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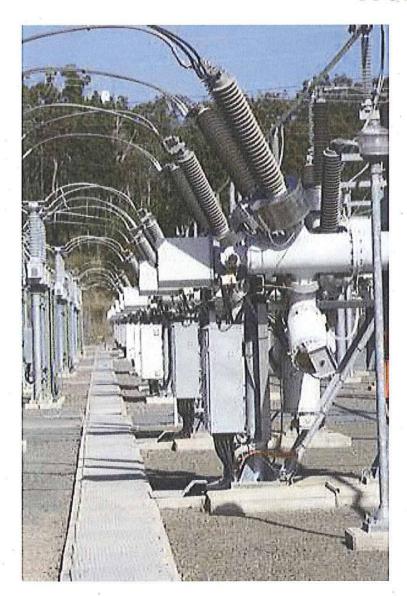
Powerlink Queensland 2013 - 2017 Revenue Proposal

## 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 <u>not</u> 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

Asset Type (\$m, nominal)	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
	• •							
		•						
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.

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 W	ORK								
OR.00883									
OR.01375					• • •				
OR.01380									
METERING						11	4.33		
OR.00653		•							
OR.01071									

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

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PROJECT #	PROJECT / PROVISION NAME	12	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/1
METERING (CC	DNTINUED)								·	
OR.01154								it is one		Second second
OR.01287										
Provision										
PROTECTION										
OR.00865								1	1.6	
OR.01103						•		* *		
OR.01133							-			
OR.01135			·							
DR.01150										
DR.01173										
OR.01175									•	
OR.01183										
DR.01212			+							
DR.01212								*		
DR.01228										
DR.01256									- and the	
DR.01262		e)								
DR.01265										I
OR.01270				18:12:10:00	en				· ·	
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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			de service						
OR.01368									
OR.01392									
Provision									
Provision									de lear
Provision		•							
REMOTE MON	IITORING			*	•				
OR.00852						÷			
OR.00855									
OR.01196									
OR.01197									
OR.01221									
OR.01320									
OR.01365								<del></del>	
and the second rese		1		, 9			8		а — 2 А. — А.
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PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
REMOTE MON	IITORING (CONTINUED)								
OR.01427								2 - 1	
OR.01439									
OR.01444		ų							
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									

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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 SECON	DARY SYSTEMS OPERATIONAL REFURBISHMENT								

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### 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			1						
·OR.01372									
BUILDINGS ANI	INFRASTRUCTURE								
OR.00495									New Marcalo
OR.00724				f. •					
OR.00864									
OR.01127									
OR.01200						-			
OR.01263				•					
OR.01285									
OR.01290									
OR.01294									
OR.01335									
OR.01347									
OR.01351									
OR.01405					•				
OR.01430									

A CONTRACTOR OF	
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PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
BUILDINGS AN	D INFRASTRUCTURE (CONTINUED)								
OR.01841								a Sta Strange	
OR.01842									
OR.01848									
Provision									
Provision									
DOCUMENTAT	ION								
OR.01178									
ELECTRICAL W	ORKS .								
OR.01114									
OR.01289									
OR.01350									
OR.01407									
OR.01417									
OR.01431								8 - 26	
OR.01838									
OR.01850		•							
OR.01851									
OR.01866					*.				
OR.01869									
								a 10	
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PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
ELECTRICAL W	DRKS (CONTINUED)						BAR I		
Provision			•						
Provision									
ENVIRONMEN	& COMPLIANCE	•							
OR.01388									
OR.01829									
OR.01834		•							
OR.01844		•							
Provision					•				
INSTRUMENT	RANSFORMERS								
OR.01189		<b>新教教室</b> (4)							
OR.01190									
OR.01288		•							
OR.01832									
Provision									
Provision			New real						
MATERIALS									
OR.01185								• 115 - <sup>31</sup>	
OR.01419			ne Services						
				е 23	•			- <sup>1</sup>	

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PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
REACTIVE COM	PONENTS								
OR.01280				an Roll and Sol					
SURGE ARREST	ORS					a and a sale of			
OR.01325									
OR.01349		i i i				ana sa	and a second		
SWITCHGEAR							•		
OR.00758									
OR.00819									17
OR.01112									
OR.01191									
OR.01192									
OR.01199		•							
OR.01213									
OR.01352			•						
OR.01366		•							
OR.01401									
OR.01438									
OR.01507									
OR.01823									
OR.01824									

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PROJECT #	PROJECT / PROVISION NAM	IE .		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	West out the second second							•			
Provision											
Provision		•						•			000
TRANSFORMER	S	•									
OR.00708				анын, Т							
OR.01072											
OR.01130											
OR.01131											
OR.01184										- 1944 - 1944	
OR.01209											

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PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
TRANSFORME	S (CONTINUED)							·	
OR.01215								an a	
OR.01216									
OR.01222									
OR.01272									
OR.01813									
OR.01814									ne les chiere dram Scares de comp
OR.01815									
OR.01817									
OR.01819									
OR.01820									
OR.01821									
OR.01862		•	•						
OR.01863									
OR.01864									
OR.01952									
OR.01953									2 <b>4</b>
OR.01954									
OR.01955									
OR.01956									

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

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### 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							unto con		
OR.01876									
OR.01877			#1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	anne annessan					
COMMUNICATIO	N EQUIPMENT								
OR.01307		•							
OR.01364									
OR.01382				•					
OR.01870				an a	N- Contractions				
DC SUPPLIES			•						
OR.00940								ant Contractio	
Provision							•		

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PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
TELECOMMUNI	CATION CABLES								
OR.00744									
OR.01393									
TELECOMMUNI	CATION TOWERS								
OR.01182									
TOTAL TELECOM	IMUNICATION OPERATIONAL REFURBISHMENT				untilige (d) ceres				

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### 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			and an					10 10 10	
OR.01141			•						
OR.01880									
OR.01881									
OR.01882									
Provision									
DAMPERS									
OR.01149							en e		
OR.01160									
OR.01163									
OR.01164									
OR.01898									
OR.01899									
OR.01901			· · ·						
OR.01909					•				
OR.01911									
OR.01913			•					and the second sec	
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PROJECT #	PROJECT / PROVISION NAME		2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
DAMPERS (CO	NTINUED)									
Provision										
DOCUMENTAT	ION & INVESTIGATION							*		
OR.01273					1 11 11 10					
EARTHING										
OR.01276									n Angel - angel	
OR.01357										
OR.01358										
OR.01359										
Provision										
Provision										
INSULATORS										
OR.00625										
OR.00683				n como contra 1950 de Contra 1950 de						
OR.00788					ana					
OR.00835		an a								
OR.00836										
OR.00911										
OR.01019							e e			

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PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
INSULATORS (C	ONTINUED)								
OR.01020									
OR.01021									
OR.01217									
OR.01245									
OR.01257									
OR.01298									
OR.01299									
OR.01301									
OR.01315									
(i)									
OR.01316									
OR.01317			•	•					
OR.01319									
OR.01353									
OR.01354									
OR.01356									
OR.01717									
OR.01884							nine di consent ni su su s	•	
OR.01889									a.

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PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
INSULATORS (C	CONTINUED)								
OR.01890			ur e in						
OR.01904									
OR.01905									
OR.01912									
OR.01924					-				
OR.01926			Han di di di Manana di di						
LINES									
OR.01394									
OR.01465									
TOWERS									
OR.01062						lliepen operation de onten instan			
OR.01203		an a substance all the mean approximation							
OR.01225			1						
OR.01291									
OR.01302					•				
Provision									
Provision									
TOTAL TRANSM	AISSION LINES OPERATIONAL REFURBISHMENT								

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### 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									nan ar sanna 10
OR.01929				4					
OR.01900									
OR.01902									
OR.01933									en en en
OR.01944									
OR.01945									
OR.01946									•
OR.01947									
OR.01948									
OR.01949			•						
OR.01950									
OR.01951									
OR.01970			ter altra del contante						
TOTAL TOWER	S – STRUCTURAL UPGRADES AND PAINTING			CONTRACTOR OF		- AND			and the second

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### 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			е 1						
OR.01346									
Provision					e e e e e e e e e e e e e e e e e e e				
ENVIRONMENT 8	& COMPIANCE ISSUES								
OR.01389									
OR.01472									
Provision									
EROSION									
Provision									
MARGINAL TREE	REMOVAL								
OR.01322				an a					
OR.01326									
OR.01384									
OR.01385								n seena na seena na seena	
OR.01387								n de la compañía de l En la compañía de la c	

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PROJECT #	PROJECT / PROVISION NAME	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
MARGINAL TR	EE REMOVAL (CONTINUED)								
Provision									•
TOTAL LAND C	PERATIONAL REFURBISHMENT	in a start and a	nermer (treated in						

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### 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					21 a. *			
TOTAL FOR CLIMATE CHANGE ADAPTATION PLAN					and a second second			

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