

Attachment 5.22

Material assets

May 2014



Material assets

This document addresses the requirements of Schedule 6.1.1(iii) (iv) and (v) of the National Electricity Rules which requires in respect of proposed material assets: the location of the proposed asset; the anticipated or known cost of the proposed asset; and the categories of distribution services which are to be provided by the proposed asset.

We note that this information is drawn from our response to Template 5.1 of the RIN where the AER had required information on material projects in the forthcoming period. Our response identified the material asset(s) that comprise the project (see columns relating to project name and description of project), and included other information including the location, and the forecast cost including capex and opex for each year of the 2014-19 period (see forecast yearly expenditure - forthcoming regulatory period). For this reason, we have replicated the information provided in the template on the basis that it provides the information required by the Rules. For clarity, we note that the costs only relate to providing standard control services, and in confirming this we note that we have complied with the information requirement to identify the category of distribution services provided by the proposed asset.

This document has 2 tables which follow the naming convention of the RIN so as to avoid any confusion. Table 5.1.1 relates to material projects (and the underlying material asset/s) for network related projects. Table 5.1.3 is for forecast non-network related projects. For network related assets, we have included projects with a total cumulative expenditure over the life of the project of greater than \$5 million. For non-network assets, we have included those projects with a total cumulative expenditure over the life of the project of greater than \$2 million.

Table 5.1.1 - Projects in forthcoming regulatory control period

Ongoing and future projects												
Unique identifier	Project name	Description of project	Proposed start date	Proposed commissioning date	Location		Forecast yearly expenditure - forthcoming regulatory control period (real \$'000)					Total
							2014-15	2015-16	2016-17	2017-18	2018-19	
Include unique identifier for each project		Provide a brief description of the project stating (where required) whether the regulatory test was satisfied, reference the appropriate documentation and where the regulatory test is yet to be satisfied the estimated timeframe for this to be achieved.	Identify month and year	Identify month and year	Identify location if only one site, if several, e.g. pole replacement, insert 'various'.		Include the anticipated or known expenditure of the project by expenditure purpose.					
ARA_01.0013	Munmorah STS + Connections (SJ-00102 & SJ-00165)	Construction of a 132/33kV subtransmission substation (STS) to supply Ausgrid's 33kV system following Delta Electricity's planned decommissioning of Munmorah Power Station. The 33kV system was previously supplied from the power station's 330/33kV auxiliary transformers. NER consultation is not required and a Final Report will not be published. Reference =	Jun-12	Oct-15	Doyalson	Capital expenditure	9,880	22,043	0	0	0	31,923
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	28	29	29	86
						Total	9879.647	22043.24	27.87028	28.56704	29.28122	32,009
ARA_01.0025	Nelson Bay 11kV SG Replacement (SJ-06020)	The existing 11kV switchgear at the Nelson Bay Zone Substation will be replaced with new indoor 11kV switchgear to address asset condition issues. NER consultation is not required and a Final Report will not be published. Reference = Development Brief: Nelson Bay 11kV Switchgear Replacement (Version 2, approved 29 Oct-10)	Aug-13	Aug-15	Nelson Bay	Capital expenditure	4,940	3,478	0	0	0	8,418
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	16	16	17	48

						Total	4939.823	3477.77	15.72568	16.11882	16.52179	8,466
ARA_01.0027	New Lambton 11kV SG Replacement (SJ-05932)	The existing 11kV switchgear at the New Lambton Zone Substation will be replaced with a new 11kV switchroom (including 33kV control and protection equipment) to address asset condition issues. NER consultation is not required and a Final Report will not be published. Reference = Development Brief: New Lambton 33/11kV Zone Substation 11kV Switchgear Replacement Install new 11kV	Oct-13	Oct-15	New Lambton	Capital expenditure	5,229	1,125	0	0	0	6,354
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	13	14	14	41
						Total	5229.297	1125.063	13.30634	13.639	13.97998	6,395
ARA_01.1.0008	Rookwood Rd BSP 132kV Connections (SJ-05197)	Make 132kV feeder connections to TransGrid's 330/132kV Rookwood Road Bulk Supply Point (BSP). NER consultation was conducted by EnergyAustralia (Ausgrid) and TransGrid and a Final Report was published. Reference = Development Brief: New Inner Metropolitan Bulk Supply Point - Connection of Rookwood Road BSP (Version 2, approved 8 Jul-10)	Mar-14	Dec-14	Sydney Reservoir	Capital expenditure	1,009	0	0	0	0	1,009
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	2	2	2	2	9
						Total	1008.928	2.129034	2.18226	2.236817	2.292737	1,018
ARA_01.1.0024	132kV Feeders 92JA/B and 92GA/B replacement (SJ-06044)	Replacement of oil-filled sections of Ausgrid's 132kV cables 92J and 92G from the Meadowbank Zone Substation to the East Ryde Transition Point. NER consultation is not required and a Final Report will not be published. Reference = Development Brief: Replacement of Feeders 90X, 92F, 92GA/B and 92JA/B (Version 1, approved 21 May-13)	Mar-17	Sep-19	Various	Capital expenditure	0	0	0	18,420	17,971	36,391
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
						Total	0	0	0	18420.17	17970.91	36,391

ARA_01.1.0027	132kV Feeders 92FA/B and 90XA/B replacement (SJ-06115)	Replacement of oil-filled sections of Ausgrid's 132kV cables 90X and 92F from Medowbank Zone Substation to the Homebush Bay Transition Point. NER consultation is not required and a Final Report will not be published. Reference = Development Brief: Replacement of Feeders 90X, 92F, 92GA/B and 92JA/B (Version 1, approved 21 May-13)	Oct-12	Sep-16	Various	Capital expenditure	4,894	14,486	14,158	0	0	33,539
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	80	82	162
						Total	4894.351	14485.79	14158.38	79.9604	81.95941	33,700
ARA_01.1.0031A	Beaconsfield West 132kV Busbar Replacement (SJ-06136)	Make 132kV connections to TransGrid's new 132kV busbars at Beaconsfield North and Beaconsfield South bulk supply points (BSPs) so that TransGrid can decommission the existing 132kV busbar at Beaconsfield West BSP. NER consultation is not required and a Final Report will not be published. Reference = Development Brief: Beaconsfield West 132kV Busbar Replacement - Feeder	Oct-12	Oct-16	Beaconsfield West	Capital expenditure	9,089	1,737	0	0	0	10,826
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	25	25	50
						Total	9089.275	1736.822	0	24.82104	25.44157	10,876
ARA_01.1.0035A	132kV Feeder (BFW-Belmore Park) & Partial 9SA & 9SB Repl	Install a new 132kV cable between Beaconsfield Bulk Supply Point (BSP) and Belmore Park Zone Substation (ZS) to extend the proposed 132kV feeder 90Y between Haymarket BSP and Belmore Park ZS and allow retirement of 132kV oil-filled cable sections of 132kV feeders 92L/3 and 92M/1. NER consultation is required and a Final Report will be published following project authorisation	Oct-12	Sep-15	Various	Capital expenditure	15,693	3,534	0	0	0	19,227
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	46	47	49	142
						Total	15693.34	3534.011	46.31852	47.47649	48.6634	19,370
ARA_01.1.0110	132kV Feeders 91L & 91M Replacement (SJ-05471 & SM-13754)	Replace 132kV oil-filled cable sections of 132kV feeders 91L and 91M. Although this is a replacement project, it involves significant expenditure and a change of network connectivity. EnergyAustralia (Ausgrid) published an Application Notice on 3 Dec-08 and a Final Report on 17 May-10. Reference = Development Brief: Replacement of Feeders 91L and 91M (Version 5, approved 3 Dec-10)	May-12	May-14	Various	Capital expenditure	8,053	0	0	0	0	8,053
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	139	143	146	150	154	732
						Total	8192.03	142.7015	146.269	149.9257	153.6739	8,785
ARA_01.1.0128	132kV Feeder 202 Replacement	Like-for-like replacement of 132kV Feeder 202 between Drummoyne Zone Substation (ZS) and Rozelle Subtransmission Substation (STS) with XLPE circuit. NER consultation is not required since the project is condition driven and involves no augmentation costs. Reference = Sydney Inner	Oct-18	Dec-20	Various	Capital expenditure	0	0	0	0	636	636
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
						Total	0	0	0	0	635.5567	636
		Construction of a new 16-way 11kV ductline in King St, between Sussex St and Clarence St in conjunction with the				Capital expenditure	4,131	4,806	1,984	0	0	10,921

ARA_02.1.0001	New City North 11kV	Sydney City Council's streetscape works, and to allow the vacation and abandonment of an existing 8-way	Sep-12	Sep-13	Various	Operating expenditure	0	0	0	0	0	0
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	Ductlines	asbestos ductline in King St. NER consultation is not required and a Final Report will not be published. Reference = Concept Brief/Development Brief: New				Maintenance expenditure	0	0	0	0	0	0	
							Total	4130.722	4805.635	1984.477	0	0	10,921
ARA_02.1.0004	CBD 11kV LTs 2012	Transfer of 11kV load within the CBD area, required to comply with N-2 security standard requirements, as specified in the licence conditions. The project involved a 25.5MVA load transfer from Dalley St Zone Substation to City North Zone Substation. Energy Australia (Ausgrid) published a Final Report (Establishment of a new 132/11kV CBD Zone Substation) on 02 Jul-09, which covers the 11kV Load	Dec-11	Sep-12	Sydney CBD	Capital expenditure	500	0	0	0	0	500	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	0	0	0	0	0	0	
							Total	499.9393	0	0	0	0	500
ARA_02.1.0005	CBD 11kV LTs (N-2)	Transfer of 11kV load within the CBD area, required to comply with N-2 security standard requirements, as specified in the licence conditions. The project involves 11kV load transfers from City South Zone Substation to Belmore Park Zone Substation to achieve N-2 compliance at City South Zone Substation. Energy Australia (Ausgrid) published a Final Report (Establishment of a new 132/11kV	Sep-16	Sep-17	Sydney CBD	Capital expenditure	3,952	3,863	2,363	0	0	10,178	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	0	0	0	0	0	0	
							Total	3951.858	3862.876	2363.159	0	0	10,178
ARA_02.1.0102	Belmore Park 132kV Feeders (SJ-05600)	Install 132kV feeders to connect the Belmore Park Zone Substation to Ausgrid's 132kV network. EnergyAustralia (Ausgrid) published a Final Report (Establishment of a new 132/11kV CBD Zone Substation) on 2 Jul-09. Reference = Development Brief: Establishment of a new 132kV/11kV CBD Zone Substation 132kV Connections to Belmore Park Zone Substation (Version 1, approved 30	Nov-10	Nov-14	Various	Capital expenditure	1,539	0	0	0	0	1,539	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	0	18	18	19	19	74	
							Total	1539.4	17.83769	18.28363	18.74072	19.20924	1,613
ARA_02.1.0105	Belmore Park 11kV Ductlines	Install 11kV ductlines and feeders from Belmore Park Zone Substation to load areas. EnergyAustralia (Ausgrid) published a Final Report (Establishment of a new 132/11kV CBD Zone Substation) on 2 Jul-09. Reference = Development Brief: Establishment of a new 132kV/11kV CBD Zone Substation 132kV Connections to Belmore Park Zone Substation (Version 1, approved 30 Jul-08)	Sep-13	Sep-14	Various	Capital expenditure	1,209	0	0	0	0	1,209	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	0	0	0	0	0	0	
							Total	1208.668	0	0	0	0	1,209
ARA_02.1.0106	New Belmore Park 132/11kV	Establish a new 132/11kV zone substation in the Sydney CBD at Belmore Park. EnergyAustralia (Ausgrid) published a Final Report (Establishment of a new 132/11kV CBD Zone Substation) on 2 Jul-09. Reference = Network Project	Oct-08	Jan-14	Sydney CBD	Capital expenditure	296	0	0	0	0	296	
						Operating expenditure	0	0	0	0	0	0	

	Zone (SJ-03191)	Approval: Establishment of a new 132kV/11kV CBD Zone Substation 132kV Connections to Belmore Park Zone Substation (Version 1, approved 30 Jul-				Maintenance expenditure	127	130	133	136	140	666	
							Total	423.0411	129.818	133.0634	136.39	139.7998	962
ARA_02.1.0108	CBD Eastern Tunnel (SJ-05729)	Construct a 132kV cable tunnel from the proposed Riley St Bulk Supply Point (previously, proposed Riley Street STSS) to City City North Zone Substation. NER consultation is not required and a Final Report will not be published. Reference = Development Brief: New Eastern CBD 132kV Cable Tunnel. (Version 1, approved 27 Aug-09)	Mar-11	Mar-15	Various	Capital expenditure	23,711	6,781	0	0	0	30,492	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	0	412	423	433	444	1,712	
							Total	23711.15	7193.232	422.5549	433.1188	443.9468	32,204
ARA_02.1.0123	New Bligh St Zone 132kV Connections (SJ-06104)	Install 132kV feeders to supply Bligh St Zone Substation from City North Zone Substation. NER consultation is not required and a Final Report is not required to be published. Reference = Development Brief: Bligh St Zone Substation Develop new 132/11kV 'Bligh St' Zone Substation and associated 132kV feeders, and decommissioning of existing City East and Dalley St zone	Jun-18	Dec-19	Sydney CBD	Capital expenditure	0	483	1,416	4,605	3,163	9,667	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	0	0	0	0	0	0	
							Total	0	482.8595	1415.838	4605.043	3162.88	9,667

ARA_02.1.0125	New Bligh St 11kV Ductlines	Construct 11kV ductlines between Bligh St Zone Substation and Dalley St Zone Substation and City East Zone Substation respectively. NER consultation is not required and a Final Report is not required to be published, however, Ausgrid will publish a Consultation Paper because the project has an augmentation component with expenditure in excess of \$1 million. Reference = Development	Jun-17	Jun-19	Sydney CBD	Capital expenditure	0	0	0	2,254	19,594	21,848
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
						Total	0	0	0	2253.523	19594.13	21,848
ARA_02.1.0126	New Bligh St 132kV Zone (SJ-06087)	Construct a new 132/11kV zone substation at Bligh St, Sydney. NER consultation is not required and a Final Report is not required to be published, however, Ausgrid will publish a Consultation Paper because the project has an augmentation component with expenditure in excess of \$1 million.	Dec-13	Dec-19	Sydney CBD	Capital expenditure	11,263	27,838	37,756	27,630	13,397	117,884
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
						Total	11262.8	27837.83	37755.67	27630.26	13397.31	117,884
ARA_02.1.0135A	11kV LTs to Decommission Dalley Street	Transfer load at 11kV from Dalley St Zone Substation to Bligh St Zone Substation and City North Zone Substation respectively to enable to decommissioning of Dalley St Zone Substation. NER consultation is not required and a Final Report is not required to be published, however, Ausgrid will publish a Consultation Paper because the project has an augmentation	Sep-14	Sep-20	Sydney CBD	Capital expenditure	6,677	4,527	4,641	3,595	0	19,441
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
						Total	6677.227	4527.313	4641.209	3595.244	0	19,441
ARA_03.1A.0002	Campbell St 3rd Tx and 11kV SG	Install an additional 132/11kV transformer at Campbell St Zone Substation to facilitate the required 11kV load transfers to retire Darlinghurst Zone Substation. Darlinghurst Zone Substation will undergo a phased retirement due to the condition of the 33kV feeders and 11kV switchgear. This project is replacement driven and therefore NER consultation is not required and a Final Report is not required to be	Sep-17	Sep-18	Sydney CBD	Capital expenditure	0	0	0	4,191	1,134	5,325
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
						Total	0	0	0	4191.196	1134.032	5,325
ARA_03.1A.0005	Darlinghurst Zn and 33kV Feeders Retirement	Transfer 12MVA from Darlinghurst Zone Substation to Campbell St Zone Substation to retire 33kV feeder 387 from Surry Hills Subtransmission Substation to Darlinghurst Zone Substation and associated 11kV switchgear at Darlinghurst Zone Substation in 2015. Transfer 5MVA from Darlinghurst Zone Substation to Paddington Zone Substation and 32MVA from Darlinghurst	Dec-11	Dec-15	Darlinghurst	Capital expenditure	1,166	1,513	0	2,397	3,108	8,184
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
						Total	1166.406	1513.013	0	2396.593	3107.798	8,184
		Install two 132kV 3 way ring main circuit breakers (RMCBs) at St Peters Zone Substation to improve the system				Capital expenditure	379	0	0	0	0	379

ARA_03.1A.0007	St Peters Ring Main CB (SJ-05959)	reliability when transformer faults occur. NER consultation is not required and a Final Report is not required to be published. Reference = Development Brief: Ring Main Arrangement at St Peters Zone. [Version 2, approved 21 Oct-10]	Jul-09	Oct-14	St Peters	Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	13	13	14	14	54
Total						378.598	13.01786	13.34331	13.67689	14.01881	433	
ARA_03.1A.0011	Marrickville Ring Main CB (SJ-05960)	Project is divided into two stages. For stage one: Commissioning of feeders 91H, 9F6, 906 and 91U between Beaconsfield West, Marrickville, Hurstville North and Canterbury to connect to the two new 132kV 3 way ring main circuit breakers (RMCBs) at Marrickville Zone Substation. For Stage two: Connect the 132kV busbar at Marrickville Zone Substation to the 3 way RMCBs and commission 91X and	Feb-11	Feb-15	Various	Capital expenditure	2,016	23	0	0	0	2,039
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	13	13	14	14	54
Total						2016.141	36.18825	13.34331	13.67689	14.01881	2,093	
ARA_03.1A.0017	Paddington 33kV Feeders Replacement	Replacement of three 33kV feeders from Surry Hills Subtransmission Substation to Paddington Zone Substation due to condition issues of the existing gas cables. Four ducts are to be laid in 2015 when feeder 380 will be replaced. The	Jun-15	Dec-16	Various	Capital expenditure	0	8,691	1,563	0	0	10,255
						Operating expenditure	0	0	0	0	0	0

	ent (SJ-05967)	remaining feeders will be replaced in 2017 utilising the previously installed ducts. This project is replacement driven and therefore NER consultation is not				Maintenance expenditure	0	0	0	56	58	114
						Total	0	8691.471	1563.322	56.14719	57.55087	10,368
ARA_03.1A.0028A	New Alexandria STS (SJ-00091, SJ-00172, SJ-00175)	Commissioning of a new Alexandria Subtransmission Substation and associated 132kV feeder connections from Beaconsfield West Bulk Supply Point. This project will facilitate the replacement of the 33kV feeders to Sydney Airport as well as allow for a 33kV connection point for Equinix Data Centre. NER consultation is not required and a Final Report is not required to be	Apr-13	Sep-16	Alexandria	Capital expenditure	10,374	15,746	9,911	0	0	36,030
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	96	98	194
						Total	10373.63	15745.64	9910.862	95.64886	98.04008	36,224
ARA_03.1B.0003	Botany 11kV SG Replacement & 11kV LTs	Replacement of 11kV switchgear at Botany Zone Substation. This project includes a 5MVA load transfer from Botany Zone Substation to Matraville Zone Substation. NER consultation is not required and a Final Report is not required to be published. Reference = Area Plan: Eastern Suburbs December 2012.	Sep-15	Jun-18	Botany	Capital expenditure	0	258	317	13,426	887	14,888
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	46	46
						Total	0	257.7327	317.1676	13425.77	932.59	14,933
ARA_03.1B.0011	New Port Botany 33/11kV Zone (SJ-05108 & SI-05670)	Commissioning of a new 33/11kV Zone Substation at Port Botany. This project will facilitate future load from Sydney Ports Corporation. EnergyAustralia (Ausgrid) published a Consultation Paper (Port Botany New Zone Substation) on 15 apr-08 and a Final Report (Port Botany New Zone Substation) on 30 Jul-08.	Nov-07	Nov-10	Port Botany	Capital expenditure	1,534	0	0	0	0	1,534
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	80	82	84	86	88	419
						Total	1613.451	81.79191	83.8367	85.93262	88.08094	1,953
ARA_03.1B.0016	Matraville 11kV SG Replacement (SJ-05953)	Replacement of 11kV switchgear at Matraville Zone Substation with single-bus switchgear arrangement. This project will require a staged installation and decommissioning of the 33kV switchgear. This project is replacement driven and therefore NER consultation is not required and a Final Report is not required to be published. Reference = Development Brief: Matraville 11kV Switchgear	Jun-16	Dec-18	Matraville	Capital expenditure	0	0	2,832	5,585	0	8,416
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
						Total	0	0	2831.676	5584.5	0	8,416
ARA_03.1B.0017	Mascot 33kV Feeders Replacement (Alexandria - Mascot)	Replacement of 33kV feeders from Bunnerong North Subtransmission Substation to Mascot Zone Substation with four new 33kV feeders from new Alexandria Subtransmission Substation. This project is replacement driven and therefore NER consultation is not required and a Final Report is not required to be published. Reference = Area Plan: Eastern Suburbs December 2012.	Jun-17	Dec-18	various	Capital expenditure	0	0	0	5,183	8,948	14,132
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
						Total	0	0	0	5183.148	8948.447	14,132

ARA_03.1B.0020	Mascot Zone Refurbishment	Mascot Zone Substation 11kV switchgear replacement with single-bus 11kV switchgear arrangement. Temporary load transfers to Green Square Zone Substation will be required. This project is replacement driven and therefore NER consultation is not required and a Final Report is not required to be published. Reference = Area Plan: Eastern Suburbs December 2012.	Dec-16	Dec-20	Macot	Capital expenditure	0	0	127	1,120	7,195	8,441
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
						Total	0	0	126.5928	1120.071	7194.773	8,441
ARA_03.1B.0029A	Transfer Equinix and Airport Load to	This option involves constructing a new Alexandria STS. The Sydney Airport 33kV feeders from Bunnerong North Subtransmission Substation would be replaced by three new 33kV feeders from Alexandria Subtransmission Substation,	Mar-17	Sep-18	Various	Capital expenditure	0	0	41	15,103	4,782	19,926
						Operating expenditure	0	0	0	0	0	0

	Load to Alexandria STS	and retirement of the aged Sydney Airport 33kV switchgear would be enabled by tail-ending the transformers at the existing zone. This project is customer driven and				Maintenance expenditure	0	0	0	0	0	0
						Total	0	0	40.66105	15103.48	4781.935	19,926
ARA_03.1C.0004	Surry Hills 11kV SG Replacement	Replacement of the 11kV switchgear at Surry Hills Zone Substation with new 11kV single-bus switchgear. This project will require load transfer to Campbell St Zone Substation to facilitate the staging of the switchgear replacement. This project is replacement driven and therefore NER consultation is not required and a Final Report is not required to be published. Reference = Development Brief: Surry	Dec-13	Sep-15	Various	Capital expenditure	5,928	4,862	0	0	0	10,790
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	62	63	65	190
						Total	5927.789	4861.876	61.69305	63.23538	64.81626	10,979
ARA_03.1C.0008	New Waverley 132/11kV Zone (SJ-05952 & SM-12599)	Commission a new 132/11kV Waverley Zone Substation and 132kV feeder connections from Belmore Park and Rose Bay Zone Substations. NER consultation is not required and a Final Report is not required to be published as the augmentation component of this project does not exceed \$1 million. Reference = New Waverley 132/11kV ZN. [Version 2, approved 23 Apr-10]	Nov-10	Nov-13	Various	Capital expenditure	478	0	0	0	0	478
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	52	54	55	56	58	274
						Total	529.7294	53.51277	54.85059	56.22186	57.6274	752
ARA_03.1C.0022	132kV Feeders 260/2 & 261/2 Replacement (Clovelly-Kingsford)	Install a new 132kV feeder from Kingsford to Clovelly Zone Substations. This project is replacement driven and therefore NER consultation is not required and a Final Report is not required to be published. Reference = Area Plan: Eastern Suburbs December 2012.	Jun-16	Dec-17	Various	Capital expenditure	0	0	8,759	11,650	0	20,409
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	29	29
						Total	0	0	8758.976	11650.17	29.02729	20,438
ARA_03.1C.0038A	New 132kV Feeder Bunnerong to Kingsford and Retire Feeder 26	Replacement of 132kV feeder 264 Beaconsfield West Bulk Supply Point to Kingsford Zone Substation. This project is replacement driven and therefore NER consultation is not required and a Final Report is not required to be published. Reference = Area Plan: Eastern Suburbs December 2012.	Jun-18	Dec-20	Various	Capital expenditure	0	0	0	0	2,904	2,904
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
						Total	0	0	0	0	2903.503	2,904
ARA_03.1C.0042A	Clovelly to Kingsford 11kV LT	This project is associated with the 11kV switchgear replacement at Clovelly Zone Substation. Load transfers to Kingsford, Double Bay and Waverley Zone Substations will be required to off load Group 1 switchgear at Clovelly Zone	Jun-16	Jun-17	Various	Capital expenditure	0	0	4,863	639	0	5,502
						Operating expenditure	0	0	0	0	0	0

		Substation. This project is replacement driven and therefore NER consultation is not required and a Final Report is not required to be published. Reference =				Maintenance expenditure	0	0	0	0	0	0
						Total	0	0	4862.984	639.4539	0	5,502
ARA_04.1.0006	New Hurstville 132/11kV Zone (SJ-05277 & SM-06472)	Rebuild the existing Hurstville North 33/11kV Zone Substation as a 132/11kV zone substation adjacent to the existing site. Energy Australia (Ausgrid) published an Application Notice on 19 Dec-08 and a Final Report was issued on 30 Jun-10. Reference = Development Brief: Development of Hurstville North Zone	Nov-10	Feb-14	Hurstville North	Capital expenditure	936	0	0	0	0	936
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	48	49	50	52	53	252
						Total	984.2413	49.19753	50.42746	51.68815	52.98035	1,189
ARA_04.1.0007	Blakehurst Decom with 11kV LTs and 33kV Feeder Rearrangement	Retire Blakehurst Zone Substation by transferring one half of the load to Hurstville North and the other half to Kogarah Zone Substations. Rebond feeder 769 to feeder 777 to supply Sans Souci Zone Substation. This project is replacement driven and therefore NER consultation is not required and a Final Report is not required to be published. Reference = Area Plan: St George June	Mar-18	Sep-19	Various	Capital expenditure	0	0	0	19	9,578	9,597
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
						Total	0	0	0	18.61608	9578.185	9,597
ARA_04.1.0008	New Rockdale Zn and Decom (SJ-05993, SJ-06161, SJ-06162)	Retire 33/11kV Rockdale Zone Substation and build a new 132/11kV Rockdale Zone Substation. 132kV feeder connections will be looped into feeder 907 between Kogarah and Canterbury. This project is replacement driven and therefore NER consultation is not required and a Final Report is not required to be published. Reference = Development Brief: New Rockdale 132/11kV ZS. [Version 1,	Sep-13	Sep-16	Rockdale	Capital expenditure	13,338	10,454	4,004	0	0	27,795
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	54	56	110
						Total	13337.52	10453.91	4003.706	54.14903	55.50275	27,905
ARA_04.1.0010	Arncliffe Retirement & 11kV LTs	Retire Arncliffe 33/11kV Zone Substation by transferring all load to Rockdale Zone Substation. This project is replacement driven and therefore NER consultation is not required and a Final Report is not required to be published. Reference = Area Plan: St George June 2013.	Sep-15	Dec-16	Arncliffe	Capital expenditure	0	1,338	15,063	0	0	16,401
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
						Total	0	1338.201	15062.52	0	0	16,401
ARA_04.1.0029	Peakhurst 33kV SG Replacement	Repair and replace the 33kV switchroom and switchgear at Peakhurst Zone Substation. This project is subject to future outages, in case the required outages are not achievable, a new switchroom will need to be built. This project is replacement driven and therefore NER consultation is not required and a Final Report is not required to be published. Reference = Area Plan: St	Sep-16	Dec-18	Peakhurst	Capital expenditure	0	0	1,022	21,085	3,777	25,884
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
						Total	0	0	1021.686	21085.47	3776.897	25,884

ARA_04.2.0007	New Kurnell 132/11kV Zone (SI-04526 & SM-13357)	Retire 33/11kV Kurnell Zone Substation and build a new 132/11kV Kurnell South Zone Substation. The 33kV infrastructure at Kurnell Subtransmission Substation is also to be retired. NER consultation is not required and a Final Report was issued on 24 Dec-10. Reference - Development Brief: Kurnell South Zone Substation. [Version 3, approved 21 Feb-13]	Sep-12	Sep-14	Kurnell	Capital expenditure	2,447	0	0	0	0	2,447
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	39	40	41	42	162
						Total	2446.999	38.9454	39.91903	40.91701	41.93994	2,609
ARA_04.2.0013	Engadine New 132kV Feeders (SI-05747)	Construction of three 132kV underground feeder sections to Supply Engadine 132/11kV Zone Substation. This project is replacement driven and therefore NER consultation is not required and a Final Report is not required to be published. Reference = Development Brief: New Feeders to Engadine 132/11kV Zone. [Version 2, approved 23 Jul-09]	Mar-13	Sep-14	Various	Capital expenditure	3,140	0	0	0	0	3,140
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	55	57	58	60	230
						Total	3140.405	55.49502	56.8824	58.30446	59.76207	3,371
ARA_04.2.0024	Port Hacking Refurbishment (SJ-06039)	Replace the 33kV and 132kV outdoor switchyard with a 33kV and 132kV indoor switchrooms at Port Hacking Subtransmission Substation. This project is replacement driven and therefore NER consultation is not required and a Final Report is not required to be published. Reference = Development Brief: Port Hacking combined 132kV and 33kV Switchgear Replacement. [Version 2,	Mar-13	Sep-14	Port Hacking	Capital expenditure	4,547	0	0	0	0	4,547
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	44	45	46	48	183
						Total	4546.508	44.17625	45.28066	46.41268	47.57299	4,730
ARA_04.2.0029	Jannali Refurbishment (SJ-04900)	Replace the 11kV switchgear at Jannali 33/11kV Zone Substation and the 33kV busbar with 33kV indoor switchgear. This project is replacement driven and therefore NER consultation is not required and a Final Report is not required to be published. Reference = Development Brief: Jannali Zone Refurbishment. [Version 2, approved 24 Jun-10]	Mar-13	Sep-15	Jannali	Capital expenditure	1,460	240	0	0	0	1,701
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	27	27	28	82
						Total	1460.353	240.2226	26.61269	27.27801	27.95996	1,782
ARA_04.3A.0005	New Leightonfield 132kV Zone	Establish a new 33/11kV Leightonfield Zone Substation due to condition and compliance issues at the existing Leightonfield Zone Substation. This project is replacement driven and therefore NER consultation is not required and a Final Report is not required to be published. Reference = Area Plan:	Dec-16	Jun-19	Leightonfield	Capital expenditure	0	0	272	6,758	11,617	18,646
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
						Total	0	0	272.0743	6757.611	11616.74	18,646
	New	Establish a new 132/11kV Strathfield South Zone Substation to replace existing Enfield 33/11kV Zone Substation. 132kV				Capital expenditure	1,019	17,009	10,580	126	0	28,734

ARA_04.3A.0007	New Strathfield South 132kV Zone	feeder connections will be looped into feeders 910 or 911. This project is replacement driven and therefore NER consultation is not required and a Final Report is not required to be published. Reference = Area Plan: Canterbury Bankstown June 2012.	Sep-13	Sep-16	Enfield	Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	53	55	108
Total						1018.671	17008.71	10579.92	179.5661	54.64901	28,842	
ARA_04.3A.0008	Canterbury STS Refurbishment (SJ-05740)	Replacement of 132kV and 33kV switchgear and installation of two series reactors on feeders 906 and 907. This project is replacement driven and therefore NER consultation is not required and a Final Report is not required to be published. Reference = Development Brief: Canterbury STS Refurbishment. [Version 2, approved 30 Oct-11]	Oct-14	Jan-17	Canterbury	Capital expenditure	4,692	1,825	2,418	0	0	8,935
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	42	43	86
Total						4691.524	1825.445	2417.722	42.30135	43.35889	9,020	
ARA_04.3A.0012	New Potts Hill 132/11kV Zone (SJ-05415 & SJ-05570)	Establish a new 132/11kV Potts Hill Zone Substation and 132kV feeder connections. NER consultation was published on 2 May-08 and a Final Report was issued on 28 Oct-08. Reference - Development Brief: Establish New Zone Substation - Potts Hill. [Version 1, approved 8 Oct-07]	Nov-10	Nov-13	Potts Hill	Capital expenditure	993	0	0	0	0	993
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	52	53	54	56	57	273
Total						1045.125	53.14342	54.47201	55.83381	57.22966	1,266	
ARA_04.3A.0014	New Greenacre Park 132/11kV Zone with 11kV LTs and Decom	New Greenacre Park 132/11kV Zone Substation to retire existing Greenacre Park Zone Substation. This project is replacement driven and therefore NER consultation is not required and a Final Report is not required to be published. Reference = Area Plan: Canterbury Bankstown June 2012.	Dec-13	Jun-17	Greenacre Park	Capital expenditure	4,163	18,343	5,349	606	0	28,461
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	57	58	115
Total						4162.63	18343.22	5348.816	662.5883	58.06398	28,575	
ARA_04.3A.0019	Dulwich Hill 33kV Zone + Decom (SJ-06064 & SI-00157)	Establish a new 33/11kV Dulwich Hill Zone Substation at the adjacent site to the existing zone substation. This project is replacement driven and therefore NER consultation is not required and a Final Report is not required to be published. Reference = Development Brief: Dulwich Hill Zone Substation Replacement. [Version 2, approved 20 Jun-13]	Feb-14	Jun-17	Dulwich Hill	Capital expenditure	198	966	10,730	10,170	0	22,063
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	51	52	103
Total						197.593	965.7192	10730.16	10220.53	52.10719	22,166	
ARA_04.3A.0021	Dulwich Hill 33kV Feeder Replacement (S.I.)	Install three new 33kV feeders from Canterbury Subtransmission Substation to Dulwich Hill Zone Substation. This project is replacement driven and therefore NER consultation is not required and a Final Report is not required to be published. Reference = Area Plan: Canterbury Bankstown June 2012.	Jun-15	Jun-17	Various	Capital expenditure	988	14,486	14,788	391	0	30,652
						Operating expenditure	0	0	0	0	0	0

	06070 & SI-00190)	published. Reference = Development Brief: Dulwich Hill Zone Substation Replacement. [Version 2, approved 20 Jun-13]				Maintenance expenditure	0	0	0	117	120	237	
							Total	987.9647	14485.78	14788.06	507.5497	119.9681	30,889
ARA_04.3B.0003	Bankstown STS 33kV SG Replacement (SJ-06056)	Replace existing 33kV switchgear and outdoor busbar with new 33kV indoor switchgear and busbar. Relocate overhead feeders 914 and 915. This project is replacement driven and therefore NER consultation is not required and a Final Report is not required to be published. Reference = Development Brief: Bankstown STS 33kV Switchgear Replacement. [Version 2, approved 23	Nov-13	May-15	Bankstown	Capital expenditure	1,494	0	0	0	0	1,494	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	0	35	36	37	38	146	
							Total	1493.951	35.12572	36.00386	36.90396	37.82655	1,640
ARA_04.3B.0011	Punchbowl 11kV SG Replacement (SJ-06063)	Replace the 11kV switchgear at Punchbowl Zone Substation at the adjacent site. Decommission transformer five at Punchbowl and transfer load to Bankstown Zone Substation. Replace the 33kV feeders from Bankstown Subtransmission Substation to Punchbowl Zone Substation. This project is replacement driven and therefore NER consultation is not required and a Final	Mar-15	Jun-17	Various	Capital expenditure	5,928	6,329	0	0	0	12,256	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	0	0	0	60	61	121	
							Total	5927.788	6328.658	0	59.51565	61.00354	12,377
ARA_04.3B.0014	Bass Hill 11kV SG Replacement (SJ-06061)	Replace the existing 11kV switchgear at Bass Hill Zone Substation in a new switchroom in the control building. This project is replacement driven and therefore NER consultation is not required and a Final Report is not required to be published. Reference = Development Brief: Bass Hill Zone Substation 11kV Switchgear Replacement. [Version 1, approved 27 Jun-11]	Sep-13	Sep-15	Bass Hill	Capital expenditure	8,895	575	0	0	0	9,470	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	0	0	32	33	34	100	
							Total	8894.627	574.966	32.46712	33.2788	34.11077	9,569
ARA_04.4.A.0011	Leichhardt 132kV Conversion (SJ-05946)	Conversion of Leichhardt ZS to 132kV operation. While this is a replacement project, it involves an increase in capacity of feeder900 in excess of \$10M, hence Ausgrid published an Application Notice in Dec-09 and a Final Report in Sep-10. Reference = Final Report "Replacement of Feeder 900, Leichhardt and Five Dock	Jan-16	Jul-17	Leichhardt	Capital expenditure	889	471	0	0	0	1,360	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	0	0	0	0	16	16	
							Total	889.1683	471.2545	0	0	15.70688	1,376
ARA_04.4.A.0012	New Croydon 132/11kV Zone (SJ-05942)	Establishment of New Croydon ZS to replace Five Dock ZS. While this is a replacement project, it involves an increase in capacity of feeder900 in excess of \$10M, hence Ausgrid published an Application Notice in Dec-09 and a Final Report in Sep-10. Reference = Final Report "Replacement of Feeder 900, Leichhardt and Five Dock Zones" published in 10 Sep-10.	Mar-14	Jun-16	Croydon	Capital expenditure	1,997	3,463	0	0	0	5,460	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	0	0	56	57	59	172	
							Total	1996.836	3463.449	56.07874	57.48071	58.91773	5,633

ARA_04.4.A.0016	132kV Feeder 900 Replacement (SI-05767)	Replacement and Uprate of Feeder 900 to supply new Leichhardt and Croydon ZSs. While this is a replacement project, it involves an increase in capacity of feeder900 in excess of \$10M, hence Ausgrid published an Application Notice in Dec-09 and a Final Report in Sep-10. Reference = Final Report "Replacement of Feeder 900, Leichhardt and Five Dock Zones" published in 10 Sep-10.	Jun-14	Dec-15	Various	Capital expenditure	38,531	10,924	0	0	0	49,455
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	112	115	118	346
						Total	38530.63	10924.1	112.3834	115.1929	118.0728	49,800
ARA_04.4.B.0022A	132kV feeders 923/2 and 924/2 Replacement	Replacement of feeders 923/2 and 924/2 from Burwood ZS to Strathfield STS. No RIT-D process will be required as this is a Replacement driven project. Reference = Master CAPEX Project List CC Hunter & Sydney areas_2014 (TRIM Ref. D13/402565).	Dec-18	Dec-20	Various	Capital expenditure	0	0	0	0	158	158
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
						Total	0	0	0	0	158.3297	158
ARA_04.4.C.0005	New Olympic Park 132kV Zn (SJ-05947, SJ-06147, SJ-06148)	Construction of new Olympic Park ZS. This is a Capacity driven project, a Consultation Paper was published in Aug-09 and a Final Report was published in June-11. Reference = Final Report "New Olympic Park 132/11kV Zone Substation and associated Load Transfer; and Uprating at Homebush Bay Zone Substation" published in 3 Jun-11.	Aug-13	Nov-15	Olympic Park	Capital expenditure	16,464	2,575	0	0	0	19,039
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	80	82	84	245
						Total	16464.5	2574.975	79.68127	81.6733	83.71513	19,285
ARA_04.4.C.0008	New Auburn South 132kV Feeders	Install two new 132kV feeders to replace 33kV feeders 602, 604, 605 from Lidcombe ZS to Homebush STS and feeders 614 & 615 from Auburn ZS to Homebush STS. No RIT-D process will be required as this is a Replacement driven project. Reference = Master CAPEX Project List CC Hunter & Sydney areas_2014 (TRIM Ref. D13/402565).	Mar-15	Sep-16	Lidcombe	Capital expenditure	36	27,029	10,602	0	0	37,667
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	62	63	125
						Total	36.30797	27028.83	10602.35	61.63614	63.17704	37,792
ARA_04.4.C.0009	New Auburn South 132kV Zone	Establishment of a new 132kV ZS to replace Auburn and Lidcombe ZSs. No RIT-D process will be required as this is a Replacement driven project. Reference = Master CAPEX Project List CC Hunter & Sydney areas_2014 (TRIM Ref. D13/402565).	Jun-14	Sep-16	Lidcombe	Capital expenditure	2,540	22,314	4,090	0	0	28,944
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	45	46	90
						Total	2539.782	22313.59	4090.423	44.63674	45.75266	29,034
	Flemington to SOPA	11kV LT to offload Flemington ZS for decommissioning half or 11kV SG at				Capital expenditure	0	0	0	0	2,473	2,473

ARA_04.4.C.0018	11kV LT and 11kV SG Decom (DP Costed)	Decommissioning of 11kV CC at Flemington ZS. No RIT-D process will be required as this is a Replacement driven project. Reference = Master CAPEX Project List CC Hunter & Sydney areas_2014 (TRIM Ref. D13/402565).	Sep-18	Sep-19	Various	Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
						Total	0	0	0	0	2473.4	2,473
ARA_04.4.C.0026A	11kV LTs to Decommission Auburn	11kV LT to decommission existing Auburn ZS, moving all load from Auburn ZS to new Auburn South ZS. No RIT-D process will be required as this is a Replacement driven project. Reference = Master CAPEX Project List CC Hunter & Sydney areas_2014 (TRIM Ref. D13/402565).	Sep-15	Sep-16	Various	Capital expenditure	0	7,454	9,182	0	0	16,636
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
						Total	0	7454.352	9182.101	0	0	16,636
ARA_04.5.0001	Camperdown Zone Refurbishment (SJ-02883, SM-04738, SM-06358)	The existing 11kV switchgear at the Camperdown Zone Substation will be replaced with an indoor 11kV switchroom to address asset condition issues. NER consultation is not required and a Final Report will not be published. Reference = Project Proposal: Camperdown Zone Substation. (Version 7.1, approved 31 Mar-09)	May-10	May-14	Camperdown	Capital expenditure	2,622	0	0	0	0	2,622
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	47	48	50	51	52	248
						Total	2669.01	48.38671	49.59638	50.83629	52.10719	2,870
ARA_04.5.0003	Camperdown 33kV Feeder Replacement (SJ-02875)	The 33kV cables supplying the Camperdown Zone Substation will be replaced to address asset condition issues. NER consultation is not required and a Final Report will not be published. Reference = Development Brief: Camperdown 33kV Feeder Replacement Development of 33kV Supply to Camperdown Zone Substation from Pymont STS. (Version 3, approved 11	Aug-12	Feb-14	Camperdown	Capital expenditure	497	0	0	0	0	497
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	70	71	73	75	77	366
						Total	566.9598	71.35074	73.13451	74.96287	76.83694	863
ARA_04.5.0005	Blackwattle Bay 11kV LTs (DP Costed)	The load at 11kV from Blackwattle Bay Zone Substation to Camperdown Zone Substation to enable conversion of Blackwattle Bay Zone Substation from 5kV to 11kV. NER consultation is not required and a Final Report will not be published. Reference = Master CAPEX Project List - Sydney & CC.xls. (Revision number 39, TRIM ref.D13/402565)	Sep-16	Sep-18	Blackwattle Bay	Capital expenditure	0	0	429	8,097	1,055	9,581
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
						Total	0	0	429.4371	8096.782	1054.902	9,581
ARA_05.1.0006	Crows Nest 132kV Conversion (SJ-05510)	Conversion of Crows Nest ZS to 132kV operation. Install two 132kV feeders from Willoughby STS. Consultation paper and Final Report are not required as it is a replacement driven project. Reference =	Jun-13	Jun-15	Crows Nest	Capital expenditure	790	111	0	0	0	902
						Operating expenditure	0	0	0	0	0	0

	05651 & SM-05951)	Concept Brief "Crows Nest Zone 132kV Conversion" (Version 2, approved 31 July-09)				Maintenance expenditure	0	13	13	14	14	54	
							Total	790.3716	124.1457	13.30634	13.639	13.97998	955
ARA_05.1.0008	Willoughby 132kV Feeders 9E3 & 9E4/2 Replacement (SJ-06046)	Replacement of oil-filled cables between Willoughby STS to Lindfield STSS. A Final Report is required as this project has an augmentation component with expenditure in excess of \$1M. (Can't find this FR.) Reference = Development Brief "Lindfield STSS to Willoughby STS 132kV feeder" (Version 1 approved 30 June-09)	Mar-13	Apr-15	Various	Capital expenditure	19,508	0	0	0	0	19,508	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	0	143	146	150	154	593	
							Total	19507.9	142.7015	146.269	149.9257	153.6739	20,100
ARA_05.1.0009	New North Sydney 132/11kV Zone (SJ-05969 & SI-05341)	Conversion of North Sydney ZS to 132kV operation. Install two 132kV feeders from Crows Nest ZS. No Consultation Paper or Final Report is required as the augmentation component of this project involves an expenditure of less than \$1M. Reference = Development Brief "Convert North Sydney ZS from 33/11kV to 132/11kV ZS and install two 132kV feeders" (version 5 approved 15 May-13).	Jan-12	Nov-14	North Sydney	Capital expenditure	930	2,221	0	0	0	3,152	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	0	44	45	46	47	181	
							Total	930.4327	2264.82	44.75771	45.87665	47.02356	3,333
ARA_05.1.0016	Lindfield STSS 132kV RMCB (SJ-06106)	Install new 132kV RMCB at Lindfield STSS to facilitate connections to Castle Cove ZS. No Consultation Paper or Final Report is required as this is a Reliability driven project. Reference = Development Brief "Lindfield STSS 132kV Circuit Breakers" (Version 1 approved 30 Jun-09).	Nov-12	Nov-14	Lindfield	Capital expenditure	3,710	0	0	0	0	3,710	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	0	11	12	12	12	47	
							Total	3710.41	11.43229	11.7181	12.01105	12.31133	3,758
ARA_05.1.0026	Castle Cove 132kV Feeder 925/3 & 9E4/3 Replacement (SJ-05970)	Replacement of 132kV feeders 925/3 & 9E4/3 from Lindfield STSS to Castle cove ZS. No Consultation Paper or Final Report is required as this project is Replacement driven. Reference = Development Brief "Lindfield STSS to Castle Cove 132kV Feeders" (Version 1 approved 29 Jun-09).	Sep-13	Mar-15	Various	Capital expenditure	11,078	0	0	0	0	11,078	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	0	95	98	100	102	395	
							Total	11078.48	95.13432	97.51268	99.9505	102.4493	11,474
ARA_05.1.0034A	Chatswood 33kV Feeder 554 Uprate	Replacement and uprate of Chatswood 33kV feeder 554. This project may involve an augmentation component and therefore a RID-D process maybe required. Detail analysis shall be carried out approximately four years prior to the project proposed date. Reference = Master CAPEX Project List CC Hunter & Sydney areas_2014 (TRIM Ref. D13/402565).	Mar-19	Sep-20	Chatswood	Capital expenditure	0	0	0	0	20	20	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	0	0	0	0	0	0	

						Total	0	0	0	0	19.87184	20
ARA_05.2.0006	Kuringai 33kV SG Replacement (SJ-06016)	Replace 33kV SG at Kuringai STS. No Consultation Paper or Final Report is required as this project is Replacement and Duty of Care driven. Reference = Development Brief "Kuringai STS 33kV Switchgear Replacement" (Version 1 approved 30 Jun-10).	Jul-14	Apr-17	Kuringai	Capital expenditure	5,434	3,863	1,632	0	0	10,928
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	33	34	68
						Total	5433.806	3862.876	1631.686	33.49352	34.33086	10,996
ARA_05.2.0009	St Ives 33kV Feeders Replacement (SJ-06017)	St Ives 33kV cable replacement, HV CT replacement and Fourth cable installation. Final Report is not required as this is a Replacement project with subsequent increase in capacity (material cost difference only). Reference = Development Brief "St Ives 33kV Cable Replacement" (Version 1 approved 29 Jan-10).	Mar-13	Sep-14	St Ives	Capital expenditure	326	0	0	0	0	326
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	63	65	67	68	263
						Total	325.8821	63.42288	65.00845	66.63366	68.29951	589
ARA_05.3.0019	Hunters Hill Refurbishment with 11kV SG (SJ-04784, SJ-00043)	Refurbishment of 66kV Hunters Hill ZS is closed to completion. Replacement of 11kV SG will commence once the refurbishment is completed. NER consultation is not required and a Final Report is not required to be published. Reference = Development Brief: Hunters Hill Zone 11kV Switchgear Replacement. (Version 3, approved 11 Feb-13)	Jun-11	Jun-17	Hunters Hill	Capital expenditure	1,893	5,794	5,663	281	0	13,632
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	56	57	113
						Total	1893.014	5794.314	5663.35	337.106	57.19082	13,745
ARA_05.3.0021	Top Ryde Additional Tx and 11kV SG	Installation of a third transformer and associated 11kV switchgear in Top Ryde ZS. A Final Report will be published as the augmentation component of this project exceed \$1M. Reference = Development Brief: Top Ryde Zone Additional Transformer. (Version 1, approved 28 Oct-13)	Jun-15	Jun-16	Top Ryde	Capital expenditure	0	5,486	61	0	0	5,548
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	18	19	19	56
						Total	0	5486.346	79.60761	18.59864	19.06361	5,604
ARA_05.4.0008	Careel Bay 11kV SG Replacement (SI-09903)	Replace existing 11kV switchgear at Careel Bay 33/11kV Zone Substation by building a new switchroom on the existing zone site. NER consultation is not required as the project is driven by asset condition issues and involves augmentation expenditure of less than \$1M. Reference = Development Brief SI-	Sep-14	Sep-15	Careel Bay	Capital expenditure	7,876	1,039	0	0	0	8,915
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	17	17	18	52
						Total	7876.054	1039.269	16.93535	17.35873	17.7927	8,967
		Replace underground cable HSL section of 33kV feeder S20 to address asset				Capital expenditure	0	260	13,784	1,038	0	15,082

ARA_05.4.0022A	Uprate 33kV feeder S20	Uprate 33kV feeder S20 to address asset condition issues. NER consultation is not required and a Final Report will not be published. Reference = Master CAPEX Project List - Sydney & CC.xls. (Revision number 39, TRIM ref.D13/402565)	Jan-16	Jul-17	Various	Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	38	38
Total						0	260.3525	13783.79	1037.859	37.91476	15,120	
ARA_05.4.0025A	Uprate 33kV feeder S21 Stage 2	Replace underground cable HSL section of 33kV feeder S21 to address asset condition issues. NER consultation is not required and a Final Report will not be published. Reference = Master CAPEX Project List - Sydney & CC.xls. (Revision number 39, TRIM ref.D13/402565)	Jan-19	Jul-20	Various	Capital expenditure	0	0	0	0	195	195
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
Total						0	0	0	0	194.9524	195	
ARA_05.4.0034A	Mona Vale 11kV SG Replacement (Q13756)	Replacement of OLX type air-insulated 11kV switchgear in an extended switchroom building at Mona Vale 33/11kV Zone Substation. NER consultation is not required since the project is driven by asset condition issues and involves no augmentation costs. Reference = Development Brief SI-10081 Mona Vale Zone Substation 11kV Switchgear Replacement Version 1	Mar-14	Sep-16	Mona Vale	Capital expenditure	2,023	5,774	460	0	0	8,257
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	11	11	23
Total						2022.634	5773.968	460.0692	11.15918	11.43816	8,279	
ARA_05.4.0035A	Terrey Hills 11kV SG Replacement (Q13751)	Replacement of OLX type air-insulated 11kV switchgear at Terrey Hills 33/11kV Zone Substation. NER consultation is not required since the project is driven by asset condition issues and involves no augmentation costs. Reference = Area Plan Master Project List TRIM record D13/402565.	Mar-15	Sep-17	Terrey Hills	Capital expenditure	71	1,836	6,771	458	0	9,136
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	25	25
Total						71.4177	1836.056	6770.585	458.3216	25.41814	9,162	
ARA_05.5.0018	North Head 33kV SG Refurbishment (SJ-05979)	Uprating of transformers and replacement of 33kV switchgear together with the installation of 11kV vacuum circuit breaker trucks at North Head Zone Substation. NER consultation is not required as this project is driven by asset condition issues. Reference = Development Brief SJ-05979 North Head Zone Substation Refurbishment Version 1 issued on 30/10/2009.	Jun-14	Mar-15	North Head	Capital expenditure	3,853	119	0	0	0	3,972
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	8	8	9	9	34
Total						3853.062	127.2049	8.467674	8.679366	8.89635	4,006	
ARA_05.5.0039A	33kV UG Sections Replacement (S08)	Replace underground cable HSL sections of 33kV feeders S08 and S10 to address asset condition issues. NER consultation is not required and a Final Report will not be published. Reference = Master	Jan-15	Sep-16	Various	Capital expenditure	268	21,238	3,524	0	0	25,030
						Operating expenditure	0	0	0	0	0	0

	ent (000, S10)	CAPEX Project List - Sydney & CC.xls. (Revision number 39, TRIM ref.D13/402565)				Maintenance expenditure	0	0	0	60	62	122
						Total	268.0893	21238.09	3524.011	60.02027	61.52078	25,152
ARA_06.1.0006	Lisarow 11kV SG Replacement (SJ-05734)	Refurbish the existing Lisarow 33/11kV Zone Substation by replacing 11kV switchgear. NER consultation is not required as this project is driven by asset condition issues and involves no augmentation costs. Reference = Development Brief SJ-05734 SS-00039 Lisarow 11kV switchgear replacement Version 3 issued on 11/04/2013.	Dec-12	Sep-15	Lisarow	Capital expenditure	7,575	4,084	0	0	0	11,659
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	24	25	25	74
						Total	7575.271	4083.894	24.19335	24.79819	25.41814	11,734
ARA_06.1.0011	Peats Ridge 11kV and 33kV SG Replacement (SI-09893)	Replace the outdoor 11kV switchgear with indoor 11kV switchgear and replace the outdoor 33kV switchgear at Peats Rige 33/11kV Zone Substation. NER consultation is not required as this project is driven by asset condition issues and involves no augmentation costs. Reference = Development Brief SI-09893 SS-00154 SI-10035 Pats Ridge Zone 11kV and 33kV SG Replacement Version	Jul-13	Jul-15	Peats Ridge	Capital expenditure	4,989	1,141	0	0	0	6,130
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	19	20	20	60
						Total	4989.221	1140.711	19.35468	19.83855	20.33451	6,189
ARA_06.1.0023	New Empire Bay 66/11kV Zone with 11kV LTs (SI-05732)	Establishment of a new 66/11kV Zone Substation at Empire Bay and 11kV load transfers from Woy Woy, Umina and Avoca Zone Substations to Empire Bay. EnergyAustralia (Ausgrid) published a Final Report (Development of Empire Bay 66/11kV Zone Substation) on 9 Jul-10. Reference = Development Brief SI-05732	Dec-10	Jun-13	Empire Bay/Saratoga	Capital expenditure	499	0	0	0	0	499
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	34	35	36	37	38	180
						Total	533.0755	35.16415	36.04325	36.94433	37.86794	679
ARA_06.1.0031A	Umina 11kV SG Replacement (Q13746)	Replacement of existing OLX 11kV air insulated switchgear at Umina 66/11kV Zone Substation with new 11kV switchgear by modifying the existing switchroom. NER consultation is not required since the project is driven by asset condition issues and involves no augmentation costs. Reference = Development Brief SJ-00145 Replacement of 11kV Switchgear at	Dec-14	Sep-16	Umina	Capital expenditure	487	9,347	574	0	0	10,407
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	25	25	50
						Total	486.5919	9346.544	573.6127	24.79819	25.41814	10,457
ARA_06.2.0009	Vales Point 11kV SG Replacement (SJ-06001)	Replacement outdoor 11kV circuit breakers with indoor 11kV switchgear at Vales Point 33/11kV Zone Substation. NER consultation is not required since this project is driven by asset condition issues and involves no augmentation costs. Reference = Development Brief SJ-06001 Vales Point Zone 11kV Switchgear Replacement, issued 16/08/2011	Mar-13	Sep-14	Vales Point (Manning Park)	Capital expenditure	5,928	2,816	0	0	0	8,743
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	13	13	14	14	54
						Total	5927.789	2828.681	13.30634	13.639	13.97998	8,797

ARA_07.1.0004	New Tighes Hill 33/11kV Zone (SJ-05934 & SJ-00025)	Construct Tighes Hill 33/11kV Zone Substation and decommission the existing Carrington 33/11 Zone Substation to address asset condition issues. NER consultation is not required and a Final Report will not be published. Reference = Development Brief: Development of Tighes Hill 33/11kV Zone Substation (Formerly Known As: Carrington 33/11kV ZS) Replacement of Carrington 33/11kV	Dec-13	Jun-16	Tighes Hill	Capital expenditure	15,745	1,132	433	0	0	17,309
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	40	41	42	124
						Total	15744.69	1131.934	472.9513	41.34294	42.37652	17,433
ARA_07.1.0006	New Broadmeadows 132/11kV Zone (SJ-04866 & SJ-00008)	Construct Broadmeadow 132/11kV Zone Substation and decommission the existing Broadmeadow 33/11 Zone Substation to address asset condition issues. Energy Australia (Ausgrid) published a Final Report (Development of 132/11kV Broadmeadow Zone Substation) on 9 Jul-10. Reference = Development Brief: Develop Broadmeadow132/11kV Zone Substation	Oct-10	Oct-13	Broadmeadow	Capital expenditure	124	0	0	0	0	124
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	60	61	63	64	66	313
						Total	183.2673	61.03522	62.5611	64.12513	65.72826	437
ARA_07.2.0004	Waratah Busbar Refurbishment (SJ-05975)	Refurbish Waratah STS and address asset condition issues by consolidating the 33kV supply, decommissioning the industrial busbar and decommissioning Shortland, Wallsend, Mayfield and Tubemakers zone substations . NER consultation is not required and a Final Report will not be published. Reference = Development Brief: Waratah STS Supply Rearrangement Waratah STS 33kV	Jul-14	Jan-16	Waratah	Capital expenditure	5,928	9,770	0	0	0	15,698
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	31	31	32	95
						Total	5927.788	9770.474	30.73116	31.49944	32.28693	15,793
ARA_07.3.0013A	Edgeworth 11kV SG Replacement (Q13683)	The 11kV switchgear at Edgeworth Zone Substation will be replaced to address asset condition issues. NER consultation is not required and a Final Report will not be published.	May-15	Nov-17	Edgeworth	Capital expenditure	37	1,113	7,465	978	0	9,593
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	23	23
						Total	37.49079	1113.225	7464.584	977.8375	22.87633	9,616
ARA_07.4.0005	11kV SG Replacement at Myuna & Coorabong Mines	The 11kV switchgear at Myuna and Coorabong zone substations will be replaced to address asset condition issues. NER consultation is not required and a Final Report will not be published.	Dec-13	Dec-15	Myuna and Coorabong Collieries	Capital expenditure	13,630	3,676	0	0	0	17,305
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	27	27	28	82
						Total	13629.81	3675.596	26.61269	27.27801	27.95996	17,387
	New	Construct Toronto 132/11kV Zone Substation and decommission the existing Toronto 33/11 Zone Substation to				Capital expenditure	17,754	295	0	0	0	18,049

ARA_07.4.0007	New Toronto 132/11kV Zone (SJ-06009)	address asset condition issues. NER consultation is not required and a Final Report will not be published. Reference = Development Brief: Toronto 132/11kV Zone Substation Construct Replacement Toronto Zone Substation. (Version 1, approved 31 Dec-10)	Oct-12	Oct-15	Toronto	Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	30	30	31	91
Total						17754.46	294.9035	29.55577	30.29466	31.05203	18,140	
ARA_07.5.0001	33kV Feeder 760 & 766 Replacement (SJ-05976 & SJ-10011)	Replace oil-filled cable feeders 760 and 766 to address asset condition issues. NER consultation is not required and a Final Report will not be published. Reference = Development Brief: Feeder 760 and Feeder 766 Cable Replacement Replace 1330m of 33kV dual oil-filled cables from Merewether STS (feeder 760) Replace 1000m of 33kV dual oil-filled cables from Merewether STS	Dec-12	Dec-16	Various	Capital expenditure	4,940	2,273	717	0	0	7,930
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	22	22	44
Total						4939.823	2273.053	716.8773	21.65594	22.19734	7,974	
ARA_07.5.0018	Swansea 11kV SG Replacement (Q13643)	The 11kV switchgear at Swansea Zone Substation will be replaced to address asset condition issues. NER consultation is not required and a Final Report will not be published.	May-16	Nov-18	Swansea	Capital expenditure	0	43	1,301	8,812	1,156	11,311
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
Total						0	43.2845	1300.554	8811.632	1155.502	11,311	
ARA_07.6.0022	New Metford 33kV Zone, Decom East Maitland, 11kV LTs (SJ-060)	Construct Metford 33/11kV Zone Substation and decommission the existing East Maitland 33/11 Zone Substation to address asset condition issues. NER consultation is not required and a Final Report will not be published. Reference = Development Brief: Metford 33/11kV Zone Substation Construct new Metford 33/11kV Zone Substation and Decommission East Maitland ZS.	Jan-13	Jul-15	Metford	Capital expenditure	12,302	1,394	0	0	0	13,695
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	66	68	69	203
Total						12301.64	1393.773	65.97405	67.6234	69.31398	13,898	
ARA_07.6.0033A	Tarro to Thornton 11kV LT	Progressively transfer up to 8MVA of load at 11kV from Tarro Zone Substation to Thornton Zone Substation to address a capacity constraint at Tarro Zone Substation. The need for NER consultation will be assessed at the time of preparation of the Development Brief document.	Dec-17	Dec-18	Various	Capital expenditure	0	0	0	897	9,647	10,544
						Operating expenditure	0	0	83	428	0	511
						Maintenance expenditure	0	0	0	0	0	0
Total						0	0	83	1324.982	9647.299	11,055	
ARA_07.6.0035A	New Telarah West 33kV	Construct Telarah West 33/11kV Zone Substation to replace the existing Telarah 33/11 Zone Substation to address asset condition issues. NER consultation is not	May-14	Nov-16	Telarah	Capital expenditure	2,073	16,007	3,200	0	0	21,281
						Operating expenditure	0	0	0	0	0	0

	33/11kV Zone	required and a Final Report will not be published.				Maintenance expenditure	0	0	0	33	33	66	
							Total	2073.497	16006.98	3200.307	32.68252	33.49958	21,347
ARA_07.7.0005	New Paxton 33/11kV Zone (SJ-06023 & SM-19125)	Construct new Paxton 33/11kV Zone Substation and decommission the existing Paxton 33/11 Zone Substation to address asset condition issues. NER consultation is not required and a Final Report will not be published. Reference = Development Brief: Paxton 33/11kV Zone Substation Construct replacement Paxton 33/11kV Zone Substation. (Version 1, approved 30 Jul-10)	Dec-12	Jun-15	Paxton	Capital expenditure	781	920	0	0	0	1,701	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	0	30	31	32	32	125	
							Total	781.48	949.8556	30.93363	31.70697	32.49965	1,826
ARA_07.7.0008	New Cessnock 33/11kV Zone (SJ-06026)	Construct Cessnock South 33/11kV Zone Substation to replace the existing Cessnock 33/11 Zone Substation to address asset condition issues. NER consultation is not required and a Final Report will not be published. Reference = Development Brief: Cessnock 33/11kV Zone Construct new Cessnock 33/11kV Zone Substation. (Version 3, approved 13 Dec-13)	Dec-14	Jun-17	Cessnock	Capital expenditure	6,718	7,726	2,360	0	0	16,804	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	0	0	0	50	52	102	
							Total	6718.162	7725.754	2359.73	50.29522	51.5526	16,905
ARA_07.8.0013	Stockton 11kV SG Replacement (Q13645)	The 11kV switchgear at Stockton Zone Substation will be replaced to address asset condition issues. NER consultation is not required and a Final Report will not be published.	Dec-18	Jun-21	Stockton	Capital expenditure	0	0	0	0	157	157	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	0	0	0	0	0	0	
							Total	0	0	0	0	157.4952	157
ARA_07.8.0032A	New Medowie 33/11kV Zone (SJ-00041)	Construct Medowie 33/11kV Zone Substation. Ausgrid published a Final Report (Development of Medowie 33/11kV Zone Substation) on 9 Nov-11. Reference = Development Brief: Medowie 33/11kV Zone Establish Medowie 33/11kV ZS. (Version 1, approved 30 Jun-10)	Apr-12	Oct-14	Medowie	Capital expenditure	4,494	0	0	0	0	4,494	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	0	48	50	51	52	201	
							Total	4494.396	48.48807	49.70027	50.94277	52.21634	4,696
ARA_08.1.0010	Newdell 11kV SG Replacement	The existing 11kV switchgear at the Newdell Zone Substation will be replaced with an indoor 11kV switchroom to address asset condition issues. NER consultation is not required and a Final Report will not be published. Reference =	Apr-14	Apr-15	Newdell	Capital expenditure	4,446	164	0	0	0	4,610	
						Operating expenditure	0	0	0	0	0	0	

	ent	Development Brief: Newdell 11kV Switchgear Replacement Install new 11kV switchroom. (Version 1, approved 11 Dec-09)				Maintenance expenditure	0	13	13	14	14	54	
							Total	4445.841	176.8894	13.30634	13.639	13.97998	4,664
ARA_08.1.0012	Branxton 11kV SG Replacement (SJ-06035)	The existing 11kV switchgear at the Branxton Zone Substation will be replaced with an indoor 11kV switchroom to address asset condition issues. NER consultation is not required and a Final Report will not be published. Reference = Development Brief: Branxton Zone 11kV Switchgear Replacement Install new 11kV	Jun-14	Jun-15	Branxton	Capital expenditure	3,063	0	0	0	0	3,063	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	0	15	16	16	17	64	
							Total	3062.69	15.34213	15.72568	16.11882	16.52179	3,126
ARA_08.1.0014	Singleton 11kV SG Replacement (SJ-06032)	The existing 11kV switchgear at the Singleton Zone Substation will be replaced with an indoor 11kV switchroom to address asset condition issues. NER consultation is not required and a Final Report will not be published. Reference = Development Brief: Singleton 66/11kV Zone Substation 11kV Switchgear Replacement Install new 11kV switchroom. (Version 1, approved 22 Apr-	Jan-15	Jan-16	Singleton	Capital expenditure	3,952	738	0	0	0	4,690	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	0	0	16	16	17	48	
							Total	3951.859	737.9223	15.72568	16.11882	16.52179	4,738
ARA_08.2.0012	Denman 11kV SG Replacement (Q13648)	The 11kV switchgear at Denman Zone Substation will be replaced to address asset condition issues. NER consultation is not required and a Final Report will not be published.	Dec-16	Jun-19	Denman	Capital expenditure	0	0	167	4,081	6,250	10,498	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	0	0	0	0	0	0	
							Total	0	0	166.7112	4080.899	6250.276	10,498
ARA_08.2.0014	New Aberdeen 66/11kV Zone (SJ-05634)	Construct an Aberdeen 66/11kV Zone Substation to allow retirement of the existing Aberdeen 33/11kV Zone Substation. This project is a component of the overall strategy for the Upper Hunter area and, considered in conjunction with the works at Muswellbrook, NER consultation is not required and a Final Report will not be published. Reference = Development Brief: New Aberdeen	Jul-09	Sep-12	Aberdeen	Capital expenditure	1,366	0	0	0	0	1,366	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	5	5	5	5	5	25	
							Total	1370.233	4.805816	4.925961	5.04911	5.175338	1,390
ARA_08.2.0030	Muswellbrook Zone 66kV Conversion (SJ-06030)	Construct a Muswellbrook 132/11kV Zone Substation instead of a Muswellbrook 66/11kV Zone Substation to allow retirement of the existing Muswellbrook 33/11kV Zone Substation and Muswellbrook Subtransmission Substation. NER consultation is not required and a Final Report will not be published. Reference = Development Brief: Muswellbrook 132/11kV Zone	Oct-13	Oct-16	Muswellbrook	Capital expenditure	13,238	3,700	0	0	0	16,938	
						Operating expenditure	0	0	0	0	0	0	
						Maintenance expenditure	0	0	0	46	47	93	
							Total	13237.93	3699.992	0	45.87665	47.02356	17,031

ARA_08.2.0038A	Mitchell Line 11kV SG Replacement (Q13691)	The 11kV switchboard at Mitchell Line Zone Substation will be replaced to address asset condition issues. NER consultation is not required and a Final Report will not be published.	Dec-15	Jun-18	Mitchell Line	Capital expenditure	0	154	3,723	5,668	176	9,721
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	17	17
Total						0	153.6993	3723.443	5667.945	192.0709	9,737	
						Capital expenditure						0
						Operating expenditure						0
						Maintenance expenditure						0
Total						0	0	0	0	0	0	
Total						440,295	387,683	233,843	189,556	134,133	1,385,510	

Table 5.1.3 - Non-network asset projects in the forthcoming regulatory control period

Ongoing and future projects												
Unique identifier	Project name	Description of project	Proposed start date	Proposed commissioning date	Location	Forecast yearly expenditure - forthcoming regulatory control period (real \$'000)					Total	
						2014-15	2015-16	2016-17	2017-18	2018-19		
Include unique identifier for each project			Identify month and year	Identify month and year	Identify location if only one site, if several, e.g. pole replacement, insert 'various'.	Include the anticipated or known expenditure of the project by expenditure purpose.						
AER-AM-013	Geographical Information System (GIS) EOL Maintenance	Maintenance/upgrade of SmallWorld Geographical Information System (GIS), the database of records for spatial and connectivity data related to Ausgrid's network, to ensure the system remains supported by the vendor.	Sep-18	Sep-20	Not Applicable	Capital expenditure	0	0	0	0	4,334	4,334
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
Total						0	0	0	0	4334	4,334	
AER-MM-013	Itron Enterprise Edition Upgrade	Maintenance/ upgrade of IEE, Ausgrid's core meter data management system, to ensure the system remains supported by	Jul-16	Nov-17	Not Applicable	Capital expenditure	0	0	1,666	445	0	2,111
						Operating expenditure	0	0	0	0	0	0

	Upgrade (IEE)	the vendor.				Maintenance expenditure	0	0	0	0	0	0
						Total	0	0	1666	445	0	2,111
AER-MM-012	nemSTAR Replacement	Phase 2 of of replacement of nemSTAR, Ausgrid's core interval metering system. (Forecast includes carry forward of nemSTAR phase 1 project)	May-15	Dec-16	Not Applicable	Capital expenditure	3,543	1,454	851	0	0	5,848
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
						Total	3543	1454	851	0	0	5,848
AER-IT-087	Oracle EOL Upgrade	Maintain/ upgrade the Oracle platform to ensure Ausgrid's core database platform continues to be vendor supported reducing any risk of potential failure and/or unplanned production outages. Ausgrid currently have 327 production	Jul-16	Jun-18	Not Applicable	Capital expenditure	0	0	2,225	2,270	0	4,496
						Operating expenditure	54	109	111	113	115	501
						Maintenance expenditure	0	0	0	0	0	0
						Total	54	109	2336	2383	115	4,996
AER-IT-047	Server Hardware Maintenance	The proposed maintenance program will involve the consolidation and maintenance of servers annually unless analysis indicates that further sweating of assets is viable.	Jan-16	Jun-19	Not Applicable	Capital expenditure	0	680	2,591	1,740	807	5,817
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
						Total	0	680	2591	1740	807	5,817
AER-IT-039	Storage Capacity Maintenance	The program includes annual amalgamation of storage hardware requirements for the Storage Area Network (SAN) driven by BAU growth and the need to maintain ageing equipment.	Jan-15	Jun-19	Not Applicable	Capital expenditure	1,785	2,337	2,270	4,376	3,217	13,986
						Operating expenditure	0	271	483	735	924	2,414
						Maintenance expenditure	0	0	0	0	0	0
						Total	1785	2609	2753	5112	4142	16,400
AER-OT-004	Corporate LAN Refresh	The maintenance of the Corporate Telecommunications Environment to ensure: • hardware or software support the network; •support from vendor;	Apr-15	Jun-19	Not Applicable	Capital expenditure	1,189	511	1,634	1,471	1,253	6,059
						Operating expenditure	0	0	0	0	0	0
						Maintenance expenditure	0	0	0	0	0	0
						Total	1189	511	1634	1471	1253	6,059
AER-WM-012	Fieldforce Automation Program	Program includes • Stream 1B – Leverage the foundation platform established in Stream 1A and extends the asset management capability to Emergency & Reactive Work processes used by District Operators,	Apr-15	Jun-18	Not Applicable	Capital expenditure	1,486	1,309	2,182	6,918	0	11,894
						Operating expenditure	0	0	470	955	971	2,396
						Maintenance expenditure	0	0	0	0	0	0
						Total	1486	1309	2651	7873	971	14,290
						Total IT	8,057	6,672	14,483	19,024	11,622	59,857
NC-00742	Roden Cutler House	Staged refurbishment and fitout of the office facilities at the existing Roden Cutler House site to provide fit for purpose facilities, replace aging assets ID 59345	Jul-14	Dec-16	Haymarket	Capital expenditure	5.28	7.80				13.08
						Operating expenditure						0.00
						Maintenance expenditure						0.00

						Total	5.28	7.8	0	0	0	13.08
NC-00738	Potts Hill Depot	Staged rebuild of the depot facilities at the existing Potts Hill site to provide fit for purpose facilities, replace aging assets and relocate out of leasehold premises ID 95512	Oct-13	Jun-16	Potts Hill	Capital expenditure	4.92	5.44				10.36
						Operating expenditure						0.00
						Maintenance expenditure						0.00
						Total	4.92	5.44	0.00	0.00	0.00	10.36
	Alexandria Depot	New green-field development to enable replacement of the existing Zetland depot due to aging assets, encroachment by residential development and local council ID 46954	Dec-14	Jun-18	Alexandria	Capital expenditure	12.04	18.00	15.84			45.87
						Operating expenditure						0.00
						Maintenance expenditure						0.00
						Total	12.04	18.00	15.84	0.00	0.00	45.87
NC-00346	Ourimbah Depot	New green-field development to enable replacement of the existing Noraville and West Gosford depots due to aging assets and site development constraints ID 00024	Feb-13	Jul-14	Ourimbah	Capital expenditure	8.00					8.00
						Operating expenditure						0.00
						Maintenance expenditure						0.00
						Total	8.00	0.00	0.00	0.00	0.00	8.00
NC-00748	Maitland Depot	Staged rebuild of the depot facilities at the existing Maitland site to provide fit for purpose facilities, replace aging assets and relocate out of leasehold premises ID 25831	Jan-14	Jun-16	Rutherford	Capital expenditure	6.25	3.00				9.25
						Operating expenditure						0.00
						Maintenance expenditure						0.00
						Total	6.25	3.00	0.00	0.00	0.00	9.25
NC-00739	Dee Why Depot	Staged rebuild of the depot facilities at the existing Dee Why site to provide fit for purpose facilities and replace aging assets ID 33790	Oct-13	Jun-15	Cromer	Capital expenditure	3.00		0.75	5.25		9.00
						Operating expenditure						0.00
						Maintenance expenditure						0.00
						Total	3.00	0.00	0.75	5.25	0.00	9.00
	Oatley Depot	Staged rebuild of the depot facilities at the existing Oatley site to provide fit for purpose facilities, replace aging assets and relocate out of demountable ID 91748	Jun-15	Jun-17	Oatley	Capital expenditure		0.50	5.00			5.50
						Operating expenditure						0.00
						Maintenance expenditure						0.00
						Total	0.00	0.50	5.00	0.00	0.00	5.50
NC-00754	Chatswood Depot	Staged rebuild of the depot facilities at the existing Chatswood site to provide fit for purpose facilities, replace aging assets and relocate out of leasehold premises ID 17697	Dec-14	Jun-17	Chatswood	Capital expenditure	9.15	12.00	16.24		0.65	38.04
						Operating expenditure						0.00
						Maintenance expenditure						0.00
						Total	9.15	12.00	16.24	0.00	0.65	38.04
NC-00755	Homebush Depot	Staged rebuild of the depot facilities at the existing Homebush site to provide fit for purpose facilities, replace aging assets and relocate out of leasehold premises ID 61850	Dec-14	Jun-17	Homebush	Capital expenditure	2.00	28.00	10.00			40.00
						Operating expenditure						0.00
						Maintenance expenditure						0.00
						Total	2.00	28.00	10.00	0.00	0.00	40.00

	Wallsend Depot	Staged rebuild of the depot facilities at the existing Wallsend site to provide fit for purpose facilities and replace aging assets ID 68533	Jun-16	Jun-18	Wallsend	Capital expenditure			2.50	7.50		10.00
						Operating expenditure						0.00
						Maintenance expenditure						0.00
						Total	0.00	0.00	2.50	7.50	0.00	10.00
						Total property	50.64	74.74	50.32	12.75	0.65	189.09
						Total non-network	8,107.61	6,746.52	14,532.83	19,036.87	11,622.25	60,046.08