



# Costing Principles

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## 1. Introduction

### 1.1 The Railway Owner

Arc has the management and control of the freight rail Network in the south-west region of Western Australia (**Railway Network**). The Railway Network facilitates the movement of bulk commodities and freight to ports in Geraldton, Kwinana, Albany, Bunbury, Fremantle and Esperance, and connects Western Australia to the Eastern States via ARTC's railway network. Arc's business is solely dedicated to managing the Railway Network. As the Railway Owner, Arc:

- engages with Access Holders and Access Seekers to support and encourage the movement of freight on rail;
- provides the function of network control, which includes the scheduling of train services and managing the continuous safe and efficient passage of trains on the Railway Network in accordance with Arc's Train Management Guidelines;
- inspects and maintains the Railway Infrastructure, including track, signalling, communications, level crossings, access tracks and structures;
- constructs Railway Infrastructure to maintain the existing Railway Network and to upgrade and expand the Railway Network as necessary to meet demand;
- manages and maintains rail safety within the rail corridor, including participating in public safety campaigns, engaging with regulatory bodies and undertaking activities with a view to reducing risks to rail safety;
- manages the land on which the Railway Network is located, including managing Aboriginal and European heritage and ensuring compliance with environmental laws and standards;
- engages with a broad range of stakeholders whose interests interface with the Railway Network, including members of the public, community groups, local government and state government departments;
- participates in industry, regulation, community and Government partnerships in connection with the railway industry and Railway Network; and
- is directly responsible for the full range of corporate and business functions necessary to safely and effectively perform the core access related functions mentioned above.

Arc provides access to the Railway Network by allocating capacity to Access Seekers and Access Holders in accordance with their requirements and Arc's Train Path Policy.

### 1.2 Purpose

These Costing Principles give effect to sections 47H(1) and 47H(2) of the Code. They describe the applicable principles, rules and practices that are to be applied and followed by the Railway Owner in certain circumstances.

### 1.3 Scope of these Costing Principles

The scope of these Costing Principles is to give effect to the relevant sections of the Code, as set out in the table below:

Relevant Section of the Code	Code Section Concept	Relevant Section of the Costing Principles
47H(1)	Purpose of document	1.2
47H(1)(a)	Initial RAB	2
47H(1)(b)	Annual RAB Update	3
47H(1)(c)	Total Cost, Incremental Costs	4.1, 4.6
47H(1)(d)	Recordkeeping	5
47H(2)(a)	Route Sections	Appendix 1
47H(2)(b)(i)	Initial RAB Depreciation	2.7
47H(2)(b)(ii)	Annual RAB Update Depreciation, Total and Incremental Cost Depreciation	3.5, 4.4
47H(2)(c) 47H(4)(a)-(c)	Asset Grouping	1.4
47H(2)(d)	Double Counting	3.5, 5.1
47H(2)(e)	Contributed Capital	2.4, 3.4
47H(10)	Corporations Act consistency	5.2

### 1.4 Definitions

The terms used in these Costing Principles are defined below. Where a defined term is specified to take the same meaning as that set out in the Code, the definition provided by the Code has been repeated here for ease of reference.

#### Definitions

Term	Definition
Access Holder	Has the meaning described in section 3 of the Code, which is as follows: means an entity to which access is provided under an access agreement.
Access Seeker	Has the meaning described in section 3 of the Code, which is as follows: means an entity that has made a proposal.
Arc	Means Arc Infrastructure Pty Ltd, Arc Infrastructure StandardGauge Pty Ltd, Arc Infrastructure NarrowGauge Pty Ltd and each of their Related Bodies Corporate.
Asset Class	Means groupings of assets that are of the same or similar category of Railway Infrastructure. Examples of individual Asset Classes include: (a) rail; (b) sleepers; and (c) ballast.
Asset Group	Means a subset of assets within an Asset Class, grouped in accordance with the requirements set out in section 47H(4) of the Code, which is as follows: (a) assets will only be grouped with other assets that are — (i) in the same route section; and (ii) the same, or a similar, category of railway infrastructure; and (iii) of a similar age and condition;

Term	Definition
	<p>and</p> <p>(b) assets will not be grouped in a way that will result in access holders paying for assets they do not use; and</p> <p>(c) assets will not be grouped in a way that will interfere with the Regulator's ability to monitor compliance by the railway owner with the provisions of this Code.</p>
Associate	<p>Has the meaning described in section 3 of the Code, which is as follows:</p> <p>in relation to a railway owner, means —</p> <p>(a) a related body corporate; and</p> <p>(b) a unit trust, joint venture or partnership where the interest of the railway owner or of a related body corporate in the unit trust, joint venture or partnership entitles the railway owner or the related body corporate to —</p> <p>(i) control the composition of the governing body of the unit trust, joint venture or partnership; or</p> <p>(ii) cast, or control the casting of, more than one half of the maximum number of votes that might be cast at a general meeting of the unit trust, joint venture or partnership; or</p> <p>(iii) control the business affairs of the unit trust, joint venture or partnership.</p>
Capital Costs	<p>Has the meaning described in clause 2, Schedule 4 to the Code, as follows:</p> <p>means the costs comprising both the depreciation and risk-adjusted return on the relevant railway infrastructure.</p>
Capital Expenditure	<p>Means the capital expenditure incurred by the Railway Owner or an Associate of the Railway Owner in relation to the Railway Network including capital:</p> <p>(a) to maintain capacity to meet existing levels of demand;</p> <p>(b) to increase the capacity, level of service or life of an asset to meet increased demands;</p> <p>(c) to maintain or improve the safety of rail operations;</p> <p>(d) to maintain the integrity of rail operations;</p> <p>(e) to comply with regulatory obligations or requirements;</p> <p>(f) approved under section 47S of the Code; and</p> <p>(g) any further efficient capital expenditure under section 47N of the Code, but excluding Operating Costs and Overhead Costs.</p>
Code	<p>Means the Railways (Access) Code 2000</p> <p><a href="https://www.legislation.wa.gov.au/legislation/statutes.nsf/law_s35.html">https://www.legislation.wa.gov.au/legislation/statutes.nsf/law_s35.html</a></p>
Consumer Price Index	<p>Means Australian Bureau of Statistics Eight Capital Cities All Groups CPI.</p>
Contributed Capital	<p>Has the meaning described in section 47B of the Code, as follows:</p> <p>means railway infrastructure that has been funded wholly or in part by an entity other than the railway owner or an associate of the railway owner, including by the entity doing any of the following —</p> <p>(a) providing cash or in-kind contributions to the railway owner or an associate of the railway owner;</p> <p>(b) undertaking work, or paying for work to be undertaken, for the railway owner or an associate of the railway owner;</p> <p>(c) making payments to the railway owner or an associate of the railway owner that —</p> <p>(i) fund the recovery of capital in relation to the railway infrastructure; and</p> <p>(ii) are not payments of prices and charges for access.</p> <p>For the purposes of these Costing Principles, means any contribution of the kind described in section 47B of the Code, made by anyone other than the entity who was the Railway Owner (or an Associate of the Railway Owner) at the time the contribution was made.</p>
Costing Principles	<p>Means this document, comprising Arc's Costing Principles prepared in accordance with section 47H of the Code.</p>

Term	Definition
Depreciated Optimised Replacement Cost	<p>Has the meaning described in section 3 of the Code, which is as follows:</p> <p>In relation to railway infrastructure, means –</p> <ul style="list-style-type: none"> <li>(a) the lowest current cost to replace the railway infrastructure with assets that – <ul style="list-style-type: none"> <li>(i) have the capacity to provide the level of service that meets the actual and reasonably projected demand; and</li> <li>(ii) are modern equivalent assets;</li> </ul> </li> <li>less</li> <li>(b) accumulated depreciation in accordance with the costing principles for the time being approved or determined by the Regulator under section 47H.</li> </ul>
Depreciation Schedule	<p>Means the depreciation schedule referred to in section 47Q of the Code.</p> <p>For the purposes of these Costing Principles, the Depreciation Schedule will describe depreciation in respect of each year of an asset's Economic Life. Depreciation may be applied evenly over an asset's Economic Life, or may vary over time.</p>
Double Counting	<p>Has the meaning described in section 47F(2) of the Code, which is as follows:</p> <p>A railway owner engages in double counting of assets if the sum of the return of capital that is attributable to an asset over its economic life, via depreciation or otherwise, exceeds the value of the asset at the time at which it is first included in a regulatory asset base.</p>
Economic Life	<p>Has the meaning described in section 3 of the Code, which is as follows:</p> <p>in relation to an asset that is railway infrastructure, means the period over which the asset is reasonably expected to remain economically usable by 1 or more entities.</p>
Incremental Costs	<p>Has the meaning described in section 1, Division 1 of Schedule 4 of the Code, as follows:</p> <p>incremental costs, in relation to an access holder or a group of access holders, means the following that the railway owner or an associate would be able to avoid if it were not to provide access to that access holder or group of access holders —</p> <ul style="list-style-type: none"> <li>(a) the operating costs;</li> <li>(b) where applicable — <ul style="list-style-type: none"> <li>(i) the capital costs; and</li> <li>(ii) the overheads attributable to the performance of the railway owner's access-related functions whether by the railway owner or an associate.</li> </ul> </li> </ul>
Initial Regulatory Asset Base, Initial RAB	<p>Has the meaning given in section 47J(7) of the Code, which is as follows:</p> <p>means for each Route Section of an applicable part of the railways network, the depreciated optimised replacement cost of applicable railway infrastructure associated with the route section.</p>
Operating Costs	<p>Has the meaning described in section 3 of the Code, which is as follows:</p> <p>operating costs, in relation to railway infrastructure —</p> <ul style="list-style-type: none"> <li>(a) includes — <ul style="list-style-type: none"> <li>(i) train control costs, signalling and communications costs, train scheduling costs, emergency management costs, and the cost of information reporting; and</li> <li>(ii) the cost of maintenance of railway infrastructure calculated on the basis of cyclical maintenance costs being evenly spread over the maintenance cycle; and</li> <li>(iii) payments made in respect of any lease or licence that the railway owner or an associate of the railway owner holds over any land, but only to the extent that the Regulator determines that those payments relate to land used for constructing, maintaining or operating the relevant railway and are not capital costs under Schedule 4 clause 2(5);</li> </ul> </li> <li>but</li> <li>(b) does not include costs that the Regulator has determined under section 47W(3) to be inefficient.</li> </ul>
Operating Expenditure	<p>Has the meaning described in section 3 of the Code, which is as follows:</p> <p>in relation to railway infrastructure, means any of the following —</p>

Term	Definition
	<p>(a) operating costs;</p> <p>(b) overheads attributable to the performance of the railway owner's access-related functions, whether by the railway owner or an associate.</p> <p>For the purposes of these Costing Principles, the overheads referred to in this definition are defined as Overhead Costs in these Costing Principles.</p>
Overhead Costs	<p>Means all other costs attributable to the performance of access related functions incurred by the Railway Owner (or its Associate) in connection with the Railway Network and includes:</p> <p>(a) office buildings;</p> <p>(b) rent and utilities;</p> <p>(c) payroll;</p> <p>(d) legal expenses;</p> <p>(e) housing;</p> <p>(f) freight centres;</p> <p>(g) terminal yards;</p> <p>(h) depots; and</p> <p>(i) other corporate expenditure;</p> <p>but excludes Operating Costs and Capital Costs</p>
Proposal	<p>Has the meaning described in section 3 of the Code, which is as follows: proposal means a proposal under section 8.</p> <p>In respect of these Costing Principles, means a Proposal under the Code for access to Arc's Railway Network.</p>
Railway Infrastructure	<p>Has the meaning described in section 3 of the Code, which is as follows: means the facilities necessary for the operation of a railway, including —</p> <p>(a) railway track, associated track structures, over or under track structures, supports (including supports for equipment or items associated with the use of a railway); and</p> <p>(b) tunnels and bridges; and</p> <p>(c) stations and platforms; and</p> <p>(d) train control systems, signalling systems and communication systems; and</p> <p>(e) electric traction infrastructure; and</p> <p>(f) buildings and workshops; and</p> <p>(g) associated plant machinery and equipment,</p> <p>but not including —</p> <p>(h) sidings or spur lines that are excluded by section 3(3) or (4) of the Act from being railway infrastructure; and</p> <p>(i) rolling stock, rolling stock maintenance facilities, office buildings, housing, freight centres, and terminal yards and depots.</p>
Railway Network, Network	<p>Has the meaning described in section 3 of the Code, which is as follows: railways network means —</p> <p>(a) all the railways that were Government railways when the Act received the Royal Assent; and</p> <p>(b) all the railways that are on land that is corridor land as defined in the Rail Freight System Act 2000; and</p> <p>(ba) the railway constructed pursuant to the TPI Railway and Port Agreement; and</p> <p>(c) any railway declared under section 3(2) of the Act to be part of the railways network.</p> <p>In respect of these Costing Principles, means the Railway Network managed by Arc.</p>
Railway Owner	<p>Has the meaning described in section 3 of the Code, which is as follows: being the person having the management and control of the use of the railway infrastructure concerned.</p> <p>In respect of these Costing Principles, 'Railway Owner' means Arc.</p>

Term	Definition
Regulator	<p>Has the meaning described in section 3 of the Code, which is as follows: means the person who holds, or is acting in, the office provided for by Part 3 of the Act.</p> <p>In respect of these Costing Principles, means the Economic Regulation Authority Western Australia or any subsequent government body or agency undertaking the same or similar function.</p>
Related Body Corporate	<p>Has the meaning described in section 3 of the Code, which is as follows: has the meaning described in the <i>Corporations Act 2001</i> (Commonwealth) section 9.</p>
Relevant Period	<p>Means:</p> <p>(a) in respect of the first Updated RAB, the period commencing from the Valuation Date until 30 June in the year following the date the Regulator determines the Initial RAB; and</p> <p>(b) in respect of each subsequent Updated RAB, a 12 month period commencing 1 July of each year.</p>
Route	<p>Has the meaning described in section 3 of the Code, which is as follows: Those parts of the railways network and associated infrastructure to which the Code applies, and includes part of a route.</p> <p>In respect of these Costing Principles, means those Routes comprised in Arc's Railway Network.</p>
Route Section	<p>Has the meaning described in section 3 of the Code, which is as follows: The sections of the railways network into which the network is divided for management and costing purposes.</p> <p>In respect of these Costing Principles, means those Route Sections listed in Appendix 1.</p>
Standard Design Life	<p>Means the standard technical design life for certain Asset Classes, as set out in Appendix 2.</p>
Total Costs	<p>Has the meaning described in clause 1, Schedule 4 to the Code, as follows: means the total of all —</p> <p>(a) operating costs;</p> <p>(b) capital costs; and</p> <p>(c) the overheads attributable to the performance of the railway owner's access-related functions whether by the railway owner or an associate.</p>
Train Management Guidelines	<p>Means the Train Management Guidelines provided by Arc in respect of its Railway Network as published by the Regulator, as updated or amended from time to time.</p>
Updated Regulatory Asset Base, Updated RAB	<p>Has the meaning described in section 47N of the Code, as follows: Means, in respect of a Route Section, the Railway Owner:</p> <p>(a) taking the current regulatory asset base of the route section; and</p> <p>(b) adding asset indexation over the relevant period of applicable railway infrastructure associated with the route section; and</p> <p>(c) adding the value of capital expenditure incurred by the railway owner during the relevant period in relation to applicable railway infrastructure associated with the route section; and</p> <p>(d) deducting depreciation over the relevant period of applicable railway infrastructure associated with the route section, in accordance with the applicable depreciation schedule for the time being approved or determined by the Regulator under section 47K(3); and</p> <p>(e) deducting the value of railway infrastructure that —</p> <p>(ii) was disposed of by the railway owner or became redundant or stranded during the relevant period; and</p> <p>(iii) was applicable railway infrastructure associated with the route section immediately prior to being disposed of or becoming redundant or stranded.</p>



Term	Definition
Weighted Average Cost of Capital	Means the weighted average cost of capital determined by the Regulator pursuant to clause 3, Schedule 4 to the Code.

#### Acronyms

Acronym	Definition
ARTC	Australian Rail Track Corporation
CPI	Consumer Price Index
DORC	Depreciated Optimised Replacement Cost
GTK	Gross Tonne Kilometre
MEA	Modern Equivalent Asset
Initial RAB	Initial Regulatory Asset Base
RAB	Regulatory Asset Base
Updated RAB	Updated Regulatory Asset Base
WACC	Weighted Average Cost of Capital

## 1.5 Interpretation

In this document, unless the context otherwise requires:

- the word “person” includes a firm, a body corporate and an unincorporated association;
- the words “include”, “includes”, “including” and other words introducing one or more examples of a thing are not to be construed as words of limitation;
- words indicating the singular include the plural and vice versa;
- a capitalised term has the meaning described in the Definitions section of this document. Where a capitalised term does not appear in the Definitions section of this document it has the meaning described in the Code; and
- words which are not otherwise defined should be given their ordinary meaning.

## 2. Initial RAB

### 2.1 Purpose

Section 47J(1)(a) requires the Railway Owner to determine the Depreciated Optimised Replacement Cost (**DORC**), of applicable Railway Infrastructure for each Route Section of the Railway Network. To determine the DORC, the Railway Owner will:

- Firstly, determine the replacement cost of the modern equivalent asset;
- Secondly, optimise the modern equivalent asset so it has the capacity to meet the actual and reasonably projected demand. The replacement cost will be adjusted when optimising the Modern Equivalent Asset;
- Thirdly, remove any Contributed Capital from the optimised modern equivalent asset; and
- Finally, depreciate the optimised replacement cost of the asset to reflect accumulated depreciation.

This is known as the Initial Regulatory Asset Base (**Initial RAB**).

### 2.2 Valuation Date

The Railway Owner will determine the value of the Initial RAB of the Railway Network as at 31 December 2024, or such other date as agreed with the Regulator (**Valuation Date**).

### 2.3 Replacement Cost

The asset replacement cost used in the Initial RAB will be the lowest current cost to replace the Railway Infrastructure based on Modern Equivalent Assets (**MEAs**). MEAs comprise the assets and form of construction which would be designed and constructed at the valuation date, using modern design techniques, constructed from modern materials using modern methods, and in compliance with prevailing legislation and prevailing standards. The MEA scope will be defined on the basis that it meets the closest comparable service standard to the existing asset.

The key capital cost drivers that the Railway Owner will adopt to specify the MEA will be:

- the operating standards (axle load, maximum speed, maximum train length);
- population of supporting infrastructure (bridges, culverts); and
- topography of route (gradient and track curvature).

The asset replacement cost will include provisions for:

- design development, planning and approval costs;
- material costs;
- construction costs;
- project and construction management costs; and
- funding (opportunity) costs.

Costs of cuttings and embankments made prior to the commencement of the Code will not be included in the asset replacement cost used in the Initial RAB.

The asset replacement cost will include amortised amounts of the costs of acquiring any interest in or access to land incurred after the commencement of the Code.

Design development, planning and approval costs, construction costs, and project and construction management costs will be based on those typical for efficient entities developing an asset of this scale, considering variations in cost relating to distance, geography and local factors at each Route Section.

Funding and opportunity costs will be estimated by applying the WACC to a development cost curve over a realistic project development duration. The project development duration will be built up from the scheduling dependencies and durations of project development tasks. The schedule will be developed to represent the realistic minimum duration, without being unduly rushed, that an experienced entity would require to complete the development, from project identification, through to when the entire development could earn revenue. The profile of construction costs will be determined on the basis of a single stage project comprised of concurrent individual projects.

## 2.4 Optimisation

The optimised asset configuration will be the asset configuration which has the capacity to meet the actual and reasonably projected demand, within the physical constraints of the existing railway corridor, that can be constructed at least cost.

The level of service associated with the actual and reasonably project demand will be defined in terms of:

- maximum axle loads;
- maximum train speeds; and
- maximum train lengths.

The asset replacement cost will be based on an optimised asset configuration where the existing asset configuration is adjusted as required to deliver the level of service associated with the actual and reasonably projected demand.

The Railway Owner will:

- identify redundant assets;
- assess MEA capability against existing asset capacity;
- assess demand forecast to identify any required changes in service capacity of assets;
- determine the value of the optimisation; and
- adjust the replacement cost by the optimisation to calculate the Depreciated Optimised Replacement Cost.

To account for the differing maintenance costs of the actual asset configuration versus the optimised asset configuration, the net present value of the difference between the forecast operating cost of the actual Railway Infrastructure and the optimised Railway Infrastructure will be subtracted from the asset replacement cost.

The Railway Owner will provide a ten year demand forecast based on ten years of historical demand data, and will provide a clear explanation of the forecasting method.

## 2.5 Contributed Capital

As part of the calculation of the Initial RAB, the Railway Owner will exclude any Railway Infrastructure that has been funded by Contributed Capital. The Railway Owner will reduce the replacement cost of the asset

equivalent to the proportion of the original development cost in respect of the particular asset that was funded by another entity. Where:

- the entirety of an asset was funded by others, the replacement cost of the asset will be removed from the Initial RAB; or
- part of an asset was funded by others, the asset replacement cost will be reduced in respect of that asset at a rate proportional to the percentage funded by others.

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.

## 2.6 Construction Approach

The asset replacement cost will represent the cost of developing and constructing an asset on a brownfields basis, with the following considerations:

- cutting and embankments are not included in estimating the initial DORC, although expenditure since the commencement of the Code to create capacity, or expand the network, or improve standards or efficiency, are included;
- the new infrastructure is constructed without existing traffic on the rail; and
- planning and development costs are included to the extent that they are required to integrate with existing infrastructure.

## 2.7 Accumulated Depreciation

The optimised replacement cost will be depreciated to reflect the Railway Infrastructure's Economic Life as at the Valuation Date.

In determining the Economic Life of an asset, the Railway Owner will:

- firstly, consider the current physical condition of the asset;
- secondly, consider the forecast rate at which the asset will be consumed; and
- finally, develop the Economic Life of the asset based on the current physical condition of the asset and forecast rate of consumption.

Upon determining the Economic Life of the asset, the Railway Owner will compare the Economic Life of the asset to the Standard Design Life and reduce the optimised replacement cost for that asset proportionally.

As an example – if, at the Valuation Date, an asset is projected to have 30 per cent of its Standard Design Life remaining, then for the purpose of the Initial RAB, the asset will be assumed to have accumulated

depreciation equivalent to 70 per cent of the optimised replacement cost. Therefore, the remaining value of the asset to be included in the Initial RAB will be 30 per cent of the optimised replacement cost.

The Railway Owner will provide the Regulator with all supporting material necessary for the Regulator to meet its obligations under section 47K in the evaluation of the Railway Owner's depreciation schedules. This material will include:

- asset commissioning date;
- asset condition information (using an accepted sampling approach); and
- information on variations of performance from given design life, including explanations, and renewal work which may have extended the asset life.

### 3. Annual RAB Update

#### 3.1 Purpose

The Railway Owner will determine the Updated RAB in respect of each Route Section within 60 business days of the end of each Relevant Period. To determine the Updated RAB, the Railway Owner will, in respect of the applicable Railway Infrastructure in each Route Section:

- take the current RAB of the Route Section;
- add asset indexation for the Relevant Period;
- add the value of Capital Expenditure incurred by the Railway Owner during the Relevant Period;
- deduct depreciation over the Relevant Period; and
- deduct the value of Railway Infrastructure which was disposed of or became redundant or stranded during the Relevant Period.

The steps are shown in Figure 1, and detailed in the sections below:

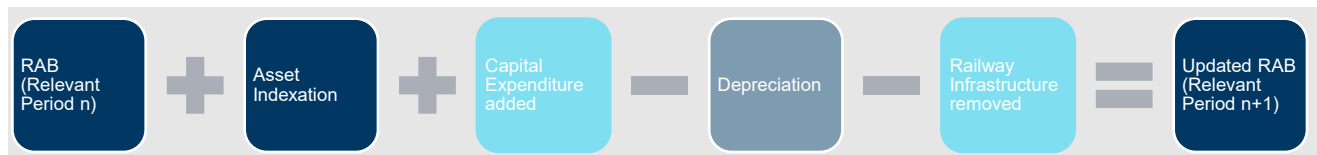


Figure 1 RAB update components

#### 3.2 Asset Indexation

The Railway Owner will apply asset indexation to the applicable Railway Infrastructure in each Route Section in accordance with the following formula:

$$\text{Asset indexation} = \text{RAB} \times (\text{CPI}_n / \text{CPI}_0) - \text{RAB}$$

Where:

- Asset indexation: the value of asset indexation to be added to the RAB.
- RAB: the current RAB.
- CPI<sub>n</sub>: CPI for the June quarter of the Relevant Period.
- CPI<sub>0</sub>: CPI for the June quarter of the prior Relevant Period.

### 3.3 Capital Expenditure

Capital Expenditure made by the Railway Owner during the previous Relevant Period will be added to the RAB for the relevant Route Section.

The Railway Owner will ensure that Capital Expenditure is efficient and will provide the Regulator with all supporting material necessary for the Regulator to meet its obligations under section 47N and section 47V in the determination of the efficiency of the Railway Owner's capital expenditure. The supporting material will include:

- provision of business cases to support proposed capital expenditure;
- benchmarking of costs against other comparable infrastructure owners; and
- demonstration of competitive tendering process.

Assets added to the RAB will, at the time they are added, be assumed to have the Economic Life equal to the Standard Design Life relevant to their Asset Class, as specified in Appendix 2.

Investments will be assumed to occur, on average, mid-year, so a half WACC will be added to the Capital Expenditure to compensate for the six-month period before Capital Expenditure is included in the RAB. Capital expenditure that is added to the RAB at the end of the relevant year is equal to capital expenditure multiplied by  $(1+WACC)^{(1/2)}$ .

Where Capital Expenditure creates an additional Route or Route Section, this addition will be valued using the same methodology and otherwise in accordance with these Costing Principles.

### 3.4 Contributed Capital

The Railway Owner will adjust the Capital Expenditure to exclude any Railway Infrastructure that has been funded by Contributed Capital. The Railway Owner will reduce the Capital Expenditure equivalent to the proportion of the original Capital Expenditure in respect of the particular asset that was funded by another entity. Where:

- the entirety of an asset was funded by others, the replacement cost of the asset will be removed from the Updated RAB; or
- part of an asset was funded by others, the Capital Expenditure will be reduced in respect of that asset at a rate proportional to the percentage funded by others.

If an investment which is contributed is not classified as Contributed Capital – for example if capital recovery is earned through access charges rather than a separate capital recovery charge – the contribution should be reflected as accelerated depreciation within the depreciations schedule, with the economic life for the investment set to reflect the term of the access agreement.

### 3.5 Depreciation

The Railway Owner will prepare a Depreciation Schedule in respect of assets comprised in Railway Infrastructure. The Depreciation Schedule will set out the depreciation to be applied against particular assets within relevant Asset Groups over their Economic Life.

Assets will only be grouped with other assets that are in the same Route Section; in the same, or a similar, category of Railway Infrastructure; and are of a similar age and condition. Assets will not be grouped in a way

that will result in Access Holders paying for assets they do not use, or in a way that will interfere with the Regulator's ability to monitor compliance by the Railway Owner with the provisions of the Code.

The Depreciation Schedule will, pursuant to section 47K(5) of the Code, provide:

- for assets to be depreciated over their Economic Life (whether depreciation is distributed uniformly or otherwise);
- for an asset to be depreciated only once over its Economic Life, such that the Railway Owner may not recover a sum exceeding the value of the asset that was added to the RAB;
- for access prices to vary over time in a way that promotes efficient growth in the market for rail access;
- for adjustments that reflect changes in the Economic Life of a particular asset or Asset Group; and
- for the legitimate business interests of the Railway Owner, Access Seekers and Access Holders.

The Railway Owner will depreciate assets over their Economic Life pursuant to the Depreciation Schedule.

The Railway Owner may change an asset's Economic Life to:

- accelerate depreciation, where there is a risk of asset stranding (pursuant to section 47K(6)(a) of the Code); or
- accelerate or decelerate depreciation, where there is a change in the Economic Life of the asset (pursuant to section 47K(5)(e)).

Depreciation may also be deferred, where the market for access to the asset is relatively immature (pursuant to section 47K(6)(b) of the Code).

In reassessing an asset's Economic Life, the Railway Owner will also redetermine the applicable depreciation for that asset by reference to the Depreciation Schedule. The Railway Owner will apply that depreciation in respect of the asset for the Relevant Period and for the remainder of the asset's reassessed Economic Life or until such time as the Economic Life of that asset is reassessed again. The Railway Owner will not change an asset's Economic Life or relevant depreciation more than once per Relevant Period.

Changes to an asset's Economic Life and associated depreciation are subject to approval by the Regulator pursuant to sections 47K(3) and 47Q of the Code. As part of the approval process, the Railway Owner will provide evidence for changes in circumstances that could not have been foreseen by a prudent owner at the time the depreciation profile was last assessed.

Having determined the applicable depreciation for the asset (by reference to the Depreciation Schedule), the amount of depreciation attributable to the asset in the Relevant Period will be calculated by combining the value of the asset that was added to the RAB with the relevant depreciation figure according to the applicable Depreciation Schedule. In the event the remaining value of the asset to be depreciated is less than this amount, the lesser value will be used, in compliance with the double counting provisions in section 47F of the Code.

### **3.6 Disposed, Redundant and Stranded Railway Infrastructure**

Where Railway Infrastructure is disposed of or becomes redundant or stranded during a Relevant Period, the Railway Owner will remove the value of that Railway Infrastructure which has been disposed of, made redundant or stranded from the Updated RAB in respect of the relevant Route Section.

Railway Infrastructure will be considered to be:

- disposed of, where that Railway Infrastructure has been decommissioned and removed from the Railway Network;
- redundant, where that Railway Infrastructure is no longer in use and is no longer required to be used due to replacement with other Railway Infrastructure, changes in standards, advancements in technology, or similar; or
- stranded, where that Railway Infrastructure has been taken out of service due to lack of foreseeable demand.

Disposal of Railway Infrastructure will be assumed to occur, on average, mid-year, so a half WACC of the disposed Railway Infrastructure will be deducted from the RAB to compensate for the six-month period before the disposed Railway Infrastructure is removed from the RAB.

In practice, the application of the half WACC adjustment will be done in accordance with section 47N of the Code, by updating the RAB by the Net Capex Value by the following method:

$$\text{Net Capex Value} = \text{Net Capex} \times (1 + \text{WACC})^{1/2}$$

Where Net Capex is investments less any corresponding disposals during the Relevant Period (with appropriate adjustments for any Relevant Period that is not one year in length).

## 4. Costs

### 4.1 Total Costs

Total Costs are the costs which will be provided to an access seeker pursuant to section 9(1)(b)(ii) of the Code and is the cost referred to in clause 8 of Schedule 4 to the Code which establishes the ceiling price test.

Total Costs are the sum of the Operating Costs, Capital Costs (depreciation and risk adjusted return) and Overhead Costs attributable to the performance of the railway owner's access related functions, as described in the sections below.

### 4.2 Operating Costs

For each relevant Route Section, the Railway Owner will determine the Operating Costs applicable, or forecast to be applicable, per year.

The Railway Owner will:

- allocate Operating Costs directly to the Route Section to which those Operating Costs are attributable; or
- where Operating Costs cannot be directly attributed to a Route Section, the Railway Owner will assign Operating Costs to Route Sections in accordance with Appendix 3.

In responding to a Proposal, the Operating Costs referred to in section 9(1)(b)(ii) of the Code will comprise the sum of the annual Operating Costs applicable, or forecast to be applicable, in respect of each year of the term of the Proposal.



The costs will be those that would be incurred by a prudent railway owner acting efficiently in accordance with good industry practice to achieve the lowest sustainable cost of providing access.

When forecasting costs, the Railway Owner 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.

The Railway Owner will provide the Regulator with adequate supporting material enabling it to assess the efficiency of Operating Expenditure, and to meet its obligations under section 47T of the Code. This material may include:

- benchmarking studies;
- unit costs from competitive tendering processes; and
- industry standards for maintenance based on efficient scope and frequency.

### **4.3 Capital Costs – Risk Adjusted Return**

For each relevant Route Section, the Railway Owner will multiply the RAB applicable, or forecast to be applicable by the weighted average cost of capital appropriate to the railway infrastructure for each year. This is the annual risk adjusted return on the relevant Railway Infrastructure calculated as per clause 2(4)(a) Schedule 4 to the Code.

For the purposes of responding to a Proposal pursuant to section 9(1)(b)(ii) of the Code, the sum of these annual risk adjusted returns on the relevant Railway Infrastructure applicable, or forecast to be applicable, over the term of the Proposal comprises the relevant return on capital component of the Capital Costs within the Total Costs to be provided to the Access Seeker.

### **4.4 Capital Costs – Depreciation**

For each relevant Route Section, the Railway Owner will refer to the depreciation applicable, or forecast to be applicable, during each year. Annual depreciation is determined in accordance with the applicable Depreciation Schedule determined pursuant to clause 2(4)(b) Schedule 4 to the Code and referred to in further detail in section 3.5 of these Costing Principles.

For the purposes of responding to a Proposal pursuant to section 9(1)(b)(ii) of the Code, the sum of these annual depreciation amounts on the relevant Railway Infrastructure applicable, or forecast to be applicable,

over the term of the Proposal comprises the return of capital component of the Capital Costs within the Total Costs to be provided to the Access Seeker.

## 4.5 Overhead Costs

For each relevant Route Section, the Railway Owner will determine the Overhead Costs applicable, or forecast to be applicable, per year.

The Railway Owner will ensure current and forecast Overhead Costs are efficient, and that it will provide the ERA with evidence to that effect, sufficient to enable the ERA to meet its obligations under section 47T of the Code in the determining the efficiency of the Railway Owner's Operating Expenditure.

The Railway owner will:

- allocate Overhead Costs directly to the Route Section to which those Overhead Costs are attributable; or
- where Overhead Costs cannot be directly attributed to a Route Section, the Railway Owner will assign Overhead Costs to Route Sections in accordance with Appendix 3.

In responding to a Proposal, the Overhead Cost component of the costs referred to in section 9(1)(b)(ii) of the Code will comprise the sum of the annual Overhead Costs applicable, or forecast to be applicable, in respect of each year of the term of the Proposal.

## 4.6 Incremental Costs

Incremental Costs are that portion of the Total Costs which the Railway Owner or an Associate of the Railway Owner would be able to avoid if it were not to provide access to that Access Holder or group of Access Holders.

The Incremental Costs represent the cost of providing access to a specific Access Holder (or group of Access Holders). Each Access Holder will have different Incremental Costs. Each Proposal will therefore be based on its individual circumstances. The Railway Owner will generally consider the following factors to determine the Incremental Costs:

- the percentage that the incremental allocation of capacity represents against the existing capacity already allocated;
- the percentage that the incremental volume represents against the existing volumes on the Route;
- the standard and condition of the Railway Infrastructure and the specific requirements of the Access Holder, including maintenance requirements;
- the term of the access sought;
- the terms of access contracted to other Access Holders; and
- whether the Railway Owner would close the Route for economic reasons if access was not provided to the Access Holder.

## 5. Cost Recordkeeping

The Railway Owner's accounts and financial records as they relate to the costs discussed in these Costing Principles will be maintained at a level of detail required to support the practices discussed in these Costing

Principles. The Railway Owner will maintain records relating to costs and provide the same to the Regulator to enable the Regulator to monitor the compliance of the Railway Owner with the provisions of the Code.

## **5.1 Double Counting**

The Railway Owner will keep records of depreciation incurred in a manner which allows it to prevent Double Counting from occurring.

## **5.2 Financial Administration**

The Railway Owner's financial statements will be prepared in accordance with Australian Accounting Standards and Interpretations issued by the Australia Accounting Standards Board (AASB) and the *Corporations Act 2001*.

## Appendix 1 – Route Sections

Code Route Number	Code Route Gauge	Code Route Name	Route Section
1	SG	The track between Avon and Kalgoorlie, including the loop and the arrival road adjacent to that track at West Kalgoorlie.	Avon Yard to West Merredin
			West Merredin
			West Merredin to Merredin
			Merredin
			Merredin to Southern Cross
			Southern Cross
			Southern Cross to Koolyanobbing East
			Koolyanobbing East to Mount Walton
			Mount Walton to West Kalgoorlie West
			West Kalgoorlie West to West Kalgoorlie
			West Kalgoorlie
			West Kalgoorlie to Kalgoorlie
			Kalgoorlie
Kalgoorlie to Parkeston (border)			
2	SG	The track between Forrestfield South and Kewdale.	Forrestfield South to Kewdale
3	SG	The track between Kalgoorlie and Leonora.	Kalgoorlie to Menzies
			Menzies
			Menzies to Malcolm
			Malcolm
			Malcolm to Leonora
Leonora			
4	SG	The track between West Kalgoorlie West and West Kalgoorlie South.	West Kalgoorlie West to West Kalgoorlie South
			West Kalgoorlie to West Kalgoorlie South
5	SG	The track between West Kalgoorlie and Esperance.	West Kalgoorlie South to Hampton Terminal
			Hampton Terminal
			Hampton Terminal to Hampton
			Hampton
			Hampton to Kambalda
			Kambalda to Salmon Gums
			Salmon Gums to Esperance
			Esperance
			Esperance to Esperance Wharf
Esperance Wharf			
6	SG	The track between Kambalda and Redmine.	Kambalda to Redmine
7	SG	The track between Cockburn North and Robb Jetty.	Cockburn North to Robb Jetty (SG)
8	SG	All tracks servicing the facilities of Co-operative Bulk Handling Limited on the standard gauge network except private sidings that are excluded by paragraph (h) of the definition of railway infrastructure in section 3.	Avon Yard
			Bodallin
			Burracoppin
			Carrabin
			Cunderdin

Code Route Number	Code Route Gauge	Code Route Name	Route Section
			Doodlakine
			Grass Patch
			Grass Valley
			Hines Hill
			Kellerberrin
			Meckering
			Merredin
			Moorine Rock
			Salmon Gums
			Southern Cross
			Tammin
9	SG	All spur line tracks servicing customer facilities on the standard gauge network except private sidings that are excluded by paragraph (h) of the definition of railway infrastructure in section 3.	Esperance Industrial Road
			West Kalgoorlie Industrial Road
			Kewdale North Grid
			Kewdale BP Loading Depot
10	NG	The track between Kwinana and Mundijong Junction.	Kwinana
			Kwinana to Mundijong Junction
11	NG	The track between Mundijong Junction and Picton Junction.	Mundijong Junction to Pinjarra
			Pinjarra to Pinjarra South
			Pinjarra South to Wagerup North
			Wagerup North to Wagerup South
			Wagerup South to Brunswick North
			Brunswick North to Brunswick Junction
			Brunswick Junction
			Brunswick Junction to Picton Junction
12	NG	The track between Cockburn North and Robb Jetty.	Cockburn North to Robb Jetty (NG)
13	NG	The track between Picton Junction and Lambert.	Picton Junction to Greenbushes
			Greenbushes to Lambert
14	NG	The track between Boyanup and Capel.	Boyanup to Capel
15	NG	The track between Picton Junction and Picton East.	Picton Junction to Picton East
16	NG	The track between Picton Junction and Inner Harbour Junction.	Picton Junction to Bunbury Inner Harbour
17	NG	The track between Picton Junction and Bunbury Terminal.	Picton Junction to Picton Container Terminal
			Picton Container Terminal to Bunbury Terminal
18	NG	The track between Pinjarra and Alumina Junction.	Pinjarra to Alumina Junction
19	NG	The track between Alumina Junction and Pinjarra South.	Alumina Junction to Pinjarra South
20	NG	The track between Brunswick Junction and Premier.	Brunswick Junction to Brunswick East
			Brunswick East to Worsley
			Worsley to Worsley East
			Worsley East to Ewington Junction
			Ewington Junction to Premier

Code Route Number	Code Route Gauge	Code Route Name	Route Section
21	NG	The track between Brunswick North and Brunswick East.	Brunswick North to Brunswick East
22	NG	The track between Worsley and Hamilton including Worsley East to Worsley North.	Worsley to Hamilton
			Worsley East to Worsley North
23	NG	The track between Avon and Albany.	Avon Yard to York
			York to Brookton
			Brookton to Narrogin
			Narrogin to Wagin
			Wagin to Wagin South
			Wagin South to Katanning
			Katanning to Tambellup
			Tambellup to Redmond
			Redmond to Albany
Redmond to Mirrambeena			
24	NG	The track between York and Quairading.	York to Quairading
25	NG	The track between Narrogin and West Merredin.	Narrogin to West Merredin
26	NG	The track between Yilliminning and Kulin.	Yilliminning to Kulin
27	NG	The track between Wagin and Newdegate including Wagin East to Wagin South.	Wagin to Lake Grace
			Lake Grace to Newdegate
			Wagin East to Wagin South
28	NG	The track between Lake Grace and Hyden.	Lake Grace to Hyden
29	NG	The track between Katanning and Nyabing.	Katanning to Nyabing
30	NG	The track between Katanning East and Katanning South.	Katanning East to Katanning South
31	NG	The track between Tambellup and Gnowangerup.	Tambellup to Gnowangerup
32	NG	The track between West Merredin and Kondinin.	West Merredin to Kondinin
33	NG	The track between West Merredin and Trayning.	West Merredin to Trayning
34	NG	The track between Avon Yard and McLevie.	Avon Yard to Goomalling
			Goomalling to McLevie
35	NG	The track between Goomalling and Mukinbudin.	Goomalling to Amery
			Amery to Mukinbudin
36	NG	The track between Amery and Kalannie.	Amery to Burakin
			Burakin to Kalannie
37	NG	The track between Burakin and Beacon.	Burakin to Beacon
38	NG	The track between Millendon Junction and Geraldton.	Millendon Junction to Watheroo
			Watheroo to Marchagee
			Marchagee to Dongara
			Dongara to Narngulu
Narngulu to Geraldton			
39	NG	The track between Dongara and Eneabba South.	Dongara to Eneabba South

Code Route Number	Code Route Gauge	Code Route Name	Route Section
40	NG	The track between Narngulu and Maya.	Narngulu to Narngulu East
			Narngulu East to Mullewa
			Mullewa to Tilley Junction
			Tilley Junction to Tilley
			Tilley to Morawa
			Morawa to Perenjori
			Perenjori to Maya
41	NG	The track between Toodyay West and Miling.	Toodyay West to Miling
42	NG	All tracks servicing the facilities of Co operative Bulk Handling Limited on the narrow gauge network except private sidings that are excluded by paragraph (h) of the definition of railway infrastructure in section 3.	Arrino
			Avon Yard
			Ballaying
			Ballidu
			Beacon
			Bencubbin
			Beverley
			Bindi Bindi
			Bolgart
			Bowgada
			Brookton
			Broomehill
			Buniche
			Bunjil
			Cadoux
			Calingiri
			Canna
			Carnamah
			Cleary
			Coomberdale
			Coorow
			Cranbrook
			Dowerin
			Dumbleyung
			Ejanding
			Gabbin
Goomalling			
Hyden			
Jennacubbine			
Kalannie			
Karlgarin			
Katanning			
Kirwan			
Kondut			

Code Route Number	Code Route Gauge	Code Route Name	Route Section
			Konnongorring
			Koorda
			Kuender
			Kukerin
			Kulja
			Lake Grace
			Latham
			Manmanning
			Marchagee
			Maya
			McLevie
			Miling
			Mingenew
			Mogumber
			Moora
			Morawa
			Moulyinning
			Mount Kokeby
			Mukinbudin
			Mullewa
			Narrogin
			Newdegate
			Perenjori
			Piawanning
			Pingaring
			Pithara
			Tambellup
			Tarin Rock
			Three Springs
			Wagin
			Watheroo
			Welbungin
			Wongan Hills
			Woodanilling
			Wyalkatchem
			Yerecoin
			York
			Yornaning
43	NG	All spur line tracks servicing customer facilities on the narrow gauge network except private sidings that are excluded by paragraph (h) of the definition of railway infrastructure in section 3.	Kwinana to Kwinana Alcoa Kwinana to Kwinana West Kwinana West to Kwinana KBT



Code Route Number	Code Route Gauge	Code Route Name	Route Section
44	DG	The track between Midland and Avon.	Midland to Millendon Junction
			Millendon Junction to Toodyay West
			Toodyay West
			Toodyay West to Avon Yard
			Avon Yard
45	DG	The track between Midland and Kwinana and the western leg of the Woodbridge Triangle from Signal 94 to Woodbridge South.	Midland to Woodbridge South
			Woodbridge West to Woodbridge South
			Woodbridge South to Forrestfield
			Forrestfield
			Forrestfield to Kenwick
			Kenwick to Cockburn East
			Cockburn East to Cockburn South
			Cockburn South to Kwinana North
			Kwinana North to Kwinana West
			Kwinana North to Kwinana
Kwinana West to Kwinana KBT			
46	DG	The track between Cockburn North and Cockburn East.	Cockburn North to Cockburn East
47	DG	The track between Cockburn North and Cockburn South.	Cockburn North to Cockburn South
48	DG	All spur line tracks servicing customer facilities on the dual gauge network except private sidings that are excluded by paragraph (h) of the definition of railway infrastructure in section 3.	Kwinana West to Kwinana FPA
			Kwinana FPA to Kwinana CBH

#### Notes

1. A Route Section described by a location name, except for those on Route 8 and Route 42, describes the common user Railway Infrastructure within the station limits at that location which branch off the passing loop and would usually only be used by an operator who is entering the Network, exiting the Network or performing other activities at that location.

## Appendix 2 – Standard Design Life

Asset Class	Asset Group	Effective Life (years)
Earthworks	Formation	100
	Cuttings	100
	Embankments	100
Tunnels and Bridges	Bridges	100
	Tunnels	100
Under Track Structures	Culverts	50
Associated Track Structures	Level Crossing Surfaces	20
	Access Roads	10
	Fencing	15
	Roads and Shunt Pathways	10
	Track Signage	10
Sleepers	Concrete	50
	Steel	40
	Timber	15
	Fastenings	25
Ballast	Metal	50
	Gravel	50
Rail	Curve < 400m	10
	Curve 400-800m	15
	Curve > 800m & Tangent	70
Turnouts	Concrete Bearers	40
	Timber Bearers	15
Train Control Systems	Train Control	15
Signalling Systems	Signals	20
	Detectors	20
	Interlockings	20
	Flashlights	20
	Boom gates	20
Communications Systems	Communications	15
Financing	Finance Costs for Construction	50
Stations and Platforms	Stations	50
	Platforms	50
	Terminals	50
Buildings and workshops	Buildings	50
	Workshops	50
Plant, machinery and equipment	Tampers	15
	Light Vehicles (e.g. road rail vehicles)	8
	Rail vehicle moving and placing assets	10
	Grinders	20

Asset Class	Asset Group	Effective Life (years)
	Ballast wagons	20
	Cleaners	20
	Regulators	20
	Sleeper Laying Machines	20
	Track Recorders	20
Miscellaneous	Miscellaneous	Refer to most current ATO Depreciation Rate for the equivalent asset
	Other	Refer to most current ATO Depreciation Rate for the equivalent asset

#### Notes

1. Where an asset is constructed, all capitalised costs (including but not limited to design development costs, contractors margin and overheads, engineering and contract management costs, planning and approvals costs) associated with the construction work has the same Effective Life as the asset constructed.
2. The Standard Design Lives above are generally indicative for the relevant Asset Class and Asset Group. Application of these lives will take various factors including but not limited to use and asset attributes (including track gauge) into account.

## Appendix 3 – Cost Allocators

Cost Classification	Component	Inclusions	Allocation
<b>Operating Costs</b>	(i) Network management	Train control costs	By Arc network control area and then train numbers within that network control area
		Signalling and communications costs, train scheduling costs, emergency management costs, and the cost of information reporting	Train numbers
	(ii) Infrastructure maintenance costs	Maintenance costs	By Arc regional maintenance area and then GTKs within that regional maintenance area
	(iii) Lease or licence costs	Payments made in respect of any lease or licence that the Railway Owner or an Associate of the Railway Owner holds over any land, but only to the extent that the Regulator determines that those payments relate to land used for constructing, maintaining or operating the relevant Network and are not capital costs under section 2(5) of Schedule 4 of the Code;	GTKs
<b>Overhead Costs</b>			GTKs