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Powerlink Queensland 2013 - 2017 Revenue Proposal

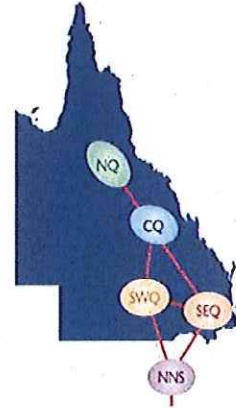
2010 OPERATIONAL REFURBISHMENT PLAN

Volume 2



Network Strategy and Performance

Works Schedule



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1. Document Security

The 2010 Operational Refurbishment Plan contains information that is the property of the Queensland Electricity Transmission Corporation (Powerlink). This report contains information that has commercial value to Powerlink. It qualifies as Confidential Information under the National Electricity Rules (NER), and is not a public document.

The NER provides that Confidential Information:

- must not be disclosed to any person except as permitted by the NER;
- must only be used or copied for the purpose intended in this report (namely the replacement of assets within the transmission network by Powerlink); and
- must not be made available to unauthorised persons.

2. Introduction

The 2010 Operational Refurbishment Plan Volume 2 outlines Powerlink's Operational Refurbishment (OR) works from 2009/10 to 2016/17. As elaborated on in Volume 1, OR Projects have different planning timeframes to replacement and augmentation projects. Consequently, the overall OR works program is identified by either an OR project (where an existing need and specific location/equipment is known) or an OR Provision (which is a future that is reflective of historic expenditure). OR Projects and Provisions make up the total OR spend profile expenditure forecast.

A summary of the OR expenditure forecast is summarised in Table 1.

Table 1 - Forecast Operational Refurbishment Expenditure by Asset Type

<i>Asset Type (\$m, nominal)</i>	<i>2009/10</i>	<i>2010/11</i>	<i>2011/12</i>	<i>2012/13</i>	<i>2013/14</i>	<i>2014/15</i>	<i>2015/16</i>	<i>2016/17</i>
Total OR	22.19	24.42	27.04	35.62	37.41	36.67	38.98	44.98

The remainder of this document outlines specific operational refurbishment works by asset class (e.g. substation) and equipment type (e.g. circuit breakers) and also the Climate Change Adaptation Plan.

3. Secondary Systems Operational Refurbishment Projects and Provisions Schedule (\$m, nominal)

PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
AUTOMATION									
OR.00887									
OR.01227									
OR.01312									
OR.01428									
OR.01441									
OR.01442									
OR.01804									
Provision									
Provision									
Provision									
ELECTRICAL WORK									
OR.00883									
OR.01375									
OR.01380									
METERING									
OR.00653									
OR.01071									

PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
METERING (CONTINUED)									
OR.01154									
OR.01287									
Provision									
PROTECTION SYSTEMS AND SIGNALLING									
OR.00865									
OR.01103									
OR.01133									
OR.01135									
OR.01150									
OR.01173									
OR.01175									
OR.01183									
OR.01212									
OR.01228									
OR.01236									
OR.01262									
OR.01264									
OR.01265									
OR.01270									

PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
PROTECTION SYSTEMS AND SIGNALLING (CONTINUED)									
OR.01271									
OR.01275									
OR.01277									
OR.01278									
OR.01286									
OR.01306									
OR.01368									
OR.01392									
Provision									
Provision									
Provision									
REMOTE MONITORING									
OR.00852									
OR.00855									
OR.01196									
OR.01197									
OR.01221									
OR.01320									
OR.01365									

PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
REMOTE MONITORING (CONTINUED)									
OR.01427									
OR.01439									
OR.01444									
OR.01445									
OR.01446									
OR.01695									
OR.01696									
OR.01697									
OR.01698									
OR.01699									
OR.01795									
OR.01805									
OR.01806									
OR.01807									
OR.01808									
OR.01809									
OR.01812									
Provision									

PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
SCADA & EMS									
OR.01086									
OR.01118									
OR.01261									
OR.01293									
OR.01295									
OR.01363									
OR.01436									
OR.01437									
OR.01443									
Provision									
TOTAL SECONDARY SYSTEMS OPERATIONAL REFURBISHMENT									

4. Substation Operational Refurbishment Projects and Provisions Schedule (\$m, nominal)

PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
ASSESSMENTS									
OR.01371									
OR.01372									
BUILDINGS AND INFRASTRUCTURE									
OR.00495									
OR.00724									
OR.00864									
OR.01127									
OR.01200									
OR.01263									
OR.01285									
OR.01290									
OR.01294									
OR.01335									
OR.01347									
OR.01351									
OR.01405									
OR.01430									

PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
BUILDINGS AND INFRASTRUCTURE (CONTINUED)									
OR.01841									
OR.01842									
OR.01848									
Provision									
Provision									
DOCUMENTATION									
OR.01178									
ELECTRICAL WORKS									
OR.01114									
OR.01289									
OR.01350									
OR.01407									
OR.01417									
OR.01431									
OR.01838									
OR.01850									
OR.01851									
OR.01866									
OR.01869									

PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
ELECTRICAL WORKS (CONTINUED)									
Provision									
Provision									
ENVIRONMENT & COMPLIANCE									
OR.01388									
OR.01829									
OR.01834									
OR.01844									
Provision									
INSTRUMENT TRANSFORMERS									
OR.01189									
OR.01190									
OR.01288									
OR.01832									
Provision									
Provision									
MATERIALS									
OR.01185									
OR.01419									

PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
REACTIVE COMPONENTS									
OR.01280									
SURGE ARRESTORS									
OR.01325									
OR.01349									
SWITCHGEAR									
OR.00758									
OR.00819									
OR.01112									
OR.01191									
OR.01192									
OR.01199									
OR.01213									
OR.01352									
OR.01366									
OR.01401									
OR.01438									
OR.01507									
OR.01823									
OR.01824									

PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
SWITCHGEAR (CONTINUED)									
OR.01825									
OR.01826									
OR.01827									
OR.01837									
OR.01840									
OR.01852									
OR.01853									
OR.01857									
OR.01858									
OR.01859									
Provision									
Provision									
TRANSFORMERS									
OR.00708									
OR.01072									
OR.01130									
OR.01131									
OR.01184									
OR.01209									

PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
TRANSFORMERS (CONTINUED)									
OR.01215									
OR.01216									
OR.01222									
OR.01272									
OR.01813									
OR.01814									
OR.01815									
OR.01817									
OR.01819									
OR.01820									
OR.01821									
OR.01862									
OR.01863									
OR.01864									
OR.01952									
OR.01953									
OR.01954									
OR.01955									
OR.01956									

PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
TRANSFORMERS (CONTINUED)									
OR.01957									
OR.01958									
OR.01959									
OR.01960									
OR.01961									
OR.01962									
OR.01963									
OR.01965									
TOTAL SUBSTATION OPERATIONAL REFURBISHMENT									

5. Telecommunications Operational Refurbishment Projects and Provisions Schedule (\$m, nominal)

PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
BUILDINGS AND INFRASTRUCTURE									
OR.01235									
OR.01871									
OR.01876									
OR.01877									
COMMUNICATION EQUIPMENT									
OR.01307									
OR.01364									
OR.01382									
OR.01870									
DC SUPPLIES									
OR.00940									
Provision									

PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
TELECOMMUNICATION CABLES									
OR.00744									
OR.01393									
TELECOMMUNICATION TOWERS									
OR.01182									
TOTAL TELECOMMUNICATION OPERATIONAL REFURBISHMENT									

6. Transmission Lines Operational Refurbishment Projects and Provisions Schedule (\$m, nominal)

PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
CABLES									
OR.00686									
OR.01141									
OR.01880									
OR.01881									
OR.01882									
Provision									
DAMPERS									
OR.01149									
OR.01160									
OR.01163									
OR.01164									
OR.01898									
OR.01899									
OR.01901									
OR.01909									
OR.01911									
OR.01913									

PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
DAMPERS (CONTINUED)									
Provision									
DOCUMENTATION & INVESTIGATION									
OR.01273									
EARTHING									
OR.01276									
OR.01357									
OR.01358									
OR.01359									
Provision									
Provision									
INSULATORS									
OR.00625									
OR.00683									
OR.00788									
OR.00835									
OR.00836									
OR.00911									
OR.01019									

PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
INSULATORS (CONTINUED)									
OR.01020									
OR.01021									
OR.01217									
OR.01245									
OR.01257									
OR.01298									
OR.01299									
OR.01301									
OR.01315									
OR.01316									
OR.01317									
OR.01319									
OR.01353									
OR.01354									
OR.01356									
OR.01717									
OR.01884									
OR.01889									

PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
INSULATORS (CONTINUED)									
OR.01890									
OR.01904									
OR.01905									
OR.01912									
OR.01924									
OR.01926									
LINES									
OR.01394									
OR.01465									
TOWERS									
OR.01062									
OR.01203									
OR.01225									
OR.01291									
OR.01302									
Provision									
Provision									
TOTAL TRANSMISSION LINES OPERATIONAL REFURBISHMENT									

7. Towers – Painting and Structural Upgrades (\$m, nominal)

PROJECT #	PROJECT NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
OR.01313									
OR.01929									
OR.01900									
OR.01902									
OR.01933									
OR.01944									
OR.01945									
OR.01946									
OR.01947									
OR.01948									
OR.01949									
OR.01950									
OR.01951									
OR.01970									
TOTAL TOWERS – STRUCTURAL UPGRADES AND PAINTING									

8. Land Operational Refurbishment Projects and Provisions (\$m, nominal)

PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
ACCESS TRACKS & INFRASTRUCTURE									
OR.01056									
OR.01223									
OR.01324									
OR.01338									
OR.01346									
Provision									
ENVIRONMENT & COMPLIANCE ISSUES									
OR.01389									
OR.01472									
Provision									
EROSION									
Provision									
MARGINAL TREE REMOVAL									
OR.01322									
OR.01326									
OR.01384									
OR.01385									
OR.01387									

PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
MARGINAL TREE REMOVAL (CONTINUED)									
Provision									
TOTAL LAND OPERATIONAL REFURBISHMENT									

9. Climate Change Adaptation Plan (\$m, nominal)

PROJECT	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Flood Modelling for Substations and Transmission Lines								
Lightning Performance of Transmission Lines								
Dust pollution Modelling for Transmission Lines								
Bushfire management for Transmission Lines								
Temperature Modelling for Substation Plant and Transmission Lines								
High Wind Impact on Transmission Lines								
TOTAL FOR CLIMATE CHANGE ADAPTATION PLAN								