AURIZON

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22 November 2013

Dear Martin

Aurizon appreciates the opportunity to respond to ARTC's proposal on the determination of the Final Indicative Service (FIS) including whether gtkm is the appropriate pricing unit to encourage efficient consumption of Capacity.

As Australia's largest rail freight operator, and the second largest coal haulage operator on the Hunter Valley coal network, Aurizon has considerable experience in train configuration and a keen interest in the outcome of ARTC's determination of the efficient train configuration.

Aurizon does not support ARTC's proposed FIS and associated pricing because Aurizon considers the proposal is unsuitable to achieve the efficiency objectives which clause 4.18 of the Hunter Valley Access Undertaking (HVAU) seeks to achieve.

The reasons for Aurizon's view are set out in the atlached submission, including that the modeling results do not support the proposed FIS and that it is not possible to reliably identify a particular train configuration to optimise coal chain utilisation. In addition, the proposal is likely to discourage investment in long life assets including rolling stock, given the risk of regular changes to below rail access pricing.

Aurizon encourages ARTC to revise its position and to return to a flat $/gtkm based access charge. To the extent that this does not occur, Aurizon believes grandfathering arrangements, based on asset life, should apply when access charges based on a particular train configuration are changed.

[redacted]

Executive Summary

Aurizon does not support the proposed Final Indicative Services (FIS) and the associated access charges because the proposal will not achieve the objective of clause 4.18 of the Hunter Valley Access Undertaking (HVAU). The analysis recently presented by ARTC does not support the FIS that have subsequently been proposed. Moreover, Aurizon believes that ARTC's FIS analysis highlights flaws in the premise that such analysis can reliably identify any particular train configuration that will optimise the utilisation of coal chain capacity now and in the future. Aurizon believes that a flat $/gtkm access charge will best support system efficiency.

Given the inherent difficulties in predicting the future and given the long economic life of rollingstock investments, Aurizon believes that the optimum utilisation of coal chain capacity can only be delivered through prudent, well coordinated system-wide infrastructure investment decisions.

Consistent with the objective of third party access regulation, the intrinsic motivation within the competitive above rail market for operators to adopt evermore efficient train configurations will ensure train configurations are used that best suit prevailing system constraints and improve overall system efficiency.

Furthermore, Aurizon contends that, given the long economic life of rollingstock assets, it is appropriate to acknowledge earlier investment decisions at each application of a new Indicative Service to ensure that any Efficient Train Pricing scheme results in improved system efficiency, does not discourage new investment and does not simply transfer costs among coal chain participants arbitrarily. Grandfathering arrangements should be extended to match asset life.

Modelling Results

The objective of clause 4.18 of the HVAU is to identify an efficient train configuration to deliver optimum utilisation of coal chain capacity and to ensure that the pricing unit is appropriate to encourage efficient consumption of network capacity.

The Hunter Valley Coal Chain (HVCC) is a complex system with multiple route options and heterogeneous features. In general, Aurizon believes that ARTC's analysis has applied a number of over-simplifying assumptions to identify an "Efficient Train" configuration. However, in such a complex system, the efficient train size is almost certain to be non-unique. Mandating a uniform train length in the HVCC would introduce a constraint that may be both inefficient and may not deliver additional capacity.

The results of the modelling work undertaken by ARTC and the HVCCC to determine a FIS are presented in ARTC's consultation documents. The documents claim that modelling results support the existence of two specific train configurations that will optimise the utilisation of coal chain capacity:

- an 'Axle Load' FIS (35t axle load, 1606m long, 11,800t payload);
- and a 'Long' FIS (30t axle load, 1914m length, 11,800t payload).

The results of ARTC's FIS modelling are reproduced below in Figures 4 and 7. Figure 4 presents the results from "Unadjusted" shipping queue scenarios and Figure 7 the results of the "Adjusted" shipping queue results.

It is not clear from Figures 4 and 7 that the nominated 11,800t payload FIS configurations result in the optimised utilisation of coal chain capacity. The lines in the graphs connecting the throughput results for the various payload scenarios for each given option are essentially flat, indicating that an increase in payloads above a certain threshold (somewhere around 8,036t) is relatively insignificant. The idea that the benefits of payload size 'plateau' at certain thresholds is also mentioned by ARTC in their consultation paper where they state:

> *"It is readily apparent from Figure 4 that the efficiency of trains, in terms of delivered coal volume, increases rapidly from the small train sizes, but reaches a fairly stable plateau… The results for Option 1 (Gunnedah Basin remains at 25 TAL) is very similar with a plateau being reached at the 8,036t trains and small gains arising beyond this".*

Figure 4: Volumes Delivered With Unadjusted Shipping Queue (mtpa)

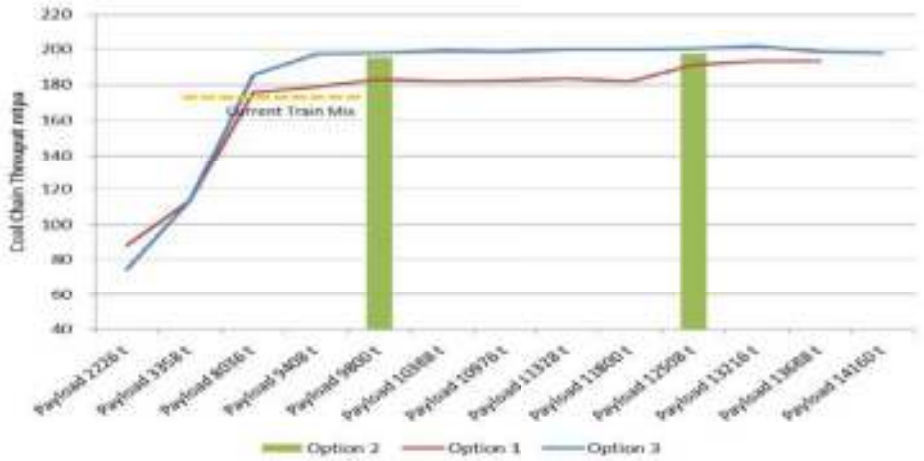

Figure 4 – Results indicating that above a certain threshold increased payload makes little difference

Figure 7: Indicative Benefit Beyond 208 mtpa

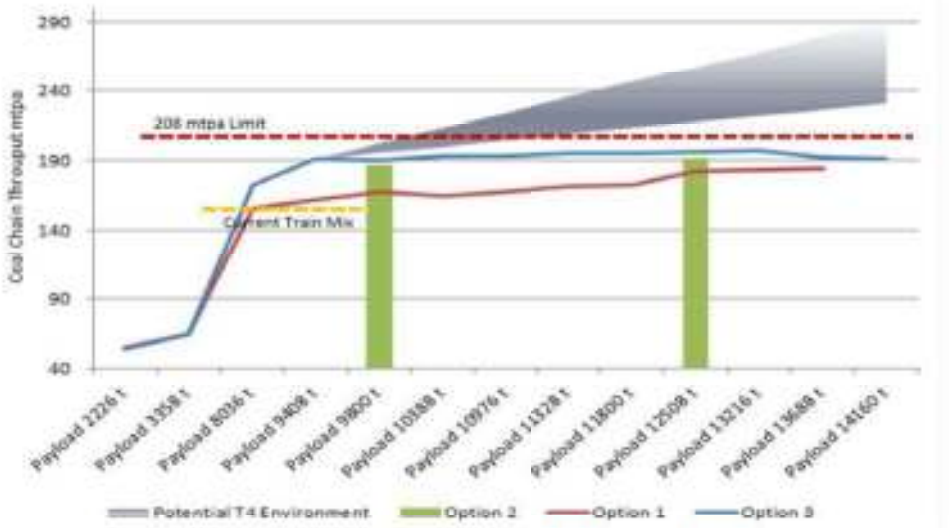

Figure 7 – Results highlighting benefit of upgrading infrastructure on Gunnedah branch. Qualitative hand-drawn argument used in place of quantitative analysis to support FIS nomination.

Rather than supporting the nomination of 11,800t payload FIS configurations, or even the notion that bigger is necessarily better, the quantitative analysis presented in Figures 4 and 7 appears to better support the idea that most system-wide gains are to be had by upgrading infrastructure on the Gunnedah branch.

The observation that throughput benefits plateau at certain thresholds becomes even more significant when considering that only one (apparently arbitrarily chosen) fleet size has been examined in ARTC's analysis. The location of the plateau point is certainly dependent on the total system fleet size chosen; larger fleet sizes will plateau at smaller payloads and smaller fleet sizes will plateau at larger payloads.

Additionally, the analysis has assumed that load point performance and infrastructure constraints have been enhanced in lock-step with payload increases. One likely problem with this approach is that any potential throughput benefits, due to payload increases, cannot be distinguished from the benefits due to improvements at load points and other infrastructure constraints.

Another, and potentially more significant, problem is that by modelling all load points and unload points to be able to accept trains of any size, it is not possible to predict the effect of train size on overall system velocity. A fixed cycle-time has been assumed for each of the scenarios examined in the analysis. However, in reality, as trains larger than prevailing system constraints are added to the system, the number of load point / unload point combinations (i.e. route options) available to them is reduced. As the number of route options available to trains decreases, train dwell is likely to increase resulting in a decrease in overall system velocity. This idea seems to be somewhat acknowledged in ARTC's consultation paper which states:

> *"Adjustments were made to load point daily capacity limits for each of the larger train configurations tested to ensure that the daily maximum equivalent peaking capacity of each load point was aligned to increments of 'whole consist size'. While this might not be capable of being achieved in reality, it is unlikely to have a significant negative impact on the results whereas the alternative is likely to under-report load point performance and hence coal chain throughput".*

A more realistic approach to estimating the benefit of different payload configurations would necessarily need to consider various fleet sizes as well as consider the effect of train size on overall system velocity.

In the absence of any substantial quantitative support for the chosen FIS configurations, ARTC instead relies on the qualitative hand-drawn addition to Figure 7 indicating that the results may look different for a different demand profile. This is not consistent with the 'robust' analysis required by clause 4.18 of the HVAU. Reliance on this analysis as the foundation for the proposed FIS cannot sensibly be maintained. In this respect, the FIS concept should be abandoned for its failure to satisfy the requirements of the HVAU and achieve its purpose.

Flaws in the Premise of an Efficient Train

Aurizon believes that benefits of innovation and variety in operations within the HVCC have been the result of the dynamic and competitive above rail market, supported by third party access and cost reflective pricing rather than through regulatory incentives.

The concept of establishing differential access charges in order to encourage above rail operators to invest in a particular train configuration is inconsistent with the object of third party access regulation. Third party access regulation should be directed at improving the efficient use of the below rail asset and ensuring that dependent markets (particularly the above rail market) are competitive.

Sustained and robust competition is the least cost way to promote efficiency and encourage operators to adapt to ever changing system constraints and technological limitations. The efficiency benefits of competition depend on a level playing field that allows operators to differentiate in order to compete on a range of elements, including reliability, surge capacity, flexibility and responsiveness, risk sharing and efficient contract management. To the extent that the service offering is differentiated between operators, the standard of service will improve with customers able to select the optimal mix of price and non-price value. Where customers value throughput or price over other elements of the service offering, competition will automatically drive a focus on that element of the service.

The success of third party access in promoting competition is evidenced by the fact that there are now five active operators in the Hunter Valley haulage market. Regulation of the monopoly infrastructure has enhanced competition through facilitating improved transparency and access to information, limiting impediments for market entry and reducing switching costs between competing operators.

Aurizon recognises that third party access and the resultant vertical separation of the market have made coordinated investment over the supply chain more difficult. However, regulatory arrangements that impose prescriptive conditions on the type and nature of supply chain services with the objective of promoting further coordination increase the risk of reducing competition and the benefits it has delivered.

While a vertically integrated market allows for coordinated investment across the supply chain, access regulation is not an efficient framework for attempting to achieve the same internal trade-offs and coordinated investments over the supply chain. Using regulation of the below rail asset as a de facto mechanism for directing investment and activities across the entire coal supply chain, including investment decisions related to rollingstock and private load point infrastructure, is not only inefficient but also introduces the risk of regulatory overreach and error. Aurizon believes that attempts to promote investment in a particular train configuration through the regulatory framework distorts the efficiency drivers inherent in a competitive market.

The Importance of Coordinating Infrastructure Investments

Given the inherent difficulties in predicting the future and the long economic life of rollingstock investments, Aurizon believes that optimum utilisation of coal chain capacity can only be delivered through prudent, well coordinated system-wide infrastructure investment decisions.

The results of the ARTC analysis shown in the Figures 4 and 7 indicate that a much greater system-wide benefit can be realised by upgrading the infrastructure on the Gunnedah branch than by increasing payloads toward a FIS ideal. However, the FIS configurations that have been nominated are unlikely to assist in prioritising and coordinating the infrastructure investment decisions required (e.g. what happens if Gunnedah branch line producers elect to increase axle load limits but central Hunter Valley producers instead choose to increase passing loop lengths?).

ARTC's proposal does not appropriately acknowledge the long economic life of rollingstock investments nor does it adequately consider the rollingstock assets currently in service. In nominating FIS configurations, ARTC effectively reallocates its cost recovery across users depending on their prior investment decisions. Furthermore, as the prevailing technological and system constraints at various points in the future evolve, ARTC will inevitably be required to revise earlier nominated FIS configurations, despite the long term investment decisions taken by operators in the interim. Such revisions will likely only redistribute costs across the HVCC rather than reduce costs for all stakeholders and improve efficiency.

Aurizon believes it is essential to continued investment in the competitive above rail market that access charging recognises the long term nature of rollingstock investment decisions and the lack of alternative uses for the rollingstock once investments are made by above rail operators.

The current proposal, based on current infrastructure assumptions, suggests that each time new infrastructure is introduced into the HVCC, the access charges and preferred efficient train configuration will change accordingly. This type of uncertainty is likely to either discourage further investment in above rail, thereby reducing competition, or will increase the costs associated with the higher risks of investing in a market subject to regulatory uncertainty.

Consequently, Aurizon considers that it is essential to acknowledge those earlier investment decisions through an extension of the grandfathering provisions, applied to the Initial Indicative Service, to the Final Indicative Service for the life of the assets.

Conclusions

Aurizon believes that the analysis that has recently been undertaken by ARTC does not support the Final Indicative Services that have been proposed.

Moreover, Aurizon believes that ARTC's over-simplified FIS analysis highlights likely flaws in the premise that such analysis can reliably identify a particular train configuration that will optimise the utilisation of coal chain capacity and that the envisaged optimised capacity utilisation can be brought about by the imposition of an associated Efficient Train Access Charge. Reliance on this analysis as the foundation for the proposed FIS cannot sensibly be maintained.

Given these considerations, Aurizon believes that a flat $/gtkm access charge will best support system efficiency and should replace the concept of the FIS. Given the inherent difficulties in predicting the future and the long economic life of rollingstock investments, Aurizon believes that optimum utilisation of coal chain capacity can only be delivered through prudent, well coordinated infrastructure investment decisions. The intrinsic drive within the competitive above rail market to evermore efficient configurations will then ensure operators adopt train configurations that best suit prevailing system constraints and improve overall system efficiency.

Considering the long economic life of rollingstock assets, it is appropriate to acknowledge earlier investment decisions at each application of a new Indicative Service to ensure that any Efficient Train Pricing scheme results in improved system efficiency and does not simply arbitrarily transfer costs among coal chain participants. To the extent that the FIS is maintained, grandfathering arrangements matching train asset life should apply in order to maintain appropriate investment incentives.