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7 March 2014

Dr Malcolm Roberts
Chairman
Queensland Competition Authority
Level 27, 145 Ann Street
GPO Box 2257
BRISBANE QLD 4001

Dear Malcolm

Aurizon Network Pty Ltd – 2013 Draft Access Undertaking (2013 DAU): Response to Consultant's Reports – Forecast Expenditure

Aurizon Network welcomes the opportunity to provide a submission to the Queensland Competition Authority (QCA) in response to the Consultants' Reports assessing the reasonableness of costs (maintenance, operating and capital) contained in the 2013 Draft Access Undertaking (2013 DAU).

The following Consultants' reports were published by the Authority on the 29 January 2014:

- *Aurizon Network's 2013 Draft Access Undertaking: Financial Assessment of Operating Expenditure* (RSM Bird Cameron)
- *Aurizon Network's 2013 Draft Access Undertaking: Engineering Technical Assessment of Maintenance, Operating and Capital Expenditure Forecast* (Sinclair Knight Merz)

In response, Aurizon Network in its response, has addressed the key issues and findings within these consultant reports, paying particular attention to the forecast operating and capital expenditure within the RSM Bird Cameron report, and the engineering and technical assessment of forecast maintenance expenditure, operating expenditure and the asset renewals component of capital expenditure within the Sinclair Knight Merz report.

Aurizon Network remains committed to the timely and efficient approval of 2013DAU and will continue to work constructively with our customers and the QCA to achieve a mutually beneficial outcome.

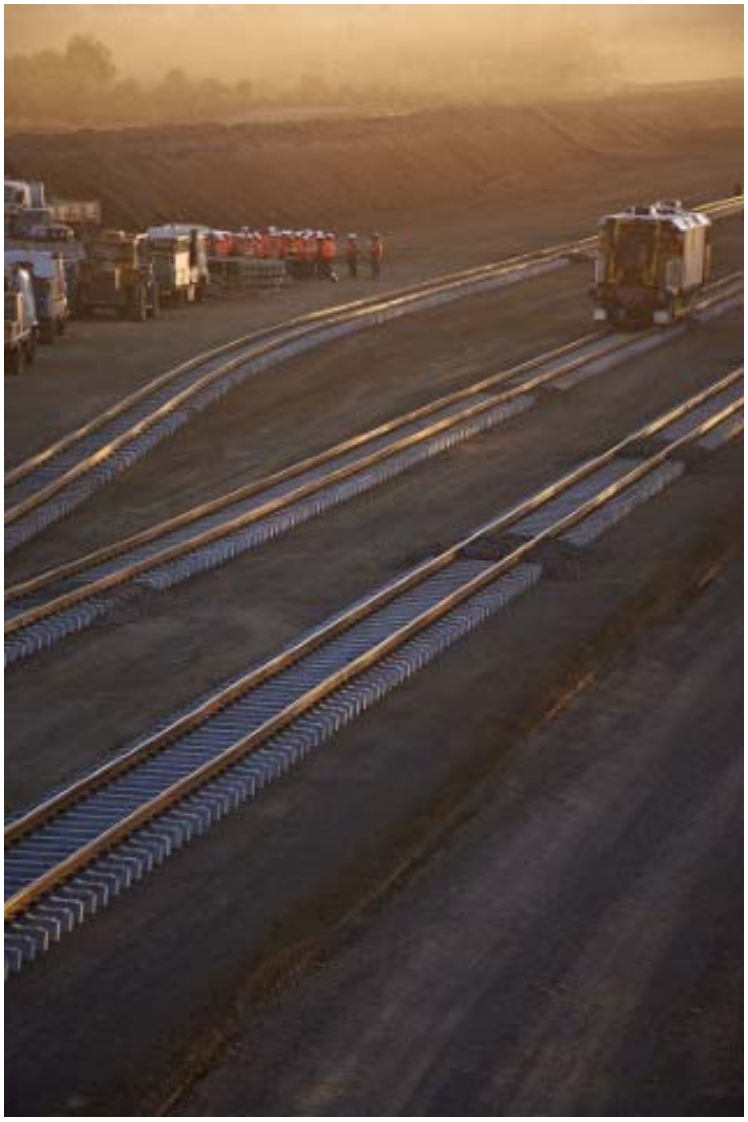
Yours sincerely

Lana Stockman
Vice President Regulation

7 March 2014

2013 Draft Access Undertaking

Response to QCA Consultants' Cost Reports



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Executive Summary

Aurizon Network welcomes the opportunity to provide a response to the Queensland Competition Authority (QCA) with regards to the Sinclair Knight Merz (SKM) and RSM Bird Cameron (RSMBC) reports. These reports were commissioned to assess the reasonableness of the operating costs (maintenance, operating and capital expenditure) within Aurizon Network's 2013 Draft Access Undertaking (2013 DAU).

The consultants, SKM and RSMBC, provided the following reports to assist the Authority with its consideration of the 2013 DAU:

- *Aurizon Network's 2013 Draft Access Undertaking: Financial Assessment of Operating Expenditure* (RSM Bird Cameron)

- *Aurizon Network's 2013 Draft Access Undertaking: Engineering Technical Assessment of Maintenance, Operating and Capital Expenditure Forecast* (Sinclair Knight Merz)

Aurizon Network's revenue proposal, Volume 3 – Maximum Allowable Revenue and Reference Tariff's, submitted as part of the 2013DAU, reflected the efficient costs of developing, maintaining and operating a highly reliable below rail network that has safety as its core value. These costs, where possible, have been rigorously benchmarked, and are otherwise controlled through the Aurizon Group's well established corporate governance practices.

Aurizon Network has implemented a robust approach to estimating corporate costs for 2013 DAU, including by commissioning independent benchmarking from Ernst & Young (EY). This benchmarking analysis was based on a number of sources, including the American Productivity and Quality Centre's Open Standards Benchmarking Collaborative Database, the Global Audit Information Network Benchmarking Survey and data from individual organisations approached for the purpose of this study. The report concludes that overall, Aurizon Network's 2013 DAU cost estimate for overheads place it within the benchmark range expected for a stand-alone business of a similar size and in a similar industry.

Having an appropriate cost allocation applied to Aurizon Network is critical to ensure that it delivers on its requirements as outlined within the 2013DAU. An inappropriate or under allocation, could result in Aurizon Networks inability to deliver on its requirements, and hence affect the coal supply chain.

Scope and Consideration

Aurizon Network has considered the reports provided by RSMBC and SKM respectively and provides the following main points as an overview:

Response to Key Findings – RSM Bird Cameron

RSMBC were specifically engaged by the QCA to assist them by

- Reviewing specific aspects of Aurizon Network's forecast operating and capital expenditure and assist the authority to identify any additional information required;

- Assessing the reasonableness and efficiency specific aspects of Aurizon Network's forecast operating and capital expenditure, particularly the allocation of Aurizon Network's corporate overhead costs; and

- Advise the Authority on matters raised by stakeholders during the 2013 DAU public consultation process.

As part of their report to the QCA, RSMBC have provided a conclusion on 12 items relating to the scope of the engagement. Aurizon Network, in this response, have provided a detailed response to these matters, which is contained within the body of this response submission. The content of this executive summary provides only an outline of the four major points of difference in relation to RSMBC conclusions.

Corporate overhead allocation

The Authority requested RSMBC to review the corporate overhead cost allocation methodology for allocating corporate (Aurizon Group) overhead costs to Aurizon Network outlined in Volume 3, *Maximum Allowable Revenue and Reference Tariffs*, section 10.2 of Aurizon Network's 2013 DAU. Volume 3, section 10.2 of the 2013 DAU.

It is important to note that, the corporate cost allowance for 2010 AU was understated, an assertion that RSMBC have supported in their report noting that Aurizon Network have absorbed these costs for the duration of 2010 AU. This absorption is not sustainable.

RSMBC concluded that:

> *…..we consider the use of an alternative cost allocation methodology (direct costs as a percentage of total direct costs) to allocate overheads…*

However, the analysis presented in the RSMBC report does not demonstrate a strong correlation between total direct spend in Aurizon Network and the consumption of corporate overhead in the Aurizon Network business.

RSMBC report does not substantiate or provide conclusive evidence that Aurizon Network's submitted operating allowances are not efficient.

Aurizon Network maintains the position that the allocation of corporate overhead costs (not subject to specific cost drivers) using the three factor combination of revenue, assets and FTE's (the proposed blended allocator) are reasonable. This methodology has regulatory precedence and results in an allocation of costs within appropriately adjusted comparator benchmarks.

Therefore, in the absence of a conclusive justification, the blended allocator should not be rejected in favour of the proposed direct cost methodology as RSMBC have concluded within their report.

Total Cost Benchmarking

The QCA requested RSMBC to benchmark Aurizon Network's total operating expenses against historic performance and similar companies.

RSMBC concluded that:

> *….. based on the benchmarking undertaken, the proposed UT4 Total Costs appear higher than the benchmark entities...*

RSMBC has acknowledged the constraints in sourcing quality and sufficiently detailed granular information to complete their benchmarking exercise. To assist with Aurizon Network's 2013 DAU, EY where appointed to complete a detailed benchmarking exercise which sourced granular detailed information which resulted in EY confirming Aurizon Network's submitted costs.

Aurizon Network did requested further information from RSMBC on the development methodology of the indicative "shadow" benchmark used to develop their conclusion. However, no further relevant information was forthcoming.

Without detailed information or transparency on methodology, Aurizon Network questions the appropriateness of RSMBC providing qualified conclusions.

Aurizon Network does not agree with the conclusions made in the report based on the "shadow company" benchmarking analysis as there are a number of material factors to be considered before a shadow benchmark could be prudently utilised as a benchmarking tool.

RSMBC's benchmarking exercise have attempted to illustrate the variance between Aurizon Network and Australian Rail Track Corporation (ARTC) Hunter Valley on a total cost basis with associated ratios per track km and GTK in particular. As part of this review, Aurizon Network identified that the Track Kilometre's being used within their calculations is incorrect. If the analysis is revised to include correct track kilometre's at 740km (not 1,336km) , operating costs of $33,463,987and taking the RSMBC estimate of ARTC overheads of $16,671,000 then the comparison indicates Aurizon Network is significantly more efficient in terms of $/km ($46,326/km vs $67,750/km).

RSMBC has also used Brookfield as an applicable benchmark comparison. From Aurizon Network's understanding, this is not appropriate as Brookfield operates a sparse, low tonnage network that is not a direct comparison to the operations of the Central Queensland Coal Network.

Indicative Shadow Benchmark

As part of their engagement, RSMBC also establishment a 'shadow' benchmark below rail network manager to test the efficiency of Aurizon Network's operating expenses. As part of their engagement, RSMBC have not disclosed their industry experts used to develop their shadow benchmark. This approach results in reduced credibility when both the sources of data and the 'industry experts' are not disclosed. Aurizon Network operates a unique heavy haul railway, the scale and complexity of which is unparalleled in Australia. ARTC is arguably the closest benchmark that could provide a credible comparator. The opinions of unnamed Industry experts is of little value without substantiation.

The fact that RSMBC admit that the Shadow benchmark assessment was a desktop review further reduces the credibility of the assessment and the recommendations that follow. As stated by RSMBC 'A full operational and organisational analysis of Aurizon Network operations would be required to arrive at firm conclusions with regard to an efficient operating model for the Aurizon Network"[1].

Whilst RSMBC have not recommended reducing the operational expense proposed by Aurizon Network on account of benchmarking, their flawed assessment infers that Aurizon Network are more expensive than comparable benchmarks. This is unlikely to be the case on kilometre or per Gross Tonne Kilometre (GTK) basis against the closest comparator ARTC if the financial assessment is corrected.

Calculation of Mine Depreciation Profile

The Authority requested RSMBC to provide an opinion on the proposed change in the calculation of RAB depreciation based on the analysis of CQCN mine lives, outlined in section 6.4 of Volume 3, section 6.4 of the 2013 DAU.

In their report, RSMBC concluded that:

> *…..We note that Aurizon Network has proposed a maximum economic life of assets for all regions of 25 years which is inconsistent with the mid-point for the Northern Bowen Basin and Moura economic regions.*

In calculating a depreciation profile, Aurizon Network recognises the disparity of the midpoints across each of the economic zones. Yet, given the different characteristics of the mines within these zones, different midpoints are not a surprise.

Aurizon Network considers that the 2013 DAU position, being a consistent system wide 25-year economic life constraint across the 2013 DAU period, remains appropriate.

[1] RSMBC 2014, Executive Summary, Page 33

Response to Key Findings – Sinclair Knight Merz

SKM were specifically engaged by the QCA to assist them by:

- Reviewing the forecast maintenance expenditure;
- Assessment of the reasonableness of Aurizon Network's proposed incremental maintenance reference tariff component (AT1 reference tariff);
- Review of forecast operating expenditure including:
    - an assessment of Aurizon Network's operating expenditure forecast for reasonableness based on historical actual operating expenditure for the Central Queensland Coal Region; and
    - benchmarking of forecast operating expenditure against similar below rail operations
- Review of forecast asset renewal component of capital expenditure including;
    - assessment of Aurizon Network's forecast renewals expenditure, with particular focus on the relationship between asset renewals and maintenance expenditure; and
    - assessment of Aurizon Network's forecast asset renewals programme on the basis of reasonableness.

As part of their report to the QCA, SKM have provided conclusions and recommendations on the items listed above. Aurizon Network, in this response, has provided a response to all of these matters. The content of this executive summary provides only an outline of the major points of difference in relation to RSMBC conclusions.

Maintenance Expenditure and Renewals

SKM considered that Aurizon Networks costs for both Maintenance Expenditure and Renewals forecasts were found to be reasonable. This is consistent with research supplied as part of the 2013 DAU. This research was undertaken by:

- Evans and Peck - who stated that after "extensive analysis has been carried out comparing Queensland Rail (QR) Network's (now Aurizon Network) four systems with the ARTC, the analysis clearly indicated QR Network's CQCN cost efficiency to be reasonable and prudent when compared with the ARTC on a unit cost basis of dollars' per track kilometre versus net system tonnage[2];
- Worley Parsons and the Transportation Technology Centre (TTC) USA stated that the "approach is further confirmed by a series of independent consultancy reports prepared which confirmed that the costs of maintaining the CQCN are reasonably in line with those of other networks, such as the ARTC.[3]

The SKM report also confirmed that there was no "double counting" of maintenance costs (which RSMBC have also confirmed in their report).

General Recommendations

The SKM report recommends and Aurizon Network supports that the QCA should review a number of items to improve transparency and improved cost allocation for the CQCN. These include:

- The AT_1 cost modelling, the existing model needs to be updated to reflect actual cost variables;
- The cost allocation for train control and safe working, consider allocation based on gross tonnes per kilometre;
- Improved transparency on the performance and condition of the network, Aurizon Network is to committed to a more transparent service delivery model; and
- Improved reporting on the scope and cost of service delivery for maintenance and renewals projects.

[2] Evans and Peck Maintenance and Operating Cost Report 2013

[3] Worley Parson and Transport Technology Centre (USA) Parallel Active Cost Comparison Report

However there some matters where Aurizon Network does not support the recommendations of SKM, including:

- No reduction in the ballast undercutting scope - Aurizon Network believes it can deliver the scope within the cost provided in the maintenance submission;
- No reduction of costs for Commercial Management - the services delivered are much wider than those considered by SKM;
- It would be inappropriate for the QCA to approve Aurizon Network's Asset Maintenance and Renewal Policy as this document forms part of the Safety Management System which is reviewed and approved by other regulators.

1. The RSM Bird Cameron (RSMBC) Report

RSMBC were engaged by the QCA to assist them by

- Reviewing specific aspects of Aurizon Network's forecast operating and capital expenditure and assist the authority to identify any additional information required;
- Assessing the reasonableness and efficiency specific aspects of Aurizon Network's forecast operating and capital expenditure, particularly the allocation of Aurizon Network's corporate overhead costs; and
- Advise the Authority on matters raised by stakeholders during the 2013 DAU public consultation process.

1.1 - Review of Corporate Overhead Cost Allocation Methodology

As outlined within the 2013DAU and its supporting material, since the implementation of the 2010 Access Undertaking, Aurizon Groups gone through substantial organisation changes. Since 2010, full structural separation has been completed and a listing upon the Australian Stock Exchange has occurred. During this time, Aurizon Group, have pursued a transformation program on cost containment, operational delivery and safety.

These transformation programs have affected the composition of the corporate overhead cost allocation. EY as part of their benchmarking analysis, confirmed that Aurizon Network corporate costs as submitted within the 2013 DAU were appropriate.

During the current 2010 AU period, the corporate cost allowance was understated, an assertion that RSMBC have supported in their report noting that Aurizon Network have absorbed these costs for the duration of 2010 AU. This absorption is not sustainable.

RSMBC were engaged by the QCA to review the corporate overhead cost allocation methodology for allocating corporate ("Aurizon Group") overhead costs to Aurizon Network as set out in section 10.2 of Volume 3 of the 2013 DAU. The review included:

- Undertaking an assessment of the benchmarking report prepared by EY to determine the reasonableness of the allocated costs; and
- Providing an opinion on the reasonableness of the cost allocation methodology proposed by Aurizon Network.

Section 10.2.2.1 of Volume 3 of Aurizon Network's 2013 DAU proposal, outlined that historical cost allowances should not be used as a benchmark for assessing forward looking efficient costs due to Aurizon Network's organisational and structural changes (including loss of economies of scale) and volume growth.

The assumption that the efficient benchmark firm is a listed entity should also be and is reflected in the parameters for the Weighted Average Cost of Capital (WACC) and hence Aurizon Network believes it is appropriate that these costs be recovered.

Resultant of the abovementioned 2010 AU under-recovery of corporate overheads, a new methodology was applied for 2013 DAU which is consistent with approaches used by other regulated businesses in Australia and accepted by their respective regulatory bodies. The methodology for the calculation of the corporate overhead allowance is outlined in section 10.2.4 Volume 3 of Aurizon Network's 2013 DAU proposal and is not intended to be repeated here. In the review of this methodology, RSMBC have identified several matters that Aurizon Network has provided a response to within this paper.

1.1.1 - Shadow Company and Benchmarking

RSMBC as part of their review, completed a benchmarking exercise to use as a basis to review Aurizon Network's costs against. This enabled RSMBC to then form a conclusion to provide it to the QCA.

The establishment of a 'shadow' benchmark below rail network manager to test the efficiency of Aurizon Network's operating expenses has limited credibility if the sources of data and the 'industry experts' are not disclosed. Aurizon Network operates a unique heavy haul railway, the scale and complexity of which is unparalleled in Australia. ARTC is arguably the closest benchmark that could provide a credible comparator.

RSMBC have confirmed within their report that the Shadow benchmark assessment was completed as a desktop review. This statement reduces the credibility of the assessment and the recommendations that follow. RSMBC go on to further state that 'A full operational and organisational analysis of Aurizon Network operations would be required to arrive at firm conclusions with regard to an efficient operating model for the Aurizon Network', placing further doubt on the credibility of the desktop benchmarking exercise.

As part of the 2013 DAU, Aurizon Network engaged EY to complete a detailed benchmarking exercise incorporating detailed data sourced directly from appropriate below rail network managers. This information was sourced on a confidential basis.

In reviewing the benchmarking elements of RSMBC's report, Aurizon Network has the following comments:

Overall

- Aurizon Network notes that a "shadow" benchmark is not standard practice by regulators to determine benchmarks to evaluate the prudency of regulated entities allowances. RSMBC have not been able to provide the basis for derivation of the benchmarks and if they were derived from actual company metrics, and if so, which companies.
- Given the diversity of rail infrastructure businesses within Australia it is likely that the shadow benchmark has been informed by passenger networks. These businesses bear little resemblance in operating costs to a vertically integrated heavy haul railroad operating providing cyclical services under an open access framework to multiple competing operators within a complex supply chain. RSMBC provide no description or evidence as to how these differences have been taken into account.
- Through using a "shadow" benchmark most of the issues that RSMBC raised in regards to the EY report would equally apply to RSMBC's "shadow" benchmark entity. Some example issues being the scale, type and complexity of operations, scale of revenue, geographical location, details including name of railway data used.

Brookfield

- The use of Brookfield Rail as a benchmark comparison is misleading particularly on a per track kilometre basis. Brookfield operate a sparse low tonnage network.
- The summary table in section 9.19 suggests that the 2013 DAU forecast is in line with Brookfield on a total cost/forecast GTK basis, however in section 9.33 the comparison is made to a "shadow" company which does not exist. The "shadow" company has not been compared to any of the real 'benchmark' companies (ARTC), hence it unknown whether the suggested level of efficiency in the "shadow" company is accurate and/or achievable.

ARTC

- References to the operating costs for the Hunter Valley Coal Network (HVCN) erroneously assume that the costs reflected in access charges represent ARTC's costs to supply the service. However, this does not address the fact that most, if not all of those costs are allocated costs associated with a diverse network and are not actual direct costs. For example, comparisons of network control should review ARTC's total network control costs and not the allocation to the HVCN and subsequent sub-allocations to coal.
- RSMBC have not adjusted the ARTC cost of operating expenses to reflect the fact that the ARTC network is non-electrified. A fair comparison would include this adjustment as the FTE requirements of resourcing for electrical control and fault officers is significant.
- RSMBC financial costs reported against ARTC relate to costs incurred on the Hunter Valley Constrained Network, which Aurizon Network's has established is 740km in track length not 1,336km as RSMBC have reported. Using the reduced track length would alter RSMBC's conclusions and would result in showing the Aurizon Network is more efficient than the most appropriate benchmark company.
- RSMBC have taken their estimate of the ARTC Operating Cost from the ARTC Hunter Valley Access Undertaking 2010. In July 2011, new line segments were incorporated into the Hunter Valley Network which increased the applicable kilometres of the ARTC network resulting in RSMBC's using outdated information in their review.
- From the limited information that has been made available on the composition of the costs for the "shadow" benchmark, it appears that some of functions included in Aurizon Network's allocation of corporate overhead have not been included in the "shadow" company and therefore it would appear to be understated. Overlooked functions for RSMBC's benchmark include Human Resources, Safety, Health & Environment and Stakeholder and Community Relations, Procurement, Strategy and Branding, Operational Excellence, National Policy and Records Management. It appears that these costs have not been included in corporate overheads for the shadow company.
- It is understood that the industry experts constructing the "shadow" benchmark believed that Aurizon Network's staff train control numbers were excessive. However, given the safety implications of train control there is no evidence provided that these industry experts possess appropriate accreditation in rail safety management systems to express this opinion. In contrast, Aurizon Network engaged technical consultants, Lloyds Register in 2011 to provide an assessment of train controller workload (based on tonnages at that point in time) prior to the consolidation to the Mackay control centre to Rockhampton. Outcomes from this assessment resulted in the creation of two extra control boards (Gregory board and Ports board) which occurred as a part of the consolidation in 2011. The creation of these two additional control boards was a result of analysis of the density of trains and complexity of infrastructure within the Central Queensland Coal Network. This analysis resulted in an increase in the number of FTEs required to control each board which requires 24 hour a day, 7 day a week coverage.

Hunter Valley Coal Chain Coordinator (HVCCC)

- The comparison of Aurizon Network's operational expense against the ARTC Hunter Valley operations needs to consider the role of the HVCCC in management of coal chain planning.

  HVCCC has a mix of Federal, State and privately owned organisations operating individual components of the Coal Chain. The HVCCC provides a single point of coordination for both short-term (managing the coal chain as a system) and long-term (Infrastructure and operational investment)) planning decisions across the entire Hunter Valley Coal Chain. Overall, the HVCCC provides a single point of co-ordination for all planning decisions within the Hunter Valley Coal region.

  The existence of HVCCC has the effect to smooth out relations across the Coal Chain. If HVCCC did not exist, it is likely that ARTC would be required either through industry or regulatory involvement to boost their manning levels for capacity planning and day to day train planning.

  In this respect it would be appropriate to increase the cost of ARTC Train Control to be comparable to Aurizon in relation to the benchmarking undertaken by RSMBC.

Whilst RSMBC have not recommended reducing the operational expense proposed by Aurizon on account of benchmarking, their flawed assessment infers that Aurizon Network is more expensive (based upon track KM) than comparable benchmarks (ARTC).

1.1.2 - Use of the blended allocator

In the 2013 DAU, Aurizon Network outlines that its corporate overhead costs have been calculated using a cost allocation methodology based on both causal and blended allocation bases. Research undertaken by EY (presented in their report) indicates that the use of a blended allocator in the absence of a clear causal driver of costs is supported by regulatory precedent, particularly for regulated firms with similar characteristics.

As part of the blended allocator, Aurizon Network has proposed that it is based upon FTE's, Aurizon Network's revenue and assets.

RSMBC agrees that the use of an alternative cost allocation methodology to allocate overheads for cost centres where no clear cost driver can be determined may be appropriate (section 3.101). In section 3.101 of the report, RSMBC conclude:

> *"….we consider the use of an alternative cost allocation methodology (direct costs as a percentage of total direct costs) to allocate overheads for cost centres, whereon clear cost drivers can be determined, may be appropriate based upon:*
>
> - *This is the most commonly adopted methodology in the regulatory environment*
> - *It is the primary methodology adopted by Energex, the company that Aurizon Network has identified as a comparable business".*

RSMBC's response is misleading as the methodology used by Energex is such that direct costs are used to allocate between services within the regulated business. It is Aurizon Network's understanding that Energex use a three factor (blended) allocator to allocate costs between the non-regulated and regulated segments of their business. Aurizon Network would maintain that the approach of Energex is directly comparable to the use of the blended allocator within the Aurizon Group.

Whilst Aurizon Network recognises the point made by RSMBC that the scale of the non-regulated activities was a factor in determining the cost allocation methodology to apply, Energex have stated that the blended factor it applied was the "most appropriate when considering simplicity in its application, capable of being replicated by the AER and the most representative cost drivers"[4]. Energex further states that the blended allocator "better reflects the economic and efficient costs of the services provided. Utilising the three factor method allows consideration to be taken of the materiality, scale and size of the non-regulated activities in comparison to the regulated activities."[5]

Citipower and Powercor are further examples of where a blended allocator has been used for the allocation of substantial shared costs including system operations, general and administration, health and safety, training, motor vehicle running costs, computer systems, voice communication and salary costs.

In section 3.104, RSMBC recommend

> *"….Should a blended rate methodology be adopted for allocating overheads for cost centres where no clear cost driver can be determined, we consider that it may be more appropriate to utilise direct costs rather than revenue as a component of that blended rate".*

Aurizon Network disagrees with this conclusion, as the Aurizon Network selected components of the blended rate allocator best reflect the main business drivers of the Aurizon Network business for reason of:

- *Asset Value* - Aurizon Network's asset base makes up almost fifty percent of the total assets of the Aurizon Limited group.
- *Revenue* - Aurizon Network accounts for over twenty five percent of the Aurizon Limited group earnings before interest and tax.

[4] Energex Limited, Cost Allocation Method, February 2009, p22
[5] Energex Limited, Cost Allocation Method, February 2009, p22

- *Full Time Equivalent (FTE)* – EY as part of their benchmarking exercise confirmed that FTE was 'an acceptable component of the blended rate and are commonly used as a casual allocator. Regulatory precedence also supports the use of FTEs as a component in a blended allocator'[6]

The suggestion that only [redacted] of the total Aurizon Limited corporate overheads can be allocated to Aurizon Network through using direct cost method would result in a substantial understatement of costs and result in the un-regulated parts of the Aurizon Group funding the regulated business's shortfall.

In their report, RSMBC have also stated that:

"…we consider:

- *that there is generally a stronger correlation between an entity's direct costs and its corporate overhead costs than the value of an entity's assets and its corporate overhead costs".*

RSMBC do not provide any further context or substantiation in support of this statement.

The direct costs of the Aurizon Network business (excluding depreciation and maintenance) largely comprise energy costs, train control and infrastructure management, with energy costs making up 49% of these direct costs. It is difficult to understand the conclusion of RSMBC that these costs have a strong correlation with overhead costs. Furthermore, Aurizon Network believes that the amount of corporate costs (including Finance, Information Technology, Safety, CEO and Board) do not have a strong causal relationship with the main direct costs of the Aurizon Network business.

Aurizon Network contends that the blended allocator has regulatory precedence and results in an allocation of costs within appropriately adjusted comparator benchmarks.

The largest proportion of Aurizon Network's direct costs is its energy costs. This has no strong causal relationship to its overhead costs.

Aurizon Network believes that the arguments offered by RSMBC do not conclusively demonstrate that the blended allocator is not appropriate.

1.1.3 - Exclusion of capital costs from direct costs

In section 3.103 and 3.104, where RSMBC have proposed that direct costs be used as the allocator in place of the blended allocator (or in place of revenue in the blended allocator), RSMBC have calculated a direct cost percentage that excludes capital costs.

The exclusion of capitalised costs or asset values from the determination of the amount of direct costs is erroneous as it results in an unreasonably lower allocation of corporate overhead for many functions and would also lead to an understatement of costs such as:

- finance (who provide advice on funding of the assets and maintenance of fixed asset register);
- insurance (arranging cover for CQCN declared assets and other insurance types);
- IT (systems used to monitor assets);
- safety (mitigating assets from major incidents and damage); and
- procurement for Aurizon Network.

Aurizon Network is an asset intensive business. The RSMBC allocator excludes capital costs which will result in an unreasonably lower allocation of capital overheads.

The benchmarking analysis completed by EY has been based on the costs that would be incurred by Aurizon Network as a stand-alone below rail network operator. Aurizon Network can confirm that this process did not result

[6] EY - Benchmarking of Corporate Overhead Costs for QR Network Pty Ltd, 2012, Pg8

in a duplication of costs between Aurizon Network and Aurizon Operations. This was also confirmed by RSMBC within their report[7]

There is a distinction between the activities reflected in the corporate overhead forecast costs allocated to Aurizon Network and the measurement of the corporate overhead costs. For clarity, the process by which the percentage corporate costs applicable to Aurizon Network were calculated is as follows:

1. In constructing the Aurizon Network corporate overhead allowance, Aurizon Network identified the activities and functions that would be incurred by a publicly listed, stand alone, rail infrastructure business of commensurate scale;
2. The costs of the identified activities and functions were then assessed as a percentage of the Aurizon Group total corporate costs based upon the allocator applied.

Aurizon Network confirms that any savings from economies of scale, benefits from efficiencies and any additional cost savings targets on specific business areas within the Aurizon group have already flowed through to Aurizon Network in the proposed corporate overhead forecasts submitted in the 2013 DAU.

1.1.5 - Benchmarking analysis

As part of the 2013 DAU submission, Aurizon included a report from EY which undertook an analysis of Aurizon Network corporate overhead costs, determining the appropriate cost allocation methodology for overhead costs to Aurizon Network using the EY Benchmarking Methodology. The EY Benchmarking Methodology has been used in regions across Australia to compare the cost and non-cost performance of corporate service functions. The model is continually monitored and updated to reflect leading practice performance benchmarking. In the explanatory section of the report, EY clearly identify the types of sources of data used in the development of the Benchmarking Methodology.

The EY findings state that Aurizon Network's share of corporate overhead costs falling within a reasonable range of comparable benchmarks.

As part of the QCA cost review, RSMBC were requested to benchmark Aurizon Network's total costs against, if practicable, similar companies. In response, RSMBC have developed a specific indicative 'shadow' benchmark for this engagement. In constructing the 'shadow' benchmarking RSMBC's methodology outlined in their report included:

- Comparison of UT3 actual and UT4 forecast costs
- RSMBC benchmarking operating costs against 2 comparable Australian rail access providers using publically available information;
- Creation of a shadow benchmark company using a bottom up cost approach

In comparison, EY's benchmarking process involved:

- Scope of Benchmark study including assessment of relevant Aurizon functions;
- Cost definition and identification of potential benchmark's candidates for each cost;
- Collection of data from both Aurizon Network and directly from comparable companies candidates within the applicable benchmark. This including sourcing information from EY internal sources;
- A comparison of cost definition between Aurizon Network's and any external data sourced;
- Data analysis including filtering of relevant data, resulting in the most comparable organisations being used, including identification of any material variations.

A rigorous approach to benchmarking costs has been undertaken by Ernst and Young using a transparent methodology and drawing on the actual costs of comparable comparison companies. The limitation of this analysis when scrutinised is the non-disclosure of the comparator companies. However to source the most comparable data to complete the benchmark appropriately EY have, at their discretion, requested confidentiality be maintained.

Ernst and Young is an experienced and well recognised firm who have provided a rigorous benchmark based on actual data. The RSMBC proposed "shadow" cost model does not compare as it is unable to demonstrate the same level of rigour in its methodology.

[7] RSM Bird Cameron02014, paragraph 3.96 pg59

One of the difficulties in completing a benchmarking exercise for the purpose of comparing costs with Aurizon Network is the unique nature of Aurizon Network's Central Queensland Coal Network and the difficulties in finding appropriate comparators. Even where such comparators are found, adjustments must be made to reflect differences in factors such as ownership structure, scale and scope of activities, the environment and its operations. This is relevant when benchmarking costs as well as identifying and analysing efficiencies. As a result of analysis, RSMBC state in section 9.44 of their report,

> *….based on a desktop benchmarking exercise, the ability to drill down further is limited. However, based on the benchmarking undertaken, the proposed UT4 Total Costs appear higher than the benchmark entities.*

Aurizon Network disagrees with the above statement and any recommendations to reduce the proposed corporate overhead forecast based on the RSMBC indicative "shadow" benchmark, and details the issues with the construction and use of the RSMBC indicative "shadow" benchmark.

- RSMBC have used publically available information in forming their indicative "shadow" benchmark. The EY benchmarking analysis does not reference to publicly available information, as this type of information is not detailed enough for an analysis. RSMBC have acknowledged the limitations with using publicly available information[8];
- The above statement demonstrates inconsistency in RSMBC's analysis and methodology. The appropriateness of the proposed "shadow" benchmark company off the back of this assertion and as proposed by RSMBC is not demonstrated;
- Whilst RSMBC in section 9.42, have eluded to some limitations of the EY benchmarking methodology, the same limitations can be extended to their proposed "shadow" cost company model, or in fact to any other benchmarking exercise where confidential information and been used in the analysis;
- RSMBC have been able to only provide a list of total costs together with a description of activities used as a base for their indicative "shadow" costs, which did not allow for any meaningful analysis to be performed. Aurizon Network therefore asserts that the RSMBC proposed "shadow" cost benchmark should not be considered as more appropriate than the benchmark developed by EY, which supported the Aurizon Network 2013 DAU submitted forecast costs.

Aurizon Network has the following comments based on the limited information on the indicative "shadow" company costs:

- The summary table in section 9.19 suggests that the 2013 DAU forecast is in line with Brookfield on a total cost/forecast GTK basis; however the benchmark summary in section 9.33 only contains the comparison to the indicative "shadow" company. RSMBC have not made comparisons between their indicative "shadow" company and real 'benchmark' companies (such as ARTC, Brookfield), hence it unknown whether the suggested level of efficiency in the "shadow" company is accurate or achievable;
- RSMBC have attempted to illustrate the variance between Aurizon Network and ARTC Hunter Valley on a total cost basis with associated ratios per track km and GTK in particular. If the analysis is revised based upon track kilometres of 740km, operating costs of $33,463,987 (as presented in section 1.2.6 below) and taking the RSMBC estimate of ARTC overheads of $16,671,000 then the comparison would indicate that Aurizon are significantly more efficient in terms of $/km ($46,326/km vs $67,750/km).
- Some of functions included in Aurizon Network's allocation of corporate overhead have not been included in the indicative "shadow" costs suggesting that RSMBC have understated the benchmark. In the functional organisational model in which Aurizon Network operates the Human Resources, Safety, Health & Environment and Stakeholder and Community Relations functions are included within corporate overhead. These costs ($10 million in Aurizon Network's 2013 DAU cost estimates) included in direct costs rather than corporate overheads in the indicative "shadow". It also appears that the corporate overheads for the 'shadow' company have excluded the costs of Procurement, Strategy and Branding and non-benchmarked functions including Operational Excellence, National Policy and Records Management which total [redacted] million;

[8] RSMBC 2014, Page 124, Section 9.15

- Property costs: RSMBC have commented that there has been no explanation of the variances where Aurizon Network's estimated costs are below the benchmarks. It should be noted that EY have provided comments explaining instances of higher costs. Direct comparisons to RSMBC's Rail Company's 1 and 2 with respect to property costs are difficult without the provision of any further detailed information (EY addressed this issue by completing a separate benchmarking of Brisbane CBD rental costs). Aurizon notes that Central Queensland property costs (which are applicable to Aurizon Network's geographical footprint) are not included in the 2013 DAU submitted allowances;
- Train Control and Safe Working costs - RSMBC presented the proposed cost increases for additional train control boards established during the consolidation of train control and the additional FTE's required. RSMBC concluded that it is not unreasonable to expect increased costs for train control in an increased tonnage environment;

  The number of train control boards use to manage the CQCN (9 plus support boards) is appropriate for the operational work load. By comparison, the Broadmeadow Network Control centre has 12 control boards, with approximately half of these being dedicated to the Hunter Valley operations and the rest for the management of North/South traffic and parts of the ARTC Inland Route in Western NSW. Whilst the Hunter Valley has a higher number of train control boards per track km than Aurizon, the Hunter Valley has more background general freight and passenger traffic on its network which is the driver for the number of boards in existence. .

Given the limited transparency of the key assumptions underpinning the indicative 'shadow' benchmark there a number of key points of difference between Aurizon Network and other heavy haul railways which lead to material variances in operating costs:

- Aurizon Network operates a system with significant route electrification;
- The CQCN system is predominantly based in a remote location, in a region which endures more extreme conditions compared with other heavy haul railways resulting in higher operational complexity and costs;
- Aurizon Network operates in a complex supply chain structure, where the CQCN interfaces with multiple port precincts with each precinct having different operating models that directly affects the capacity and operation of the CQCN;
- Interconnectivity of the four systems comprising the CQCN creates complexity with respect to access rights, cross system tariffs and operations to several terminals both domestic and export;
- The regulatory environment in which Aurizon Network operates adds significant complexity to operations necessitating additional resources to manage the CQCN operations;

1.2 - Other Comments

1.2.1 - Review of Corporate Overhead Cost Allocation - Maintenance Costs

In the 2013 DAU, Aurizon Network has submitted revised corporate overhead costs applicable to maintenance costs due to an under-allocation during the 2010 Access Undertaking period. Aurizon Network corporate overhead costs were calculated upon two independent pieces of work completed by Deloitte's.

RSMBC have recognised in section 3.100 of their report that corporate overheads utilised in the current undertaking period (2010 AU) were below the actual costs incurred by the Aurizon Group in relation to the management of Aurizon Network. As part of their review, RSMBC have concluded that the Maintenance Costs provided in Aurizon Network's 2013DAU should be reviewed and amended. Specifically, in section 4.55, RSMBC have recommended

> *'…..that the corporate maintenance costs of $12.09 million per year in real terms proposed by Aurizon be amended to $10.24 million per year in real terms for the year ended 30 June 2012).'*
>
> *The proposed reductions are reflective of:*

- *Aurizon Network being part of a larger group with centralised functional overheads that will result in lower corporate overheads than a stand-alone entity; and*
- *corporate overheads (legal costs) allocated within Aurizon Network's proposed operating expenses'*

Aurizon Network agrees that there are economies of scale and synergies that businesses benefit from, by being part of a larger enterprise. However, there is a distinction between Aurizon Network receiving cost saving benefits from economies of scale and synergies and having overhead costs subsidised by the un-regulated parts of the Aurizon Group. The 2013 DAU has been submitted with such savings included within the proposed costs, which overall supports productivity improvements. It is also important to consider that Aurizon Network under the regulatory regime, is required to operate essentially as a stand-alone entity, making access to these costs savings questionable.

The basis for the allocation of costs in the 2013 DAU is the costs attributable to Aurizon Network on a stand-alone basis. Whilst the stand-alone basis recognises the savings from economies of scale and synergies, it includes an allocation of group corporate costs which represent the services that have been anticipated for the regulated business.

RSMBC have recommended a reduction primarily in the corporate overheads relating to the Office of the CEO and Board (from $2.01m to $0.63m) and Legal services (from $0.76m to $0.10m). Whilst acknowledging these reductions may firstly appear reasonable when viewed by themselves based on the explanations provided by RSMBC, a review of the Deloitte Access Economics report[9] would suggest that there are some costs relating to services provided by the Aurizon Limited for Aurizon Network that have been excluded from the benchmark constructed by Deloitte Access Economics. Examples of such costs are those relating to property, procurement, taxation, treasury and safety services. Aurizon Network notes that RSMBC do not make reference to these costs or suggested any possible adjustments.

As stated by RSMBC in section 4.8 of their report,

> *'…The proposed corporate cost figure equates to approximately 6% of the proposed maintenance services revenue of approximately $200 million.'*

The proposed corporate overheads for the maintenance forecast of 6% compares favourably with the recent regulatory decisions which RSMBC acknowledge within section 4.44 of their report:

> *….The recent regulatory decisions quoted by Deloitte have an average of 7.0% of total cost and a median of 5.4% of total cost'*

Aurizon Network does not accept the reasons for the RSMBC proposed decrease in corporate maintenance costs by $2.04 million per year (in 30 June 2012 real dollars).

1.2.2 - Benchmarking of Cost of Insurance Premiums

Aurizon Network notes the conclusion by RSMBC within section 5.33 being *'Based on analysis undertaken, the corporate insurance costs proposed by Aurizon Network do not appear unreasonable'*

[9] Deloitte Access Economics – Estimate of QR Network Maintenance Services Overheads, 1 November 2012

1.2.3 - Review of Calculation of Mine Depreciation Profile

The depreciation charge is recognised as a fundamental component of the building blocks methodology that constitutes Aurizon Network's MAR, yet a clear distinction exists between physical depreciation and that associated with economic depreciation. Physical depreciation refers to

> *'…the decline in the physical ability of capital to generate useful services'*

Whilst in contrast, economic depreciation refers to

> *'…the decline in the ability of capital to provide services of value.'* [10]

To illustrate the distinction, a piece of machinery could be in near perfect condition and be able to manufacture goods for an indefinite period of time. In such a circumstance, the machine would experience little to no physical depreciation. Yet, if the value of the good the machine produces decreases in value or is substituted by another good, then the economic value of the machine would decline, therefore reflecting economic depreciation.

Due to the significance of both of these definitions and their respective implications, the change in value due to either depreciation approach should be treated just as importantly as one another. Consequently, when utilised for the purpose of calculating depreciation of regulated assets, the shorter of the physical or economic lives of the asset should be used, a longstanding principle that has previously been applied throughout preceding Aurizon Network undertakings.

In this light, the 2013 DAU considered three options in addressing the impact of depreciation upon tariffs, ultimately aiming to produce more efficient pricing outcomes across the CQCN. This included the consideration of:

- Option 1: Apply a 20 year rolling life assumption to investment made in 2010 AU and 2013 DAU, with the rolled forward 2010 AU asset value continuing to be constrained by the 50 year life assumption.
- Option 2: Apply a periodically reviewed weighted average mine life constraint on all assets, having regard to marketable reserves, the 2013 DAU volume forecast and the expected renewal of contract volumes until resource depletion; and
- Option 3: Apply a 20 year rolling life assumption to all assets.

In applying a periodically reviewed weighted average mine life with regards to both marketable reserves and production rates, Option 2 was identified by Aurizon Network as the most suitable option in addressing efficient pricing outcomes, where by taking into account the relative size of each mine across the three economic zones within the CQCN, mine lives per the different weighting methods were calculated. This is indicated below in Table 1.

***Table 1*– Weighted average mine lives by economic zones (2013 DAU)**

Economic Zone	Weighted by Reserves	Weighted by Production	Midpoint	RSM Bird Report
Northern Bowen Basin	32.04	21.27	26.66	27
Blackwater	29.62	19.80	24.71	25
Moura	29.37	24.37	26.87	27

Similar to the approach applied by the ARTC within the HVCN, Aurizon Network undertook a weighted approach to mine life by referencing both marketable reserves and production. Producing different estimates, a midpoint was determined for each of the economic regions, with a 25 year economic depreciation life applicable to all assets installed pre and post 1st July 2009 throughout 2013 DAU across all regions. RSMBC commented upon this within their report and stated:

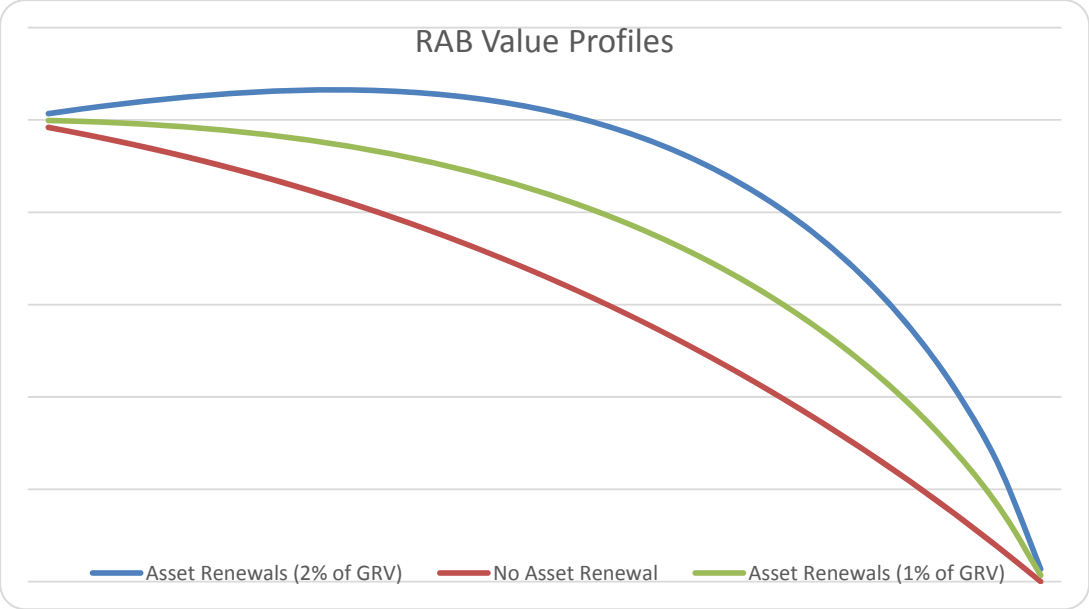
We note that Aurizon Network has proposed a maximum economic life of assets for all regions of 25 years which is inconsistent with the mid-point for the Northern Bowen Basin and Moura economic regions....[11]

[10] National Research Council, 1994, *Assigning Economic Value to Natural Resources*, pg. 61, 15th January 1994
[11] RSM Bird Cameron, 2014, section 6.52, pg. 83

Aurizon Network recognises the minor disparity of the midpoints across each of the economic zones. Yet given the different characteristics of the mines within these zones, different midpoints do not come as a surprise. As mentioned, the ARTC applies and the ACCC accepted the use of a weighted by production approach, representing the lower bound of Aurizon Network's analysis. Rather than adopting a lower value from this sole approach, Aurizon Network considered that the combination of two weighted approaches represents a more balanced economic stance. Therefore for simplicity, but most importantly economic efficiency, Aurizon Network proposed a single maximum economic life for all assets across the CQCN for the following reasons:

- The weighted average mine life will be periodically reassessed to ensure new mines are taken into account. This could see the weighted average mine life increase in future regulatory periods;
- Regulatory precedent in the sense that the maximum economic life applied to 2010 AU capital expenditure was set at 20 years for all systems;
- Application of a single, consistent economic life constraint for all assets promotes greater transparency and efficiency; and
- The Impact of this proposal on allowable revenues is immaterial when compared to a rolling forward of the current 2010 AU methodology.

Further, the RSMBC report does not appear to have addressed the issue of asset renewals in their graphical analysis located within sections 6.44, 6.45 and 6.46. Asset renewals are classified as expenditure upon existing assets, where expenditure does not increase the asset's capacity, but returns the life of the asset to that which it retained originally. For comparison purposes, the following graph illustrates the effects of renewals upon RAB values. Specifically, where asset renewals of 1 or 2% of GRV for each year are included, significant disparities in the remaining carrying values of the RAB become apparent. Aurizon Network believes with the omission of asset renewals from the RSMBC's analysis, carrying values inherent within the RAB profiles are ultimately understated. So as to more accurately represent the carrying values across the economic zones, Aurizon Network therefore recommends that asset renewals be included within the remaining carrying values of the RAB.12



In establishing an economically efficient price, it could therefore be considered entirely reasonable to continue to apply a single, weighted average mine life figure against all of the assets within the CQCN, rather than having up to three different life figures. Aurizon Network also notes comments within the RSMBC report, specifically:

[12] Note: GRV is 150% of the starting RAB value.

No issues were noted in relation to the review of the mathematical accuracy of the calculation or the data utilised in the calculation. [13]

…there are regulatory precedents for adopting a depreciation methodology to match the return of capital the expected lives of the mines being serviced by rail infrastructure. [14]

It therefore does not appear unreasonable for Aurizon Network to adopt a similar depreciation methodology to mitigate the asset stranding risk (subject to this risk not being compensated for within the WACC calculation). [15] [16]

…we are of the opinion that the adoption of an amended maximum economic life of assets based on the mid-point of the average mines lives weighted by marketable reserves and production rates does not appear unreasonable. [17]

Aurizon Network confirms that its position remains consistent with the 2013DAU submission, being that the consistent, system wide application of a 25 year economic life constraint across the UT4 period remains appropriate.

1.2.4 - Benchmarking of Forecast Compliance Audit Costs

RSMBC in their report within section 7.19 have concluded that:

> *….Based on the above, we consider that the forecast audit compliance costs proposed by Aurizon Network do not appear unreasonable*

The 2013 DAU submitted audit costs were forecasts based upon audit costs incurred during the 2010 AU term. It is important to note that within the current drafting of the 2013 DAU, the scope of the audit is all encompassing of the approved Access Undertaking and the quantity of the audits is limitless. This makes it more difficult to accurately forecast the allowance the needs to be made for these costs. Therefore, Aurizon Network has proposed an adjustment to the System Allowable Revenue to account for any differences in these costs.

1.2.5 - Engineering and Compliance Functions

RSMBC presented an assessment of the cost increase in the area of engineering and compliance and stated that these relate to additional FTE's required for infrastructure management.

In an environment of increased tonnages, the requirement for predictive maintenance is greater than ever. The ARTC Hunter Valley network has experience similar growing pains and has increased its internal workforce significantly in the last 18 months in the area of engineering and compliance. This is backed up by information obtained at the ARTC Industry Briefing held on the 4th December 2013 and the Annual Compliance Assessment 2012 in which an additional 8 FTE's were identified during 2012.

Whilst RSMBC don't take objection to the proposed increases in engineering and compliance it is relevant to point out that the increases and particularly the focus on improved asset and infrastructure management is not out of step with the relevant benchmark network of ARTC in the Hunter Valley.

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[13] RSM Bird Cameron, 2014, *Aurizon Network 2013 Draft Access Undertaking: Financial Assessment of Operating Expenditure,* January 2014, section 6.23, pg. 78, available at www.qca.org.au

[14] RSM Bird Cameron, 2014, section 6.24, pg. 78

[15] RSM Bird Cameron, 2014, section 6.26, pg. 78

[16] Aurizon Network is not compensated for asset standing risk via the WACC, a point confirmed within the Draft Decision upon the April 2013 AT5 DAAU, specifically "*…the QCA considers that the regulatory WACC does not compensate Aurizon Network for asset stranding risk* (QCA, 2013, Aurizon Network 2013: Blackwater Electric Traction Pricing DAAU, pg. 48)."

[17] RSM Bird Cameron, 2014, section 6.61, pg. 83

1.2.6 - High Level Review of Forecast Operating Expenditure

In their report, RSMBC conclude their high level review of Aurizon Network's forecast operating expenditure with the following:

> *….On a $/track km and on a $/GTK basis, Aurizon Network's forecast operating costs are broadly consistent with ARTC (Hunter Valley). Brookfield Rail's operating costs are significantly below both Aurizon Network and ARTC (Hunter Valley)* [18]

Aurizon Network welcomes this conclusion from RSMBC in regard to its forecast operating costs for UT4. Nonetheless, Aurizon Network believes that the comparison against ARTC does not paint the full picture in terms of the comparability of costs. Whilst, on paper, RSMBC's desktop benchmarking exercise concludes that Aurizon Network's and ARTC Hunter Valley's costs are broadly consistent, this does not speak to the relative efficiency of the costs. Aurizon Network believes that its forecast costs are actually more efficient that HVCN's on a comparative basis. There are numerous reasons that may contribute to this and these are discussed in detail in this section.

The differences between Aurizon Network and ARTC Hunter Valley

Whilst RSMBC compared Aurizon Network to ARTC Hunter Valley, it is not possible to remove the HVCN's operating costs completely from ARTC's operations as a whole, due to the structure of its operations. This is ceded by RSMBC but, the full quantum of the constraint is not explored.

As stated in previous submissions, the differences between ARTC and Aurizon Network are considerable.[19] For instance:

> *….The ARTC owns and manages 8,500 km of track in five states, moving a range of commodities (including coal) and general freight. ARTC therefore has a considerably broader asset base than Aurizon Network to allocate operating costs such as train control. As a result, it would therefore be expected that these costs may be considerably lower than Aurizon Network's costs.* [20]

Allocative Inefficiencies in HVCN's Operating Costs

The main concern that Aurizon Network has with the RSMBC benchmarking exercise is the use of ARTC estimates of the costs associated with running the HVCN. Aurizon Network has conducted its own estimates of the ARTC and HVCN revenue and operating expenses below to illustrate that there is potential for inefficiencies to arise out of the ARTC's internal cost allocations.

[18] RSM Bird Cameron, 2014, section 8.38, pg. 95

[19] Aurizon Network, 2014, *A Comparator Analysis of Aurizon Network's Commercial and Regulatory Risks*, 20th January 2014, available at www.qca.org.au

[20] Aurizon Network, 2013, *Response to Industry Submissions: Aurizon Network's 2013 Draft Access Undertaking,* 29th November 2013, available at www.qca.org.au

Table 2 below illustrates that the HVCN generated approximately 49% of ARTC's revenues for FY2013 yet, only incurred 15% of the operating costs. This shows that HVCN may be the subject of allocative inefficiencies when it comes to operating costs. Aurizon Network does not have view to what the internal cost allocation of ARTC entails but, given that the majority of ARTC's other business is intermodal inter-state freight, the question of efficiency must be raised.

***Table 2*– ARTC and HVCN Revenue and Operating Cost Comparison**

	2009/2010	2010/2011	2012/2013 Est.
ARTC Revenues	552,240	588,470	689,070
HVCN Revenues	114,620	124,190	335,000
HVCN Proportion	21%	23%	49%
			FY13
ARTC Operating Cost	270,812	213,716	214,044
HVCN Operating Cost	22,650	25,820	28,121
HVCN Proportion	9%	14%	15%

Source: Aurizon Network estimates using ARTC Annual Reports as well as HVAU Ceiling Test Submission / HVAU Price Estimates to the ACCC

A display of efficiency of ARTC's cost allocations should show that coal operations would be allocated a fairer share of the operating costs of ARTC. In absence of data from the Australian market, Aurizon Network believes a suitable proxy is data from the Surface Transportation Board's Commodity Revenue Stratification for 2011 as coal is a globally competitive product and its price interactions with different commodities is similar enough to invite comparison. The Surface Transport Board (STB) is the regulator of the United States' rail industry. Table 3 takes this data and estimates an inverse elasticity for the given services. The commodity with the lowest inverse elasticity should be allocated more costs in an efficient cost allocation as it has more capacity to pay when volumes change. Applying this theory to ARTC's case, Aurizon Network's analysis concludes that coal is not allocated its efficient share of operating costs.

***Table 3* - STB Revenue Stratification 2011 – Coal Products versus Intermodal**

Revenue Description	Revenues ($ '000)	Variable Costs ($ '000)	Inverse Elasticity
Coal Products	16,254,155	9,935,968	0.61
Intermodal	8,021,250	6,805,908	0.85

This shows that ARTC inadvertently incorporates an allocation bias of operational costs to longer routes, which would naturally be its interstate freight network. The distance of these hauls is shown in Table 4, along with some indicative distances in the HVCN. The distances for the HVCN are for Xstrata mines as Xstrata is the largest exporter of coal in the HVCN. The production-weighted average haul for the CQCN is also included for comparison.

Given that ARTC does not publish train paths for their networks, Aurizon Network has estimated the number of hauls per day using ARTC's Master Train Plan dated 12 January 2014 Version 1[21]. The assumptions are outlined within the notes to Table 4 below:

[21] http://www.artc.com.au/Content.aspx?p=161

***Table 4* – Aurizon Network's estimate of ARTC's Haulage numbers**

System / Haul Interstate	Haul Length (km)	Number of Services (per week)
Brisbane – Melbourne[1]	1,300km	15[3] Return trips (loaded) - 16
Melbourne – Perth[2]	2,500km+	20[4] Return trips (loaded) - 19
HVCN (Average)[5]	129	423[6]
Bulga – Port of Newcastle	87	
Ulon – Port of Newcastle	275	
Mt Owen – Port of Newcastle	99	
Liddell – Port of Newcastle	107	
Rovensworth – Port of Newcastle	103	
CQCN		
Average Haul[5]	253	490[7]

Sources:
[1]Estimate of haul, net of Sydney Freight Corridor, owned by Rail Corp
[2] ARTC owns the Melbourne – Kalgoorlie section, this is reflected in the length
[3]Services denoted as XBMX – ARTC MTP 12 Jan 2014 V1
[4]Services denoted XMPX – ARTC MTP 12 Jan 2014 V1
[5] Production-weighted average haul length
[6]HVCCC Website – 22,000 trips per year basis
[7]Aurizon Network Average Services

Despite the fact that the haul distances for the interstate network are much longer, when compared in terms of frequency of operations, the HVCN easily outpaces the interstate network with one train haul reaching destination every 24 minutes compared to the one every 3.5 hours on the North-South stress (excluding passenger services to Roma Street and through the HVCN)[22]. When this is viewed from the perspective of train control this would indicate a greater intensity of work and a greater number of boards. It should also be noted that a significant portion on the East-West corridor is controlled through train order operation, and as a consequence does not have specific control boards allocated to control the traffic. Given this, the small operating costs compared to the traffic intensity and revenue of the HVCN casts doubt over the efficient allocation of operating costs.

For the operating costs that RSMBC was charged to review, the length of the track is not the best indicator of the varying costs of operation for the reasons above.

Discrepancy in Track kilometres for Hunter Valley Coal Network

The table in section 8.36 of RSMBC's report has applied 1,336km as the track kilometres in the Hunter Valley. This includes new network segments which were absorbed into the Hunter Valley business in July 2011 including the section from the Gap to Turrawan. Prior to July 2011 this track segment was managed as part of the Country Regional Network business. Tonnage on this additional network segment is significantly lower than the traditional core Hunter Valley network.

Furthermore, RSMBC financial costs reported against ARTC relate to costs incurred on the Hunter Valley Constrained Network which is only 740km in track length (in Zones 1-3) not 1,336km as reported. Using the reduced track length would change the conclusions significantly.

[22] Services denoted as XBMX and XMBX – ARTC MTP 12 Jan 2014 V1

Basis of HVCN's Operating Cost Forecast

The next inconsistency that Aurizon Network would like to note upon is the HVCN operating cost forecasts that were utilised by RSMBC in their benchmarking. Upon enquiry with RSMBC, Aurizon Network was provided with the forecast HVCN costs for the 2011-2019 periods[23]. These forecasts formed the basis of RSMBC's benchmarking analysis on operating costs. Aurizon Network has found in these forecasts the following inconsistencies:

- It appears that ARTC's Asset Management Overhead is used as a proxy for Aurizon Network's Infrastructure Management costs. Whilst this is a high level benchmarking exercise, the absence of analysis of what makes up the costs for each of the companies makes the proxy insufficient. For large scale networks such as the HVCN and the CQCN, even minor differences in scope of asset/infrastructure management could mean large discrepancies in cost.
- The Fixed Costs presented in the Hunter Valley 2011-2019 forecasts have not been used in the RSMB comparative calculation.
- ARTC's Network Control for the HVCN is conducted at the Network Control Centre North (NCCN) at Broadmeadow in Newcastle. Given that RSMBC has used forecasted costs compiled in 2010, there is significant room for error. In late 2010, 5 control boards at the NCCN were dedicated to the HVCN[24], Aurizon Network assumes the costs of the 5 boards in that year were used as the input for the 2010-2019 forecast. However, in July 2013, 7 boards were dedicated to the HVCN[25]. RSMBC has not addressed the discrepancy in figures and whether or not the forecast includes the 2 extra train control boards. With this in mind, the cost build-up is incomplete and incorrect. The escalation process below would capture some of this increase in costs through incremental increases in tonnages but, as the addition of extra control board is a cost step-up, the full quantum of this increase in cost would could not have been foreseen and included in the forecast. Aurizon Network is of the understanding that the Hunter Valley Coal Chain Coordinator (HVCCC) performs the planning function for the HVCN. Aurizon Network also understands the HVCCC to be funded by the users of the HVCN infrastructure. In contrast, Aurizon Network undertakes the rail oriented activities provided by HVCCC and as a result, the cost of these activities will be understated when compared with the HVCN's forecast operating costs.
- RSMBC have not adjusted the ARTC cost of operating expenses to reflect the fact that the ARTC network is non-electrified. A fair comparison would include this adjustment as the FTE requirements of resourcing for electrical control and fault officers is significant.
- Aurizon Network is of the understanding that the Hunter Valley Coal Chain Coordinator (HVCCC) performs some of the planning functions for the HVCN. Aurizon Network also understands the HVCCC is funded by the users of the HVCN infrastructure. Whilst ARTC have in house network control, train planning staff and capacity planning, the existence of HVCCC does smooth out relations across the Coal Chain and if HVCCC did not exist, it is likely that ARTC would be required either through industry or regulatory pressure to boost their manning levels for capacity planning and day to day train planning. In contrast, Aurizon Network undertakes some the rail oriented activities provided by HVCCC and as a result, the cost of these activities will be understated when compared with the HVCN's forecast operating costs.
- There is no allowance in the ARTC forecast cost for asset management, which is included in the Aurizon Network benchmarked costs. No commentary is provided by RSMBC for why this has been omitted from the benchmarking process or if indeed it is included in the Asset Management Overhead. Without a stated cost from ARTC on the amount spent on asset management for the HVCN, the build-up of costs for the HVCN is incomplete and inaccurate.
- All of the forecast costs in the ARTC HVCN source are only forecast for the first year (being 2010) and the remaining 9 years of forecast costs are escalated as follows – by CPI, then an efficiency factor is netted off, the costs and then adjusted by the relative increase in the proportion of GTK's in the Pricing Zone relative to

[23] The forecast costs can be found at:
https://www.accc.gov.au/system/files/ARTC%202010%20Hunter%20Valley%20Access%20Undertaking%20-%20Hunter%20Valley%20Forecast%202011-2019%20PUBLIC%20VERSION.pdf

[24] ARTC BROADMEADOW NCCN CONTACT LIST, available at: http://extranet.artc.com.au/docman/DocManFiles/DocTypes/Safe/Files/2-1381%20attachment.PDF

[25] ARTC SAFE Notice 2013 – Network Control Centre North Broadmeadow (NCCN) – Introduction of new Network Control "Upper Hunter 3" Board and alterations to the existing "Upper Hunter 2" Board boundaries, 7th July 2013

the ARTC Network in that year (compared to the prior year). This also introduces the potential for error the longer through the forecast the benchmarking exercise is taken.

Given the above issues identified, there are a number of instances where the operating costs for the HVCN may possibly have been understated by RSMBC, and in the case of business management omitted. When these understated costs are included in the benchmarking process, there is an illusory effect on the outcome when assessed over the same denominator. If the costs for ARTC HVCN were fully stated on the same basis as the CQCN then the benchmarking exercise would show that the CQCN is more efficient in it operating costs than the HVCN. This, in turn, would show that Aurizon Network's operating costs were forecasted to be efficient over the UT4 period.

Aurizon Network suggest that the operating costs outlined within the Annual Compliance Assessment 2012 be used as the basis for estimating 2013/14 system wide operating costs for ARTC as a comparison to Aurizon costs. Using the Compliance assessment as a benchmark, would result in the cost per track kilometre as outline within Table 5 below:

***Table 5* – Revised Track Kilometre's**

Approx Operating Costs[1]	Zone 1 & 2 (Constrained)	Zone 3 (Unconstrained)	Zone 1,2 & 3 (2012)	Escalated to 2013/4[2]	RSMBC
Asset mgmt O/H / Shared Maintenance	$18,270,000	$1,370,891			
Network Control	$9,300,000	$1,480,915			
SUB TOTAL	$27,570,000	$2,851,806	$30,421,806	$33,463,987	$29,730,000
TRACK KMs				740	1,336
Operating Cost / Track km				$45,222	$22,252

1 – Sourced from the Annual Compliance Assessment
2- Applied similar methodology to that being completed by RSMBC

The analysis above shows Aurizon Network's analysis on the operating costs per track kilometre for the ARTC. This is sufficient evidence to show that RSMBC understated the operating cost per track kilometre by around 50%. This however is not unexpected. The difference in the HVCN and CQCN networks would create much of this difference. For instance, some sections of track in Zone 1 of the HVCN carry 100% of the traffic that the HVCN experiences. This same traffic density is not seen on specific parts of the CQCN as the CQCN services more than one port district and therefore no section of track would experience 100% of the traffic that is hauled on the CQCN.

As discussed previously, the costs used by RSMBC are forecast costs, not actual costs. It should be noted, that by way of the 2011 Hunter Valley Access Undertaking Section 4.4, ex-post operating costs (including maintenance) are included in a "true-up" process. This consequently means that ARTC's estimates are not subject to an error in forecasting as any variation at year end, which can still be deemed efficient, are included in costs. Aurizon Network does not have access to this kind of "true-up" process through its undertaking and, as a consequence, is exposed to risk associated with changes in forecast costs.

Aurizon Network's proposed operating costs are not only 'broadly consistent' with ARTC's, they are vastly more efficient if ARTC's operating costs were fully stated for the HVCN and efficiently allocated between the HVCN and the Interstate freight mainlines.

Differences in functions included within the system wide operating costs

Whilst the above illustrates that Aurizon system wide operational costs are reasonable in comparison to ARTC based on public information[26] there are further differences in the way costs are allocated which further supports Aurizon efficiency against relevant benchmarks.

***Table 6* – Differences in ARTC Hunter Valley and Aurizon Network Operational Structure**

`	Aurizon	ARTC	Comment
Asset Management Overhead			
	• Asset Business • Assurance Management • Electric Asset Management (N/A for the Hunter Valley • Telecom and signalling asset management • Track and civil asset management • Asset strategy • Corridor asset management activities	• ~~Asset Business~~ • Assurance Management • ~~Electric Asset Management~~ • Telecom and signalling asset management • Track and civil asset management • ~~Asset strategy~~ • Corridor asset management activities	• The ARTC Hunter Valley Network is non-electrified and as such does not have Electric asset management • It is Aurizon Network's understanding that Asset Strategy is partly undertaken as a Corporate function with staff in both Adelaide and Sydney dedicated to Asset and Network Strategy • HVCCC also undertakes strategic and capacity planning for the benefit of ARTC and other stakeholders. Without the HVCCC, ARTC would likely boost internal resources
Network Control			
	• Train Control • Safe working • Operations Administrators	• Train Control • Safeworking • Operations Administrators	• Risk and Safety at the time of the 2010 Access Undertaking was a Corporate function • HVCCC provide day of operation train planning and other train planning functions. Without the HVCCC, ARTC would likely increase internal resources
Business Management			
	• Commercial Planning • Commercial Management North and South • Planning and Development • Regulation and Policy	• ~~Commercial Planning~~ • ~~Commercial Management North and South~~ • ~~Planning and Development~~ • ~~Regulation and Policy~~	• These functions are likely to be included within the Executive General Manager – Strategy and growth corporate functions corporate within ARTC.

Effects of Contracted vs Forecast tonnes

Another key difference that differentiates Aurizon Network and HVCN is that of the difference between forecast and contracted tonnages and how they affect the operations of the two entities. Aurizon Network is required to manage its infrastructure and operations to meet contracted obligations. Specifically, there are consequences under the Access Undertaking if Aurizon Network is unable to fulfil its contracted volumes. Hence both of Aurizon Network's infrastructure and operating cost structures are required to reflect contracted volumes. RSMBC allude to this within section 8.13:

> *….We consider that the nature of operating costs within a business such as Aurizon Network would be largely fixed in nature.* [27]

[26] http://www.artc.com.au/Content.aspx?p=27,

[27] RSM Bird Cameron, 2014, section 8.13, pg. 91

However, there are many factors that can influence a difference between contracted and actual tonnes. Factors such as mine performance or weather can impact upon the actual volumes delivered. Both of these events, when they occur, will not cause a decrease in short-term costs as the scope and quantum of the costs are fixed over the life of the undertaking. As an example, it is not possible to reduce the size of a control centre with actual volumes, especially if contractual obligations have not changed. As operating costs are largely fixed, as noted by RSMBC, Aurizon Network needs to resource to its contracted position or peak capacity levels.

It is therefore highly misleading to compare metrics between ARTC (who is operating at 100% of contract) and Aurizon Network (who is operating at around 77% of contract).

Importance of utilising stand-alone costs as a benchmark

Given the aforementioned limitations and inconsistencies, Aurizon Network notes that the only way to gain a true and proper benchmark of costs would be to provide the HVCN's stand-alone operating costs. It is also important to remember that in the case of HVCN and Aurizon Network, it is appropriate to build-up operating costs on stand-alone basis, as it allows the closest simulation of competitive prices in a regulatory setting. This is particularly important given that Aurizon Network operates a system that is almost entirely dependent on coal traffic and does not have the opportunity of rationalising costs through the use of cost allocation between different customer bases.

Aurizon Network had utilised the stand-alone methodology as it represents the maximum prices that could be charged for operation without the infrastructure's customers deferring to a theoretical competing service, whether one may or may not exist in reality. But more importantly, it also represents the minimum cost incurred to a provider of a possibly hypothetical alternative to the service provided by Aurizon Network, if they were to try and enter the market. Without the ability to allocate costs between different customer groups or different asset groups – as already stated – Aurizon Network has no other efficient option but to claim costs on a stand-alone basis.

Differences between Aurizon Network and Brookfield Rail

Brookfield Rail is the other rail infrastructure operator that RSMBC uses as part of the operating cost benchmark activity. There is significant difference between Aurizon Network and Brookfield Rail and as a result Aurizon Network will not delve into as much detail on the differences as it did with HVCN.

For comparative purposes, Aurizon Network has included entire Brookfield Network in this analysis. Given that the year that RSMBC selected to base Brookfield Rail costs on, included a number of grain hauls as part of the cost build up process, it is reasonable to include all of the network (including grain lines) in the comparison.

The first point of difference between Aurizon Network and Brookfield Rail, and one of the largest is that of the cost of train control. A significant proportion of the Brookfield Rail network is operated on a train order working system, which is significantly less capital and labour intensive than train control technologies employed by Aurizon Network. The only sections of Brookfield's network which utilise Controlled Signalling from a centralised train control is from Kalgoorlie to Bunbury via Perth. This represents about 830km of the 5,100km network operated by Brookfield, or around 16%[28].

[28] Train Control – Signalling & Order Boundaries found at: http://www.brookfieldrail.com/assets/br_files/Communications%20Material/131030%20Brookfiel%20Rail%20Network%20Map%20-Train%20Control%20Areas.pdf cross referenced for distances with Brookfield Rail Network Map found at: http://www.brookfieldrail.com/assets/br_files/Communications%20Material/2013%20Brookfield%20Rail%20Network%20Map.pdf

An outline of the largest net tonnages over certain segments, mainly concerned with freight or export markets, of the Brookfield Rail network is shown in Table 7 below:

***Table 7* – Brookfield Net Tonnes per segment**

Line Segment	2012 (net tonnes)	Majority Traffic Type
Kalgoorlie – West Kalgoorlie	7,082,474	Intermodal Freight
West Kalgoorlie – Esperance	11,402,349	Export Iron Ore
Morawa - Geraldton	4,857,718	Export Grain
Pinjarra – Alumina Junction (on to Export)	13,781,526	Export Alumina
Redmond – Albany	1,896,899	Export Grain

Source: Aurizon Network calculations

The table shows that Brookfield Rail operates a railway that interfaces with different port districts, not unlike Aurizon Network. The difference between the two comes about when analysing the difference in the asset class and structure. Table 8 below outlines the proportion of the Brookfield Network in classes by maximum axle tonnages.

Table 8 – Brookfield Maximum Axle Loads

Maximum axle load	Proportion of Brookfield Network
16.0 tonne	31%
19.0 tonne	29%
21.0 tonne	9%
23.0/24.0 tonne	31%

Source: Aurizon Network Calculations

This table shows that 69% of Brookfield Rail's network is under what could be classified as heavy haul based on axle loads alone.[29] This would have an impact on the asset management costs and as less-frequently used, lower class railways require less asset management than heavy haul railways running at near capacity levels, as experienced in the CQCN.

Aurizon Network concludes that the Brookfield Rail network should be completely excluded from the benchmarking comparison as it has no similarity with Aurizon Network in terms of asset class and structure or the nature of use of the railway.

Appropriateness of benchmarking units

As per section 8.17, RSMBC have undertaken benchmarking analysis on the basis of:

- total absolute dollars;
- $/track km;
- $/train path;
- $/GTK (forecast); and
- $/GTK (contracted).

Aurizon Network does not believe that $/track km is a prudent metric to use for allocating and benchmarking total operating and corporate overhead allowances. The main use for this metric is usually applied to certain discreet costs. Furthermore the track kilometre metric excludes the recognition of differences in levels of operational complexity as well as the intensity of asset usage.

It should also be noted that the number of actual train paths should not be used as a base to compare costs. This is because the actual number of train paths run does not take into account the number of train paths scheduled and

[29] International Heavy Haul Association classifications, found at: http://www.ihha.net/about-ihha

also, subsequently cancelled by customers. Cancelled train paths are often re-scheduled, resulting in a $/train path providing an inaccurate indicator to compare costs. An example from FY13 is as follows:

> *During FY2013 a total of 43,292 train paths (out of a total of 52,188 total train paths) were run whilst there were a total of 8,896 cancelled paths or one in every five is cancelled. This may result in a significant increase in workload for the business in managing scheduled train paths.*[30]

It is worth noting, that as part of the benchmarking analysis on corporate overhead compiled by EY for Aurizon Network, an exercise was performed to match activities performed to functions of the business to enable a more accurate and reliable comparison of costs on a like for like basis.

For each data set (ie Aurizon Network and the comparators) definitions of costing areas/functions were compared to ensure comparisons between data provided by Aurizon Network and external data were valid. Where necessary, definitions of data provided and/or costing grouping was adjusted and figures recalculated to ensure a valid like-for-like comparison[31]. The process followed by EY is also explained in steps 2, 3 and 4 of the Corporate Cost Benchmarking - Process Overview[32].

Comparison of corporate costs to historical and forecast expenditure

RSMBC have proposed some reductions to the corporate cost base to which the allocators have been applied, with the most significant adjustments associated with the overall corporate overhead stretch target[33]. However, this stretch target is from the FY14 corporate plan and relates to the Enterprise Services function and has not been split to a lower sub functional level in the corporate plan to enable identification of where those savings would be achieved.

RSMBC also note in their report that no consideration was made in the UT4 corporate cost allocation of this particular stretch target[34]. Whilst it was not known at the time in which sub-function these cost savings would be achieved, it is still likely that such savings may be achieved from activities initiated by the Procurement division, for example - negotiations with suppliers. In addition, it may arise that the actual cost savings will be achieved in other functional areas in the form of direct costs of goods/services procured. That is, the costs of the Procurement function are restricted to labour and on costs of the people in that division. There isn't opportunities for significant costs savings in this team, but the negotiations conducted by people in this team may result in reductions in the costs of consumables acquired by the operational functional areas. These are most likely to fall to other functional areas such as Aurizon Operations.

However importantly, the amount of [redacted] million adjusted by RSMBC is not the only stretch target that has been included within the FY14 corporate plan. In fact, stretch targets have been included across all functions within the FY14 corporate plan, and hence by applying the RSMBC proposed reductions to Finance, General Counsel and Company Secretary, Safety, Health and Environment and Enterprise Strategy and Branding, such savings will be taken into account. Further, Aurizon Network notes that for the FY13 4+8 forecast from which the UT4 cost estimates were derived, cost saving targets were also included at this point in time, resulting in lower costs being allocated.

RSMBC have proposed a reduction to branding costs. Aurizon Network must continue over time to rebrand its fleet and facilities appropriately to ensure both clarity of ownership and strengthening of brand recognition. Based on the size of its fleet, geographical diversity of its facilities, complexity of its operations and the need to align assets to maintenance windows, Aurizon Network requires an ongoing branding budget. Applying the $0.9 million reduction proposed brings the UT4 costs in line with FY13 actuals and FY14 budget[35]. Aurizon Network does not agree with the proposed $2.5 million reduction.

System wide direct costs

Aurizon Network confirms its forecast of increased FTE numbers and employee costs for the train control centre. These increases will follow the implementation of processes that establish a pool of control centre staff to meet

[30] Aurizon Network records

[31] Ernst & Young Benchmarking of Corporate Overhead Costs for Aurizon Network Operations 22 January 2013, pg.5

[32] RSM Bird Cameron, 2014, Appendix 5, pg. 177

[33] RSM Bird Cameron, 2014, 8.122 RSMBC report, pg. 108

[34] RSM Bird Cameron, 2014, 8.116 RSMBC report, pg. 107

[35] RSM Bird Cameron, 2014, 8.108, pg.106

rostering requirements in line with Workplace Health and Safety (WHS). This assists in the preparation of a smooth transition from retiring staff to new train controllers. This will also continue to support the control centre meeting their compliance obligations as the complexities in operations continue to increase throughout the term of the next access undertaking.

The control centre also encompasses the role of fault centre coordinator (6 personnel). These personnel monitor all of the technical equipment to support the control centre and in field equipment, particularly to ensure 24/7 system functionality. Their other core role is to manage the status of the network responding and reacting to alarms and equipment monitoring as well as managing the identification, analysis, prioritisation, and response to these alarms, and failures, infrastructure faults, and the calling out and response of field staff, including contractors, Asset Maintenance personnel and, trackside systems personnel, to provide a reliable and safe network for CQCN on a 24/7 basis.

The control centre structure includes the role of on a Business Manager (BM) for each rostered shift. This is a 24/7 role involving 5 FTE. The BM is accountable for the management of the day of operations activities including the application relevant compliance management obligations. This role is required on shift due to the complexity of managing these obligations within the Central Queensland Coal Network (CQCN), including Brisbane to Cairns non-coal traffic that interfaces with the CQCN cyclic traffic. The BM role deals with the complexity of multiple operators; various Access holders, including Producers, multi user yards and terminals, and performs the role of supply chain coordinator for the CQCN.

1.2.7 - Revisions to operating expenses

During the course of the analysis of the operating cost allowance by RSMBC, it has come to our attention that the original 2013 DAU submission needs to be amended for the following matters:

Adjustments regarding non-coal traffic.

Whilst non-coal (freight and passenger) services do not create any additional incremental costs, in our costing estimates submitted for 2013 DAU a reduction of 9% was applied against the Rockhampton train control centre costs to allow for non-coal traffic.

Non-coal traffic is timetabled (i.e. is 'hard wired' into the master train plan and therefore requires little week to week alteration) and predominantly runs on only 120km of the 2,667 km network (being the North Coast Line (NCL) between Parana (near Gladstone) and Rocklands (near Rockhampton).

The 9% reduction in the 2013 DAU submission was obtained using completed train kilometres. An average of non-coal train kilometres over the 2010 AU period was divided by the sum of the estimated average of train kilometres over the 2013 DAU period (from the 2013 DAU pricing model and is derived from the volume forecasts and the haul distances for each Origin/Destination pair) and the average non-coal train kilometres from 2010 AU. This assumes that the non-coal carrying services over 2013 DAU would be consistent with 2010 AU. With non-coal remaining relatively static and coal volumes growing, including increased volumes through coal growth projects, the non-coal percentage allocation is expected to decline in future years. This reduction was not factored into the estimates.

Concurrent with the consultants' review, Aurizon Network reconsidered the approach of using kilometres as an allocator. This methodology was found to have the following deficiencies:

- It does not take account of the complexities associated with the scheduling of coal traffic compared with non-coal traffic, which is less complex;
- It does not take into consideration closures for maintenance and on-track vehicles (closures is a complex task that consumes a lot of resources and is for coal);
- It does not consider cancellations and rescheduling.

Following further discussions with, and analysis by, staff from the Rockhampton train control centre, Aurizon Network believes that an alternative 'averaging' approach is more prudent methodology. This alternative approach considers the train controller utilisation on the relevant boards for non-coal traffic and calculates the non-coal percentage reduction to train control costs with reference to the contracted monthly train paths, the number of

boards used to control those trains and the number of FTEs assigned to those boards. The approach better aligns costs between coal and non-coal traffics by considering the activities which required to support their operations.

Based on contracted train paths, non-coal traffic accounts for 33% of the traffic on the NCL and 4% on the Western line (West). Non-coal electric services represent 3% of services on the NCL as outlined within Table 9 below:

Table 9 – % of non-coal train paths

	North Coast Line	Western Line
Electric Non-Coal	8	0
Non-Coal	93	7
Coal	190	190
Total Trains Per Week	**283**	**197**
Non-Coal % of Total	33%	4%
Non-Coal electric % of Total	3%	0%

The number of train controllers on each of these lines is as follows:

Table 10 – Train Controllers

	North Coast Line	Western Line
Moura Board	5	
South Board	5	
Near West Board		5
West Board		5
Safeworking Supervisor	1	1
Total Board Staff	**11**	**11**
Electric Control Operator Staff South	5	5

An allocation of a full-time equivalent (FTE) for one safeworking supervisor has been included. This allocation is conservative as whilst there are five FTEs (to cover three shifts per day) they supervise the entire Blackwater and Moura systems.

The equivalent FTEs attributable to non-coal traffics has therefore been determined as follows:

Table 11 – Non-coal FTE's

	North Coast Line	Western Line	Total
Control staff as non-coal % of total	3.6	0.4	4.0
ECO staff as non-coal % of total	0.1	0.0	0.1
Total Control Staff			199
Control non-coal portion			2.0%
Electric Control Operator non-coal portion			**0.1%**

Aurizon Network re-confirms that non-coal services represent a negligible proportion of traffic in the Goonyella and Newlands systems (services predominantly restricted to the short section between Kaili and Durroburra on the NCL). Accordingly, no averaging of train control costs between coal and non-coal traffic is appropriate for these systems.

The analysis above indicates that only four FTEs – out of a total of 199 train control and scheduling staff, are required to support non-coal traffics. The 'remaining' 195 FTEs are represented as follows:

- Train control staff managing coal services in the Blackwater and Moura systems (per above);
- Train control staff managing coal services in the Goonyella and Newlands systems, as indicated above non-coal traffics from a negligible part of activities in these systems;
- Train planning and scheduling staff based in Rockhampton (for Blackwater and Moura) and Mackay (for Goonyella and Newlands) as indicated above non-coal traffics are hard-wired into the master train plan and hence require little intervention; and
- Train and supply chain performance staff whose activities are based solely on coal traffics.

This 2% reduction across the entire train control function is now considered more appropriate and representative of the costs of train control function that should reasonably be allocated to non-coal train services, notwithstanding that there are no incremental costs of these services.

In view of the above, Aurizon Network proposes that the 9% deduction in the 2013 DAU submission is reduced as per table 12 below:

Table 12 – Adjustments

	2013/14 $000	2014/15 $000	2015/16 $000	2016/17 $000
2013 DAU submission (based on 9%)	31.1	32.6	34.2	35.7
Proposed (based on 2%)	32.3	33.9	35.6	37.1
Variance (increase in allowance)	1.2	1.3	1.4	1.4

Condition Based Assessment (CBA)

The obligation to have a CBA report has been retained in 2013 DAU. Discussions with the QCA have indicated that the cost recovery for the CBA should be included as part of the 2013 DAU operating cost allowance. The estimated cost of the CBA to be added to the costs for FY17 is approximately $550k. This estimated costs have been based upon information provided by relevant external specialists and has been stated in FY14 dollars.

1.3 - Detailed Review of Forecast Operating Expenditure

1.3.1 - Depreciation Expenses

Aurizon Network notes that RSMBC have concluded in their report within section 10.6, that a duplication of depreciation expenses in the corporate plan data used for the purposes of the 2013 DAU cost estimates

> *…. has resulted in Aurizon Limited total forecast corporate overheads being overstated….*

Aurizon Network agrees with these adjustments. Excluding this, Aurizon Network re-emphasises that RSMBC have confirmed that

.....other than the duplication of some depreciation costs, no other duplications or double recovery was identified [36]

1.3.2 - CPI-X adjustment

The process of CPI-X adjustments involves the establishment of revenue and prices once accounting for changes in the Consumer Price Index (CPI), as well as adjustments for expected efficiencies, enhancements to output quality and/or improvements to service levels.

Also commonly referred to as x-factors, these adjustments are designed to provide two key functions. Firstly, via improving efficiencies and decreasing costs regulated firms are incentivised to undertake productivity improvements. Secondly, to ensure regulated firms are restricted from unduly benefitting from productivity improvements over multiple regulatory periods, x-factors are usually designed to be reset at regular intervals, ensuring cost savings are passed through to consumers via lower prices and tariffs.[37]

In their report, RSMBC have recommended that:

…. it is reasonable that a CPI-X adjustment be included within the UT4 forecast operational expense to be applied to allocated corporate overhead costs to represent reasonable productivity improvement to be incorporated on a year by year basis. [38]

Where:

An X factor of between 0.625% (being the 25% of CPI (assumed to be 2.5%) applied within the Brookfield Rail Access Agreement) and 1% (being the factor provided for within the Melbourne Metro Access Agreement) would appear to be reasonable. [39]

However Aurizon Network disagrees with this recommendation for a number of reasons.

Application of the x-factor:

The decision to apply an x-factor should reflect the circumstances of the entity in question, taking into account the extent of efficiency gains that already have been achieved.[40] Even if this approach was accepted, the identification of historical firm efficiencies can prove inherently difficult, with procedures used to identify and quantify efficiency characteristically unreliable. [41] In addition, for firms that have already achieved efficiency gains and thereby operate closer to the efficiency frontier, Aurizon Network believes the identification of further areas of productivity improvements would become an increasingly difficult task.[42]

Little economic justification:

What is of most concern to Aurizon Network is that the RSMBC report has not provided any economic rationale or justification for its recommendation of an x-factor. Particularly, RSMBC do not:

- Detail the basis for the Melbourne Metro access arrangements or the nature of the relevance to the CQCN;
  - Make no assessment of the industry total factor productivity (TFP) against the broader economy for justification the inclusion of an x-factor. Specifically, TFP forms a crucial element in determining efficiency:

    The roles of X are to ensure that productivity improvements are passed on and (in some interpretations) that existing above normal profits and cost inefficiencies are removed. Usually X is

[36] RSMBC, 2014, Section 3.96, Page 59
[37] Makholm, J, 2007, *Elusive Efficiency and the X-Factor in Incentive Regulation*, 2nd August 2007, pg. 95, available at www.nera.com.
[38] RSMBC, 2014, section 10.50, pg. 141
[39] RSMBC, 2014, section 10.51, pg. 141
[40] Makholm, 2007, pg. 97
[41] Makholm, 2007, pg. 95
[42] Porcelli, F, 2009, *Measurement of Technical Efficiency – A brief survey of parametric and non-parametric techniques,* January 2009, available at www.warwick.ac.uk

> *set to reflect expected growth in total factor productivity (TFP) based on past TFP growth, but perhaps with an eye to possible future developments affecting costs. It may also include an amount to eat into existing monopoly profits and/or existing cost inefficiency. X is reassessed at regular intervals, for example, every three years in Australian telecommunications.* [43]

On this basis, the percentage RSMBC has recommended has seemingly been done arbitrarily, with a value chosen that rests between the x-factors applied to the Brookfield Rail and Melbourne Metro Access Agreements. Given the criticality of the x-factor, Aurizon Network is of the understanding that no further analysis has been undertaken. Further, Aurizon Network is of the understanding that:

- ARTC (Hunter Valley) is not subject to an x-factor nor do RSMBC provide evidence or citations for this statement;
- In relation to Brookfield Rail, the use of an x-factor as an appropriate approach should not be considered relevant as:
    - The x-factor is based upon productivity changes from when a government owned corporation (GOC) was managing a light freight railway between 2001-2003, bearing little to no resemblance to a heavy-rail railway operating 10 years later;
    - In contrast to DORC based pricing and RAB lock-in, the regulatory model requires changes in technology to be reflected in pricing; and [44]
    - The application of the x-factor has no practical effect as revenues are below the CPI-x adjusted ceiling costs.

Framework:

Even if such analysis was undertaken, RSMBC have failed to acknowledge that incentive based regulation does not require the inclusion of an x-factor, nor does the inclusion of an x-factor satisfy the requirements of the Pricing Principles located within the *Queensland Competition Authority (QCA) Act 1997*. For instance:

> *The economic regulatory framework for network businesses is essentially based on the concept of 'incentive regulation' which seeks to provide strong incentives for regulated businesses to reduce costs, improve service quality, and undertake efficient investment. The incentive to reduce costs is provided by the regulator setting the prices or revenue to apply at the start of the regulatory period, regardless of what actual costs are incurred during the regulatory period. Regulated businesses that realise efficiency gains can retain these benefits for a time, and the benefits are later shared with customers in the form of lower prices. Other incentives to maintain or improve service quality levels work in combination with efficiency incentives to ensure that improved efficiency is not at the expense of service quality. Overall, the regulatory framework seeks to provide appropriate signals for regulated businesses to make efficient investments and not over or under invest in the network.* [45]

In addition, whilst all forms of regulation modify behaviour, they do so differently:

> *Whereas rate-of-return regulation may cause the utility to reduce productive efficiency (i.e. to increase its production costs) by using an excessive amount of capital equipment and usually dictates inefficient pricing structures, price capping and yardstick regulation both contain inducements for the utility to increase productivity in a quest for lower costs. Additionally, both can be devised to provide an incentive for the utility to move towards a more efficient pricing structure.* [46]

Despite this, RSMBC have noted that Brookfield Rail, ARTC and Melbourne Metro all have productivity improvement obligations included within their access agreements.[47] However of concern to Aurizon Network is that the basis for these x-factors and/or the nature of the relevance to the CQCN has again not been detailed.

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[43] ACCC, 2000, *Incentive regulation, benchmarking and utility performance,* November 2000, pg. 17, available at www.accc.gov.au
[44] ACCC, 2000
[45] AER, 2012, *AER submission to the Productivity Commission Inquiry into Electricity Network Regulation,* 19th April 2012, pg. 4, available at www.pc.gov.au
[46] ACCC, 2000, pg. 10
[47] RSMBC, 2014, section 10.33, pg. 139

Unambiguously, it does not follow that because an x-factor has been applied in other arrangements and/or regulatory regime, should it also be applied to the costs of Aurizon Network throughout the UT4 period.

Another important distinction is that Melbourne Metro and ARTC are not publicly listed companies, which is in stark contrast to Aurizon Network where it is a subsidiary of Aurizon Holdings Limited, listed upon the Australian Stock Exchange). Particularly, for a listed company achieving an efficient cost basis is integral in delivering value to shareholders and as listed company, is publicly accountable for its financial results and financial performance.

Further, unlike a government owned entity (for which x-factors are sometimes used), the Aurizon group (and therefore Aurizon Network) is naturally incentivised to lower its costs and increase shareholder value through driving down operating costs and enhancing operating ratios and thereby enhancing earnings per share to shareholders. An example of this is the Aurizon Group "stretch targets" initiatives to achieve lower overhead costs, with the most prominent commonly referred to as the "Drive to 75". As communicated to the Australian Stock Exchange in Aurizon FY2013 Results Presentation[48], Aurizon Network already has a low operating ratio in comparison to other areas of the Aurizon Group.

Table 13 – Operating Ratio's

	FY13	FY12
Aurizon Network		
Operating Ratio	59.9%	63.7%
Operating Cost / NTK ($/'000 NTKs)	14.2	14.2
Aurizon Operations		
Operating Ratio	82.8%	85.5%
Operating Cost / NTK ($/'000 NTKs)	35.4	36.2

Consisting of a three phase, multi-layered cross-functional approach, the "Drive to 75" initiative began in June 2012 ultimately aiming to drive the Operating Ratio to 75% by FY2015.[49] Hence via such initiatives, savings are inherent within the Aurizon Group corporate budgets, ultimately flowing through to Aurizon Network and the allocation of its corporate overhead forecasts. In addition, Aurizon Network's 2013 DAU corporate overhead forecasts include productivity improvements on a real basis, as costs per GTK and Train Path are forecast to decline over the UT4 period despite volume increases.

In summary, Aurizon Network does not agree with RSMBC's proposed x-factor adjustment for three reasons including (1) that the recommendation does not take into account previously attained efficiencies; (2) little to no economic justification has been supplied to support the x-factor recommendation; and (3) that incentive based regulation does not require such an adjustment nor does it satisfy the requirements of the Pricing Principles.

1.3.3 - Advice on Interest during Construction ("IDC")

Aurizon Network notes that RSMBC state within their report in section 11.31 and section 11.32, that

Based on our review, the interest during construction methodology proposed by Aurizon Network appears reasonable…..and

….The utilisation of a post-tax nominal WACC of 7.36% appears reasonable on the basis that the 8.18% post-tax nominal vanilla regulatory WACC is approved

[48] Aurizon 2013, FY2013 Results Presentation, 19 August 2013, available at http://www.aurizon.com.au/Downloads/Aurizon%20FY%2013%20Results%20Presentation.pdf

[49] Aurizon 2013, *Aurizon Investor Briefing*, 18th July 2013, available at www.aurizon.com.au

1.3.4 - Review of Capital Cost Build-Up

RSMBC comment in their report within section 12.7,

> *'…the approach for calculating the contingency for each discipline and overall project level contingency is not articulated in the Cost Estimating Procedure…..'*

The Aurizon Network Investment Framework Manual is not intended to be a prescriptive document and whilst it does not specifically articulate contingency rates to be used for different project types, it does specify the accuracy expected of cost estimates, varying from +/- 50% (concept stage) to +/- 10% (feasibility stage), and in assessing Investment Approval Requests (IARS), the relevant review forums, like the Network Investment Committee (NIC), will consider the nature of the project when assessing the cost build up including contingency allowances.

Aurizon Network notes the conclusion by RSMBC with section 12.26 of their report, and agrees that the general policies adopted in the Investment Framework Manual and Estimating Procedure is considered reasonable and consistent with industry practice for civil and track projects

1.3.5 - Maintenance Submission - Return on Assets

Aurizon Network agrees that:

- It is reasonable to utilise the replacement cost of assets rather than the historical written down values as the basis for the calculation of return on assets;
- Recognises the understatement of the return on assets upon motor vehicles. Aurizon Network will update the calculations to the reflect the useful lives of these assets;
- Agrees that only assets relevant to maintenance activities have been included in the ROA calculations;
- Confirms that major periodic maintenance has been excluded under the Gross Replacement Value (GRV) methodology; and
- Supports the recommendations for the QCA to undertake a periodic review of the Specialised Track Services and Asset Maintenance assets.

Aurizon Network also notes the analysis undertaken by RSMBC in assessing the impact of either the GRV or historical cost written down methodologies upon the return on asset estimates. Specifically in analysis performed by RSMBC, a net difference of ~$13m was identified between the two approaches.[50] Whilst Aurizon Network observes that RSMBC did highlight that costs of major programmable maintenance (MPM) should be deducted from the net difference, there is still a possibility that the value differential could be misconstrued. Despite the fact that it is difficult to accurately include these costs, Aurizon Network suggests that an estimate could still be provided so as to more accurately align either approach.

1.4 - Maintenance Submission - Return on Inventory and Working Capital

Aurizon Network agrees with RSMBC's conclusion within section 14.8 and section 14.22 that it is reasonable for the business to include a return on working capital and inventory within the maintenance costs claim, and that the proposed return on inventory included within the 2013 DAU maintenance submission appears reasonable.

A number of approaches exist in determination of working capital requirements, usually either ex-post or ex-ante. Rather than relying on historical financial data, Aurizon Network has aimed to establish its maintenance-based working capital requirements upon efficient forecasts of the average, monthly maintenance spend across the 2013 DAU period. Note this methodology is similar to the approach recommended by the QCA in its 2012-2017 Price Review of SunWater:

> *…SunWater should aim to base working capital requirements on efficient forecasts of revenue and cash flows from SunWater's irrigation schemes, rather than relying on historical, whole of business data.* [51]

[50] RSM Bird Cameron, 2014, section 13.30, pg. 158

[51] QCA, 2012, *Final Report – SunWater Irrigation Price Review: 2012-2017, Volume 1,* May 2012, available at www.qca.org.au

As the methodology is based upon forecasted revenue, the maintenance-based working capital requirement translates into a fixed percentage across each year of the undertaking, similar to that utilised by Queensland Rail (QR) and Dalrymple Bay Coal Terminal (DBCT) within their respective submissions.

However RSMBC recommended in section 14.23, to adjust the working capital requirement per internal/external allocation proportions within the 2013 DAU maintenance submission. Aurizon Network does not agree with this recommendation.

Many of the maintenance services undertaken in relation to the declared service are contestable and via internal provisioning, provide benefits to users via economies of scale in plant, people and expertise. From a regulated perspective, maintenance costs therefore function as an input cost in the determination of efficient prices for maintenance effort; those that would prevail in a competitive market for a standalone business. This is underpinned by s.168A of the QCA Act, which requires that the price of access to a service should generate expected revenue for the service that is at least enough to meet the efficient costs of providing access to that service.

Of note, in relation to the standalone nature of the establishment of costs, RSMBC have referred to the views of the Queensland Resources Council (QRC) upon the cost build up methodology and state:

> *QRC has submitted that it supports the approach adopted in relation to calculation of maintenance costs by building up a cost structure for a hypothetical, standalone maintenance company…*[52]

For these reasons, Aurizon Network remains of the view that working capital should continue to be included as per the 2013 DAU and calculated as:

Average monthly maintenance spend x Real pre-tax WACC

i.e.

(FY14 $189.5m / 12 months) x 6.83%

[52] RSM Bird Cameron, 2014, section 4.48, pg. 68

2. The Sinclair Knight Merz (SKM) Report

SKM was engaged by the QCA to assist them by:

A. Reviewing the forecast maintenance expenditure including:
   - An assessment of Aurizon Network's forecast maintenance expenditure and benchmarking against similar below rail operations as well as historical actual maintenance expenditure for the Central Queensland Coal Network, including consideration for productivity improvements; and
   - Identification of any irregularities, such as 'double counting' and adjusting the forecast maintenance costs as required.

B. Assessment of the reasonableness of Aurizon Network's proposed incremental maintenance reference tariff component (AT1 reference tariff).

C. Review of forecast operating expenditure including:
   - An assessment of Aurizon Network's operating expenditure forecast for reasonableness based on historical actual operating expenditure for the Central Queensland Coal Region; and
   - Benchmarking of forecast operating expenditure against similar below rail operations.

D. Review of forecast asset renewal component of capital expenditure including:
   - assessment of Aurizon Network's forecast renewals expenditure, with particular focus on the relationship between asset renewals and maintenance expenditure; and
   - Assessment of Aurizon Network's forecast asset renewals programme on the basis of reasonableness.

SKM within their report, have concluded that Aurizon Networks costs for Maintenance Expenditure and Renewals forecasts were found to be reasonable and that there was no "double counting" in the maintenance costs

SKM have made a number of recommendations in their report and Aurizon Network offers the following comments in response.

2.1 - Maintenance

2.1.1 - Constrained ballast undercutting scope.

SKM have recommended that the scope of the ballast undercutting task be limited until such time as the new spoil wagons have been acquired.

At the time of preparing the Maintenance Cost Submission the production assumptions for the ballast undercutting task provided for the acquisition of an additional 24 spoil wagons and the upgrade of 56 ballast wagons. Additionally, Aurizon Network have committed to a suite of logistical support enhancements and productivity improvements to the current undercutting programme which will enable the delivery of the full maintenance scope for the regulatory period. The following is a summary of the programme:

- Spoil wagons, eight sets of three wagons to be delivered by December 2015;
- Ballast wagon upgrades, fourteen sets of four to be delivered by December 2014;
- RM900, the existing undercutting machine, system upgrades to be completed by December 2014;
- Upgrades to storage and loading facilities at four sites, three sites have be completed and the last site is to be completed by June 2015.

Aurizon Network's 2013 DAU Maintenance Submission Volume 4 includes a cost for a Return on Asset for the Spoil wagons and the associated production assumptions for the programme but does not include any additional costs associated with the programme.

To provide further comfort to industry and the QCA, Aurizon Network can confirm that the Investment Approval Request for the procurement of Ballast Upgrade Programme was authorised in 2013.

Aurizon Network recommends that the full scope for Ballast Undercutting remains in place to ensure our statutory and contracted obligations for rail safety, asset condition and asset performance is not put at risk.

Aurizon Network is committed to providing the supply chain and the QCA additional reporting and greater transparency. This will include regular updates on the performance of the ballast undercutting programme and scope delivery. This reporting will also be included in the Annual Maintenance Report. The Annual Maintenance Report is audited by Consultants engaged by the QCA.

In addition it is recommended that Aurizon Network include in the above reports a detailed pricing analysis and cost reconciliation to confirm that there are no additional costs are passed onto the supply chain through the implementation of the Ballast Upgrade Programme.

2.1.2 - Additional savings for productivity assumptions for turn out grinding.

SKM have recommended that there be an adjustment for additional savings (although not significant) from Aurizon Network's productivity assumptions for turnout rail grinding.

In the development of the Rail Grinding production assumptions the productivity improvements discussed with SKM had already been factored into the Rail Grinding scope and form part of the overall pricing proposal. These productivity improvements include:

- Rescheduling of cyclical maintenance activities to better coincide with medium to long term system closures required by the ports or the mines;
- Remodelling of the work shifts to increase productivity. This has been made possible through changes to the Industrial Agreements;
- Taking more track access around turnouts to include adjacent cross overs and passing loops.

2.1.3 - Retrospective reporting on planned preventative maintenance, unplanned preventative maintenance and corrective maintenance.

SKM have recommended that to provide transparency on the efficiency of forecast and actual maintenance activities, SKM recommended that Aurizon Network distinguish on a yearly basis (i) the location of its planned preventative maintenance activities for the coming year (i.e. those areas where condition-based projections have identified the need for intervention), (ii) the location of its unplanned preventative maintenance activities for the past year (i.e. those areas, different from the planned preventative maintenance locations, where condition-based assessments have identified an unexpected need for intervention) and (iii) the locations of its corrective maintenance activities for the past year.

Aurizon Network supports and has embraced the concept of transparency, and is currently progressing an initiative to make available an extensive suite of products and services to all supply chain participants and stakeholders via a range of customer focussed, delivery service models.

The major focus of this initiative is to improve how Aurizon Network provides relevant data and information to the supply chain participants and the QCA. The overall objective is to make the operations and performance of the Central Queensland Coal Network more visible to our customers and stakeholders. Aurizon Network will work with its customers, its stakeholders and the QCA to ensure that these service models provide the information and services required by the users.

This approach will complement the current range of industry engagement forums already in place covering commercial, operational and strategic issues. Refer to section 3.3.2 of the 2013 DAU Maintenance Submission Volume 4.

2.1.4 - Adjustments to the Maintenance Cost Allowance base on the Energy Economics volume forecast.

As part of the 2013 DAU public consultation process, the QCA engaged Energy Economics to verify the reasonableness of the volume forecasts within the 2013 DAU submission, with a report subsequently released in July 2013. As noted in the report, Energy Economics undertook a different methodology to derive its volume estimate:

> *The Aurizon Network forecasts appear to take a top down approach, with individual projects being allocated a percentage of their contracted railings within the pre-defined envelope of the total system forecast. Energy Economics has focused more on analysis of the development timeframes and production potential of the individual mines and projects. These differences in methodology have resulted in substantial differences in the forecasts for individual mines, and render detailed comparisons at the mine level of limited value. For example, the Aurizon Network forecasts do not include a separate line item for the new Daunia mine, but this omission may not have made any difference to their system-wide forecasts given their top-down nature. Energy Economics believes its approach of detailed evaluation of the production capabilities of the individual mines and projects, coupled with a top down evaluation, is a more robust approach to forecasting coal railing volumes.* [53]

A summary of both Aurizon Network and Energy Economics volumes is replicated below in Table 11.

Table 11

Financial year to June	2014f	2015f	2016f	2017f	Total
Aurizon Network	199.6	222.2	236.5	252.1	910.4
Energy Economics	190.6	198.3	207.6	219.7	816.3
Difference	-9.0	-23.8	-28.9	-32.4	-94.1

SOURCE: Energy Economics, 2013, *Central Queensland Coal Railings Forecast*, pg. 25

Whilst the Energy Economics volumes are lower than those of Aurizon Network, both sets of volumes would appear to be below those re-forecasted for the 2013-2014 financial year (FY13/14). For instance, as at 31st December 2013, Aurizon Network railed 107.60 million net tonnes across the CQCN, 5.96% above Aurizon Network's original forecast. In combining this with forecasts for the remainder of the financial year, Aurizon Network estimates to rail approximately 203 million net tonnes, clearly above the Energy Economics forecasts and even those of Aurizon Network itself.

IN SKM's report, they have recommended that

> *…that proposed adjustments to the maintenance cost expenditure to account for the impact of alternate volumes as forecast by Energy Economics during the 2013 DAU period, as well as a maintenance cost estimate for the 2017/18 financial year.*

Aurizon Network's proposed tonnage profile was assessed prior to the Energy Economics Submission. Both tonnage profiles are therefore aged and should be considered by the QCA in light of current performance and industry production forecasts. Based on the current run rates, the production of the Central Queensland Coal Network for the FY 2013/14 will exceed both the Aurizon Network proposed tonnage profile and the Energy Economics.

[53] Energy Economics, 2013, *Central Queensland Coal Railings Forecast,* pg. 5, available at www.qca.org.au

Whilst Aurizon Network recognises at the time of writing this submission that there is still approximately four months to rail for this financial year, Aurizon Network expresses a number of concerns for this potential disparity. Firstly when compared to both medium and long-term forecasting, due to lower degrees of variability attributable to input variables, short-term forecasts should inherently prove to be more accurate. Energy Economics volumes are already 6.5% below those re-forecasted for the FY13/14 concerns could be raised about the amount of error already inherently contained within the longer term forecasts.

It also Aurizon Network's view that the volumes forecast by Energy Economics in the later years of the regulatory period do not accurately reflect the conditions of the Central Queensland Coal Region particularly for railings associated with the Wiggins Island Rail Project (WIRP) and the Goonyella to Abbot Point Expansion Project (GAPE).

A further consideration is that although the Energy Economics analysis provides a view on total production it does not provide for the production volume by specific locations within the four systems. That is, it does not include the production forecast by mine with the nominated destination. This is a critical component in determining the locations of tonnage based maintenance activities such as rail grinding. The maintenance programme also utilises this production profile by location and destination to determine maintenance requirements on assets that are geographically dispersed.

It is important that the forecast and actual production profile closely align for several reasons, including reducing tariff price variation and providing greater certainty for maintenance planning.

It is suggested that the QCA assess the tonnage profile in light of more recent production rates considering the overall production volume based on access agreements including the mine location and destination similar to that proposed in Appendix K in the Explanatory Material of the 2013 DAU.

2.2 - Incremental tariff AT_1

2.2.1 - Adjustment to the assessment of the AT_1 Tariff

SKM have recommended that the QCA seek to commission an update to the analysis conducted in 2001 (Working Paper 2: Usage-related infrastructure maintenance costs in railways) to address the limitations outlined in Section 2.2.2 of SKM report and therefore providing a more accurate estimation of incremental costs for the Central Queensland Coal Network. Specifically, it is recommended that an update would consider maintenance costs for various tonnage profiles (from very low to very high tonnages) on an individual system basis.

Aurizon Network acknowledges the assessment conducted by SKM in assessing the variable cost and accepts their view that the cost curve has changed since the 2001 decision. Aurizon Network agrees that the AT_1 incremental costs should be modelled to accurately reflect the variable costs, within the regulatory period and reflect management's ability to control costs in line with the asset condition and performance requirements as tonnage profile dictate.

Aurizon Network has conducted an assessment of the short run variable costs, and a summary of the findings along with further discussion on this matter is contained within Section 10.4.2 of Volume 2 of the Explanatory Material for the Regulatory Framework.

Aurizon Network suggests that any adjustment to the AT_1 methodology provide for the short run variability costs in providing maintenance services. These short run variable costs are differentiated from the long run incremental cost that was considered in the Consultant's assessment. The short run variable costs reflect the controllable costs in so much as annual maintenance delivery can be adjusted e.g. external contracts varied, service and procurement contracts varied or terminated, closure regime adjusted to suit volatility in train orders and associated variation in maintenance requirements for tonnage driven maintenance products.

The intent of this alternative approach, for consideration by the QCA, is to provide for minimum variation of cost to expenditure in a given year, as reasonably managed by Aurizon Network. Current assessment of the short run variation is that approximately 37% of maintenance costs are variable in the short term (annual). This approach

would replace and simplify the proposed methodology provided in Section 10.4.2 of Volume 2 of the Explanatory Material for the Regulatory Framework.

Aurizon Network agrees with SKM and also agrees to further explore the escalation of the AT_1 tariff modelling utilising the Maintenance Cost Index rather than the Consumer Price Index. This would provide a more standardised approach to cost escalation across the various cost components of the 2013 DAU.

Aurizon Network looks forward to working with the Queensland Competition on this matter.

Aurizon Network acknowledges the assessment conducted by SKM in assessing the variable cost and accepts their view that the cost curve may have changed since the 2001 decision.

Aurizon Network would also like to further explore the escalation of the AT1 tariff modelling utilising the Maintenance Cost Index rather than the Consumer Price Index. This would provide a more standardised approach to cost escalation across the various cost components of the 2013 DAU.

Aurizon Network will work with the QCA on both the AT1 and MCI matters.

2.3 - Operating expenditure

2.3.1 - Adjustment to the Commercial Development work group cost forecast

SKM have recommended a reduction in the allowance for Commercial Management costs that are expected to increase slightly as access requests and negotiations increase with train paths. However, the Consultant would not expect the unit cost would increase on average. The Consultant finds that the unit costs have increased in the UT4 forecast compared to the UT3 actual. SKM therefore proposes an adjustment to Commercial development costs.

The cost allocation for Commercial Management is based on the resources, internal and external, that are required to deliver a range of other services that are not linked entirely to Train Paths. For example the optioneering for alternate rail configuration, the management of associated services including electricity services, Transfer Facility Licences, installation and operation of veneering systems and land management matters are some of the issues provided for by the Commercial Management team.

Aurizon Network does not accept this recommendation as its forecast costs for Commercial Management are not based upon train path but are based upon whole of business.

2.3.2 - Adjustment to the Utilities cost forecast

SKM have determined that Utilities costs would be expected to remain consistent regardless of growth in train paths, and this is observed in the UT4 forecasts each year. However, the Consultant notes that total costs increase relative to the UT3 period, for which SKM has been unable to determine a justification upon reviewing Aurizon Network's DAU for the UT4 period. SKM therefore finds that forecast utilities costs should be adjusted downwards to reflect the average for the UT3 period ($0.8 million per year).

The average for the 2010 AU period is not indicative of the annual costs for the 2013 DAU period.

The direct costs recognised by Aurizon Network for financial year 2013 were only $20,547. Under the functional organisational model introduced during financial year 2012 these costs are now incurred centrally as corporate costs. For financial year 2013 these costs were still budgeted within Aurizon Network rather than in the corporate function, however actual costs were recognised in the corporate function. As the corporate cost allowance has been derived from the financial year 2013 4+8 forecast, the allowance does not include these utilities costs. However, they should still be part of the overall operating cost allowance, and therefore in our view this reduction is inappropriate.

2.3.3 - Adjustment to the Moura System cost to reflect the efficiency in train control, safe working and operation costs

SKM recommends that Aurizon Network adjust the system allocation of train control, safeworking and operations costs to ensure costs are efficiently allocated. This recommendation arises from SKM review on an individual system basis which has indicated that train control, safeworking and operations for the Moura system has become less efficient compared to the UT3 period, while the unit cost for other systems is trending downwards.

SKM, determined that 'The inefficiency of unit costs for the Moura system is due to fluctuations in forecast train paths during the 2013 DAU period which result in a lower average number of train paths compared to the 2010 AU period'[54].

Because of this, Aurizon Network suggests that this recommendation be reviewed given the total costs which increase slightly causing a decline in efficiency in the context of dollars per train path.

Aurizon Network supports SKM's recommendation for a recast of the system allocation for train control and safe working on a gross tonnes per kilometre basis.

2.3.4 - The QCA confirms the costs impacts of the Coal Loss Management Plan and the Queensland Workplace Health and Safety laws.

SKM recommends that the QCA seeks to confirm that costs of compliance with the Coal Dust Management plan and changes to Queensland Workplace Health and Safety laws are appropriately reflected in both Infrastructure Management and Regulation and Policy cost forecasts.

Aurizon Network is committed to providing a safe workplace for its workers, contractors and the general community and would welcome any review from the QCA to ensure that the cost impacts of the Workplace Health and Safety laws are reflected in the forecast Infrastructure Management costs. Likewise Aurizon Network would welcome any review by the QCA in regard to the application and costs associated with the Coal Loss Management Plan as Aurizon Network is regarded as the Australian leader in coal dust management practices.

[54] Attachment C. Benchmarking of specific aspects of the operating expenditure forecast - Page 20.

2.3.5 - The QCA obtain an estimate of the expensed labour costs incurred by Operations during planning that is associated with capital works

SKM recommends that the QCA seeks to obtain an estimate of the value of expensed project costs associated with labour intensive operations during capital works, and that these costs are excluded from the approved operating expenditure forecast. SKM has attempted to obtain this information from Aurizon Network and to date this information has not been received.

In the 2013 DAU, Aurizon Network we states that "During construction projects normal signalling and safeworking systems have to be suspended and either train movements are suspended or labour intensive manual systems are introduced temporarily over the affected sections in order to maintain train operations across the affected parts of the network. These costs are not included in the capital works as they are incurred for operational reasons during construction activity. They are therefore addressed in the system wide and regional cost forecast. Whilst costly, this solution has been implemented to minimise the impact of construction works on train services. These costs will continue to be maintained over 2013 DAU given the continued level of construction activity. It is SKM view, these costs should be capitalised.

It is Aurizon Network's opinion that it is not appropriate to treat these labour costs as capital and not operational due to existing accounting policies and practices, and hence have treated as operational. The nature of any form of direct cost allocation is complicated by the fact that in any system closure or track work authority, train control and planning are involved in a combination of tasks including scheduling and executing train movements for stowage of revenue trains, movements of maintenance vehicles, maintenance staff and the provision of safe working arrangements for a large number of both maintenance and capital works activities. These tasks are not independent of each other, therefore assigning an allocation of time associated for either maintenance or capital project would be subjective in nature and would create inefficiencies in the service delivery and incur an additional cost burden to the supply chain.

Additionally the estimate for the Capital Indicator for 2013 DAU does not allow for these costs and if they were to be disallowed from the Operating Cost Allowance, then we would be seeking to recover the costs from the capital cost allocation.

If requested Aurizon Network will provide further information to the QCA to facilitate a more detailed understanding of the tasks described above with a view of how these costs could be directly allocated to a specific capital works project.

2.3.5 - The QCA seek clarity on estimated cost savings associated with Regenerative Braking ($2.5M) as quoted in Aurizon Networks Investor Briefing dated 18 July 2013

It is recommended that the QCA seek to gain further evidence from Aurizon Network to support estimated cost savings associated with regenerative braking trials which have been published in Aurizon Network's Investor Briefing dated 18 July 2013 ($2.5 million). While differential pricing may not yet be feasible due to limitations associated with monitoring individual train contributions, SKM finds that these savings should still be reflected in the operating cost forecast. If Aurizon Network does not provide evidence that the savings have already been accounted for, SKM recommends that the allowable operating expenditure for the UT4 period is revised down by $2.5 million, since this would reflect the ongoing minimum saving which would be expected from continuing regenerative braking trials.

Aurizon Network is currently running a project to test the capacity and impacts of regenerative power on the Central Queensland Coal Network. The project provides for the installation of suitable metering at the Powerlink Network Interface points which record the amount and value of energy returned to the Powerlink Grid. The credit adjustments for the electricity returned to the grid is recorded on the electricity bills and the reduced cost is reflected in the EC tariff. These benefits automatically pass through to operators in accordance with the function of the EC tariff.

As recognised by SKM regenerative braking assists in reducing energy consumption in two ways; namely export from the network and electricity reuse by adjacent electric rollingstock. The net effect is a reduction in electricity usage charges.

Currently there are sixty three locomotives which are owned by various operators that are enabled for and have switched on their regeneration braking capability.

As part of the trial Aurizon Network will monitor the energy quality being returned to Powerlink grid to ensure the regenerative power quality complies with National Energy Regulation performance criteria. Aurizon Network will also ensure that any contractual arrangements between itself, the energy Retailer and Powerlink are not compromised.

With the understanding that the reduction in energy costs function operates on a cost pass through basis Aurizon Network does not consider that any adjustment to the Operating costs is required as the benefits already flow through to operators and the supply chain.

2.3.6 - Forecast frequency rates for derailments and dewirements should be adjusted to reflect improved maintenance practices (preventative resurfacing) and the inclusion of severe weather events in the historical data sets.

The Consultant finds that Aurizon Network's forecast derailment risk is reasonable in the context of historical derailment rates from other operators. However, based on the review of Aurizon Network's proposed maintenance strategy for the UT4 period, the Consultant finds that there are a number of proposed maintenance activities for the UT4 period which should result in a decline in the forecast running line derailment risk no change is expected for yards / sidings. SKM therefore recommends that Aurizon Network seek an understanding of specific causes of derailments on the Central Queensland Coal Network, which can be assessed against proposed preventative maintenance activities to determine the improvement in derailment risk which should occur.

Aurizon Network has based its forecast for self-insurance costs, in part, on the volume and severity of derailments on the Central Queensland Coal Network. That is the cost allocation is based on historical data. Aurizon Network would not consider it appropriate to make an arbitrary adjustment to that quantum based on the potential for improved performance of the network based on improved maintenance activities as improved asset performance through good maintenance practices are inherent in the original calculation. As such Aurizon Network does not see any advantage in conducting any further analysis on the causation and effects of maintenance on the volume and severity of derailments.

SKM also considered as an alternative that the QCA request that improvements are realised in the UT5 period i.e. the derailment frequency should decline on a gross tonne per kilometre basis

As Aurizon Network progressively moves from a reactive to proactive maintenance programme the impacts of the improved maintenance performance should reflect an improvement in the volume but necessarily the severity of derailments over an extended time frame. Therefore the provision for future self-insurance costs would take into consideration the historical performance of the network as suggested by SKM.

2.3.7 - Adjustment to the annual dewirement costs to remove the impact of severe weather events which occurred in 2011 from the historical data sets

SKM finds that Aurizon Network's proposed methodology to forecast dewirements based on historical occurrences is reasonable, since maintenance and operation practices have a limited impact on the frequency of dewirements. However, the impact of severe weather conditions which occurred during the UT3 period (in 2011) is potentially distorting the historical frequency of dewirements.

Aurizon Network consultants Finity has, in part, based its forecast for self-insurance costs on the historical performance of the network. Aurizon Network can confirm that historically dewirements have been caused by motor vehicles coming into contact with the overhead line equipment at level crossings or when the pantograph of rolling stock and the interface to the overhead line equipment does not perform as designed. Aurizon Network can confirm that there have been no dewirements in recent years, as a result of severe weather conditions. As such the information used by Aurizon Networks Consultants Finity take into consideration these data sets.

Aurizon Network considers it appropriate to leave the forecast for self-insurance costs as they were submitted

2.4 - Asset renewals

2.4.1 - The QCA review the Aurizon Network Asset Maintenance and Renewal Policy as provided in Schedule E of the 2013 Undertaking

In regards to Aurizon Network's Asset Maintenance and Renewal Policy document, SKM recommends that the QCA review, and approve the policy in accordance with Schedule E of the UT4.

Aurizon Network has a highly developed Asset Management model, which will be enhanced by the Network Asset Management System (NAMS) becoming operational. In both the current and future states the review and maintenance of core documents such as Asset Maintenance and Renewal Policy is critical and as such is constantly monitored and updated as required.

As noted by SKM a review of "Aurizon Network's Asset Maintenance and Renewal Policy and Stage Gate process provides confidence that prudency of expenditure with regards to scope standard and cost can be appraised. The Asset Maintenance and Renewal Policy would provide a robust and consistent framework for asset management decision making".

The above findings confirm that Aurizon Networks Asset Management Systems function appropriately. As these asset policies form part of our overall Safety Management System and are approved and reviewed by other regulators it would not be considered reasonable to have the QCA approve the Asset Maintenance and Renewal Policy. In this context Aurizon Network is prepared to provide the QCA and the supply chain reports on the status of the Policy. (Refer Section 3 above)