Aurizon Network

Proposed Standard User Funding Agreement Risk Assessment

April 2013

Final Report

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17 April 2013

Dear Dean

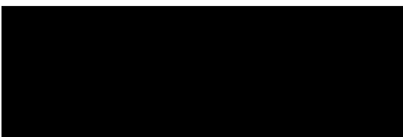
Thank you for appointing us to assist Aurizon Network Pty Ltd (Aurizon Network) by reviewing the proposed standard User Funding Agreement (SUFA).

We have conducted our assessment in accordance with the engagement letter dated 26 September 2012 and have summarised our view in the attached report.

Please don't hesitate to contact me on (07) 3308 7206 or Tom Frost on (07) 3308 7417 if you would like to discuss any aspect of this report.

We look forward to working with you again in the future.

Yours sincerely



Mark Ingham

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1 Introduction

1.1 Background

QR Network Pty Ltd's, now Aurizon Network's, 2010 Access Undertaking (UT3) was approved by the Queensland Competition Authority (QCA) on 1 October 2010. Clause 7.6(a) of UT3 requires Aurizon Network to submit a proposed Standard User Funding Agreement (SUFA) and a draft amending access undertaking to implement a framework that complied with the principles set out in Schedule J of UT3.

On 24 December 2010, Aurizon Network submitted a Draft Amending Access Undertaking (2011 DAAU) and proposed SUFA to the QCA which was published on the QCA's website for public consultation. Stakeholders raised a number of concerns with the proposed SUFA, however the QCA's consideration of the SUFA and the 2011 DAAU concluded on 30 April 2012 when Aurizon Network withdrew both documents.

Aurizon Network has subsequently been consulting with stakeholders and the Government in terms of the development of SUFA. Prior to submitting a revised proposal to the QCA, Aurizon Network commissioned Deloitte to review certain aspects of the SUFA.

1.2 Purpose of this report

Deloitte has been commissioned by Aurizon Network to identify the relevant cash flow risks to a user funded transaction with the purpose of:

- Confirming that cash flows associated with an infrastructure enhancement are effectively risk neutral between Aurizon Network as owner or the user as an effective economic owner
- Where the cash flows and risks are not effectively neutral, opine to whether the difference is likely to exceed the statistical error within the Capital Asset Pricing Model (CAPM)
- Where the risks are not equal, opine whether the assignment of risk is associated with a reasonable level of control, or that the incentives are aligned.

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1.3 Approach

Our approach involved:

1. Understanding and mapping the cash flows that would result from an investment by Aurizon Network and the cash flow which would result under the proposed user funding model
2. Considering the variability, volatility and risks associated with the cash flows.

In order to gain an understanding of both the current arrangements and the proposed user funding arrangements we had a number of meetings with the following Aurizon Network staff:

- Ian Lock, Group Manager Commercial Network Development & Regulation
- Julian Thornton, Manager New Business Commercial Development
- Dean Gannaway, Manager Regulation & Policy Finance & Regulation.

Additionally, we were given copies of the following documents:

- *User Funding - Trust Deed*, QCA submission draft, 18 December 2012
- *User Funding - Project Management Agreement*, QCA submission draft, 18 December 2012 (Project Management Agreement)
- *User Funding – Rail Corridor Agreement,* QCA submission draft, 18 December 2012 (Rail Corridor Agreement)
- *User Funding - Subscription and Unit Holders Deed*, QCA submission draft, 18 December 2012
- *User Funding - Extension Infrastructure Lease*, QCA submission draft, 18 December 2012
- *User Funding - Umbrella Agreement*, QCA submission draft, 18 December 2012
- *User Funding – Integrated Network Deed,* QCA submission draft, 18 December 2012 (Integrated Network Deed)
- Risk Allocation Table for a Generic SUFA project.

It should be noted that these documents are in draft form and may be subject to change – it has been noted in the discussion where the current position may differ from that in the draft documents.

The cash flows under the following circumstances have been mapped and are presented in Section 2.1.

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We have then considered the variability, volatility and risks associated with the cash flows. This task has been completed through stress testing the proposed SUFA model by examining how cash flows will be affected by a range of scenarios (refer to Section 2.2). For each scenario and consideration, we have evaluated how the user funder's cash flow risks compare to those of Aurizon Network under the proposed SUFA.

Where differences have been identified we have examined their implications on the cost of capital through an assessment of their potential impact on the cost of equity in Section 3 (noting that the cost of debt is explicitly excluded from being considered in this review).

Finally, we have undertaken a high level of assessment of how effectively the interests of Aurizon network as a constructor, asset manager and Trustee are aligned with those of the user funders (Section 3.3).

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2 Cash Flow Risk

2.1 Mapping the Cash Flows

Cash flows under the following circumstances have been mapped:

1. Aurizon Network funded investment
2. User funded investment – construction phase
3. User funded investment – operational phase
4. User funded investment – termination phase.

These circumstances represent the status quo and the key stages under the user funded model. A high level description of each circumstance is included below.

2.1.1 QRNN Funded Investment

The figure below outlines the current arrangements in which Aurizon Network funds investment in the Central Queensland Coal Network (CQCN). Aurizon (Aurizon Network's parent company) borrows funds and provides construction funding to Aurizon Network. The Access Undertaking outlines the negotiation framework under which Aurizon Network negotiates with access seekers. Aurizon Network enters into access agreements with users and contracts with both third parties and related entities for the construction of the infrastructure.

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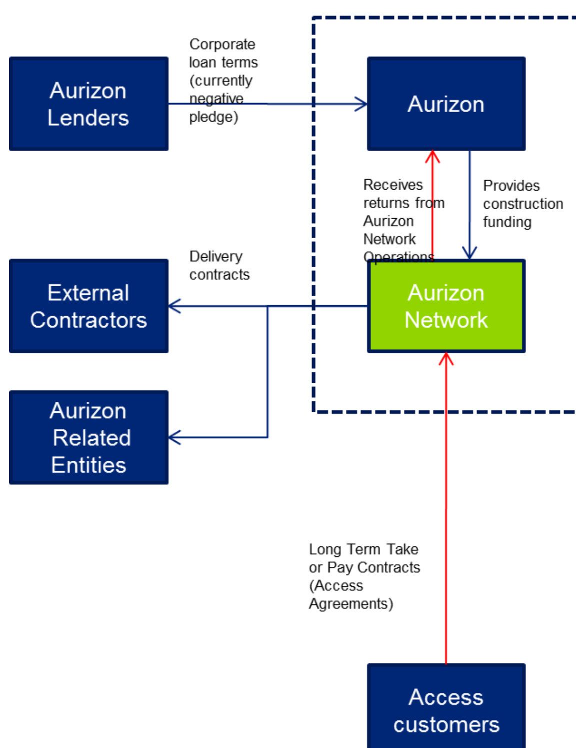
Figure 1 Aurizon Network Funded Investment Cash Flow Map



2.1.2 User Funded Investment

The proposed SUFA involves the establishment of a Trust. The initial setup of the Trust involves a number of potentially complex negotiations both between individual users, and between users and Aurizon Network. The requirements of the negotiation with Aurizon Network are broadly consistent with those required to negotiate access to additional capacity where the investment is being funded by Aurizon Network, and are guided through both the Access Undertaking and the SUFA specific documents.

The negotiations between users are in addition to those that would be required under an Aurizon Network funding model, as the users will need to decide how they will act as a group in negotiations with Aurizon Network, the State and other parties through the various construction and operational periods. These negotiations could be relatively complex, but they do not impact on the cash flows that would result from the investment.

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The outcome of the set up phase is the establishment of a Trust that has:

- Aurizon Network as the Trustee
- Aurizon Network as the ordinary subscriber
- Preference subscribers that have subscribed for a specified number of preference shares based on their agreed proportion of the total capital expenditure
- A licence (from Aurizon Network) to access and use certain rail corridor land for the purpose of operating, managing, repairing, maintaining and modifying the extension in accordance with the Rail Corridor Agreement and Extension Infrastructure Lease, and a non-exclusive licence, right and privilege to modify the landholder infrastructure in accordance with the terms of the Rail Corridor Agreement.

By the time the infrastructure becomes operational it will be owned by the State, leased back to the Trust which then subleases the infrastructure to Aurizon Network.

Under SUFA there will be a construction phase, an operational phase and a termination phase. The cash flows differ between the different phases and they have been described in the sections below.

2.1.2.1 Construction Phase

Under the Project Management Agreement, the Trustee will appoint Aurizon Network (as project manager) to project manage the design, procurement, construction, commissioning and completion of the extension. The details of how these activities will be undertaken are negotiated with Aurizon Network by user funders via the Trust.

The negotiation will define the parameters of the construction process, notably:

1) The procurement methodology
2) The project scope
3) The target cost
4) The target availability dates
5) Any project management fee payable to Aurizon Network (and the associated conditions).

At closure, each user funder will be committed to pay up to a total of 130% of its share of the project's target cost.

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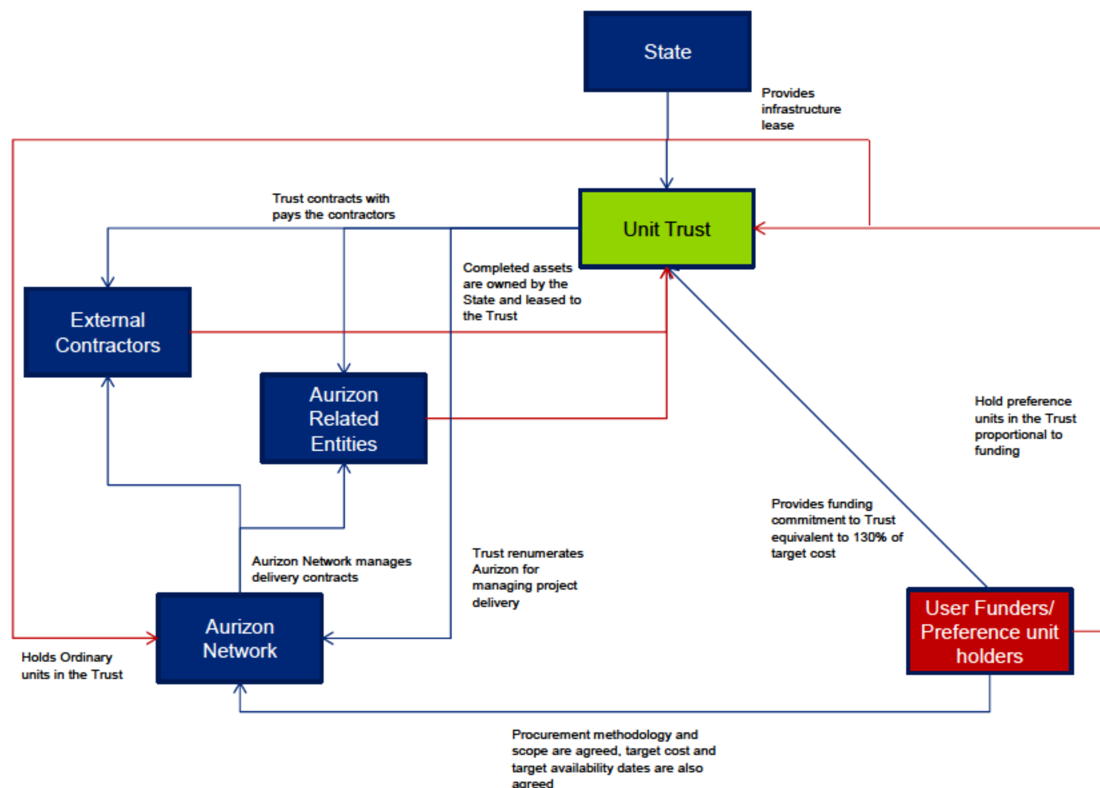
Following closure, each user funder (unless it meets a creditworthiness threshold) will need to provide the Trust with a bank guarantee to the value of its expected future calls from time to time over the construction period. This threshold is met when the user funder has either a credit rating of at least Standard & Poor's A- or a guarantee from a company with such a rating, in which case no credit support is required by that user funder. The initial commitment of each user funder will be 100% their share of the initial target project cost, however the user funder will be required to commit to pay up to a total of 130% of its share of the project's target cost.

To the extent that the Trust has at closure agreed the project's scope and/or procurement methodology requirements, the Trust takes optimisation risk on those requirements. Payments to contractors will be via the Trust.

The figure below outlines the arrangements and the cash flows during the construction phase of a user funded investment.

Figure 2 User Funded Investment Construction Phase Cash Flow Map



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2.1.2.2 Operational Phase

During the operational phase access holders will contract with Aurizon Network under the ordinary terms of their access agreements (with associated take or pay and revenue cap provisions), but their invoice will include a direction to pay provision. This direction to pay will instruct the access holder to pay a defined portion of their access fees directly to the Trust, which will receive these amounts as lease rental due from Aurizon Network in respect of the user funded infrastructure. These payments accrue monthly. The Trust will then pay lease rental net of trust operating expenses to the preference unit holders. Although QRNN is able to prevent the Trust from making such distributions, there are strong financial incentives for QRNN not to prevent distributions. The financial incentives are that, if QRNN elects to block Trust distributions, QRNN is required to pay compensation equal to interest at the regulated WACC on the blocked distributions and to meet all of the Trustee's tax outgoings due to non-distribution.

The calculation of the actual value of the payment is detailed in the SUFA documentation and it equates to that portion of Aurizon Network's maximum allowable revenue (on the rail system augmented by the SUFA project) that is directly attributable to the user funded assets as per the terms of the lease. It excludes all operating and maintenance costs associated with the user funded assets which are paid directly to Aurizon Network (the operator / maintainer).

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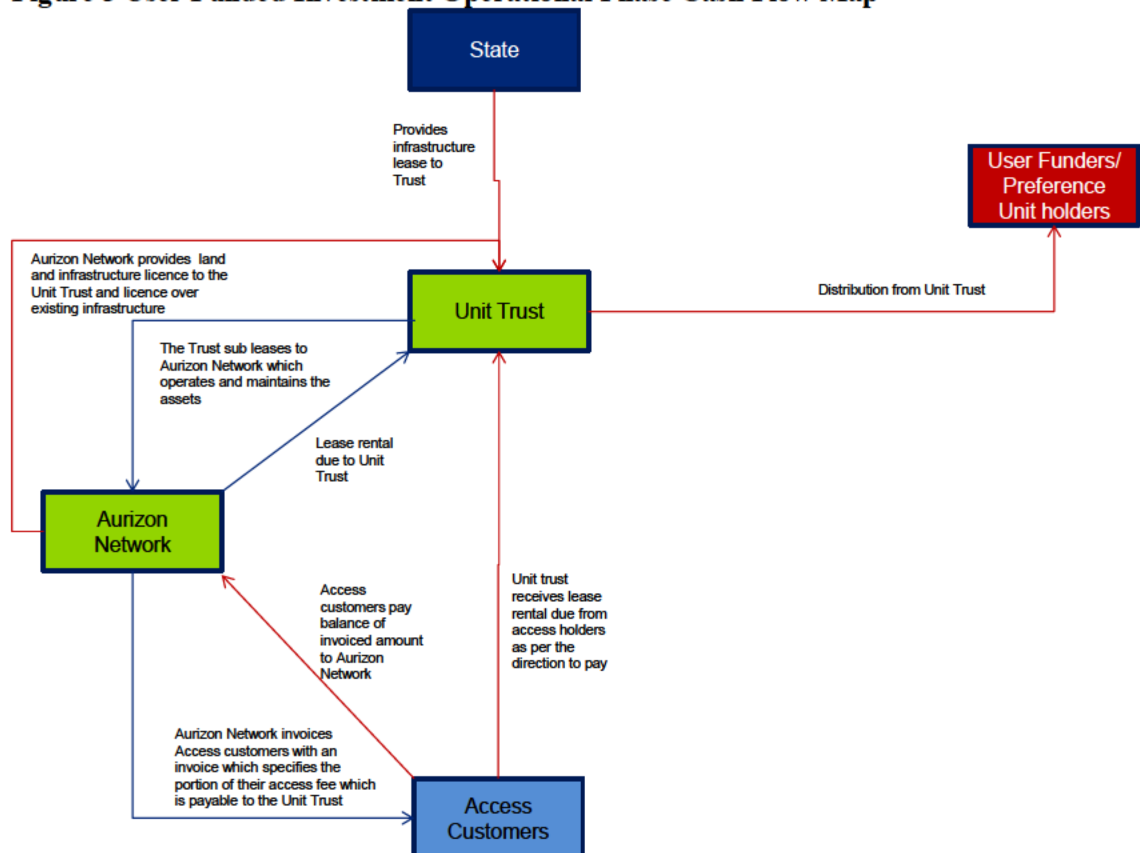
The figure below outlines the arrangements and the cash flows during the operational phase of a user funded investment.

Figure 3 User Funded Investment Operational Phase Cash Flow Map



2.1.2.3 Termination Phase

There are a number of scenarios in which the Integrated Network Deed and the SUFA arrangements can be terminated, including if:

1. The infrastructure lease expires
2. The Trustee loses the right to lease the infrastructure
3. Aurizon Network becomes insolvent.

When the SUFA infrastructure lease expires, the user funders will have received the return of and return on capital for the infrastructure they funded. Aurizon Network may redeem the preference units for nominal consideration, and as the ordinary unit holder, Aurizon Network will have the only beneficial interest in the Trust.

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If the Trustee's lease from the State is terminated, the SUFA assets will be leased by the State directly to Aurizon Network. In this event, Aurizon Network has indicted that it is looking to include provisions in the SUFA that will require it to negotiate with user funders to pay them the capital return associated with the user funded assets. To the extent the termination of the infrastructure lease is not the fault of Aurizon Network the amount paid will be less any costs incurred by Aurizon Network, in this situation there will be no net gain to Aurizon Network.

If there is an event during the operational phase where the user funded assets remain operational (and earning revenue) but Aurizon Network falls into the hands of an administrator, to the extent the Extension Infrastructure Lease remains in place and the assets are used, the Trust will continue to earn revenue. Additionally, to the extent the Extension Access Agreements remain in place the Trust will continue to receive its revenue directly from the Extension Access Agreement Customers. It is considered unlikely that the administrator would terminate Aurizon Network’s lease rights from the Trust since doing so would render the rail corridor augmented by the SUFA project useless.

In this scenario Aurizon Network's existing infrastructure lease with the State as well as each SUFA infrastructure lease would be subject to early termination by the State. Consequently, the assets Aurizon Network operates under its lease (including the user funded asset) would revert to the State.

Following reversion to the State, the State will sell the long term lease to a third party and distribute the proceeds from the sale between Aurizon Network (for distribution to its creditors) and any user funder groups, in accordance with a sharing methodology agreed as at closure of each SUFA transaction (it is expected that these shares will be proportional to the Discounted Value of the assets unless there has been a specific optimisation event).

The figure below outlines the steps involved and the cash flows during the termination phase of a user funded investment in the event the assets revert to the State.

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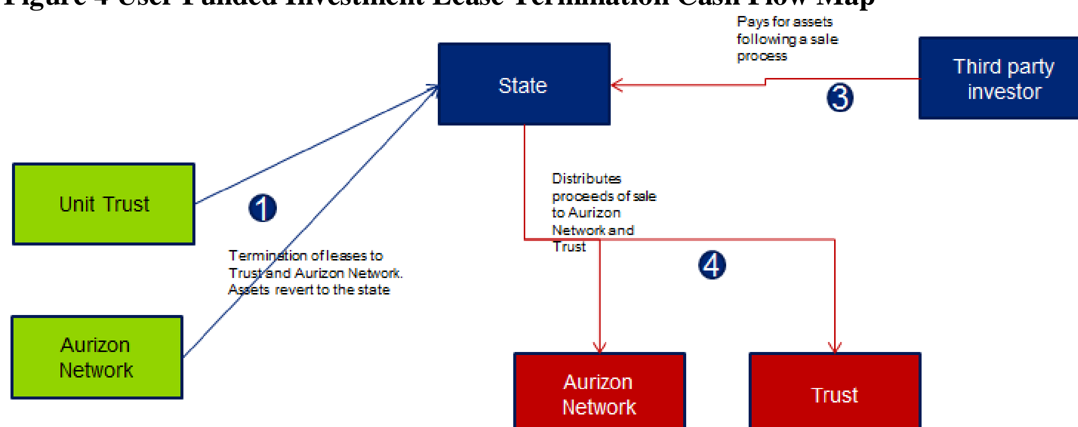
Figure 4 User Funded Investment Lease Termination Cash Flow Map



2.2 Assessing the Cash Flow Risk

We have considered the variability, volatility and risks associated with the cash flows. This task has been completed through stress testing the models by examining how cash flows will be affected by a range of scenarios including:

- Aurizon Network default and liquidation and the subsequent distribution of proceeds
- Aurizon Network default and the distribution of revenue during operation by an administrator
- Optimisation by the regulator preventing the full construction cost from being capitalised in the regulated asset base (RAB)
- User default during construction or major construction cost increases
- Optimisation by the QCA during the operational phase
- Trustee's lease with the State is terminated due to the Trustee's breach
- Trustee's lease with the State is terminated due to breach by Aurizon Network (as sub-lessee).

Additionally, consideration has been given to:

- Working capital costs during construction
- Cost associated with irrevocable letters of credit issued by a bank
- Related party payment incentives
- Inclusion of operating and performance risk allowance
- Exposure to uninsurable events.

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Each of these scenarios and considerations have been detailed in Table 1 below along with a comment on the how the residual risk to the user funders (if any) differs from that which Aurizon Network would bear if they were funding the investment themselves.

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Table 1: Summary of Cash Flow Risks

Issue	Cash Flow Risks	Comments
A scenario where all State infrastructure leases (i.e. Aurizon Network's own and the SUFA lease(s)) are terminated and Aurizon Network's trading ceases	Under the scenario that an Aurizon Network default results in the termination of the sub-lease and/or lease, after a (yet to be finalised) period of time, the leases will be terminated. The State will then be required to sell the long-term lease that relates to all of the Central Queensland Coal assets that are operated under Aurizon Network's lease/sub-lease. The net proceeds of disposal will be shared between former infrastructure lessees in accordance with a sharing methodology agreed at closure of each SUFA transaction. It is proposed that each parties share will be determined on a relative discounted cash flow basis (with the user funders negotiating position within the Trust being determined by the number of preference units that they hold). Therefore the quantum of proceeds in these circumstances for user funders will be uncertain, and value of assets potentially dependent on the value of the larger pool of assets.	User funders bear the residual risk over the final share of sale proceeds relative to the actual value of the residual investment. This risk is consistent with the risk that Aurizon Network would bear if they funded the asset, but for the user funders it is an uncontrollable risk that they are exposed to.
Distribution of revenue while Aurizon Network is in corporate distress and trading	Upon an Aurizon Network insolvency event it is expected that the asset will first be operated by an administrator, through this period the direction to pay obligations will be upheld by the access agreements and revenue will continue to accrue to the Trust.	The direction to pay provisions should ensure that users continue to be paid after to the administrator taking control.

Issue	Cash Flow Risks	Comments
Optimisation by the regulator preventing the full construction cost from being capitalised in the RAB	SUFA allocates optimisation risk between: - the user funders, in respect of project decisions they accept at closure, such as the agreed project scope - Aurizon Network, in respect of other project decisions outside of the agreed scope. To the extent that optimisation relates to Aurizon Network accepted optimisation risk, Aurizon Network is liable and the liability is calculated through a defined process that is documented as an optimisation fee in the SUFA. When payable, this fee includes full recompense of any optimised expenditure including all associated interest during construction charges.	Construction optimisation risk for user funders is limited to project decisions, such as the procurement methodology, set by the user funders.
Potential for additional capital contributions	Under the terms of the EIL Aurizon is obliged to pay operating and maintenance costs but has no obligation to replace any part of the Leased Extension Infrastructure which is obsolete or life expired. This may include items which would have be replaced a number of times during the term of the SUFA agreement such as turnouts, rail or ballast. The unit preferences holders rely on Aurizon interests aligning with their own to ensure that Aurizon undertake the appropriate investment. If this is not the case they will be incentivised to make further capital contributions over the life of the asset which may result in the unit preference holders owning some assets which have asset lives that extend beyond the term of the SUFA.	User funders rely on an alignment of interests with Aurizon (or the entity which acquires the relevant assets owned by Aurizon) to ensure that they are not required to make additional capital contributions.

Issue	Cash Flow Risks	Comments
User default during construction (project cost less than130% of target)	Users are asked to provide a bank guarantee for call amounts. Users may be required to provide funding for 130% of the target capital cost. If one or more of the user funders is unable to fund the additional investment, there is a risk that insufficient funds will be available to complete the project. This is risk is mitigated by the ability of: a) Other users taking up the option to the access rights and funding obligations b) Selling the rights and obligations to another potential access user (that was not included in the original user funding group) c) If the sale was unsuccessful, the other user funders could cover the required funding requirements and take up the associated access rights at a discount to the face value of the original investment. Under this scenario the users (and Aurizon Network who will also have the option to take up the investment) are incentivised to take up the commitments of the defaulting user because they will receive income from the full value of that user's investment. The entity that has defaulted, on the other hand, may not receive the full value of its investment as compensation.	The risk of non-completion is higher than under an Aurizon Network funded option, particularly in situations where the expansion is dominated by a single major miner and that miner is unable to extend additional funds. Under this scenario it is unlikely that the remaining smaller miners, or another potential access user, would be willing (or able to) pick up the funding requirements.
User default during construction (project cost greater than130% of target)	Users are asked to provide a bank guarantee for call amounts. Users may be required to provide funding for 130% of the target capital cost. To the extent that costs rise beyond this level, and one or more of the user funders is unwilling or unable to fund the additional investment, there is a risk that insufficient funds will be available to complete the project.	The risk of non-completion is higher than under an Aurizon Network funded option, particularly in situations where the expansion is dominated by a single major miner and that miner is unable to extend additional funds. Under this scenario it is unlikely that the remaining smaller miners, or another potential access user, would be willing (or able to) pick up the funding requirements.

Issue	Cash Flow Risks	Comments
Optimisation by the QCA during the operational phase	Once built and operating there is a risk that part of the railway system becomes redundant due changing market conditions. This decision would be made by the regulator following stakeholder consultation.	This risk would be the same for user funders as it would be if the asset were built and funded by Aurizon Network.
Trustee loses the right to be an infrastructure lease holder due to the Trustee not fulfilling its obligations	If the Trustee's lease with the State terminated due to the Trustee's breach (and Aurizon Network's CQCN infrastructure lease continued), then the SUFA assets would be leased by the State to Aurizon Network under the latter lease. Aurizon Network would continue to receive revenue in respect of the SUFA assets in regulatory access charges and it would no longer pay lease rental to the Trust, accordingly Aurizon Network's net revenue would increase. Clauses 3.6 of the EIL set out the compensation arrangements that would apply in this scenario. The intent is that Aurizon has no net gain.	Risks associated with the assets diverting to the holder of the CQCN infrastructure lease are mitigated somewhat by the proposed provisions. It is important that in addition to these provisions, there is a requirement for the Trustee to notify preference unit holders when they are provided with notices to undertake activities that, if not undertaken, would result in the Trustee being deemed ineligible to be a lease holder.

Issue	Cash Flow Risks	Comments
Trustee loses right to be an infrastructure lease holder due to Aurizon Network (the operator) not fulfilling its obligations.	If the Trustee's lease with the State terminated due to Aurizon Network's breach (and Aurizon Network's CQCN infrastructure lease continued), then the SUFA assets would be leased by the State to Aurizon Network under the latter lease. Aurizon Network would continue to receive revenue in respect of the SUFA assets by way of regulated access charges and it would no longer pay lease rental to the Trust, so Aurizon Network's net revenue would increase. Under Clause 3.5 of the EIL Aurizon Network assumes an obligation to pay compensation to the Trust that corresponds to the lease rental that would have been payable had the Trustee's lease with the State not terminated.	This risk is mitigated by the EIL provisions
Working capital costs during construction	An Aurizon Network build would likely involve the use of an open account build which would limit the requirement to actually draw down debt/equity until the monies have actually been spent. This approach is not available to the Trust so there is a requirement for users to draw down funds prior to expenditure which increases the cost of the build. While the Trust will reinvest funds not being used and return any interest to the Trust to reduce future call amounts, it is expected there will be a differential between the borrowing cost and the interest earned. At this stage it is not expected that these additional costs will be included in the RAB.	User funders are expected to have a higher unfunded working capital charge than Aurizon Network.
Cost associated with irrevocable letters of credit issued by a bank	In order to become preference unit holders, all entities that do not have a credit rating of at least A- will need to provide a bank guarantee to the Trust.	The cost of this facility would not be incurred by Aurizon Network and this cost is unlikely to be included in the RAB.

Issue	Cash Flow Risks	Comments
Related party payment incentives	Aurizon Network will be the project manager of the asset build and is also expected to bid for major components of the construction task using staff and equipment that have specialist equipment and skills. The requirement for Aurizon Network to negotiate with related parties creates risk that approvals will be given for works to be undertaken at inflated prices. The user funders will have veto rights over these contracts. To the extent that these negotiations were completed through an open tender process it is unlikely that a regulator would be able to dismiss these costs as being inefficient. To the extent that the procurement process was managed by Aurizon Network without direct involvement from the user funders any optimisation of costs by the regulator would be repayable by Aurizon Network.	The optimisation provisions combined with the power of the regulator to review Aurizon Network's costs mitigates against Aurizon Network over charging for those parts of the construction that are provided by Aurizon Network related entities.
Inclusion of operating performance and risk allowance	Aurizon Network is proposing to include a margin on the operating costs associated with the operation and maintenance of the user funded assets. The QCA has routinely rejected the inclusion of such margins where Aurizon Network owns and operates the assets on the basis that they are related party payments.	The impact on the users of the imposition of a margin will depend on the regulator. If the regulator allows it be recovered through the access charges the returns to the Trust will not be affected. -
Exposure to uninsurable events	When operating the user funded assets Aurizon Network bears the risk of operating and maintaining the assets and investing in any sustaining capex. To the extent this involves exposure to uninsurable events Aurizon Network bears the short term funding risks but it would be expected that these risks would be funded by variations in the opex allowance (as illustrated by the payments to Aurizon Network for flood recovery works). Where is there is substantial loss and destruction it would be expected that this would involve capital works to make the repairs and these capital works would be included in the RAB.	User funders have little exposure to uninsurable events during the operational phase. This is an operating risk born by Aurizon Network.

3 Implications for the cost of capital

Having detailed the potential differences in the cash flows under the two ownership models the second objective of this analysis is to determine if the variations in the cash flows identified will have a material impact on the cost of equity of the investment for user funders compared to the cost of equity of the investment that is assumed through the regulated returns provided to Aurizon Network.

To undertake this task we have reviewed the inputs to the cost of equity in the CAPM and focused on those factors that could be impacted by the ownership model.

3.1 Overview of the WACC Calculation

The WACC is designed to approximate the rate of return that is expected by investors in capital markets for investments of a given level of risk. It is a forward looking concept based on estimated future expected returns and future expected risk. The rate of return is essentially the opportunity cost to investors.

WACC is defined as:

$$WACC = \frac{D}{D+E} \times r_d + \frac{E}{D+E} \times r_e$$

Where

- D is the assumed level of debt
- E is the assumed level of equity
- R_d is the cost of debt
- R_e is the cost of equity

For the purposes of this review the focus is on the cost of equity. The components of the cost of debt are explicitly outside the brief that we were given and therefore have been excluded from this analysis. Although we note that the proposed structure is unlikely to be independently financeable and as such user funders will have to rely on balance sheet funding, which, particularly for smaller miners would be expected to be significantly higher than which is assumed by the regulator for below rail assets.

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3.2 Capital Asset Pricing Model

CAPM calculates the minimum rate of return that the company must earn on the equity-financed portion of its capital to leave the market price of its assets unchanged. The CAPM is the most widely accepted and used methodology for determining the cost of equity capital.

The cost of equity capital under CAPM is determined using the following formula:

$$K_e = R_f + \beta(R_m - R_f) + a$$

The components of the formula are:

K_e = required return on equity

R_f = the risk free rate of return

R_m = the expected return on the market portfolio

β = beta, the systematic risk of an asset/ stock

α = specific asset/company risk premium.

The table below reviews the inputs to the cost of equity in the CAPM to assess which factors could be impacted by the ownership model.

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Table 2: Analysis of inputs to the cost of equity

Input	Theory of input	Approach used to determine the cost of equity for the investment by the QCA	Potential impact of alternative ownership structures
Risk-free rate	The risk-free rate represents the rate of return on an asset with zero default risk.	A five year Commonwealth Government bond rate is used to approximate the risk-free rate that corresponds to the regulatory reset period.	As this is a market input, there is no difference in the estimation between an investment being funded by Aurizon Network or under the proposed user funded model.
Market risk premium	The market risk premium is the expected rate of return on the market portfolio of risky assets (i.e. the rate of return above the risk-free rate).	A market risk premium which is determined from the application of six different methodologies. These include: Ibbotson historical averaging, Siegel historical averaging, Merton method, Cornell method, discounted dividends model and surveys. No method is without limitation.	As this is a market input, there is no difference in the estimation between an investment being funded by Aurizon Network or under the proposed user funded model.
Gamma	Gamma reflects the benefit from dividend imputation credits and is the product of the utilisation rate of those credits and the distribution rate.	A gamma of 0.50 was appropriate in the context of the remainder of the WACC parameters being determined domestically.	If the QCA determines a gamma to be appropriate for Aurizon Network given the domestic WACC parameters, we consider a gamma would be applicable under the proposed user funded model. However, the evidence on whether investors value dividend imputation credits is inconclusive.
Asset beta	The asset beta measures the correlated volatility between an asset and a benchmark. Asset betas vary with the volatility of free cash flows and are driven by sensitivity to the economy and operating leverage. The asset beta removes the effect of financial leverage (i.e. gearing).	The asset beta used in the calculation of the cost of equity used to determine the WACC for the regulated assets focused on the underlying nature of the product (i.e. coal) or the service (i.e. coal handling). Regulatory energy firms were seen as being the most relevant comparator. The rationale being, regulated energy firms have relatively uncorrelated demand, revenue caps and/or take-or-pay contracts over significant volumes.	To the extent that the operating arrangements successfully result in the operations having a similar cash flow risk profile to that of the benchmark regulatory energy firms; the asset beta so derived will be appropriate. To the extent that the operating arrangements do no fully achieve this objective (i.e. are not directly comparable to the benchmark) the operations will have different cash flow risk profiles and may require a different beta.

Source Deloitte analysis

The beta coefficient measures the systematic risk or non-diversifiable risk of an asset in comparison to the market as a whole. Systematic risk, as separate from specific risk as discussed below, measures the extent to which the return on the asset or investment is correlated to market returns.

Betas will primarily be affected by three factors which include:

- The degree of operating leverage employed by the entity. Typically investments with a relatively high fixed cost base will be more exposed to economic cycles and therefore have higher systematic risk compared to those with a more variable cost base. However, in the case of regulated businesses with strong take or pay contracts and/or revenue caps these risks are often mitigated
- The degree of financial leverage employed in an investment. As additional debt is employed by a firm, equity investors will demand a higher return to compensate for the increased systematic risk associated with higher levels of debt – this is out of the scope of our study
- Correlation of revenues and cash flows to economic cycles. Companies that are more exposed to economic cycles (such as retailers), will generally have higher levels of systematic risk (i.e. higher betas) relative to companies that are less exposed to economic cycles (such as regulated utilities).

The CAPM assumes, amongst other things, that rational investors seek to hold efficient portfolios, that is, portfolios that are fully diversified. One of the major conclusions of the CAPM is that investors do not have regard to specific investment or asset risks (often referred to as unsystematic risk).

There are several empirical studies that demonstrate that the investment market does not ignore specific investment risks. Therefore, to the extent an investment has specific risks which are non-diversifiable and hence not reflected in either the underlying cash flows of the investment or in the beta; these can be reflected in the specific risk premium. However, we note that the preferable approach is to reflect the specific risks of an investment in the underlying cash flows, where possible.

Given the cash flow issues noted above, we have determined whether adjustments for these risks should be considered in either the beta (reflecting operating or financial leverage, or exposure to economic cycles), in the underlying cash flows of the investment or included as a specific risk premium. The Table below reviews the major risks identified.

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Table 3: Potential of major risks to impact on the beta

Issue	Comments	Adjustments to beta
Aurizon Network default – distribution of proceeds	The risk of default is considered to be a diversifiable risk, and therefore would be reflected within the beta of an asset. Given that the probability of default by Aurizon Network is considered to be low (but not zero given that Aurizon Network has a credit rating of BBB+) it would not typically be modelled in either the cash flows or the cost of equity. The WACC used to calculate the revenue streams payable on the user funded assets is calculated based on the characteristics of a regulated asset. However, the user funders have to take on the risk of an Aurizon Network default, which might be different from that of the regulated entity. Aurizon Network has the ability to diversify its business, and is aligned in the benefits and risks of this diversification. In contrast the user funders are exposed to the diversification risks of Aurizon Network without the associated benefits.	None.
Aurizon Network default – distribution of revenue during operation by an administrator	As above.	None.
Optimisation by the regulator preventing the full construction cost from being capitalised in the RAB	This issue is inherently already reflected in the underlying cash flows i.e. for the asset to be constructed in an efficient manner and any cost overruns cannot be reflected in the RAB and therefore not included in considering the cash flows of the investment.	None –as long as incentives are aligned this would be a systematic risk.

Issue	Comments	Adjustments to beta
User default during construction / major cost increase	To the extent cost increases cannot be estimated in the cash flow projects, or mitigated through contractual arrangements, a specific risk premium should be included in the cost of equity.	To the extent that there is a greater risk that the project could not be completed due to one or more of these events compared with an Aurizon Network funded approach, the cost of capital may be adjusted during the construction phase through the introduction of an alpha factor.
Optimisation by the QCA during operation	This is a normal operating risk factor and would therefore be reflected in the beta of an asset.	None –as long as incentives are aligned this would be a systematic risk.
Trustee loses the right to be an infrastructure lease holder due to the Trustee not fulfilling its obligations	Given that the probability of the Trustee not fulfilling its obligations is low (i.e. in the case of fraudulent activity) it would not typically be modelled in either the cash flows or reflected in the cost of equity for the user funders. Further to this, the risks of the Trustee do not impact on the risk of the asset being held by the user funders and therefore would not be adjusted for.	None –as long as incentives are aligned this would be a systematic risk.
Working capital costs during construction	Any working capital requirements should be able to be reflected in the underlying cash flows of the investment. This would result in two different cash flow streams and if the price for using the user funded assets is the same under the two models, returns to user funders will be lower than they would be if Aurizon funded the same investment.	Does not affect the asset beta but will lower the overall assessment of the returns to the investment relative to the Aurizon Network alternative.
Related party payment incentives	This issue would be considered to be a normal operating risk, and therefore would be reflected within the beta of an asset.	None –as long as incentives are aligned this would be a systematic risk.
Exposure to uninsurable events	This is a normal operating risk factor and would therefore be reflected in the beta of an asset.	None –as long as incentives are aligned this would be a systematic risk.
Lack of direct control over operations / no exposure to operating cost variations	These two factors are related but work in different directions with respect to the relative risks of the two ownership models. The requirement that the user funders are relatively passive investors (post construction) relying on Aurizon Network to operate and maintain their asset would be considered as a positive risk factor for the user funders. At the same time Aurizon Network bears all the financial risks associated with operating and maintaining the asset.	Since the user funded assets will be part of an integrated Aurizon Network asset base, Aurizon Network's interests and those of the user funders should align. The risk that they may not is likely to be at least offset by the benefits of not being exposed to any of the regulatory and financial risks associated with the maintenance and operation of the network.

Issue	Comments	Adjustments to beta
Lack of control during operation	During operation the user funders are reliant on Aurizon Network effectively carrying out its duties as Trustee, project manager, asset manager, asset operator and asset maintainer.	The outsourcing of these functions is not uncommon (and could conceivably be consistent with Aurizon Network's business model in years to come) but an asset owner typically has step in rights in these situations and, except in the case of the Trustee, the step in rights of user funders is very limited. The user funders are relying on Aurizon Network's incentives to be aligned over the full life of the asset.

As set out in the table above, we consider that the only adjustment which would be required to the cost of capital to take into account the additional cash flow risks user funders are exposed to relate to the construction of the asset. To the extent that there is a greater risk to the user funders that the project could not be completed compared to an Aurizon Network funded approach, the cost of capital may be adjusted during the construction phase through the introduction of a specific asset risk factor (i.e. alpha). However, there are two caveats to this statement:

1) There must be alignment of incentives such that Aurizon Network's management and operation of the user funded assets will be in the interests of the user funders.
2) The implications of a lack of direct control over the management and operation of the assets (even where incentives are aligned) on required returns needs to be assessed.

All other things being equal an investor would be expected to prefer an investment that gave them a direct interest in the operation and management of an asset over one that did not.

3.3 Incentive Alignment

Where Aurizon Network has the operational control of an asset that is funded and leased by the user funders (through the Trust) a question remains as to whether Aurizon Network will be as incentivised to manage those assets as efficiently and effectively as they would if they were part of Aurizon Network's asset portfolio. The key issues that have been raised are:

1) Will Aurizon Network, in its role as project manager be incentivised to manage the project as effectively as if it were managing its own project so that cost over runs, delays and potential optimisations are avoided
2) Will there be a scenario where Aurizon Network could influence which assets may be optimised through its operation of the network, and if so could this work against the user funded assets
3) During the operational phase will Aurizon Network be incentivised to operate and maintain user funded assets as well as Aurizon Network funded assets.

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3.3.1 Construction Phase

Alignment of interests during the construction phase are addressed through allowing the Trust to be involved with the procurement process and by the proposed introduction of a project management fee where by Aurizon Network is paid an agreed percentage of the completed construction costs if the project is completed on time and on budget.

While the extent of the Trust's involvement in the procurement process will be determined on a case-by-case basis the intent is to facilitate user funder involvement in the process. The Trust will bear the optimisation risks where it can be shown that the optimisation is due to an aspect of the procurement process/scope of work that was agreed by the Trust. Aurizon Network will clearly be incentivised to ensure that all cost over runs and/or time delays are due to aspects of the procurement process/scope of work which were influenced by the Trust. This risk will need to be mitigated by a clear specification of the roles and responsibilities prior to construction commencing.

For those aspects of the construction process that are Aurizon Network's responsibility, Aurizon Network will be incentivised by the optimisation fee provisions which require Aurizon Network to repay the Trust the value of any optimised construction costs plus interest at WACC.

Where the Trust has agreed with Aurizon Network as to the cost of an investment and the final cost is consistent with the forecast it is unlikely the regulator will optimise the investment. The major risk here is that the build cost is higher than it would otherwise be due to a non-competitive procurement process that the user funders have agreed to, but it would be expected that this would be mitigated when the procurement process is agreed.

Overall, while there is a clear risk of a non-alignment of incentives during construction there are a number of mechanisms proposed to mitigate these risks.

3.3.2 Operations Phase

During the operations phase Aurizon Network will be the Trustee, asset operator, asset maintainer, network operator and responsible for the billing of the access users. The user funders have step in rights to replace Aurizon Network as Trustee if Aurizon Network is not fulfilling its responsibilities. While the direction to pay provisions ensure that if the assets are being used revenue will flow directly to the Trust from access holders. The success of the SUFA structure relies on Aurizon Network's incentives being aligned to those of the Trust to ensure Aurizon Network carries out its other responsibilities in the best interest of the Trust.

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In the short to medium term it would be expected that Aurizon Network's interests would be aligned with those of the user funders. The user funded assets will form part of Aurizon Network's network and their efficient effective operation will be as critical to the capacity of the network as any other component of the network. This alignment would be enhanced by the inclusion of an operating performance risk allowance (OPRA) which would incentivise Aurizon Network to perform tasks related to the user funded assets, particularly if the OPRA was accompanied by some performance KPIs.

In the longer term this alignment of interests is not as clear. Given much of Aurizon Network's investment in the network is already written down and is subject to accelerated depreciation provisions, a situation could arise where the user funded assets dominate the asset base of particular portions of the network. In this situation, it may be possible that Aurizon Network's broader network management strategy could be biased against the utilisation of these track sections. This risk is mitigated by:

- The SUFA assets expected life of 20 years
- The likelihood that Aurizon Network will managed the network with a view to the fact that once the SUFA assets are fully paid for, the Trust will be dissolved and their management may sit with Aurizon Network
- The non-discrimination clauses that govern Aurizon Network's management of the network.

3.4 Degree of Control

There is a requirement that, despite being wholly responsible for the funding of the asset and being commercially dependent on the efficiency of its operation, the user funders are relatively passive investors (post construction) relying on Aurizon Network to operate and maintain their asset. This means that, notwithstanding that the user funders have the responsibilities of controlling shareholders (i.e. to provide the majority, if not all, of the funding) their rights of control will be limited; more akin to the rights of a minority interest holder.

The owner of a controlling interest has the ability to do many things that the owner of a minority interest does not. These include:

- Control the cash flows of the company, such as dividends, capital expenditure and compensation for directors
- Determine the strategy and policy of the company
- Make acquisitions or divest operations
- Control the composition of the board of directors.

Clearly, the user funder's rights will be less than those described above.

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This impairment of the rights of the user funders will have an impact on the value of the user funders' interests in the assets. This type of impact can be observed in control versus minority interest valuations of securities. The difference between the market value of a controlling interest and a minority interest is referred to as the premium for control. Australian studies indicate the premiums required to obtain control of non-regulated companies range between 20% and 40% of the portfolio holding values. A minority interest discount is the inverse of a premium for control (minority interest discount = 1-[1/(1+control premium)]) and generally ranges between 15% and 30%.

It is noted, however, that regulated assets have characteristics which limit the capacity of a new owner to institute changes which will unlock value. For example, pricing is typically set via a regulator and costs savings once instituted are passed on to users in the longer term. Despite this there is extensive evidence of regulated assets traded both on-market and off-market at a premium to their RAB. This has been typically justified by factors such as:

- Expected efficiencies: the asset owner expects to be able to reduce the cost structure of the asset consistently beyond the regulator's expectations, especially during the final part of each regulatory period
- Implementation of effective tax structures: the asset owner expects to be able to minimise and/or significantly defer tax payments beyond the regulator's assumptions through means of sophisticated tax structures
- Mispricing of the required rate of return: the effective cost of capital borne by the asset owner may be lower than that assumed by the regulator due to either a cheaper cost of capital and/or greater leverage
- Income from associated unregulated operations: either at the time of the transaction or forecast, regulated assets may be able to derive revenue from unregulated operations which do not form part of the asset's RAB
- 'Real' growth: since the regulator allows the asset's owner to recover a market return on future expansionary investments (as approved by the regulator), the absolute return on the current RAB will be greater than that implied by the WACC allowed.

Prior to the commencement of the global financial crisis in 2007, several transactions of Australian regulated assets took place at RAB multiples greater than 1.5. Since then off-market transactions have significantly diminished. However, the recently announced proposed acquisition of WA Gas Networks by ATCO Group – the largest transaction involving a pure regulated asset since 2007 – implies a RAB multiple of 1.265.

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From market soundings this is indicative of a consensus view that RAB multiples have decreased substantially. Transactions are now expected to occur at RAB multiples closer to 1.1 as some of the factors traditionally supporting higher RAB multiples appear less achievable in the current market. In particular:

- While the cost of debt and equity capital have substantially increased at least in the short term, recent regulatory decisions do not appear to allow for this factor in the required rate of return
- The ability to realise efficiencies has diminished because of the increase in real costs
- The implementation of sophisticated tax structures and of highly-geared investment vehicles may be more difficult to achieve given the more stringent terms on debt funding following the global financial crisis.

To compensate for this impairment and value discount the user funders could expect a premium return to restore their position. The inverse of the observed RAB premiums is around 9%. This is in the range of the observed discount on listed shares that do not have voting rights. Initial analysis suggests that returns to equity could be increased by approximately this amount through a small change to the asset beta (.01).

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4 Conclusion

Overall, the proposed user funding model provides users with a higher risk profile than that modelled in the regulatory returns because:

- Aurizon Network has direct control over the operation and maintenance of the network
- Users are exposed to the broader risk of Aurizon Network default
- User funders have exposure to default by other user funders during the construction phase.

The materiality of these risk factors is significantly reduced by the various mitigation mechanisms that have been included in the SUFA documentation and we do not believe they justify a variation in the asset beta and associated cost of equity. The only exception to this could be the risk of cross user default during construction, which could justify a higher WACC during the construction period; however this should be assessed on a case-by-case basis.

It is noted that the while the proposed SUFA structure does mitigate the risks of the investment itself, the structure does impose additional costs on user funders which would not be incurred if Aurizon Network funded the investments. These costs include:

- The cost of negotiating the final SUFA documentation with Aurizon Network
- The cost of negotiating with individual user funders to agree the how negotiations with Aurizon Network will proceed
- The ongoing cost of fulfilling the obligations and responsibilities of preference shareholders.

Additionally, the user funded option would be expected to generate marginally higher tariffs for users of the infrastructure because of the additional costs associated with SUFA that would be expected to be recoverable under the regulatory framework, specifically the project management fee.

These factors, together with a range of financing issues (which are out of scope of this study) would be expected to drive the total cost of access for user funders under the user funded option above the cost of access that the user would have incurred if the project was funded by Aurizon under the regulatory framework.

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5 Limitation of our work

General use restriction

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