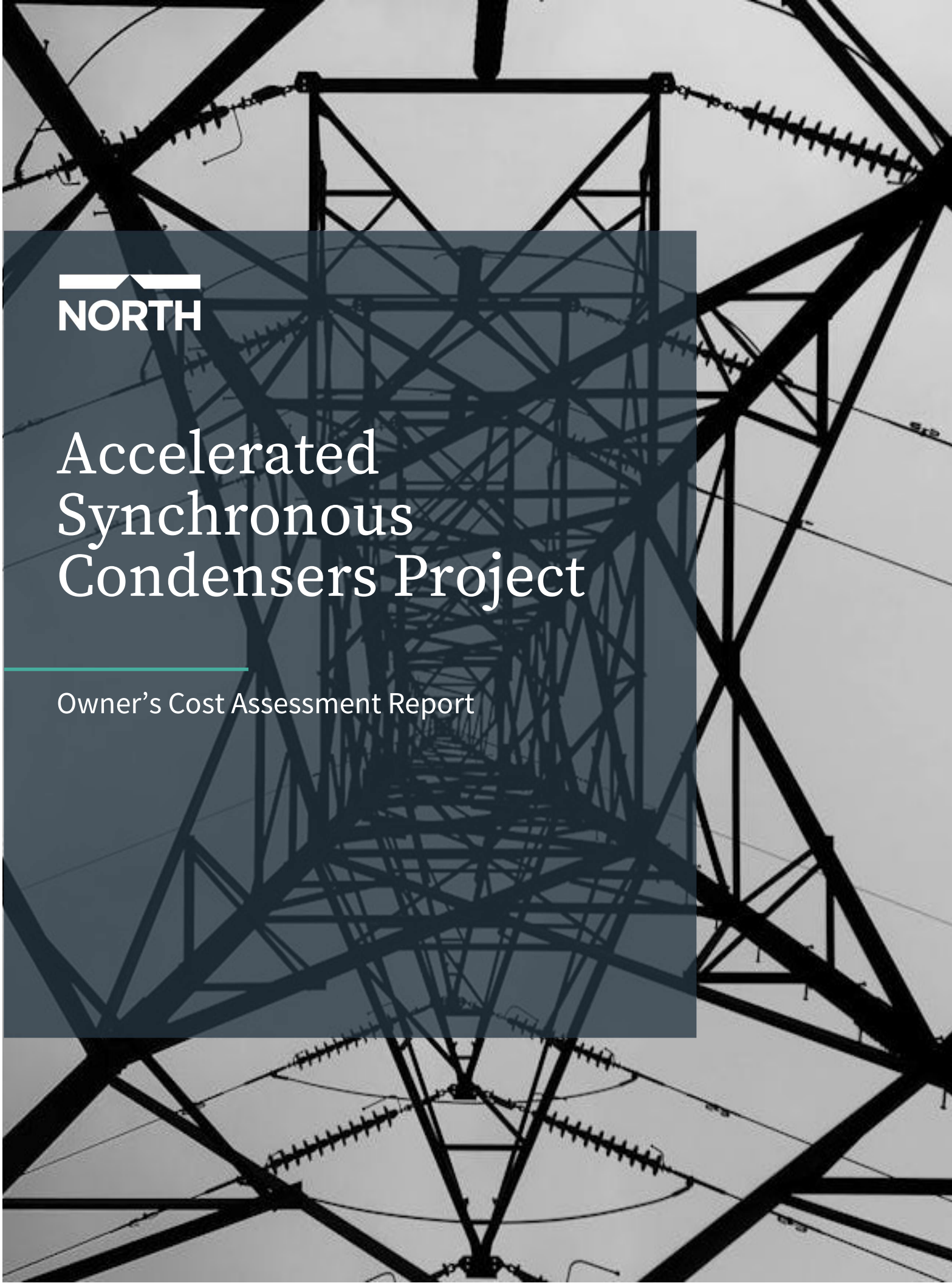

NORTH

Accelerated Synchronous Condensers Project

Owner's Cost Assessment Report

NORTH

Commercial in Confidence

DOCUMENT CONTROL INFORMATION

Document Name: Accelerated Synchronous Condensers Project Owner's cost Assessment

North Projects Document Number: PQLDAU002-250207

Client: Transgrid

Client Contact: Matthew Sherratt

REVISION HISTORY

Revision	Detail / Status	Author	Checked	Approved	Date
V01	Draft – issued for comment.	NA	JF	DG	06-Feb-2026
V02	Cost comparisons broken down further	JF	JS	AS	16-Feb-2026
V03	Updated based on revised Owners costs estimate	JS	JF	AS	12-Mar-2026
V04	Minor adjustments to re allocate Insurance, Equipment and property cost to allow for improved benchmark comparison.	JF	JS	AS	16-Mar-2026
V05	Additional commentary added to sections 6 and 7.	JF	JS	AS	18-Mar-2026
V06	D & C Costs reduced by $1m. Minor commentary changes.	JS	JF	AS	25-Mar-2026
V07	Early development and consultation costs commentary revised.	JF	JS	AS	26-Mar-2026

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1. INTRODUCTION

The retirement of NSW's coal generators and the growth in inverter-based resources in the coming decade is driving an urgent need to add new sources of system strength to the power system. From December 2025 System Strength Service Providers must proactively deliver system strength services to maintain the secure operation of the power system and to support the stable operation of new inverter-based resources.

A network without adequate system strength will result in stability issues. In a system with low system strength:

- generators may be unable to remain connected during disturbances on the power system.
- control of the system voltage becomes more difficult; and
- protection systems that ensure safe operation of the network may not operate correctly.

Gaps in system strength grow as coal units retire.

Transgrid's obligations are driven by AEMO's minimum fault level requirements at each system strength node, plus AEMO's annual inverter-based resource forecasts which are driven by the Integrated System Plan.

AEMO has determined that minimum fault level requirements must be delivered by devices that can provide protection-quality levels of fault current – such as new synchronous condensers.

Transgrid determined that five (5) Synchronous Condensers are required at Newcastle, Kemps Creek,

Armidale, Wellington and Darlington Point. Transgrid's procurement approach is to award a Synchronous Condenser Supply contract and a separate Design and Construct (Associated Works) Contract.

Transgrid has awarded the Synchronous Condenser Supply Contract for the design, supply, delivery installation and commissioning of the Synchronous Condenser equipment to GE Vernova.

Transgrid has now received the tender submissions for the Associated Works contract and is progressing with the evaluation of the two shortlisted tenderers.

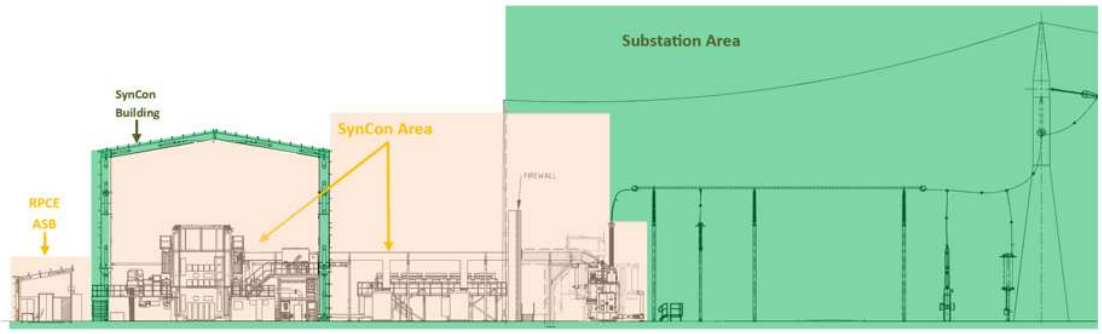
The Associated Works Contract includes all works to prepare Transgrid's five (5) substation sites (Newcastle, Kemps Creek, Armidale, Wellington and Darlington Point) for the delivery and installation of synchronous condensers.

2. PROJECT SCOPE

The Accelerated Synchronous Condensers project requires the installation of five (5) Synchronous Condensers at various locations across the NSW Transmission Network. The identified locations are:

1. Newcastle
2. Kemps Creek
3. Armidale
4. Wellington
5. Darlington Point

The typical layout of each Synchronous Condenser is as illustrated below:



Transgrid has decided to divide each scope into two packages:

- Synchronous Condenser Supplier
- Associated Works Contract

The division of responsibilities is as per below:

Supply and LTSA

1

Supplier

Scope: Design, supply, deliver, install, test and commission synchronous condensers , RPCE building, modelling and registration
Contract: Supply contract
Scope: Long-term Service
Contract: Long-term Service Agreement
Route to Market: Select tender (RFT)

Enabling Works

2

D&C Contractor

Scope: Enabling works – bay extension, bulk earthworks, foundations, conduits, fencing, synchronous condenser building, earthgrid, secondary systems installation
Contract: Lump Sum (D&C)
Route to Market: Select tender (RFT)

Operation and Maintenance

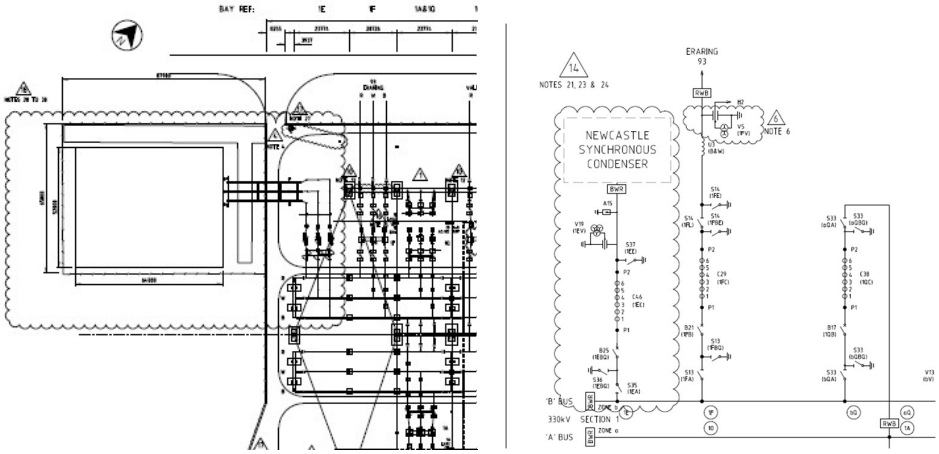
3

Transgrid

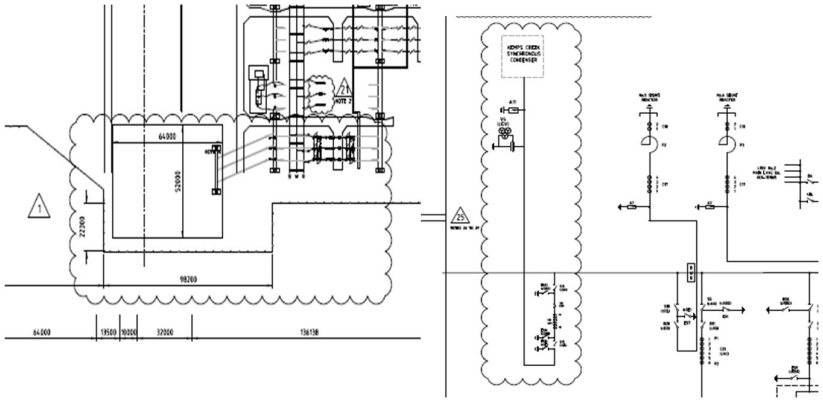
Scope: Connection to Network, Operation and day-to-day maintenance.
Route to Market: N/A

The specific scope of work for each of the five (5) sites is illustrated in the General Arrangements and Single Line Diagrams below:

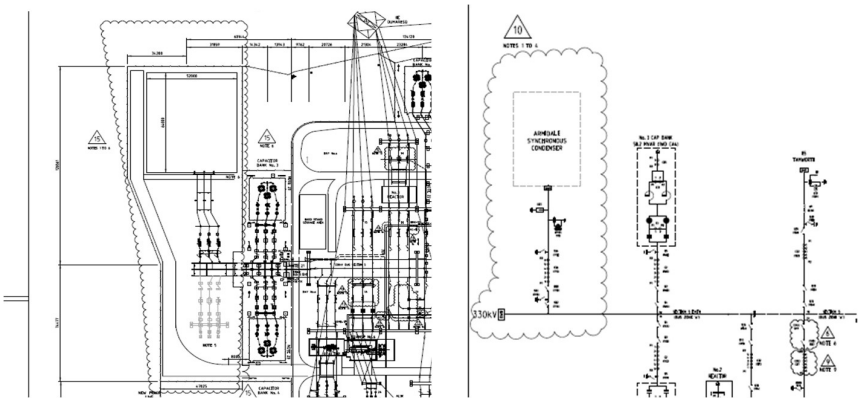
Newcastle – 330kV Connection



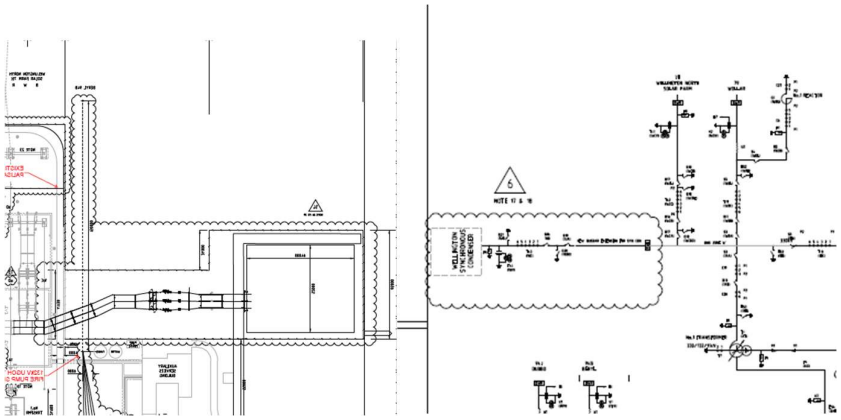
Kemps Creek – 500kV Connection



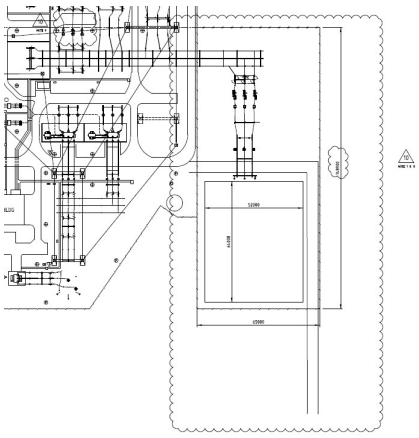
Armidale – 330kV Connection

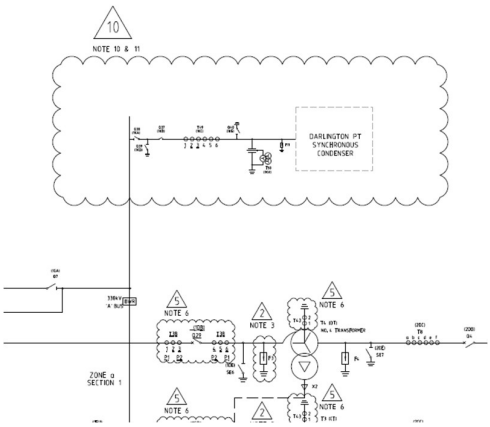


Wellington – 330kV Connection



Darlington Point – 330kV Connection





3. NORTH PROJECT ROLE

North Projects have been engaged by Transgrid to undertake an independent review of the Transgrid Estimate for the Accelerated Synchronous Condenser Project. The scope of North Projects' owner's cost review includes:

- Review Transgrid Organisations Chart
- Review Transgrid Program
- Review Transgrid Internal costs
- Provide Recommendations

4. TRANSGRID PROGRAM

[redacted]

5. DOCUMENTS PROVIDED BY TRANGRID

Transgrid has provided the following documents for the purpose of assessing the Owner's costs:

- Transgrid – Accelerated Syncons – Labour and Overhead Costs 02.03.2026
- Additional Cost Review – 16.03.2026
- Forecast Model - P0030217 - Acc Syncons Jan 2026-North
- SynCon Team Org Chart Jan 2026
- 20260109_ASC_Full Program Status to 20.12.2025
- 20260109_ASC_Summary Program Status to 20.12.2025

North Projects has examined the documents listed above as part of the Project owner's cost review. A summary of Transgrid's costs, based on the information provided, is presented in **Table 2** below.

Item	Description	Total Costs
Transgrid Project Capital Costs (excluding equity raising costs)		**$ 1,118.3M**
1.0	**Direct Costs**	**$ 928.5M**
	[redacted]	
	Equipment Costs (Non-contestable)	$ 10.3M
2.0	**TG Staff and Consultants**	**$ 189.8M**
2.1	TG Project Management	$ 83.6M
	Project Delivery Management - Project Management	$ 56.5M
	Project Delivery Management - Project Controls	$ 17.7M
	Project Delivery Management - Commercial Management	$ 9.4M
2.2	Project Delivery Management - Construction Management	$ 33.0M
2.3	Project Delivery Management - Commissioning	$ 25.0M
2.4	Project Development - Design	$ 17.8M
	Project Delivery Management - Project Engineering	$ 2.4M
	Project Development	$ 15.5M
2.5	Other	$ 30.4M
	Community and Stakeholder Engagement	$ 0.2M
	Fleet	$ 0.1M
	Fleet Costs (Non-contestable)	$ 0.6M
	Land and Environment	$ 5.8M
	Regulatory Approvals	$ 2.1M
	Transaction Procurement Support	$ 4.4M
	Other Support & Corporate Roles	$ 17.3M
	Insurance	$ 9.3M
Other Costs		**$ 31.9M**
3.1	Early development and consultation costs[1]	$ 17.0M
3.2	Non-contestable Costs	$ 14.9M
	Property Costs - Easement at Armidale	$ 0.05M

Item	Description	Total Costs
	Building Costs - Spare Parts Building	$ 7.1M
	Infrastructure Planner Fees	$ 7.8M
Total Project Cost[2]		**$ 1,159.4M**

1 Early development costs have been excluded from the Capex totals for the purpose of benchmarking as these cost costs are excluded from reference projects (e.g. system modelling and RIT-T consultation).

2 Excludes labour escalation costs.

Total Transgrid labour, staff and consultant costs amount to $189.8 million. To support comparative assessment, these costs have been allocated in accordance with the table below.

Table 3 Transgrid Staff and Consultants Costs

Item	Description	Cost
1	Design	$17.8M
2	Project Management (Includes project controls, procurement & logistics)	$83.6M
3	Site Management	$33.0M
4	Commissioning	$25.0M
5	Other	$30.4M

6. NORTH PROJECTS REVIEW AND OBSERVATIONS

After reviewing the provided documents and associated cost information, the following observations have been formed when assessed against relevant industry benchmarks.

6.1. Principal Staff and Consultants

Table 4 presents the ratio of Principal Staff and Consultant costs to Construction costs, providing a comparative benchmark assessment by North Projects.

Table 4 Syncon Project Principals Staff and Consultants

Principals Cost Metric	Benchmark reference	Estimate
Transgrid Principal Staff and Consultant's cost	OEM + D &C + LTSA spares + Equipment	$189.8M / $928.5M = 20.4%

For the purposes of this benchmarking assessment, 'construction cost' has been taken as the sum of OEM Costs, D&C Costs, LTSA capital spares and Equipment Costs, being the base construction cost used for comparison of principal staff and consultant costs with other Power Transmission and Infrastructure projects.

The Transgrid Project Staff and Consultants costs include the design and commissioning of reactive plant control systems, as well as the management of the Synchronous Condenser Supplier (GE Vernova) and the associated works contracts across five (5) sites.

[Client Owners Team + Consultants] / [Construction Cost] is a common ratio used for benchmarking projects.

Table 5 below provides a comparative assessment of the Accelerated Synchronous Condenser project relative to reference projects with commensurate scope and/or scale.

Table 5 Principals Staff and Consultants Cost Comparison

Project	Description	[Principal Staff + 3rd Party Consultant Cost] / [Construction Cost] ratio	North comment
TG SynCon	HV Transmission	20%	Includes Greenfield and Brownfield work across 5 Sites
Project A	HV Transmission	19%	Largely existing alignment and easements.
Project B	Brownfield Rail	19%	Existing alignment but required some land resumptions. Very complex utility services.
Project C	Regional Rail	23%	Largely Greenfield alignment requiring new rail corridor.
Project D	HV Transmission	13%	Greenfield alignment requiring new easements
Project E	HV Transmission	21%	Largely existing alignment and easements. Multiple complex brownfield substations in scope.

North Projects' benchmarking indicates that Transgrid's Principal Staff and Consultant costs are consistent with typical industry benchmarks for comparable projects.

North Projects' have reviewed Transgrid's proposed organisational structure and the overall staffing appears reasonable when compared to other similar sized projects, however the staffing mix could be adjusted to include more dedicated civil engineering and commissioning resources without increasing the overall headcount.

A more detailed comparative assessment was made with other Power and Infrastructure projects for Design, Project Management, Site Management and Commissioning Costs as detailed in the subheadings below.

This more detailed breakdown should be viewed with caution as the comparable projects have different characteristics such as location, number of sites and commercial model.

6.2. Principals Design

Table 6 Principals Design Cost Benchmarks

Project	Description	[Principal Design Cost] / [Construction Cost] ratio	North comment
Accelerated SynCon	HV Transmission	1.9%	Includes Greenfield and Brownfield work across 5 sites with 1 x Syncon supplier and 2 x Design and Construct Contractor packages
Project D	HV Transmission	1.2%	Largely existing alignment and easements.
Project E	HV Transmission	1.3%	Includes Multiple complex brownfield substations in scope.
Project F	Regional Road	1.0%	New greenfield environment.

While the design cost ratio is higher than other projects the ratio is reasonable when considering the additional design effort required to co-ordinate interfaces for two (2) Design and Construct Contractors, the Synchronous Condenser supplier and Brownfields Substation expansion works across five (5) sites.

If the complex interfaces are not adequately managed during the design process this greatly increases the risk of scope gaps, design inconsistency, rework, delays to procurement and construction, commissioning delays and unclear responsibility between delivery parties.

6.3. Principals Project Management

Table 7 Principals Project Management Cost Benchmarks

Project	Description	[Principals Project Management Cost] / [Construction Cost] ratio	North comment
Accelerated SynCon	HV Transmission	9.0%	Includes Greenfield and Brownfield work across 5 Sites.
Project E	HV Transmission	12.0%	Includes Multiple complex brownfield substations in scope.
Project F	Regional Road	7.3%	New greenfield environment.

The principals project management cost ratio is reasonable when compared with other projects with the ratio lying approximately mid-way between the two reference projects. Project management effort is required to manage two (2) Design and Construct Contractors, one (1) Synchronous Condenser supplier and Brownfields Substation expansion works across five (5) sites.

6.4. Principals Site Management

Table 8 Principals Site Management Cost Benchmarks

Project	Description	[Principals Site Management Cost] / [Construction Cost] ratio	North comment
Accelerated SynCon	HV Transmission	3.6%	Includes Greenfield and Brownfield work across 5 sites with 1 x Syncon supplier and 2 x Design and Construct Contractor packages
Project E	HV Transmission	3.2%	Largely existing alignment and easements.

The principals site management ratio is slightly higher than the comparable project, however this is considered reasonable as site management is required across five (5) locations and the scope includes upgrade work inside live substations with addition supervision, safety and outage co-ordination effort required.

6.5. Principals Commissioning

Table 9 Principals Commissioning Cost Benchmarks

Project	Description	[Principals Commissioning Cost] / [Construction Cost] ratio	North comment
Accelerated SynCon	HV Transmission	2.7%	Some resources could be transferred to Commissioning.
Project E	HV Transmission	3.3%	Largely existing alignment and easements.

The principals commissioning cost ratio is lower than the comparable project which is reasonable as the commissioning effort is slightly reduced due to the Synchronous Condenser commissioning being the responsibility of the supplier. Some additional commissioning effort is required to integrate brownfields substation expansion works across five (5) sites.

7. CONCLUSION

North Projects has reviewed the principals cost ratios for the Accelerated Synchronous Condensers Project and compared these against other Power Transmission, Rail and Road projects. It was found that the overall principal's staff and consultant costs were 20% of construction costs which is 1% above the median of five (5) comparable projects and considered reasonable.

Key cost elements that make up principal's staff and consultants were also reviewed with the following findings:

- Principals Design costs are 1.9% of construction costs which is 0.7% above the median of three (3) comparable projects. This is reasonable when considering the additional design effort required to co-ordinate interfaces for two (2) Design and Construct Contractors, the Synchronous Condenser supplier and Brownfields Substation expansion works across five (5) sites.
- Principals Project Management is 9% of construction costs which is 0.6% below the median of two (2) comparable projects which is considered reasonable.
- Principals Site Management is 3.6% of construction costs which is 0.4% above the comparable project benchmark. This is reasonable when considering site management is required across five (5) locations and the scope includes upgrade work inside live substations with additional supervision, safety and outage co-ordination effort required.
- Principals Commissioning is 2.7% of construction costs which is 0.6% below the comparable project and considered reasonable.

In summary North Projects' benchmarking indicates that Transgrid's Staff and Consultant costs are consistent with typical industry benchmarks for comparable projects. North deems the delivery model requires significant owner-side co-ordination across the Synchronous Condenser supplier, the Associated Works contractors and Transgrid's brownfield substation interfaces across five (5) sites. On this basis, the allowance appears to represent a reasonable provision for owner-side management, design co-ordination, site supervision and commissioning support.

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