OPTIONS EVALUATION REPORT (OER)

FY24-28 Multiplexer Renewal Program

OER- N2441 revision 0.0

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

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

Approvals

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Change history

Revision	Date	Amendment
0	1/11/2021	First Issue

Executive summary

TransGrid currently utilises Synchronous Digital Hierarchy (SDH) technology across the optical fibre and microwave telecommunications networks as the main backbone for data transmission between TransGrid substations, offices and depots, network control rooms and data centres. Representing a subset of TransGrid's multiplexer systems asset base (holistically comprising duplicate 'A' and 'B' schemes), there are currently 110 locations with 'B' system multiplexers under consideration for this Need. The systems have installation dates from 2005.

Communication services that traverse across the SDH network include Protection, SCADA, Operational Telephony, Corporate Data, and the Substation Security Zone that are critical in maintaining a safe, secure and reliable transmission network. The fleet of SDH multiplexers are a core component of TransGrid's communications network and are required into the foreseeable future.

A number of 'B' system multiplexers are reaching end of life by 2027/28. Manufacturer support for the identified assets is limited or withdrawn, meaning that repair and replacement facilities are expected to be unavailable by 2027/28.

There is a need to address deteriorating 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 'B' system multiplexers evaluated as NPV positive, and reaching end of life by 2027/28.

Under the Base Case TransGrid continues to operate and maintain the existing assets across various sites as required. This approach will not address the obsolescence and health of these ageing assets.

Table 1 - Evaluated options ($ million)

Option	Description	Direct capital cost	Network and corporate overheads	Total capital cost[1]	Weighted NPV	Rank
Option A – N2441A	Renewal of Individual Assets Like-for-like replacement whereby the asset is replaced by its modern equivalent.	7.32	1.59	8.91	6.02	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

TransGrid currently utilises Synchronous Digital Hierarchy (SDH) technology across the optical fibre and microwave telecommunications networks as the main backbone for data transmission between TransGrid substations, offices and depots, network control rooms and data centres. Representing a subset of TransGrid's multiplexer systems asset base (holistically comprising duplicate 'A' and 'B' schemes), there are currently 110 locations with 'B' system multiplexers under consideration for this Need. The systems have installation dates from 2005

Communication services that traverse across the SDH network include Protection, SCADA, Operational Telephony, Corporate Data, and the Substation Security Zone that are critical in maintaining a safe, secure and reliable transmission network. The fleet of SDH multiplexers are a core component of TransGrid's communications network and are required into the foreseeable future.

A number of 'B' system multiplexers are reaching end of life by 2027/28. Manufacturer support for the identified assets is limited or withdrawn, meaning that repair and replacement facilities are expected to be unavailable by 2027/28.

TransGrid's assets are classified as a Data Communication Provider, Data Communications Facility and Intervening Facility under the Power System Data Communication Standard (PSDCS) to meet clause 4.11.2(a) of the NER. This standard places an obligation on TransGrid to provide high reliability data communication services to support the power system security of the network.

Additionally, the Network Performance Requirements set out in Schedule 5.1 of the NER, place an obligation on TNSPs to meet critical clearance times for protection services 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, to ensure that a fault of any type anywhere on its transmission system is automatically disconnected.

Though the replacement of failed 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 spares are depleted due to ceased manufacturer support, 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 Telecommunications Systems[2], a pre-emptive approach to asset renewals is required to address several factors increasing the risk of identified assets including:

- increasing probability of failure
- end of serviceable life
- obsolete technology
- withdrawal of manufacturer support for repair and procurement
- depletion of spares

Addressing this need upholds the capital expenditure objectives in the NER Clause 6A.6.7 (a), in particular it will:

1. maintain the quality, reliability and security of supply of prescribed transmission services; and
2. maintain the reliability and security of the transmission system through the supply of prescribed transmission services

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

2. Related needs/opportunities

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

- N2442 – FY24-28 Microwave Renewal
- N2487 – FY24-28 Rack Power Supply Renewal
- N2486 – FY24-28 NiCd Battery and Charger Renewal
- N2550 – FY24-28 OPGW Rollout

3. Options

3.1 Base case

The Base Case for this Need is to continue with TransGrid's current operations and maintenance (O&M) plan 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. Failures are the result unrepairable internal electronic subcomponents requiring the replacement of complete assets.
- TransGrid's decreasing ability to effectively recover from asset failure due to no manufacturer support and increasing unavailability of spares over time, increases the 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 are prone to mechanical wear, increasing the likelihood of a hazardous event occurring.

Increasing maintenance on the identified equipment cannot reduce the probability of failure or reduce risk costs. This is because the conduct of maintenance of these assets at an electronic component level is neither feasible nor practicable.

3.2 Options evaluated

Option A — Renewal of Individual Assets [NOSA N2441, OFS N2441A]

This option involves renewal of 'B' system Primary and Secondary SDH multiplexers and PDH multiplexers across 110 locations within the regulatory period. The option is based on a like-for-like approach whereby the asset is replaced by its modern equivalent. The new 'B' system multiplexers include both functions of SDH and PDH; as a result, PDH multiplexers are no longer required. 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 obsolescence and 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. Targeted assets will be in service for approximately 15 years, with some assets remaining in the network to incur investment in future years.

Renewal of each 'B' system multiplexer will require the following equipment:

- New multiplexer units and communication cards

- New racks for installation of multiplexer equipment
- New power distribution units
- New AC and DC power cabling
- New alarms and monitoring cabling

3.3 Options considered and not progressed

Table 2 - Options not progressed

Option	Reason for not progressing
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 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 - Scenarios

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 - Parameters used in commercial evaluation

Parameter	Parameter Description	Value used for this evaluation
Discount year	Year that dollar values are discounted to	2020/21

Parameter	Parameter Description	Value used for this evaluation
Base year	The year that dollar value outputs are expressed in real terms	2020/21 dollars
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 (PV, $ million)

Option	Capital Cost PV	Central scenario NPV	Lower bound scenario NPV	Higher bound scenario NPV	Weighted NPV	Ranking
Option A	7.06	4.98	-1.40	15.51	6.02	1

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. The need for replacement of the identified assets is not driven by these risks and there is no quantifiable safety risk reduction by addressing the condition of these assets.

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 enabling TransGrid to continue meeting its regulatory obligations set out in PSDCS and 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 those components with no manufacturer support and limited spares carry the potential for incurring aspects of the proposed capital expenditure as operational expenditure. In such a scenario these larger costs are attributed to significant design and preparation costs, and likely augmentation of linking systems required to move a system from one design solution to a differing 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: $1.59 million
- Annualised cost: $0.85 million

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

6. Recommendation

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

The total project cost associated with this option is $8.91 million including an amount of $1.10 million to progress the project from DG1 to DG2.

Appendix A – Option Summaries

Table 6 - Option A Summary Analysis

Project Description	**Multiplexer Renewal Program**		
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, $m)	4.98	Annualised CAPEX @ Central Benefit Scenario ($m)	Annualised Capex - Standard (Business Case) 0.85
NPV @ Lower Bound Scenario (PV, $m)	-1.40	Network Safety Risk Reduction ($m)	Network Safety Risk Reduction 0.00
NPV @ Higher Bound Scenario (PV, $m)	15.51	ALARP	ALARP Compliant? NA
NPV Weighted (PV, $m)	6.02	Optimal Timing	Optimal timing (Business Case) 2023/24
Cost (Central Scenario)			
Total Capex ($m)	8.91	Cost Capex (PV,$m)	7.06
Terminal Value ($m)	0.00	Terminal Value (PV,$m)	0.00
Risk (Central Scenario)	Pre	Post	Benefit
Reliability (PV,$m)	Reliability Risk (Pre) 0.00	Reliability Risk (Post) 0.00	Pre – Post 0.00
Financial (PV,$m)	Financial Risk (Pre) 0.00	Financial Risk (Post) 0.00	Pre – Post 0.00
Operational/Compliance (PV,$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) 0.00	Total Risk (Post) 0.00	Pre – Post 0.00
OPEX Benefit (PV,$m)			OPEX Benefit 0.00
Other benefit (PV,$m)			Incremental Net Benefit 12.04
Total Benefit (PV,$m)			Business Case Total Benefit 12.04

Appendix B – Asset Renewal Program

The following table provides a summary of the individual option evaluations of the communication links evaluated under Option A of this OER. Renewal analysis has been established at a site level, each site evaluated may include one or more individual multiplexers dependent on the site specific configuration. A site 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.

Location	Container	Replacement Type	Cost[3]	Weighted NPV	Optimal Timing
Metro /AVS /MCR	MUX A/B Rack	New Mux-B	$79,280	$113,034	2023/24
Metro /BF1 /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Metro /BFN /MCB2	COMMS A&B MUX Rack	New Mux-B	$79,280	$113,034	2023/24
Metro /BFS /MCB1	COMMS A&B MUX Rack	New Mux-B	$79,280	$113,034	2023/24
Metro /DPT /MCB	COMMS A&B MUX Rack	New Mux-B	$79,280	$113,034	2023/24
Metro /DPT /MCR	ADR/FMX B Rack (B20 R5)	New Mux-B	$79,280	$113,034	2023/24
Metro /HLD /MCB1	COMMS A&B MUX Rack	New Mux-B	$79,280	$113,034	2023/24
Metro /HLD /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Metro /HYM /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Metro /ING /MCR	FMX A/B Rack	New Mux-B	$79,280	$113,034	2023/24
Metro /KCK /MCR	ADR B Rack	New Mux-B	$79,280	$113,034	2023/24
Metro /KVS /MCR	FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Metro /LP1 /MCR	FMX12 A/B Rack	New Mux-B	$79,280	$113,034	2023/24
Metro /MAC /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Metro /RGV /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Metro /RWR /MCB1	COMMS A&B MUX Rack	New Mux-B	$79,280	$113,034	2023/24
Metro /RWR /MCB2	COMMS A&B MUX Rack	New Mux-B	$79,280	$113,034	2023/24
Metro /RWR /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Metro /SE1 /MCR	ADR/FMX B Rack (B2 R5)	New Mux-B	$79,280	$113,034	2023/24
Metro /SYN /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Metro /SYS /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Metro /SYW /MCR	ADR B RACK	New Mux-B	$79,280	$113,034	2023/24
Metro /SYW /SSB1	MULTIPLEXER CUBICLE	New Mux-B	$79,280	$113,034	2023/24

[3] The cost provided is the unitised cost only. It does not include the one off development costs (refer to OFS-N2441A)

Location	Container	Replacement Type	Cost[3]	Weighted NPV	Optimal Timing
Metro /VYD /MCR	FMX A&B Rack	New Mux-B	$79,280	$113,034	2023/24
Newcastle /BAY /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Newcastle /ER0 /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Newcastle /LD1 /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Newcastle /MN1 /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Newcastle /MRK /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Newcastle /NEW /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Newcastle /NTH /MCR	ADR A&B Rack	New Mux-B	$79,280	$113,034	2023/24
Newcastle /PMQ /MCR	SLF & FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Newcastle /SOM /RRS	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Newcastle /TGH /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Newcastle /TOM /132MCB	COMMS A&B MUX Rack	New Mux-B	$79,280	$113,034	2023/24
Newcastle /TOM /330MCB	COMMS A&B MUX Rack	New Mux-B	$79,280	$113,034	2023/24
Newcastle /TOM /330MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Newcastle /TRE /MCR	SLF A and MUX RACK	New Mux-B	$79,280	$113,034	2023/24
Newcastle /VP1 /132SSB(1-4)	MULTIPLEX CUBICLE	New Mux-B	$79,280	$113,034	2023/24
Newcastle /VP1 /330SSB(5-6)	MULTIPLEX CUBICLE	New Mux-B	$79,280	$113,034	2023/24
Newcastle /VP1 /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Newcastle /WRH /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Orange /BER /MCR	MUX RACK	New Mux-B	$79,280	$113,034	2023/24
Orange /MNL /MCR	MUX RACK	New Mux-B	$79,280	$113,034	2023/24
Orange /MOL /CTRL	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Orange /MPP /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Orange /MTP /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Orange /ONO /MCB1	COMMS A&B MUX Rack	New Mux-B	$79,280	$113,034	2023/24
Orange /ONO /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Orange /ORG /MCB1	COMMS A&B MUX Rack	New Mux-B	$79,280	$113,034	2023/24
Orange /PKS /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24

Location	Container	Replacement Type	Cost[3]	Weighted NPV	Optimal Timing
Orange /PMA /MCR	MUX RACK	New Mux-B	$79,280	$113,034	2023/24
Orange /WL1 /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Orange /WOL /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Orange /WW1 /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Orange /WWS /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Orange /WWS /SSB1	COMMS A&B MUX Rack	New Mux-B	$79,280	$113,034	2023/24
Orange /WWS /SSB2	COMMS A&B MUX Rack	New Mux-B	$79,280	$113,034	2023/24
Tamworth /AR1 /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Tamworth /BGE /MCR	MUX RACK	New Mux-B	$79,280	$113,034	2023/24
Tamworth /BOS /MCR	MUX RACK	New Mux-B	$79,280	$113,034	2023/24
Tamworth /COF /MCR	MUX RACK	New Mux-B	$79,280	$113,034	2023/24
Tamworth /DMQ /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Tamworth /GFT /ASB	MUX RACK	New Mux-B	$79,280	$113,034	2023/24
Tamworth /GN2 /MCR	ADR/FMX A RACK	New Mux-B	$79,280	$113,034	2023/24
Tamworth /INV /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Tamworth /KLK /MCR	MUX RACK	New Mux-B	$79,280	$113,034	2023/24
Tamworth /KS2 /MCR	MUX RACK	New Mux-B	$79,280	$113,034	2023/24
Tamworth /LSM /MCR	MUX RACK	New Mux-B	$79,280	$113,034	2023/24
Tamworth /MVL /MCR	MUX RACK	New Mux-B	$79,280	$113,034	2023/24
Tamworth /NAM /MCR	MUX RACK	New Mux-B	$79,280	$113,034	2023/24
Tamworth /RAL /MCR	MUX RACK	New Mux-B	$79,280	$113,034	2023/24
Tamworth /TA1 /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Tamworth /TMW /MCR	MUX B RACK	New Mux-B	$79,280	$113,034	2023/24
Tamworth /TMW /SSB1	MUX RACK	New Mux-B	$79,280	$113,034	2023/24
Tamworth /TMW /SSB2	MUX RACK	New Mux-B	$79,280	$113,034	2023/24
Tamworth /WRK /MCR	MUX RACK	New Mux-B	$79,280	$113,034	2023/24
Wagga /BKH /MCR	ADR/FMX A Rack	New Mux-B	$79,280	$113,034	2023/24
Wagga /BRD /MCR	MUX RACK B6	New Mux-B	$79,280	$113,034	2023/24
Wagga /BRG /MCR	MUX RACK	New Mux-B	$79,280	$113,034	2023/24
Wagga /DNT /MCR	MUX RACK	New Mux-B	$79,280	$113,034	2023/24
Wagga /HYR /MCR	MUX /ODF RACK	New Mux-B	$79,280	$113,034	2023/24

Location	Container	Replacement Type	Cost[3]	Weighted NPV	Optimal Timing
Wagga /JDA /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Wagga /WG1 /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Wagga /WG2 /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Wagga /WG2 /SSB1	COMM A&B MUX RACK	New Mux-B	$79,280	$113,034	2023/24
Wagga /WGC /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Wagga /WOD /WOTS	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Yass /BBY /MCR1	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Yass /BBY /MCR2	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Yass /CA1 /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Yass /CWF /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Yass /ELS /RRS	SLF B Rack >MRN	New Mux-B	$79,280	$113,034	2023/24
Yass /GUL /RRS	SLF B Rack >MGY	New Mux-B	$79,280	$113,034	2023/24
Yass /GUR /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Yass /GUR /SSB1	COMMS A&B MUX Rack	New Mux-B	$79,280	$113,034	2023/24
Yass /HHR /RRS	ADR B Rack	New Mux-B	$79,280	$113,034	2023/24
Yass /LT1 /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Yass /M2P /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Yass /MGY /RRS	SLF B Rack >GUR	New Mux-B	$79,280	$113,034	2023/24
Yass /MRN /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Yass /MUR /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Yass /SDL /MCR	MUX RACK	New Mux-B	$79,280	$113,034	2023/24
Yass /UT1 /ASB	LOOP B Rack	New Mux-B	$79,280	$113,034	2023/24
Yass /UT1 /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Yass /UT1 /SHL GSS	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Yass /UT1 /SSB	COMMS A&B MUX Rack	New Mux-B	$79,280	$113,034	2023/24
Yass /WDL /MCB1	COMMS A&B MUX Rack	New Mux-B	$79,280	$113,034	2023/24
Yass /WDL /MCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24
Yass /YSN /NCR	ADR/FMX B Rack	New Mux-B	$79,280	$113,034	2023/24