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04 September 2014

Mr Matthew Schroder  
General Manager  
Fuel, Transport and Prices Oversight Branch  
Australian Competition and Consumer Commission  
GPO Box 520  
Melbourne Vic 3001

Dear Mr Schroder

#### **ASSESSMENT OF ARTC's REVENUE ALLOCATION METHODOLOGY**

Hunter Valley Energy Coal Pty Ltd (HVEC) would like to thank you for the opportunity to respond to the ACCC's Discussion Paper of 29 May 2014 regarding ARTC's Revenue Allocation Methodology under the Hunter Valley Access Undertaking.

In order to assist the ACCC in its consideration of this matter, we have asked Frontier Economics to prepare a report that:

- Reviews ARTC's existing methodology for allocating revenue between different rail zones in the Hunter Valley
- Considers whether this methodology is consistent with regulatory best practice.

A copy of this report is attached for your consideration. At a high level, the report makes three key observations.

Firstly, Frontier Economics notes that its review of ARTC's existing costing and revenue allocation methodology has been hampered, to some extent, by its inability to view the actual model used by ARTC, to estimate fees it charges to users of the Hunter Valley rail network. Frontier Economics notes this is inconsistent with its experience in other matters involving the assessment of regulated charges, and it recommends that ARTC's model should be disclosed in the future, subject to appropriate confidentiality arrangements. It observes that this would enable users of the network to better understand and comment on the prices they are asked to pay for access to the rail network.

Secondly, Frontier Economics finds that, based on its review of material that is publicly available, that access charges appear to be set for users in Zone 3, in a way that does not cover all of the incremental costs that these users are likely to impose on the Hunter Valley rail network, in the long run. This is because Zone 3 users impose additional costs on Zone 1 of the network other than simply the direct operating and maintenance costs they generate in that zone. This is principally due to additional investments needed in the network in Zone 1, to expand capacity in response to growing demand in Zone 3.

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Thirdly, as a result of this, payments made to ARTC by users in Zones 1 and 2 have the effect of “cross-subsidising” payments made by users in Zone 3. In turn, this has a number of detrimental effects, including that ARTC’s revenue allocation methodology is:

- Likely to lead to inefficient investment in both railway infrastructure and coal mines in the Hunter Valley
- Likely to lead to the inefficient use of railway infrastructure in the Hunter Valley
- Unnecessary in order to meet ARTC’s legitimate business interests
- Discriminates in favour of both future and current rail users in Zone 3 in a way that is unlikely to aid efficiency
- Not in the interests of rail users in Zones 1 and 2.

If you would like to discuss this submission further, please do not hesitate to give me a call.



Yours sincerely

**Robert Hayes**

Manager Production Planning

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# **Assessment of ARTC's Revenue Allocation Methodology**

A REPORT PREPARED FOR HUNTER VALLEY ENERGY COAL

September 2014



# Assessment of ARTC's Revenue Allocation Methodology

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## Executive summary

Hunter Valley Energy Coal has asked Frontier Economics (Frontier) to prepare a report that:

- Reviews the Australian Rail and Track Corporation's (ARTC's) existing methodology for allocating revenue between different rail zones in the Hunter Valley
- Considers whether this methodology is consistent with regulatory best practice principles.

The Hunter Valley rail network is used by miners to transport coal from the Hunter region to export port terminal facilities at the Port of Newcastle.

For the purposes of determining access charges to the Hunter Valley rail network, ARTC defines three zones in its network – Zones 1, 2 and 3. When it comes to transporting coal to the Port of Newcastle, there are three categories of coal producer:

- Those located within Zone 1, who use access to the Z1 line to transport coal to port
- Those located within Zone 2, who use access to both the Z2 and Z1 lines to transport coal to port
- Those located within Zone 3, who use access to both the Z3 and Z1 lines to transport coal to port.

It follows, therefore, that all coal producers using the rail network transport coal over the Z1 line; while some will also transport coal over either the Z2 or Z3 line.

Our review of ARTC's existing costing and revenue allocation methodology has been hampered, to some extent, by our inability to view the actual model used by ARTC to estimate fees it charges to users of the Hunter Valley rail network. We would recommend that this model be disclosed in the future, subject to appropriate confidentiality arrangements, to enable users of the network to better understand and comment on the prices they are asked to pay for access to the rail network.

Based on our review of material that is publicly available, it would appear that access charges set for users in Zone 3 do not cover all of the incremental costs that they are likely to impose on the Hunter Valley rail network in the long run. This is because Zone 3 users impose additional costs on Zone 1 of the network other than simply the direct operating and maintenance costs they generate in that zone. This is principally due to additional investments needed in the network in Zone 1 to expand capacity in response to growing demand in Zone 3.

As a result of this, payments made to ARTC by users in Zones 1 and 2 have the effect of “cross-subsidising” payments made by users in Zone 3. In turn, this has a number of detrimental effects, including that ARTC’s revenue allocation methodology is:

- Likely to lead to inefficient investment in both railway infrastructure and coal mines in the Hunter Valley
- Likely to lead to the inefficient use of railway infrastructure in the Hunter Valley
- Unnecessary in order to meet ARTC’s legitimate business interests
- Discriminates in favour of both future and current rail users in Zone 3 in a way that is unlikely to aid efficiency
- Not in the interests of rail users in Zones 1 and 2.



# 1 Introduction

1 Hunter Valley Energy Coal has asked Frontier Economics (Frontier) to prepare a report that:

- Reviews the Australian Rail and Track Corporation's (ARTC's) existing methodology for allocating revenue between different rail zones in the Hunter Valley
- Considers whether this methodology is consistent with regulatory best practice principles.

## 1.1 The Hunter Valley Coal Chain

2 The Hunter Valley Coal Chain (HVCC) is the supply chain for coal delivery that links predominantly open-cut coal mines in the Hunter region in New South Wales with export port terminal facilities at the Port of Newcastle. It also links to domestic coal-powered fire stations in the Hunter Valley.

3 A key element in the HVCC is the existence and operation of a railway network that is used, amongst other things, to transport coal from mines in the Hunter region to the Port of Newcastle.<sup>1</sup> The railway line is comprised of three main segments:

- A line that runs from the Port of Newcastle to a junction point at Muswellbrook. For the purposes of this report, this is referred to as the "Zone 1" (or Z1) line
- A line that runs from Muswellbrook in a westerly direction toward Ulan. For the purposes of this report, this is referred to as the "Zone 2" (or Z2) line
- A line that runs from Muswellbrook in a more north-westerly direction toward Gunnedah. For the purposes of this report, this is referred to as the "Zone 3" (or Z3) line.

4 The Hunter Valley rail network is managed by the ARTC. The ARTC is a Commonwealth Government-owned entity that leases the Hunter Valley rail network from the New South Wales government under a 60-year lease that was granted on 5 September 2004.<sup>2</sup>

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<sup>1</sup> The ACCC notes "The network is also used by non-coal traffic, including general and bulk freight services (such as grain) and passenger services." See ACCC, *Australian Rail Track Corporation's Hunter Valley Rail Network Access Undertaking – Revenue allocation review* – Discussion Paper, 29 May 2014, at p. 5.

<sup>2</sup> ACCC, *op. cit.* at p. 5.

5 The ARTC is vertically separated and provides only a “below rail” service. We are advised there are 4 “above rail” haulage providers operating on the Hunter Valley rail network; and 11 coal producers operating from approximately 35 coal mines.

6 When it comes to transporting coal to the Port of Newcastle, there are three categories of coal producer:

- Those located within Zone 1, who use access to the Z1 line to transport coal to port
- Those located within Zone 2, who use access to both the Z2 and Z1 lines to transport coal to port
- Those located within Zone 3, who use access to both the Z3 and Z1 lines to transport coal to port.

7 It follows, therefore, that all coal producers using the rail network transport coal over the Z1 line; while some will also transport coal over either the Z2 or Z3 line.

8 Material provided to us by Hunter Valley Energy Coal indicates that:

- Z1 is the most heavily used line, with a capacity to run between 68 and 82 paths per day. It is also the shortest of the three lines, with a length of approximately 100kms. The ACCC also notes that due to increasing coal volumes since 2000, the Z1 line is now capacity constrained.<sup>3</sup>
- Z2 is the second-most heavily used line, with a capacity to run approximately 21 paths per day. We are also advised that the township at Ulan is approximately 276kms from the Port of Newcastle, and that the Z2 line is also capacity constrained.
- Z3 has historically been the least-used line, and has a capacity of 14 train paths per day. It is also the longest rail line, with the township of Gunnedah being approximately 364 from the Port of Newcastle.

9 Importantly, it would appear that while Z1 is presently capacity constrained, this has been partly caused by growth in the volumes of coal transported from Z3 in recent years. Further, future growth is expected in Z3 that will necessitate further investment in capacity on the Z1 line in order to ease congestion on this line. In this regard, the ACCC notes that:

ARTC notes that while the heaviest coal volumes are currently at the lower end of the Hunter Valley ... the expected growth in coal mining is along the Gunnedah Basin which is producing high rates of growth in percentage terms.

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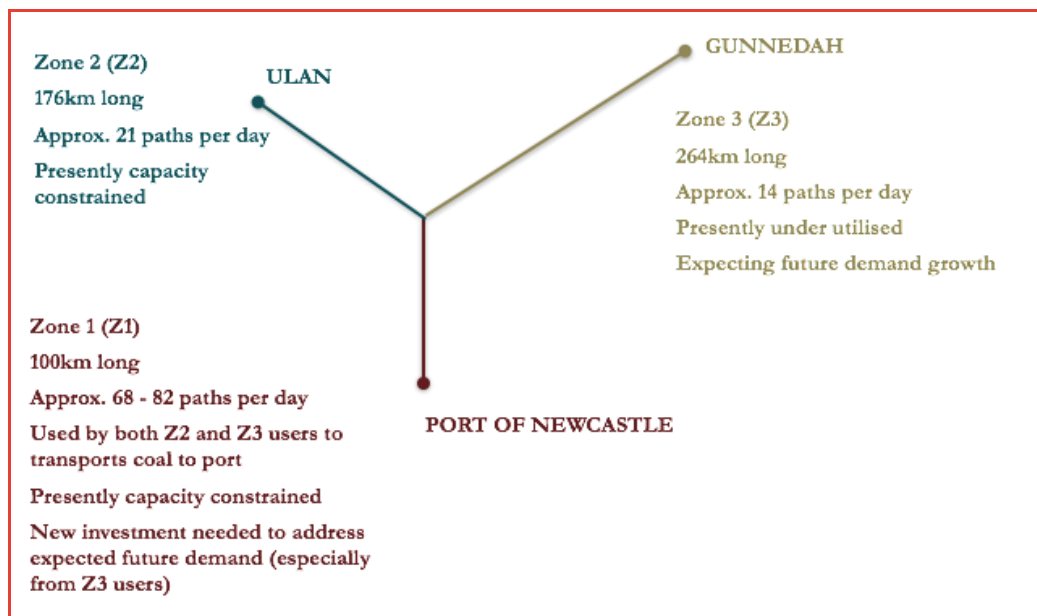
<sup>3</sup> ACCC, *op. cit.*, at p. 6.

The increase in coal volumes has necessitated investment in the network, in part to accommodate the expanding volumes in PZ3. In its 2013 Hunter Valley Corridor Capacity Strategy ARTC noted that 'coal demand on the (Gunnedah Basin) line has already increased significantly and is forecast to increase very rapidly. Considerable increase in capacity continues to be needed to accommodate this growth.<sup>4</sup>

10 This suggests that recent and expected growth in coal volumes in Zone 3 are pushing additional cost onto other users of the rail network in Zone 1. This is both in terms of increased capacity constraints, and the need for further capital investments that will need to be recovered from all users of Zone 1 in the long-term.

11 Figure 1 below sets out our understanding of some of the key features of the Hunter Valley rail network.

**Figure 1: Key features of the ARTC HVRN**



Source: Frontier Economics

## 1.2 The HVAU and the ACCC process

12 The terms and conditions under which the ARTC supplies access to its below rail services in the Hunter Valley rail network are governed by the HVAU, which was approved by the ACCC in June 2011. In determining whether to accept the undertaking, the ACCC was required to have regard to a number of matters set out in section 44ZZA(3) of the Competition and Consumer Act (CCA), including:

- the objects of Part IIIA of the CCA, which are to:

<sup>4</sup> ACCC, *op. cit.*, at p. 6.

- promote the economically efficient operation of, use of and investment in the infrastructure by which services are provided, thereby promoting effective competition in upstream and downstream markets; and
    - provide a framework and guiding principles to encourage a consistent approach to access regulation in each industry.
  - the legitimate business interests of the provider of the service
  - the public interest, including the public interest in having competition in markets (whether or not in Australia)
  - the interests of persons who might want access to the service
  - any other matters that the ACCC thinks are relevant.
- 13 In addition to these matters, the ACCC was also required to have regard to pricing principles specified in section 44ZZCA of the CCA, which provide that:
- regulated access prices should:
    - be set so as to generate expected revenue for a regulated services that is at least sufficient to meet the efficient costs of providing access to the regulated service; and
    - include a return on investment commensurate with the regulatory and commercial risks involved; and
  - access price structures should:
    - allow multi-part pricing and price discrimination when it aids efficiency; and
    - not allow a vertically integrated access provider to set terms and conditions that discriminate in favour of its downstream operations, except to the extent that the cost of providing access to other operators is higher; and
  - access pricing regimes should provide incentives to reduce costs or otherwise improve productivity.
- 14 The ACCC has recently released a Discussion Paper describing the approach used by the ARTC to determine access prices for users in the different zones in the Hunter Valley rail network. This involves what amounts to a “reallocation” of revenue that would otherwise be collected from users in Zone 3 for their use of the rail line in Zone 1 such that it is recovered from other users in Zones 1 and 2.
- 15 The ACCC has asked interested parties to comment on any matters relevant to the ARTC’s revenue allocation approach.

## 1.3 Structure of this report

Our report is structured so that:

- Section 2 sets out our understanding of ARTC's revenue allocation methodology
- Section 3 considers whether this methodology is consistent with the criteria set out in section 44ZCA(3) of the CCA that are used to assess access undertakings under Part IIIA of the CCA.



## 2 ARTC's revenue allocation methodology

16 In this chapter of our report, we briefly describe the methodology used by the ARTC to determine prices for access to lines in its rail network. Importantly, we observe that:

- The ARTC adopts a different approach to recovering its estimates of economic cost in Z1 and Z2 compared to that which it uses to recover costs in Z3. In particular, while it uses an “unders and overs” methodology to recover costs in Z1 and Z2, it uses a “loss capitalisation approach” to recover costs in Z3.
- The ARTC makes additional adjustments to its approach to determine revenues it collects from access seekers in different zones that has the effect of reducing the amounts it will need to recover from users in Z3, and increasing the amounts it recovers from users in Z1 and Z2.

17 It is this second “reallocation” of revenues that is the subject of the ACCC's Discussion Paper, and which raises concerns that we discuss in detail in section 3 of this report.

### 2.1 We have not been provided with access to ARTC's costing model

18 At the outset, it is important to note that we have been hindered in our ability to fully analyse the approach taken by the ARTC to determine the revenues it seeks to recover from individual access seekers. This is because we have not been provided with access to the model it uses to determine prices paid by individual access seekers. This creates two levels of concern:

- First, in order to understand the approach it has taken to recover costs from individual access seekers, we are reliant on the ACCC's descriptions of the ARTC's approach, as set out in the ACCC's Discussion Paper on this issue. In this respect, we have only been provided with qualitative descriptions of the ARTC's approach, and have not been able to inspect the actual model it has used. It is possible, therefore, that there are other adjustments made in ARTC's modelling that have material effects on its approach to setting prices that we are simply not aware of, and that might impact on our view of its approach.
- Second, even where we do understand the method employed by ARTC to determine the revenues it seeks to collect from individual access seekers, we are unable to see whether it has correctly applied this method in its model. That is, we have been unable to observe whether there are any errors in the formulations in the ARTC model that are materially affecting the revenues it seeks to collect from individual access seekers.

19 We find this lack of transparency surprising, and inconsistent with approaches to setting prices that we have observed for other regulated infrastructure services. In our experience, parties are typically able to have access to – and to interrogate – the models used by infrastructure service providers to determine the prices they must pay for regulated services. We would strongly recommend that, subject to appropriate confidentiality arrangements, the ARTC disclose any models and workings it has used to determine revenues it seeks to collect from individual access seekers for both existing and future periods.

## 2.2 ARTC uses an “unders and overs” methodology in Z1 and Z2; and a loss capitalisation model in Z3

20 Based on the ACCC’s Discussion Paper, it would appear that users of ARTC’s below-rail service are charged a “two-part tariff”. That is, each user is charged:

- A fixed fee that is meant to reflect a contribution towards the recovery of fixed operating costs and the depreciation of (and return on) assets. This is charged on a take-or-pay basis, and is referred to in the ACCC’s Discussion Paper as a “FCC charge”.
- A variable fee, which is meant to reflect recovery of the direct operating and maintenance costs of providing services to it. This is charged on a non-take-or-pay basis, and is referred to in the ACCC’s Discussion Paper as a “VCC charge”.

21 The ARTC pricing methodology would appear to:

- First, estimate amounts that it should be entitled to recover in each year that would enable it to recover the “economic” cost of providing its services in each zone over the lifetime of the relevant assets
- Second, compare this to the revenues it collects from the two-part tariffs referred to above
- Third, ensure that the VCC it charges each user covers the direct costs of providing services on each route to each user (this is the so-called “floor limit”)
- Fourth, compare the revenues it receives from the FCC to those amounts it considers it is entitled to recover as contributions towards its estimated fixed costs for that route.



22 The key issue raised in the ACCC’s Discussion Paper relates to cases where the amounts recovered from the FCC charges for a given zone are not equal to the amounts ARTC believes it is entitled to recover for that zone in a given year (as determined by its financial/economic cost model). Notionally, where:

- The combined FCCs initially allocated for use in Z1 and Z2 are not equal to the combined amounts it is entitled to recover across these two zones under the ARTC model, the difference is settled via an “unders and overs” methodology. This means that if the combined FCCs under-recover the combined estimated costs across these two zones, the ARTC will seek additional revenues from users in these zones. In contrast, if the combined FCCs over-recover combined estimates of costs in a period, the excess is returned/refunded to users in those zones.
- The FCC initially allocated for use in Z3 is not equal to the amounts it is entitled to recover under the ARTC model, the difference is taken into account via a “loss capitalisation model”. At present, Z3 is under-utilised and so FCC charges are unable to recover the economic costs ARTC has modelled for current periods. This means there is a deficit between the FCC and the economic costs for these periods in Z3. In the case of a typical cost allocation approach using a loss capitalisation model, this difference would be added to the capital base that the ARTC would then be expected to recover in future periods once Z3 reaches capacity. However, for the reasons discussed in section 2.3 below, the ARTC does not presently adopt this approach.

23 Box 1 below provides a stylised illustration of how the ARTC’s approach would notionally work to determine revenues that should be collected from users in different zones.

Box 1: Stylised illustration of notional ARTC revenue allocation methodology

Step 1 – Assume the ARTC’s economic model estimates the following amounts should be recovered from users in each zone in a given year:

Zone	VCC	FCC	
Z2	\$10m	\$20m	
Z3	\$5m	\$15m	
Z1 (1)	\$3m	\$8m	} \$20m
Z1 (2)	\$2m	\$6m	
Z1 (3)	\$2m	\$6m	

Nb Z1(1) refers to the revenues that should be collected from Z1 users in Z1; Z1(2) refers to

the revenues that should be collected from Z2 users in Z1 etc

Step 2 – Assume the ARTC is able to collect the following revenues from each user in each zone (nb. under its pricing methodology, its revenues must recover direct costs (i.e. the VCC must be fully recovered)). The resultant over or under-recovery of the FCC charge is shown in the final column.

Zone	VCC	FCC	Over/under recovery of FCC
Z2	\$10m	\$22m	+\$2m
Z3	\$5m	\$4m	-\$11m
Z1 (1)	\$3m	\$9m	} \$23m +\$3m <sup>5</sup>
Z1 (2)	\$2m	\$7m	
Z1 (3)	\$2m	\$7m	

In these circumstances, if the notional methodology were applied without the ARTC's second round of revenue allocations (as discussed in section 2.3 below), the following would occur:

- The combined \$5m over-recovery<sup>6</sup> in Z1 and Z2 would be returned to Z1 and Z2 users under the overs and unders methodology
- \$11m would be added to the loss capitalisation measure in the asset base for Z3 users.

Source: Frontier Economics

## 2.3 ARTC reallocates revenue from Z1 to Z3

24 In practice, however, ARTC does not simply follow the method set out in section 2.2 above. Instead, it makes further adjustments to its revenue allocation methodology. When determining whether FCC revenues recover estimates of economic cost, the ARTC:

- Does not set FCC revenues it receives from Z3 users in Z1 against the estimates of economic cost in Z1
- Instead takes revenues from Z3 users in Z1 and sets them against the economic costs it considers it is entitled to recover in FCC charges in Z3.

<sup>5</sup> This is estimated as the sum of the difference between FCC revenue and cost for each user in Z1 (i.e. \$9m-\$8m for Z1(1) + \$7m-\$6m for Z1(2) + \$7m-\$6m for Z1(3) = \$1m + \$1m + \$1m = \$3m).

<sup>6</sup> That is, the \$2m over-recovery from Z2 plus the total \$3m over-recovery from all users in Z1.

## ARTC's revenue allocation methodology

25 The effect of this is two-fold:

- First, it means there is less FCC revenue in Z1 to set against ARTC’s estimates of economic cost in that zone. This increases the amount of revenues the ARTC will recover from Z1 and Z2 users in Z1. That is, it will either reduce the amount of over-recovery returned to Z1 and Z2 users; or increase the amount of under-recovery collected from them under the “overs and unders” methodology.
- Second, it will increase the FCC revenue deemed to have been recovered in Z3. In turn, this will reduce the loss incurred in Z3, and thereby reduce the amount added into the asset base under the loss capitalisation model. This will have the effect of reducing the amounts of revenue the ARTC needs to collect from Z3 users in future periods once this zone in the rail network becomes capacity constrained.

26 A stylised example describing how the revenue allocation methodology works is set out in the box below.

**Box 2: Stylised illustration of ARTC revenue allocation methodology**

The revenues notionally collected using the example in Box 1 above are repeated immediately below.

Zone	VCC	FCC	Amended Over/under recovery of FCC
Z2	\$10m	\$22m	+\$2m
Z3	\$5m	\$4m	-\$11m
Z1 (1)	\$3m	\$9m	} \$23m +\$3m <sup>7</sup>
Z1 (2)	\$2m	\$7m	
Z1 (3)	\$2m	\$7m	

Rather than collect revenues in this way, however, ARTC would take the \$7m FCC charge recovered from Z3 users in Z1 (which is shaded in the table above), and reallocate this toward the recovery of the FCC in Z3. The effect of this would be two-fold:

- it would convert a \$5m combined over-recovery across Z1 and Z2 into a combined \$2m under-recovery across these zones. This would then be

<sup>7</sup> This is estimated as the sum of the difference between FCC revenue and cost for each user in Z1 (i.e. \$9m-\$8m for Z1(1) + \$7m-\$6m for Z1(2) + \$7m-\$6m for Z1(3) = \$1m + \$1m + \$1m = \$3m).

recovered from users in Z1 and Z2 leading to them paying more than would otherwise be the case

- it would reduce the \$11m otherwise entered into the loss capitalisation account in Z3 to only \$4m for this period. This will have the effect of reducing the amounts the ARTC would seek to recover from Z3 users in future periods once the network becomes capacity constrained and can recover costs.

*Source: Frontier Economics*

### 3 The ARTC methodology is not consistent with regulatory best practice

27 It should be noted at the outset that we take no objection to a cost recovery scheme which comprises both an “unders and overs” and cost allocation approach to different components of the relevant infrastructure (as contemplated generally by the HVAU). What we are concerned about is the manner in which the ARTC has sought to apply the cost allocation methodology in practice.

28 In providing our assessment of the ARTC’s revenue allocation methodology, we have assessed its approach against the criteria set out in section 44ZZCA(3) the CCA, and referred to in section 1.2 of this report.

29 Our review of the information available on the ARTC revenue allocation methodology leads us to conclude that its approach is:

- Unlikely to ensure revenues from users in Zone 3 recover the incremental costs imposed on the rail network by these users
- Likely to lead to inefficient investment in both railway infrastructure and coal mines in the Hunter Valley
- Likely to lead to the inefficient use of railway infrastructure in the Hunter Valley
- Unnecessary to meet ARTC’s legitimate business interests
- Discriminates in favour of both future and current rail users in Zone 3, and is therefore not in the interests of rail users in Zones 1 and 2
- Does not involve multi-part pricing and price discrimination in a way that is likely to aid efficiency.

30 Each of these matters is discussed in more detail below.

#### 3.1 The ARTC revenue allocation methodology raises questions about the appropriate cost tests

31 The HVAU specifies that the ARTC will set access prices for users of the Hunter Valley rail network that ensures it receives revenue that lies between floor and ceiling limits. In this regard, section 4.2 of the HVAU specifies that:

- Access revenue from every access holder must at least meet the Direct Cost imposed by that Access Holder (the Floor Limit)
- The HVAU caps the maximum amount of revenue that ARTC is entitled to receive at the Economic Cost of providing services (the Ceiling Limit).

32 ARTC notes that the purpose of the Floor Limit:

**The ARTC methodology is not consistent with regulatory best practice**

... is to avoid cross-subsidisation, that is, each traffic must at least cover the costs that would be avoided if it did not use the network.<sup>8</sup>

33 Direct Cost is defined in the HVAU to mean:

... efficient maintenance expenditure, and other costs that vary with the usage of the network but excluding Depreciation.<sup>9</sup>

34 Separately, the HVAU also includes an objective that for each segment or group of segments, access revenue from access holders should, as an objective, meet the incremental cost of those segments.

### 3.1.1 Principles of incremental cost and cross-subsidisation in the economics literature

35 In the economics literature, incremental costs are the additional costs that a firm incurs in providing a service relative to it not providing that service at all. In this regard, Faulhaber states that the:

The incremental cost of a service or group of services is the additional cost of providing that service or group of services over and above the cost of providing all the remaining services.<sup>10</sup>

36 Where a firm provides a service to a number of parties, the incremental cost of providing the service to only one of these parties (say A) is the difference in total cost between providing the service to all parties minus the total cost of providing the service to all parties other than A. To illustrate, if the total cost of providing the service to firms A, B and C were \$100; but the cost of providing the service only to B and C is \$80, then the incremental cost of providing the service to A is \$20.

37 It is commonly understood in the literature that the incremental costs of providing a service to one firm can be determined by calculating those costs that would be *avoided* if that service were no longer provided to the firm. This is consistent with the definition of incremental costs referred to by the ACCC in its Discussion Paper, where it notes that:

Incremental costs are defined as all costs that could be avoided in the medium term if a Segment was removed from the network.<sup>11</sup>

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<sup>8</sup> ARTC, *Revenue Allocation Review Submission*, at p. 4.

<sup>9</sup> ACCC, *op. cit.*, at p. 9.

<sup>10</sup> Faulhaber, G., *Cross-subsidy Analysis with more than Two Services*, A note for Sprint, August 2002 at p. 1. The note can be found at: <http://assets.wharton.upenn.edu/~faulhabe/cross%20subsidy%20analysis.pdf>

<sup>11</sup> ACCC, *op. cit.*, at p. 9.

**The ARTC methodology is not consistent with regulatory best practice**

38 This is also consistent with the approach taken by the ACCC to define incremental costs in other regulated industries, such as telecommunications where it notes that:

[Total service long-run incremental cost] TSLRIC is the incremental or additional costs the firm incurs in the long term in providing the service, assuming all of its other production activities remain unchanged. It is the cost the firm would **avoid** in the long term if it ceased to provide the service.<sup>12</sup> [emphasis added]

39 Similarly, in relation to post, the ACCC states that:

The incremental cost of a service is defined as the additional cost incurred in producing that service (in addition to the other services the firm produces). Another way of considering incremental cost is to ask what costs would be avoided, in the long run, if the service were no longer offered.<sup>13</sup>

40 It follows, therefore, that the incremental costs of providing access to a rail service to an individual user would be equal to the costs that would be avoided if that user were no longer provided access to the service.

41 Importantly, however, it is clear that direct cost does not have the same meaning as incremental cost. That is, while direct costs are a form of incremental cost, they are in many cases merely a subset of incremental costs. This is because, in the long-run, more than simply direct costs may be able to be avoided if a service (or group of services) or a segment is no longer provided.

42 The distinction between incremental costs and direct costs is clear in other ACCC observations, including those in relation to post where it makes clear that incremental costs involve both direct and attributable costs:

- Costs that are direct to a particular service will be incremental to that service as they are 'solely associated with a particular service' and would therefore be avoided if that service were no longer offered.
- A cost that is attributable to a group of services is incremental to that combination of services (i.e. if that combination of services were no longer offered, the cost would be avoided) and may be incremental to a particular individual service. The extent to which a particular attributable cost is incremental to a particular individual service depends on the extent to which Australia Post can avoid this particular cost by not providing that particular service.<sup>14</sup>

43 In our view, it is clear that, in the long-run, all costs that could be avoided if users in a rail segment were no longer provided with access to a service should fall within the meaning of incremental costs. This would include *both* variable and fixed (including depreciation) costs that would be avoided if the segment were no

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<sup>12</sup> ACCC, *Access pricing principles – Telecommunications, a guide*, July 1997 at p.28.

<sup>13</sup> ACCC, *Tests for assessing cross-subsidy*, June 2014 at p. 5.

<sup>14</sup> *Ibid.*

longer provided. This is an important distinction because, as noted above, the definition of Direct Costs applied by ARTC explicitly excludes depreciation. This would appear to include depreciation even if that relates to capital costs that could be avoided in the medium term (or long-run) if users in a particular zone (e.g. Zone 3) were no longer provided with a rail service.

44 It is also well understood in the economics literature that a cross-subsidy occurs to an individual (or group of individuals) when that individual (or group of individuals) is charged a fee that does not cover its incremental costs – and where someone else is charged more than their stand-alone costs of providing a common service. In this regard, a classic article in the economic literature relating to the meaning of cross-subsidies was published by Professor Gerald Faulhaber in 1975.<sup>15</sup> In his paper, Professor Faulhaber considered the example of a rail network that had added a new line to its rail network. He then uses this example to consider under what conditions prices for the new individual (or incremental) rail line connecting a town to the network would involve a cross-subsidy. In this respect, he notes that:

Provided the revenues realized from providing rail service to the town exceed the added costs, the answer must be in the negative.<sup>16</sup>

45 In a note further explaining his seminal article on cross-subsidies, Professor Faulhaber states that:

... if the revenues of a regulated enterprise just cover total economic costs, then all prices are subsidy-free if the revenues of each service *and each group of services* is at least as great as the incremental cost of that service or group of services ...<sup>17</sup>

46 In other words, if the revenue from one service (or group of services) of a multi-product firm covers the incremental (or additional) costs of providing that individual service (or group of services), then that service (or group of services) can not be said to be subject to a cross-subsidy.

### 3.1.2 ARTC's revenue allocation methodology appears to involve a cross-subsidy to users in Zone 3

47 We contend that ARTC's revenue allocation practices and application of the tests with respect to users in Zone 3 do not ensure that no cross-subsidisation occurs.

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<sup>15</sup> Faulhaber, G., "Cross-Subsidization: Pricing in Public Enterprises", *American Economic Review*, 65(5) December 1975, pps. 966-977.

<sup>16</sup> *Ibid.*, at p. 966.

<sup>17</sup> Faulhaber, G., *Cross-subsidy Analysis with more than Two Services*, A note for Sprint, August 2002 at p. 1. The note can be found at: <http://assets.wharton.upenn.edu/~faulhabe/cross%20subsidy%20analysis.pdf>

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48 This contention follows simply from the notion that the avoidable cost of serving mines located in Zone 3 with access to track located in Zone 1 is not restricted to the direct operating and maintenance expenses of supplying Zone 3 users in Zone 1 if there are some capacity constraints in Zone 1. If such constraints exist, then it implies that the avoidable costs of supplying users in Zone 3 will include the costs of the capacity used to supply these users. In other words, if their demand did not exist, the network in Zone 1 would have lower capital costs in the medium term and the long run. It would only be appropriate to ignore the costs of such capacity if there was substantial excess capacity in the network, as then the long run costs of supplying users in Zones 1 and 2 would be no different if Zone 3 users were excluded from using Zone 1 in the rail network.

49 Our understanding is that ARTC *has* been investing in further capacity in Zone 1, and will continue to invest in further capacity in the future.<sup>18</sup> Further, we understand that this additional investment is being driven (at least in part) by increasing use of Zone 1 by users located in Zone 3. These costs – which are incremental or avoidable in relation to users located in Zone 3 – should be recovered from those users. As it stands, under the revenue allocation methodology it is (at best) unclear how much of the incremental cost will be recovered from users in Zone 3. It would be inefficient for these capital costs to be recovered by users in Zone 1 and Zone 2, as we now go on to describe.

### 3.2 The ARTC methodology is likely to create incentives for inefficient investment decisions

50 In considering efficient investment, it is necessary to consider investment in both the markets for the supply of below rail services, and in the markets up or downstream of the railway network (in this instance, the supply of coal).

51 Efficient investment in below rail services is promoted by regulation that allows the access provider to recover its efficient costs of supply on each route section. Efficient investment in downstream markets requires both that costs reflect efficient costs and that the pricing regime limits access providers' ability to appropriate the sunk investments of downstream firms (i.e. in mines).<sup>19</sup>

52 The current scheme of cost recovery allows the ARTC not to recover the (long run) efficient incremental costs of supplying services in Zone 1 to mines located in Zone 3. Users in Zones 1 and 2 currently cover all capital costs in Zone 1 – even though the use of the zone by users in Zone 3 is adding additional capital

<sup>18</sup> ARTC, *op. cit.*, p. 15.

<sup>19</sup> On the first element, see Australian Competition Tribunal, *Re Telstra Corporation Ltd (No 3) [2007]*, at 164. On the second element, see Darryl Biggar, *Is Protecting Sunk Investments by Consumers a Key Rationale for Natural Monopoly Regulation?*, at p. 2, available at: <https://www.accc.gov.au/system/files/Darryl%20Biggar%20paper.pdf>

costs to the build of Zone 1 of the rail network. While eventually there is an expectation that Zone 3 users will recover some of the capital costs in Zone 1<sup>20</sup>, there appears to be no intention for these users to recover all of their incremental costs in Zone 1.

53 This system of cost recovery seems to favour investment in Zone 3 rather than in Zones 1 and 2, even where the marginal costs of producing coal are the same. Indeed, the ARTC appears to suggest that this is a favourable outcome of its scheme, as it encourages entry and hence the growth and development of new coal basins.<sup>21</sup>

54 Economic efficiency is ultimately about maximising value. Maximising value comes from finding the largest gap between the costs of extracting and shipping the coal and the market price of coal. The pricing of below rail services should facilitate the achievement of this efficiency. In contrast, it would be undesirable to price below rail services to encourage the entry of new mines in Zone 3 at the expense of existing mines in Zones 1 and 2, or new mines located in Zones 1 and 2.

55 Further, the revenue allocation scheme seems to offer little certainty to downstream firms about the access provider's efficient costs of supply on particular route sections. Nor does it appear to effectively constrain the ARTC from expropriation from downstream producers that are particularly successful, in order for the ARTC to achieve other objectives such as the development of new mines. These firms might, for example, be required to pay all capital costs on segments in Zones 1 and 2, while firms located in Zone 3 have the advantage that they are not required to contribute to the capital costs of Zone 1, even where some of those costs are incremental to their use.

### 3.3 The ARTC methodology is inconsistent with the efficient use of infrastructure

56 The efficient use of infrastructure is largely determined by the relationship of charges to the marginal costs of supplying the infrastructure. That is, the most efficient use of existing infrastructure will result where users face the marginal cost of carrying an extra tonne of coal (or carriage, or train, depending on the particular unit of output).

57 It appears that, in general, the ARTC pricing methodology may not hinder the efficient use of below rail infrastructure in the short-run. This is because its variable charges are designed to reflect variable (direct) costs. However, the

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<sup>20</sup> ARTC submission, p. 14.

<sup>21</sup> Ibid. p. 2.

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current cost recovery scheme does not appear to promote the allocative efficiency of resource use more broadly in the long-run. This is because the ARTC's costing and revenue allocation methods appear to involve a cross-subsidy from Zone 1 and 2 users to users in Zone 3. In turn, this means that the ARTC approach will encourage the extraction and transport of coal that is higher cost – in Zone 3. ARTC explicitly recognises this when it says it negotiates a cost of access that reflects a balance between:

promoting the development and expansion of the Gunnedah Basin... and the recovery of a reasonable level of the cost of recent investment in PZ3...<sup>22</sup>

58 It follows, therefore, that the methodology and pricing decisions:

- (a) do not maximise the economic value of the coal resources; and
- (b) result in patterns of usage of the network that are not consistent with those which would maximise economic efficiency overall.

### 3.4 ARTC's approach discriminates against users in Zones 1 and 2 in a way that does not aid efficiency

59 It is clear from our examination of material on ARTC's revenue allocation methodology that its approach does discriminate in favour of Zone 3 users, and against users in Zones 1 and 2. This is because it appears to effectively ensure that users in Zone 3 presently make no contribution toward the recovery of the capital costs associated with the provision of services in Zone 1 – even if these costs could be avoided if users in Zone 3 were no longer provided access to the rail network. It instead ensures that these costs are recovered from users located in Zones 1 and 2.

60 It is true that the pricing principles in section 44ZZCA of the CCA allow for multi-part pricing and price discrimination when it aids efficiency. However, for the reasons set out in section 3.3 above, it is not our view that the form of price discrimination employed by ARTC does aid efficiency. Indeed, where ARTC's revenue allocation approach leads to a cross-subsidy from users in Zones 1 and 2 to users in Zone 3, it is likely to lead to inefficiency in the use of and investment in the rail network.

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<sup>22</sup> ARTC, *op. cit.*, at p. 16.

### 3.5 The ARTC methodology is not in the interests of persons who might want to access

61 The Australian Competition Tribunal (Tribunal) has previously considered the meaning of the interests of persons who have a right to use telecommunications access services under Part XIC of the CCA. In relation to the provision of a particular telecommunications services (a line sharing service), the Tribunal found that:

The interests of persons who have a right to use the LSS, access seekers, are served by an access price that enables them to compete on their merits (that is, on the basis of their own efficiency) in downstream markets.<sup>23</sup>

62 In our view, the revenue and costing allocation approach adopted by the ARTC has the potential to inhibit the ability of users of the rail network to compete on their merits in downstream markets. In this respect, firms that are less efficient at extracting coal and transporting it to export markets should not be able to compete and survive in downstream markets on the basis of any price discrimination with respect to the provision of access to railway services. The pricing approach adopted by the ARTC does, however, have the potential to allow this to occur. This is because it involves coal miners in Zones 1 and 2 cross-subsidising coal miners in Zone 3. It also has the effect of raising the marginal costs of users in Zones 1 and 2 relative to those in Zone 3 even when users in Zones 1 and 2 may not impose any greater marginal costs on ARTC than those in Zone 3.

63 In our view, therefore, it is not in the interests of users (i.e. persons) in Zones 1 and 2 that do not operate in Zone 3 to either:

- Cover in total the capital costs involved in the provision of rail services in Zone 1 in a way that ensures users in Zone 3 make no contribution toward the capital costs of Zone 1
- Provide a cross-subsidy to users in Zone 3 by footing the bill for investments to increase the capacity of Zone 1 to accommodate use of the rail network in that zone by users in Zone 3.

### 3.6 The ARTC methodology is not necessary to meet its legitimate business interests

64 The Tribunal has, on a number of occasions, had cause to consider what is meant by “the legitimate business interests” of an access provider in the context of its assessment of a number of telecommunications access price undertakings

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<sup>23</sup> *Re: Telstra Corporation Limited* (2006) ATPR 42-121, at para 138.

provided by Telstra. In this regard, the Tribunal found in *Telstra Corporation Limited [2006]* at para [89] that:

... legitimate business interests require that Telstra be allowed to recover its costs of supplying ...[a service] ... and achieve a normal return on its invested capital .... It is a reference to the interest of a carrier in recovering the costs of its infrastructure and its operating costs and obtaining a normal return on its capital.

65 We accept that ARTC should be entitled to recover the costs of its investment in its rail network (inclusive of a normal return on its capital investments) where market conditions allow this to occur.

66 We also accept that ARTC's revenue allocation methodology is not intended to ensure it is able to recover more than its costs (inclusive of a normal return on its investment). In this respect, the revenue allocation methodology would appear to simply reallocate the recovery of capital costs between different users of its rail network.

67 We would not accept, however, that ARTC's revenue allocation methodology is necessary for it to meet its legitimate business interests. The effect of its revenue allocation methodology appears to be to reduce the size of its capitalised losses in Zone 3 in current periods while increasing the amount of capital costs it recovers from users in Zones 1 and 2. While such a method will increase the speed with which ARTC is able to recover its costs, it is not in our view necessary to ensure it is able to recover its costs in the long-run.

68 In our view, the loss capitalisation model (LCM) established for Zone 3 provides an adequate measure that enables ARTC to recover, over time, its costs of providing services in Zone 3 (and indeed across all three zones in its network). The issue here is essentially one of timing, in that the current method allows for a smaller LCM and a faster recovery of the economic costs of the entire network. However, it is equally available to ARTC to recover the efficient level of costs from Zone 3 users via the LCM. To the extent that the LCM does not guarantee cost recovery in Zone 3, then this is a risk that the infrastructure owner should be prepared to bear – not users in Zones 1 and 2.

69 Further, it is not clear to us that ARTC's legitimate business interests extend to it recovering the costs of infrastructure from Zone 1 users via cross subsidies to users in Zone 3 (to the extent that Zone 3 users do not recover the incremental costs of their use in Zone 1).

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