on costs was a real concern and was one the Authority specifically addressed in the terms of reference provided to WorleyParsons. In this regard, WorleyParsons were required to fully reconcile forecast capital expenditure accepted as part of the Authority's 2005 Final Determination with Energex's proposed capital expenditure to determine whether:

- any previously accepted projects had been included in the \$720 million pass-through application; and
- there had been any reconfiguration of previously accepted capital expenditure away from EDSD-related projects thereby providing Energex with more EDSD-related projects to include in its pass-through application.

WorleyParsons addressed both these issues in its report and raised no concerns.

With respect to ongoing monitoring, this capital expenditure will be treated no differently to other capital expenditure in the 2005 Final Determination. In this regard, the Authority will monitor Energex's performance through its regular financial reporting requirements. Having made a decision, the Authority does not seek to monitor during the regulatory period whether or not particular capital expenditures are undertaken. However, the actual capital expenditure undertaken during the regulatory period will be scrutinized for economic and technical efficiency at the time of undertaking the next reset. Within the regulatory period, Energex is best placed to manage its business.

Origin Energy agreed with the Authority's Draft Decision to exclude Energex's proposed non-system capital expenditure. However, given Energex's claim that the expenditure was critical to the delivery of the system capital expenditure, Origin Energy queried how the Authority would deal with the additional \$77 million of non-system capital expenditure.

With respect to the latter issue, the Authority is not revisiting other aspects of its 2005 Determination in assessing this cost pass-through application, including capital expenditure requirements in excess of the \$720 million provided for in the 2005 Determination. The pass-through provision was created in the 2005 Final Determination to address a specific concern the Authority had with the adequacy of the level of capital expenditure Energex had been able to establish as reasonable at that time. In establishing the cost pass-through provision, the Authority acknowledged that it was providing a degree of flexibility to Energex at the expense of certainty for customers.

Finally, Origin endorsed the Authority's approach of acknowledging the offsetting effect of previous revenue over-recoveries by Energex when assessing the impact of approving the cost pass-through. At the same time, Origin Energy suggested that, if this was applied to the retail tariff indexation formula, then this may not meet the objective of the Queensland Governments' retail tariff. However, as indicated earlier in relation to the concerns raised by CCCL, the Authority's decision needs to be made in the context of the provisions establishing the cost pass-through mechanism and issues concerning the yet to be developed Electricity Cost Index and the possible impact of this current decision on future retail prices need to be addressed in that latter context.

6. FINAL DECISION

The Authority's Final Decision is to accept the pass-through of costs associated with an additional \$720 million in capital expenditure by Energex during the current regulatory period, as per Table 11.

Table 11: Additional Capital Expenditure – 2005-06 to 2009-10 (\$m)

	<i>2005-06</i>	<i>2006-07</i>	<i>2007-08</i>	<i>2008-09</i>	<i>2009-10</i>	<i>Total</i>
Additional capital expenditure	29.9	59.8	173.8	202.5	254.1	720.0

Note: All forecast figures are in June 2004 dollars.

Based on the same parameters used in the 2005 Final Determination, the Authority has determined the total revenue impact associated with the increase in capital expenditure to be \$108.1 million (nominal) over the regulatory period.

However, under the revenue cap form of regulation applying to Energex, the Authority makes annual adjustments to Energex's aggregate annual revenue requirement (AARR) for the forthcoming year in order to correct (primarily) for any over- or under-recovery of revenue in previous years. In 2004-05 and 2005-06, Energex over-recovered revenue and the Authority would normally be seeking to reduce future AARRs to return this revenue over-recovery to customers in lower future prices.

When combined, the increase in revenue required to pass-through the costs associated with Energex's proposed additional capital expenditure and the reduction in revenue needed to return previous over-recoveries of revenue, the net effect on Energex's future revenue is a requirement for an additional \$80.7 million to be raised over the remainder of this regulatory period. This equates to an additional \$54.8 million of revenue in net present value terms.

Consistent with the stated intention in its 2005 Final Determination, the Authority proposes that Energex be permitted to recover this additional revenue over the remainder of the current regulatory period to 2009-10.

The revised revenue requirements for Energex over the remainder of the regulatory period are shown in Table 12.

Table 12: AARRs – 2005-06 to 2009-10 (\$m nominal)

	<i>2005-06</i>	<i>2006-07</i>	<i>2007-08</i>	<i>2008-09</i>	<i>2009-10</i>	<i>Total</i>	<i>NPV</i>
AARR	626.8	692.1	774.3	902.5	970.2	3,965.8	3,068.0
Annual per cent change		10.4	11.9	16.6	7.5		

To reduce year to year volatility in the revenue requirement, whilst maintaining its value in real terms, the Authority has smoothed the proposed AARRs as shown in Table 13.

Table 13: Smoothed AARRs – 2005-06 to 2009-10 (\$m nominal)

	<i>2005-06</i>	<i>2006-07</i>	<i>2007-08</i>	<i>2008-09</i>	<i>2009-10</i>	<i>Total</i>	<i>NPV</i>
Smoothed AARR	626.8	692.1	779.7	878.5	989.8	3,966.9	3,068.0
Annual per cent change	-	10.4	12.7	12.7	12.7		

After allowing for forecast demand growth, the smoothed AARRs, incorporating the net revenue impacts discussed above, should result in Energex's prices growing in nominal terms by 8.2 per cent each year on average over the remaining three years of the regulatory period. This compares with currently forecast annual growth of 5.4 per cent.

While the current side constraint of CPI + 4.5% will continue to apply to underlying network prices for Energex's contestable customers, it is proposed that price increases resulting from the pass-through of the costs associated with the additional capital expenditure not be subject to the side constraints. The additional expenditure has been deemed necessary to ensure acceptable network security and all customers should bear their fair share of the associated costs.