OPTIONS EVALUATION REPORT (OER)

FY24-28 Prot - Busbar Renewal

OER- n2246 revision 0.0

Ellipse project no(s):
TRIM file: [TRIM No]

Project reason: Capability - Asset Replacement for end of life condition
Project category: Prescribed - Replacement

Approvals

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Change history

Revision	Date	Amendment
0	26/10/2021	First Issue

Executive summary

Busbar (and interzone) protection relays are used throughout the NSW network to isolate high voltage busbar faults in order to reduce their impact on system security, system reliability and network infrastructure. The relays under investigation are installed at all voltage levels from 11kV to 500kV. Representing a subset of TransGrid's busbar (and interzone) protection relay asset base, there are currently 152 installed units under consideration for this Need. The units have installation dates from 1963.

A number of Busbar (and Interzone) Protection Schemes are reaching end of life by 2027/28. Manufacturer support for many models is limited or withdrawn, meaning that repair and replacement facilities are expected to be unavailable by 2027/28.

There is a need to address degrading asset health and increasing risks associated with the identified assets. Addressing this need will ensure TransGrid will continue to meet its regulatory obligations set out in the NER.

The assessment of options considered to address this need appears in Table 1, which includes busbar (and interzone) protection schemes evaluated as NPV positive, and reaching end of life by 2027/28. A summary of all options considered are detailed below.

Under the Base Case TransGrid continues to operate and maintain (O&M) the existing site secondary systems as required. This approach will not address the obsolescence and health of the sites with ageing secondary system assets.

Table 1 - Evaluated options ($ million)

Option	Description	Direct capital cost	Network and corporate overheads	Total capital cost[1]	Weighted NPV	Rank
Option A – N2246A	Renewal of Individual Assets Like-for-like replacement whereby the asset is replaced by its modern equivalent.	8.30	2.88	11.18	4.31	1

It is the recommendation that Option A – Renewal of Individual Assets, be scoped in detail.

[1] Total capital cost is the sum of the direct capital cost and network and corporate overheads. Total capital cost is used in this OER for all analysis.

1. Need/opportunity

Busbar (and Interzone) protection relays are used throughout the NSW network to isolate high voltage busbar faults in order to reduce their impact on system security, system reliability and network infrastructure. The relays under investigation are installed at all voltage levels from 11kV to 500kV. Representing a subset of TransGrid's busbar (and interzone) protection relay asset base, there are currently 152 installed units under consideration for this Need. The units have installation dates from 1963.

A number of Busbar (and Interzone) Protection Schemes are reaching end of life by 2027/28. Manufacturer support for many models is limited or withdrawn, meaning that repair and replacement facilities are expected to be unavailable by 2027/28.

Network Performance Requirements, set out in Schedule 5.1 of the NER, place an obligation on TNSPs to provide redundant protection schemes to ensure the transmission system is adequately protected. Schedule 5.1.9(c) of the NER requires a TNSP to provide sufficient primary and back-up protection systems, including any communications facilities and breaker fail protection systems, to ensure that a fault of any type anywhere on its transmission system is automatically disconnected.

Additionally, TNSPs are required to disconnect the unprotected primary systems where a secondary systems fault lasts for more than eight hours (for planned maintenance) or 24 hours (for unplanned outages). TNSPs must also ensure that all protection systems at a voltage 66 kV or above are well-maintained in order to always be available excluding short periods (less than eight hours) for protection system maintenance. In the event of an unplanned outage, AEMO's Power System Security Guidelines require that the primary network assets must be taken out of service within 24 hours.

Though the replacement of failed secondary systems components is a possible interim measure, the approach is not sustainable as spare components may not be available due to supplier constraints and technological obsolescence in the future. Once manufacturer support ceases and subsequently, spares are depleted, defect repairs can no longer be a viable approach to maintain compliance with performance obligations.

In accordance with TransGrid's Renewal and Maintenance Strategy for Automation Systems[2], a pre-emptive approach to asset renewals is required to address several factors increasing the risk of identified assets including:

- Withdrawal of manufacturer support for repair and procurement.
- Depletion of spares
- Increasing probability of failure (for secondary system devices the majority of failure modes lead to the complete loss asset function resulting in replacement).

2. Related needs/opportunities

The following related needs could improve efficiency of delivery where timing is coordinated in alignment with risk profiles:

- N2242 – FY24-28 Prot - Line Renewal
- N2243 – FY24-28 Prot - Transformer Renewal
- N2244 – FY24-28 Prot - Reactor Renewal
- N2245 – FY24-28 Prot - Capacitor Renewal
- N2212 – FY24-28 Prot - UFLS Renewal
- N2439 – FY24-28 Prot - Digital Intertrip Renewal

[2] Refer to Renewal and Maintenance Strategy – Automation Systems

Appendix C lists related Needs that include works covered under this project and have had their associated assets removed.

3. Options

3.1 Base case

The Base Case for this Need is to continue with TransGrid's business as usual operations and maintenance (O&M) for the identified assets. This approach does not address the deteriorating condition of the assets under evaluation or the risk cost associated with maintaining aging assets. The risk will likely increase due to:

- The probability of failure increasing as assets move further along their failure curves[3].
- TransGrid's inability to recover from asset failure in the future due to reducing levels of manufacturer support, and depletion of spares availability that would otherwise limit the overall consequence of asset failure.

Key drivers for this risk cost are:

- The assets identified will have reached their end of life or have limited spares and no manufacturer support. This increases the likelihood of a hazardous event occurring and decreases TransGrid's ability to mitigate or repair failures.
- Assets have increasing numbers of faults as they progress along their failure curves, degrading components or are prone to mechanical wear, increasing the likelihood of a hazardous event occurring.

Increasing maintenance on secondary systems equipment cannot reduce the probability of failure or reduce risk costs. This is because maintenance of secondary assets is focused on device inspection and functional performance checks only, the conduct of maintenance at an electronic component level is neither feasible nor practicable.

3.2 Options evaluated

Option A — Renewal of Individual Assets [NOSA N2246, OFS N2246A]

This option involves individual replacements of 75 identified assets (listed in Appendix B) across 23 sites within the regulatory period. The option is based on a like-for-like approach whereby the asset is replaced by its modern equivalent. Additional system modifications or additional functionalities would not be deployed under this option.

This option would deliver risk mitigation and reduced corrective maintenance benefits to consumers and the networks by only targeting the probability of failure of identified assets. This option will not deliver any additional operational benefits such as improved capabilities for remote interrogation and predictive activities.

This option will phase asset renewals across the regulatory control period. Deployments are prioritised based on investment benefit with consideration also given to efficient delivery strategies. The majority of targeted assets will be in service for approximately 25 years and a subset of assets for approximately 15 years depending on the site specific requirements, with some assets remaining at each site to incur investment in future years.

3.3 Options considered and not progressed

Table 2 - Options not progressed

Option	Reason for not progressing

[3] Refer to Network Asset Health Framework

Option	Reason for not progressing
Secondary Systems Renewal	This option would have required the complete renewal of all secondary systems assets at each site. The condition of remaining assets at identified sites did not warrant additional expenditure. Therefore, this option is not commercially feasible.
Refurbishment of Individual Assets	This option is considered not feasible due to the specialised skillsets required and the inability to resolve the lack of support from manufacturers.
Asset Retirement	This can only be achieved through retirement of the associated primary assets, which is not technically or economically feasible.
Non-network solutions	It is not technically feasible for non-network solutions to provide the functionality of secondary systems assets for protection, control, communications and metering

4. Evaluation

4.1 Commercial evaluation methodology

The economic assessment undertaken for this project includes three scenarios that reflect a central set of assumptions based on current information that is most likely to eventuate (central scenario), a set of assumptions that give rise to a lower bound for net benefits (lower bound scenario), and a set of assumptions that give rise to an upper bound on benefits (higher bound scenario).

Assumptions for each scenario are set out in the table below.

Table 3 - Scenario assumptions

Parameter	Central scenario	Lower bound scenario	Higher bound scenario
Discount rate	4.8%	7.37%	2.23%
Capital cost	100%	125%	75%
Operating expenditure benefits	100%	75%	125%
Risk costs benefits	100%	75%	125%
Other benefits	100%	75%	125%
Scenario weighting	**50%**	**25%**	**25%**

Parameters used in this commercial evaluation are shown in Table 4.

Table 4 - Commercial evaluation parameters

Parameter	Parameter Description	Value used for this evaluation
Discount year	Year that dollar values are discounted to	2020/21
Base year	The year that dollar value outputs are expressed in real terms	2020/21 dollars

Parameter	Parameter Description	Value used for this evaluation
Period of analysis	Number of years included in economic analysis with remaining capital value included as terminal value at the end of the analysis period.	15 years
Safety disproportionality	Multiplier of the environmental and safety related risk cost included in NPV analysis to demonstrate implementation of obligation to reduce to ALARP.	Refer to section 4.3 for details.

The capex figures in this OER do not include any real cost escalation.

4.2 Commercial evaluation results

The commercial evaluation of the technically feasible options is set out in Table 5. Details appear in Appendix A.

Table 5 - Commercial evaluation ($ million)

Option	Capital Cost PV	Central scenario NPV	Lower bound scenario NPV	Higher bound scenario NPV	Weighted NPV	Ranking
Option A	8.86	3.40	-2.87	13.29	4.31	1

Note: The evaluation above is a consolidation of busbar (and interzone) protection schemes that were individually evaluated as NPV positive, and reaching end of life by 2027/28. The individual protection schemes are listed in Appendix B.

4.3 ALARP evaluation

TransGrid manages and mitigates bushfire and safety risk to ensure they are below risk tolerance levels or 'As Low As Reasonably Practicable' ('ALARP'), in accordance with the regulation obligations and TransGrid's business risk appetite. Under the Electricity Supply (Safety and Network Management) Regulation 2014 Section 5 'A network operator must take all reasonable steps to ensure that the design, construction, commissioning, operation and decommissioning of its network (or any part of its network) is safe.' TransGrid maintains an Electricity Network Safety Management System (ENSMS) to meet this obligation[4].

In its Network Risk Assessment Methodology, under the ALARP test with the application of a gross disproportionate factor[5], the weighted benefits are expected to exceed the cost. Where TransGrid's analysis concludes that the costs are less than the weighted benefits from mitigating bushfire and safety risks, the proposed investment will enable TransGrid to continue to manage and operate this part of the network to a safety and risk mitigation level of ALARP.

Evaluation of the above options has been completed in accordance with As Low As Reasonably Practicable (ALARP) obligations. The Network Safety Risk Reduction is calculated as 6 x Bushfire Risk Reduction + 6 x Safety Risk Reduction + 3 x other Environmental Risk Reduction + 0.1 x Reliability Risk Reduction.

Results of the ALARP evaluation are set out in Table 6.

[4] TransGrid's ENSMS follows the International Organization for Standardization's ISO31000 risk management framework which requires following hierarchy of hazard mitigation approach

[5] In accordance with the framework for applying the ALARP principle, a disproportionality factor of 6 has been applied to risk cost figures. The values of the disproportionality factors were determined through a review of practises and legal interpretations across multiple industries, with particular reference to the works of the UK Health and Safety Executive. The methodology used to determine the disproportionality factors in this document is in line with the principles and examples presented in the AER Replacement Planning Guidelines and is consistent with TransGrid's Revised Revenue Proposal 2023/24- 2027/28.

Table 6 - Reasonably practicable test ($ million)

Option	Network Safety Risk Reduction	Annualised Capex	Reasonably Practicable?[6]
A	0.00	1.06	No

The result of the ALARP evaluation is that the overall proposed program does not meet ALARP.

4.4 Preferred option

The preferred option to meet the identified need by 2027/28 is Option A. Option A is the only technically and commercially feasible solution to enable TransGrid to continue meeting its regulatory obligations set out in Schedule 5.1 of the NER.

Capital and Operating Expenditure

There is negligible difference in predicted ongoing planned routine operational expenditure between the option and the Base Case.

Resultant corrective maintenance under the base case strategy is anticipated to result in higher expenditure over the upcoming regulatory period. Delivery of proposed works under Option A will reduce the risk of increasing direct defect response costs.

It has been modelled that under corrective maintenance, those components with no manufacturer support and limited spares would incur significant costs associated with design and preparation, and likely augmentation of linking systems required to move to a different design solution. Such costs would not be present in cases where a like-for-like replacement is feasible.

These operating expenditure benefits have been captured in the economic evaluation.

Regulatory Investment Test

The program and estimate allows for the appropriate Regulatory approvals as required.

5. Optimal Timing

The test for optimal timing of the preferred option has been undertaken. The approach taken is to identify the optimal commissioning year for the preferred option where net benefits (including avoided costs) of the preferred option exceeds the annualised costs of the option. The commencement year is determined based on the required project disbursement to the meet the commissioning year based on the OFS.

The results of optimal timing analysis is:

- Optimal commissioning year: 2027/28
- Commissioning year annual benefit: $0.96 million
- Annualised cost: $1.06 million

Based on the optimal timing, the project is expected to commence in the 2023/24-2027/28 Regulatory Period.

6. Recommendation

It is recommended that Option A – Renewal of Individual Assets, be scoped in detail.

[6] Reasonably practicable is defined as whether the annualised CAPEX is less than the Network Safety Risk Reduction.

The total project cost associated with this option is $11.18 million including $1.88 million to progress the project from DG1 to DG2.

Appendix A – Option Summaries

Project Description	FY24-28 Prot - Busbar Renewal		
Option Description	Option A - Renewal of Individual Assets		
Project Summary			
Option Rank	*1*	Investment Assessment Period	*15*
Asset Life	*15*	NPV Year	2020/21
Economic Evaluation			
NPV @ Central Benefit Scenario (PV, $m)	3.40	Annualised CAPEX @ Central Benefit Scenario ($m)	Annualised Capex - Standard (Business Case) 1.06
NPV @ Lower Bound Scenario (PV, $m)	-2.87	Network Safety Risk Reduction ($m)	Network Safety Risk Reduction 0.00
NPV @ Higher Bound Scenario (PV, $m)	13.29	ALARP	ALARP Compliant? No
NPV Weighted (PV, $m)	4.31	Optimal Timing	Optimal timing (Business Case) 2023/24
Cost (Central Scenario)			
Total Capex ($m)	11.18	Cost Capex (PV,$m)	8.86
Terminal Value ($m)	3.16	Terminal Value (PV,$m)	1.13
Risk (Central Scenario)	**Pre**	**Post**	**Benefit**
Reliability (PV,$m)	Reliability Risk (Pre) 0.61	Reliability Risk (Post) 0.27	Pre – Post 0.34
Financial (PV,$m)	Financial Risk (Pre) 16.85	Financial Risk (Post) 7.20	Pre – Post 9.65
Operational/Compliance (PV,$m)	Operational Risk (Pre) 0.00	Operational Risk (Post) 0.00	Pre – Post 0.00
Safety (PV,$m)	Safety Risk (Pre) 0.00	Safety Risk (Post) 0.00	Pre – Post 0.00
Environmental (PV,$m)	Environmental Risk (Pre) 0.00	Environmental Risk (Post) 0.00	Pre – Post 0.00
Reputational ($m)	Reputational Risk (Pre) 0.00	Reputational Risk (Post) 0.00	Pre – Post 0.00
Total Risk (PV,$m)	Total Risk (Pre) 17.46	Total Risk (Post) 7.47	Pre – Post 9.99
OPEX Benefit (PV,$m)			OPEX Benefit 0.00
Other benefit (PV,$m)			Incremental Net Benefit 1.15
Total Benefit (PV,$m)			Business Case Total Benefit 11.13

Appendix B – Asset Renewal Program

The following table provides a summary of the individual asset option evaluations of the secondary systems assets evaluated under Option A of this OER. These individual asset replacements are assessed based on their specific asset lifecycle. An asset is included in the final program if it is NPV positive, and is optimally timed prior to 2027/28. Assets that meet the criteria are recommended to proceed under this OER and are indicated in the table below.

Asset ID	Model	Obsolete	Location	Plant Number	Voltage (kV)	Cost	Weighted NPV	ALARP	Optimal Timing
92438	DUOBIAS	Y	BAY	NNDBAYIZN0D	500	$149,000	$208,676	NO	2023/24
92424	DUOBIAS	Y	BAY	NNDBAYIZN0E	500	$149,000	$207,549	NO	2023/24
71006	MFAC	N	VYD	CMDVYD2M1	132	$149,000	$171,805	NO	2023/24
71007	MFAC	N	VYD	CMDVYD2M1	132	$149,000	$296,133	NO	2023/24
71009	MFAC	N	VYD	CMDVYD2BB	132	$149,000	$171,805	NO	2023/24
71010	MFAC	N	VYD	CMDVYD2BB	132	$149,000	$296,133	NO	2023/24
82660	MCGG52	Y	MUR	SYDMUR8AB	11	$149,000	$164,196	NO	2023/24
83780	2V47	Y	TA1	NTDTA12BB1	132	$149,000	$282,938	NO	2023/24
83783	2V47	Y	TA1	NTDTA12BB5	132	$149,000	$282,938	NO	2023/24
20807	MFAC	N	WRH	NNDWRH2S	132	$149,000	$136,304	NO	2023/24
20808	MFAC	N	WRH	NNDWRH2S	132	$149,000	$245,315	NO	2023/24
20810	MFAC	N	WRH	NNDWRH2R	132	$149,000	$136,304	NO	2023/24
20811	MFAC	N	WRH	NNDWRH2R	132	$149,000	$245,315	NO	2023/24
82618	MFAC	N	MUR	SYDMUR1WN	330	$149,000	$135,678	NO	2023/24
82621	MFAC	N	MUR	SYDMUR1WS	330	$149,000	$135,678	NO	2023/24
82624	MFAC	N	MUR	SYDMUR1EN	330	$149,000	$135,678	NO	2023/24
82627	MFAC	N	MUR	SYDMUR1ES	330	$149,000	$135,678	NO	2023/24

Asset ID	Model	Obsolete	Location	Plant Number	Voltage (kV)	Cost	Weighted NPV	ALARP	Optimal Timing
57927	MFAC	N	PKS	CODPKS1E	132	$149,000	$135,211	NO	2023/24
57928	MFAC	N	PKS	CODPKS1E	132	$149,000	$243,751	NO	2023/24
57933	MFAC	N	PKS	CODPKS2H2	66	$149,000	$135,211	NO	2023/24
57934	MFAC	N	PKS	CODPKS2H2	66	$149,000	$243,751	NO	2023/24
57460	MFAC	N	MNY	SYDMNY2D	132	$149,000	$133,254	NO	2023/24
57461	MFAC	N	MNY	SYDMNY2D	132	$149,000	$240,949	NO	2023/24
92423	T60	N	BAY	NNDBAYIZN0E	500	$149,000	$71,872	NO	2023/24
1397417	REC670	N	BUK	SYDBUK2D	132	$149,000	$49,818	NO	2023/24
10399	FV2	Y	DPT	CMDDPT1L1	330	$149,000	$14,749	NO	2023/24
10402	FV2	Y	DPT	CMDDPT1L2	330	$149,000	$14,749	NO	2023/24
10405	FV2	Y	DPT	CMDDPT1M1	330	$149,000	$14,749	NO	2023/24
10408	FV2	Y	DPT	CMDDPT1M2	330	$149,000	$14,749	NO	2023/24
20285	FV2	Y	LD1	NNDLD11GB	330	$149,000	$14,749	NO	2023/24
20288	FV2	Y	LD1	NNDLD11MB	330	$149,000	$14,749	NO	2023/24
57296	FAC	Y	CA1	SYDCA11J1	330	$149,000	$14,749	NO	2023/24
11582	FAC34	Y	MTP	CODMTP1BA	330	$149,000	$12,533	NO	2023/24
20146	FAC	Y	BAY	NNDBAY1GB	330	$149,000	$12,533	NO	2023/24
20149	FAC	Y	BAY	NNDBAY1MB	330	$149,000	$12,533	NO	2023/24
11584	FAC34	Y	MTP	CODMTP1BB	330	$149,000	$12,527	NO	2023/24
10412	FAC	Y	DPT	CMDDPT2Q1	132	$149,000	$12,103	NO	2023/24
10415	FAC	Y	DPT	CMDDPT2Q2	132	$149,000	$12,103	NO	2023/24

Asset ID	Model	Obsolete	Location	Plant Number	Voltage (kV)	Cost	Weighted NPV	ALARP	Optimal Timing
10421	FAC	Y	DPT	CMDDPT2P2	132	$149,000	$12,103	NO	2023/24
10418	FAC	Y	DPT	CMDDPT2P1	132	$149,000	$12,082	NO	2023/24
10532	FAC	Y	SYS	CMPSYSCR1281K22	330	$149,000	$11,809	NO	2023/24
10535	FAC	Y	SYS	CMPSYSCR1271L12	330	$149,000	$11,809	NO	2023/24
10538	FAC	Y	SYS	CMPSYSCR1281L22	330	$149,000	$11,809	NO	2023/24
10529	FAC	Y	SYS	CMPSYSCR1271K12	330	$149,000	$11,803	NO	2023/24
6766	FAC34	Y	AVS	CMPAVSCR14B1BB2	330	$149,000	$10,501	NO	2023/24
63078	FV2	Y	WG2	SWPWG2CR75B2BB32	132	$149,000	$8,293	NO	2023/24
62748	FV2	Y	WG2	SWPWG2CR73B2BB12	132	$149,000	$7,851	NO	2023/24
20553	FAC	Y	PMQ	NNDPMQ2BB2	132	$149,000	$7,057	NO	2023/24
20569	FAC	Y	PMQ	NNDPMQ6BB1	33	$149,000	$7,057	NO	2023/24
20572	FAC	Y	PMQ	NNDPMQ6BB2	33	$149,000	$7,057	NO	2023/24
20575	FAC	Y	PMQ	NNDPMQ6BB3	33	$149,000	$7,057	NO	2023/24
62169	FAC34	Y	ANM	SWDANM2BB	132	$149,000	$6,896	NO	2023/24
48934	FAC	Y	KLK	NTDKLK2BB1	132	$149,000	$6,698	NO	2023/24
48937	FAC	Y	KLK	NTDKLK2BB3	132	$149,000	$6,698	NO	2023/24
48941	FAC	Y	KLK	NTDKLK4L1	66	$149,000	$6,698	NO	2023/24
48944	FAC	Y	KLK	NTDKLK4L2	66	$149,000	$6,698	NO	2023/24
57323	FV2	Y	CA1	SYPCA1CR77B2N12	132	$149,000	$6,427	NO	2023/24
57329	FV2	Y	CA1	SYDCA12N	132	$149,000	$6,427	NO	2023/24
57332	FV2	Y	CA1	SYDCA12P1	132	$149,000	$6,427	NO	2023/24

Asset ID	Model	Obsolete	Location	Plant Number	Voltage (kV)	Cost	Weighted NPV	ALARP	Optimal Timing
57335	FV2	Y	CA1	SYDCA12P2	132	$149,000	$6,427	NO	2023/24
49758	FV2	Y	TTF	NTDTTF7BA1	22	$149,000	$6,410	NO	2023/24
49761	FV2	Y	TTF	NTDTTF7BA3	22	$149,000	$6,410	NO	2023/24
62550	FAC34	Y	JDA	SWDJDA2G1	132	$149,000	$6,077	NO	2023/24
62553	FAC34	Y	JDA	SWPJDACRD6B2G22	132	$149,000	$6,077	NO	2023/24
10545	FAC	Y	SYS	CMDSYS2Q2	132	$149,000	$5,215	NO	2023/24
10548	FAC	Y	SYS	CMDSYS2R1	132	$149,000	$5,215	NO	2023/24
10542	FAC	Y	SYS	CMDSYS2Q1	132	$149,000	$5,209	NO	2023/24
10551	FAC	Y	SYS	CMDSYS2R2	132	$149,000	$5,209	NO	2023/24
49570	FAC	Y	MRE	NTDMRE4J2	66	$149,000	$4,333	NO	2023/24
49563	FAC	Y	MRE	NTDMRE2F	132	$149,000	$4,333	NO	2023/24
49567	FAC	Y	MRE	NTDMRE4J1	66	$149,000	$4,333	NO	2023/24
48849	FAC	Y	GN2	NTDGN22F	132	$149,000	$4,239	NO	2023/24
48853	FAC	Y	GN2	NTDGN24J1	66	$149,000	$4,239	NO	2023/24
48856	FAC	Y	GN2	NTDGN24J2	66	$149,000	$4,239	NO	2023/24
62398	FAC34	Y	DNT	SWPDNTCRF5B2BB2	132	$149,000	$964	NO	2023/24

Appendix C – Related Needs with Assets Removed

The following Needs contain assets that would otherwise be covered under this proposed program of work. These assets have been captured and justified within the relevant Option Evaluation Report for each Need below.

Need ID	Need Description
N2437	FY24-28 COF Secondary Systems Renewal
N2436	FY24-28 INV Secondary Systems Renewal
N2435	FY24-28 NB2 Secondary Systems Renewal
N2434	FY24-28 LSM Secondary Systems Renewal
N2433	FY24-28 TOM Secondary Systems Renewal
N2432	FY24-28 GN2 Secondary Systems Renewal
N2431	FY24-28 NAM Secondary Systems Renewal
N2430	FY24-28 FB2 Secondary Systems Renewal
N2429	FY24-28 VP1 Secondary Systems Renewal
N2428	FY24-28 CW2 Secondary Systems Renewal
N2427	FY24-28 RGV Secondary Systems Renewal
N2426	FY24-28 WW1 Secondary Systems Renewal
N2419	FY24-28 PMA Secondary Systems Renewal
N2411	FY24-28 WL1 Secondary Systems Renewal
N2410	FY24-28 FNY Secondary Systems Renewal
N2409	FY24-28 KS2 Secondary Systems Renewal
N2408	FY24-28 AR1 Secondary Systems Renewal
N2407	FY24-28 BRD Secondary Systems Renewal
N2406	FY24-28 GNS Secondary Systems Renewal
N2405	FY24-28 LT1 Secondary Systems Renewal
N2214	FY24-28 ER0 Secondary Systems Renewal
N2213	FY24-28 BER Secondary Systems Renewal
N2212	FY24-28 SE1 Secondary Systems Renewal
N2211	FY24-28 YSN Secondary Systems Renewal