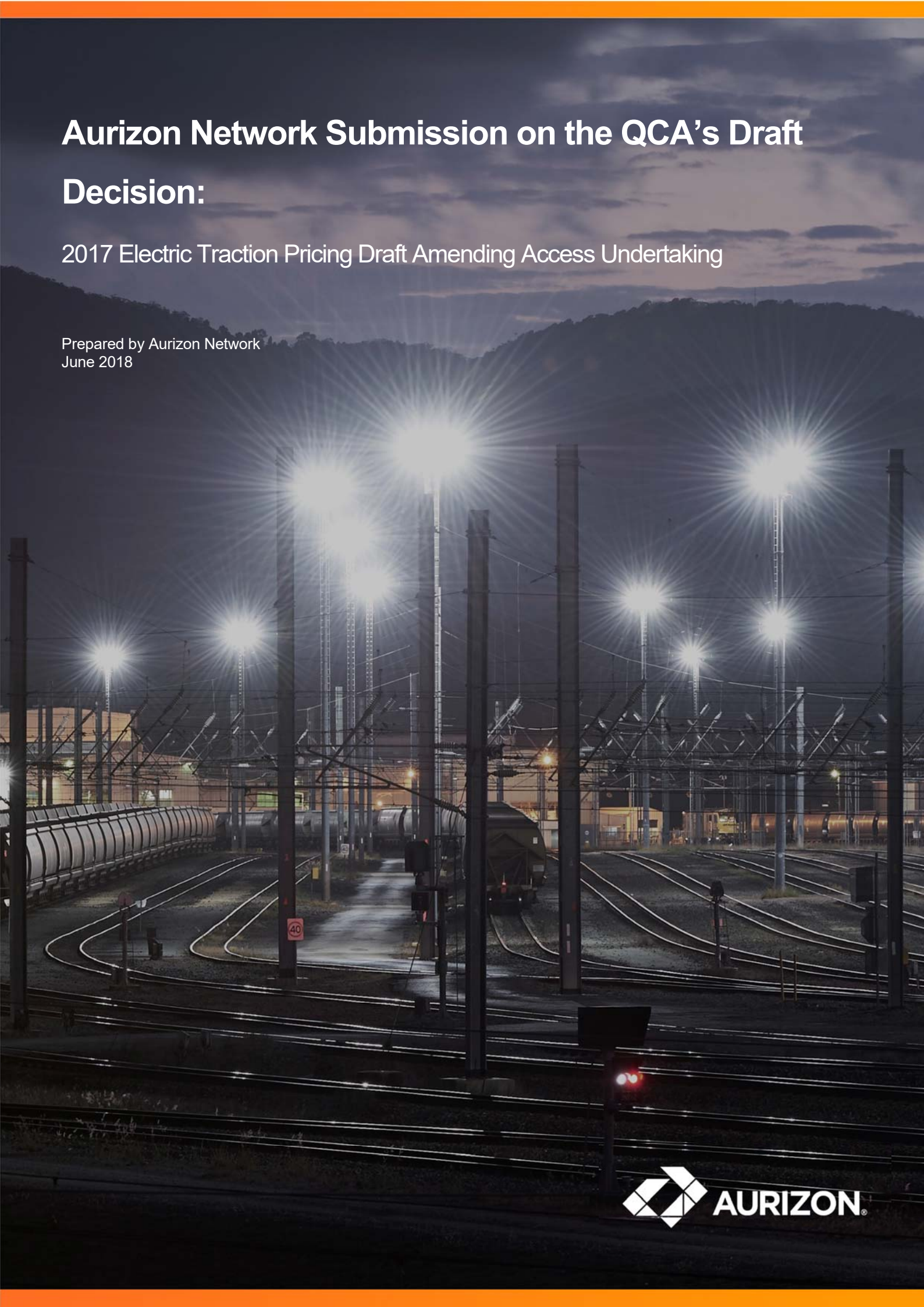
Aurizon Network Submission on the QCA's Draft Decision:

2017 Electric Traction Pricing Draft Amending Access Undertaking

Prepared by Aurizon Network
June 2018



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1. Executive Summary

On 24 May 2018, the Queensland Competition Authority (**QCA**) published its Draft Decision setting out the reasons why it proposed to refuse Aurizon Network Pty Ltd's (**Aurizon Network**) Electric Traction Draft Amending Access Undertaking (**Electric Traction DAAU**).

The Electric Traction DAAU is designed to address the risk of asset stranding arising under the existing electric traction regulatory framework where diesel users can exercise the free option to switch between electric and diesel traction without providing any contribution to the continued operation of the electric traction network. Currently. Aurizon Network is obliged to make electrical infrastructure available to all access holders. To fulfil this obligation Aurizon Network has invested in and maintained the electric traction network across the Goonyella and Blackwater systems, facilitating optionality and competition in above rail markets.

In its Draft Decision to refuse the Electric Traction DAAU, the QCA identified a number of issues that prevented it from approving the Electric Traction DAAU. Aurizon Network has reviewed the Draft Decision and engaged with stakeholders and the QCA to understand key concerns. This response to the Draft Decision reflects Aurizon Network's understanding of concerns identified.

Stakeholder consultation throughout the Electric Traction DAAU process has revealed that there is general industry acknowledgement around the concerns associated with the existing electric traction pricing framework and the potential stranding risk for not only Aurizon Network, but also operators of electric rollingstock and end customers that have electrified rail spurs and long-term exposure to electric traction pricing. The varied level of individual exposure to these issues across the industry makes achieving agreement across all stakeholders around a specific AT5 pricing proposal difficult.

In the absence of reforms to the existing electric traction pricing framework, a broad switch to diesel traction will have significant adverse implications for efficient investment incentives in the CQCN electric infrastructure as it risks stranding Aurizon Network's electric traction assets and an estimated $1bn of rollingstock investment by three rail operators. Stranding of Aurizon Network's electric traction assets will also have broad macro-economic and social impacts including increases in Queensland regional electrical infrastructure costs and the ability for Queensland and Australia to meet future climate policy goals.

Aurizon Network has taken the QCA's concerns with the originally submitted Electric Traction DAAU into account in revising its proposal. The revised Electric Traction DAAU proposed by this submission will minimise the risk of socialisation of electric traction costs to circumstances where there is a material risk of asset stranding. If utilisation remains at or above the proposed utilisation floor levels of 90% in Goonyella and 70% in Blackwater, there will be no electric traction revenue that needs to be socialised.

In response to the QCA's concerns, the revised Electric Traction DAAU does not address the differential that may exist between the cost of electric and diesel traction at a point in time, but seeks to proactively prevent price distortions in the electric pricing framework (through the AT5 reference tariffs) that would lead to asset stranding following a decline in electric traction utilisation. The revised Electric Traction DAAU provides a framework that enables Aurizon Network to recover its efficient costs of providing electric traction infrastructure as required under the *Queensland Competition Authority Act 1997* (Qld) (**QCA Act**), the Infrastructure Lease between Aurizon Network and Queensland Treasury Holdings and the Access Agreements between Aurizon Network and access holders. Aurizon Network will continue to work to deliver the most efficient costs associated with electric traction but acknowledges that the supply chain may ultimately decide that electric traction is economically unattractive. In these circumstances, the revised Electric Traction DAAU will provide a mechanism for orderly exit.

The Electric Traction DAAU as amended seeks to rebalance the pricing framework to ensure that each access holder contributes equitably to their portion of the cost of providing electric traction, whether that be by using the infrastructure, or by maintaining the option of traction choice.

2. Overview of Submission

The Draft Decision raised four key concerns with the original Electric Traction DAAU which Aurizon Network has responded to in the revised Electric DAAU and this submission. The QCA's concerns and Aurizon Network's response are summarised below.

Key concerns raised in the Draft Decision

Re-allocation of variable costs from AT5 to EC tariffs

QCA concern: Aurizon Network had not provided the QCA with revised AT5 and EC tariffs that reflect the proposed re-allocation of variable charges from AT5 to EC tariffs.

Aurizon Network response: Aurizon Network has provided pricing guidance of this impact, by updating the approved transitional Reference Tariffs (for the period 1 July 2018 to 31 December 2018) to reflect the proposed re-allocation of variable charges from AT5 to EC tariffs. The updated AT5 and EC Reference Tariffs are included in Attachment 1. The same methodology is proposed to be applied in setting the AT5 and EC Reference Tariffs under a UT5 Access Undertaking.

Selecting an appropriate utilisation measure

QCA concern: The mechanism proposed by Aurizon Network was too broad, focussing on relative volumes between traction choices rather than the use of electric infrastructure, thereby enabling socialisation to be triggered where the risk of asset stranding has not changed

Aurizon Network response: The proposed mechanism has been amended to include an additional step before any electric utilisation adjustment is triggered to ensure socialisation only occurs in circumstances that materially increases asset stranding risk. Under the revised mechanism, socialisation would only occur in a year where there is a decline in electric utilisation, there is an electric traction revenue shortfall *and* actual eGTKs are less than a defined number of eGTKs in a year (defined based on the utilisation threshold floor applied to FY18 actual GTKs).

Setting appropriate electric utilisation levels

QCA concern: The electric utilisation thresholds proposed by Aurizon Network of 98% in Goonyella and 75% in Blackwater were too high and did not represent a point where a persistent and sustained reduction in electric traction is likely to occur

Aurizon Network response: The utilisation thresholds have been reduced to 90% in Goonyella and 70% in Blackwater which Aurizon Network considers reflect an appropriate balance where a reduction in utilisation below the revised levels presents a material risk of persistent and sustained reduction in electric traction and asset stranding.

Inclusion of capital expenditure rules for electric traction

QCA concern: Aurizon Network required a robust pre-approval process to ensure prudency and efficiency of investment is reflected in the Electric Traction DAAU to reflect commitments provided in the original supporting submission

Aurizon Network response: The Electric Traction DAAU has been amended to commit Aurizon Network to seek pre-approval of Significant Electric Investment. Aurizon Network will utilise existing processes in the Access Undertaking. Specifically, Aurizon Network has included an obligation to submit Significant Electric Investment projects to a vote by Interested Parties, and commits to seeking pre-approval of Significant Electric Investment projects by the QCA.

Details of Aurizon Network's response to the key concerns identified in the Draft Decision and key matters identified through both stakeholder engagement and the Draft Decision are set out in sections 3 and 4 of this submission. Aurizon Network is seeking the approval of the QCA to amend Aurizon Network's 2016 Access Undertaking (**UT4**), which is in force until the earlier of 31 December 2018 or the date a QCA-approved replacement undertaking takes effect.

Aurizon Network recognises that UT4 may only remain in operation for a relatively short period and therefore any amendment to UT4 may be of limited duration. However, if the Electric Traction DAAU is approved, it is Aurizon Network's intention to seek to have a similar Electric Traction DAAU incorporated into subsequent access undertakings.

3. Draft Decision 3.1

3.1 Overview of Draft Decision 3.1: Cost Reallocation

Draft Decision 3.1: Cost reallocation

The QCA's Draft Decision is to refuse to approve Aurizon Network's proposal to provide for a variable connection charge.

While the QCA supports an approach that would transfer variable charges associated with electric connections from the AT5 tariff cost base to the EC tariffs, the QCA would require Aurizon Network to also provide updated AT5 and EC tariffs that reflect the proposed reallocation to give this proposal effect.

3.2 Provision of updated AT5 and EC tariffs

3.2.1 Overview of QCA Draft Decision

The QCA provided commentary within the Draft Decision confirming that it considers the proposed cost reallocation to be appropriate, however the QCA also indicated that they considered that Aurizon Network did not intend to implement the proposed approach in the current undertaking period as Aurizon Network:

- did not seek to amend the AT5 and EC tariff components in schedule F of the Access Undertaking; and
- subsequently submitted a separate DAAU to extend the 2016 Access Undertaking that includes transitional tariffs that do not reflect a reallocation.

The QCA requires Aurizon Network to reflect the reallocation through changes to Schedule F the Access Undertaking.

3.2.2 Aurizon Network Review

In its supporting submission to the Electric Traction DAAU, Aurizon Network provided an estimate of the proposed Reference Tariff changes, indicating the variations to AT5 and EC. Aurizon Network did not make amendments to Schedule F at the time given transitional tariffs were already in place.

Additionally, Aurizon Network did not reflect the reallocation in the Electric Traction DAAU to extend UT4, as the electric traction DAAU is yet to be approved.

Aurizon Network is however willing to address this decision, and has proposed changes below.

3.2.3 Proposed changes

Aurizon Network has amended the current approved transitional tariffs for the period 1 July 2018 to 31 December 2018 to reflect the re-allocation of variable costs from the AT5 to EC Reference Tariff. As this may result in adjustment charges, Aurizon Network is also willing to accept that the new rates apply from the month after the date of approval of the Electric Traction DAAU. The table below indicates the changed tariffs based on FY19 Transitional Tariffs. Should the revised Electric Traction DAAU be approved, Aurizon Network will true up the difference in any further transitional tariffs, or through the UT5 process.

		FY19 Transitional Tariffs	Variable Charges	Revised Reference Tariffs
AT5	Blackwater	$3.48	$0.19	$3.29
($ per eGTK)	Goonyella	$2.20	$0.16	$2.04
EC	Blackwater	$0.91	$0.17	$1.08
($ per eGTK)	Goonyella			

4. Draft Decision 4.1

4.1 Overview of Draft Decision 4.1: Electric revenue adjustment

Draft Decision 4.1: Electric Revenue Adjustment

The QCA's Draft Decision is to refuse to approve Aurizon Network proposed electric revenue adjustment.

Aurizon Network would need to:

- select an appropriate electric utilisation measure to provide a proxy for electric traction use, as discussed in section 4.2 of this Draft Decision
- set a lower electric utilisation floor, as discussed in section 4.2 of this Draft Decision
- include capital expenditure rules for electric infrastructure, as discussed in section 4.3 of this Draft Decision
- separate the electric revenue adjustment from stakeholders' non-electric take-or-pay calculations.

4.2 Setting an appropriate electric utilisation measure

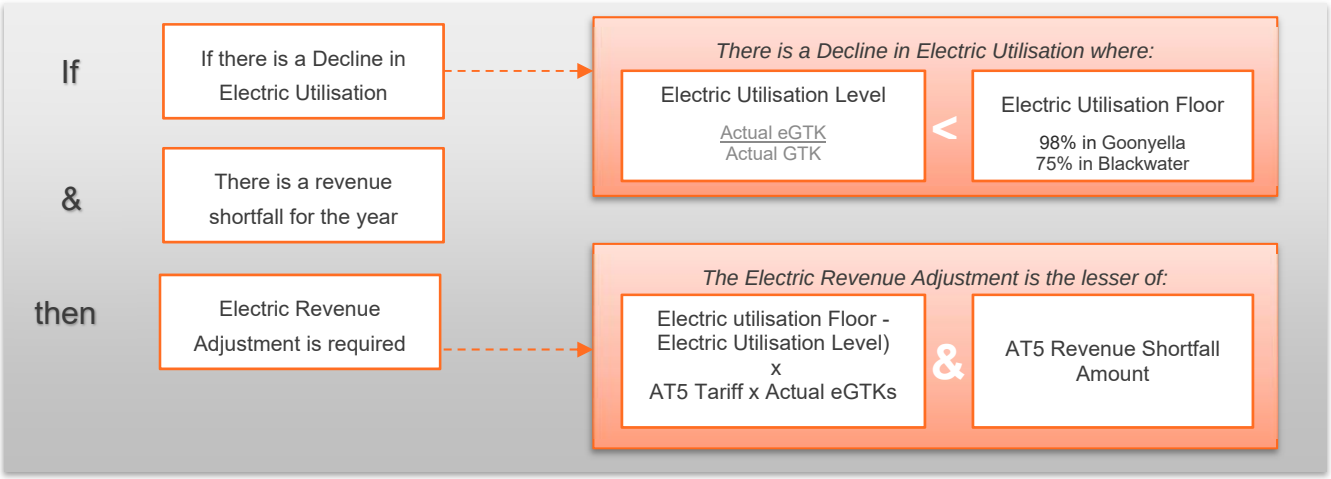
4.2.1 Overview of QCA Draft Decision

In its Draft Decision, the QCA has provided criteria to set an effective electric revenue adjustment mechanism. As detailed in section 4.1 of its Draft Decision, the QCA considers that an effective mechanism should be:

- Technology neutral, and promote competition in downstream markets
- Provide for Aurizon Network to recover efficient electric investment costs
- Be based around the user-pays principles, to the extent possible; and
- Provide minimal distortion to traction choice to facilitate the efficient use, investment and operation of electric infrastructure and promote competition.

It appears that the QCA's primary concern with the mechanism proposed by Aurizon Network is that it is too broad, focussing on relative volumes between traction choices rather than the use of electric infrastructure, thereby enabling socialisation to be triggered by new entrants.

Under Aurizon Network's original Electric Traction DAAU, the mechanism proposed was as follows:



The QCA has provided the following criteria by which to assess the effectiveness of the mechanism:

1. Provide a reliable proxy for electric traction use, such as coal volumes hauled by electric locomotives or train paths occupied by electric trains
2. Remain technology neutral, so that increases in non-electric traction use, without an associated decline in electric usage, do not result in lower electric utilisation
3. Demonstrate a persistent decline in electric traction use, indicating a possible bypass of electric infrastructure
4. Be easily understood and transparent to stakeholders

4.2.2 Aurizon Network review and proposed changes

Aurizon Network has considered the originally proposed mechanism against criteria provided by the QCA, stakeholder feedback, and has evaluated the changes required.

The use of GTKs as the appropriate proxy for measuring electric traction use

The QCA stated that it does not intend to require a particular measure but offered alternatives for providing a reliable proxy of electric use. Aurizon Network believes that the proposed measure of eGTK's remains the best proxy of electric use because:

- Aurizon Network has consulted with our customers, who have confirmed GTKs are an appropriate and easily understood measure.
- QCA approved System Forecast eGTKs are used to establish the AT5 tariff. Mapping the mechanism to the same measure is the best determinant of use, as it directly corresponds to billed access revenue.
- Aurizon Network's bills are based on nominal GTKs per wagon (unless there is a trade certified weighbridge in place) so revenue is largely unaffected by lighter loaded wagons
- The linear nature of the electric network requires a metric that includes the distance of the electric network that is used.
- Aurizon Network does not distinguish between electric and diesel pathing, with customers having the ability to operate either traction types under their existing agreements.

Aurizon Network considers that the key issue the QCA is seeking to address is the risk that a simple ratio calculation may result in unintended triggering of the mechanism where there is no actual and material decline in electric usage. In any event, the QCA's concern is best addressed through changes to the mechanism itself particularly given that, Aurizon Network itself and following stakeholder consultation has concluded that with the proposed changes in the mechanism, the use of eGTKs as a proxy to measure electric traction use is the most appropriate proxy. Aurizon Network's analysis of this issue is discussed below.

Addressing the potential for the mechanism to trigger, without an associated decline in electric usage

The QCA has raised concerns that the mechanism could trigger with new entrants into the Blackwater and Goonyella systems. Aurizon Network considers that it is appropriate for the mechanism to trigger where a new entrant is displacing electric traction volumes with diesel volumes, and consequentially impacting the AT5 Reference Tariff. Where displacement occurs and the utilisation floor is breached, the mechanism will appropriately trigger to ensure pricing is not distorted. The example below depicts this scenario.

Example 1: Displacement of electric traction volumes	
Causes	- The transfer of access rights from one mine to another, and a subsequent change in traction type; - The entry of new mines that have chosen not to electrify their private infrastructure, that receive access rights on the CQCN as a result of capacity becoming available from expired or winding down mines previously using electric traction; and - The entry of a new rail operator into the system that operates diesel trains resulting in a reduction in electric traction utilisation.
Example:	- A mine that was producing and railing 5mtpa of electric volumes in Goonyella closes as it is at the end of their mine life, and capacity is handed back to Aurizon Network, and Dalrymple Bay Coal Terminal (DBCT). - A new mine is also being developed, and receives 5mtpa of new capacity at DBCT, and 5mtpa of corresponding access rights in the CQCN. This mine has built new private rail infrastructure, and chooses not to electrify. - In this circumstance, and based on current Goonyella electric traction volumes, the AT5 price for all other users would increase from $2.30 per eGTK to $2.40 per eGTK, an increase of over 4%. - Aurizon Network's electric infrastructure remains capable of delivering these new volumes using the electric network, but the new entrant has chosen to bypass Aurizon Network's electric traction network
Analysis:	- Aurizon Network's original Electric Traction DAAU seeks to protect against AT5 price distortion from the displacement of electric traction volumes, resulting in a decline in electric utilisation. - The choice to bypass electric traction results in increased prices for remaining electric traction users. Despite being triggered by a new entrant, it would be appropriate for the proposed mechanism to operate to send effective pricing signals with the aim of preventing further bypass, and asset stranding.

Following consultation with the QCA and customers, Aurizon Network has been made aware of potential circumstances where the mechanism could inadvertently trigger, without an associated decline in electric usage. These are:

- New growth diesel tonnes being contracted in the system where spare capacity exists; and
- Expansion volumes (either diesel or electric) being contracted and operated in a system.

Aurizon Network has provided an example of each of these situations below:

Example 2: Growth tonnes where spare capacity exists	
Causes	- Spare capacity exists within the systems due to ports and below rail not being fully contracted
Example:	- A system has the capacity to run 120mtpa - 20mtpa of spare capacity is currently available to be contracted - Out of the 100mtpa contracted: o 75mtpa use electric traction o 25mtpa use diesel traction. ~ 75% electric utilisation - If a new entrant contracts the spare 20mtpa, and uses diesel services: o the ratio of electric utilisation to diesel is now 62.5%, and the mechanism may trigger o AT5 prices would however be unaffected by the new entrant, as AT5 System Allowable Revenue would still be recovered over the same base eGTK. o These tonnes should be excluded from the calculation of the ratio, therefore keeping the ratio at 75%.
Analysis:	- In the original mechanism there was potential for the mechanism to trigger despite no displacement of electric traction volumes. - There is some protection against this occurring, as for the mechanism to trigger there must be an electric revenue shortfall. With consistent electric traction volumes, revenue should remain unchanged. Additionally, if the mechanism did trigger, the amount that could be recovered via socialisation is limited to the lesser of the calculated amount, and the shortfall amount. Aurizon Network does however acknowledge that this could be made more evident in the Electric Traction DAAU, and has proposed changes to address this in section 4.2.3.

Example 3: Expansion volumes	
Causes	- New volumes are introduced to a system that was at capacity, therefore requiring an Expansion to contract the required access rights; and - The electric infrastructure also requires and Expansion.
Example:	- An Access Seeker is seeking to develop a new mine, and requires access rights for 10mtpa. - The Access Seekers expands the network. - An Expansion tariff is set, and the Access Seeker contracts rights, including the requirement to pay Take or Pay on AT5. - Under the originally proposed mechanism, the GTKs associated with this haul would be included in the Actual GTK calculation, even though they pay a separate tariff, potentially causing the mechanism to trigger.
Analysis:	- With the Blackwater and Goonyella systems approaching port name plate capacity, there is little opportunity for new growth tonnes to enter the system without an Expansion. Part 6.4 of the Access Undertaking provides principles for expansion pricing, including the following key points: o Expanding users generally receive an Expansion Tariff, reflecting at least the full incremental costs of providing additional Capacity. o Expansion Tariffs may be socialised with other Expansion Tariffs, but not with existing System Reference Tariffs[2]. o Under the Expansion pricing framework, any expansions to the electric infrastructure are subject to Take or Pay[1], and as such, where Expansion users choose not to use the electric infrastructure that has been created for them, they will be liable for Take or Pay.

[1] Clause 3.3 (n) of Schedule F of Aurizon Network's Access Undertaking

-	With these principles in place, an Expansion to the electric infrastructure should not affect current AT5 pricing, and will be largely[2] quarantined to expansion users. However, Aurizon Network agrees with the QCA that volumes associated with an Expansion should not be considered when assessing whether there is an electric utilisation decline. Aurizon Network has proposed changes to address this in section of this submission.

For clarity, Aurizon Network only intends for the mechanism to trigger where there is displacement of electric traction volumes by diesel volumes. As outlined above, this could be through new entrants. Aurizon Network concludes that it is appropriate for the mechanism to trigger where displacement occurs. However, where new entrants take up spare capacity, or expand the network, Aurizon Network does not intend for the mechanism to trigger. As such, proposed changes to address this are included in section 4.2.3.

Demonstrating a persistent decline in electric traction use, and defining the point of material bypass

Aurizon Network notes the QCA's concern with the original proposal that the combination of the mechanism and proposed utilisation floors increase the likelihood of some socialisation of costs with minimal change in electric traction usage. The QCA provides commentary around the requirement for the mechanism only to trigger where there is a significant risk, or actual bypass of the electric traction infrastructure.

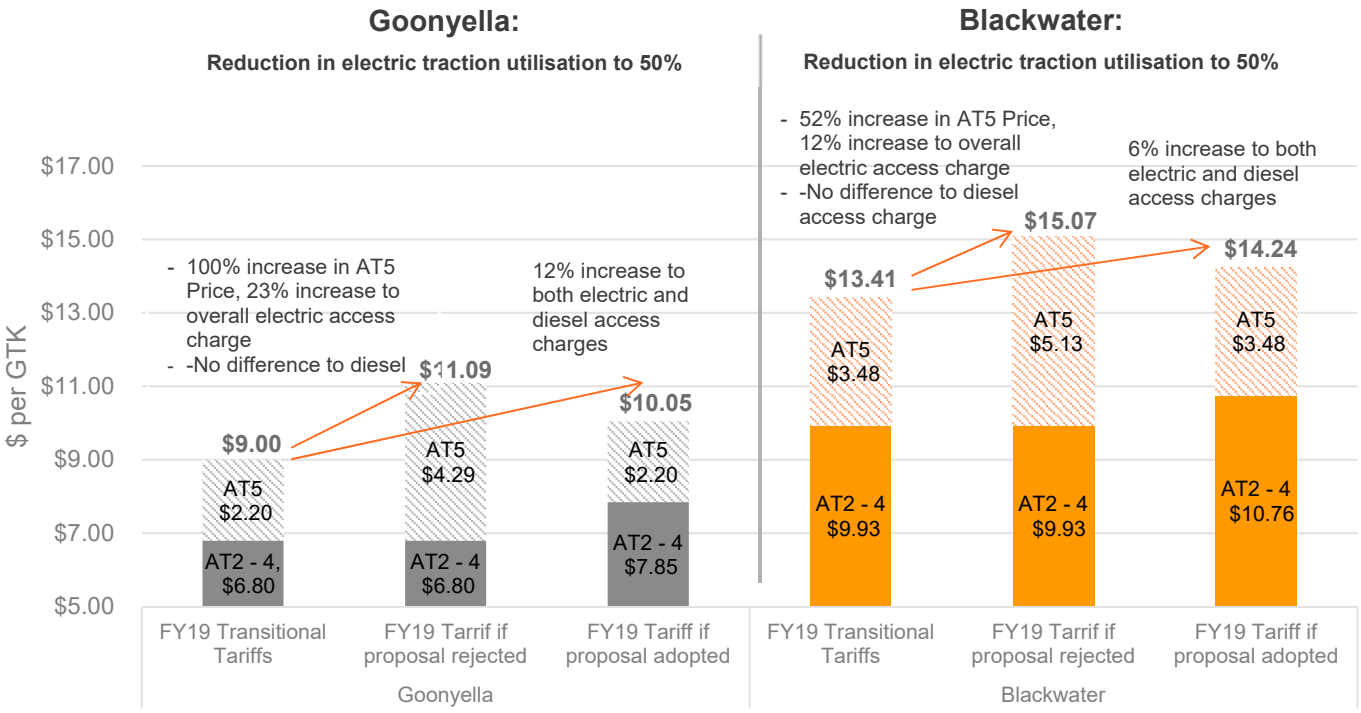
Aurizon Network's Electric Traction DAAU seeks to minimise the probability that actual bypass will occur by proposing pricing reforms that promote greater stability in electric pricing arrangements over time.

Aurizon Network considers that it is too late to wait until material change in utilisation occurs in terms of setting appropriate pricing signal and to minimise stranding risk. Each incremental switch is in fact a choice by that party to bypass the electric infrastructure service provided, and each decision incrementally contributes to the increasing risk of a material bypass.

For example, should the utilisation floors be set at 50% for both systems, there would be no reallocation of costs until large volumes have switched, failing to provide an efficient pricing signal. For Access Holders that do not switch, they would face a 100% increase in AT5 costs in Goonyella, or 52% increase in costs in Blackwater until the point these trigger levels are breached. Under this circumstance, there would be a 'first mover' affect, whereby an Access Holder could effectively switch all their volumes to diesel, at the detriment of the other Access Holders who would need to bear a large increase in the AT5 Reference Tariff. Figure 1 below provides an overview of potential price impacts.

[2] Where an Expansion is a consensus expansion, there is the potential for the reference tariff to apply. If this is the case, expansion pricing does not apply, and it would be appropriate to include the expansion volumes within the calculations for determining if an Electric Revenue Adjustment is required.

Figure 1 - Access Pricing impacts through displaced electric utilisation



Determining the point at which such an increase becomes unsustainable and the electrical infrastructure is therefore 'stranded' is complex and affected by many parameters, including sunk investments, contractual pricing parameters, capital investment requirements, and market factors. Many of these variables are not in the direct control of Aurizon Network, and it is therefore difficult to determine the specific 'bypass point'. It will be impacted by the risk appetite and market outlook for each Access Holder. Aurizon Network has also considered whether it is possible to identify a range where the likelihood of bypass increases. However, for the reasons outlined above Aurizon Network considers that this is not an appropriate way to address the risk of bypass to the electric network.

Aurizon Network has instead re-designed the mechanism specifically to address the impact of incremental cases of bypass, rather than only triggering when a persistent decline in electric traction is evident. This is because the nature of contracting in the CQCN means that customers have the flexibility to both switch between rail operators, and to transfer access rights across multiple locations with ease. There is also flexibility for new entrants to enter the market through low cost infrastructure solutions. Any of these changes can impact electric traction volumes, and consequently the price and competitiveness of electric traction.

The new proposed mechanism will work to ensure a minimal socialisation occurs. In doing so it will increase AT5 price stability, providing greater investment and operational certainty for the supply chain. Importantly, each electric traction user will continue to pay their share of the cost through AT3, so any incremental increase in costs to non-electric users is as low as possible. Given the level of utilisation across both systems currently, where incremental change does occur, electric traction users will continue to pay most of the socialised amount. If the Electric Traction DAAU is not in place, this choice would mean that other electric traction users would pay more, and may also choose to bypass, resulting in potential asset stranding. With the Electric Traction DAAU in place, each customer is free to choose between diesel and electric traction, however if they do choose to bypass the electric service provided, this will not result in significant detrimental impacts on remaining electric traction users.

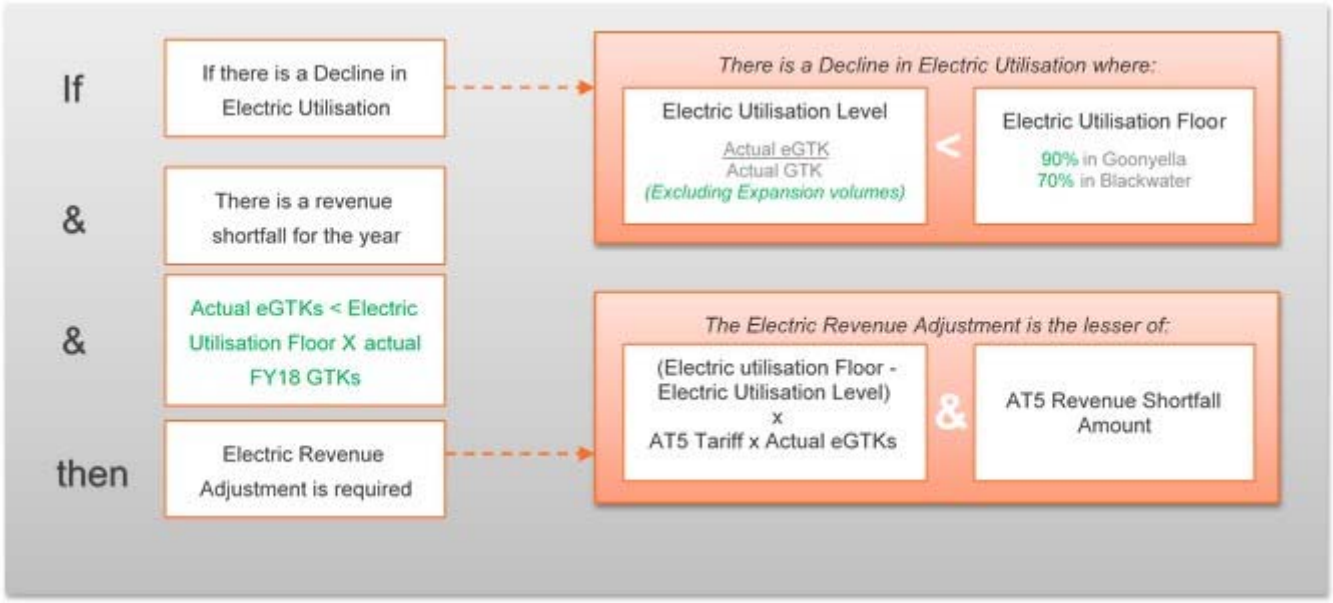
Aurizon Network therefore considers that with changes to the utilisation floors as outline in section 4.3.3, the revised mechanism works appropriately to address the concerns raised by the QCA and stakeholders and distinguish between variability and persistent declines in electric utilisation.

4.2.3 Proposed changes

Aurizon Network has proposed the following changes to address concerns raised by the QCA and our customers:

- Exclude any Expansion volumes in the calculations to determine whether the mechanism is triggered. Aurizon Network has provided suggested amendments in clause 4.3(I) of Schedule F of the Electric Traction DAAU to make this explicit.
- Include a third test before the Electric Revenue Adjustment is triggered. This test would ensure that where actual eGTKs are greater than or equal to a set percentage of FY18 actual GTKs, then the Electric Revenue Adjustment is not required. Drafting has been included to clause 4.3(h)(iii) of Schedule F of the Electric Traction DAAU to give effect to this change.

The proposed changes to the mechanism is highlighted below, and in **attachment 1**.



4.3 Lowering the electric utilisation floor

4.3.1 Overview of QCA Draft Decision

Aurizon Network originally proposed a utilisation floor in its original Electric Traction DAAU submission equal to the current volumes of electric traction in both systems, being 98% in Goonyella, and 75% in Blackwater. This was to ensure that when the mechanism is in place, any change from current levels of utilisation triggers socialisation across all users, providing the appropriate pricing signals for bypass, and acting as proxy pricing for customers exercising their option to bypass the electric traction infrastructure.

In its Draft Decision, the QCA noted that one of the reasons for refusal to approve was that the socialisation trigger thresholds were too high. The QCA's view was that maximum utilisation in the medium term does not represent a point where a persistent and sustained reduction in electric traction is likely to occur. It was mentioned that the mechanism together with the thresholds proposed makes socialisation a likely outcome violating the user pays principle. Therefore, the QCA suggested that to enable efficient price discrimination, socialisation should only occur where the demand spiral becomes material and likely. The QCA provided the following criteria for setting the electric utilisation floor:

1. Be set so that socialisation of costs is unlikely, only occurring when there is material risk of electric infrastructure bypass
2. Be low enough to avoid triggering socialisation during one-off shocks that do not represent a bypass of electric infrastructure such as during cyclone Debbie.
3. Be set high enough so that bypass is avoided - that is, the threshold should not be so low that bypass of electric traction assets still occurs
4. Be designed to address a persistent decline in electric traction use and therefore should have a time component, which is adjusted to take account of changed conditions from one regulatory period to the next
5. Be adjusted if necessary where there are new entrants that are using diesel traction

4.3.2 Aurizon Network review

Aurizon Network has evaluated the appropriate floor levels against the criteria provided by the QCA. As a result of this review, Aurizon Network proposes to lower the electric utilisation floors to 90% in Goonyella and 70% in Blackwater. A summary of the analysis undertaken to set these levels is below.

Defining the appropriate levels

Aurizon Network considers that setting a floor level at the point where there is a material risk of electric infrastructure bypass would be too late to provide any effective pricing signal. Rather, we consider that each incremental switch is in fact a choice by that party to bypass the electric infrastructure service provided, and each decision incrementally contributes to the increasing risk of a material bypass.

Aurizon Network has assessed the impact in price of a change in AT5 resulting from declining electric volumes in the Blackwater and Goonyella systems. In the absence of pricing reform, and with a sustained decrease in the electric utilisation percentage, the impact on AT5 pricing exponentially increases. The lower the utilisation level, the longer remaining electric traction users are required to incur high prices and the higher the likelihood of further displacement of electric volumes.

Figure 2: AT5 Price path with declining utilisation

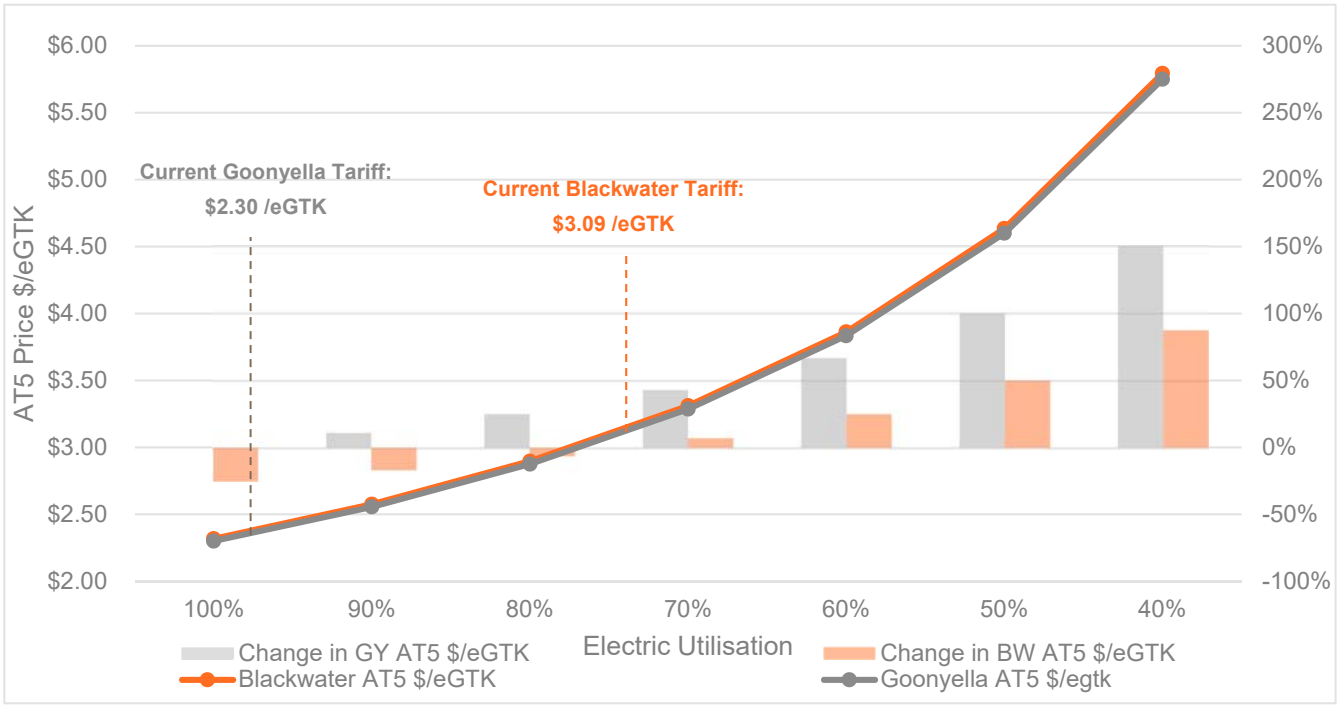


Figure 2 shows the impact of changes in utilisation on the AT5 Reference Tariffs. As prices increase, so to does the relative difference between the cost of electric traction versus diesel. As electric traction becomes less competitive due to declining utilisation, the threat of stranded assets increases.

In both the Blackwater and Goonyella systems, any incremental change beyond current utilisation levels has the potential to materially increase the AT5 Reference Tariffs.

The Blackwater mainline has capacity installed to run 100% of contracted volumes, and as such there is significant potential for the introduction of new electric volumes, reducing the AT5 pricing. As an example, should an additional 5mtpa of electric volumes be introduced to the Blackwater system, the AT5 price would change from $3.09 eGTK to $2.82 per eGTK, decreasing by 9%. However, given the current utilisation level, even a 5% fall in utilisation has the potential to increase the Blackwater AT5 Reference Tariff by $0.20 per eGTK.

In the Goonyella system, given current high utilisation, there is little room for the AT5 Reference Tariff to benefit from larger electric traction volumes. Relative traction competitiveness is however closer than in Blackwater due to the economies of scale represented in the Goonyella AT5 price. However, any fall in utilisation has a larger impact than in Blackwater due to the lower starting price. A 5% fall in utilisation in the Goonyella system has the potential to increase the Goonyella Reference Tariff by $0.26 per eGTK.

Aurizon Network recognises the criticality of setting the utilisation floors at the appropriate level to ensure an effective pricing signal. Bypass however, is a factor of many market and financial considerations as outlined above. Where the utilisation floors are set too low, there is significant risk of electric traction users wearing material increases in cost for a prolonged period, unsustainable over the medium to long term. This will almost certainly accelerate asset stranding.

Accounting for one-off shocks

Aurizon Network considers that the utilisation levels themselves do not need to be changed to consider one-off shocks, as the mechanism itself already protects for such events. Where there is an issue that affects the system materially, such as a cyclone, in most of cases, both diesel and electric would be equally affected, and would be negated out through the ratio calculation of actual electric gtks vs. actual diesel gtks, these types of system disturbances would be felt across all services. It would be a rare case where electric services are affected, but diesel services can operate.

In any case, Aurizon Network acknowledges the QCA's concerns and agrees that the utilisation floors must be set an appropriate level to avoid unintended consequences. As described in section 4.3.3, Aurizon Network does propose to lower the utilisation floors from the original proposal, which will provide room for system variability and a buffer prior to the mechanism being triggered.

Addressing persistent declines in electric traction use, and changed conditions across regulatory periods

Aurizon Network's proposal seeks to set the electric utilisation floor for the regulatory period. We recognise the shortfalls with seeking to lock in a mechanism for a short to medium term and the resulting increase in uncertainty compared to a mechanism that applies across regulatory periods. However, the regulatory regime somewhat restricts the ability to put in place anything that would carry over into future regulatory periods.

For the mechanism to work effectively and to address persistent declines in electric traction use, the utilisation floors should arguably be set for the remaining life of the asset. Given the regulatory process at hand, should the Electric Traction DAAU be approved, Aurizon Network's intention is to seek to roll forward this mechanism and corresponding utilisation floors into the UT5 regulatory period and beyond. Based on current forecasts, Aurizon Network does not anticipate change to the utilisation floors between the UT4 and UT5 periods.

Minimising variation between regulatory periods will provide more investment certainty for Aurizon Network, above rail operators and producers. We recognise however that this will be part of each Access Undertaking process, and any amounts will be negotiated with our customers and submitted to the QCA for approval at the relevant time.

Adjustments for new entrants using diesel traction

Aurizon Network considers that adjusting the utilisation floor for new entrants does not account for the price increases directly caused by these new entrants where they displace electric usage. Should the utilisation floor levels be changed with the introduction of new entrants, it would undermine the mechanism, as it may isolate displacement of electric volumes from the mechanism – an outcome that is inconsistent with the Electric Traction DAAU's intention to avoid asset stranding.

To address the impact of new entrants Aurizon has outlined its intended approach above in section 4.2.2. If a new entrant displaces existing electric traction volumes, either through expiry, change to or transfer of existing access rights, then this displacement has the effect of increasing AT5 prices. However, where new entrants enter via an Expansion, or are contracting spare capacity, the AT5 tariff may be unaffected. Aurizon Network's updated mechanism is designed to only trigger where displacement of electric traction volumes results in usage below the updated utilisation thresholds. Displacement is the critical factor as it represents the situation where the electric traction network is bypassed. Aurizon Network has included changes within the Electric Traction DAAU to address these circumstances.

4.3.3 Proposed changes

Aurizon Network has considered the issues raised by the QCA, and taking into consideration customer feedback, is proposing to lower the relevant electric utilisation floors to 90% in Goonyella and 70% in Blackwater. A summary of this change, and the flexibility included for each system is below.

In setting the utilisation levels, Aurizon Network has carefully considered the type and scale of contracts and the operational changes that exist in the Blackwater and Goonyella systems. Aurizon Network considers that reducing the originally proposed thresholds by similar percentages provides operational flexibility for Access Holders without imposing an unsustainable increase in the electric traction tariff that could increase the risk of asset stranding.

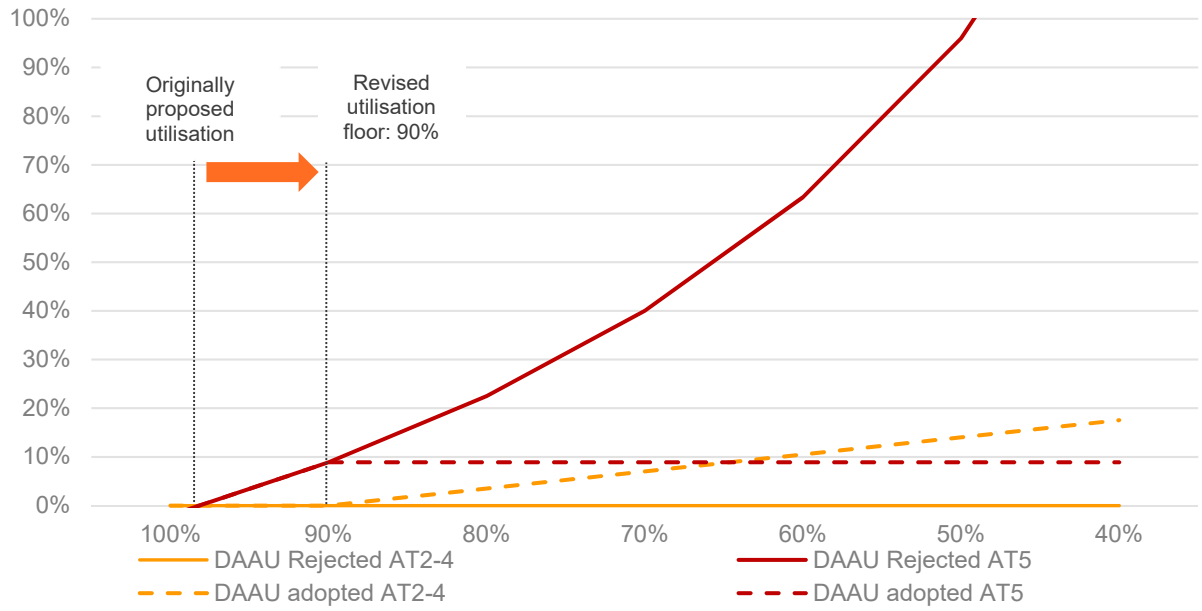
This reduction was selected based on the flexibility required in Goonyella, and the ability for the utilisation level to be reduced without materially affecting the tariffs in Goonyella. In Blackwater however, as the below analysis will examine, the current utilisation of 75% means that any change from the current utilisation level presents further risk to the AT5 tariff carrying proportionately high costs. Recognising the need to move away from a 'hair trigger' level, and based on testing the required level of flexibility with stakeholders, Aurizon Network has proposed to decrease Blackwater's electric utilisation level by approximately the same proportion as Goonyella.

It is recognised that the lower utilisation level of Blackwater poses challenges for the competitiveness of electric traction as outlined in Aurizon Network's original submission. However, Aurizon Network is prepared to provide operational flexibility to secure a workable outcome. The proposed utilisation level in Goonyella is proposed as a preventative measure to ensure the same asset stranding risk does not eventuate in the Goonyella System as is present in Blackwater.

Goonyella System

Aurizon Network has revised the Goonyella utilisation floor down to 90% on the basis that below this amount, should a bypass event occur, the AT5 tariff increase would exponentially outweigh the volume change. At that point, there is little incentive to recontract with electric traction as the average individual contract cannot increase the threshold sufficiently to address the decline in utilisation. That is, the risk of further declines and the consequential impact on the AT5 tariff is likely to be unacceptable to users.

Figure 3: Impact of electric utilisation on pricing (Goonyella System)



Aurizon Network tabled the proposed 90% utilisation floor for Goonyella at various customer consultations. The response to this change was positive, with customer feedback suggesting this level was appropriate as it provided sufficient operational flexibility but arrests material increases in AT5 tariff reducing the risk of asset stranding.

A summary of the proposed flexibility provided at the proposed electric utilisation floor is below:

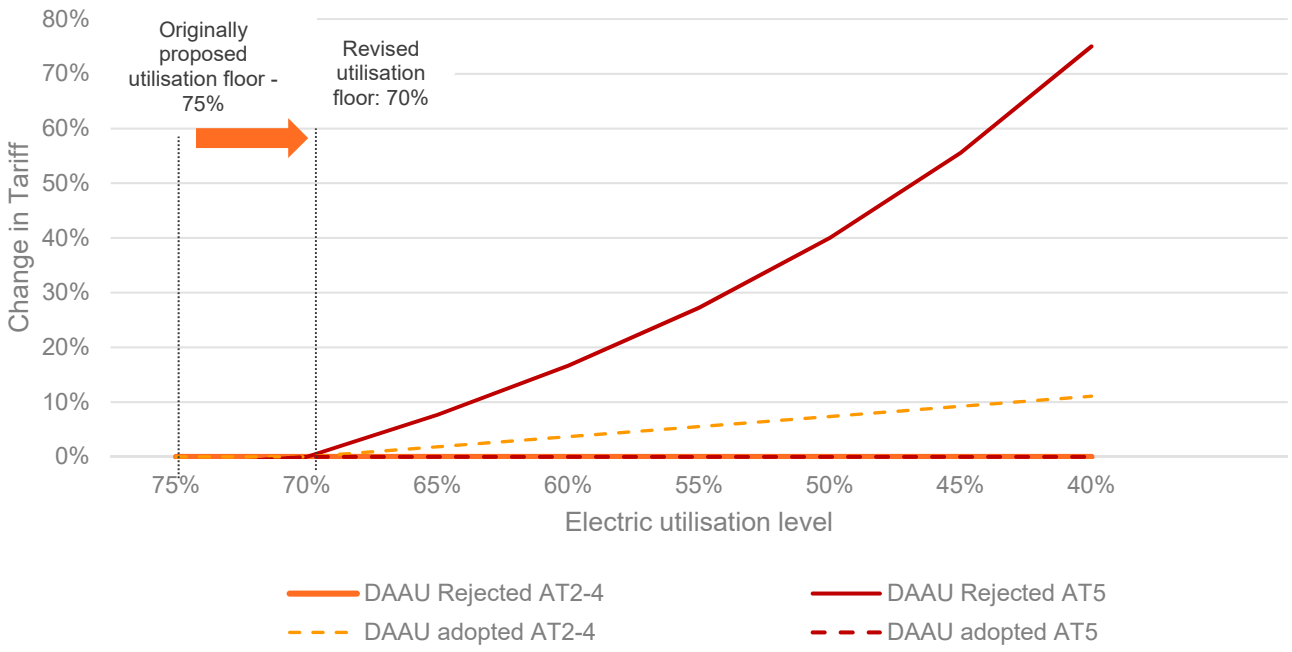
Figure 3: Summary of Goonyella electric utilisation floor

Proposed electric utilisation floor	90%	Flexibility provided: - 2 to 3 consists can switch from electric to diesel; - 9.4 mtpa convert to diesel; or - 3 contracts (of average size) can be renewed using diesel traction
Approved System Forecast eGTKs (FY18)	37,552,326	
Approved System Forecast System GTK (FY18)	37,598,102	
Approved System Forecast Electric utilisation	98%	

Blackwater System:

Aurizon Network has revised the Blackwater Electric Utilisation Floor down to 70%. With the relatively lower utilisation level on Blackwater, the system is already susceptible to bypass because electric traction users are currently carrying costs of a network that can deliver 100% electric volumes, but is operating 25% short of this outcome. As such, the current utilisation is already at risk, as described below.

Figure 4: Impact of electric utilisation on pricing (Blackwater System)



Aurizon Network recognises however that there is the need to include some level of flexibility in the utilisation floor levels to ensure that the mechanism is not triggered by minor variations in capacity. Aurizon Network has proposed to drop the utilisation floor to 70% on this basis. While the shift is less than the Goonyella shift, there is less room to move given the current disparity in pricing in the Blackwater system. In addition, as described in section 4.3.2, there is significant upside potential in the Blackwater system that can reduce AT5 Reference Tariffs, making the electric network substantially more affordable.

A summary of the proposed flexibility provided at the proposed electric utilisation floor is below:

Figure 5: Summary of Blackwater electric utilisation floor

Proposed electric utilisation floor	70%	Flexibility provided: - 1.5 consists can switch from electric to diesel; - 3.5 mtpa convert to diesel; or - 1.5 contracts (of average size) can be renewed using diesel traction
Approved System Forecast eGTKs (FY18)	29,547,009	
Approved System GTK (FY18)	38,721,726	
Approved System Forecast Electric utilisation	76%	

As outlined in Aurizon Network's original submission, the defined floor utilisation levels for each of the Goonyella and Blackwater systems will continue to be used in determining the AT5 charge for all future regulatory periods. That is, in all future regulatory periods (including beyond UT5), the electric utilisation level used in determining AT5 will be no less than:

- for the Goonyella system, 90%; or
- for the Blackwater system, 70%.

4.4 Inclusion of capital expenditure rules for electric infrastructure

4.4.1 Overview of QCA Draft Decision

In our original submission supporting the Electric Traction DAAU, Aurizon Network committed to seeking pre-approval as a pre-condition to the FY22 reinvestment decision. Changes were not made to reflect this in the Electric Traction DAAU as the processes were already included within the Access Undertaking to describe pre-approval.

In its Draft Decision, the QCA notes that any proposal for socialisation has the effect of reducing Aurizon Network's risk on new investments in electric traction infrastructure, and therefore increasing its incentive to build assets that may not be needed. The QCA suggests Aurizon Network needs to provide for capital expenditure rules that specify that Aurizon Network will apply a rigorous approach to approvals for electric infrastructure. The QCA therefore concludes that it requires Aurizon Network to include drafting in the Electric Traction DAAU giving effect to a robust pre-approval process for electric infrastructure investments.

4.4.2 Aurizon Network review

Aurizon Network does not agree with the premise that by having the proposed socialisation mechanism in place, investment risk is reduced, or that it provides incentives to over-invest in electric infrastructure. The proposed mechanism does not change the current capital approval requirements contained in Schedule E of the Access Undertaking, nor the oversight and approval rights the QCA has to test prudency of scope, standard and cost. With these processes in place, each capital project is tested for prudency of scope, standard and cost by the QCA prior to it being included in the regulatory asset base.

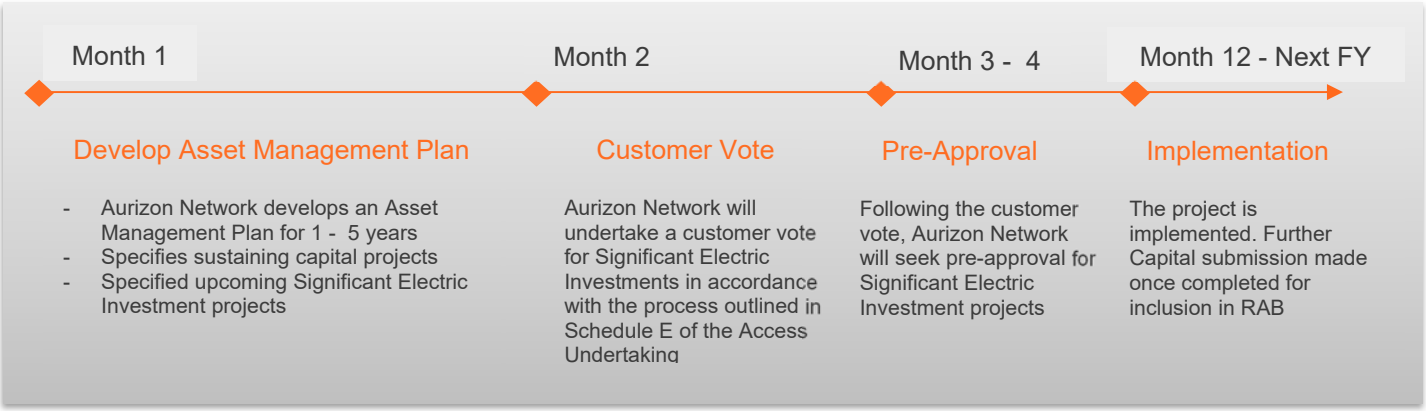
However, given the original commitment made in the supporting submission, Aurizon Network has incorporated drafting in Schedule E of the Access Undertaking to cement this commitment.

4.4.3 Proposed Changes

Aurizon Network proposes to use the existing processes in the undertaking to engage with our customers early for significant electric infrastructure investments, and to seek pre-approval from the QCA. It is proposed to commit to seek a customer vote (unless Aurizon Network is legally prevented from doing so), and to seek pre-approval from the QCA for significant electric investments required in the electric traction network.

The proposed process and indicative timing is outlined below.

Figure 5: Proposed significant electric investment process



Defining Significant Electric Investment

Aurizon Network has created a class of expenditure that it intends to subject to additional scrutiny by Interested Parties and the QCA. The rationale for defining this class is to concentrate on those involving significant expansions and enhancements of electric infrastructure such as those that could arise in relation to the renewal of aging feeder stations in the Blackwater and Goonyella systems. Stakeholder feedback highlighted the need for greater transparency about future costs and oversight to avoid any impacts on the AT5 reference tariff. Aurizon Network considers that the existing regulatory mechanisms are appropriate for sustaining capital, but has responded to concerns over the need for additional oversight in relation to Significant Electric Investment.

A new definition of Significant Electric Investment has been included in the Electric Traction DAAU, defined as an individual capital project associated with the electric infrastructure greater than $20m. There may be more than one project planned for a period, in which case the proposed pre-approval process will be undertaken for each project independently.

In some circumstances, Significant Electric Investment projects may not be solely Aurizon Network projects, and may involve third party service providers, such as connection service providers. Where third party service providers are involved, contractual arrangements are commonly subject to strict confidentiality obligations which could prevent Aurizon Network from disclosing the commercial details of the project to Access Holders, Customers and Access Seekers. If projects of this type occur, Aurizon Network will seek confidentiality obligations that allow disclosure. In the event this cannot be obtained, Aurizon Network will be unable to submit these projects for customer vote, however there will still be an obligation under the Electric Traction DAAU to submit them directly for pre-approval by the QCA.

Developing the asset management plan

Aurizon Network proposes to prepare an asset management plan for the electric infrastructure. The plan will outline capital expenditure for a one to five-year time frame including both sustaining capital and Significant Electric Investments proposed.

The asset management plan is intended to provide greater transparency and visibility on Aurizon Network's future capital expenditure particularly in relation to Significant Capital Expenditure. Both QCA and customer feedback has identified concern in relation to the planning of major renewals such as feeder station renewals. Where Significant Electric Investment projects are identified in this plan for the upcoming year, Aurizon Network will seek a vote where able to do so a pre-approval by the QCA.

Vote by Interested Parties

Clause 4.1(a) of Schedule E of the amended 2016 DAAU obliges Aurizon Network to seek a customer vote for Significant Electric Investment projects in accordance with Clause 4 of Schedule E of the Electric Traction DAAU. While the voting provisions set out in cl. 4 of the 2016 DAAU do not bind either Aurizon Network or the QCA, the results inform Aurizon Network and the QCA of the views of Interested Parties. Clause 2.2 (I)(iii) of Schedule E requires the QCA to take the vote into account when approving whether the capital expenditure is prudent and efficient.

Aurizon Network considers that obliging Significant Electric Investment projects to be subject to these voting provisions (to the extent that confidentiality obligations allow), provides an additional layer of oversight and incentivises Aurizon Network to demonstrate that the proposed capital expenditure is prudent and efficient.

Pre-approval by the QCA

Clause 2.1(f) of Schedule E of the amended 2016 DAAU obliges Aurizon Network to seek pre-approval from the QCA of all Significant Electric Investment projects. Aurizon Network anticipates that in deciding whether to pre-approve Significant Capital Expenditure, the QCA will exercise its authority as defined in cl. 2.2(e)-(f) of Schedule E of the 2016 DAAU. Aurizon Network notes that where pre-approval is obtained, the capital expenditure is not added to the Regulatory Asset Base until further capital submissions are made in accordance with of the Access Undertaking, enabling a further review by the QCA to determine whether the cost of the project is prudent.

Pre-approval timing

Timing of pre-approval is an important consideration for this process to work effectively. When pre- approval will be sought is largely dependent on the lead times for each specific project. Aurizon Network intends to introduce a rolling annual cycle:

- developing and publishing the asset management plan within 3 months of the commencement of the financial year.
- Where Significant Electric Investment projects are identified in that plan, Aurizon Network will initiate the customer vote and pre-approval process
- The proposed timeline estimates that pre-approval will take approximately 3-4 months to be completed.

It is acknowledged that some projects may not naturally fit into these timeframes. Where these occur, Aurizon Network may request a customer vote and pre-approval on an ad hoc basis. It is also acknowledged that there may be cases where the pre-approval process may be delayed, beyond the timeframes required to deliver the project. Importantly, and to sustain the electric traction service, Aurizon Network will meet its obligation by seeking a customer vote and pre-approval, but may commence and deliver projects, prior to this process being finalised at its risk, submitting the capital expenditure for assessment by the QCA on an ex post basis as part of the Capital Expenditure Report.

The process outlined above effectively provides a three-step process where Interested Parties and the QCA assess the prudency and efficiency of Significant Electric Investment. This process demonstrates the prudency and efficiency through:

1. Obliging Aurizon Network to allow Interested Parties to vote on Significant Electric Investments
2. Obliging Aurizon Network to submit all Significant Electric Investment projects for pre-approval by the QCA
3. After implementation, requiring Aurizon Network to submit capital incurred and details of the completed project to the QCA for assessment about whether it can be included in the Regulatory Asset Base.

Aurizon Network considers that this three-step process will provide stakeholders and the QCA with greater oversight of Significant Electric Investment and address concerns raised about Aurizon Network's perceived lack of incentive to invest prudently and efficiently.

4.5 Separating the electric revenue adjustment from stakeholder's non-electric take or pay calculations

4.5.1 Overview of QCA Draft Decision

In its Draft Decision, the QCA notes that the use of the AT3 Reference Tariff to socialise the electric revenue adjustment is inappropriate due to its use in Access Holders take or pay contracts. They state that Aurizon Network would recoup additional take or pay revenue in subsequent years where socialisation has occurred, and this would be levied on a coal volume, which in aggregate may be higher than the electric volume forecasts. The QCA requires Aurizon Network to use a socialisation tariff that is separate to the AT3 price take-or-pay.

4.5.2 Aurizon Network Review

Aurizon Network considers that in forming this view, the QCA has misunderstood the mechanics of how the Electric Revenue Adjustment will be socialised. The mechanism has been designed to ensure there is no under or over recovery of Allowable Revenue.

Where there is an Electric Revenue Adjustment in any given year, the associated revenue amount will be added to the AT3 Allowable Revenue for the System as part of the approved Revenue Adjustment Amount and the AT3 tariff calculated by applying the approved ntk System Forecasts.

This is detailed in clause 4.3 (a) of the DAAU.

If Take or Pay obligations trigger in any given year, the Electric Revenue Adjustment will be included in Take or Pay calculations as part of the AT3 tariff. The amount of Take or Pay payable will however be capped at the AT2-4 Allowable Revenue.

In the event of any over or under recovery of Allowable Revenue then this would be included in the Revenue Adjustment Amount calculation for that year preventing Aurizon Network from earning an amount more than Allowable Revenue including the Electric Revenue Adjustment.

4.5.3 Proposed Changes

Aurizon Network does not propose changes to use a separate tariff for socialisation of any electric utilisation adjustments. We consider the risk outlined by the QCA is sufficiently addressed through the process by which the electric utilisation amount is included in the AT3 Allowable Revenue, and by the existing Take or Pay methodology.

5. Attachment 1: Aurizon Network's proposed amendments to the 2017 Electric Traction DAAU