



Costing Principles

Draft

Document approval				
	Name	Position Title	Signature	Date
Author				
Reviewers				
Approver				

Revision Register			
Version	Date	Position Title	Amendment / Reason for revision

Contents

1. Introduction 3

 1.1 Background 3

 1.2 Development of Costing Principles 4

 1.3 Relevance of Costing Principles 4

 1.4 Service quality commitment 4

 1.5 Structure of this document 4

2. Determination of capital costs 5

 2.1 Introduction 5

 2.2 Capital Costs associated with Land 5

 2.3 What infrastructure is included? 6

 2.4 Gross Replacement Values 6

 2.5 Allowable return 9

 2.6 The annuity calculation 9

3. Determination of “Operating Costs” 10

 3.1 Introduction 10

 3.2 Efficient cost tests 10

 3.3 RHI’s definition of “Operating Costs” 10

 3.4 Allocation of Operating Costs 13

 3.5 Payment of Operating Costs 13

4. Overhead Costs 13

 4.1 Definition of “Overhead Costs” 13

 4.2 Allocation of Overhead Costs 14

 4.3 Payment of Overhead Costs 14

5. Other matters 14

 5.1 Incremental Costs and Total Costs variations 14

 5.2 Asymmetric risk 14

6. Compliance and review 15

7. Definitions 15

Annexures 20

THIS DOCUMENT IS UNCONTROLLED IN HARD COPY FORMAT

Rev	Document Number	Author	Approver / BFO	Issue Date	Approved Date	Page
A						Page 2 of 22

1. Introduction

1.1 Background

- (a) Roy Hill Infrastructure Pty Ltd (**RHI**) owns and operates the RHI Railway from the Roy Hill Mine to Port Hedland in the Pilbara region of Western Australia.
- (b) The purpose of the *Railways (Access) Act 1988* (**the Act**) and the Railways (Access) Code 2000 (**the Code**) is to establish a rail access regime that encourages the efficient use of, and investment in, railway facilities by facilitating a contestable market for rail operations. The Act requires the RHI Railway to be made available for access by third party rail Operators.
- (c) RHI is a wholly owned subsidiary of Roy Hill Holdings Pty Ltd (**RHH**). RHH, through its subsidiary companies, will be a vertically integrated business. RHH will construct and operate the mining operation at the Roy Hill Mine, transport the Product on the RHI Railway to the port of Port Hedland, export the Product through the port of Port Hedland and market the product.
- (d) To the extent that the Act and the Code impose additional costs and burdens on RHH and its subsidiary companies (either directly or indirectly), these Costing Principles permit the complete recovery of all of those costs.
- (e) The objectives of these Costing Principles are:
 - (i) to provide the framework for the calculation and determination of the Floor Price and the Ceiling Price required under clause 9(1)(c)(i) of the Code; and
 - (ii) to define the manner in which the keeping and presentation of the railway owner's accounts and financial records so far as they relate to the determination of the Floor Price and the Ceiling Price will occur.
- (f) As required by clause 9(1) of the Code, RHI will, when requested by a person seeking access, provide that person with:
 - (i) the Floor Price and the Ceiling Price for the proposed access;
 - (ii) the incremental costs and the total costs on which those prices have been calculated; and
 - (iii) a copy of these Costing Principles.
- (g) Capitalised expressions and expressions defined in section 7 of these Costing Principles have the meanings set out in that section.
- (h) The Over-payment Rules (required by the ERA under section 47 of part 5 of the Code) are linked to the Costing Principles. The Over-payment Rules set out the methodology for dealing with over payments where a breach of the ceiling price test (referred to in clause 8 of Schedule 4 of the Code) has occurred.

1.2 Development of Costing Principles

These Costing Principles have been developed on the basis that they are a set of principles that will need to be supported by databases and costing models containing considerable detail, which will change from time to time.

1.3 Relevance of Costing Principles

- (a) The Costing Principles are a statement of the principles, rules and practices that RHI will apply to calculate the incremental costs and the total costs over the applicable Route Section, as required to be established under the Code.
- (b) The Code also allows RHI to negotiate prices between the Floor Price and the Ceiling Price and as such the incremental costs and the total costs only provide the lower and upper boundaries to potential final prices for access which will be established by negotiations (and if necessary arbitration).
- (c) Although this document only refers to the Costing Principles, RHI notes that clause 13 of Schedule 4 to the Code provides guidelines on which negotiated access prices under the Code are to be based.
- (d) RHI is prepared to discuss access with interested parties either within the requirements of the Code or outside the Code. The rights and protection offered under the Code are not extended to negotiations and agreements undertaken outside the Code.

1.4 Service quality commitment

- (a) RHI will adopt economically and technically efficient practices to provide a network which maintains service quality at the specified operational levels for the network.
- (b) RHI will negotiate specific KPIs (covering both RHI and the Operator's performance) in its Access Agreements to measure operational performance of itself and the Operator. This may include financial incentives or penalties.

1.5 Structure of this document

This statement of Costing Principles is structured into seven sections:

- (a) Section 2 – Determination of capital costs;
- (b) Section 3 – Determination of operating costs;
- (c) Section 4 – Determination of overhead costs;
- (d) Section 5 – Other matters;
- (e) Section 6 – Compliance and review;
- (f) Section 7 – Definitions; and
- (g) Section 8 – Annexures.

2. Determination of capital costs

2.1 Introduction

- (a) The total costs, and in certain circumstances the incremental costs, include a capital charge which is intended to reflect the cost to RHI of establishing and replacing infrastructure capacity over time. The Code sets out the basis for determining the capital charge based on an annuity formula, calculated having regard to the gross replacement cost of the infrastructure, its economic life and an allowable rate of return. The capital charge, using the annuity formula, compensates RHI for both the return on capital and for capital depreciation of the infrastructure.
- (b) Incremental costs will include a capital charge only where RHI has agreed that it is necessary to make capital expenditure to provide the Service (either because of the need to expand capacity or because of the characteristics of the Service requested) and RHI has agreed, at its complete discretion, to fund the capital expenditure. In such cases, it is appropriate to include the cost of this capital in the incremental costs. These circumstances will only arise where RHI has agreed, at its complete discretion, to fund capital expenditure, and will usually be limited to situations where capacity has to be expanded to meet the Operator's requirements. In calculating an Operator's incremental cost, the economic life assumption underpinning the annuity payment calculation for these types of capital costs will be based on the economic life of assets listed in Annexure A. If the assets service a time limited project, then the annuity will be based on that shorter life, and the ERA will be advised as to the reasons for the shorter life assumption.
- (c) There are five key elements which underpin the determination of the appropriate capital charge:
 - (i) infrastructure to be included in the calculations;
 - (ii) gross replacement value;
 - (iii) economic life of the asset;
 - (iv) allowable return; and
 - (v) annuity calculation.

Each of these elements is discussed below.

2.2 Capital Costs associated with Land

- (a) Capital costs will be calculated to include amounts for the amortisation of:
 - (i) the costs incurred by RHI to acquire any interest in land; and
 - (ii) any other costs incurred by RHI in relation to the acquisition of any interest in land (including costs incurred in connection with Aboriginal heritage or native title issues or other transaction costs).
- (b) The capital cost associated with land and the methodology used by RHI for its calculation will be reviewed by the ERA as part of each incremental cost and total cost determination.

2.3 What infrastructure is included?

- (a) Capital costs will include all amounts intended to reflect the cost of establishing and replacing infrastructure capacity over time (including the acquisition costs of the land on which the infrastructure is located, if that cost is not included in these Costing Principles elsewhere as an operating cost). The amount will be an annuity calculated in respect of the value of the infrastructure assets, the appropriate rate of return and the economic life of assets, and will apply to all of the railway infrastructure owned by RHI that is defined as “railway infrastructure” under Part 1 of the Code, including:
- (i) railway track, associated track structures, over and under track structures, supports (including supports for equipment or items associated with the use of a railway);
 - (ii) tunnels and bridges;
 - (iii) stations and platforms;
 - (iv) train control systems, signalling systems and communications systems;
 - (v) buildings and workshops; and
 - (vi) associated plant, machinery and equipment.
- (b) Railway infrastructure is taken to include any cuttings or embankments.
- (c) Assets which support operating functions will be included in the operating cost or overhead cost calculations as appropriate. Assets included in this category are motor vehicles, computers, printers, facsimile machines, photocopiers, system hardware and software, mobile and fixed communications, office furniture and equipment. The cost of these assets will be calculated on a net basis.

2.4 Gross Replacement Values

- (a) There are a number of underlying assumptions which affect the calculation of Gross Replacement Values (**GRV**) including:

(i) Capacity of infrastructure

The infrastructure is required to be optimised to meet current and reasonably projected demand.

RHI believes the existing network can meet the reasonably projected demand by RHI. If RHI received a request for access from a third party, the capacity of the existing network would have to be increased. RHI would include the costs of the additional infrastructure required to meet the projected demand from the third party, and that third party would need to demonstrate:

- (A) the basis of the demand projection; and
- (B) a commitment to the capital expenditure.

(ii) Route optimisation

RHI will assume that the optimised network is provided by the rail track within the existing corridor of the land and therefore the resulting lateral alignment of the network is considered efficient.

(iii) Contributed assets

There are at present no contributed assets on RHI's existing network. However, in the future, it is possible that individual third parties may contribute capital towards the construction of the network. In such a case, contributed assets will be included in the cost of capital for the purpose of calculating the GRV and the total costs applicable to a Route Section. Contributed assets may include both government and operator contributed assets, and the cost of operating and maintaining these assets will also be included in the calculation of total costs.

In the case of Government and operator contributed assets, the value of the contributed capital will be accounted for as an equivalent annuity payment which is to be included in the revenue earned on the asset, for the purpose of calculating total costs.

As an illustration, if RHI contributed 50% of the capital cost of a new level crossing, with the other 50% coming from another source, then for the purpose of the total costs calculation, the full cost of the level crossing calculated as an annuity would be added to the total costs of the relevant Route Section. As for the 50% contribution from the other source, that amount would be annualised and treated as revenue for the purpose of the calculation of total costs of that Route Section.

(iv) Greenfields Site

For the purposes of calculating the GRV, the replacement cost calculations are to assume a Greenfields site. However, costs related to constructing around and over other existing railways and rail traffic, and other surface diversions shall be included in the replacement cost calculations.

(v) Modern Equivalent Assets

Replacement values are to be assessed on the basis of Modern Equivalent Assets (**MEA**), and current market tested unit rates for materials, where appropriate.

The key steps required to complete a GRV estimate based on MEA are:

- (A) identify the Route Section or Route Sections that the GRV is being calculated for;
- (B) assess the existing railway infrastructure specification to ensure that the MEA test is appropriate;
- (C) review asset databases to ensure the population of assets is correct;
- (D) confirm existing network capacity will meet current and reasonably expected future demand on the network;
- (E) confirm unit rates are based on Efficient Costs;
- (F) complete an analysis of each asset class to optimise the network to a MEA; and
- (G) calculate the current GRV of the railway infrastructure using the MEA or existing asset specification if appropriate.

The key capital cost drivers RHI will adopt to ensure a MEA network are:

- (H) the operating track standard (axle load, speed);
- (I) population of supporting infrastructure (bridges, culverts); and
- (J) topography of route (gradient and track curvature).

(vi) Unit rates

RHI will determine the unit rates to be included in the RHI costing model (which may be reviewed by an independent engineering consultant) and, where these rates have any adjustment for scale or scope or the impact of location, these assumptions will be included.

This information is contained in the RHI costing model and will be made available to the ERA and contains information of the source and the assumptions that are currently used in the model.

In addition, RHI will identify and provide to the ERA, unit rate information and assumptions that it considers can be released as part of the public consultation process for the ERA's determination under clause 9 of Schedule 4 to the Code on the incremental costs and total costs to apply to the applicable Route Section.

(vii) Design, construction and project management fees

If design, construction and management fees are not included elsewhere in the capital cost of infrastructure, RHI will apply design, construction and project management fees at a rate of 20% of the total cost of the infrastructure and based on the life of the project.

Because RHI uses primary unit rates for establishing construction costs, it is appropriate to charge the full project management on the materials cost calculated for the infrastructure (which materials costs shall include travel and accommodation, fuel consumption for construction activities and equipment and plant hire). In cases where such fees are included in unit rates, RHI accepts that the project management fee should be reduced to account for such charges, keeping total design, construction and project management fees in line with a 20% limit.

(viii) Financing charge during railway infrastructure construction

The Code requires that the GRV for railway infrastructure be applied as part of the calculation of the capital charge. Consistent with this approach, RHI will include in the capital cost an allowance for its cost of capital and related financing fees and charges during the construction period.

RHI will apply the WACC determined by the ERA to the construction cash flows to calculate the financing charge. Upon completion of construction, the interest calculation ceases. In determining the annuity payment attributed to such costs, the life of the project will be used.

Construction rates will vary depending on scale and scope and also the geography and the impact of other infrastructure on the applicable Route Section. RHI will use an appropriate average construction rate. This rate will be based on the entire RHI Railway and allocated to the applicable Route Section on a per kilometre basis. The ERA may consider a higher or lower rate in some sections of the network and adjust the construction rate accordingly.

(ix) Economic life

RHI has evaluated the economic life of its infrastructure based on the application of MEA with new components and key determinants of asset life such as environmental factors, which will have an impact to extend or reduce the life of the asset.

This evaluation is based on generally accepted industry lives and RHI’s own experience. The economic life of assets adopted by RHI are generally consistent with those accepted in other regimes.

In calculating a total (and if appropriate an incremental) cost, the economic life assumption underpinning the annuity payment calculation for these types of capital costs will be based on the economic life of assets listed in Annexure A unless a shorter life is adopted due to the assets servicing a time limited project. In assessing the life of a project serviced by the assets, RHI may have regard to the term of contractual arrangements that are entered into by the parties. The ERA will be advised as to the reasons for any shorter life assumption.

2.5 Allowable return

In accordance with the Code, the nominal pre-tax WACC as applied to the RHI Railway will be determined by the ERA and reviewed (by the ERA) each year at 30 June.

2.6 The annuity calculation

- (a) The annuity calculation provides a return on capital and implicitly provides for depreciation of the asset.
- (b) RHI has adopted the methodology (applying the PMT formula) used in a Microsoft Excel spreadsheet to calculate the annuity required.
- (c) The MS Excel terminology for the Annuity formula (PMT) is described:

Rate of Interest:	be set at the relevant WACC as defined by the Code.
Nper:	be expressed in years and based on the lesser of (a)the economic life of the asset; and (b) the life of the project.
Pv:	is the GRV of the relevant Route Section.
Fv:	is the salvage value, if any, which remains at end of economic life. At the end of the economic life of an asset, or at the end of the life of the project, the salvage value is to be set at zero.
Type:	be set at the start of the period by inputting 1.

- (d) This formula estimates the annual capital charge at the beginning of the period. Payments are calculated annually in advance based on this formula for estimating the capital charge. Any underpayments or overpayments will be calculated promptly after the end of each financial year

against actual costs incurred during the year, and any adjustment will be refunded or paid (as appropriate) promptly after the finalisation of the calculation.

- (e) If amounts are not paid annually in advance, the ERA has determined that RHI can include in its operating costs a proxy for the working capital required due to the effects of the formula (refer to section 3.3). The appropriate methodology is to calculate the charge annually in arrears but this is not possible under the definition in the Code where economic life for the GRV of the railway infrastructure is to be expressed by reference to number of years of useful life.

3. Determination of “Operating Costs”

3.1 Introduction

RHI has determined its Operating Costs based on the Efficient Costs of maintaining the MEA network.

3.2 Efficient cost tests

- (a) RHI will test whether or not its Operating Costs used for determining the incremental costs and total costs are efficient as follows:
 - (i) benchmarking will be used where it is available and comparable;
 - (ii) for certain processes and activities unit costs from competitive tendering may be used;
 - (iii) if the maintenance programs are based on accepted industry standards for maintenance which describe the scope and frequency of the activity then this may be considered to be efficient;
 - (iv) actual costs may be used where the consumption and scope are efficient (e.g. train controller’s salaries if the number of controllers and their range of duties are efficient by benchmarking); and
 - (v) actual costs may also be used where the costs:
 - (A) come from a competitive market such as insurance; or
 - (B) are regulatory costs (such as the cost of Rail Safety Accreditation).
- (b) In measuring efficiency, RHI recognises that these costs change over time especially as a result of innovation and technological change.

3.3 RHI’s definition of “Operating Costs”

- (a) In determining what maintenance activities are required to maintain MEA infrastructure in a GRV based regime, major periodical maintenance activities (**MPM**) have not been included. For the purpose of these Costing Principles, this is because MPM is assumed to extend the economic life of the assets.

- (b) However, it is noted that the use and definition of MPM has a wide variety of applications and interpretation in the rail industry. There are some activities which are included in both MPM or in Cyclical Maintenance in a GRV based regime and are not exclusive to either regime. For this reason, in these Costing Principles, RHI uses the defined terms “Routine Maintenance” and “Cyclical Maintenance” to describe the activities it will include in its Operating Costs.
- (c) For present purposes, RHI has five categories of Operating Costs in the Costing Model as follows:
- (i) Routine Maintenance for track and for signals and communications;
 - (ii) Cyclical Maintenance for track and for signals and communications;
 - (iii) Network Management Costs;
 - (iv) Land Related Operating Costs and
 - (v) Working Capital Charge.

Note that the expression “Operating Costs” is also defined in the Code.

(i) Routine Maintenance and Cyclical Maintenance for track

RHI has developed a track maintenance model which calculates the cost of maintaining the track infrastructure in accordance with the defined assumptions documented in these Costing Principles. The assumptions adopted in this process are set out below.

The track infrastructure is new at year 1 and is maintained to realise the defined economic life of components of the asset. The infrastructure maintenance levels and the frequency of the activities are deemed to comply with the Australian Standard AS4292 (Parts 1 and 2) which specifies the safety requirements of the Railway Safety Management System.

The maintenance regime is broadly classified into two categories:

- (A) Routine Maintenance; and
- (B) Cyclical Maintenance.

There are two major activity classifications within Routine Maintenance, namely:

- (C) routine inspections; and
- (D) routine maintenance, which typically follows the inspection process.

The inspection regime includes patrolling, on-train inspection, track condition monitoring (using recorder vehicles), defined event inspections by patroller and inspection of structures.

Routine Maintenance is therefore the corrective action taken as a follow up to routine inspections.

Cyclical Maintenance comprises tasks that are undertaken at regular intervals to ensure that assets achieve their expected asset life and include:

- (1) track resurfacing, rail grinding, ballast top up and cleaning, rail defect removal and structures maintenance to achieve economic life; and
- (2) firebreaks, scrub slashing, drainage, access roads and road seal on level crossings to meet operational and safety requirements.

The cost of repairing infrastructure as a result of incidents such as fire and flood and damage caused to the track as a result of derailments or accidents, has been included in maintenance costs but only to the extent they are not recoverable under insurance policies or direct from operators. The cost of repairing infrastructure will not be included if it can be shown that RHI is grossly negligent in its responsibility as a railway owner. While RHI intends to calculate such “incident costs” based on a historical cost approach, RHI understands that the ERA will decide such costs having regard to the manner in which the cost of incidents is calculated when determining the incremental costs and total costs on the various routes as part of the review conducted under clause 9 of Schedule 4 to the Code.

The track maintenance model is incorporated into the Costing Model and includes all the assumptions and prices used in that model. As the level of maintenance activity varies over the life of the asset, it is appropriate to calculate the net present value of the projected stream of maintenance costs that occurs over the life of the asset, starting with the assumption of a new asset in year 1. The annualised value of this stream of costs is then used to represent an average annual maintenance charge over the life of the asset. These are costs included in the definition of “Operating Costs” in clause 1 of Schedule 4 to the Code.

(ii) Routine Maintenance and Cyclical Maintenance for signalling and communications

Signalling and communications costs are largely based on Routine Maintenance because of the safety and operating requirements of these systems.

Routine Maintenance is based on industry accepted inspection regimes and on fault history and includes specified periodical inspections and procedures (including testing), and responses to faults.

Cyclical Maintenance is significantly less important for signalling and communications - it includes component rebuilds to achieve economic life.

The signal and communications maintenance model is incorporated as part of the Costing Model. The annual charge is based on an annualised value of the net present value of maintenance costs stream. Maintenance costs are allocated to Route Sections according to train movements.

These are costs included in Part (b) of the definition of “Operating Costs” in clause 1 of Schedule 4 to the Code and the NPV of the cash flows is then used to calculate an average annual maintenance charge over the life of the asset.

(iii) Network Management Costs

RHI will incur costs which are directly related to the operational management of the network as defined in Part (b) of the definition of “Operating Costs” in clause 1 of Schedule 4 to the Code.

These costs reflect a centralised train control system and include compliance costs with RHI’s rail safety accreditation requirements under the Rail Safety National Law, train scheduling and requirements for emergency management.

These costs include the whole of any additional costs incurred by RHI resulting from the provision of access to another Operator in managing the network (including the entire cost of employing or engaging any additional persons required as a consequence of complying with RHI’s obligations to provide access under the Act and the Code).

(iv) Land Related Operating Costs

Land Related Operating Costs are any payments made in respect of any lease or licence that RHI (or any related company of RHI) holds over any land. These payments will relate only to land used for constructing, maintaining or operating the RHI Railway and are not capital costs.

(v) Working Capital Charge

If the capital charge is not paid annually in advance, because of the limitations of the Code in calculating the annuity formula described in section 2.6, RHI will include in its Operating Costs an annual “Working Capital Charge” that is calculated by multiplying the WACC by the annuity. However, if the capital charge is paid monthly in advance, RHI will include in its Operating Costs an annual “Working Capital Charge” that is calculated by multiplying half of the WACC by the annuity.

(vi) Insurances

The cost of any insurances taken out by or on behalf of RHI (or any related company of RHI) will be included in RHI’s Operating Costs. If RHI (or any related company of RHI) elects to self insure any part of the assets which form part of the Project or any aspect of the business conducted by RHI (or any related company of RHI) an amount equal to the cost which would have been incurred had RHI (or any related company of RHI) taken out or effected insurance with an external provider will be included in the costs of RHI.

3.4 Allocation of Operating Costs

- (a) Track and signalling maintenance costs are directly allocated to Route Sections based on the nature and population of the infrastructure.
- (b) Centralised train control cost will be apportioned directly to routes based upon actual train control resources managing traffic over each route. Allocation of non-sector specific operating costs including costs in part (a) of the definition of Operating Costs in Schedule 4 of the Code is in accordance with the allocation rules using GTK or train movements and listed in Annexure B. The allocation of Operating Costs will in the first instance be apportioned to the applicable Route Section and subsequent allocation to the applicable Route Section will be determined by the ERA as part of the incremental cost and total cost determinations.

3.5 Payment of Operating Costs

Amounts payable for Operating Costs will be paid annually in advance based on budgeted costs. Any underpayments or overpayments will be calculated promptly after the end of each financial year against actual costs incurred during the year, and any adjustment will be refunded or paid (as appropriate) promptly after the finalisation of the calculation.

4. Overhead Costs

4.1 Definition of “Overhead Costs”

RHI is a separate legal entity and has an efficient overhead structure which relates to its business of access provision. RHI also sources corporate and related functions from its immediate parent company, Roy Hill Holdings Pty Ltd. Nonetheless, only those Overhead Costs attributable to activities related to the

Code's definition of "railway infrastructure" will be included in the calculation of incremental costs and total costs.

4.2 Allocation of Overhead Costs

The allocation of Overhead Costs will, in the first instance, be apportioned to a Route Section and subsequent allocation to the Route Section level will be determined by the ERA as part of the calculation of incremental costs and total costs.

Details of Overhead Costs included are set out in Annexure B.

4.3 Payment of Overhead Costs

Amounts payable for Overhead Costs will be paid annually in advance based on budgeted costs. Any underpayments or overpayments will be calculated promptly after the end of each financial year against actual costs incurred during the year, and any adjustment will be refunded or paid (as appropriate) promptly after the finalisation of the calculation.

5. Other matters

5.1 Incremental Costs and Total Costs variations

- (a) Following any determination of incremental costs and total costs, the costs may be indexed annually, for a period of up to five years. The purpose of the indexation is to enable the administration of the Over-payment Rules in relation to revenues received under Access Agreements and to enable total costs to reflect a reasonable return to RHI over the five year period without requiring RHI or the ERA to predetermine costs over that period.
- (b) Costs determined for the purposes of administering the Over-payment Rules will remain unadjusted following the expiration of the five year determination period, unless superseded by costs approved by the ERA in a subsequent determination.
- (c) RHI will index the incremental costs and the total costs annually based on any actual cost increases which have occurred for the year (or if those actual cost increases cannot be calculated, then the applicable CPI for the Pilbara region of Western Australia). Cost increases will include any additional costs which might be incurred as a consequence of any change in law, or change in policy (Government, local Council or otherwise), which might adversely affect the cost of conducting RHI's business (including without limitation any policy changes which affect employees, consultants and contractors of RHH or its subsidiaries).
- (d) RHI will submit the annual inflation adjusted incremental costs and total costs for determined routes to the ERA for review and approval.

5.2 Asymmetric risk

RHI will include an allowance for asymmetric risk as an annual Operating Cost in its model and in its calculation of incremental costs and total costs. The allowance and the methodology used by RHI for its

calculation will be reviewed by the ERA as part of each determination of incremental costs and total costs.

6. Compliance and review

- (a) These Costing Principles may be amended or replaced by RHI with the approval of the ERA. Stakeholders have the ability to express any concern to the ERA which may arise at any time and the ERA will investigate such claims.
- (b) The ERA has the power under the Code to amend these Costing Principles at any time and Operators and persons seeking access can at any time request the ERA to consider amendments.

7. Definitions

In these Costing Principles:

Access Agreement	means an agreement in writing under the Code between RHI and an entity for access to the RHI Railway by that entity.
Act	means the <i>Railways (Access) Act 1998 (WA)</i> .
Ceiling Price	has the same meaning as in clause 9(4) of the Code.
Code	means the Railways (Access) Code 2000 established under the Act.
Costing Model	<p>means the model that RHI uses to calculate total costs and includes the associated models and data bases for:</p> <ul style="list-style-type: none">(a) the track, signalling and communications models which calculate the GRV of the rail infrastructure;(b) track, signalling and communications maintenance models;(c) the model of Operating Costs;(d) the Overhead Cost and other costs allocation model;(e) track population data bases; and(f) the usage model which records from RAMS the GTK usage and train movement by Route Section, <p>and supporting detail for these models including unit rates, assumptions and sources of information as well as the physical characteristics of the rail infrastructure including distance and specifications.</p>
Costing Principles	means these principles, rules and practices, approved by the ERA in accordance with section 46 of the Code.

CPI		means the Weighted Average of Eight Capital Cities All Group Consumer Price Index published by the Australian Bureau of Statistics or the Australian Statistician.
Cyclical maintenance		means tasks undertaken at regular intervals (for example, annually) which are necessary to achieve the expected asset life. Tasks could include (but are not limited to): <ul style="list-style-type: none">(a) track resurfacing - rail grinding, calculation, ballast top up and cleaning, rail defect removal, and structures maintenance;(b) signalling and communications - servicing, component replacement and cleaning;(c) track - firebreaks, scrub slashing, drainage, access roads, road seal on level crossings;(d) signalling and communications - upgrading of components; and(e) change out for detailed servicing.
Efficient Costs		means those costs that would be incurred by a body managing the railways network and adopting efficient practices applicable to the provision of railway infrastructure, including the practice of operating a particular route in combination with other routes for the achievement of efficiencies.
Economic Authority (ERA)	Regulation	means the Economic Regulation Authority established by the <i>Economic Regulation Authority Act 2003</i> (WA).
Floor Price		has the same meaning as in clause 9(4) of the Code.
incremental costs		has the same meaning as in clause 1 of schedule 4 of the Code.
GRV		means the gross replacement value of the railway infrastructure calculated as the lowest current cost to replace the existing assets with assets that: <ul style="list-style-type: none">(a) have the capacity to provide the level of service that meets the actual and reasonably projected demand; and(b) are, if appropriate, MEA.
GTK		means gross tonne kilometre.
MEA		means “modern equivalent asset”, being an optimised network that is re-configured using current modern technology serving the current load with some allowances for reasonably projected demand growth up to three years into the future. The MEA excludes any

	unused or underutilised assets and allows for potential cost savings that may have resulted from technological improvement.
MPM	means “major programmed maintenance” activities which are, or are associated with, partial asset renewal to maintain functional condition of the infrastructure and which occur at intervals greater than one year.
Network Management	means activities that are undertaken in the provision of train management. Functions include access management, train scheduling, operations planning, RAMS management, customer service and safe working management.
Operator	has the same meaning as in clause 3 of the Code.
Operating Costs	means those costs which fall within the meaning of the term “Operating Costs” in section 3 of these Costing Principles.
Overhead Costs	means those costs which fall within the meaning of the term “Overhead Costs” in section 4 of these Costing Principles.
Over-payment Rules	means the rules for RHI determined by the ERA in accordance with clause 47 of the Code, which deal with the payment of amounts in excess of total costs.
Product	means product produced by the Roy Hill Mine.
Rail Safety National Law	means the <i>Rail Safety National Law (WA) Act 2015 and the Rail Safety National Law (WA) Regulations 2015</i> .
RAMS	means the Rail Access Management System computer system operated by RHI for the purpose of preparing train consists and monitoring Train progress on the Network and generally for the purpose of Train Control, including for the provision of information relating to timetables, special train notices, temporary speed restrictions, and track warnings.
RHI	means Roy Hill Infrastructure Pty Ltd ABN 60 130 249 633.
RHI Railway	means the railway owned and operated by RHI from the Roy Hill minesite to the Port of Port Hedland.
RHI Rules	means RHI’s Rules issued in accordance with RHI’s Safety Management Plan approved under the Rail Safety National Law together with any amendments, deletions or additions made in accordance with the Safety Management Plan and all policies and notices issued by RHI for the purpose of ensuring the safe use of the rail network.

Route Section or Route Sections means a section, or the sections (if any), into which the RHI Railway is divided for management and costing purposes in accordance with Schedule 2 of the Code.

Routine Maintenance means regular and ongoing maintenance activities, which are required to meet specific levels of defined safety and operational standards and commences from day one of operation and is generally continuous for the life of the operation. There are two major activity classifications:

- (a) routine inspections of:
 - (i) track, which includes patrolling; track recording using on track recording technology, ultrasonic testing, site inspections; and structures inspections; and
 - (ii) signalling and communications, which includes programmed inspections and systems and equipment testing;
- (b) routine maintenance which is usually undertaken as a result of the inspection process and comprises maintenance of:
 - (i) track, which includes change out of failed sleepers or components; cross boring; recanting of curves; geometry corrections and tamping following inspections; turnout maintenance, minor formation repairs; and fastening replacement ; and
 - (ii) (ii)signalling and communications, which includes scheduled services, replacements and cleaning, etc.

Services means any services provided under an Access Agreement which may include any one or more of the following:

- (a) the provision of access to the Railway;
- (b) the receipt of Product from the Operator (or another person) at a loading point;
- (c) the transportation of Product from a loading point to an unloading point; and
- (d) the delivery of Product to the Operator (or another person) at an unloading point.

total costs means the total of all:

- (a) Operating Costs;
- (b) capital costs; and
- (c) Overhead Costs,

attributable to the performance of the railway owner's access related functions whether by the railway owner or an

associate as defined in the Code, as defined in clause 1 of schedule 4 to the Code.

WACC

means the target long term weighted average cost of capital appropriate to the railway infrastructure expressed as an annual interest rate and determined by the ERA in accordance with clause 3 of schedule 4 to the Code.

Annexures

Annexure A - Economic Life of Assets

Assets	RH Economic Life (Years)
--------	--------------------------

Track Structure

Earthworks	16
Ballast	16
Sleepers	16
Turnouts/Catchpoints	16
Insulated Joints	16
Bridges	16
Level Crossings	16
Culverts	16
Rail structures and infrastructure	16

External Access Roads 16

Internal Access Roads 16

Signalling & Communications

Radio Base Stations	7
Towers	16
Enclosures	16
Level Crossings (active warning & monitoring)	15
Signalling Equipment	15
Detection Devices	15
Site facilities, equipment rooms, location cases etc.	16
Electronic equipment	10
Computer/network equipment	5

Overhead Costs	RHI Overhead Costs	Corridor management; access compliance costs; net cost of computers; office equipment; furniture; motor vehicles; safety accreditation costs; and RHI management costs. Information systems, Payroll, Human resource management; accounting/finance, company secretarial and legal are included as part of RHI overhead.	GTK & Train Numbers Proportion to be agreed by the ERA during floor and ceiling cost determinations.
----------------	-----------------------	---	--

Notes

Two proxies are used to allocate Overhead Costs. GTK’s are used to allocate costs which vary more in quantum due to volumes moved, and train movements are used to allocate costs which vary more in quantum due to the number of train movements.

Rev	Document Number	Author	Approver / BFO	Issue Date	Approved Date	Page
A						Page 22 of 22