ABERDEEN GLOBAL INFRASTRUCTURE GP LTD

PROJECT MOORE - VENDOR DUE DILIGENCE

Queensland New Generation Rollingstock – Technical Adviser's Report

FINAL
OCTOBER 2020

CONFIDENTIAL

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EXECUTIVE SUMMARY

WSP has been appointed by Aberdeen Global Infrastructure GP Ltd to undertake Vendor technical due diligence on Project Moore, which consists of four projects (one healthcare project, one water treatment plant project, one rolling stock project and one light rail project). Our technical due diligence has concentrated on the technical principles and risk transfer of the portfolio of assets, identifying the fundamental commercial, construction and operational issues that exist from a technical perspective.

All Dollar values in this report are given in Australian Dollars unless otherwise stated.

Our report utilises a RAG risk reporting system. The Red, Amber and Green Flag definitions are as follows:

Table 1 - RAG Definitions

Definition	Risk Category
Red Flag: Material technical issue identified at the time of review, the Client should consider the implication of this risk in their price and its potential impact on equity. Strong asset management required to ensure the risk is managed and mitigated. This would be considered as a material risk until such time as it is mitigated or there is a robust management plan in place to mitigate it.	
Amber Flag: A technical issue has materialised at the time of the review, which has the potential to impact on project performance and equity if not managed appropriately. Will require the project parties to work together and implement a rectification plan, or a rectification plan is required to be produced. Potential for deterioration of key project relationships if not managed appropriately, however typical security provisions e.g. defects liability, PCG's are in place.	
Green Flag: No known material technical issues identified at the time of the review that could have a detrimental impact on project performance. Issues identified at the time of the review are considered to be manageable to an experienced investor. Typical security provisions e.g. defects liability, PCG's are in place.	

	Description / Key Points	Red / Amber / Green
Construction Matters	The D&D (Design and Delivery) Subcontractor (Bombardier Transportation Australia) has extensive experience in designing and delivering rolling stock in Australia and internationally. The construction phase of the project is largely complete: ▪ The maintenance depot received its construction completion certificate on 10th June 2016. ▪ Simulator Final Acceptance was achieved on 13th December 2019.	

	▪ As of 24th September 2021, all 75 units had received their Final Acceptance Certificates. Qtectic has submitted an application for Initial Fleet Acceptance and expect a response from the State on 12th September 2020. Outstanding technical issues relating to on-board odour may delay Initial Fleet Acceptance (IFA). Deductions from Availability Payments in respect to delayed Initial Fleet Acceptance events are passed through from the State to the D&D Subcontractor.	
Operational Service Delivery	The operational service delivery is reported as good in recent months, deductions are minimal with the asset comfortably operating within the contractual trigger levels that may give rise to termination of the Contract.	
Availability Payment and Performance Adjustment Cap	Revenue is generated through an availability-based payment mechanism. The payment mechanism and performance measurement system pose no undue risk beyond standard market principles. Operational delivery risk has been passed down to the Service Provider subject to a Performance Adjustment Cap. The ratio of abatement to availability payment before abatement averaged 6.7% for the 12 months to August 2020, although this is above the industry benchmark of 3%, it leaves headroom to the Performance Adjustment Cap.	
Service Provider Replacement	If the Service Provider has to be replaced during the contract term, WSP considers that a suitable replacement with the correct technical capability could be found. Market dynamics at the time of replacement will dictate any cost increases associated with the new contract. In the event that the Service Provider has to be replaced we consider that the Termination Cap represents a manageable risk to allow for their replacement. This is based on current market conditions.	
COVID-19 impact	WSP's reviews of the Qtectic board reports identified that the Project Co is taking a pro-active approach to monitoring and reacting to the COVID-19 pandemic. WSP advises that Qtectic continues to monitor Bombardier for supply chain and operational issues arising from the COVID-19 pandemic, as concerns have been raised by the Independent Certifier. The contractual structure of the PPP means that Qtectic is not exposed to revenue risk for the fleet in service as ridership on public transport drops due to the pandemic.	
Future Fleet Requirements	The delivery of the Cross River Rail Project will change the operation of the NGR fleet. Qtectic should take pro-active steps to ensure understand the future operating requirements as they emerge so the Cross River Rail operation does not result in new or modified systems or operations that negatively impact on the availability payment regime adding cost or risk to Qtectic. WSP understands that Qtectic intends to adjust abatement and/or maintenance regimes for the impact of the Cross River Project if it causes operations to go beyond the scope contemplated in the Project Deed.	

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1 PROJECT DASHBOARD

KEY PARTIES	
Generic Term	**Company**
Authority	State of Queensland
Project Company (Project Co)	NGR Project Company Pty Ltd (trading as Qtectic)
Shareholders	John Laing – 40% Aberdeen – 25% ITOCHU – 25% Bombardier – 10%
D&D Subcontractor	Bombardier Transportation Australia Pty Ltd / IIIQ Pty Ltd (ITOCHU) (JV)
A&M Subcontractor	Bombardier Transportation Australia Pty Ltd
Independent Certifier	Global Rail Solutions Limited
Financiers' Certifier	WS Atkins International Ltd
Fleet Operator	Queensland Rail

KEY DATA / RISK ALLOCATION	Value	Cost Risk Responsibility
Construction Value	$1,320 million	D&D Subcontractor
Operational Service Costs	$1,390 million	A&M Subcontractor
PROJECT DATA		
Construction Completion	Depot completion: 10th June 2016 Simulator Final Acceptance: 13th December 2019 As of 24th September 2020, all 75 Multiple units have Final Acceptance Certificates. Qtectic has submitted an application for Initial Fleet Acceptance to the State.	
Financial Close	January 2014	
Concession Period	32-year contract.	
End of Operations	January 2046	
Contract Type	Design, delivery, financing and maintenance.	
Start of Passenger Services	December 2017	

2 INTRODUCTION

2.1.1. In September 2020, WSP was commissioned by Aberdeen Global Infrastructure GP Ltd to undertake Vendor technical due diligence on Project Moore, which consists of four projects (one healthcare project, one water treatment plant project, one rolling stock project and one light rail project). This report is in relation to the rolling stock project.

2.1.2. Our technical due diligence has concentrated on the technical principles and risk transfer of the project, identifying the fundamental commercial and operational issues that exist from a technical perspective.

2.1.3. WSP does not make representation or warranty as to the factual accuracy of the information provided to us via the data room or by the Vendor on which this report is based.

2.1.4. WSP has undertaken this technical due diligence using data provided to us via the data room and publicly available information. No asset inspections or site visits have been undertaken as part of this exercise.

2.2 DISCLAIMER

2.2.1. WSP has provided this report solely for the use of the recipient and accepts no liability to any third parties or any other party using or reviewing the report or any part thereof. WSP makes no warranties or guarantees, actual or implied, in relation to this report, or the ultimate commercial, technical, economic, or financial effect on the project to which it relates, and bears no responsibility or liability related to its use other than as set out within the scope of the contract under which it was supplied.

3 PROJECT OVERVIEW

3.1.1. The Queensland New Generation Rollingstock (NGR) Public-Private Partnership (PPP) reached financial close in 2014. The contract is between the State of Queensland and Qtectic, a consortium of Bombardier, John Laing, ITOCHU and Aberdeen Asset Management. Qtectic was contracted to design, finance, deliver and maintain 75 new passenger trains, a purpose-built maintenance centre at Wulkuraka in Queensland and three NGR training simulators for traincrew.

3.1.2. This is an availability based PPP for a 32-year period from January 2014, to January 2046.

Figure 3-1 - Queensland New Generation Rollingstock Multiple Unit (source railjournal.com)

3.2 THE TRAIN FLEET

3.2.1. The fleet of 75 passenger trains are operated by Queensland Rail (QR), serving South East Queensland. The fleet comprises of 6-car 25kV electric multiple units (EMUs) with a maximum speed of 140 km/h, built in Bombardier's facility in Savli, India. Each single-deck train is approximately 147m long and weighs 260t with narrow gauge (Bombardier FLEXX) bogies and MITRAC propulsion system. There is capacity for 454 seated and 510 standing passengers on each train. These trains are equipped with onboard Wi-Fi, CCTV, LCD infotainment displays, toilet modules and twelve allocated spaces for mobility.

3.2.2. The fleet entered service between December 2017 and December 2019. The fleet is Queensland's largest fleet of electric trains.

Figure 3-2 - Queensland NGR - cutaway view (source railway-technology.com)

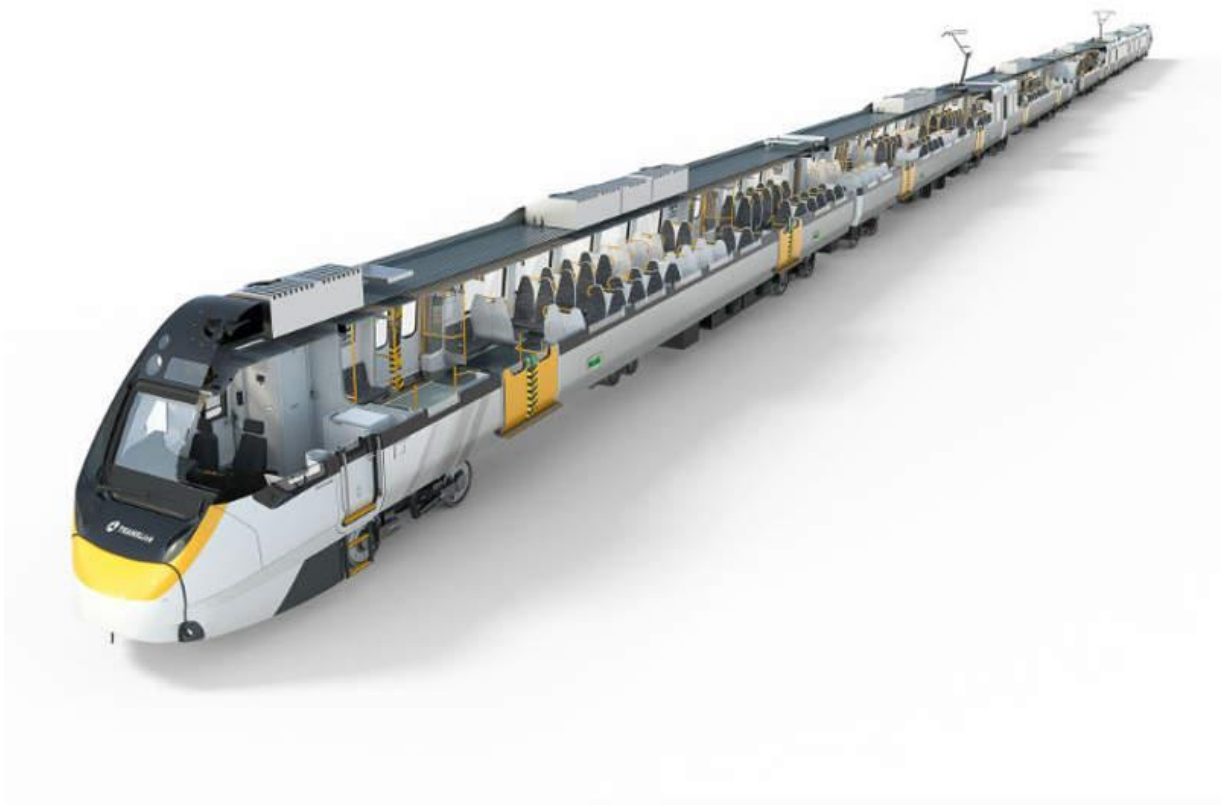
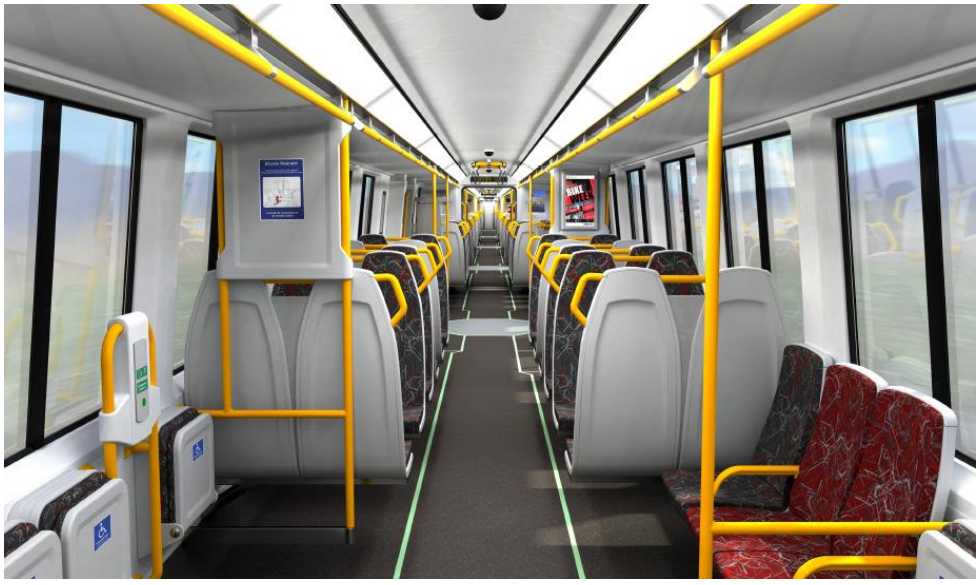


Figure 3-3 - Queensland NGR interior view (source qtectic.com)



3.3 MAINTENANCE OVERVIEW

MAINTENANCE RESPONSIBILITIES

3.3.1. QR (the operator) will is responsible for:

- Delivering trains to Wulkuraka Depot in accordance with Bombardier's daily and weekly maintenance plans;
- Train preparation activities at all stabling locations; and
- Scheduling of each train to undergo an external wash plant clean on a regular basis.

Bombardier (as Availability & Maintenance (A&M) Subcontractor) is responsible for:

- Train depot movements between incoming handover (from operator to Bombardier) and outgoing handover (from Bombardier to operator) at Wulkuraka Depot;
- All planned maintenance activities (scheduled);
- All component exchange activities (overhauls);
- All unplanned maintenance activities (corrective);
- Damage and vandalism rectification tasks (at operator's cost, except for Category 5);
- Train cleaning and repair relating to collisions with humans, including suicides or attempted suicides, bird or animal strikes and track debris damage (at operator's cost);
- All wheel turning activities;
- All refurbishment activities (in order to maintain an aesthetically compliant fleet throughout the entire project life cycle);
- All presentation activities (with the exception of external washes);
- Decanting toilet waste tanks and replenishment of water tanks and consumable supplies;
- Check and top-up (when necessary) windscreen washer reservoirs and sand hoppers;
- Maintaining stores with adequate stock;
- Depot maintenance; and
- Fleet technical support.

3.3.2. Only a small proportion of the fleet return to Wulkuraka Depot each night, with the rest of the fleet being stationed at other stabling sites around the network. Light corrective maintenance and cleaning take place at remote stabling yards.

ROLLING STOCK MAINTENANCE STRATEGY

3.3.3. A balanced maintenance regime is employed using c. 30,000km intervals which correspond to approximately 86 days in service on a 480,000km cycle. Unplanned (unscheduled or intervention) maintenance to repair random faults take place on an as required basis. Major overhauls take place at intervals which corresponds to roughly 8, 10 and 12 years in service. Major mid-life refurbishment will take place in the 16th year with each MU requiring 3 weeks' downtime for the process. Hence, for 75 MUs the refurbishment phase will last from the beginning of the 16th year to the first half of the 20th year.

3.3.4. The routine overhaul strategy is as follows:

- Routine overhauls will be based on line-replaceable units using a float of spares and off-line overhaul if the affected component or assembly is repairable – some are just disposed of, e.g., filters;
  Overhaul will be undertaken by Bombardier or specialist sub-contractor, e.g., for HVAC, doors, brakes, etc.;
- Bogies will be overhauled off-line by Bombardier or a specialist sub-contractor;
- Propulsion systems will be overhauled by Bombardier or a specialist sub-contractor;
- Interiors will be maintained by Bombardier; and
- Wheels will be condition turned between 120,000 and 240,000 km intervals – Bombardier maintenance staff will conduct the process.

3.3.5. WSP considers that this is an appropriate headline rolling stock maintenance strategy, which reflects modern industry best practice.

3.4 THE NEW DEPOT

3.4.1. Construction of the NGR Maintenance Centre in Wulkuraka was completed in 2016. This site includes the following facilities:

- 10 roads for stabling, maintenance, repairs and overhauls, including 4 pitted roads (with roof-level platforms) and 1 jacking road (all 6-car length);
- Wheel lathe building;
- Maintenance building which includes a Windhoff train jacking system;
- Train cleaning and decanting facilities;
- Retractable overhead lines and roof gantries;
- Track, signalling, electrification and overhead wiring;
- Automatic vehicle inspection system (MRX train monitoring);
- Remote stores;
- Administration building;
- Queensland rail drivers' facility; and
- Car parks.

The facility is purpose built to maintain the 75 6-car trains. No other fleets are maintained at this facility.

Figure 3-4 - Wulkuraka depot (source qtectic.com)

3.5 PROJECT LOCATION

3.5.1. The NGR trains currently operate on the following Queensland Rail lines in the South East of Queensland:

- Gold Coast line, Airport line, Doomben line, Northgate line, Springfield line, Redcliffe Peninsula line, Ipswich line, Caboolture line, Shorncliffe line, Cleveland line, Sunshine Coast line (Nambour Station).

Figure 3-5 - Queensland NGR - project location (source google.com/maps)

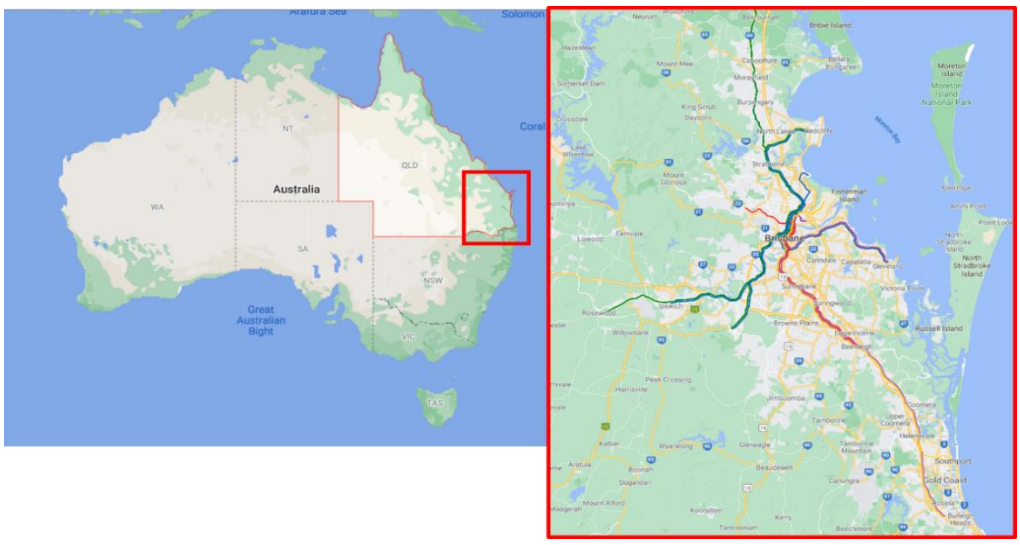
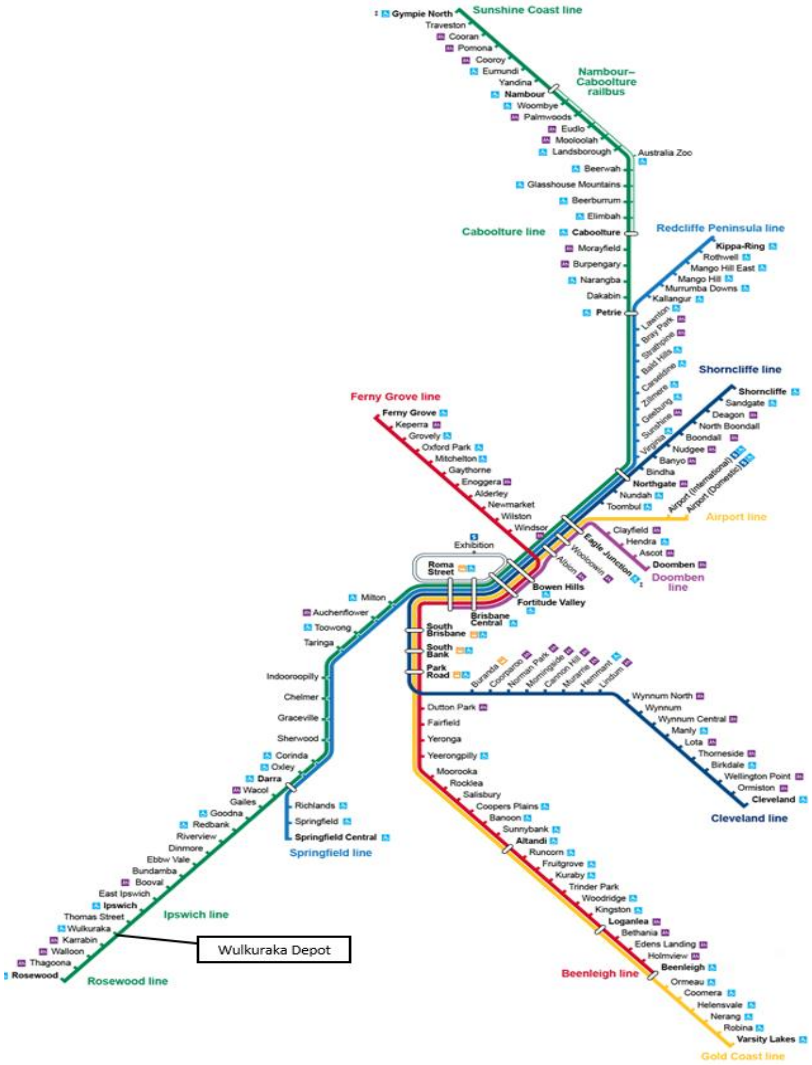


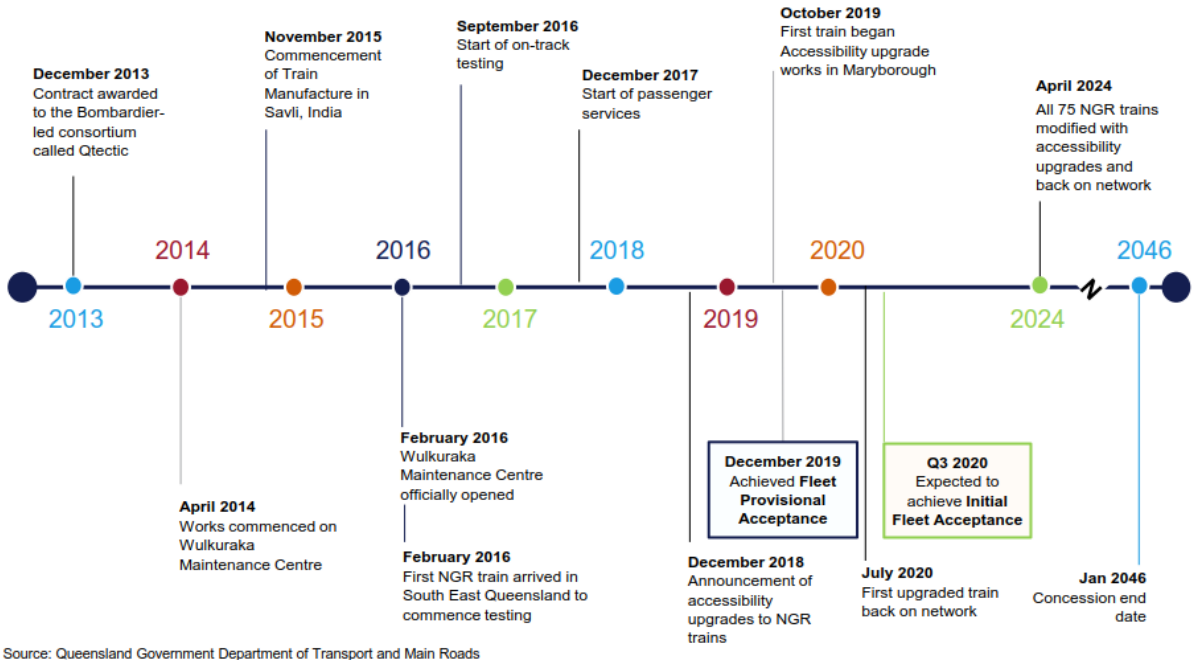
Figure 3-6 - Queensland Rail network map (source queenslandrail.com.au)



3.6 PROJECT TIMELINE

3.6.1. The figure below provides a timeline for the NGR project from contract award to the end of the concession in 2046. The next key milestone for the fleet is the completion of modifications and upgrades to ensure compliance with the Australian 'Disability Standards for Accessible Public Transport 2002 (DSAPT)' in 2024. These modifications are being completed at the Downer Rail Facility in Maryborough.

Figure 3-7 - Project Timeline (source: Project Moore - Information Memorandum June 2020)

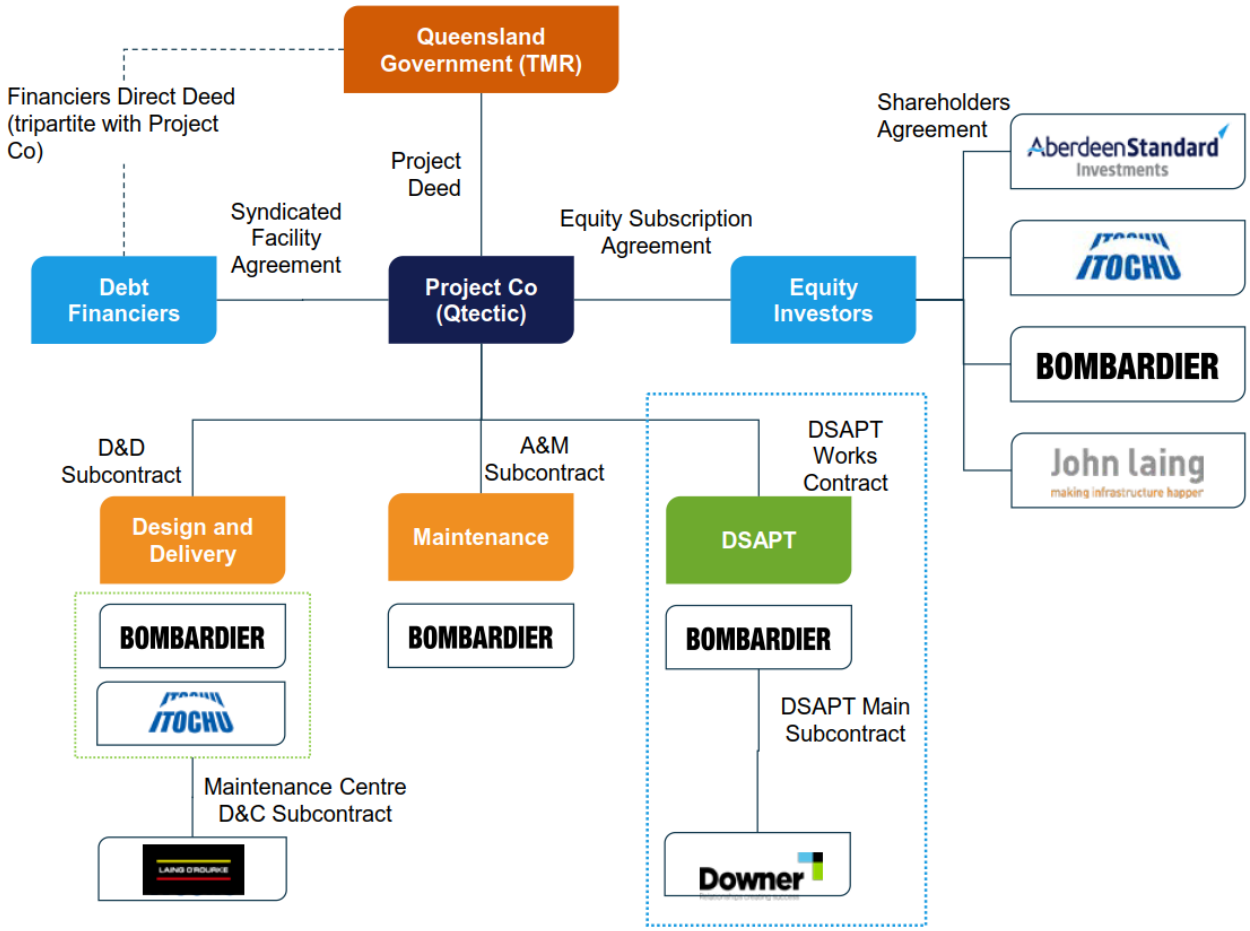


Source: Queensland Government Department of Transport and Main Roads

3.7 PROJECT STRUCTURE

3.7.1. The structure of the project is as illustrated in Figure 3-8 below. Bombardier, Itochu and Downer are the main contractors associated with the delivery of the Queensland New Generation Rollingstock PPP.

Figure 3-8 - Project Structure



3.8 OVERVIEW OF MAIN CONTRACTORS

BOMBARDIER

3.8.1. Bombardier Inc. is a Canadian multinational manufacturer of rail and aviation products.

3.8.2. Bombardier's rail product portfolio includes:

- Rail vehicles – urban, commuter, regional, intercity and very high speed;
- Transportation systems;
- Locomotives and equipment;
- Signalling;
- Propulsion, controls and energy management systems; and
- Services, operations and maintenance.

3.8.3. In 2019, Bombardier Rail revenues totalled US$8.3 Billion. Over 100,000 Bombardier manufactured rail vehicles are in service world-wide, in over 70 countries. Bombardier Rail division has a local presence in over 70 countries globally.

3.8.4. Bombardier designs, engineers, manufactures and maintains rollingstock across Australia, along with providing signalling, rail equipment, asset management and through-life support to customers and operators. Bombardier has industrial design, engineering, manufacturing, maintenance and rail signalling teams based in Australia allowing it to maintain the highest level of local content across the majority of its projects. With local engineering and manufacturing capabilities, Bombardier also provides solutions for signalling, propulsion and control technology, asset management and through-life support. Bombardier operates in 22 locations across the country, with their Australian operations headquartered at their manufacturing hub in Victoria, as well as having established maintenance facilities in Melbourne, Perth, Brisbane, Gold Coast and Adelaide[1].

3.8.5. Bombardier's portfolio of projects in Australia includes the FLEXITY E-Class Tram in Melbourne, VLocity Diesel Multiple Units in Victoria, FLEXITY 2 in Gold Coast and A-City Electric Multiple Unit in Adelaide.

Acquisition of Bombardier Transportation by Alstom

3.8.6. Alstom SA is a French multinational manufacturer of rail products.

3.8.7. Alstom's rail product portfolio includes:

- Rolling stock – urban, commuter, regional, intercity and very high speed;
- Digital Mobility;
- Signalling;
- Systems;
- Infrastructure; and
- Components.

3.8.8. In FY 2019/2020 Alstom's Net Income was €467 million. Alstom employs 38,900 people world-wide on 105 sites in 60 countries.

3.8.9. Alstom, a supplier of rolling stock, signalling systems and associated services, has been providing sustainable infrastructure solutions in Australia and New Zealand for more than 100 years and currently employs approximately 450 people across 10 sites that include workshops, offices and manufacturing facilities[2].

3.8.10. Alstom's portfolio of projects in Australia includes the X'Trapolis trains in Melbourne, Citadis trams in Melbourne and Adelaide, Metropolis metro trains in Sydney, and in the future Citadis trams in Sydney.

3.8.11. In July 2020 the European Commission approved, under EU Merger Regulations, the acquisition of Bombardier Transportation by Alstom. The acquisition is conditional on full compliance with a commitments package offered by Alstom to address concerns raised by the Commission. Alstom and Bombardier are both global leaders in rail transportation competing in the manufacturing and supply of very high speed, mainline and urban rolling stock and mainline and urban signalling solutions and their merger is expected to create a stronger single entity better able to meet the demand for sustainable mobility[3]. The acquisition price is between €5.8bn to €6.2bn,

[1] https://rail.bombardier.com/en/about-us/worldwide-presence/australia/en.html#Presence_in_Australia

[2] https://www.alstom.com/alstom-australia

[3] https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1437

with Caisse de dépôt et placement du Québec (CDPQ) set to be the largest shareholder of Alstom with c. 18% of the capital.

3.8.12. WSP believes both Bombardier and Alstom to be capable in the delivery and maintenance of new rolling stock fleets. It is likely that the takeover will result in some adjustments to both Bombardier and Alstom's organisations in Australia, however Alstom does not have a strong presence in Queensland, and hence the Bombardier organisation in Queensland is unlikely to see significant change.

ITOCHU

3.8.13. ITOCHU is one of the leading general trading companies in Japan and has businesses all over the world. ITOCHU is involved in domestic trading, import/export, and overseas trading of various products such as textile, machinery, metals, minerals, energy, chemicals, food, general products, realty, information and communications technology, and finance, as well as business investment in Japan and overseas[4].

DOWNER

3.8.14. Downer designs, builds and sustains assets, infrastructure and facilities and are a leading provider of integrated services in Australia and New Zealand. Downer has a history of over 150 years and is listed on the Australian Securities Exchange and the New Zealand Stock Exchange. Downer employs more than 52,000 people across more than 300 sites, primarily in Australia and New Zealand[5].

3.9 QTECTIC MANAGEMENT TEAM

3.9.1. Qtectic's management team has a wealth of experience in the delivery and operation of large-scale infrastructure and PPP projects. The Operations Director for Qtectic is based at Wulkuraka Maintenance Depot and is responsible for the Availability and Maintenance (A&M) Subcontract. This role is responsible for the day to day operations in terms of availability and reliability, longer term reliability improvements and strategic aspects, such as maintenance periodicity extensions. The Technical Manager for Qtectic oversaw the delivery of the 75 trains, 3 simulators and associated spares parts, tooling and compliance documentation, thus providing continuity and retention of knowledge and experience gained in the earlier stages of the NGR project. The Project Director focuses on key modifications and upgrades and is responsible for the delivery of the DSAPT works.

3.10 HEALTH, SAFETY, ENVIRONMENT AND QUALITY

3.10.1. Health, Safety, Environment and Quality is reported monthly in the NGR Project Board Pack, and a monthly NGR HSE review meeting conducted. The Project monitors:

- Lost Time Incidents, medically Treated Injuries, Near Misses, Reportable Incidents and Fatalities across Qtectic, Bombardier Australia, Bombardier India and Downer;
- Environmental Issues and Reportable Incidents;
- Rail Safety Incidents;
- Interactions with the Office of the National Rail Safety Regulator;
- Safety Interface Deed and ICPs; and
- Quality.

3.10.2. The Qtectic Quality Management System is ISO9001 / ISO14001 certified.

[4] https://www.itochu.co.jp/en/about/profile/index.html

[5] https://www.downergroup.com/about-us

4 PROJECT CONTRACT OVERVIEW

4.1.1. Qtectic is party to the following core Project Documents:

- The Project Deed, entered into by the State of Queensland (acting through the Department of Transport and Main Roads);
- The D&D (Design and Deliver) Subcontract entered into with Bombardier Transportation Australia and IIIQ Pty Ltd (ITOCHU);
- The A&M (Availability and Maintenance) Subcontract entered into with Bombardier Transportation Australia; and
- The DSAPT Contract entered into with Bombardier Transportation Australia.

4.2 PROJECT DEED

4.2.1. WSP believes the Project Deed contract provisions and obligations are in line with the market for similar projects.

4.2.2. The Project Deed forms an agreement between the State of Queensland and Qtectic to supply:

- Design & Deliver, and Availability & Maintenance of:
  - 75x 6-car EMUs
  - A new depot facility
  - Simulators

PROJECT DEED PAYMENT MECHANISM

4.2.3. The payment mechanism is described in Schedule E2 of the Project Deed. The payment mechanism is built up from:

- Government Contribution Payments; made up of 2 elements:
  - Depot Capital Contribution (DCC)
    Paid upon Depot completion. $60M
  - Initial Fleet Multiple Unit Capital Contribution (IMUCC)
    Paid upon Provisional Acceptance of each Multiple Unit from the 16th MU to achieve Provisional Acceptance to the 75th. $11M per Multiple Unit, $660M for the fleet.
- Availability Payments (AP) – payable each Payment Period following the Date of Provisional Acceptance of the first Multiple Unit.
  - The availability payments are based on a Multiple Unit Availability Payment (MUAP) made up of the Multiple Unit Base Availability Payment (MUBAP), the Fixed Multiple Unit Payment (FMUP)
    The Availability Payment is subject to abatement and adjustment payments that include;
    Performance Regime Adjustments (PRA), KPI Adjustment (KPIA), Additional A&M Services Payment Adjustment (ASPA). the Maintenance Payment (MP), Volume Adjustment (VA), Marginal Unit Payment Adjustment (MUPA); Final Acceptance Deduction (FAD), Initial Fleet Acceptance Deduction (FLAD), Other Adjustments (OA), Insurance costs (BIC and IA) and the Base Rate Adjustment Payment (BRAP).

PERFORMANCE REGIME ADJUSTMENTS (PRA)

4.2.4. The Performance Regime is described in Schedule E3 of the Project Deed.

4.2.5. Performance Regime Adjustments are included in the Availability Payment calculated for each Payment Period. The Performance Regime Adjustment is passed through Qtectic from the State to the A&M Subcontractor. The Performance Regime Adjustment is the sum of the below:

- Availability Adjustment – if a Multiple Unit is assessed at Handover as not Available, an adjustment of $11,000 can be made, however, this can be reduced if replacement MUs are offered for service.
- Cancellation Adjustment – if an MU is assessed as Available for Service at the beginning of a Train Working, and subsequently suffers a Type 1 or Type 2 cancellation, adjustments of $4,500 (Type 2) to $18,000 (Type 1) can be made.
- Delay Adjustment – if an MU causes delays, an adjustment of $60 per minute can be applied.
- Service Defect Adjustment – if an MU has a Service Defect, adjustments of up to $200 for all affected vehicles can be made. Failure to remedy the defect within 1 week can add a further $2,000 adjustment.
- Simulator Adjustment – if a simulator is unavailable for the Minimum Simulator Available Hours adjustments of $50 per hour for the first 20 hours and $60 per hour thereafter can be made.

MAINTENANCE PAYMENT (MP)

4.2.6. The Maintenance Payment is described in Schedule E2 of the Project Deed.

4.2.7. The Maintenance Payment is passed through from the State to the A&M Subcontractor. The Maintenance Payment is the sum of the three parts described below:

- A Distance Based Payment – to reflect mileage above or below the predicted fleet mileage impacting on component lives
- A Lumpy Maintenance Payment – this payment is varied each Payment Period to reflect the levels of maintenance activity on the fleet. As would be expected, the payments are low in the early years of service, then peaks are seen at 10, 15 to 20 years as major overhauls are required.
- Less an Unrequired Refurbishment Adjustment – an amount determined and agreed between the Project Co and the State at the time of mid-life refresh and end of life replacements that are not required to be conducted.

ADDITIONAL A&M SERVICES PAYMENT ADJUSTMENT (ASPA)

4.2.8. Also included in Schedule E2 are Agreed Rates, which the Project Co can charge the State for additional A&M Services and Fixed Price Additional A&M Services (for example, graffiti removal, broken windscreen replacement, replacement of seats). The ASPA is passed through from the A&M Subcontractor to the State.

OPTION UNITS

4.2.9. The Project Deed was set up to allow for the purchase of Option Units, however the latest date to exercise this option was 30th July 2017. No order for Option Units was placed.

CHANGE IN LAW

4.2.10. If a Change in Law occurs during the Concession Period, the Project Co shall comply with the Change in Law, such that compliance be at its own expense, except where the Project Deed provides for the State to bear some, or all of, the costs of compliance.

4.2.11. Within 20 Business Days of learning of a change in State Policies and Standards, the Project Co shall provide an estimate of increased Capital Expenditure and Operating Costs that it would incur as a result of complying with the change. The State will then, within 20 Business Days, respond to the Project Co and direct it to comply (in which case the change will be addressed as a Qualifying Change in Law) or not to comply and disregard the change.

4.2.12. In the event of a Qualifying Change in Law, all increased cumulative Capital Expenditure and cumulative increased Operating Costs (net of any savings) from that date required in relation to the Project Activities shall accrue and shall be borne by the State and the Project Co in the shares set out in the table below.

Table 4-1 – Change In Law

Cumulative increased Capital Expenditure incurred by the Project Co as a result of Qualifying Changes in Law	Cumulative increased annual operating costs (net of any savings) incurred by the Project Co as a result of Qualifying Changes in Law	Project Co Share	State Share
Up to $1,000,000	Up to $200,000	100%	0%
$1,000,001 - $2,000,000	$200,000 - $400,000	50%	50%
Amount over $2,000,000	Amounts over $400,000	0%	100%

4.2.13. WSP is not aware of any upcoming legislation or Standards changes that will impact the fleet.

PROJECT TERMINATION

4.2.14. The below events are Project Co Termination Events as described by Clause 41 of the Project Deed. This list includes technical reasons only.

- ("Prolonged Delay – Single Multiple Unit"): the Project Co has failed to achieve Provisional Acceptance of a Multiple Unit within 18 months of the Date for Provisional Acceptance of the Multiple Unit;
- ("Failure to remedy"): a failure by the Project Co to remedy a Project Co Event of Default which is the subject of an Approved Cure Plan within the Applicable Cure Period;
- ("Failure to prevent"): a failure by the Project Co to prevent the recurrence of a Project Co Event of Default which is the subject of an Approved Mitigation Plan or to remedy or mitigate the effects of that Project Co Event of Default in accordance with the Approved Mitigation Plan;
- ("Failure to comply with notice"): a failure by the Project Co to comply with a notice given by the State under clause 40.7(c);
- ("Suspension or cancellation of the Project Co's Accreditation"): an Authority suspends or cancels any Project Co Accreditation required by the Project Co to perform all or part of the Project Activities and such suspension or cancellation is not rectified within 20 Business Days after the Project Co being notified of such suspension or cancellation;
- ("Suspension or cancellation of the Operator's Accreditation"): an act or omission of the Project Co or Project Co's Personnel in carrying out the Project Activities results in an Authority suspending or cancelling the Operator's Accreditation and such suspension or cancellation is not rectified within 20 Business Days after the Project Co being notified of such suspension or cancellation;
- ("Look Forward"): the Works are delayed such there is no reasonable prospect of:
  - The Date of Provisional Acceptance for the first Multiple Unit occurring before a date which is 18 months after the Date for Provisional Acceptance in respect of such Multiple Unit;
  - The Date of Provisional Acceptance in respect of the last Multiple Unit occurring before the date which is 18 months after the Date for Provisional Acceptance in respect of such Multiple Unit; or
  - The Date of Depot Completion occurring before a date which is 18 months after the Date for Depot Completion;
- ("Performance"): the State has issued:
  - Four or more Default Notices for Unacceptable Availability to Project Co under clause 40.3(n) in any rolling two year period; or
  - Three or more Default Notices for Unacceptable Reliability to Project Co under clause 40.3(o) in any rolling two year period;

- ("Depot Completion"): the Project Co has failed to achieve the Date of Depot Completion within 18 months of the Date for Depot Completion;
- ("Abandonment"): the Project Co wholly or substantially abandons performance of the Project Activities.

EVENTS OF DEFAULT

4.2.15. Clause 40.3 of the Project Deed details Events of Default. The below events are Project Co Termination Events as described by the Project Deed. This list includes technical reasons and events that still apply to the ongoing project only.

- (Failure to progress): the Project Co fails at any time to regularly and diligently progress the Project Activities with due expedition and without delay;
- (Delay – Final Acceptance of Individual Multiple Unit): the Project Co has failed to achieve Final Acceptance of a Multiple Unit within 12 months after the Date of Provisional Acceptance of the Multiple Unit;
- (Safety Breach):
  (i) a Multiple Unit is involved in a collision or derailment whilst that Multiple Unit is in service which causes minor injury to any person and such injury is found to be principally attributable to breach or negligence by any one or more of the Project Co, the Project Co's Personnel or any of the Subcontractor's personnel; or
  (ii) a Notifiable Occurrence occurs at the New Depot or in respect of a Multiple Unit which is found to be principally attributable to the breach or negligence of any one or more of the Project Co, the Project Co's Personnel or any of the Subcontractor's personnel;
- (Unacceptable Availability): in the period after Provisional Acceptance of the eighth Multiple Unit to achieve Provisional Acceptance:
  (i) less than 85% of the Required Availability is Available in any one Availability Period;
  (ii) less than 90% of the Required Availability is Available in any 12 Availability Periods in any 12 month rolling period;
  (iii) less than 95% of all the Required Availability is Available in any 20 Availability Periods in any 12 month rolling period; or
  (iv) less than 80% of the Required Availability is Available in any five out of seven consecutive Availability Periods (where no two such periods of seven consecutive Availability Periods overlap), provided that:
  (v) any Availability Periods that are counted towards Unacceptable Availability under clause 40.3(n)(iv) will be disregarded for the purposes of assessing Unacceptable Availability under clauses 40.3(n)(i), (ii) and (iii); and
  (vi) the Project Co cannot accrue more than one Default Notice in aggregate under 40.3(n)(i) and 40.3(n)(iv) in any seven day period where the same Availability Periods are counted towards a Project Co Event of Default under both clauses 40.3(n)(i) and 40.3(n)(iv).

VARIATION PROCEDURE

4.2.16. Schedule A11 of the Project Deed sets out a comprehensive procedure for State and Project Co variations. This procedure follows industry best practice for variations. Details of Variations either in-progress or on hold are presented in Section 5.4 of this report.

BENCHMARKING / MARKET TESTING PROVISIONS

4.2.17. There is no provision in the Project Deed for Benchmarking / Market testing. This is typical of rolling stock maintenance contracts.

PROJECT EXPIRY

4.2.18. Clause 43 of the Project Deed describes that upon Expiry of the Project Deed in 2046, the Title for the Multiple Units, Depot and Simulators shall be transferred to the State.

4.2.19. WSP notes that this is accounted for in the Operating Model provided (20200602 Project Hodges – Operating Model), with no costs or revenues modelled beyond January 2046. WSP notes that the transfer of the assets

to the State upon expiry of the Project Deed removes any risk from the Project Co of re-leasing the Multiple Units beyond 2046.

RETURN CONDITIONS

4.2.20. Schedule A13 of the Project Deed sets out the Return Conditions for the Multiple Units, Simulators and Other Equipment.

4.2.21. The Return Conditions are applicable under termination or expiry of the Concession period. The Return Conditions require that the Multiple Units be returned Fault Free, free from Defects and subject to fain wear and tear, in a condition that would permit immediate operation of a Multiple Unit. All maintenance, refurbishment and repair work (and related examinations and inspections) which the A&M Services Management Plan contemplates as being carried out on a Multiple Unit on or before termination shall have been completed in accordance with the A&M Services Management Plan.

4.2.22. The Return Condition obligations are passed through to the A&M Subcontractor via Schedule 13 of the A&M Subcontract.

4.3 D&D SUBCONTRACT

4.3.1. WSP believes the D&D Subcontract provisions and obligations are in line with the market for similar projects.

PAYMENTS TO D&D SUBCONTRACTOR

4.3.2. Schedules E2 and E3 of the D&D Subcontract detail Milestone and Advance Payments from the Project Co to the D&D Subcontractor through the project listing the milestones and intended dates. The total amounts for Rolling Stock Works, New Depot Works, Initial Spares & Equipment and Project Management Fee are presented below. These amounts are in line with WSP's expectations based on our knowledge of the global rolling stock industry.

Table 4-2 – Rolling Stock Payments

Item	Comment	Amount
Rolling Stock Works	Paid as mixture of Milestone and Advance Payments	$1,030M
New Depot Works	Paid as mixture of Milestone and Advance Payments	$237M
Initial Spares and Equipment	Paid as Milestone Payments	$45M
Project Management Fee	Paid as Milestone Payments	$8M
Total payments		**$1,320M**

4.3.3. The rolling stock works price reflects a price per vehicle of $2.28 million per vehicle. This is in line with WSP's industry benchmarks for modern urban EMUs. The depot price is in line with WSP's benchmarks for depot construction.

PASS THROUGH OF FAD AND FLAD DEDUCTIONS

4.3.4. Clause 29B of the D&D Subcontract passes through the Final Acceptance Deduction (FAD) and Initial Fleet Acceptance Deduction (FLAD) deductions to the Availability Payment through to the D&D Subcontractor.

LIQUIDATED DAMAGES

4.3.5. Schedule E1 and Clause 31.2 of the D&D Subcontract detail the Liquidated Damages, these are presented below.

Table 4-3 – Liquidated Damages

LD Type	Milestone delay events	Dollar LD	Comment
	Part A		
1	Provisional Acceptance of a Multiple Unit has not been achieved by the Date for D&D Provisional Acceptance of any Multiple Unit 1 - 75 and a corresponding failure by the Project Co to provide the State with the Required Availability in accordance with the Base Case Financial Model as a	$3,500 per MU per day	No longer applicable: All MUs achieved Provisional

	result of that Multiple Unit failing to achieve Provisional Acceptance		Acceptance by Dec 2019.
	Part B		
2	Date of D&D Minimum Fleet Acceptance does not occur by the Date for D&D Minimum Fleet Acceptance	$2,989 per day	No longer applicable: Minimum fleet achieved Dec 2018
3	Provisional Acceptance of 51 Multiple Units and D&D Final Acceptance of 27 Multiple Units have not been achieved by the relevant Date for D&D Provisional Acceptance and Date for D&D Final Acceptance (as applicable)"	$1,992 per day	No longer applicable: All MUs achieved Provisional Acceptance by Dec 2019. Currently 74 MUs have achieved Final Acceptance
4	Initial Fleet Acceptance (D&D) has not been achieved by the Date for D&D Initial Fleet Acceptance	$4,824 per day	Still applicable

D&D SECURITY PACKAGE

4.3.6. The D&D Subcontract details the D&D security package. Highlights of the package are as presented below:

4.3.7. Schedule E8 of the D&D Subcontract presents the Form of Parent Company Guarantee. Parent Company Guarantees are provided by ITOCHU Corporation (S&P A / Moody's A3) and Bombardier Inc (S&P CCC+ / Moody's B3)

4.3.8. Clause 61A of the D&D Subcontract presents the Liability, Liquidated Damages and Acceptance Caps as below:

Table 4-4 – D&D Security Package

Liability Cap	55% of Total Contract Value
LDs Cap	10% of the Base Contract Sum ($132M) This amount is included in (and not additional to) the Liability Cap
Acceptance Cap	In respect of liability in respect of: FAD*: 5% of Initial Fleet Capital Cost ($51M) FLAD**: 0.72% of the Initial Fleet Capital Cost ($7.4M) This amount is included in (and not additional to) the Liability Cap

* FAD is the Final Acceptance Deduction as defined in the Project Deed, it is a deduction to the Availability Payment

** FLAD is the Initial Fleet Acceptance Deduction as defined in the Project Deed, it is a deduction to the Availability Payment

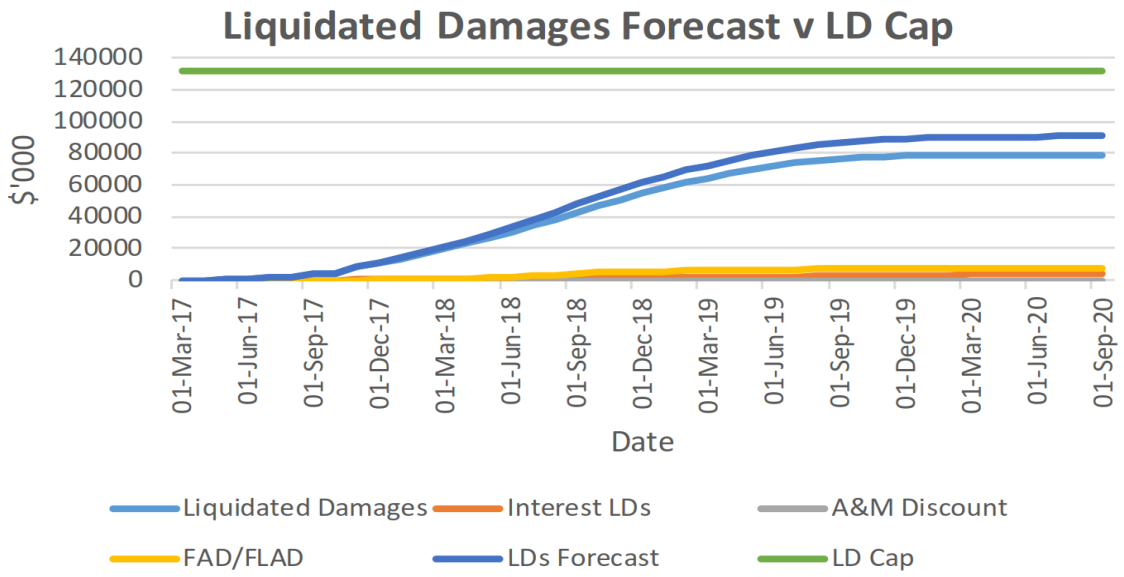
4.3.9. The FLAD Acceptance Cap of 0.72% of the Initial Fleet Capital Cost is passed through as a cap in Schedule E2 of the Project Deed, capping the State's total FLAD claim at 0.72% of the Initial Fleet Capital Cost.

4.3.10. The September 2020 Board Report states forecast Liquidated Damages on the Project of $82.2M and forecast FAD/FLAD deductions of $8.1M – resulting in a total of $90.9M. This compares to the Liquidated Damages Cap of $132M. The forecast Liquidated Damages include Liquidated Damages in relation to Required Availability of Multiple Units, missed step down of interest, Availability Discount and FAD/FLAD deductions. The Liquidated Damages Forecast change over time from March 2017 to September 2020 is shown in Figure 4-1 below.

4.3.11. The D&D security package is in line with market practices.

4.3.12. Given the proximity of the project to Initial Fleet Acceptance, WSP believes there remains substantial headroom in the D&D security package to reach IFA.

Figure 4-1 - Liquidated Damages Forecast v LD Cap (Source: Septermber Baord Report)



WARRANTIES

4.3.13. Schedule B5 of the D&D Subcontract presents the Key Component Warranties for the Multiple Units, Simulators and New Depot & Facilities.

4.3.14. For the Multiple Units, an Extended Defects Liability Period varies by component from 30 years for the Car Bodyshell, to 10 years for multiple items including Bogie Frames, Axles & Passenger Doors, and to 7.5 years for multiple items including Traction Systems, Passenger Information Systems & Pantographs. WSP considers the list of items covered to be comprehensive and the length of cover to be good when compared to industry standards.

4.3.15. For the Depot, the Extended Defects Liability Period by item varies from 5 to 7 years. This list of items covered is comprehensive.

4.3.16. The Key Component Warranties are passed on to the State via the Project Deed (as detailed in Schedule B5).

4.4 A&M SUBCONTRACT

4.4.1. WSP believes the A&M Subcontract contract provisions and obligations are in line with the market for similar projects.

PAYMENTS TO A&M SUBCONTRACTOR

4.4.2. Payments made to the A&M Subcontractor are based on availability of Multiple Units, paid each Payment Period. These are presented in Schedule E2 of the A&M Subcontract

4.4.3. The Availability Payment is a pass through of the Availability Payment from the State to the Project Co under the Project Deed, less:

- Multiple Unit Base Availability Payment (MUBAP).
- Insurance costs (BIC and IA).
- Base Rate Adjustment Payment (BRAP).
- Final Acceptance Deduction (FAD), Initial Fleet Acceptance Deduction (FLAD) (these are passed through in the D&D Subcontract).

A&M SECURITY PACKAGE

4.4.4. The A&M Subcontract details the A&M security package. Highlights of the package are as presented below:

- Performance Security (bonding) for an amount equivalent to 50% of the Look Forward Annual Service Fee (recalculated annually) until 60 days after the end of the concession period. The average Look Forward Annual Service Fee over the remaining 26 years of the concession is equal to c.$40M.
- A parent Company Guarantee is in place with Bombardier Inc. (S&P CCC+ / Moody's B3), as set out in Schedule E8 of the A&M Subcontract.

4.4.5. Liquid Security (bonding) is required to be provided by a financial bank with a Required Rating of minimum A- (S&P).

4.4.6. Clause 61A of the A&M Subcontract presents the Liability and Performance Adjustment Caps as below:

Table 4-5 – A&M Liability Cap

Cap	Amount
A&M Liability Cap	200% of the Look Forward Annual Service Fee
Performance Adjustment Cap	100% of the Look Forward Annual Service Fee This is in addition to the A&M Liability Cap, but in respect of liability for Performance Adjustments only (PRA)

A&M Liability Cap

4.4.7. In the event of termination of the A&M Subcontract, the A&M Liability Cap is required to cover additional costs incurred by the Project Co in engaging another subcontractor to deliver the availability and maintenance services.

4.4.8. WSP has undertaken an analysis to test the Liability Cap to increased costs of a new A&M Subcontractor.

4.4.9. The Look Forward Annual Service Fee equates to the sum of the Fixed Multiple Availability Payment (FMAP) and the Variable Multiple Unit Payment (VMUP). The Operating Model (20200602 Project Hodges – Operating Model.xls) records this value as $35.9 million. Hence, the A&M Liability Cap is set at $71.7 million.

4.4.10. A new A&M Contractor is likely to charge a premium over the incumbent due to the initial lack of knowledge of the fleet and potential repricing of materials & spares. A new A&M Contractor will also understand that the continuity of operation will be important to Qtectic's business model and will seek to exploit this.

4.4.11. Market Dynamics in the Australian and global rolling stock maintenance market at the time of a switch will dictate a replacement A&M subcontractors pricing, and hence any additional costs due to a switch. There are multiple organisations (for example Downer or other global rolling stock manufacturers) who have the capabilities required to fulfil the contract. A contract switch in the next 10 years would result in a contract with a significant time remaining (over 15 years), establishing a long contract with time for the new contractor to fully understand the fleet and optimise operations. This may drive a lower additional cost of maintenance post-switch than in a scenario where there are just a few years remaining.

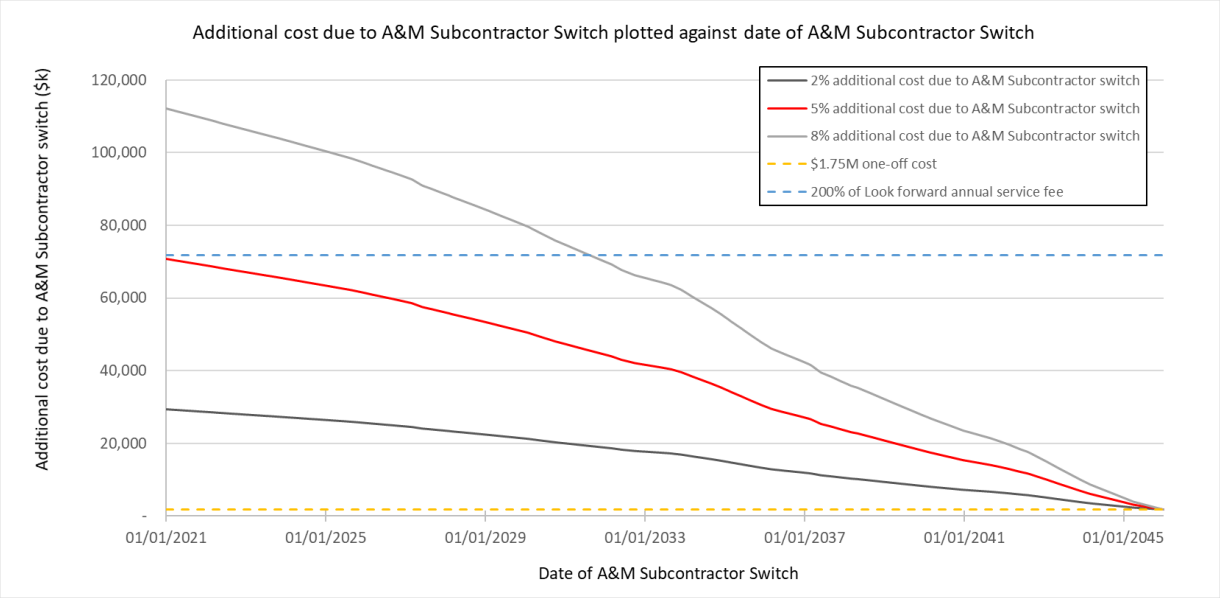
4.4.12. It is WSP's view that process of engaging a new A&M Subcontractor would incur a one-off cost in the region of $1.75 million to cover professional advisor fees (Legal Advisor, Technical Advisor etc).

4.4.13. WSP has calculated the additional cost due to an A&M Subcontractor switch for three cost increase scenarios: 2%, 5% and 8%. Cost increases have been applied to FMAP, VMUP, Distance Based Payment (DBP) and the Lumpy Maintenance Payment (LMP). These are shown plotted against the date of the switch below.

4.4.14. The graph illustrates that an increase in A&M subcontractor pricing up to 5% would be covered by the A&M Liability Cap. An increase of 8% would not be covered by the A&M Liability Cap until 2031.

4.4.15. The Australian and global rolling stock maintenance market is currently competitive and WSP would expect this to be the case in the medium-term, hence a competitive tender process may achieve a 5% or less additional cost and the A&M Liability Cap would be sufficient. There is, however a risk that the A&M Liability Cap will not be sufficient if a contract switch is required in the early part of the fleet's service life and market dynamics are such that a deal cannot be achieved that represents 5% or less of additional cost.

Figure 4-2 - Addtional costs due to A&M Subcontractor switch



Performance Adjustment Cap

4.4.16. For the full fleet in service, the Look Forward Annual Service fee represents c. $14M per annum. Achievement of a 3% PRA:MUAP ratio (see Section 6.1) would amount to $2.3M in abatements. The September Board Report shows the average abatements for the 12-month period from September 2019 to August 2020 was 6.7%, giving headroom to the Performance Adjustment Cap if operational performance continues at a similar level or improves as a maturing fleet would be expected to do.

A&M PAYMENTS DURING OPERATIONS

4.4.17. Analysis of payments to the A&M subcontractor during the operations phase of the project has been performed on data extracted from '20200602 Project Hodges – Operating Model.xls'.

4.4.18. Across the operating phase of the project, the total payments to the A&M Subcontractor are estimated as $1,380M, over a 25-year period.

4.4.19. Of the total A&M payments, $483M of payments are associated with the Distance Based Payment (DBP) and the Lumpy Maintenance Payment (LMP). These payments are associated with renewals, this amount equates to c. 37% of the project original construction value ($1,320M). This equates to $42,800 per vehicle per annum. This is in the range of expected costs for an EMU.

4.5 KEY AMENDMENTS TO THE PROJECT DEED

4.5.1. The documents listed in the table below are additions made to the project contracts since financial close.

Table 4-6 – Key Amendments to The Project Deed

Document	Date Executed	Purpose
Deeds of Agreement and Release ("DAR")	21st December 2016	The DAR was entered into to put in place a recovery plan to resolve delay issues which arose in respect of the Project. DAR (with the D&D DAR and A&M DAR) have been superseded in all material respects by subsequent amendments
QPAC Deed	6th September 2017	Entered into to reflect an agreement by the State to issue a Qualified Provisional Acceptance Certificate (QPAC) in respect of MU4, 5, and 6 and subsequent Subject MUs, subject to additional terms and conditions
DCC Amendment Deed	21st December 2017	Brought forward the timing of the State's capital contributions by increasing the Depot Capital Contribution (DCC) from $60m to $165m, and reducing the Initial Fleet Multiple Unit Capital Contribution (IMUCC) for each of MU 34 to 75 to reach Acceptance from $8.95 million to $6.45 million
PAC Deed	19th October 2018	The State amended the Provisional Acceptance Criteria in respect of several matters to enable Qtectic to achieve unqualified Provisional Acceptance subject to Qtectic agreeing to perform the rectification work described in the PAC Deed within prescribed timeframes
RDAD	29th March 2019	Amended the Project Documents to rebaseline the Project in light of delays and various other Project issues, and to provide the delivery of the DSAPT Works as a Modification, including the entry into the DSAPT Contract and the DSAPT Subcontract. The RDAD included a settlement on claims against the State.

4.6 STANDSTILL EXTENSION AGREEMENT

4.6.1. Qtectic and the State signed the Standstill Agreement Extension on 2nd July 2020, which has provided relief against Project Co Event of Default for prolonged delay to Final Acceptance until 31st December 2020, and a number of other items, including an extension to the ETCS Early Works Agreement to 30th September 2020.

4.6.2. In exchange, Bombardier will provide:

- CCTV Analysis Tool at no cost to the State, and this has progressed to a point where design documents have been submitted to the State for review;
- SV29 Train Radio at no cost to the State - the first three trial units are operating presently, with an expectation that the fleet roll out will take place throughout the next period and be completed by the deadline of 30 September 2020; and
- A gap analysis of current SEMS to Project Deed SEMS as they relate to the ETCS project. This is progressing with a series of workshops including information requests with Queensland Rail anticipated for early in the next reporting period. This is also anticipated to be completed by the 30th September 2020 deadline.

4.6.3. A Root Cause Analysis into odour issues (see Section 5.2) was submitted to the State on 14th August 2020 as required under the agreement. A draft fault rectification strategy is due to be submitted by 30th September 2020 and Bombardier have advised that this will be provided on time.

4.7 RISK ALLOCATION

4.7.1. A summary of the risk allocation between the contracted parties is outlined in the table below:

Risk	Liability	Comment
Construction Completion	D&D Subcontractor	Initial Fleet Acceptance still outstanding. Associated Abatements are passed through from D&D Subcontractor to the State. Acceptance Cap set at same level in D&D Subcontract and Project Deed
Availability	A&M Subcontractor	Availability obligations have been passed to the A&M Subcontractor
Maintenance cost variations	A&M Subcontractor	Cost risks associated with the delivery of the A&M Subcontract sit with the A&M Subcontractor
Change of Law	The State / Project Co	In the event of a Qualifying Change in Law, increased Capex and cumulative operating cost will be borne by the State / Project Co in shares set out in Table 4-1
Return Conditions	A&M Subcontractor	The Return Condition obligations are passed through to the A&M Subcontractor via Schedule 13 of the A&M Subcontract
Replacement of A&M Subcontractor	A&M Subcontractor & Project Co	Security package in place, will protect up to 5% of additional A&M cost through remaining term. See 4.4.14.
Passenger revenues	The State	Revenues from the State are based on fleet availability and not impacted by passenger revenues
Revenues beyond Concession Period	The State	The transfer of the assets to the State upon expiry of the Project Deed removes any risk from the Project Co of re-leasing the Multiple Units beyond 2046

5 RESIDUAL CONSTRUCTION MATTERS

5.1 STATUS OF COMPLETION

WULKURAKA MAINTENANCE DEPOT

5.1.1. Wulkuraka Maintenance Depot opened in February 2016 and achieved its construction completion certificate on 10th June 2016.

SIMULATORS

5.1.2. Unqualified Preliminary Acceptance and Provisional Acceptance were achieved on 14-Sep-16.

5.1.3. Simulator Final Acceptance was achieved on 13-Dec-19.

EMU FLEET

5.1.4. Minimum Fleet Acceptance was achieved on 20th December 2018.

5.1.5. All 75 Multiple Units have achieved Provisional Acceptance (construction completion) as at December 2019.

5.1.6. As of 24th September 2021, all 75 units had received their Final Acceptance Certificates.

5.1.7. Qtectic has submitted the application for Initial Fleet Acceptance and is scheduled to receive the State's response by mid-October.

5.1.8. As at 31 August 2020, 96.3% of the overall construction payments have been certified. This includes 100% of the New Depot Milestone Payments and 95.5% of the Rollingstock Milestone Payments.

5.2 ONGOING TECHNICAL MATTERS

5.2.1. There are a number of ongoing technical matters as described in the sections below:

ACCESSIBILITY VARIATION PROJECT (AVP)

5.2.2. A programme of works is currently being undertaken to improve disabled access to the fleet of 75 Multiple Units, particularly in relation to the configuration of the on-board toilet facilities such that they fully comply with the Disability Standards for Accessible Public Transport 2002. This programme of works is known as the DSAPT Variation and is to be funded in full by the State.

5.2.3. The programme of works is scheduled to run from October 2019 to March 2024.

5.2.4. In 2019, the State, Qtectic and Bombardier (as D&D Subcontractor and A&M Subcontractor) and DSAPT Contractor finalised terms of a Rebaselining and DSAPT Amendment Deed (RDAD). The Rebaselining and DSAPT deed has three purposes:

- Rebaseline the Master Program to adjust the milestone dates;
- Qtectic to carry out the DSAPT Works as a State Variation; and
- Qtectic to provide the State with a further release of claims

5.2.5. The DSAPT Works modifications are being carried out by the DSAPT Sub-contractor (Downer EDI) at their facility in Maryborough

- Downer EDI will act as sub-contractors to the DSAPT Contractor (Bombardier) who will in turn be directly subcontracted by Qtectic under a DSAPT Works Contract.

5.2.6. The performance of the DSAPT Works is substantially ring-fenced from project activities. The performance of the DSAPT Works will not trigger a Project Co Event of Default, Project Co Termination Event or State Step in Rights. PAC/FAC is not impacted by satisfying DSAPT requirements. Liability is capped to $150M and is fully

backed to the DSAPT Contractor. The removal of MUs from service for DSAPT Works will not impact Availability Payments – each MU will receive full availability payments during works.

5.2.7. The AVP Pre-Series MU is continuing to progress to completion to an accelerated program. However, by the end of August 2020 the accelerated program acceptance date for the Pre-Series MU had slipped from 31 July 2020 to 26 September 2020. The September Board report notes that by 26th September a number of items are expected to remain open on the Pre-Series MU, which would require a conditional acceptance if the accelerated acceptance date were not to be met. The State are considering a Conditional Acceptance Agreement for the Pre-Series MU, with various terms attached. Conditional acceptance of the Pre-Series MU would impose risk on Qtectic as the open items could impede the performance of the modified Mus impacting reliability and/or availability. Qtectic is aware of this risk and recommending against entering into a conditional acceptance agreement for the Pre-Series MU.

ODOUR ISSUES

5.2.8. In early 2020, it was noted that the odour issued within certain trains that had been in existence in 2019 had returned, having disappeared over the winter months. The odour led to some passengers, some drivers and Queensland Rail complaining and resulted in train service cancellations between February and May, incurring over $4M in abatements (passed through to the A&M Subcontractor).

Technical resolution

5.2.9. A Root Cause Analysis into the cause of the odour issues has been undertaken. Indications are that the odour is coming from the insulation in the train wall and ceiling cavities, and that when it gets wet due to humidity on the trains and then is heated by the sun, a vapour arises which causes the odour.

5.2.10. Bombardier are continuing with their rectification strategy, which involves two modifications:

- A software modification (version 10) that is currently being trailed. This has the ability to be rolled out quickly and is expected to be implemented across the fleet by October 2020.
- a HVAC system programmable logic controller (PLC) modification by using sensors to control temperature and humidity. This modification is currently being tested on MU707. MU707 is now back in service and if there are no issues, then the modification will be rolled out across the fleet. It is expected that the modification is expected to be installed by January 2021.

Although the modifications will be rolled out by January, there will not have been opportunity to prove the modifications in the months of the year when the odour issues have historically been at their worst. WSP believes that this may cause the State concern and be used to delay Initial Fleet Acceptance (see section 5.25.3).

Commercial issues

5.2.11. If it is determined that the odour did not emanate from the HVAC, then Qtectic and Bombardier should recover the $4M in abatements from the State, although the September Board Report notes that this may have to go to Dispute to recover the funds.

5.2.12. Odour issues may delay Initial Fleet Acceptance (see 5.35.2.10).

5.2.13. WSP understands that refinancing of the fleet is dependent on IFA and resolution of the odour issue.

ETCS

5.2.14. The Cross River Rail Project will introduce a requirement for the fleet to be equipped with ETCS (which they do not currently have). Bombardier and Qtectic have submitted a proposal for the modification to the State, and are currently awaiting the State's response.

5.2.15. The State and Project Co / Bombardier executed a A$10 million Early Works Agreement for the implementation of ETCS Level 2 Baseline 3. Qtectic responded to the State's letter with a proposed early works framework to finalise the requirements and develop a full Variation Appraisal; this framework was agreed and executed.

5.2.16. Qtectic submitted a draft Initial Variation Appraisal (IVA) on 31 January 2020. The State responded to this offer and provided a suite of commercial documents to form the basis of the agreement between the parties. The Early Works Agreement has been extended to 30th September and the Revised IVA was forecast for submission, subject to Sponsors' and Lender's consent, by mid-September for approval by 30 September 2020. As part of the extension to the Early Works Agreement, the ETCS Amendment Deed for the ETCS State Variation 17 must also be executed by 30 September 2020.

5.2.17. Key technical issues relating to ETCS implementation include a solution for the provision of Correct Side Door Enable functionality, Automatic Train Operation (ATO) functionality and any further modifications from the State for operating the trains in tunnels. It is WSP's opinion that the functionalities that have been requested are not novel and are operating on fleets globally.

5.2.18. An ETCS Early Works Extension Agreement has been signed on 2 October 2020, contemplating an extension of the early works until 28 February 2021. Qtectic would not incur any additional costs 'at risk' if the conditions of the agreement are satisfied. The agreement is subject to board and shareholder approval prior to 31 October 2020.

5.2.19. The State has stated that a potential alternative is to contract the ETCS procurement directly with Hitachi, and then deliver back to Qtectic the modified train. This solution would result in Qtectic not being responsible for the ETCS performance and Hitachi would be required to maintain the ETCS. This would lead to complexities of contract and operation. Qtectic has identified this as an unattractive solution and WSP would concur due to the additional complexities it would add to contracting and operations.

WAYSIDE DISPUTE

5.2.20. Compliance of the provided wayside systems is currently in dispute between the State and Qtectic/Bombardier. The State issued a formal dispute notice outlining their requirements and separately issued a direction to proceed with the relevant disputed wayside system works. The Dispute process relating to the Notice of Dispute – Wayside Systems was suspended while the parties explored without prejudice discussions and workshops.

5.2.21. All parties have now agreed on the technical solution to the various wayside systems which are subject to Dispute. The additional systems that form part of this dispute are the CCTV Live View, CCTV Analysis, Remote Train Announcements (RTA) and Remote Train Communications (RTC) & Wayside Systems, and the costs incurred to date and forecast to be incurred for the implemented functionality of PIS & infotainment Simulators and Orbita Duplication.

5.2.22. On 28 May 2020, the State set out its position on entitlement in a letter and a substantive response was provided on 10 July 2020. Bombardier are currently finalising a detailed cost analysis for the additional functionality. Commercial negotiations will recommence once this is completed with the intention of resolving the Wayside Dispute.

5.2.23. Bombardier has stated that the estimated timeframe for implementation of the additional functionality is two years and also that a large volume of documentation will require updating as a result of the additional functionality.

5.2.24. However, a condition agreed as part of the Standstill Agreement extension to 31st December 2020 was the provision of CCTV Analysis to the State at no extra cost to the State in accordance with the following conditions:

- By 31 March 2021 develop a Software Requirement Specification for the CCTV Analysis Tool and provide it to the State for the State's approval,
- By 30 June 2021 develop and deliver a CCTV Analysis Tool for testing and trial running (with modifications and updates as required), and
- By 31 December 2021 implement a fully tested CCTV Analysis Tool.

5.2.25. The delivery of the CCTV analysis tool to the State closes one of the elements of the wayside dispute.

5.2.26. Qtectic considers it likely that Wayside will be resolved through a negotiated outcome as part of with IFA or ETCS.

5.3 INITIAL FLEET ACCEPTANCE STRATEGY

5.3.1. Qtectic received the Final Acceptance Certificate for the 75th and final Multiple Unit on 24th September 2020. Qtectic considers that all criteria for Initial Fleet Acceptance have been met. Qtectic has submitted an application for Initial Fleet Acceptance to the State and expect a response on 12th October 2020.

5.3.2. Qtectic believes the State is unlikely to issue an Initial Fleet Acceptance Certificate, and Qtectic expects either:

- A Rejection in accordance with Clause 20.16(c), detailing the required rectification work which shall be completed before the Initial Fleet may be re-submitted for Initial Fleet Acceptance. If the State responds to Reject the application:
  - If Qtectic agrees with the State's requires rectification work, then Qtectic will complete the required work and re-submit the application; or
  - If Qtectic does not agree with the State's required rectification work, the Qtectic will move to Dispute

  or
- Correspondence from the State to the effect that the application for Initial Fleet Acceptance has not met the State's requirements, and is therefore not considered to be a valid application. If the State responds to the effect that the application has not met the requirements:
  - If Qtectic agrees with the State's position, then Qtectic will update the documentation and re-submit the application for Initial Fleet Acceptance; or
  - If Qtectic does not agree with the State's position, then Qtectic will move to Dispute in accordance with clause 62.

5.3.3. WSP understands that refinancing of the fleet is dependent on IFA and resolution of the odour issue.

5.4 VARIATIONS

5.4.1. Appendix I of the Qtectic Board Report dated September 2020 presents a table of open variations.

5.4.2. Listed below are the State Variations either in-progress or on hold:

- SV12 – Assistance Request Button
  - The State requested a Variation to the functionality of the Assistance Request Button. This Variation is in progress.
- SV 15 – CCTV Live View and Analysis
  - The State requested a Variation to include additional specific requirements relating to 4 live streaming of CCTV images, integration with the PEI and the associated DVR equipment. The initial request was withdrawn, and this is part of the wayside dispute. This remains on hold until the wayside dispute is resolved.
- SV17 – ETCS
  - The State requests a variation to install a Train Protection System during manufacture/as a retrofit to all NGR units and for an update to Baseline 3.0. This has been submitted on the basis of a Nil cost commercial arrangement as detailed in Project Variation 0061. The ETCS project is discussed in Section 5.2 of this report.
- SV19 – Guard Screen Surveillance Screen

- The State requested a variation to include new requirements for the Train Guard's Surveillance Screens and to include new Minimum Operating Requirements for the Screens. Series roll-out underway.

- SV23 – Functionality Changes CCTV
  - Changes to the functionality of the CCTV system. Series roll-out underway.
- SV21 – Vigilance System Upgrade
  - Hardware & software changes to update the Vigilance Control System agreed with the State on 19th December 2019. Works originally scheduled to be implemented on the 1st MU by 31 Aug 2020 and on the remainder Fleet by 31 March 2021, although COVID-19 is having an impact on the programme.
- SV29 – Train Radio Zone Split Enabling (Tait Firmware Upgrade)
  - The State requested a split to align with QR splitting geographical control zones between voice traffic for Train Control Radio and Rail Traffic Crew. The first three trial units have successfully completed the testing, and it is expected that the fleet roll out will take place shortly and was due to be completed by the deadline of 30 September 2020. This Variation was provided at no cost to the State as part of the Standstill Agreement Extension.
- SV33 – Temporary COVID-19 Cleaning
  - The State requested an Emergency Variation for additional focused cleans to control the risk of COVID-19. Additional cleaning activity underway. Cleaning costs submitted as a claim on a monthly basis.

6 OPERATIONAL PERFORMANCE

6.1 OPERATING PERFORMANCE – AVAILABILITY & RELIABILITY

AVAILABILITY REQUIREMENTS

6.1.1. Appendix 1 Part 1 of Schedule E2-Payment Mechanism of the Project Deed defines number of Available Multiple Units which the Project Co must provide and has had Accepted for each Availability Period for the Initial Fleet. When the full fleet of 75 Multiple Units is accepted, the Required Availability is 72 Multiple Units. This sets the availability requirement at 96%, this is a relatively high target, but for the reasons below this should be a target which Bombardier can achieve as A&M contractor:

- The fleet size allows 3 Multiple Units to be out of service at any one time across maintenance activity and service spares
- The fleet is a modern EMU, maintained using Bombardier best practice including the use of an Automated Visual Inspection System

6.1.2. Unacceptable Availability is presented in the Project Deed as an Event of Default and is triggered if any of the below criteria are met in the period after Provisional Acceptance of the eighth Multiple unit to achieve Provisional Acceptance:

- less than 85% of the Required Availability is Available in any one Availability Period;
- less than 90% of the Required Availability is Available in any 12 Availability Periods in any 12 month rolling period;
- less than 95% of all the Required Availability is Available in any 20 Availability Periods in any 12 month rolling period; or
- less than 80% of the Required Availability is Available in any five out of seven consecutive Availability Periods (where no two such periods of seven consecutive Availability Periods overlap)

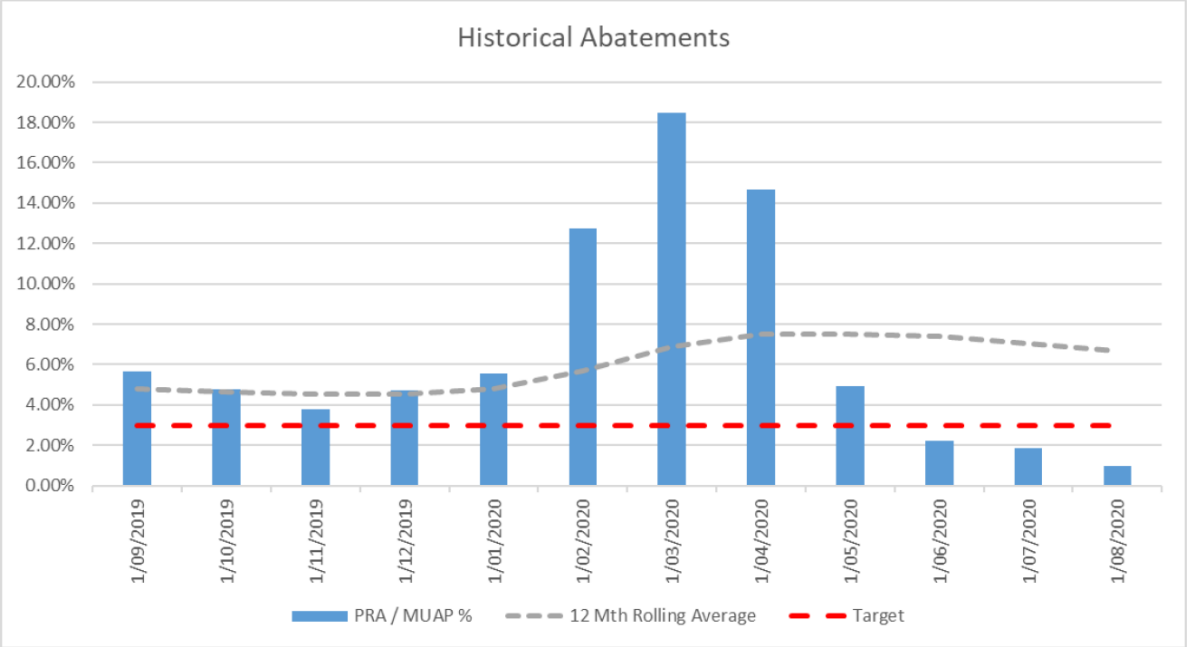
IN-SERVICE AVAILABILITY

6.1.3. In the 6-month period from March to August 2020, there were no Events of Default noted in relation to Availability.

6.1.4. Qtectic follows typical PPPs in the rolling stock sector by monitoring the ratio of abatement (PRA) to availability payment before performance, maintenance and programme deductions are made (MUAP). In line with sector practice, Qtectic targets a 3% ratio of PRA:MUAP. The project's performance against this metric over the 12 months to August 2020 is presented in Figure 6-1 below.

6.1.5. The average PRA:MUAP ratio for the 12 months to August 2020 was 6.7%. Since June 2020, the PRA:MUAP has dropped below the target 3%, with a value of 0.98% recorded in August 2020.

Figure 6-1 - Historical Abatements represented as a ratio of PRA:MUAP for 12 months to August 2020



RELIABILITY REQUIREMENTS

6.1.6. Unacceptable Reliability is presented in the Project Deed as the calculated Mean Distance Between Failures (MDBF) for either a Type 1 Failure or a Type 2 Failure in any three-month rolling period (the "Measurement Period") is lower than the MDBF default threshold set out in the following table for that Measurement Period and that Reliability Failure Type:

(Note the below thresholds are applicable for a fleet size of over 50 Multiple Units in Service)

- MDBF Default Threshold (km) – Type 1 Failure = 200,000
  Where a Type 1 Failure is defined as Multiple Unit is not Fit to Remain in Service and the Multiple Unit is withdrawn from service before reaching its Terminating Destination; or means that at Handback the Multiple Unit is unable to access the New Depot due to the inability of the Project Co to provide access, and as a consequence the Multiple Unit (in full or part) remains on the Network.
- MDBF Default Threshold (km) – Type 2 Failure = 54,500
  Where a Type 2 Failure is defined as a Multiple Unit not Fit to Remain in Service and the Multiple Unit is withdrawn from service on or after reaching its Terminating Destination.

IN SERVICE RELIABILITY

6.1.7. The fleet is currently operating above the required MDBF Event of Default thresholds for both T1 and T2 Failures. The performance requirement is 193,036km for T1 Failures and 53,964km for T2 Failures. This is a weighted Type 2 calculation to reflect the SV12, 19, 23 variations.

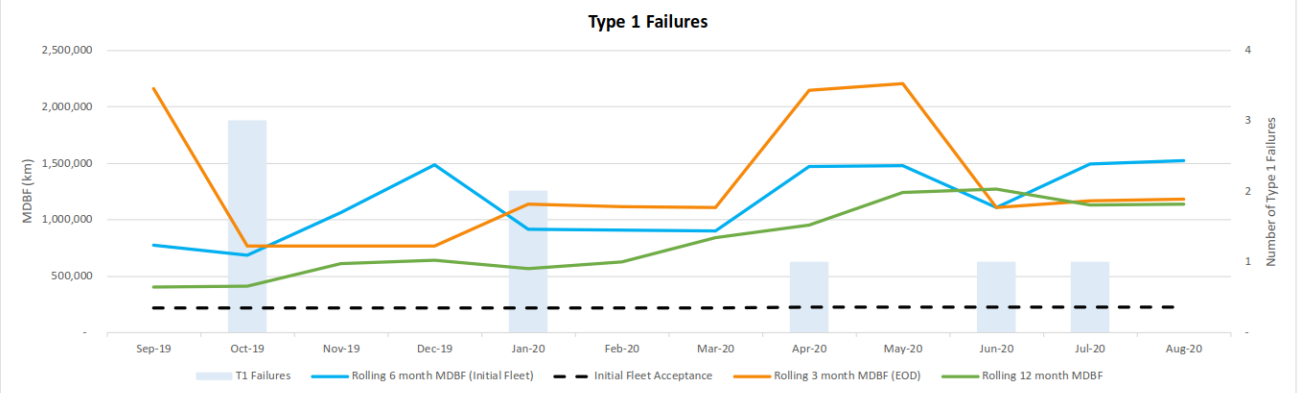
6.1.8. The in-service reliability as presented in the September 2020 Board Pack is as shown in the table below.

Table 6-1 – In-Service Reliability

Multiple Units in Service	3 months rolling Requirement / Actual	MDBF T1 Failures (km)	MDBF T2 Failures (km)
50+ MUs	Requirement	193,036	53,836
50+ MUs	Actual	1,180,088	195,285
	Status	**No Event of Default**	**No Event of Default**

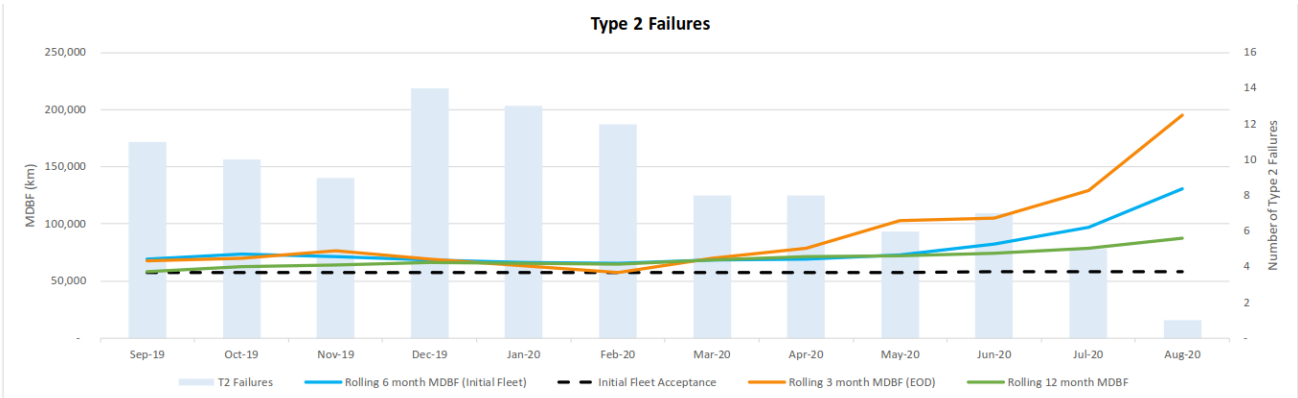
6.1.9. Figure 6-2 and Figure 6-3 below show the in-service reliability trends in the 12 months ending August 2020. Both metrics are exceeding requirements and showing positive trends that are in line with the fleet becoming established in service.

Figure 6-2 - In service reliability - Type 1 Failures



Month	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20
T1 Failures	-	3	-	-	2	-	-	1	-	1	1	-
Rolling 6 month MDBF (Initial Fleet)	772,717	686,655	1,066,743	1,483,761	915,313	907,003	902,533	1,473,630	1,478,297	1,107,896	1,493,867	1,521,283
Rolling 3 month MDBF (EOD)	2,158,635	765,632	767,934	764,216	1,139,834	1,115,608	1,110,009	2,141,224	2,203,675	1,105,784	1,170,188	1,180,088
Rolling 12 month MDBF	407,044	408,155	608,665	637,590	568,789	629,221	837,625	948,980	1,243,123	1,268,981	1,132,271	1,137,358

Figure 6-3 - In-service reliability - Type 2 Failures



Month	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20
T2 Failures	11	10	9	14	13	12	8	8	6	7	5	1
Rolling 6 month MDBF (Initial Fleet)	68,993	73,570	71,116	68,481	66,327	65,725	68,374	69,076	72,703	82,066	97,426	130,396
Rolling 3 month MDBF (EOD)	67,457	69,603	76,793	69,474	63,324	57,211	69,877	79,054	103,112	104,961	129,267	195,285
Rolling 12 month MDBF	58,149	62,510	64,070	65,958	65,810	64,920	68,658	71,174	71,916	74,646	78,767	87,489

6.2 INDUSTRIAL RELATIONS

6.2.1. The September 2020 Board Report highlights an ongoing Industrial Relations issue with the Bombardier workforce delivering the A&M contract.

6.2.2. Bombardier failed to reach an agreement with the RBTU on the proposed changes to work conditions. The Union went to the Fair Work Commission to get approval to go to a Protective Ballot. When the ballot was undertaken, the Union received a favourable result. In the meantime, Bombardier are continuing to negotiate a new Enterprise Bargaining Agreement with the Union.

6.2.3. WSP understands from the September 2020 Board report that Bombardier are finalising business continuity plans and in proactive dialogue with the RBTU to discuss next steps. Bombardier holds the risk of increased costs to provide the A&M services due to industrial action.

7 COVID-19 IMPACT

7.1.1. WSP's reviews of the Qtectic board reports identified that the Project Co is taking a pro-active approach to monitoring and reacting to the COVID-19 pandemic.

7.1.2. WSP advises that Qtectic continues to monitor Bombardier for supply chain and operational issues arising from the COVID-19 pandemic.

7.2 COVID-19 IMPACT ON QTECTIC

7.2.1. Qtectic has put in place an active COVID-Safe Plan. Qtectic are reliant on each party responsible for site safety to develop and share their own COVID-Safe Plans. Bombardier have now shared their COVID-Safe Plans with respect to the Milton, Wulkuraka and Maryborough workplaces. Qtectic also have access to the Downer and Queensland Rail COVID-Safe Plans as they relate to the Downer Maryborough and Stabling Site workplaces, respectively. To that end, Qtectic now have in place all necessary processes and procedures to support a return to work at the Qtectic workplaces, where that is appropriate. Qtectic continually monitors the evolution of the COVID-19 situation locally and globally to ensure risk is properly evaluated and mitigated and the governmental advice is followed.

7.3 COVID-19 RELIEF EVENTS AND EXTENSION OF TIMES (EOT)

7.3.1. To date, Qtectic has submitted the following notices under the Project Deed in relation to the impact of COVID-19:

- A Relief Event for 'biological contamination' and 'embargo' in accordance with 37.5 of the Project Deed. This claim is back to back with notices provided under the D&D Subcontract and A&M Subcontract by Bombardier.
- An RDAD EOT Event Notice in accordance with clause 37A.3(a)(v) of the Amended & Restated Project Deed (i.e. the specific DSAPT provisions). This claim is back to back with notices provided under the DSAPT Contract by Bombardier.
- A Claim for a Qualifying Change of Law under both the Project Deed and the RDAD. Bombardier has submitted a Qualifying Change of Law notice under the D&D Subcontract, A&M Subcontract and DSAPT Contract.

7.3.2. Qtectic will continue to provide its monthly updates in respect of the Claims and will be in a position to fully particularise the Claims, with a programme overlay once the impacts of COVID-19 cease.

7.4 COVID-19 IMPACT ON D&D AND A&M SUBCONTRACTOR

7.4.1. Bombardier noted that COVID-19 has impacted the SV19 modification and that there was some delay in logistics (i.e. paint for doors). This is due to customs prioritising medical supplies.

7.4.2. The Independent Certifier is concerned that the global impact of the Covid-19 is now having wider impact on all Bombardier's D&D and A&M activities. There is no visibility of the Procurement risk mitigation put in place to prevent significant impact to the NGR operation on site at WMF.

7.4.3. Bombardier has highlighted the risk of delay and impact to the programme as a result of the COVID-19 pandemic. Bombardier is undertaking mitigating actions, by engaging in ongoing discussion with suppliers and subcontractors around material sourcing and staff resourcing. Bombardier state that they have 3-months of A&M spares and consumables and have secured parts for the ongoing SV12, SV19 and SV23 programmes. Bombardier do not yet predict a parts risk for AVP, however the Independent Certifier notes in its' August 2020 report that it considers the AVP series toilet modules a high risk.

7.5 LONG-TERM IMPACT OF COVID-19 ON DEMAND FOR RAIL TRAVEL

7.5.1. It is not yet clear what the full impact of the COVID pandemic will be on the economy or people's travel habits, but trends show that there should be an expectation of economic slowing and reduced travel while restrictions remain in place to restrict the spread of the virus. In the long run, we may see a change in travel patterns as people continue to work from home either full time, or for a few days per week. The contractual structure of the PPP means that Qtectic is not exposed to revenue risk for the fleet in service. The revenue risk is held by the State.

8 FLEET FUTURE REQUIREMENTS

8.1 FUTURE REQUIREMENTS FOR MODIFICATIONS TO THE FLEET

UPCOMING CHANGES IN STANDARDS APPLICABLE TO THE FLEET

8.1.1. WSP is not aware of any upcoming legislation or Standards changes that will impact the fleet.

CROSS RIVER RAIL PROJECT

8.1.2. Cross River Rail is an underground railway project through central Brisbane, which is currently under construction. Cross River Rail will see the development of a new rail line underneath Brisbane River, and the redevelopment of a number of stations in the Brisbane central business district. The tunnel, due to be completed in 2024, will use ETCS, Platform Screen Doors (PSD) and Automatic Train Operation (ATO).

8.1.3. At first, the tunnel will be solely operated by the NGR fleet. WSP understands that initially there may be a period of manual driving with PSD in the tunnels before ATO is deployed. Manual stopping in line with the PSDs will require driver assistance to ensure the MUs stop in line with the doors. This may be a trackside marker, or may be fitted on board the train.

8.1.4. Increased tunnel operation will necessitate analysis of train systems for technical, safety, operability and reliability issues.

8.1.5. The delivery of the Cross River Rail Project will change the operational pattern of the NGR fleet, resulting in potential changes to stabling and frequency of return to the Wulkuraka Maintenance facility. Once operating through the Cross River tunnels, it is expected that the daily mileage for the fleet will increase. WSP understands that the fleet will be operating through the tunnel section at an increased trains per hour rate than its current operation, this will mean that the potential for knock-on delay minutes will increase. WSP understands that Qtectic intends to adjust abatement and/or maintenance regimes for the impact of the Cross River Project if it causes operations to go beyond the scope contemplated in the Project Deed.

9 APPENDICES

TABLE OF ACRONYMS & ABBREVIATIONS

Acronym / Abbreviation	Meaning
$	Australian Dollars
A&M	Availability & Maintenance
AP	Availability Payment
ASPA	Additional A&M Services Payment Adjustment
ATO	Automatic Train Operation
Bn	Billion
BRAP	Base Rate Adjustment Payment
c.	Circa
CCTV	Closed-circuit television
D&D	Design & Delivery
DAR	Deeds of Agreement and Release
DCC	Depot Capital Contribution
DSAPT	Disability Standards for Accessible Public Transport
DCC	Depot Capital Contribution
EMU	Electric Multiple Unit
EOT	Extension of Times
ETCS	European Train Control System
FAD	Final Acceptance Deduction

FLAD	Initial Fleet Acceptance Deduction
FMUP	Fixed Multiple Unit Payment
FY	Financial year
HVAC	Heating, ventilation, and air conditioning
HSE	Health, Safety, Environment
IFA	Initial Fleet Acceptance
IMUCC	Initial Fleet Multiple Unit Capital Contribution
km	Kilometre
KPIA	KPI Adjustment
LCD	Liquid Crystal Display
LD	Liquidated Damages
M	Million
MDBF	Mean Distance Between Failures
MP	Maintenance Payment
MU	Multiple Unit
MUAP	Multiple Unit Availability Payment
MUBAP	Multiple Unit Base Availability Payment
MUPA	Marginal Unit Payment Adjustment
NGR	New Generation Rolling Stock
OA	Other Adjustments
PAC	Provisional Acceptance Criteria

PPP	Public-Private Partnership
PRA	Performance Regime Adjustment
PSD	Platform Screen Doors
QPAC	Qualified Provisional Acceptance
QR	Queensland Rail
RAG	Red, Amber, Green
RBTU	Rail, Bus & Tram Union
RDAD	Re-Baseline and DSAPT Amendment Deed
SEMS	Safety & Environmental Management System
SV	State Variation
VA	Volume Adjustment

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