



## **APPLICATION NOTICE**

# **REPLACEMENT OF FEEDER 900, LEICHHARDT AND FIVE DOCK ZONES**

**19<sup>th</sup> DECEMBER 2008**

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## TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY .....</b>	<b>3</b>
<b>1. BACKGROUND.....</b>	<b>4</b>
1.1 Purpose and Scope .....	4
1.2 Electricity Supply Network .....	4
1.2.1 Introduction .....	4
<b>2. ISSUES.....</b>	<b>6</b>
2.1 Applied Service Standard .....	6
2.1.1 Zone substations and subtransmission network (urban/non-urban).....	6
2.2 Description of Network Constraints .....	6
2.2.1 Feeder 900 Issues .....	6
2.2.2 Leichhardt Zone Substation .....	7
2.2.3 Five Dock Zone Substation .....	8
<b>3. APPLICABLE NATIONAL ELECTRICITY RULES REQUIREMENTS .....</b>	<b>10</b>
3.1 Joint Planning .....	10
3.2 Material Inter-network Impact .....	10
<b>4. OPTIONS CONSIDERED.....</b>	<b>11</b>
4.1 Consideration of Demand Management.....	11
4.2 Option 1: Retain 33kV in the Eastern Inner West Load Area .....	11
4.3 Option 2: Conversion of the Eastern Inner West Load area to 132kV .....	12
<b>5. ANALYSIS OF OPTIONS.....</b>	<b>13</b>
5.1 Base Case Analysis .....	13
5.2 Base Case Sensitivity Analysis.....	13
<b>6. CONCLUSION .....</b>	<b>14</b>
<b>7. CONTACT DETAILS FOR ENQUIRIES.....</b>	<b>14</b>
<b>8. APPENDIX A – ECONOMIC ANALYSIS OF BASE CASE.....</b>	<b>15</b>

## EXECUTIVE SUMMARY

This paper has been prepared to provide a basis for EnergyAustralia to consult with affected registered participants and interested parties on the potential options, for the replacement of 132kV feeder 900, Leichhardt Zone and Five Dock Zone, which form part of EnergyAustralia's Inner West load area.

To ensure a safe and reliable electricity supply for existing customers and new developments in the load area, an integrated strategy is required to:

- Replace 132kV feeder 900 between Mason Park Sub Transmission Switching Station (STSS) and Rozelle Sub Transmission Substation (STS)
- Replace the 33kV feeders supplying Leichhardt Zone Substation
- Replace the 33/11kV Five Dock Zone Substation equipment and associated 33kV feeders

EnergyAustralia has conducted an economic analysis of the potential options to identify a preferred option which satisfies the regulatory test.

This paper is presented in the following sections:

**Section 1** of the paper provides a description of the load area and the context of the Application Notice within the regulatory approval process.

**Section 2** describes the limitations affecting the supply network in the area and the need for augmentation of the supply to the area. The objectively measurable service standard (planning criterion), against which the need and effectiveness of augmentation options are to be assessed, is also presented.

**Section 3** presents the potential options to address the issues affecting the supply network including non-network options. Two feasible augmentation options based on technical and economic performance are described.

Option 1: Retain 33kV in the Eastern Inner West load area

Option 2: Conversion of the Eastern Inner West load area to 132kV

**Section 4** presents the results of a preliminary application of the regulatory test and the options are ranked.

**Section 5** concludes that the least cost option is Option 2. The conclusion was made in accordance with the regulatory test to meet EnergyAustralia's reliability standard.

Thus, EnergyAustralia's recommended action to replace aged assets and meet load growth in the Eastern Inner West load area is to convert to 132kV (Option 2) at an estimated cost of \$108.2 million. This includes the conversion of Leichhardt and Five Dock Zones to 132kV operation and the replacement of the 132kV feeder 900 from Mason Park STSS to Rozelle STS, via Leichhardt and Five Dock Zones.

# 1. BACKGROUND

## 1.1 Purpose and Scope

This Application Notice has been prepared to provide a basis for EnergyAustralia to consult with Registered Participants and interested parties so as to identify potential options to replace the 132kV feeder 900 from Mason Park STSS to Rozelle STS, Leichhardt Zone and Five Dock Zone.

It includes:

- a discussion of the supply system limitations identified by EnergyAustralia that have led to the necessity to identify feasible options for replacement and augmentation of the network in the area
- a discussion of the service standard that has been adopted for planning purposes
- a descriptions of potential options which have currently been identified for development of the electricity supply in the area
- a detailed preliminary cost effectiveness analysis in net present value (NPV) of each of these options, carried out in accordance with the requirements of the regulatory test

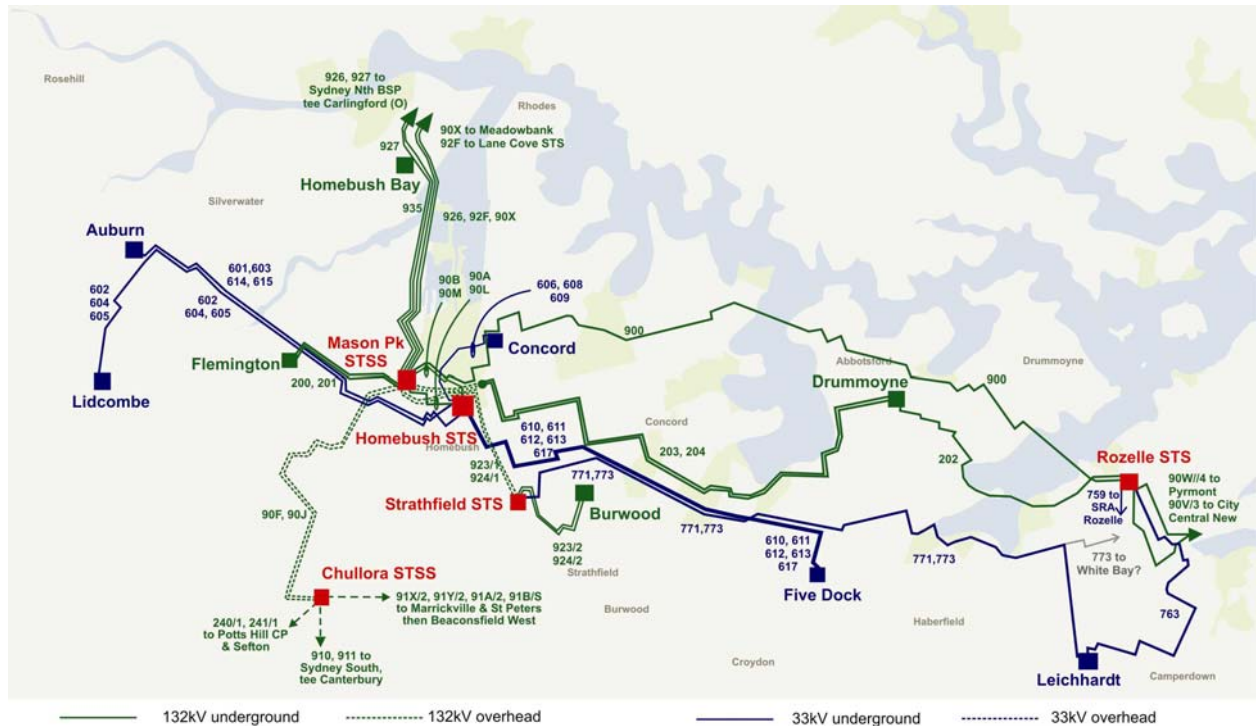
## 1.2 Electricity Supply Network

### 1.2.1 Introduction

The Inner West load area lies on the southern side of Sydney Harbour between Auburn and Rozelle.

Below is a map that shows the Inner West network area.

Figure 1-1 Inner West Load Area – Geographic Schematic



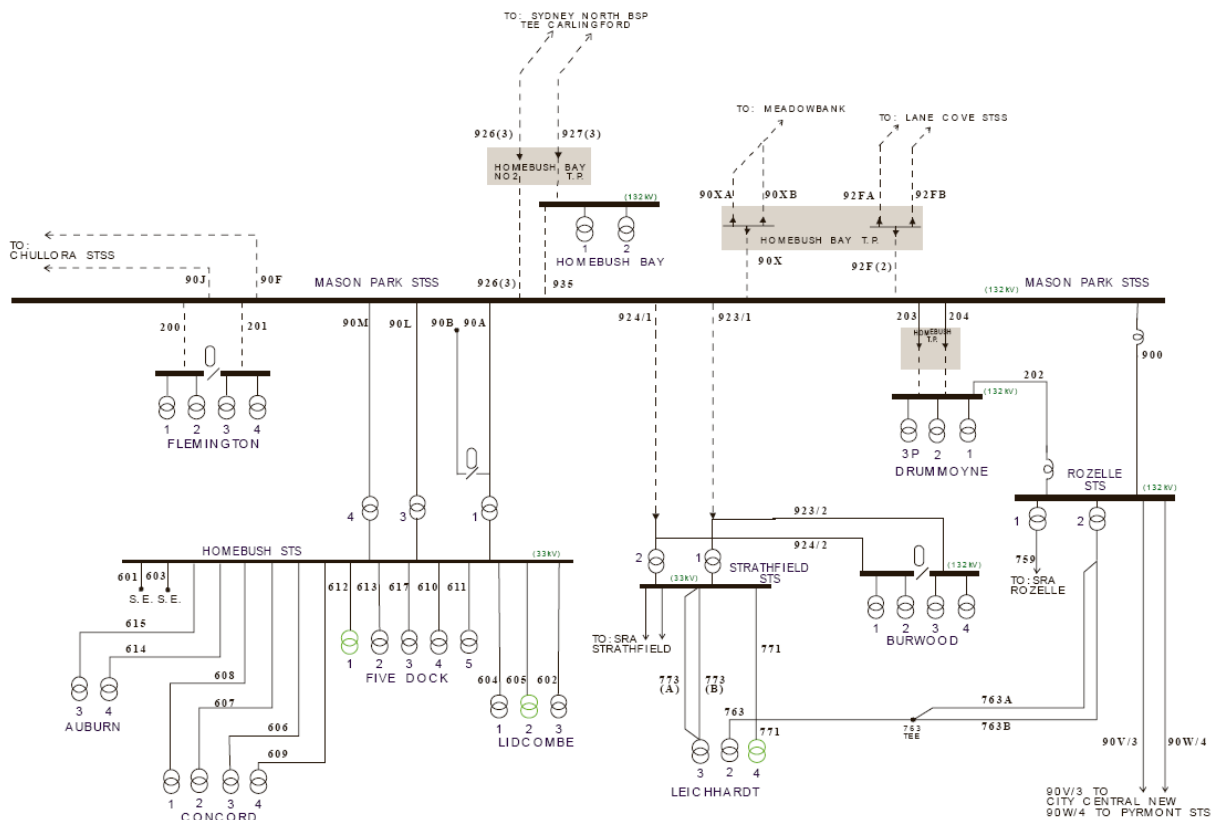
APPLICATION NOTICE - REPLACEMENT OF FEEDER 900, LEICHHARDT AND FIVE DOCK ZONE

The area of concern in this Application Notice is the Eastern portion of this load area. The network in the Eastern Inner West area:

- Includes a 132/11kV zone substations at Drummoyne and 33/11kV substations at Five Dock and Leichhardt;
- is supplied at 132kV from Mason Park STSS and provides interconnection to Haymarket BSP;
- includes 33kV supply sourced from EnergyAustralia's sub transmission substations at Homebush and Rozelle;
- provides support to the Camperdown / Blackwattle Bay load area and the Inner Metropolitan Transmission Network, via interconnections to Prymont STS, City Central and City South Zone Substations.

Below is a schematic diagram of the Inner West network.

Figure 1-2 Inner West Load Area - Electrical Schematic



## 2. ISSUES

### 2.1 Applied Service Standard

EnergyAustralia is required to comply with service standards that are specified in the 'Design, Reliability and Performance Licence Conditions' (Licence Conditions), which were imposed on NSW distributors by the Minister for Energy on 1 October 2007. The design planning criteria are specified in Schedule 1 of the Licence Conditions and reliability standards are specified in Schedules 2 and 3. For existing network, a distributor must be as compliant as practicable with these requirements by 1 July 2014 and fully compliant by 1 July 2019. All new network elements must comply with these requirements.

The service standards that are applicable to a consideration of supply constraints affecting the Inner West load area are summarised below. For further details refer to the Licence Conditions or to EnergyAustralia's Network Management Plan.

#### 2.1.1 Zone substations and subtransmission network (urban/non-urban)

With all elements in service, the thermal capacity is required to meet at least 115% of forecast demand.

Following a failure of a single critical element (i.e. N-1 conditions), the network must be designed to recover supply within one minute for systems supplying >10MVA, and otherwise, within best practice repair times. For systems that supply >10MVA, the forecast demand of a zone substation or overhead feeder network may exceed the N-1 capacity for up to 1% of the year i.e. a total aggregate time of 88 hours per annum, up to a maximum of 20% above the N-1 capacity; and the forecast demand of an underground feeder network may not exceed the N-1 capacity.

## 2.2 Description of Network Constraints

### 2.2.1 Feeder 900 Issues

#### 2.2.1.1 Fault Duty

The feeder has a calculated fault rating of 19.4kA. Under normal system conditions the fault level experienced by the cable is equivalent to the fault duty of the cable. Under abnormal conditions during switching the fault level on the cable exceeds the fault duty substantially.

#### 2.2.1.2 Feeder Condition

Feeder 900 is an oil filled 132kV cable that is over 40 years old and is one of EnergyAustralia's oldest remaining oil filled 132kV cables. The route length of the feeders is approximately 11km and includes two water crossings of Sydney Harbour.

EnergyAustralia intends to replace its oil filled 132kV feeders over the next 20 years, with priority being given to poor performing feeders. A condition assessment of feeder 900, installed in 1962, has recommended its replacement within 5 to 10 years. Due to the fault duty issues associated with this cable and the environmental risks should a cable leak occur in a section of cable under or adjacent to the harbour it has been decided to accelerate the replacement of this feeder.

#### 2.2.1.3 Feeder Capacity

Feeder 900 is rated for 95MVA in summer and 100MVA in winter. This capacity is sufficient for the current network configuration, with no constraints forecast in the April 2008 feeder forecast. However the existing cable rating limits the load transfer capacity for this part of the system.

Feeder 900 also provides support to Pymont STS and Haymarket BSP by providing a path from Mason Park to Rozelle, which is used for transferring loads following outages in the Camperdown / Blackwattle Bay load area or the Inner Metropolitan Transmission Network. Any new arrangement should maintain through-flow capacity to Rozelle.

## 2.2.2 Leichhardt Zone Substation

Leichhardt zone is a 33/11kV substation, with 3 x 33MVA transformers. The transformers are supplied by dedicated 33kV feeders from Strathfield STS and Rozelle STS. It was planned to retire Strathfield STS when the Homebush STS refurbishment decision was made. Hence options should allow for the planned retirement of Strathfield in 2012.

When Leichhardt zone was constructed in its ultimate design was to suit an old four transformer 132/11kV design, with space available for a 132kV busbar, four transformers and additional 11kV switchgear. It is assumed for the purposes of this Application Notice that the existing Leichhardt Zone substation site is suitable for use at either 33/11kV or 132/11kV

### 2.2.2.1 Asset Condition

The major condition issue at Leichhardt zone substation relates to the 33kV cables from Strathfield STS, which are each about 10km long with some sections having 2 cables per phase. These cables are due for replacement within 5 years based on condition assessment.

The 11kV switchgear at Leichhardt comprise of air insulated switchgear with oil circuit breakers. Replacement of the oil circuit breaker trucks with vacuum circuit breakers will economically address condition issues with the 11kV switchboard.

### 2.2.2.2 Capacity and Anticipated Load Growth

The zone has a firm capacity of 41.0MVA in summer and 46.0MVA in winter. The firm capacity is limited by the rating of the 33kV feeders, particularly feeder 763 from Rozelle STS.

Table 2.1 summarises peak load and utilisation forecast at Leichhardt based on the current forecast, which anticipates growth rates of 2.6% in summer and 1.6% in winter.

Figure 2-1 Leichhardt zone peak load and utilisation forecast

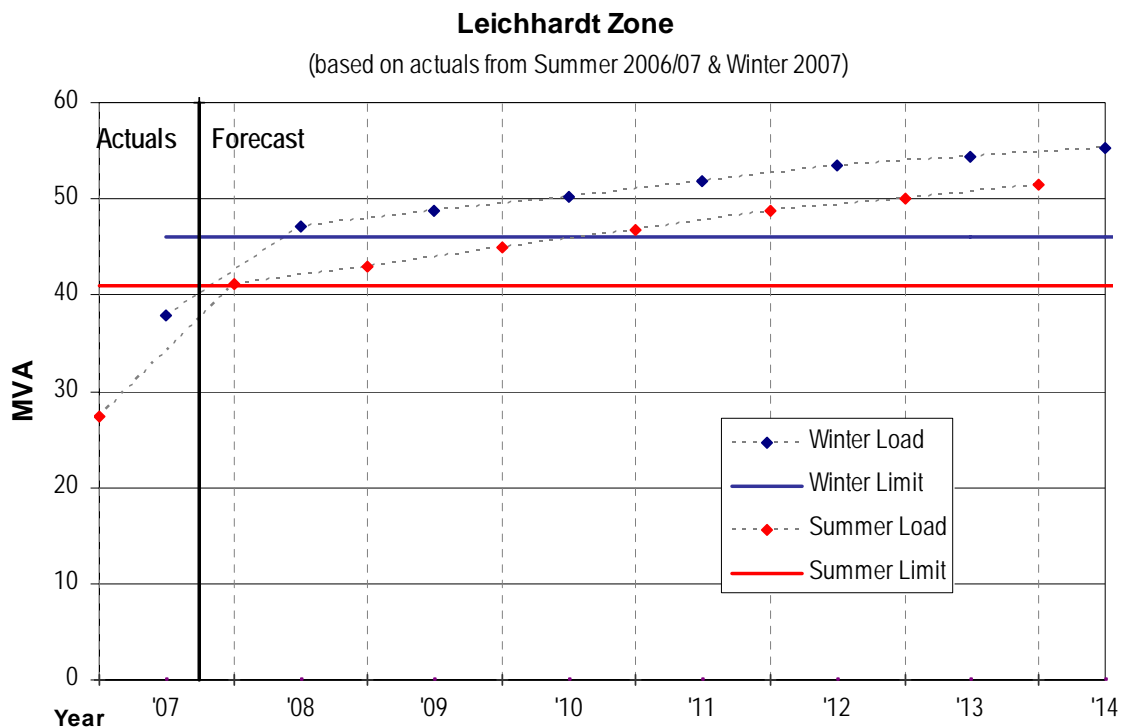


Table 2-1 Leichhardt zone peak load and utilisation forecast

	Actual	Forecast						
<b>Winter</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<b>Load</b>	37.9	47.2	48.8	50.3	51.9	53.5	54.4	55.3
<b>Limit</b>	46	46	46	46	46	46	46	46
<b>Summer</b>	<b>06/07</b>	<b>07/08</b>	<b>08/09</b>	<b>09/10</b>	<b>10/11</b>	<b>11/12</b>	<b>12/13</b>	<b>13/14</b>
<b>Load</b>	27.3	41.2	43	44.9	46.8	48.8	50.1	51.4
<b>Limit</b>	41	41	41	41	41	41	41	41

The firm capacity for both seasons has been revised down slightly since the time the Annual Electricity Supply Development (AESD) was written due to updates in feeder ratings. As a result, the capacity constraints shown in the table above have come forward by one year in both winter and summer.

Based on the substation configuration, the application of risk under the licence conditions is not appropriate at Leichhardt zone. So, as can be seen in the table 2.1, Leichhardt will be loaded above its firm capacity and therefore non-compliant following the transfer of Camperdown load scheduled this year (2008).

However a load transfer of 4MVA is currently in development which will defer the need for augmentation at Leichhardt Zone until 2011 and further load transfer are planned to occur in 2011 which will resolve any capacity issues. The transfers are expected to be less than \$1million and hence are considered a small distribution augmentation and will be authorised as a separate project.

Following these planned transfers Leichhardt Zone will not have any capacity issues in the short or medium term.

### 2.2.3 Five Dock Zone Substation

Five Dock zone is a 33/11kV zone substation with 5 x 12MVA transformers. The transformers are supplied by dedicated 33kV feeders from Homebush STS. As part of the refurbishment of Homebush STS which is currently underway, Five Dock will be reduced to a four transformer configuration. Transformer No.5 and the associated 33kV feeder will be retired to effect this change.

#### 2.2.3.1 Asset Condition

Major substation equipment including two zone transformers and 11kV switchgear at Five Dock Zone substation are prioritised for replacement within 5 years. The 33kV feeders which are each about 5km long are recommended for replacement within 10 to 20 years.

#### 2.2.3.2 Capacity and Anticipated Load Growth

Five Dock zone has a firm capacity of 57.3MVA in summer and 59.3MVA in winter. The firm capacity is limited by transformer throughput ratings. When the zone is reduced to four transformer operation as described above, the firm capacity will drop to 42.4MVA in summer and 45.6MVA in winter.

Table 2.2 summarises peak load and utilisation forecast at Five Dock based on the current forecast, which anticipates a growth rate of 1.2% in summer and winter. The reduction in capacity due to reconfiguration is included here, shown occurring in 2010.

Figure 2-2 Five Dock zone peak load and utilisation forecast

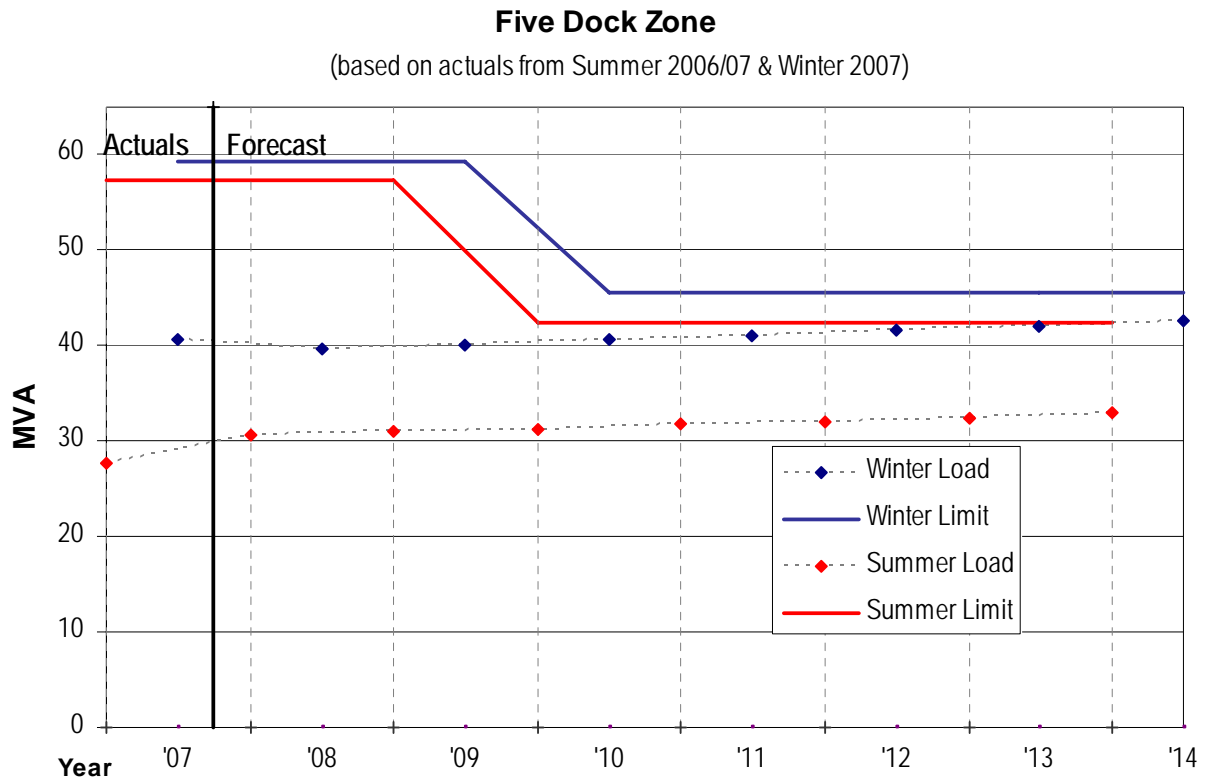


Table 2-2: Five Dock zone peak load and utilisation forecast

	Actual	Forecast						
Winter	2007	2008	2009	2010	2011	2012	2013	2014
Load	40.6	39.6	40.1	40.6	41.1	41.6	42.1	42.6
Limit	59.3	59.3	59.3	45.6	45.6	45.6	45.6	45.6
Summer	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14
Load	27.6	30.6	31	31.3	31.8	32.1	32.5	32.9
Limit	57.3	57.3	57.3	42.4	42.4	42.4	42.4	42.4

Based on the configuration of the substation, application of risk under the licence conditions is not appropriate at Five Dock zone. As can be seen in the table, Five Dock is not expected to exceed its licence capacity until beyond the end of this forecast period.

### 2.2.3.3 Site Considerations

Five Dock Zone substation is one of EnergyAustralia’s oldest zone substations. The building is State Heritage listed, and space on the site is constrained, to the point where replacement of existing transformers is only possible using smaller transformers of special design.

An additional consideration is the possible extension to the M4 motorway, which may affect the operation of the substation. Thus it is not considered feasible or prudent to either refurbish at 33/11kV or convert to 132/11kV on the existing site.

EnergyAustralia holds a land parcel in Croydon Road, approximately 700m from the existing Five Dock site. For the purposes of this Application Notice, it is assumed the site is suitable for use in the anticipated replacement of Five Dock zone.

### **3. APPLICABLE NATIONAL ELECTRICITY RULES REQUIREMENTS**

Feeder 900 is classified as a transmission asset under Chapter 6 of the National Electricity Rules (rules). The rules (clauses 5.6.6 (e) and (f)) requires that, where analysis indicates that any relevant technical limits of a transmission system will be exceeded, that the Transmission Network Service Provider must notify any affected Registered Participants of these limitations and the expected time for corrective action and consult with affected Registered Participants and interested parties on the possible options to address the projected limitations of the relevant distribution system.

The timing of the proposed work is primarily driven by the need to replace existing assets and would thus be regarded as a replacement project. EnergyAustralia is consulting with registered participants and interested parties in accordance with the rules due to the increased capacity which will result from the proposed work.

The proposed replacement option will involve augmentation expenditure in excess of \$10 million and is regarded by the Rules as a new large network asset.

This Application Notice has been prepared to provide a basis to consult to identify options which meet the network performance standards set out in Schedule 5.1 of the Rules. The development of options is necessitated solely by the need to replace feeder 900, Leichhardt and Five Dock Zones. Limb (a) of the Regulatory Test has been applied to determine the option that satisfies the Regulatory Test. Under limb (a) of the Regulatory Test, the option which meets the test is the one that minimises the present value of costs compared with a number of alternative options in the majority of reasonable scenarios.

EnergyAustralia will consult separately over the community aspects of the proposed development.

#### **3.1 Joint Planning**

EnergyAustralia and TransGrid have jointly planned the 330kV and 132kV networks supplying the Sydney Metropolitan area for many years.

TransGrid and EnergyAustralia have carried out joint annual planning reviews as required by Clause 5.6.2(b) of the Rules. As required by Clause 5.6.2(c) they have identified that the network limitations outlined in section 2.5 give rise to a need for network augmentations and have carried out joint planning to determine options for these augmentations.

#### **3.2 Material Inter-network Impact**

The rules require an assessment of whether a proposed new large transmission network asset is reasonably likely to have a material inter-network impact.

EnergyAustralia is consulting with TransGrid regarding Inter-Network Impacts. However it is considered that the proposed works will not have a significant material inter – network impact.

## 4. OPTIONS CONSIDERED

### 4.1 Consideration of Demand Management

The needs that this proposal addresses are not related to demand growth, but to the approaching need to retire old and no longer serviceable equipment. It is possible that the proposed solution will result in an incremental increase in the capacity of the network (for example at Leichhardt Zone Substation). However, any credible change in the level of demand on the relevant assets would not enable the proposal to be deferred or avoided. Further, there are no less expensive options that might be made feasible by a reduction in demand.

On this basis, no investigation of potential demand management options has been undertaken.

### 4.2 Option 1: Retain 33kV in the Eastern Inner West Load Area

This option is based on maintaining 33kV supply to Leichhardt and Five Dock zones and a like for like replacement of the 132kV feeder 900.

The option involves the following work:

- Replace feeder 900 from Mason Park STS to Rozelle STS
- Augmentation and upgrade of Rozelle STS to provide 33kV supply to Leichhardt Zone
- Install new 33kV feeders from Rozelle STS to Leichhardt Zone
- Replace 11kV circuit breaker at Leichhardt Zone.
- Install new 33kV feeder from Homebush STS to a new Five Dock Zone
- Construct a new Five Dock 33/11kV zone to replace the existing Five Dock zone.

This option does not change the existing 132kV network connections.

Given the substantial distance between Strathfield / Homebush and Leichhardt, it is proposed that three new feeders to Leichhardt would be run from the nearby Rozelle STS. This requires that Rozelle be upgraded via the installation of larger transformers, and the installation of a 33kV busbar.

Supply to the Five Dock district would be provided by a new 33/11kV zone substation (assumed to be located on existing land owned by EnergyAustralia on Croydon Road), supplied by new 33kV cables from Homebush STS.

This option is summarised below with the costs of the works covered under this Application Notice.

**Table 4-1 Option 1 Summary (July 2007 Real \$)**

Project	Commissioning	Capital (\$M)
Replace 132kV feeder 900 (Like for Like)	Dec 2011	47.4
Rozelle STS transformer augmentation	Jun 2011	1.3
Rozelle STS 33kV busbar upgrade	Dec 2011	14.5
Leichhardt to Rozelle 33kV feeders	Dec 2011	11.9
Leichhardt 11kV CB replacement	Dec 2011	1.1
New Five Dock 33/11kV zone (including 33kV feeders to Homebush)	Jun 2014	42.7
Transfers existing Five Dock load & retire	Dec 2014	0.9
<b>Total Cost</b>		<b>119.8</b>

The augmentation component of this option is \$8.5 million for the increased feeder 900 cable size.

### 4.3 Option 2: Conversion of the Eastern Inner West Load area to 132kV

This option is based on converting Leichhardt and Five Dock zones to 132kV supply and the replacement of the 132kV feeder 900 via Leichhardt and Five Dock.

The option involves the following work:

- Replace feeder 900 from Mason Park STS to Five Dock Zone, Leichhardt Zone and Rozelle STS
- Install a 132kV busbar and replace transformers at Leichhardt Zone.
- Replace 11kV circuit breaker at Leichhardt Zone.
- Construct a new Five Dock 132/11kV zone to replace the existing Five Dock zone.

This option changes the existing 132kV network connections.

This option is based on replacing the existing feeder 900 from Mason Park to Rozelle, with a new 132kV circuit arrangement that would be designed to provide the required transmission throughput, and to provide for two 132/11kV zone substations to be looped in along the route.

This strategy involves the conversion of Leichhardt zone substation to 132/11kV operation on the existing Leichhardt site, and the replacement of Five Dock zone substation with a new 132/11kV zone on a site nearby (assumed to be the Croydon Rd site).

This option is summarised below with the costs of the works covered under this Application Notice.

**Table 4-2 Option 2 Summary (July 2007 Real \$)**

<b>Project</b>	<b>Commissioning</b>	<b>Capital (\$M)</b>
Replace 132kV feeder 900 (via Five Dock & Leichhardt)	Dec 2011	56.8
Convert Leichhardt Zone to 132kV	Dec 2011	20.6
Leichhardt 11kV CB replacement	Dec 2011	1.1
New Five Dock 132/11kV zone	Jun 2014	28.8
Transfers existing Five Dock load & retire	Dec 2014	0.9
<b>Total Cost</b>		<b>108.2</b>

The augmentation component of this option is \$10.8 million for the increased feeder 900 cable size.

## 5. ANALYSIS OF OPTIONS

### 5.1 Base Case Analysis

A preliminary economic analysis has been carried out. It involves the comparison of options on an economic basis by carrying out Net Present Value (NPV) analysis for each of the two options.

The economic analysis incorporates:

- Capital costs
- Operation and Maintenance (O&M) costs
- Sensitivities to:
  - discount rate
  - substation costs
  - feeder costs
  - New five dock substation location
  - Deferral of initial replacement works

Sensitivity to growth rate is not considered applicable as the timing of the proposed and associated works are driven by replacement needs.

The results of the base case economic analysis are summarised in Table 5.1. Please refer to Appendix A for detail of this analysis.

**Table 5.1 - Comparison of Options – Base Cases**

Option	Description	Capital Cost (\$M)	NPV of Costs (\$M)
Option 1	Retain 33kV in the Eastern Inner West load area	119.8	83.9
Option 2	Conversion of the Eastern Inner West load area to 132kV	108.2	78.5

The analysis above indicates that the NPV of Option 2 is the least cost solution.

### 5.2 Base Case Sensitivity Analysis

The base case and the range over which sensitivity checks were conducted are shown in Table 5.2. The results of sensitivity analysis are contained in Table 5.3.

**Table 5.2 - Base Case Values and Range of Values Used in Sensitivity Checks**

Parameter	Base Case Value	Sensitivity Checks at
Discount rate	8.5%	7% and 10%
Substation costs	100%	75% and 125%
feeder costs	100%	75% and 125%
Five Dock location (33kV feeder length)	Near existing Five Dock (5.5km)	Closer to Homebush STS (3km)
Deferral of replacement works	2011	2012

**Table 5.3 - Comparison of Options – Sensitivity Analysis**

Option	Description	Option 1	Option 2
Base Case	8.5%	83.9	78.5
Discount Rate	7%	90.1	84.5
	10%	78.3	73.5
Feeder Costs	+25%	98.6	89.0
	-25%	69.2	67.9
Substation Costs	+25%	90.2	87.5
	-25%	77.7	69.4
Five Dock location (33kV feeder length)	Closer to Homebush STS (3km)	82.5	82.5
Deferral of replacement works	2012	79.9	73.8

The results from the sensitivity analysis indicate that Option 2 remains the least cost option under most sensitivity checks.

## 6. CONCLUSION

At this stage and subject to comments received during the consultation process, EnergyAustralia favours construction of Option 2 on the basis that this solution represents the least cost in line with the Regulatory Test.

The estimated capital cost of this option is \$108.2 million, which includes commissioning of new 132/11kV Leichhardt and Five Dock zone substations, and replacement of the 132kV feeder 900 via the new substations. Leichhardt is scheduled for completion by summer 2011/2012 and Five dock by 2014/15.

## 7. CONTACT DETAILS FOR ENQUIRIES

In accordance with the National Electricity Rules, EnergyAustralia invite written submissions from interested parties on this Application Notice within 30 business days of the report being published and made available on EnergyAustralia's website.

Any enquiries regarding this report should be directed to the contact listed below:

James Howard  
 Email: Network\_Investment@energy.com.au  
 Or in writing to:  
 570 George St,  
 SYDNEY 2000

## 8. APPENDIX A – ECONOMIC ANALYSIS OF BASE CASE

Notes: All figures in the below table are quoted in July 2007 real dollars [millions]

**Table 8-1 Option 1: Retain 33kV in the Eastern Inner West Load area**

Proposed Projects - Strategy	NPC (\$M)	Total (\$M)	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Replace 132kV feeder 900 (Like for Like)	33.852	47.402	-	-	-	7.509	39.893	-	-	-	-	-	-	-	-	-	-
Rozelle STS transformer augmentation	0.947	1.299	-	-	-	0.650	0.649	-	-	-	-	-	-	-	-	-	-
Rozelle STS 33kV busbar upgrade	9.877	14.509	-	-	-	-	14.509	-	-	-	-	-	-	-	-	-	-
Leichhardt to Rozelle 33kV feeders	8.522	11.933	-	-	-	1.889	10.044	-	-	-	-	-	-	-	-	-	-
Leichhardt 11kV CB replacement	0.730	1.065	-	-	-	-	1.065	-	-	-	-	-	-	-	-	-	-
New Five Dock 33/11kV zone (including 33kV feeders to Homebush)	25.901	42.665	-	-	2.623	-	-	4.905	30.778	4.339	-	-	-	-	-	-	-
Transfers existing Five Dock load & retire	0.498	0.910	-	-	-	-	-	-	0.005	0.905	-	-	-	-	-	-	-
Operating Expenses	3.589	-	-	-	-	-	0.009	0.145	0.546	0.789	0.929	0.937	0.937	0.937	0.937	0.937	0.937
<b>Total Cost</b>	<b>83.916</b>	<b>119.784</b>															

**Table 8-2 Option 2: Conversion of Eastern Inner West load area to 132kV**

Proposed Projects - Strategy	NPC (\$M)	Total (\$M)	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Replace 132kV feeder 900 (via Five Dock & Leichhardt)	40.534	56.758	-	-	-	8.992	47.766	-	-	-	-	-	-	-	-	-	-
Convert Leichhardt Zone to 132kV	14.545	20.648	-	-	-	0.891	19.757	-	-	-	-	-	-	-	-	-	-
Leichhardt 11kV CB replacement	0.730	1.065	-	-	-	-	1.065	-	-	-	-	-	-	-	-	-	-
New Five Dock 132/11kV zone	18.215	28.807	-	-	2.623	-	0.785	10.751	12.478	2.170	-	-	-	-	-	-	-
Transfers existing Five Dock load & retire	0.498	0.910	-	-	-	-	-	-	0.005	0.905	-	-	-	-	-	-	-
Operating Expenses	3.935	-	-	-	-	-	-	0.281	0.597	0.954	0.977	0.985	0.985	0.985	0.985	0.985	0.985
<b>Total Cost</b>	<b>78.457</b>	<b>108.188</b>															