



Costing Principles

Explanatory Supporting Document

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1. Introduction

This document is a supporting document to Arc's Costing Principles submitted to the Regulator on 19th March 2024. The primary purpose of this document is to provide additional explanatory comments for the purpose of assisting the Regulator in making its determination on the Costing Principles. Additionally, this document is intended to provide greater transparency to Access Seekers and Access Holders regarding the process Arc will work through with the Regulator to enable the Regulator to efficiently discharge its obligations under the Code. This document is not exhaustive and the explanatory comments are general in nature. Capitalised terms used in this document have the same meaning given to them in the Costing Principles, unless specified otherwise.

Arc took a "clean slate" approach in developing the Costing Principles, considering the best approach to address the requirements of the amended Code. The amended Code requires a move away from the theoretical nature of a GRV methodology, to a DORC methodology which has a direct link to the actual business decisions made in managing the Railway Infrastructure. Given the increased maturity of Arc's business processes, data collection and asset management, in addition to the Code amendments, Arc acknowledges an increased level of detail will be required for both Arc and the Regulator to meet their obligations under the Code.

1.1 The Railway Owner

No additional comments.

1.2 Purpose

The Costing Principles are intended to describe the general principles, rules and practices Arc will apply in preparing certain matters for submission to the Regulator and are not designed to be prescriptive in accounting for every possible set of circumstances. Arc will provide supporting material demonstrating the basis of each submission, including the efficiency of expenditure, to the Regulator at the relevant approval stage to support its submissions, as required by the Code. The Regulator will determine the sufficiency of the supporting information based on the circumstances at the time.

Arc will work with the Regulator over the 12 months from the Regulator's determination of Costing Principles to provide the supporting information necessary to enable the Regulator to make its determination.

1.3 Scope of these Costing Principles

No additional comments.

1.4 Definitions

- Capital Costs – the definition for Capital Costs was taken from clause 2(1), Division 1 of Schedule 4 of the Code. Only subclause (1) of clause 2 was utilised as this was considered the full definition of Capital Costs. Subclause (2) was considered a clarifying statement only, specifying items to be included for the purpose of that specific clause.
- Contributed Capital – for the purposes of the Costing Principles additional wording was added to this definition to support the definition described in the Code, clarifying the application of Contributed Capital in relation to historic Railway Owners of the Railway Infrastructure, distinct and separate to third party contributions.

- Depreciation Schedule – for the purposes of the Costing Principles additional wording was added to this definition to reference additional aspects of depreciation which Arc will action as required by the Code. This includes annual depreciation required to determine annual costs (clause 47K(1) and clauses 9(1) and 10(1), Division 2 of Schedule 4 of the Code) and non-uniform depreciation (clause 47K(6) of the Code).
- Standard Effective Life – describes the assumed life of a standard asset, utilised in a standard way, which will form the basis of Arc's assumed Economic Life. Arc has not attempted to specify the Standard Effective Life of each asset in all possible scenarios for each Route Section. Where the specific circumstances dictate at the time that an asset has a different Economic Life to the Standard Effective Life as listed, Arc will submit this to the Regulator for approval with supporting material demonstrating the basis. As detailed in section 3.5 of the Costing Principles, the Railway Owner will not change an asset's Economic Life or relevant depreciation more than once per Relevant Period.
- Additionally, for the purposes of the Costing Principles various definitions include wording additional to that included in the Code to clarify the specific organisation, matter or expenditure which the Code refers to in a general manner. The definitions with this additional clarity include Operating Expenditure, Proposal, Railway Network, Railway Owner, Regulator, Route and Route Section.

1.5 Interpretation

No additional comments.

2. Initial RAB

2.1 Purpose

The methodology for determining the Initial RAB was developed in conjunction with external expert economic advice and is designed to take advantage of the detailed data available to Arc in relation to the Railway Infrastructure. Due to the granular asset data Arc now has available, the methodology outlined in the Costing Principles is deemed the most effective and accurate method for calculating the Initial RAB.

Through its Digital Twin, Arc can identify individual assets, such as the number and type of sleepers within a Route Section. This detailed inventory data will enable Arc to accurately reconcile specific assets as they are installed, replaced or removed from the Network on an ongoing basis to ensure development of accurate costs and avoidance of Double Counting. To enable accurate reconciliation of specific assets in the future, it is appropriate to first identify the actual assets existing in the Railway Infrastructure before adjusting for Contributed Capital, MEA and optimisation.

The methodology outlined in the Costing Principles is only applicable for determining the Initial RAB. Section 3 of the Costing Principles outlines the process Arc will undertake to determine the Updated RAB annually.

2.2 Valuation Date

The Code specifies each Relevant Period as a financial year ending on 30 June. Given the Initial RAB will be submitted in approximately May 2025, towards the end of the financial year the Code uses as the first Relevant Period, Arc considered 31 December 2024 to be the most efficient Valuation Date with a relatively

simple half year adjustment then required for the first Updated RAB. If this date is no longer the most appropriate, Arc included the possibility that the Regulator and Arc could agree a different date.

2.3 Replacement Cost

In determining the asset replacement cost used in the Initial RAB, Arc expects to utilise relevant market tested rates and will provide related supporting material to the Regulator at the relevant approval stage.

2.4 Contributed Capital

The value of the asset that has received Contributed Capital will be adjusted, however the asset itself will remain in the RAB enabling Arc to accurately reconcile specific assets as they are installed, replaced or removed from the Network on an ongoing basis to ensure development of accurate costs and avoidance of Double Counting. Examples to illustrate the intended adjustment for Contributed Capital are as follows:

- Assume a third party has historically contributed \$100m to fully fund the construction of a Railway Infrastructure asset which has a MEA replacement cost of \$200m at the Valuation Date. In this circumstance, the Initial RAB will be adjusted to remove the full \$200m value of the asset at the Valuation Date.
- Assume a third party has historically contributed \$50m towards the construction of a \$100m Railway Infrastructure asset, funding 50% of the total asset. The MEA replacement cost of the total asset at the Valuation Date is \$200m, double the value at the time of the investment. In this circumstance, the Initial RAB will be adjusted to remove 50% of the full value of the asset at the Valuation Date, being an adjustment of \$100m.

2.5 Optimisation

In determining the optimised asset configuration, Arc expects to take steps such as:

- identify and verify redundant assets, including assets which a rational commercial investor would not invest in to safely and efficiently deliver the required and foreseeable demand;
- assess MEA capability against existing asset capability to identify any technical superiority;
- assess demand forecast to verify any required changes in service capability of assets;
- determine the value of the optimisation; and
- adjust the replacement cost by the optimisation to calculate the optimised replacement cost.

The optimisation seeks to be that which a theoretical new entrant would undertake to provide a Network capable of providing capacity currently required and reasonably projected to be required in the near term. This includes consideration of factors including tonne axle load, number of train paths, train path journey times, Network availability, maximum track speeds and standard of maintenance. Current requirements are informed by the highest prevailing standard Arc has currently contracted to, or agreed with, Access Holders. Reasonably projected demand includes these standards, as reasonably projected to be required by operations which Arc has sufficient information to believe are probable future Access Holders in typical “feasibility to commencement” timeframes.

Where the modernised, optimised network standard is expected to result in a material difference in ongoing operating and maintenance costs compared to that of the actual Railway Infrastructure, Arc will calculate the net present value of estimated operating expenditure savings. The Initial RAB will be adjusted by this net present value as part of the optimisation stage.

2.6 Construction Approach

Arc has used more descriptive wording in the updated Costing Principles to more accurately and transparently describe the intended greenfield construction methodology to be applied. The intended application is that while the Railway Infrastructure is assumed to be developed from a greenfields site, it should have regard to the current surrounding land use and development.

As such, the “proximate non-Railway Network infrastructure” refers to the actual features surrounding the Railway Infrastructure which must be considered in the asset replacement cost. For example, this may include considerations such as above ground power lines, underground water pipes, application of environmental legislation or the existence of residential buildings adjacent to the Railway Network.

The construction approach applied will assume a realistic duration, expected to be a single stage project with appropriate sub-projects to reflect realistic market capability.

2.7 Accumulated Depreciation

When assessing the projected life of an asset, Arc expects to:

- where possible, identify the asset commissioning date for the relevant asset;
- identify the nominal remaining physical asset life, given the Standard Effective Life for that asset; and
- review the nominal remaining physical asset life based on the asset's condition and adjust the projected life of the asset depending on:
 - the current asset condition;
 - the expected remaining life of the asset given current and expected use; and
 - any planned earlier replacement.

One example to illustrate the intended application of accumulated depreciation based on the projected life of the asset is if, at the Valuation Date, an asset is projected to have 30% of its Standard Effective Life remaining, then for the purpose of the Initial RAB, the asset will be assumed to have accumulated depreciation equivalent to 70% of the optimised replacement cost. Therefore, the remaining value of the asset to be included in the Initial RAB will be 30% of the optimised replacement cost.

3. Annual RAB Update

3.1 Purpose

No additional comments.

3.2 Asset Indexation

Perth Consumer Price Index (all Groups) is applied as the Consumer Price Index, being the index Arc typically uses throughout its access and expenditure agreements. This index is appropriate for Arc as a significant portion of Arc's expenses are based in Western Australia. In particular, labour has formed a significant portion of Arc's cost base since Arc insourced its maintenance activities in 2016 with the entirety of Arc's labour cost being based in Western Australia.

Asset Indexation not being less than zero is a standard term to match Arc's access agreements. Local labour forms a significant portion of Arc's expenditure and these costs do not decrease in a negative CPI environment.

As the asset Valuation Date is 31 December 2024 (or as otherwise agreed between Arc and the Regulator) and the Updated RAB is based on financial years, the indexation calculation for the first Updated RAB is expected to need an adjustment to allow for a partial year.

3.3 Capital Expenditure

An Updated RAB will be determined annually as per clause 47N of the Code. Capital Expenditure will assume a mid-year average investment timing in line with generally accepted economic methodology, with half WACC applied accordingly.

3.4 Contributed Capital

See section 2.4 of this document for illustrative examples.

3.5 Depreciation

The Code allows for, amongst other things, depreciation to be non-uniform and for an asset's Economic Life to be changed. The Costing Principles reflect this, with the terms used in the Costing Principles taken directly from clauses 47K(5) and (6) of the Code. As outlined in the Costing Principles, an asset's Economic Life and applicable depreciation will not be changed more than once per Relevant Period and regardless, if Arc seeks to change an asset's Economic Life or applicable depreciation, any proposed change will ultimately require the approval of the Regulator.

One example to illustrate the intended application of when Arc may seek to change an asset's Economic Life is if there is a reduction in the level of services operated, or planned to be operated, on a Route. In this circumstance Arc may seek to extend the Economic Life of assets on that Route. This would have the effect of reducing the percentage rate of depreciation each year, for the new remaining asset life.

One example to illustrate the intended application of when Arc may seek to change an asset's depreciation profile without changing its Economic Life is if the market for access to the Railway Infrastructure is immature. In this circumstance Arc may seek to change to a depreciation profile with an equivalent Economic Life, but where the balance of the depreciation is deferred until later years of that Economic Life. This would have the effect of reducing the percentage of depreciation for the earlier years of the asset life.

For the avoidance of doubt, Arc does not consider the expiry of the existing Network Lease as a relevant factor in determining an asset's Economic Life or applicable depreciation profile.

The intent of the final paragraph of section 3.5 of the Costing Principles is to explicitly prevent Double Counting in accordance with clause 47F of the Code. One example to illustrate the intended application of this

is if the application of the applicable depreciation profile stipulates an asset should be depreciated by \$100 but there is only \$20 of the asset value remaining in the RAB to be depreciated, then the depreciation applied will only be \$20.

3.6 Disposed, Redundant and Stranded Railway Infrastructure

No additional comments.

4. Costs

As per clause 41 of the Code, the parameters for demonstration of efficiency are completely at the discretion of the Regulator. Arc expects the supporting and evidentiary information required to justify efficient costs may change over time and will be dictated according to the specific circumstances at the time of determination. Regardless, Arc acknowledges the onus in all cases will fall on Arc to satisfy the standard required by the Regulator.

In responding to a Proposal, sufficient detail will be provided to identify the costs in respect of each year of the term of the Proposal.

When forecasting costs, Arc may consider factors including the:

- projected life of the assets depending on:
 - the current asset condition;
 - the expected remaining life of the asset given current and expected use; and
 - any planned earlier replacement.
- estimated replacement cost of the assets;
- number of contracted train paths as a proportion of the total number of contracted train paths operated on the Route Section;
- number of GTKs as a proportion of the total GTKs operated on the Route Section;
- number of train services as a proportion of the total number of train services operated on the Route Section;
- type of rollingstock and product transported;
- Network standard required;
- future Network requirements; and
- factors outlined in section 4.6 of the Costing Principles.

4.1 Total Costs

No additional comments.

4.2 Operating Costs

The Operating Costs will be determined in consideration of the cost of providing access to the specific Access Holder (or group of Access Holders), or Access Seeker (or group of Access Seekers). Each Access Holder or Access Seeker may have different Operating Costs, dependent on its individual circumstances.

4.3 Capital Costs – Risk Adjusted Return

No additional comments.

4.4 Capital Costs – Depreciation

No additional comments.

4.5 Overhead Costs

The Overhead Costs will be determined in consideration of the cost of providing access to the specific Access Holder (or group of Access Holders), or Access Seeker (or group of Access Seekers). Each Access Holder or Access Seeker may have different Overhead Costs, dependent on its individual circumstances.

4.6 Incremental Costs

The Incremental Costs represent the actual costs which can be avoided if not for a specific proposal for operations on a Route Section(s) or use of Railway Infrastructure. The Incremental Costs are based on Arc's forecast costs for each year for which access is sought. For each determination of Incremental Costs Arc will submit to the Regulator supporting information as to the factors relevant to the individual circumstances of the access being sought for consideration in the Regulator's approval function.

In determining the Incremental Costs relating to an Access Seeker or Access Holder, Arc may consider factors in addition to those included in 4.6 of the Costing Principles including the:

- number of contracted train paths as a proportion of the total number of contracted train paths on the Route Section;
- number of GTKs as a proportion of the total GTKs operated on the Route Section;
- number of train services as a proportion of the total number of train services operated on the Route Section;
- type of rollingstock and product transported;
- Network standard required;
- future Network requirements; and
- costs that the Railway Owner would otherwise incur if the Railway Owner were not to provide access to the Access Holder or Access Seeker.

5. Cost Recordkeeping

Arc will maintain its records in a manner which allows provision of all supporting documentation as required by the Regulator at the relevant approval stages. Arc expects this may include data such as:

- operating and overhead expenditure records, including the value of expenditure and its allocation to Route Sections;
- capital expenditure records, including the value of expenditure, Capital Contributions from third parties, asset inventory and detail of works conducted;
- any assessments to update asset remaining life; and
- details of disposed assets.

5.1 Double Counting

There are a number of different methods of recordkeeping, Arc is still determining the most appropriate method to provide transparency to the Regulator to facilitate the Regulator's efficient review and determination.

Arc will maintain a depreciation register which tracks the depreciation and the cumulative amount of depreciation. The depreciation amounts will be determined annually to update the register with reference to the relevant Depreciation Schedule and the circumstances of the relevant year. The depreciation register as a whole will be part of the supporting information used to inform various submissions to the Regulator, including the Depreciation Schedule.

5.2 Financial Administration

No additional comments.

Appendix 1 – Route Sections

There are an increased number of Route Sections in the Costing Principles. The inclusion of more granular Route Sections enables more accurate allocation of costs to Route Sections, assisting in prevention of Double Counting and ensuring Access Holders only pay for assets they seek to utilise. More granular Route Sections are possible due to the increased granularity of asset data Arc now has available through its Digital Twin.

One example to illustrate the intended application of the different types of Route Sections is as follows:

- Avon Yard to West Merredin Route Section (Route 1) describes the mainline and passing loops between Avon Yard and West Merredin, including the mainline and passing loop located within the station limits of West Merredin;
- West Merredin Route Section (Route 1) describes the common user Railway Infrastructure within West Merredin station limits which branch off the passing loop and would usually only be used by an Access Holder who is entering the Network, exiting the Network or performing other activities at West Merredin; and

- SG CBH Merredin Route Section (Route 8) describes the Railway Infrastructure within West Merredin station limits which is used only by CBH.

As a general rule:

- Route Sections that are not individual locations (e.g. A to B) will include or exclude the mainline and loop infrastructure at their bounding locations (A to B) depending on their proximity to port (e.g. if A is a port and C is the dead end of a branch line, then A to B will contain the mainline and loop infrastructure of A and of B, whereas B to C will contain the mainline and loop infrastructure of only C;
- individual location Route Sections that are CBH siding locations will include any Railway Infrastructure that is exclusively associated with CBH. At some sites, this includes the entirety of the loop; and
- individual location Route Sections that are not CBH siding locations generally contain the balance of infrastructure at a site that is open access, is not mainline or loop and is not CBH related infrastructure. It is generally limited to complex sites.

Appendix 2 – Standard Effective Life

The Standard Effective Lives listed are based on a combination of generally accepted industry effective lives, engineering assessments on individual assets and Arc's own expertise. Since the previously approved Costing Principles Arc has developed more sophisticated asset data through its Digital Twin, using more advanced track analytics, so is now better informed as to the expected effective life of the assets in the Network. As outlined in both this document and the Costing Principles (sections 2.7, 3.5 and Appendix 2), Arc will begin from a base assumption that the life of an asset is as described in Appendix 2 of the Costing Principles. However, in accordance with sections 2.7 or 3.5 of the Costing Principles, an alternate life may be deemed more accurate. In this circumstance Arc will submit relevant supporting information to the Regulator at the appropriate approval stage.

In particular, the Standard Effective Life of the following assets has been updated in the Costing Principles:

- Earthworks – perpetual life recognises that earthworks practically do not degrade over time. Additionally in a DORC and RAB context, perpetual recovery on capital value of earthworks, but no recovery of capital, is appropriate.

In the DORC valuation of the ARTC Network in both 2001¹ and 2007² it was noted that “earthworks are assumed to be a perpetual asset in that given appropriate maintenance they do not “wear out” due to the passage of trains or time.” This was supported in the 2021 DORC Report of the ARTC Network prepared for the ACCC³ and confirmed by the ACCC who accepted the classification of Earthworks as perpetual provided the assets are disposed of and depreciated accordingly.⁴ For the

¹ Booz Allen & Hamilton; *ARTC Standard Gauge Rail Network DORC (February 2001)*; section 5.4.

² Booz Allen & Hamilton; *ARTC Standard Gauge Rail Network DORC: Final Report (January 2007)*; section 5.4.

³ GHD; *Developing a Regulatory Asset Base Value for the Australian Rail Track Corporation Interstate Network, Using the Depreciated Optimised Replacement Cost Method: Concluding Public Report (21 October 2021)*; section 8.4.1.

⁴ ACCC; *DORC Valuation of ARTC's Interstate Network: ACCC Consultation Paper (15 June 2021)*; section 6.

avoidance of doubt, Arc's intent is that in the event earthworks are replaced, the replaced asset will be disposed of to avoid Double Counting.

- Steel sleepers – previous Costing Principles considered the overall average effective life of sleepers in a 1:2 or 1:4 timber/steel sleeper pattern rather than the life of the individual type of sleeper. Arc now has more granular asset data so is capable of identifying the effective life of individual steel sleepers within a sleeper pattern.
- Timber sleepers – reduction in effective life recognises that modern timber sleepers are no longer treated with life prolonging toxic chemicals.
- Ballast – increase in effective life recognises that with standard maintenance (monitoring, regular top-up, tamping etc), wholesale ballast replacement is infrequent and occurs primarily in the event of sleeper replacement or an upgrade to track structure. This understanding is available due to the evolution in sophistication of Arc's data and associated experience of extended Network maintenance.
- Rail and turnouts – tonnage brackets have not been included in recognition that effective life is very dependent on the specific circumstances based on actual operational usage and is not as simple as tallying gross tonnes. It is more appropriate to include the Standard Effective Lives as specified and, where necessary, Arc can apply to the Regulator to alter the effective life of a specific asset.

Appendix 3 – Cost Allocators

No additional comments.