

1 Industry Supported Principles

Aurizon Network's UT4 maintenance submission should be reviewed on the basis of the established regulatory principles of:

- (a) **Prudency of Scope** - Industry strongly supports the principle that Aurizon's proposed scope of maintenance work should be such to maintain the CQCN rail infrastructure to a standard in accordance with good railway operating practice so that it will reliably and safely deliver the forecast tonnages throughout the UT4 period.
- (b) **Efficient Costs** - Industry strongly supports the principle that Aurizon's maintenance expenditure should be assessed on an efficient cost base that will effectively deliver the required maintenance scope. Use of benchmarking is considered an appropriate means of identifying efficient costs provided that the benchmark organisations are appropriate and the comparisons are valid.
- (c) **Standalone Cost Basis** - Industry supports the established use of a hypothetical standalone coal network business to reflect the efficient costs of providing access services on the CQCN. It is noted that since the last undertaking Aurizon Network has separated from QR Network, so maintenance services are more contained to the CQCN. However, a portion of Aurizon Group costs are allocated to the costs of maintaining the CQCN.
- (d) **Transparency/Reporting** - Industry is seeking a much greater degree of transparency and level of maintenance reporting than has occurred in previous Undertakings. We are concerned about delivery of the proposed maintenance scope and Aurizon Network's ability to alter the scope without consultation with stakeholders and without consequences on its approved maintenance allowance.

Industry is also seeking fundamental changes to the way the CQCN rail infrastructure is managed in regulatory environment. The principles that we would like to see introduced include:

- (a) Aurizon Network developing a Maintenance Plan and Scope for each rail system on a rolling 5 year basis, with a detailed 12 month scope setting out specific planned interventions and quantities by month and an allowance for unplanned work. The Plan must be approved by a majority 75% of access holders in a rail system and failing approval by access holders, the QCA to approve or otherwise request changes.
- (b) The Plan is to include strategies to competitively tender certain maintenance activities across the CQCN where there is potential value to be gained and it makes good business sense.
- (c) Aurizon can request changes to the plan with justification within the 12 month period, which must be approved by a majority 75% of access holders or the QCA for the changes to take effect.
- (d) Aurizon can also undertake major emergency repairs (i.e. outside the unscheduled allowance) to the network using an approved schedule of rates.
- (e) Aurizon Network must progressively report on the delivery of the plan through the 12 month review period, variances to plan and forecast end of year outcomes.

- (f) The annual maintenance allowance is to be based on the approved plan with adjustments for approved scope changes and unscheduled work.
- (g) Aurizon Network will be accountable for non delivery of the maintenance scope (i.e. the maintenance allowance will be decreased) except for issues that are outside its reasonable control.

2 Proposed UT4 Maintenance Costs have Risen Significantly

Aurizon Network’s UT4 maintenance submission proposes significant increases in the maintenance allowance compared with previous Undertakings. The proposed FY14 allowance of \$212M (in FY12\$) is a 22% increase in real terms compared with the FY13 allowance of \$182M. The proposed costs increases are disproportional to the increase in forecast tonnages. In fact, as shown in Figure 1, maintenance costs in real terms and adjusted for activity have increased significantly since UT1. While industry notes and supports Aurizon’s forecast improvements in efficiency on a per GTK basis over the UT4 period it also notes that similar improvements were forecast in previous periods and did not eventuate due to lower than system activity levels.

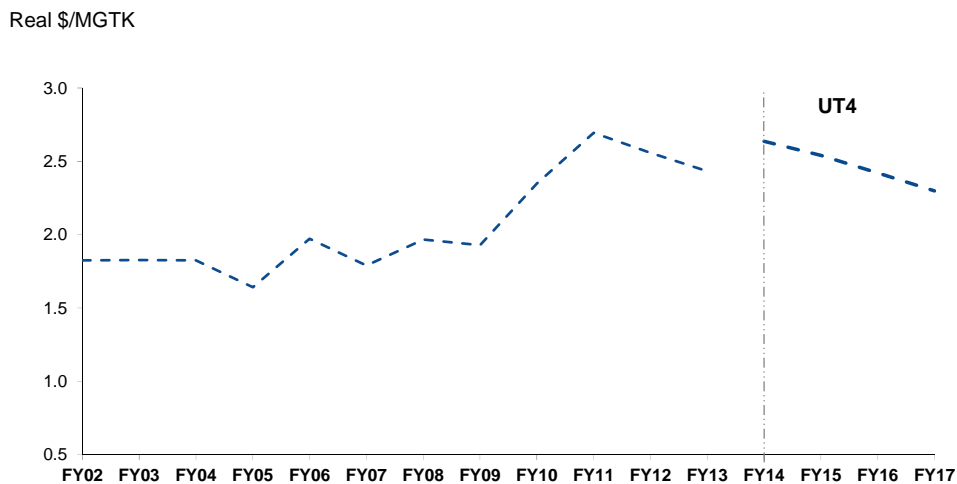


Figure 1 - Aurizon Maintenance Costs (\$'s per 000 gtk in FY11 dollar terms)

Aurizon Network’s total UT4 maintenance claim (in FY12 \$'s) is made up of direct maintenance costs \$818M (89%), return of asset employed and inventory \$48M (5%) and allocated corporate costs \$12M (5%). Direct maintenance costs include services provided from Aurizon Operations including logistic services such as “hook and pull” for work trains and track maintenance equipment.

Aurizon Network’s UT4 maintenance allowance has increased significantly from UT3. The Authority should assess the maintenance costs on an efficient, standalone basis, consistent with previous undertakings. The Authority should also assess the efficiency and margins applied on services provided by Aurizon Operations to network maintenance, including the provision of hook and pull services for work trains and work to identify quantifiable efficiency gains that should be achieved independent of any changes to volume levels

3 Forecast System Tonnages Used to Determine the Maintenance Task

Infrastructure assets will generally either deteriorate over time or due to usage. Usage deterioration is impacted predominately by the tonnage of coal hauled over the networks and causes most of the component wear. The planning horizon for most major maintenance planning activities is generally based on forecast tonnages to be hauled. It is therefore important there is accuracy and confidence in the forecast system tonnages.

As shown in Figure 2, there has been consistent overstatement of forecast system tonnages in previous Undertakings. To address this issue, the Authority commissioned Energy Economics¹ to undertake an independent forecast of coal railings over the CQCN during the UT4 period. Energy Economics has forecast total railings of 816Mt from FY14 to FY17, compared with Aurizon Network's forecast of 910Mt. Energy Economics' FY17 railings forecast of 220Mt is a 21% increase over FY13 actual railings of 182Mt, compared with Aurizon Network's FY17 forecast of 247Mt, which is a 36% increase over FY13 railings.

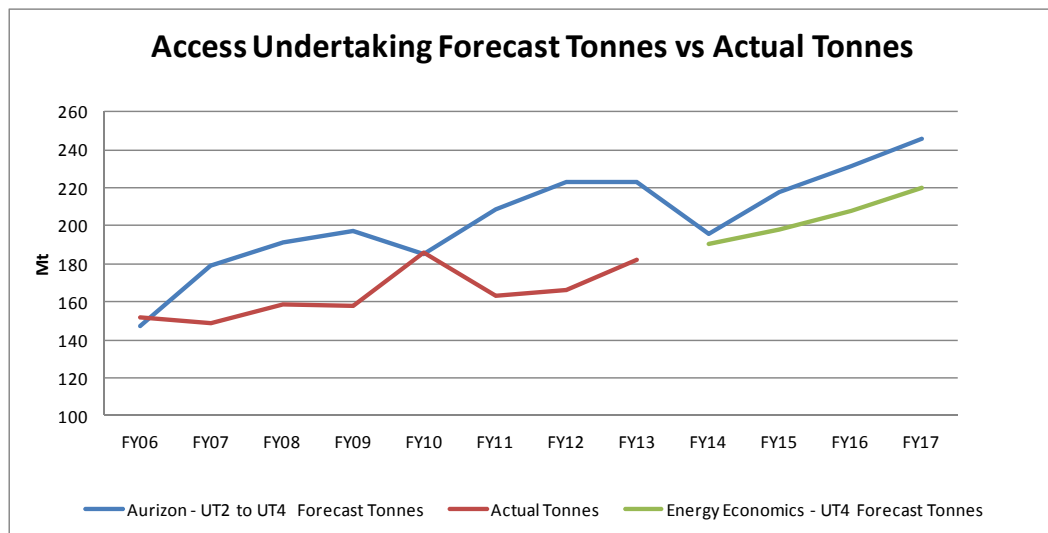


Figure 2 – Forecast and Actual Tonnages from UT2 to UT4

Industry is of the view that the Energy Economics UT4 tonnage forecast is more representative of current conditions and growth projects, which are still being progressed in the UT4 timeframe. It is noted that Energy Economics total UT4 coal railing forecast of 816.3Mt is actually less than Aurizon's UT3 railing forecast of 841Mt.

Tonnage related maintenance tasks and therefore costs are not only impacted when there is a significant variance between forecast and actual, but the lead time to respond with either increased or in some cases decreased effort is significant.

¹ Energy Economics, *Central Queensland Coal Railings Forecast – A Report for the QCA*, July 2013

The key maintenance elements affected by tonnage forecast variances are:

- (i) **Access to Infrastructure** - Major maintenance works require long shutdown periods which impact significantly on train path availability and also require long lead times for planning. This planning needs to be based on forecast tonnages, which are overstated may result in more expensive maintenance strategies (e.g. more shorter duration maintenance windows) being deployed than otherwise available.
- (ii) **Wear Rate Predictability** – Wear/deterioration rates of many infrastructure components are tonnage rather than time related. For example, rail wear, is managed by rail grinding and rail replacement. The lead time for purchasing rail and distributing it is significant. Some of the critical rail is now being imported. The volume cannot be easily adjusted and must be an estimate from predicted tonnages being hauled. The mainline grinding is performed by one machine, which therefore requires careful planning in not only responding to wear rates, but also train paths to perform the operation.
- (iii) **Resourcing Levels** - Aurizon Network needs to plan and operate its workforce at efficient levels. Predictability of the tonnage volumes not only determines invention intervals but also time available to access the rail infrastructure for maintenance. Managing peak workloads is normally accomplished by a combination of permanent and contracted workforces, which involves issues in trying to manage short term variations in work demand.

Industry believes that Aurizon Network's UT4 tonnage forecast is overstated and considers that the Energy Economics' forecast is more reflective of current conditions. It is recommended that the Authority review Aurizon Network's maintenance scope and budget based on a lower tonnage profile.

4 Non Delivery of Scope

Industry is concerned about the apparent non delivery of the proposed maintenance scope in previous Undertakings within the approved budget, taking account of AT₁ revenue adjustments due to actual volumes. These scope reductions include both reductions in quantity of maintenance work and proposed equipment purchases. Examples of non delivery of scope include:

- Significant under delivery of forecast ballast cleaning scope
- Delays / non delivery of additional MFS wagons for the ballast cleaning consist
- Delays / non delivery of resurfacing machines
- Delays / non delivery of the proposed increase in the frequency track recording data and its integration into the maintenance planning process
- Lower the expected rates of rerailling

Reasons for concern regarding the non delivery of the maintenance scope include:

- (i) Potential accumulation of a maintenance debt which will impact on the reliability of the network in the future
- (ii) If the maintenance scope is being reduced beyond the usage change, Aurizon Network is effectively overspending its approved maintenance allowance

- (iii) Concern that the maintenance budget is being reallocated on an ad hoc basis in response to short term problems rather than to meet the requirements of the long term asset plan that is presented to industry each regulatory period

Industry has concerns regarding the potential non delivery of the proposed UT4 maintenance scope based on previous Undertaking experience. Industry would like to move to an arrangement where the maintenance scope is agreed with Aurizon Network each year and then Aurizon Network is held accountable for delivering the approved scope.

5 Ballast Contamination

Ballast contamination is a significant problem confronting the ongoing sustainability of the CQCN. Contamination, primarily from coal dust/coal spillage is infecting the ballast structure, impacting on drainage and causing premature failure of ballast bed supporting the track structure. Remediation involves lifting the track removing the contaminated ballast and replacing it with new or cleaned ballast. The process is time consuming, reduces network capacity and is very expensive. Of Aurizon Network's proposed UT4 direct cost maintenance allowance of \$818M, 31% or \$252M is proposed to be spent on ballast undercutting work.

A significant increase in ballast undercutting (20%) is forecast over the UT4 period. This ballast undercutting requirement is directly related to tonnages hauled, so without addressing strategies to reduce the rate of ballast contamination then the need for undercutting will increase proportionally. In addition to strategies to reduce the rate of ballast contamination the accuracy of forecast tonnages impacts directly on the allocated budget for undercutting.

Industry notes that during the UT3 period coal veneering was introduced as a means of preventing coal dust emission from the tops of loaded coal wagons and that early indications are that the amount of airborne emissions has been reduced. However, as the Evans and Peck² report states coal dust emissions is just one source of potential contamination of the railway ballast with other potential sources being coal falling through doors, coal ploughed from loading or unloading facilities and parasitic coal falling off various parts of coal wagons in transit.

Industry further notes that Aurizon Network has recently trialled and introduced Ground Penetrating Radar to measure the amount of ballast contamination of the infrastructure on a moving track mounted vehicle, which will not only enable heavily contaminated track sections to be efficiently identified but also the rate of contamination of the entire CQCN over time.

Industry is concerned about the increasing cost of the ballast contamination intervention over the UT4 period and question whether:

- (i) The non delivery of the proposed scope of ballast cleaning in UT3 should be taken into account when assessing the ballast cleaning budget in UT4
- (ii) The scope of ballast undercutting can be reduced, particularly if tonnage forecasts over the UT4 period are reduced

² Evans & Peck, *Aurizon Network Pty Ltd, Ballast Contamination Scoping Study*, March 2013

- (iii) Costs of ballast undercutting can be reduced by initiatives such as reusing more cleaned ballast and reviewing the costs of some input services including logistics costs

In addition, Industry is concerned about the lack of a comprehensive strategy to resolve ballast contamination in the long term, so that the track systems achieve their design life with a minimum of interventions. This is not a new issue and as the owner and manager of the CQCN, Aurizon Network is accountable for deploying good operating and maintenance practices to avoid premature deterioration of the asset.

Industry is concerned about the increasing need and cost of ballast undercutting invention during UT4. The Authority should assess scope of ballast undercutting proposed against the tonnage forecast and efficiency of the operation. Industry is also concerned about the lack of a comprehensive strategy to resolve the problem in the long term.

6 Efficient Costs and Benchmarking

Aurizon Network³ claim in their UT4 Maintenance Submission that their maintenance cost efficiency is comparable to ARTC's Hunter Valley. It is important to note that this comparison is on a maintenance cost per track kilometre basis and the conclusion is different if the comparison is made on a more valid cost per gross tonne kilometre basis, as shown in Table 1.

	ARTC Hunter Valley FY11 Actual (2010-11\$)	Aurizon Network UT4 - FY14 Forecast (2011-12\$)
Maintenance Cost	\$49.5M	\$212.4M
Maintenance cost (less electric)	\$49.5M	\$202.8M
Track kilometres	452km	2713km
Gross Tonne Kilometres	27.0B	80.5B
Mce Cost / Track km	\$109,513	\$74,751 per km
Mce Cost / gtk	\$1.83 per 000 gtk	\$2.52 per 000 gtk

Table 1 – Maintenance Cost Comparison

Aurizon Network⁴ has also benchmarked its maintenance costs against Class 1 North American railroads where they claim that they are “competitive, with opportunities for improvement”. It is interesting to note that in this analysis, Aurizon Network use a cost per gross tonne kilometre basis for comparison and not a cost per track kilometre as they did with benchmarking ARTC. However, in this analysis Aurizon Network has excluded

³ Aurizon Network, UT4 Maintenance Submission, 30 April 2013, pg 13

⁴ Aurizon Network, UT4 Maintenance Submission, 30 April 2013, pg 13

mechanised maintenance, traction power & telecommunications, which represent 48% of the total \$189M direct maintenance cost claim. It is reasonable to exclude maintenance of traction power infrastructure from the comparison with North American diesel locomotive operations, however, it is questionable if any other costs should be excluded from the analysis.

The Authority should make an independent assessment of the efficiency of Aurizon's UT4 maintenance cost claims. Care should be taken when determining appropriate benchmarking parameters and partners and ensuring it is a like for like comparison.

7 Return on Assets and Corporate Costs

Aurizon Network in the UT4 maintenance submission claim over the 4 years of UT4 a total of \$48.3M (FY12 \$'s) for assets deployed, inventory and working capital and a total of \$48.4M (FY12 \$'s) for allocated corporate costs to the maintenance function.

With the return of assets employed, Aurizon has used a gross replacement cost of the assets (adjusted for productivity efficiencies of the new equipment) and a real pre tax WACC 6.83%. Industry is concerned with the so called "Modern Equivalent Asset" approach because not only should the asset value be adjusted for differing productivity between modern and old equipment, but operating and maintenance costs should also be adjusted. Industry contends that the written down value of the asset should be used along with its commensurate operating costs. Also to the extent that return on asset includes a return on additional assets that are forecast to be purchased it will important to include a mechanism to ensure that this component of the charge is excluded from the cost build up if these assets are not purchased as per the forecast (as occurred in UT3)

With the proposed corporate costs allocated to the maintenance function, Aurizon Network has built up a cost structure for a hypothetical, standalone maintenance company with an annual revenue of approximately \$200M per annum to arrive at its approximate \$12M per annum corporate cost allocation⁵. Industry supports this approach but questions the application of the methodology to some of the corporate functions where costs have been allocated. For example, a maintenance company providing long term services to a single customer, would not require a 5 person legal team to manage the function. Industry is also concerned about the potential double counting of corporate costs by:

- (i) Inclusion of corporate costs in Aurizon Group functions that provide services (e.g. logistics) to maintenance
- (ii) Aurizon Network allocation of corporate costs on the basis of a mix of revenue, assets and head count which potentially includes maintenance head count or costs

Industry has concerns with the methodology proposed by Aurizon Network for a return on assets and allocation of corporate costs to the maintenance function. The Authority should assess the appropriateness of the methodologies being used, the efficiency of the costs and whether the costs are reasonably attributable to below rail.

⁵ Deloitte Access Economics, Estimate of QR Network Maintenance Services Overheads, November 2012

8 Reporting

Industry is seeking a much greater degree of transparency and level of maintenance reporting than has occurred in previous Undertakings. We would like the 5 Year Rolling Plan/Detailed 12 Month Detailed Maintenance Plan approved by Industry or QCA and then quarterly reporting of performance to plan. Reporting requirements include the following:

- Development of a Maintenance Plan & Annual Review
- Performance Against Plan
 - Resleepering (Actual Delivery vs Plan)
 - Resurfacing (Actual Delivery vs Plan)
 - Rail Grinding (Actual Delivery vs Plan)
 - Track Recording (Actual Delivery vs Plan)
 - Rerailing (Actual Delivery vs Plan)
 - Track recording (Actual Delivery vs Plan)
 - Ballast cleaning (Actual Performance vs Plan)
 - Non Destructive Testing (Actual Delivery vs Plan)
 - Routine Maintenance vs Plan
- Measures to maintenance staff productivity
- Actual vs forecast cost of key inputs such as ballast and rail
- Scheduled closure performance
- Overall Track Condition Index
- Track Condition Index reporting over shorter sections than now

Industry would like greater transparency of the Maintenance Plan and for it to be approved by system users and/or the Authority. We would then like to see regular reporting of performance to the plan.