



Economic Regulation Authority

Draft determination of Arc Infrastructure depreciated optimised replacement costs and depreciation schedule

Attachment 5: Funding Cost During Construction

26 March 2026

Acknowledgement of Country

At the ERA we value our cultural diversity and respect the traditional custodians of the land and waters on which we live and work.

We acknowledge their continuing connection to culture and community, their traditions and stories. We commit to listening, continuously improving our performance and building a brighter future together.

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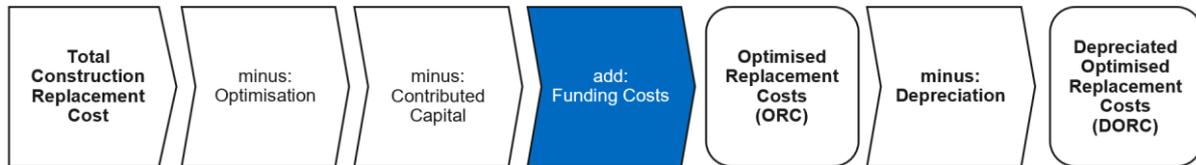
Note

This attachment relates to the funding cost during construction component of the DORC.

This attachment forms part of the ERA's draft determination on the Arc DORC and Arc Depreciation Schedule. It should be read in conjunction with all other parts of the draft determination, which comprises of the following documents and attachments:

- Overview
- ERA's draft determinations of depreciated optimised replacement costs by route section
- ERA's draft determinations of depreciated optimised replacement costs (model)
- ERA's draft determinations of depreciation schedule (model)
- Attachment 1: Information used by the ERA
- Attachment 2: Total construction replacement costs
- Attachment 3: Optimisation
- Attachment 4: Capital contributions
- **Attachment 5: Funding cost during construction (this document)**
- Attachment 6: Depreciation
- Attachment 7: DORC summary

Attachment 5. Summary



Funding costs constitute the opportunity cost of the capital required to construct the network. This recognises the debt and equity funding that a business needs to finance required expenditure over the construction period.

Arc's Costing Principles regarding funding costs state that they are to be based on a weighted average cost of capital (WACC) determined by the ERA, where funding costs are capitalised during the construction development curve from start through to completion.

Arc calculated funding costs to be \$9.1 billion on an optimised replacement cost of \$20.9 billion, or 44 per cent of optimised replacement cost. Arc allocated funding costs to the underlying network assets, where they then inherit the economic life of those network assets.

All stakeholder submissions disagreed with Arc's amount and approach to funding costs during construction. On the funding cost amount, stakeholders questioned the quantum with respect to precedents and proportion of the financial capital compared with the physical capital. Stakeholders disagreed with the construction scope, duration and staging, stating that Arc's approaches appeared excessive. Additionally, some stakeholders questioned whether the weighted average cost of capital applied by Arc was appropriate given the regulatory task.

The ERA has considered Arc and stakeholder views and has formulated an estimation of funding costs based on the following factors.

The appropriate form of the rate of return to apply for a depreciated optimised replacement cost exercise

In its statement, Arc proposed a real pre-tax WACC based on the 2024 WACC determination of 7.46 per cent.

In the draft decision, the ERA applies a real post-tax WACC of 6.22 per cent, based on the ERA's 2024 WACC determination. As DORC values are calculated in 2024 real dollars, the 2024 WACC determination is appropriate as it reasonably matches with the real dollar base.

The use of a post-tax WACC for calculating funding costs results in a regulatory asset base that does not include a tax allowance. This leaves it open for negotiations to incorporate tax impacts as counterparties see fit. This also avoids the complexity of stakeholders attempting to unwind embedded tax payments in the regulatory asset base which would result from the use of a pre-tax approach. Tax expenses can then be transparently incorporated into standard building block costs for any future price setting.

The ERA considers that the use of a post-tax WACC avoids the risk of double counting tax in future price assessments. It also reflects the reality that tax payments are not incurred during the construction of the rail infrastructure.

The appropriate capital amount to apply the rate of return over

In its statement, Arc applied the rate of return to its optimised construction replacement cost estimate of \$20.9 billion.

The ERA has applied the rate of return to the ERA's optimised replacement cost estimate of \$14.8 billion, which is a lower amount. The ERA's optimised replacement cost is lower due to changes in total construction replacement costs, lower due to higher optimisation amounts, and due to the deduction of capital contributions. Funding costs are not applied to capital that has been removed from the asset base from optimisation or from capital contributions.

The transaction costs for raising capital

Arc did not calculate transaction costs, except that debt transaction costs are implicitly incorporated in the 2024 WACC determinations as part of the overall cost of debt.

In the draft decision, the ERA includes transaction costs for equity finance. The 2024 WACC determinations includes debt financing costs in the WACC, but equity raising costs are usually calculated separately to the WACC. For consistency, and to recognise that transaction costs are necessary to raise equity capital, equity raising costs are included in the draft decision.

The expenditure profile and duration of funding cost capitalisation to completion

Arc's proposal capitalised funding costs for 19 years, being the length of the construction period based on its consultant's monthly expenditure profile, where funding costs are capitalised from when they are incurred until network completion.

In the draft decision, the ERA capitalises funding costs for 11 years, in line RPI's estimated construction period based on an annual expenditure profile where funding costs are capitalised in two stages to full completion. The ERA does not consider that economic efficiency and utilisation is promoted by assuming that the rail network can only earn revenue when the last expenditure dollar is spent (at full completion) and has, accordingly, adopted a draft position where commissioning occurs in two stages. This recognises that a prudent operator would seek to minimise funding costs.

The economic life of the funding costs

In its statement, Arc attributed funding costs to the underlying network assets. In doing so, the funding costs inherited the economic life of those network assets instead of the 50 years stated in the Costing Principles.

The ERA has accepted Arc's approach. The ERA considers that funding costs are tied to the procurement and commissioning of specific assets which all have different economic lives, most of which are not close to the 50 years. The draft decision approach means that funding costs will have the same economic life and depreciation treatment of the related assets. This matching approach is likely to result in greater economic efficiency and utilisation than the approach in the Costing Principles, as it avoids the situation where an asset may be fully depreciated but still have outstanding associated funding costs remaining in the asset base.

Draft decision

The ERA's draft decision is that funding costs of \$2.1 billion will be included as part of the optimised replacement costs. These funding costs will be attributed to the underlying network assets and will have the same economic life of those network assets.

The ERA seeks stakeholder views on options around the progressive commissioning schedule and how parts of the network could be brought into service sooner. This recognises that the rail network build would be progressively commissioned and likely better aligns with what a commercial operator would do and also works to minimise the total costs, inclusive of funding costs.

For the final determination, the ERA will undertake further work to understand how a commissioning schedule can align with individual customer routes. This will include consideration of the use of specific commissioning project schedules (schedule of projects released to customers) versus the use of general commissioning assumptions (commissioning when a percentage of the rail network is complete). We are inviting feedback from stakeholders to assist with this assessment.

Funding Cost During Construction

1. Funding costs constitute the opportunity cost of the capital required to construct the network. This recognises the debt and equity funding that a business needs to take out to finance required expenditure over the construction period.
2. To ensure that funding costs incurred during construction can be recovered these costs are capitalised within the asset's initial value. Like other construction expenditure funding costs are accumulated as part of the asset's carrying value to be recovered later.
3. Funding costs cease to be capitalised once the asset is placed into service and customer revenue is generated. These capitalised costs are then recovered through depreciation over the asset's economic life.
4. A railway owner finances the construction of the network by securing funding from the market. That funding would be a combination of debt and equity, each requiring a market reflective return. The cost of securing funds from the market is provided for by the weighted average cost of capital which reflects the appropriate risk adjusted returns for a project with a particular debt and equity capital structure.
5. Arc's Costing Principles include funding costs as a component of an asset replacement cost. Under the Costing Principles, funding and opportunity costs will be estimated by applying the WACC to a development cost curve over a realistic project development duration.¹
6. The size of funding costs during construction is a function of factors including:
 - the weighted average cost of capital
 - the amount of capital expenditure incurred
 - the time over which construction is undertaken and funds drawn down
 - when consumers can use the asset, after which the need for capitalisation ceases.

¹ Arc infrastructure, *Costing Principles*, 11 July 2025, pp. 10-11.

Arc Infrastructure Proposal

7. Arc's proposal included funding costs during construction of \$9.1 billion that it capitalised into the railway's asset value. Funding costs during construction amounted to approximately 44 per cent of Arc's estimated optimised replacement cost of \$20.9 billion.²
8. Arc's Costing Principles detail that the asset replacement cost will include provisions for funding costs, with these to be estimated by applying the WACC to a development curve over a realistic project development duration. The Costing Principles state:
 - 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 will be specified on the basis of a single stage project comprised of concurrent individual projects.
9. In calculating its proposed funding costs during construction Arc used a standard roll forward approach to accumulate funding costs into the asset value over its construction schedule. Funding costs are capitalised at the point they are incurred.
10. Funding costs should be calculated after removing capital contributions, that is, based on expenditure net of contributions. Arc would not need to finance capital contribution amounts. Arc's proposal included no contributed assets and therefore it made no adjustment for any contributed investment.³
11. Arc used a rate of return from ERA's 2024 WACC determination.⁴ A real pre-tax WACC of 7.46 per cent was applied in Arc's funding calculations.⁵
12. Arc assumed that assets would only enter service at the completion of the total network build and therefore funding costs would continue to be capitalised over the whole length of the construction period. This approach resulted in funding costs continuing to be compounded until the completion of the whole network.
13. Arc has provided for the following construction duration:⁶
 - Preconstruction planning, design, approvals and enabling works - 4.8 years
 - Construction works - 13.3 years.

² GHD Advisory, *Applicable Railway Infrastructure DORC Final Report Arc Infrastructure Pty Ltd*, 6 June 2025, p. iii.

³ GHD Advisory, *Applicable Railway Infrastructure DORC Final Report Arc Infrastructure Pty Ltd*, 6 June 2025, p. 163.

⁴ ERA, *Determination on the 2024 weighted average cost of capital for the freight and urban railway networks, and for Pilbara railways*, August 2024.

⁵ GHD Advisory, *Applicable Railway Infrastructure DORC Final Report Arc Infrastructure Pty Ltd*, 6 June 2025, p. 15.

⁶ GHD Advisory, *Applicable Railway Infrastructure DORC Final Report Arc Infrastructure Pty Ltd*, 6 June 2025, p. 105.

14. Arc contended that its railway development program is intended to minimise overall project development costs, which does not necessarily develop the project in the shortest possible time frame. However, this appears to focus on replacement cost and not total cost, which would also include funding costs.
15. Arc stated that:

“durations of major construction tasks are based on production rates that have been achieved in practice on recent projects for similar assets in Western Australia (i.e. comparable linear infrastructure projects). These therefore represent realistic construction rates using modern plant, equipment and methods”.⁷
16. Arc assumed that construction of the network will be undertaken in a series of projects typical of major rail construction projects. Arc cited recent project precedents which indicated that the line length of a typical major rail project is 200 to 300 kilometres. On this basis, the 5,560km of corridor in the network would represent 22 concurrent projects. Arc assumed that there is sufficient contractor resources available locally to support 10 concurrent projects.
17. Figure 5-5 of Arc’s statement presents an optimised replacement cost of \$20.9 billion across a development schedule of 229 months.⁸ Therefore, Arc’s large funding costs of \$9.1 billion is a function of both its large estimated optimised replacement cost (large expenditure) and long construction schedule (long time).
18. As funding costs are capitalised into the initial asset base, Arc has allocated the funding costs across routes by its estimates of optimised construction replacement costs. Funding costs are then depreciated in line with the depreciation of the assets associated with the funding costs.

⁷ GHD Advisory, *Applicable Railway Infrastructure DORC Final Report Arc Infrastructure Pty Ltd*, 6 June 2025, p. 104.

⁸ GHD Advisory, *Applicable Railway Infrastructure DORC Final Report Arc Infrastructure Pty Ltd*, 6 June 2025, p. 109.

Comments in submissions

19. Submissions raised concern with Arc's funding costs.

AMEC

20. The AMEC stated that:

"[I]ndustry has questioned why ARC's financing costs have been included, especially given the quantum of the costs. Arc's inclusion of funding costs that are the equivalent to 30%, approximately \$9bn of the value, are extreme. Industry has suggested that the ERA must give due consideration that this is an outlier when compared to historical precedents."⁹

Aurizon

21. Aurizon submitted that Arc's assessment of funding costs is highly inflated, driven by excessive construction periods and excessive construction scope (i.e. include assets that should be excluded or optimized), with an unrealistically slow construction program. This approach was inconsistent with previous ERA determinations. Aurizon submitted that Arc should adopt a more pragmatic approach to construction timelines based on the hypothetical nature of this component. Aurizon provided an example of the 200 km Carmichael Rail Network (including civil works) which had a 19 month timeframe, which applied a real post tax WACC.¹⁰

22. Aurizon also raised concern with the appropriate formulation of the WACC and Arc's use of a real pre-tax WACC (7.46 per cent).¹¹

- Aurizon submitted that with the transition to a more typical building block-based assessment of total costs, with a DORC based valuation of the initial capital base, it is appropriate to re-consider the formulation of the WACC applies in calculation of funding costs. Aurizon detailed that capitalising a tax allowance into the RAB (by calculating funding costs on a pre-tax WACC) will result in tax costs being double counted.
- Agreed with the real formulation of WACC to reflect that the valuation is being consistently undertaken using real dollar terms as at the valuation date.
- Aurizon detailed that this matter was considered by the Queensland Competition Authority (QCA) in relation to the Dalrymple Bay Coal Terminal. QCA concluded that the correct approach was to apply a real post-tax WACC. Aurizon confirmed that when interest during construction is calculated for the purpose of capitalising projects into Aurizon Network's regulatory asset base, a post-tax formulation of WACC is applied.
- Aurizon considered a real-post tax WACC that reduces the rate of return to 6.22 per cent should be adopted.

⁹ Association of Mining and Exploration Companies, *Submission on Depreciated Optimised Replacement Cost (DORC) valuation of Arc Infrastructure's railway assets*, July 2025, p. 5.

¹⁰ Aurizon, *Arc Infrastructure Proposed Depreciated Optimised Replacement Cost Submission to ERA*, 11 August 2025, p. 5.

¹¹ Aurizon, *Arc Infrastructure Proposed Depreciated Optimised Replacement Cost Submission to ERA*, 11 August 2025, p. 32.

CBH

23. CBH acknowledged that funding costs are involved in infrastructure projects and that they can form part of the DORC valuations.¹²
24. CBH submitted that Arc's estimate of funding costs as equivalent to 30 per cent of the Optimised Replacement Cost "is extreme and an outlier" when compared with regulatory precedents.¹³
25. CBH raised concern with Arc's broad scope of works that increased the replacement cost and Arc's long development schedule, both of which drove funding costs to high levels relative to historic precedents including the ERA 2014 Determination, ARTC DORC Report and Glencore v PNO Determination.¹⁴
26. CBH submitted that the use of a pre- or post-tax WACC will depend on how ceiling costs are calculated. If under the DORC methodology the building block model produces a tax allowance, the real post-tax WACC of 6.22 per cent should be used. Using a pre-tax WACC (which includes a tax burden uplift) in a building block model where an explicit tax allowance is already calculated as part of allowable revenue, would overcompensate Arc by double-counting tax compensation.¹⁵
27. With regard to funding costs, CBH provided specific recommendations:¹⁶
 - Costs and time associated with construction should be limited to what is approved for inclusion in the optimised replacement cost.
 - The time and costs associated with the construction of access roads and pre-construction planning; design and approvals should be removed.
 - The ERA should reject Arc's proposed development schedule and adopt the same approach used for the 2014 Determination, and if this is not done, then ERA should subject the development schedule to scrutiny.
 - The ERA should consider whether the use of a real pre- or post-tax WACC is appropriate for the use in the calculation of funding costs depending on the proposed approach to calculating ceiling costs.

¹² CBH Group, *CBH submission on Arc Infrastructure's statement of the depreciated optimised replacement cost and statement of the depreciation schedule published on 16 June 2025*, 11 August 2025, p. 41.

¹³ CBH Group, *CBH submission on Arc Infrastructure's statement of the depreciated optimised replacement cost and statement of the depreciation schedule published on 16 June 2025*, 11 August 2025, p. 7.

¹⁴ CBH Group, *CBH submission on Arc Infrastructure's statement of the depreciated optimised replacement cost and statement of the depreciation schedule published on 16 June 2025*, 11 August 2025, pp. 42-43.

¹⁵ CBH Group, *CBH submission on Arc Infrastructure's statement of the depreciated optimised replacement cost and statement of the depreciation schedule published on 16 June 2025*, 11 August 2025, p. 7.

¹⁶ CBH Group, *CBH submission on Arc Infrastructure's statement of the depreciated optimised replacement cost and statement of the depreciation schedule published on 16 June 2025*, 11 August 2025, p. 43.

CCIWA

28. CCIWA submitted that the inclusion of funding costs that are the equivalent to 30 per cent, approximately \$9 billion, of the value is an outlier when compared to historical precedents of 15 per cent for ARTC valuation and 2 per cent of the ERA's 2014 determination. The ERA should seek justification from Arc in relation to this claim.¹⁷

Pacific National

29. Pacific National submitted that high funding costs were a result of an assumed period of construction of the railway network as a single exercise of 22 projects over a period of 19 years. There is an implicit assumption that operation of the railway network does not commence until the end of the 19 year construction period. Pacific National considered that an alternative scenario of construction timing would be consistent with the economic concept of the DORC and would substantially reduce the funding cost component of the ORC.¹⁸
30. Pacific National submitted that the ERA should consider whether it would be more appropriate to adopt a construction timing based on the time for construction of discrete parts of the network over periods substantially less than 19 years with this having the effect of substantially reducing the funding cost component of the replacement cost.¹⁹

¹⁷ Chamber of Commerce and Industry WA, *Submission Rail Access: Current Consultations*, 11 August 2025, pp. 1-2.

¹⁸ Pacific National, *Submission Arc Infrastructure's statement of the depreciated optimised replacement cost and statement of the depreciation schedule*, 11 August 2025, pp. 7-8.

¹⁹ Pacific National, *Submission Arc Infrastructure's statement of the depreciated optimised replacement cost and statement of the depreciation schedule*, 11 August 2025, p. 8.

RP Infrastructure advice

31. RPI identified significant differences from Arc for the estimate of funding costs. RPI's approach reduces funding costs from \$9.1 billion to \$3.6 billion (a reduction of \$5.6 billion or 61 per cent). This figure amounts to 21 per cent of RPI's optimised replacement cost (net of contributed assets).
32. Funding costs are the product of the level of expenditure and construction schedule. RPI's lower funding costs are the result of the combined effect of a:
 - Reduction of construction expenditure dollars – the optimised replacement cost driven by unit rate reviews, review of expenditure scope and recognition of capital contributions.
 - Reduction in scheduled construction time – the time taken to complete construction driven by RPI narrowing scope and improving optimisation.
 - Change in WACC formulation – adopting a real post-tax WACC formulation (6.22 per cent), rather than Arc's real pre-tax WACC formulation (7.46 per cent).
 - Assumed progressive commissioning schedule – RPI introduced four-year construction and commissioning periods, which roll across the proposed capital expenditure profile. This contrasts with Arc's assumption that the network started to service customers at the completion of the construction of the whole network.

Construction expenditure dollars

33. RPI identified significant differences from Arc for the optimised replacement value (net of contributed assets). Arc's optimised replacement value for the railway was \$18.3 billion compared to RPI's proposal for \$16.7 billion.
34. RPI's optimised replacement value also excludes \$1.4 billion of contributed assets. Arc is not required to take out finance for contributed assets and therefore funding costs are not incurred. Arc's proposal had not recognised any contributed assets.
35. Details of RPI's change in the optimised replacement value is discussed in other attachments.

Construction timing

36. RPI identified opportunities to reduce the duration of construction to a realistic minimum duration. RPI's construction time to completion is 11 years.
37. RPI identified the following opportunities to reduce the construction program duration:
 - Removal of the planning and approvals period, consistent with regulatory precedents (4.8 years).
 - Reduction to reflect the optimisation of track length (15 per cent of track km resulting in a two year time saving).
 - A minor correction for the total track length allowed for by Arc (290km less, amounting to 0.5 years of duration based on Cuttings and Embankments and Formation only).

38. In addition to reducing the total construction timing, RPI recommended the application of a greater proportion of the total capex to the middle years to reflect a more realistic construction profile than the Arc profile which allocated 72 per cent of total capital expenditure to the last four years of the program.

WACC formulation

39. Stakeholders submitted that the ERA should consider whether the use of a real pre- or post-tax WACC is appropriate for use in the calculation of funding costs.
40. RPI agreed that a real post-WACC was justified so that the funding cost estimate is consistent with the allowed return regime.²⁰
41. RPI advised that where the tax is handled separately in determining the revenues required to achieve net present value equivalence (i.e. equivalence of costs and revenues over time), applying a post-tax WACC in determining the initial regulated asset base will ensure that users are not charged twice for the tax effects on funding costs. This is because the pre-tax WACC effectively escalates the return on equity to compensate for there not being a tax shield. Users will therefore be paying twice through the return on these “higher” funding costs based on a pre-tax WACC and through the cashflows for tax in future years.²¹
42. RPI cites the CBH submission, which clearly expresses the issue as follows:

CBH submits that use of a pre or post tax WACC will depend on how ceiling costs are calculated. If under the DORC methodology the building block model produces a tax allowance, the real post-tax WACC of 6.22% should be used. Using a pre-tax WACC (which includes a tax burden uplift) in a building block model where an explicit tax allowance is already calculated as part of allowable revenue, would overcompensate Arc by double-counting tax compensation (para 299).

Progressive commissioning schedule

43. RPI has advised that the application of the two principles outlined by Arc: namely that (a) the construction schedule will be the realistic minimum duration that an experienced entity would require and (b) the construction project be based on concurrent individual projects within a single stage project, will not result in efficient funding costs if concurrent individual projects are not staged in a realistic manner.
44. RPI modified its funding cost estimation methodology to allow for four years construction and commissioning periods. That is, assets take four years to be completed and come into service, after which funding costs cease to be capitalised.²²

²⁰ RP Infrastructure, *Initial Report (Review of Arc Infrastructure’s Sections 47J and 47K submissions) FINAL*, 6 January 2026, p. 44.

²¹ RP Infrastructure, *Initial Report (Review of Arc Infrastructure’s Sections 47J and 47K submissions) FINAL*, 6 January 2026, p. 44.

²² RP Infrastructure, *Initial Report (Review of Arc Infrastructure’s Sections 47J and 47K submissions) FINAL*, 6 January 2026, p. 41.

45. This has the effect of reducing the compounding of funding costs. RPI viewed that the reduction in funding costs during construction represents a lower percentage of the optimised replacement cost, and is more in line with typical ranges for other large, regulated entities.²³

Annual basis

46. RPI calculated funding costs during construction on an annual basis. Arc's funding cost calculation used a monthly basis. RPI has advised that an annual calculation is the appropriate method for the calculation in the context of the purpose of the calculation and the degree of precision in the assumptions employed.²⁴

Depreciation

47. Funding costs are capitalised into the initial asset value. RPI allocates estimated funding costs on the basis of the optimised construction replacement costs.
48. Like other asset classes, these funding costs are thus depreciated over the remaining life of the network.²⁵

²³ RP Infrastructure, *Initial Report (Review of Arc Infrastructure's Sections 47J and 47K submissions) FINAL*, 6 January 2026, p. 41.

²⁴ RP Infrastructure, *Initial Report (Review of Arc Infrastructure's Sections 47J and 47K submissions) FINAL*, 6 January 2026, p. 43.

²⁵ RP Infrastructure, *Initial Report (Review of Arc Infrastructure's Sections 47J and 47K submissions) FINAL*, 6 January 2026, p. 45.

ERA Considerations

49. The ERA does not accept Arc's proposed funding costs and has undertaken its own estimates of funding costs consistent with the expenditure and construction schedule detailed in its draft decision.
50. The ERA's estimate of funding costs are lower than proposed by Arc. The ERA's capitalised funding costs reduce to \$2.1 billion compared to Arc's \$9.1 billion, a reduction of \$7.0 billion or 77 per cent.
51. The ERA has applied a standard roll forward approach to calculating funding costs and capitalising these costs into asset values.
52. The ERA's estimate of funding costs reflects the following:
 - The ERA's draft position on efficient construction expenditure – This optimised replacement value (net of capital contributions) is driven employing different unit rates, a different scope of works and recognition of capital contributions.
 - The ERA's draft position on scheduled construction time – Narrowing the scope of works required for construction and improving construction optimisation.
 - Change in WACC formulation – Adopting a real post-tax WACC formulation (6.22 per cent), rather than Arc's real pre-tax WACC formulation (7.46 per cent).
 - Assumed progressive commissioning schedule – The ERA is of the view that an experienced commercial operator would look for opportunities to progressively bring assets into service to maximise revenue and minimise the amount of project financing. Arc's proposal assumed the whole rail network is complete before commissioning and represents the highest possible funding cost assumption.
 - Equity raising costs – Equity raising costs are recognised and capitalised. Arc's funding costs had made no provision for equity raising costs.

Construction expenditure dollars

53. The ERA's optimised replacement value (net of capital contributions) for the railway is \$14.8 billion compared to Arc's proposal for \$20.9 billion.
54. The ERA's optimised replacement value accounts for \$1.5 billion contributed assets. Arc's proposal did not account for contributed assets and therefore inappropriately raised capitalised funding costs.
55. The detail of the ERA's change in construction expenditure is discussed in other attachments.

Construction timing

56. The ERA's construction schedule accepts and applies RPI's construction timing and expenditure schedule as detailed in paragraphs 36 to 38. These paragraphs detail how various engineering optimisations can reduce the time required for construction. The ERA has reviewed RPI's proposed optimisations and their associated effect on construction timings. The ERA accepts the updated timing.

57. The ERA's construction schedule accordingly reduces the construction time to completion from Arc's proposed 18.1 years to 11 years.
58. Additionally, the ERA accepts RPI's approach to use annual expenditure amounts instead of Arc's monthly expenditure method as detailed in paragraph 46. The ERA agrees that the use of an annual expenditure basis is capable of achieving the desired modelling accuracy for the regulatory task given that regulatory modelling for other sectors is usually conducted on an annual basis.

WACC formulation

59. In calculating funding costs for the purposes of establishing an initial DORC asset valuation, the ERA has considered the appropriate formulation of the WACC.
60. The form of WACC to be applied for regulatory purposes is context dependent. The ERA determines a series of WACCs for its annual determinations on a real, nominal, pre- and post-tax basis. It is important to appreciate that these WACCs are all equivalent to each other, merely expressed in different forms.
61. The Act and Code do not specify which WACC formulation to use, where in the past the ERA has exercised its discretion to apply WACC forms which are best suited for the regulatory task at hand.
62. For the draft decision, the ERA applies a real formulation of WACC to reflect that the valuation is being consistently undertaken using real dollar terms as at the valuation date.
63. The next necessary consideration is whether the real WACC should be applied on a pre- or post-tax basis.
64. Arc's proposal applied a real pre-tax WACC to calculate funding costs. Stakeholders submitted that the ERA should consider whether the use of a real pre or post-tax WACC was appropriate for calculating funding costs during construction when determining initial asset values.
65. For the draft decision, the ERA applies a real post-tax WACC to estimate funding costs during construction. The real post-tax WACC to be applied is taken from the ERA's 2024 rail WACC determination such that it aligns with the real dollar base of 2024, which is 6.22 per cent.
66. The use of a post-tax WACC for calculating funding costs results in a RAB that does not include a tax allowance. This leaves it open for negotiations to incorporate tax impacts as counterparties see fit. This also avoids the complexity of stakeholders attempting to unwind embedded tax payments in the RAB which would result from the use of a pre-tax approach. Tax expenses should then be transparently incorporated into standard building block costs for any future price setting.
67. The ERA considers that the use of a post-tax WACC avoids the risk of double counting tax in future price assessments. It also reflects the reality that tax payments are not incurred during the construction of the rail infrastructure.

68. Other regulatory decisions have also adopted the post-tax WACC in calculating funding costs during construction. For example, the AER in the Marinus Link determination has accepted a modelling approach on a post-tax basis for the calculation of funding costs during construction.²⁶ Further, Aurizon has pointed to Queensland Competition Authority using a post-tax approach for Dalrymple Bay Coal Terminal and for Aurizon's own access undertaking.

Equity raising costs

69. Firms need to issue new equity in order to fund new infrastructure projects.
70. Equity raising costs are the administrative and transaction costs required for a firm to issue equity finance.
71. Regulators across Australia have typically included allowances to account for these costs. Equity raising costs are commonly capitalised into the asset base as equity raising costs do not reoccur.
72. In reviewing funding costs, the ERA notes that debt issuing costs have already been included in the WACC through adding these transactional costs into the cost of debt. However, the ERA has notes that no provision has been made for equity raising costs in the initial asset valuation.
73. The ERA considers that equity raising costs are a valid funding cost and has included a provision for equity raising costs consistent with the amount of equity that is required to be raised for the project.
74. The ERA applies equity raising costs equal to three per cent of the equity raised consistent with other Australian regulatory decisions.^{27, 28, 29}
75. These equity raising costs are capitalised into the initial asset value.
76. The ERA assumes that equity is raised in the year that it is needed and applies the capital structure as stated in the ERA's WACC determinations. The capital structure for Arc is 75 per cent equity.

Progressive commissioning schedule

77. An important assumption for the valuation is when assets start entering into service and therefore start generating revenue. Funding costs cease to be capitalised once the asset is placed into service and customer revenue is generated.

²⁶ Australian Energy Regulator, *Final Decision Marinus Link Stage 1, Part B (Construction costs) Transmission Determination 2025–30*, February 2026, pp. 6-8.

²⁷ Australian Energy Regulator, *Initial draft decision: Marinus Link electricity transmission determination 2025-30*, May 2025, pp. 9-10.

²⁸ Australian Energy Regulator, *Post Tax Revenue Model*, [online](#), accessed 4 November 2025.

²⁹ ERA, *Final decision on access arrangement for Goldfields Gas Pipeline (2025 to 2029) – Final Decision – Tariff Model (public)*, [online](#), accessed 4 November 2025.

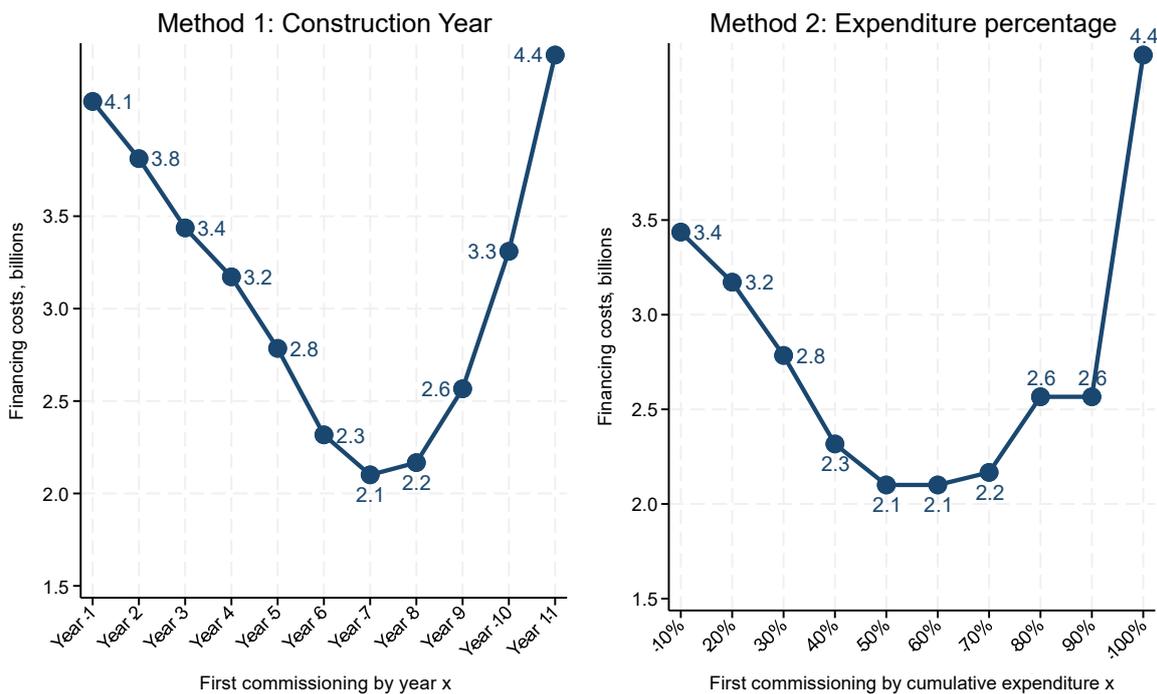
78. Arc's proposal assumed that assets would only enter service at the completion of the total network build and therefore funding costs would continue to be capitalised over the whole length of the construction period. This has the effect of continuing to compound funding costs over the full construction period.
79. The commissioning profile is influenced by both the engineering question of how the construction schedule can be undertaken in discrete projects and a commercial question on how these projects align with customers' use of the network. These two questions seek to answer how the network can progressively be released to customers over the construction period. This contrasts with waiting for the whole network to be finished before customers can start using any part of the network. For example, it would be reasonable to ask what rail main trunk route is most heavily used and therefore how it can be brought into service first.
80. Arc's Costing Principles state that:³⁰
- "The schedule will be developed to represent the minimum 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 would earn revenue"
 - "The profile of construction costs will be determined on the basis of a single stage project comprised of concurrent individual projects".
81. The ERA does not accept that Arc has provided a construction schedule of minimum duration, where the proposed construction schedule of 18 years will not result in efficient funding costs being incurred.
82. The ERA considers that the Costing Principles have sufficient flexibility to allow the railway construction to be undertaken in stages *through* to full completion and that such stages can allow for a staged commissioning for assets to come into service sooner. This recognises the commercial reality of seeking to minimise the funding envelope:
- The Costing Principles require that a construction schedule is to be developed from commencement through to completion. This allows for flexibility on how construction proceeds through to completion.
 - The Costing Principles recognise that the whole project is made of sub-projects or stages. These multiple projects progress over time through to completion of the whole network. The network is so large that it is unreasonable and not practical/possible to ensure that each of the sub-components of the network occur simultaneously each day over time.
 - A realistic minimum duration would recognise how specific projects or parts of the network can be completed in a minimum time to come into service for customers. Thereby, maximising benefits from the network and minimising cost.
 - A commercially prudent rail network business would seek to generate revenue as early as possible to minimise the funding costs and therefore the total level of debt and equity finance that it has to take out for the infrastructure project. This also has the effect of maximising revenue generation from providing the rail service.

³⁰ Arc Infrastructure, *Costing Principles*, 11 July 2025, p. 11.

83. Arc submitted that the development program is intended to minimise overall project development costs, not necessarily to develop the project in the shortest possible time frame. The ERA has noted that in this case project development costs refer only to the optimised replacement costs of a project and not also to capitalised funding costs that compound over time.
84. Stakeholders expressed concern with the length of Arc's construction schedule and that the network only comes into service once all works are completed. There was also concern with the resulting size of funding costs.
85. To minimise the length of construction and create a realistic minimum duration RPI has taken an alternative four-year rolling construction approach. In effect, this assumes that assets take four years to construct and then go into service, at which time the funding costs of those assets stop being capitalised.
86. The ERA considers that both the Arc and RPI methods represent extremes that do not promote economic efficiency and use of the rail network. Arc's method increases total costs as funding costs accrue and are capitalised over 19 years. RPI's method is not compatible with the standard asset roll forward approaches used in regulation and may not fully capture the scope of capitalised funding costs that accrue during the construction process.
87. Instead, the ERA has given further consideration to a progressive network commissioning approach. The ERA has analysed the sensitivity of the commissioning schedule approach on funding costs by:
 - Commissioning the network in two tranches based on 50 per cent of construction time. That is, at halfway through the time of construction the first tranche goes into service customers, while the second tranche continues to be built and will become operational at the end of year 11.
 - Commissioning the network in two tranches based on 50 per cent of capital expenditure spent. That is, at halfway through the total cost of construction the first tranche goes into service customers, while the second tranche continues construction until 100 per cent of capital expenditure is spent.
 - Commissioning the whole network at the end of the construction period.
88. Figure 5.1 details a two-stage network commissioning profile, where tranche 1 is commissioned within a fixed time or dollar amount and comes in service. After this then the construction of tranche 2 begins and is commissioned by the end of the whole construction period. For example, tranche 1 is commissioned in year 6 (and capitalisation for these assets stops) and tranche 2 is the remaining works required to complete the whole network by the end of year 11.
89. The figures illustrate that:
 - Funding costs during construction are at the highest when the whole network is commissioned at the end of the construction period (at \$4.4 billion).
 - Funding costs during construction are lowest when the first tranche is commissioned around halfway through (either by time or dollars) the construction period (at around \$2.1 billion).

- 90. Allowing for the progressive commissioning of stages of the project minimises the delivery time for the project and helps to reduce funding costs. All stakeholders expressed concern with the size of Arc’s proposed funding costs and such a progressive commissioning approach would help minimise funding costs and its compounding.
- 91. For this draft decision, the ERA estimates funding costs over a two-stage network commissioning profile. The estimated funding cost to be capitalised is \$2.1 billion. The ERA considers that this approach represents a more realistic project commissioning schedule that allows parts of the rail network to come into service sooner. The calculations used to determine these funding costs can be found in the ERA DORC model.

Figure 5.1: Funding cost profile of a two-stage network commissioning profile



- 92. Further work will need to be undertaken on how a commissioning schedule can align with individual customer routes. This will include consideration of specific commissioning project schedules (schedule of projects released to customers) versus the use of general commissioning assumptions (commissioning when a percentage of the rail network is complete). The draft decision position of \$2.1 billion funding costs have been formulated with currently available information and will be actively examined for the final decision with further information from stakeholders.
- 93. Recognising that the rail network build would be progressively commissioned would better align with what an experienced commercial railway owner would do and work to minimise the total costs, inclusive of funding costs. The ERA's draft decision position is a based on the information before us and may be supplemented by stakeholder perspectives of how this commissioning question should be resolved. The ERA seeks stakeholder views on options around the progressive commissioning schedule and how parts of the network could be brought into service sooner. The final decision will be informed by parties making submissions with evidence that will further develop a commissioning profile that best meets the Railways Access Act objective.

Question 5.1

Is it possible for a commissioning schedule to be applied which incorporates a specific schedule of projects released to customers (and if so, how), or is the more general commissioning approach as applied in the draft decision appropriate?

94. For the draft decision the ERA has determined funding cost to be \$2.1 billion.

Depreciation

95. Funding costs are capitalised into the initial asset value. These costs are allocated to routes based on construction costs net of capital contributions.
96. Like other asset classes, these funding costs are then depreciated over time. The Costing Principles state that funding costs are to have a 50-year economic life, but Arc's proposal instead uses the economic life of the assets that the funding costs are allocated towards. This approach was supported by RPI's advice as detailed in paragraphs 47 to 48.
97. The ERA accepts both Arc and RPI's method and depreciates funding costs to reflect the remaining life of the network. This approach supports economic efficiency as it ties the funding costs to the associated assets. This avoids the situation where the underlying assets are fully depreciated, but the associated funding costs remain in the regulated asset base due to the fact that the 50-year economic life is greater than the economic lives of most network assets.

Appendix 1 List of Figures

Figure 5.1: Funding cost profile of a two-stage network commissioning profile 18