

Input Methodologies Review

Options to maintain investment incentives in the context of declining demand

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Glossary

Acronyms	
BBM	Building Block Model
CPI	Consumer Price Index
DPP3	Default Price Path Three for Gas Pipeline Businesses
EDB	Electricity Distribution Business
FCM	Financial Capital Maintenance
GDB	Gas Distribution Business
GPB	Gas Pipeline Business
GTP	Gas Transition Plan
IM	Input Methodologies
MBIE	Ministry of Business, Innovation and Employment
P&I	Process and Issues
RAB	Regulatory Asset Base
WACC	Weighted Average Cost of Capital

Overview

Purpose of this paper

- X1 This paper describes options for how we might continue to implement the principle of ex-ante financial capital maintenance (**FCM**) through a building block model (**BBM**) in the context of declining or expected declines in consumer demand. While the paper focuses on gas pipelines, the potential issues and broad options discussed are more widely applicable to other regulated sectors facing the prospect of declining demand.
- X2 For the purposes of exploring and comparing the options for IM changes, this paper only presents options which would support continued application of the ex-ante FCM principle and its implementation through the BBM at a future price reset. As we outline below, the options discussed are not exhaustive, and we welcome feedback from stakeholders on how well these options would in work in practice, possible timing of implementation, and additional suggestions of practical alternatives.
- X3 Similar to other IM changes, if any of these options were implemented, the changes would not affect consumer prices until the IMs were applied in a subsequent price reset.¹ At a future price reset when the IMs are applied, we would assess and address asset stranding risk consistent with the evolution of the relevant industry at that time.
- X4 We have not yet reached a view on the best option or options. As such, this paper does not indicate our position on the above matters in the IM Review or otherwise. Nor does it cover interrelated IM policy areas such as the appropriate form of control for GPBs, whether we continue to apply CPI indexation of the RAB, or the parameters for estimating the cost of capital for gas pipeline services. We are considering the interaction between the IMs relating to asset stranding risk and those other IM policy areas in the IM Review. Our position on these matters will be reflected in our draft decision on all IMs next year.
- X5 Our analysis follows from the Default Price Path 3 (**DDP3**) [final decision for gas pipeline services](#), and the IM Review [Process & Issues \(P&I\) paper](#)². We thank stakeholders for their ongoing input into this important discussion. Our consultation process and details on how you can provide your views are set out in Chapter 1.

¹ DPP4 for Gas Pipeline Businesses commences in 2026.

² [Commerce Commission "Part 4 Input Methodologies Review 2023 – Process and Issues Paper"](#) (20 May 2022), chapter 5. In this paper, we asked stakeholders for their views on how to best manage longer-term

We must review the IMs including our DPP3 IM amendments

- X6 Our task for the IM Review is to review all IM policy decisions. This includes reviewing the recent [Gas IMs we amended at the DPP3 reset](#) to allow asset lives to be adjusted to better reflect economic asset lives if doing so would better promote the Part 4 purpose. We made these changes because the widely expected decline in the long-term use of natural gas is likely to mean the average remaining economic life of the assets is shorter than their average physical life.
- X7 We amended the IMs prior to DPP3 to enable us to set starting prices based on the current and projected profitability of each Gas Pipeline Business (**GPB**) using the building block model (**BBM**). Using economic asset lives in the BBM is one way to ensure that ex-ante FCM is maintained.
- X8 We noted that the IM Review would provide a further opportunity to review IMs and consider more complex issues relating to asset stranding. This includes changes to the depreciation method and the role of ex-ante compensation for asset stranding risk. This paper is part of that review.
- X9 Further developments in government policy, including the development of a Gas Transition Plan, changes in technology and consumer preferences are expected.³ We are considering the most appropriate time to make changes to these IMs given the uncertain future developments and that IMs will not apply until prices are reset.
- X10 Changes to IMs must promote one or more of the Review’s overarching objectives to:
- X10.1 promote the Part 4 purpose in section 52A more effectively;
- X10.2 promote the IM purpose in section 52R more effectively (without detrimentally affecting the promotion of the section 52A purpose); and

demand risk. For this paper, we chose to refer to the more specific term of ‘asset stranding risk’. We consider that this term better characterises the policy problem and the regulatory options.

³ MBIE’s most recent updates on the Energy Strategy and GTP are that:

- a) MBIE will collaborate and engage with Treaty partners and work with energy system stakeholders to develop the Energy Strategy by the end of 2024; and
- b) MBIE intend to engage with stakeholders, including the gas industry, consumers, non-government organisations, other interested parties, and Treaty partners at various points throughout the GTP’s development, which it expects to complete by the end of 2023.

Updates on the GTP and Energy Strategy are published on the Ministry of Business, Innovation and Employment’s (MBIE) website: <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-strategies-for-new-zealand/>.

- X10.3 significantly reduce compliance costs, other regulatory costs, or complexity (without detrimentally affecting the promotion of the section 52A purpose).
- X11 In considering potential IM changes, we may take into account the considerations in s 5ZN of the Climate Change Response Act 2002 provided they are relevant and that doing so does not compromise our achievement of the s 52A purpose of Part 4.
- X12 We welcome submitters' views on both the appropriateness of the different options for changing IMs and the optimum timing for making changes to IMs.

Addressing asset stranding risk under the current IMs

- X13 'Asset stranding' is when the actual returns a firm makes on an investment are less than necessary to compensate for the initial investment cost. For example, this could occur if an asset is permanently underutilised or shut down prematurely.
- X14 The risk of asset stranding is a problem if it results in deferral of otherwise efficient investment or in underinvestment. This can happen where there is an expectation of losses from investment due to asset stranding risk.
- X15 The principle of ex-ante FCM reflects that regulation is intended to incentivise efficient investment and promote other outcomes consistent with competitive markets. Application of the ex-ante FCM principle means that regulated suppliers have the expectation of earning their risk-adjusted cost of capital (ie. a 'normal return'), and of maintaining their financial capital in real terms over the lifetime of their investments. We use the BBM to implement this expectation.
- X16 The use of the BBM to implement FCM in the context of Part 4 regulation has been applied in sectors which are either growing or in steady state. This paper examines the options for applying ex-ante FCM through the BBM in the context of a sector in decline or facing potential decline, such as the gas pipeline businesses.
- X17 Under the current IMs consumers bear the risk of asset stranding for individual assets. Assets remain in the regulatory asset base (RAB) when capacity exceeds consumer demand rather than becoming economically stranded. When setting a DPP, we allow suppliers to recover these costs from consumers over the lifetime of the assets. This is achieved through straight-line depreciation indexed for the Consumer Price Index (CPI) to maintain real (depreciated) asset values over time. The expectation that assets will stay in the RAB supports incentives to invest and innovate in line with section 52A(1)(a) and the ex-ante FCM principle.

- X18 However, suppliers are exposed to residual asset stranding risk as our regime does not guarantee that regulated suppliers earn a normal return over the life of the assets. Networks can become fully or partially economically stranded if at any point in time a network owner can no longer expect to recoup their investment, including through depreciation. This could occur if the price increases required to recover their costs exceed consumers' aggregate willingness or ability to pay for the assets over the lifetime of these assets. For example, if demand were to drop quickly, or if the Government were to enforce restrictions or an early phase-out of natural gas use, GPBs may be exposed to unmitigated economic network stranding risk for the RAB as a whole.
- X19 Under our current approach it is important that sunk assets remain in the RAB. This is because in the next regulatory period, the current period's incremental investments become sunk. Removing assets from the RAB would therefore undermine ongoing investment incentives. However, consumers need not necessarily continue to bear asset stranding risk nor must we necessarily take the same approach for new and existing assets.
- X20 While there is already a mechanism within the IMs to shorten asset lives there are other options to address asset stranding so that incentives to invest are maintained when demand is declining, or is expected to, which we discuss within this paper. We can change our approach to addressing asset stranding risk as part of the IM Review if doing so will better promote the overarching objectives for the IM Review.

Implications of the expectations of declining demand on asset stranding risk and how it is addressed under current IMs

- X21 As we set out in our Gas DPP3 decision, the Government has committed to net zero emissions by 2050 (2050 target) which requires all greenhouse gases, other than biogenic methane, to reach zero on a net accounting emissions basis by 2050.^{4,5} In May 2022, the Government published its Emissions Reduction Plan (ERP) which sets New Zealand on a pathway to meeting the 2050 target.⁶ The ERP includes phasing out the use of fossil fuels, including natural gas, whilst ensuring energy is accessible, affordable, secure, and supports economic development, and there is an equitable transition.

⁴ [Climate Change Response Act, s5Q\(1\)\(a\)](#)

⁵ [Ministry for the Environment "Emissions reduction plan discussion document" \(October 2021\), p. 9.](#)

⁶ [Ministry for the Environment "Te hau mārohi ki anamata. Towards a productive, sustainable and inclusive economy: Aotearoa New Zealand's First Emissions Reduction Plan" \(May 2022\).](#)

- X22 As natural gas demand declines so too will the number of users on gas pipeline networks. However, natural gas remains an essential energy source for many homes and businesses. While the delivered volume of natural gas will likely decline over time, it is not clear how quickly this will happen or when any phase out will be complete.
- X23 Investment is required to ensure the networks continue to provide a safe and reliable supply of natural gas until they are no longer needed.
- X24 Under the current IMs we address the risk of asset stranding for individual assets and promote continued incentives to invest. This is by allowing assets to remain in the RAB when capacity permanently exceeds consumer demand rather than becoming economically stranded.
- X25 But declining long-term demand for natural gas is likely to increase the extent of underutilised or redundant assets, thereby increasing the impact of asset stranding risk on consumers that remain connected to gas pipeline networks. For remaining consumers this would mean that prices are likely to increase as volumes decline, leading to increased risk of disconnections.
- X26 Our DPP3 decision to adjust asset lives mitigated asset stranding risk for individual assets as well as the risk of economic network stranding. However, the risk of economic network stranding remains a potential issue and GPBs may not be compensated for the likely extent of the risk at the time of the DPP4 reset under existing DPP settings.⁷ We will need to reassess our previous adjustments at DPP4 and additional or different tools in the IMs may support an outcome that better promotes the Part 4 purpose.
- X27 Consumers will always be exposed to some degree of price uncertainty under Part 4 regulation. This is because we can only set price or revenue caps for periods of up to five years at a time and IMs must be reviewed every seven years. Price uncertainty is a feature of competitive markets and not a problem in its own right. However there may be some threshold where uncertainty undermines consumer confidence in continuing to invest in and use gas (especially for major gas users). Price uncertainty may have a ‘chilling effect’ on consumer investments, potentially leading to an inefficient decline in demand for gas pipeline services.

⁷ Note that risks relating to climate change policies that affect the natural gas industry are likely to be non-systematic risks. These risks are not compensated through the parameters that determine the Weighted Average Cost of Capital (WACC) in the Gas IMs.

Options for addressing asset stranding risk for GPBs in the current context

- X28 In response to our IM Review P&I paper, we received different views on how best to address asset stranding risk resulting from long-term demand uncertainty. In general, suppliers favoured approaches where consumers continue bearing asset stranding risk. While consumers, particularly major gas users, favoured approaches where suppliers bear the risk of asset stranding.⁸
- X29 Our options for changing IMs range from retaining the status quo (possibly with some refinements), to more material changes to our approach that could support reallocation of asset stranding risk to suppliers. In all options, the resulting IMs must address asset stranding risk in a way that is consistent with the Part 4 purpose in the context of expected declines in demand in the long term.
- X30 We could continue to address uncertainty (at least to some extent) by making regular adjustments to asset lives and/or consider the option of changing the depreciation method as new information becomes available. Adjustments to asset lives and the method of depreciation can be supported by other regulatory tools, including shorter regulatory periods, price smoothing mechanisms, and capping annual increases.
- X31 We could consider exposing suppliers to increased asset stranding risk. In practice – and to the extent the risk is asymmetric to the downside – to be consistent with the ex-ante FCM principle this would mean providing some form of additional compensation such as an ex-ante risk premium while either:
- X31.1 reducing the level of assurance we give of being able to recover the costs of investments through the RAB; and/or
 - X31.2 exposing suppliers to the risk that assets might be removed from the RAB.
- X32 In Chapter 3, we outline and assess three types of options to amend the current arrangements for addressing asset stranding risk in the context of setting DPPs:
- 1) further changes to IMs to better align regulatory asset lives with economic asset lives;
 - 2) changes to IMs to support the use of alternative depreciation methods, given expectations of declining consumer demand; and

⁸ For example, in [First Gas' "submission – Part 4 Input Methodologies Review 2023 Process and Issues Paper – Draft Framework Paper"](#) 13 July 2022, section 4.2, First Gas stated that consumers should bear long-term demand risk at this time.

Whereas, [Major Gas Users Group "submission – Process and Issues/Draft Framework" 11 July 2022](#), p. 12, stated that stranding (demand) risk is borne by suppliers under workable competition.

3) tools to support reallocation of asset stranding risk to suppliers.

X33 For each of these, we have identified specific options we consider may be practical alternatives to the current arrangements. These all have potential advantages, but also disadvantages relative to retaining the status quo.

X34 In general, the options presented are not mutually exclusive. For us to implement a change as part of this IM Review (or in a future amendment), the amended IM would need to promote one or more of the IM Review overarching objectives better than the status quo. We compare each option to the current IMs.

X35 The options discussed are not exhaustive, and we welcome feedback from stakeholders on how well these options would in work in practice, possible timing of implementation, and additional suggestions of practical alternatives. If implemented, any changes would not affect consumer prices until the price path is reset.

1) Further changes to IMs to better align regulatory asset lives with economic asset lives

X36 Asset life assumptions for individual assets used for Information Disclosure (**ID**) are an important determinant of depreciation allowances in DPPs.

X36.1 Under current IMs for ID, depreciation for each existing asset for a year is the result of dividing the asset's opening RAB value by the remaining asset life (in years). Combining the depreciation for all the assets for a year gives the total yearly depreciation for that GPB as reported through ID.

X36.2 We then use the historical depreciation expense reported in ID as the basis for forecasting depreciation for the regulatory period in a DPP for existing assets.

X37 Application of an asset life adjustment factor in a DPP (as per the 2022 Gas IM amendments) has differing effects on existing and new assets.

X37.1 For existing assets, we make an adjustment to average asset lives through the IMs for DPPs. Suppliers are required to pass through the same quantum of depreciation to individual existing assets at the start of the DPP in accordance with the IMs for ID. Suppliers have discretion on how to adjust asset lives in ID for existing assets to better reflect economic asset lives to match the extent of the DPP adjustment in the aggregate.

X37.2 For new assets we also adjusted the assumed average asset life in the DPP. But unlike for existing assets, this change is not explicitly passed through to new assets in the RAB. Instead, new assets enter the asset register with asset lives shortened (relative to physical asset lives from Schedule A)

using the average percentage change that has occurred for existing assets of that class for that GPB.

- X38 As a result of applying asset life adjustment factors in DPP3 for each GPB, asset lives for individual existing and new assets in ID will now better reflect economic assets lives compared to the previous assumptions based on physical asset lives.
- X39 However, for new assets commissioned during the regulatory period, there may be better alternatives to the IMs' current default asset life assumptions which remain partially dependent on physical assets lives in Schedule A. The asset stranding risk for new assets depends on the nature of the expected decline in pipeline usage (and the potential for repurposing) which may be independent of expected physical asset lives.
- X40 If suppliers could propose updated economic asset lives at DPP resets, asset lives may be able to better reflect economic asset lives, and suppliers may be better placed to manage asset stranding risk.
- X41 We discuss two options for further changes to IMs affecting economic asset lives in Table 1 below. In both cases it may be necessary to apply a wash-up at the next price reset to ensure the long-term effects of changes in the time profile of depreciation are Net Present Value (NPV) neutral with respect to the WACC.
- X42 We note that we are not yet able to observe the impacts of our DPP3 decision on asset life assumptions as the regulatory period has only just begun. However, we would welcome any insights from suppliers on how they intend to apply the average asset life adjustment in year 1 of DPP3 (ending 30 September 2023).

Table 1: Options for further changes to regulatory asset lives

Option	Description of possible changes to IMs
Option A. Amend current approach to give suppliers discretion to set economic asset lives for new assets consistent with GAAP (retain current approach for existing assets)	
<i>Description of possible changes to IMs</i>	<p>Provide suppliers with discretion to set economic asset lives for new assets entering the asset register in a way that is consistent with GAAP (see paragraph 3.63).</p> <p>Suppliers would disclose the economic asset life assumptions used for all newly commissioned assets at the time of the next price reset. This option would not affect how our asset life adjustment mechanism works for existing assets. We could consider the appropriateness of the assumptions made by suppliers during the previous regulatory period for new assets at the next reset.</p>
<i>Pros of changing IMs</i>	<p>Suppliers are likely to be best placed to estimate the economic lifetime of individual assets at the time of commissioning and so the resulting asset lives should be closer to economic lives.</p> <p>A requirement to apply GAAP and scrutiny ahead of the next price reset should limit the risk that asset lives are shortened below economic lifetimes.</p>

<i>Cons of changing IMs</i>	Suppliers would have an informational advantage, and it may be difficult for us or other stakeholders to assess whether the asset lives used for new assets are appropriate.
Option B. Allow suppliers to propose updated economic asset lives (consistent with GAAP) for all existing assets at a DPP reset	
<i>Description of possible changes to IMs</i>	<p>Suppliers could propose updated economic asset lives for all existing assets at a DPP reset in a way that is consistent with GAAP. We could either accept the proposal or replace the assumptions with other assumptions if doing so is expected to promote the long-term benefit of consumers. We could accompany Option B with Option A so that asset lives for new assets commissioned during the (upcoming) regulatory period also reflect economic asset lives when they are added to the RAB.</p> <p>By limiting adjustments to DPP resets (as is also the case with current IMs) and if necessary, introducing an ex-post wash-up, we can ensure that any changes to asset lives that affect BBM depreciation are NPV-neutral. GPBs would therefore remain limited in their ability to extract excessive profits (section 52A(1)(d)).</p>
<i>Pros of changing IMs</i>	<p>This approach may result in asset lives that better reflect economic asset lives than the current approach.</p> <p>A requirement to apply GAAP when proposing economic assets lives should limit the risk that asset lives are shortened below economic lifetimes.</p> <p>We would retain the ability to manage the effects on consumers by smoothing price adjustments over multiple years and regulatory periods.</p>
<i>Cons of changing IMs</i>	Suppliers would have more influence over the aggregate depreciation profile and because they have an informational advantage, it may be difficult for us or other stakeholders to assess whether the proposed asset life adjustments are appropriate.

2) Changes to IMs to support the use of alternative depreciation methods, given expectations of declining consumer demand

- X43 Changes to the depreciation method that applies to some, or all assets, may result in an aggregate depreciation profile that better reflects total long-term demand expectations. This could promote the Part 4 purpose as follows:
- X43.1 In the context of declining demand, it might help avoid long-term expectations of price escalation that could have a chilling effect on users' decisions to continue to use and invest in gas appliances and equipment.
 - X43.2 Users may be more likely to pay cost-reflective prices over time. This can support the maximum use of the assets over time.
 - X43.3 It may reduce the risk of economic network stranding of the RAB and the need for ex-ante compensation to support incentives for investment consistent with section 52A(1)(a) of the Act.

- X44 The current IMs provide for straight-line depreciation of assets over the lifetime of the asset in DPPs. Straight-line depreciation is simple and widely used, and may be appropriate when the use of an asset is uniform from one year to another.
- X45 In Table 2, we introduce option C which could allow the use of alternative depreciation methods such as diminishing value⁹ (or declining balance), tilted annuity¹⁰ or sum-of-digits¹¹.
- X46 Note there is no simple fixed relationship between the depreciation method for individual assets and the implied aggregate depreciation profile and so continued use of straight-line depreciation of all assets may still be appropriate.
- X46.1 In steady state conditions the aggregate depreciation profile will be stable, regardless of the depreciation method, if there is a large portfolio of individual assets with varying asset lives, and expiring assets are replaced on a like-for-like basis.
- X46.2 Where investment is declining and the RAB is shrinking (in real terms) over time, straight-line-depreciation of individual assets would result in a declining aggregate profile of depreciation over time (in real terms). It may be that for suppliers' existing assets, and expected future assets, the continued use of straight-line depreciation of assets would result in an aggregate profile of depreciation that broadly reflects long-term total consumer demand expectations.
- X47 If we were to adopt option C, we could use any of the front-loaded methods discussed above. Given the complex relationships we would likely need to undertake specific analysis on each GPB's actual asset base prior to changing the depreciation method.

⁹ With diminishing value, the asset value declines annually by a fixed percentage.

¹⁰ Tilted annuity results in a rate of depreciation that declines annually, but (depending on the tilt) with larger declines in the earlier years of an asset's life than in later years.

¹¹ With sum-of-digits depreciation, the rate of depreciation for assets declines linearly (by the same absolute amount each year) from the year it is commissioned down to zero when it reaches its assumed asset life.

Table 2: IM changes to support the use of alternative depreciation methods

Option	Description of possible changes to IMs
Option C. Applying a front-loaded depreciation method to individual assets	
<i>Description of possible changes to IMs</i>	<p>We could apply the same depreciation method for all network assets; and the same depreciation method for all four GDBs (a different method could still be applied for the GTB that has its own IMs).</p> <p>We could use some form of variable diminishing value or tilted annuity to profile total depreciation to reflect total expected consumer demand. The IMs could provide flexibility for the degree of ‘tilt’ (common to all assets) to be determined at the time of the price reset. Then we could specify objectives that constrain its application. For example, we could specify that the objective of a diminishing value multiple is to limit expectations of escalating unit prices in the long term.</p> <p>Alternatively, we could apply a different method for older existing assets compared to newer (or new) assets. This would provide another ‘lever’ for controlling the relationship between depreciation of individual assets and the aggregate depreciation profile for a DPP. It would also make the sum-of-digits depreciation method a practical option as we would have some control over the long-term depreciation profile by choosing the year from which sum-of-digits depreciation is to apply.</p>
<i>Pros of changing IMs</i>	<p>We would have more control over the aggregate depreciation profile, either through the degree of ‘tilt’ specified, or by choosing the year from when to apply an alternative method (relative to straight line depreciation for all assets).</p> <p>We can continue to manage the risk of consumer price shocks through smoothing adjustments over multiple regulatory periods and capping of annual increases.</p>
<i>Cons of changing IMs</i>	<p>This option is more complex than applying straight-line depreciation to all assets and may therefore increase implementation and compliance costs. Straight-line depreciation is simple, and with declining investment it may already result in an aggregate depreciation profile that broadly reflects declining demand.</p> <p>While changing the method for some or all assets may be relatively straight forward from an accounting perspective, the real challenges would be determining which method to use, any degree of tilt and from when to apply an alternative method.</p>

3) Potential tools to support reallocation of asset stranding risk to suppliers

- X48 The current IMs allocate stranding risk largely to consumers – but consumers may not always be best placed to manage these risks. For example, the choice of what and when to invest in new assets is (largely) in the control of GPBs.
- X49 The main advantages of allocating more asset stranding risk to suppliers is that it may provide an additional incentive for suppliers to take actions to mitigate the risk (to the extent they can). While we recognise that suppliers should already have strong incentives not to over-invest, allocating risk to suppliers could result in stronger incentives to innovate and improve efficiency, consistent with section 52A(1)(a) and (b). It could also reduce the chance of substantial price shocks to current and/or future consumers and reduce the need to adjust economic assets lives or the depreciation method. The benefit of this needs to be considered against the extent of pre-existing incentives to mitigate asset stranding risk.

- X50 The primary disadvantage is the difficulty in calculating the extent of compensation required, given the degree of uncertainty and that suppliers have an information advantage.
- X51 There are a wide variety of ways we could allocate more asset stranding risk to suppliers. In all cases we would need to allow compensation to maintain an expectation of ex-ante FCM, but only some options would require stranded assets to be removed from the RAB.
- X51.1 We could retain assets in the RAB, but choose not to adjust asset lives or the profile of capital recovery for existing assets in response to changes in the long-term demand outlook. This could result in a material risk of economic network stranding and ex-ante compensation would be necessary to support an ex-ante expectation of FCM.
- X51.2 We could expose suppliers to the risk that assets might be removed from the RAB. This could result in a material risk of economic network stranding and ex-ante compensation would be necessary to support an ex-ante expectation of FCM.
- X52 We do not consider it is possible to set the appropriate level of compensation in the IMs that should apply to GPBs at this time. However, there may be value in having tools in the IMs that would support reallocation of asset stranding risk to suppliers consistent with the ex-ante FCM principle at a future reset.
- X52.1 Under current IMs we do not have specific provisions that allow for ex-ante compensation at the time of a price reset. We may already be able to provide ex-ante compensation through expenditure allowances. However, there may be merit in including explicit provisions in the IMs to support reallocation of asset stranding risk to suppliers. These provisions would not specify the level of compensation, only that it can be applied. This could be implemented within the existing IMs. We discuss this as option D below.
- X52.2 Stranded assets currently remain in the RAB. Under certain circumstances where asset stranding has occurred, it may be necessary to enable assets to be removed from the RAB. We discuss this as option E below. Option E would also need to be accompanied by ex-ante compensation to support ex-ante FCM (option D).

Table 3: Tools to support reallocation of asset stranding risk to suppliers

Option	Description of possible changes to the IMs
Option D. Mechanism to enable ex-ante compensation in DPPs	
Description of possible changes to IMs	<p>A mechanism in the IMs that provides for ex-ante compensation in DPPs to support ex-ante FCM.</p> <p>The IMs would only specify that we could offer compensation, not the level of compensation, which would be set in the DPP given the risk assessment at that time. The compensation would need to reflect the risk of partial capital recovery for individual assets, or economic network stranding risk the RAB suppliers are exposed to at that time.</p>
Pros of changing IMs	Inclusion of specific provisions that allow for ex-ante allowances in the IMs may provide more clarity and certainty to both suppliers and consumers about the tools available for use in DPP resets.
Cons of changing IMs	When setting a price path, we would still need to decide whether to provide compensation and the level of compensation that is being provided. This would likely add complexity to the DPP process.
Option E. Allow stranded assets to be removed from the RAB	
Description of possible changes to IMs	<p>We could introduce means into the IMs to remove assets from the RAB that are stranded assets. This would need to apply in conjunction with an ex-ante compensation allowance (option D) to be consistent with the ex-ante FCM principle.</p> <p>This provision could be restricted in its application, for example, it could apply only to pre-specified assets or only cover assets that are no longer useful. Alternatively, it could apply to all economically stranded assets (including assets that remain useful but are underutilised). Where assets remain useful but are underutilised (partially stranded), this would effectively amount to asset value write downs.</p>
Pros of changing IMs	Introducing this tool now may ensure that we have the tools available at a future price reset to best deal with the investment situation facing both GPBs and their consumers at that point in time.
Cons of changing IMs	<p>It will be difficult prior to DPP4 to put appropriate bounds on the application of this tool which can introduce uncertainty which impacts on investment incentives. Further revisions to the IMs may be needed ahead of using these provisions to provide clarity about how the rules would apply.</p> <p>It is not necessary to remove stranded assets from the RAB to expose suppliers to increased stranding risk while remaining consistent with the ex-ante FCM principle (i.e. Option D alone). For example, we could decide to not make further adjustments to asset lives or the depreciation method and expose suppliers to the resulting risk of economic network stranding and provide ex-ante compensation.</p> <p>When setting a price path, we would need a process for identifying and removing stranded assets from the RAB. This would add significant complexity and cost to the DPP process and there may be a need for regular re-optimisation of the RAB.</p> <p>We could not rely on suppliers to remove stranded assets from the RAB as they would be incentivised (through increased profits) not to reveal when assets have become stranded. This contrasts with options that affect depreciation that can be NPV-neutral with respect to the WACC.</p>

Chapter 1 Introduction and background

Purpose of this paper

- 1.1 This paper describes options for how we might continue to implement the principle of ex-ante financial capital maintenance (FCM) through a building block model (BBM) in the context of declining or expected declines in consumer demand. While the paper focuses on gas pipelines, the potential issues and broad options discussed are more widely applicable to other regulated sectors facing the prospect of declining demand.
- 1.2 For the purposes of exploring and comparing the options for IM changes, this paper only presents options which would support continued application of the ex-ante FCM principle and its implementation through the BBM at a future price reset. As we outline below, the options discussed are not exhaustive, and we welcome feedback from stakeholders on how well these options would in work in practice, possible timing of implementation, and additional suggestions of practical alternatives.
- 1.3 Similar to other IM changes, if any of these options were implemented, the changes would not affect consumer prices until the IMs were applied in a subsequent price reset. At a future price reset when the IMs are applied, we would assess and address asset stranding risk consistent with the evolution of the relevant industry at that time.
- 1.4 We have not yet reached a view on the best option or options. As such, this paper does not indicate our position on the above matters in the IM Review or otherwise. Nor does it cover interrelated IM policy areas such as the appropriate form of control for GPBs, whether we continue to apply CPI indexation of the RAB, or the parameters for estimating the cost of capital for gas pipeline services. We are considering the interaction between the IMs relating to asset stranding risk and those other IM policy areas in the IM Review. Our position on these matters will be reflected in our draft decision on all IMs next year.
- 1.5 This paper provides an opportunity for stakeholders to test and submit on our developing analysis before we make our draft decisions on the IM Review. Hearing stakeholders' feedback at this time on these matters will help inform our draft decision. We strongly encourage submitters to use our IM Review Decision-Making Framework to show how and why their respective views and preferences best promote our overarching objectives for the IM Review.¹²

¹² Commerce Commission "[Part 4 Input Methodologies Review 2023 – Decision-Making Framework Paper](#)" (13 October 2022).

Structure of this paper

- 1.6 The remainder of this chapter:
- 1.6.1 outlines the structure of the paper;
 - 1.6.2 provides a background on our task for the IM Review which is to review all IM policy decisions. This includes reviewing recent IM changes to allow asset lives to be adjusted to better reflect economic asset lives if doing so would better promote the Part 4 purpose. These changes were made prior to resetting the default price-quality paths for gas pipeline services in the third regulatory period (1 October 2022 – 30 September 2026) (DPP3); and
 - 1.6.3 explains how you can make a submission on this paper.
- 1.7 The rest of the paper is structured as follows:
- 1.7.1 Chapter 2 discusses the wider context of maintaining ex-ante FCM in a BBM in a sector with declining demand, focusing on natural gas pipelines.
 - 1.7.2 Chapter 3 outlines some options for changing the IMs to achieve this, including changes to the depreciation method and the role of ex-ante compensation.
- 1.8 While the paper focuses on gas pipelines, the issues and broad options discussed are intended to be more widely applicable to regulated sectors facing the prospect of declining demand.

Background on our task for the IM Review and changes to the IMs prior to DPP3

We are reviewing the IMs for gas pipeline services regulated under Part 4 of the Commerce Act

- 1.9 Gas pipeline services are regulated under Part 4 of the Commerce Act,¹³ which provides for the regulation of the price and quality of goods or services in markets where there is little or no competition and little or no likelihood of a substantial increase in competition.¹⁴

¹³ [Commerce Act](#), s 55B.

¹⁴ [Commerce Act](#), s 52. Under section 52A of the Act, our regulation aims to promote the long-term benefit of consumers in such markets referred to in section 52 (including markets for gas pipeline services) by promoting specific outcomes that are consistent with outcomes produced in workably competitive markets, such that suppliers of regulated services:

- (a) have incentives to innovate and to invest, including in replacement, upgraded, and new assets; and
- (b) have incentives to improve efficiency and provide services at a quality that reflects consumer demands;

- 1.10 We set the IMs that underpin Part 4 regulation of gas pipeline services and aim to promote certainty for suppliers and consumers in relation to the rules, requirements, and processes applying to that regulation.¹⁵ Gas pipeline services are subject to information disclosure regulation and default/customised price-quality regulation.¹⁶
- 1.11 Our task for the IM Review is to review all IM policy decisions. Changes to IMs must promote one or more of the Review’s overarching objectives to:¹⁷
- 1.11.1 promote the Part 4 purpose in section 52A more effectively;
 - 1.11.2 promote the IM purpose in section 52R more effectively (without detrimentally affecting the promotion of the section 52A purpose); and
 - 1.11.3 significantly reducing compliance costs, other regulatory costs, or complexity (without detrimentally affecting the promotion of the section 52A purpose).
- 1.12 In considering potential IM changes, we may take into account the considerations in s 5ZN of the Climate Change Response Act 2002 provided they are relevant and that doing so does not compromise our achievement of the s 52A purpose of Part 4.

Our task includes reviewing IM amendments made prior to DPP3

- 1.13 On 31 May 2022, we reset the DPPs for Gas Distribution Businesses (**GDBs**) and the Gas Transmission Business (**GTB**) for DPP3. The DPPs determine the maximum revenues GPBs can recover from their consumers and the minimum quality standards.
- 1.14 Our task for this IM Review includes reviewing the Gas IM amendments made prior to setting DPP3, which allow asset lives to be adjusted to better reflect economic asset lives if doing so would better promote the Part 4 purpose. We made these changes as, given the widely expected decline in the long-term use of natural gas, the average remaining economic life of the assets is now likely to be shorter than the average physical life.

(c) share with consumers the benefits of efficiency gains in the supply of the regulated goods or services, including through lower prices; and

(d) are limited in their ability to extract excessive profits.

¹⁵ [Commerce Act](#), s 52R.

¹⁶ [Commerce Act](#), s 55C and s 55D.

¹⁷ Commerce Commission “[Part 4 Input Methodologies Review 2023 – Decision-Making Framework Paper](#)” (13 October 2022), X20-X21.

- 1.15 We amended the IMs prior to DPP3 to enable us to set starting prices based on the current and projected profitability of each GPB using the BBM. Using economic asset lives in the BBM is one way to ensure that ex-ante FCM is maintained.
- 1.16 We decided that introducing a mechanism to adjust asset lives to better reflect the average economic lives would materially benefit consumers in the long-term by promoting GPBs' incentives to invest so that they can continue to provide a quality of service that is consistent with the demands of consumers at efficient prices.¹⁸
- 1.17 We noted that the IM Review would provide a further opportunity to review the IMs and consider more complex issues relating to asset stranding, including changes to the depreciation method and the role of ex-ante compensation for asset stranding risk.¹⁹
- 1.18 Submissions on our IM Review P&I paper supported prioritising the issue of asset stranding for further consideration in our IM Review.²⁰

We are seeking views on the appropriateness and timing of changes to IMs given the continued policy uncertainty for GPBs

- 1.19 Further developments in government policy, including the development of a Gas Transition Plan, changes in technology and consumer preferences are expected. Some of the key expected developments are not due for some time. The ERP published on 16 May 2022 sets out some of the key expected developments:
- 1.19.1 publication of a gas transition plan by the end of 2023, which will set out a transition pathway for the fossil gas industry, explore opportunities for renewable gases, and ensure an equitable transition;
 - 1.19.2 publication of an energy strategy by the end of 2024, which aims to address strategic challenges in the energy sector and signal pathways away from fossil fuels; and
 - 1.19.3 the publication of a second ERP in 2024 outlining policies and strategies for meeting the second emissions budget (2026-2030).

¹⁸ [Commerce Commission "Amendments to input methodologies for gas pipeline businesses related to the 2022 default price-quality paths – Reasons Paper" \(30 May 2022\), chapter 3.](#)

¹⁹ [Commerce Commission "Default price-quality paths for gas pipeline businesses from 1 October 2022 – Final Reasons Paper" \(31 May 2022\), p. 106.](#)

²⁰ See for example, [First Gas' "submission – Part 4 Input Methodologies Review 2023 Process and Issues Paper – Draft Framework Paper" 13 July 2022, p. 3;](#) [Major Gas Users Group "submission – Process and Issues/Draft Framework" 11 July 2022, p. 1-2;](#) and [Methanex "IM Review - Process and Issues/Draft Framework Submission" 11 July 2022, p. 2.](#)

- 1.20 We are considering the most appropriate time to make changes to these IMs given the uncertain future developments and that IMs will not apply until prices are reset. We welcome submitters' views on both the appropriateness of the different options for changing IMs and the optimum timing for making changes to IMs.

How you can make a submission

Submissions on this paper

- 1.21 We welcome your views on this paper by 5pm on Friday, 10 February 2023. We will publish public versions of submissions shortly thereafter.

Address for submissions

- 1.22 Please email your submissions to im.review@comcom.govt.nz with "Options to maintain investment incentives in the context of declining demand – [your submitter name]" in the subject line of your email.
- 1.23 Attach both a format suitable for word processing (such as a Microsoft Word document), as well as a 'locked' format (such as a PDF) for publication on our website.

Identifying and managing confidential information

- 1.24 The protection of confidential information is something the Commission takes seriously.
- 1.25 When including commercially sensitive or confidential information in your submission, we offer the following guidance:
- 1.25.1 Please provide a clearly labelled confidential version and public version. We intend to publish all public versions on our website.
- 1.25.2 The responsibility for ensuring that confidential information is not included in a public version of a submission rests entirely with the party making the submission.
- 1.26 Please note all submissions we receive, including any parts we do not publish, can be requested under the Official Information Act 1982. This means we would be required to release material we do not publish unless good reason existed under the Official Information Act 1982 to withhold it. We would normally consult with the party that provided the information before any disclosure is made.

Chapter 2 Context: Maintaining ex-ante FCM in sectors with expected declines in demand, focusing on gas pipelines

Purpose of this chapter

- 2.1 Chapter 2 outlines:
- 2.1.1 the issue of asset stranding risk, how our key economic principles support us in addressing the risk for GPBs, and how we currently approach the issue in our IMs; and
 - 2.1.2 implications of the phase-out of natural gas for addressing asset stranding risk under our current IMs.

Addressing asset stranding risk under our regulatory regime

Asset stranding risk may result in underinvestment

- 2.2 When a firm makes an (irreversible) investment there is usually a risk of asset stranding, that is, the risk that the actual returns a firm makes on an investment are less than necessary to compensate for the initial investment cost. For example, this could occur if an asset is:
- 2.2.1 underutilised compared with how it was expected to be used when it was built; or
 - 2.2.2 shut down before the end of the economic life that was assumed at the time of investment.
- 2.3 Asset stranding risk is a problem if it results in deferral of otherwise efficient investment or in underinvestment. This can happen where there is an expectation of losses from investment due to asset stranding risk.
- 2.4 In competitive markets firms will still invest, despite the risk of asset stranding, if they expect to make at least normal returns.
- 2.4.1 It may be possible to manage asset stranding risk by entering long-term contracts with consumers that require consumers to continue paying for services regardless of whether assets are used to full capacity (e.g., take-or-pay agreements, which are common in the energy industry). This implies consumers bear the risk and consequences of stranded assets.
 - 2.4.2 Market prices can reflect an acceptable rate of return after accounting for the stranded asset risk (i.e a risk premium). This means the firm supplying the services bears the risk of asset stranding.

- 2.5 It is the party that bears asset stranding risk (whether the supplier or its customers) that is exposed to the consequences of long-term demand uncertainty.
- 2.5.1 If consumers bear asset stranding risk, then this may mean they continue to pay for underutilised or redundant investments. They bear the consequences of the risk eventuating (ie, having to pay the full costs of underutilised or redundant investments). But it also means they do not need to pay a risk premium up-front to compensate suppliers for bearing the risk.
- 2.5.2 If firms supplying services bear asset stranding risk, then they would bear the consequences of stranded assets and may make a loss on them. They would have been compensated in advance for this risk (through higher prices) and so would have expected to make a normal return on their investment when it was made. Ex-post, once it is clear the extent to which the risk has eventuated, suppliers will have either benefited (ie, the consequence of the risk was less than the premium received) or lost (ie, the consequence of the risk was more than the premium received).

Our ex-ante FCM principle provides a framework for addressing asset stranding risk for regulated suppliers

- 2.6 Our ex-ante FCM principle is that regulated suppliers should have the ex-ante expectation of earning their risk-adjusted cost of capital (ie, a ‘normal return’), and of maintaining their financial capital in real terms over the lifetime of their investments.
- 2.7 For GPBs subject to Part 4 regulation, our ex-ante FCM principle provides a framework for addressing asset stranding using the BBM in a way that promotes section 52A(1)(a)-(d):²¹
- 2.7.1 suppliers have the opportunity to earn a normal return on their efficient investments, consistent with section 52A(1)(a) and (d);
- 2.7.2 suppliers are rewarded for superior performance, consistent with section 52A(1)(b); and
- 2.7.3 efficiency gains are shared with consumers when the price path is reset, consistent with section 52A(1)(c).

²¹ [Commerce Commission “Part 4 Input Methodologies Review 2023 – Decision-Making Framework Paper” \(13 October 2022\), para 4.10.](#)

Consumers bear the risk of asset stranding for individual assets under the current IMs

- 2.8 Under the current IMs, consumers bear the risk of asset stranding for individual assets. This is because under the IMs, assets remain in the RAB when capacity permanently exceeds consumer demand rather than becoming economically stranded.
- 2.8.1 We do not conduct ex-post assessments of what assets should be, or should remain, in the RAB, and at what value. The full cost incurred in building each asset is included in the RAB.
- 2.8.2 If individual assets are underutilised or redundant (and would otherwise be economically stranded), those costs can be recovered from remaining consumers over time provided the asset has not been disposed of.
- 2.8.3 When setting a DPP, we allow these costs to be recovered from consumers over time through straight-line depreciation indexed for CPI to maintain the real (depreciated) value of the RAB over time.
- 2.9 For GPBs' DPP1 and DPP2, assets entered the RAB with standardised physical asset lives which, at the time IMs were developed in 2010, were considered to be a reasonable proxy for expected economic asset lives.
- 2.10 We amended the IMs prior to setting DPP3 to introduce a mechanism that enables asset lives for GPBs to be adjusted to better reflect economic asset lives. Historically, asset lives for GPBs have been long (up to 80 years for some assets) which matched their expected physical lives. But given the widely expected decline in the long-term use of natural gas, the average remaining economic life of the assets is now likely to be shorter than the average physical life.
- 2.11 The mechanism we introduced in the Gas IMs allows us to make asset life adjustments if we are satisfied that doing so would better reflect their economic lives and better promote the purpose of Part 4. A change in asset lives affects the quantum of depreciation that is recovered in a DPP period: the shorter the life the greater the amount of depreciation per annum. Since asset lives also affect the calculation of depreciation under ID, there are flow-on amendments for depreciation calculations in ID to reflect the change in asset lives. Refer to the IM amendments reasons paper for DPP3 for more detail.²²

²² [Commerce Commission "Amendments to input methodologies for gas pipeline businesses related to the 2022 default price-quality paths – Reasons Paper" \(30 May 2022\)](#), para 3.6.

Suppliers bear the residual risk under current IMs

- 2.12 At present, all actual investment enters the RAB, which informs future DPP resets and is not subject to an ex-post efficiency test. However, suppliers are exposed to residual risks as our regime does not guarantee that regulated suppliers earn a normal return over the life of the assets. For example:
- 2.12.1 DPP regulation provides for an ex-ante expectation of recovery over the upcoming regulatory period and GPBs are exposed to some forecasting risks ex-post.
 - 2.12.2 When setting DPPs we can cap and smooth annual price increases and GPBs bear the risk associated with such applications.
 - 2.12.3 If demand drops quickly, or if current or future Governments were to enforce restrictions or an early phase-out of natural gas use, GPBs may be exposed to unmitigated stranding risk to the extent that the price increases required to recover their costs exceed consumers' willingness or ability to pay.
 - 2.12.4 GPBs ultimately bear risk over time as our regime only preserves ex-ante FCM to the extent consistent with promoting the Part 4 purpose.²³

Keeping stranded assets in the RAB supports ex-ante expectations of normal returns

- 2.13 The expectation that assets will stay in the RAB under most circumstances supports incentives to invest and innovate in line with section 52A(1)(a) and our ex-ante FCM principle.
- 2.14 At some point we may need to rethink how and/or if we apply the ex-ante FCM principle and the BBM if, for example, early industry wind-down was to become certain. Given the central importance of ex-ante FCM to promoting incentives for efficient investment, we would need clear evidence that departing from it would better promote the Part 4 purpose.
- 2.15 Under our current approach it is important that sunk assets remain in the RAB. This is because in the next regulatory period, the current period's incremental investments become sunk. Removing assets from the RAB would therefore undermine ongoing investment incentives. In line with section 52A(1)(a), for businesses to have incentives to invest now, they need to have an expectation of at least recovering the full cost of their investments. This includes an appropriate return on those investments.

²³ Commerce Commission "[Part 4 Input Methodologies Review 2023 – Decision-Making Framework Paper](#)" (13 October 2022), X23.

- 2.16 This does not mean suppliers will in fact make normal returns on sunk or incremental investment (ex-post), rather they expect to at the time of committing to an investment.
- 2.17 And consumers need not necessarily continue to bear asset stranding risk nor must we necessarily take the same approach for new and existing assets.
- 2.18 While there is already a mechanism within the IMs to shorten asset lives there are other options to address asset stranding so that incentives to invest are maintained when demand is declining, or is expected to, which we discuss within this paper. We can change our approach to addressing asset stranding risk as part of the IM Review if doing so will better promote the overarching objectives for the IM Review.
- 2.19 Under our risk allocation principle, we ideally allocate risks to suppliers or consumers depending on who is best placed to manage them. Managing risks includes:
- 2.19.1 where possible, taking actions to influence the probability of risks eventuating;
 - 2.19.2 taking actions to mitigate the costs of occurrence; and
 - 2.19.3 having the ability to absorb the impact where it cannot be mitigated.
- 2.20 If suppliers are exposed to asset stranding risk, they are also incentivised to take actions to avoid asset stranding. This may result in even stronger incentives to innovate and improve efficiency.

Implications of the expectations of declining demand on asset stranding risk and how it is addressed under current IMs

- 2.21 As we set out in Chapter 3 of our [DPP3 decision](#), the Government has committed to net zero emissions by 2050 (2050 target) which requires all greenhouse gases, other than biogenic methane, to reach zero on a net accounting emissions basis by 2050.^{24,25} In May 2022 the Government published its ERP which sets New Zealand on a pathway to meeting the 2050 target.²⁶ The Government's plan includes phasing out the use of fossil fuels, including natural gas, whilst ensuring energy is accessible, affordable, secure, and supports economic development, and there is an equitable transition.

²⁴ [Climate Change Response Act](#), s 5Q(1)(a).

²⁵ [Ministry for the Environment "Emissions reduction plan discussion document" \(October 2021\)](#), p. 9.

²⁶ [Ministry for the Environment "Te hau mārohi ki anamata. Towards a productive, sustainable and inclusive economy: Aotearoa New Zealand's First Emissions Reduction Plan" \(16 May 2022\)](#).

- 2.22 As natural gas demand declines so too will the number of users on gas pipeline networks. However, natural gas remains an essential energy source for many homes and businesses, and forecasts indicate that it will likely take years for users to move to lower emission alternatives (see paragraph 2.29).
- 2.23 Furthermore, while the delivered volume of natural gas will likely decline over time, it is not clear how quickly this will happen or when any phase out will be complete. In general, significant uncertainty remains around the pace of change, the rate at which demand for natural gas will decline, and potential impact on gas pipeline businesses.
- 2.24 This has implications for how we address asset stranding risk for GPBs under current IMs.

The IMs must appropriately address asset stranding risk to incentivise investment

- 2.25 Investment is required to ensure networks continue to provide a safe and reliable supply of natural gas until they are no longer needed. This means that it is important that we continue to deliver ex-ante FCM through the BBM to provide incentives for continued investment. This requires the IMs to appropriately address asset stranding risk.
- 2.26 Under the current IMs we address the risk of asset stranding for individual assets and promote continued incentives to invest. This is by allowing assets to remain in the RAB when capacity permanently exceeds consumer demand rather than becoming economically stranded.

Declining long-term demand for natural gas is likely to increase the risk of stranded assets, which has implications for consumers

- 2.27 Declining long-term demand for natural gas is likely to increase the extent of underutilised or redundant assets, thereby increasing the impact of asset stranding risk on consumers that remain connected to gas pipeline networks.
- 2.28 For the gas transmission network, declining volumes are expected to be largely driven by the likely phase out of baseload electricity generation from natural gas²⁷ and the uncertain timing of any reduction in methanol production.²⁸ The impact on demand for individual transmission assets is likely to vary significantly, potentially resulting in asset stranding of some transmission assets.

²⁷ The Government has an aspirational target of 100 per cent renewable electricity by 2030.

²⁸ Which according to Concept Consulting is quite sensitive for medium-term gas supply conditions. [Concept Consulting "Gas demand and supply projections – 2021 to 2035" \(May 2021\), section 4.4.4.](#)

- 2.28.1 Assets providing end-of-line services to some specific gas users are likely to become redundant.
- 2.28.2 Other gas transmission assets may continue to operate but with significantly lower volumes.
- 2.29 For gas distribution networks the immediate impact of declining volumes from major gas users may be limited. However, we note that projections by Concept show declines in gas usage for most consumer segments by 2035.²⁹ If these declines eventuate, then many gas distribution network assets will become redundant or have excess capacity over time.
- 2.30 There is some potential for alternative gasses to limit the overall decline in delivered volumes for both transmission and distribution networks. However, even if repurposing is technically and economically viable, it may not replace existing uses of natural gas on like-for-like for basis.³⁰ If so, many existing assets will become redundant or underutilised.
- 2.31 The implication for remaining consumers is that prices are likely to increase if total volumes decline, leading to increased risk of disconnections.

There may be an increased risk of economic network stranding of the RAB as a whole

- 2.32 Networks can become fully or partially economically stranded if at any point in time a network owner can no longer expect to recoup their investment, including through depreciation.
- 2.33 This can occur if all, or a significant part, of the consumer base disconnects or reduces consumption such that the revenue GPBs are able to recover from the remaining customer base is insufficient to recover the costs of the network over time. Consumers would disconnect or reduce their consumption if prices rise beyond their willingness to pay given their economic alternatives.

²⁹ [Commerce Commission "Default price-quality paths for gas pipeline businesses from 1 October 2022 – Final Reasons Paper" \(31 May 2022\), para 3.38.](#)

³⁰ See for example: [Boston Consulting Group "The Future Is Electric: A Decarbonisation Roadmap for New Zealand's Electricity Sector" \(2022\), p. 108-110;](#) and [Australian Energy Regulator "Regulating gas pipelines under uncertainty – Information Paper" \(November 2021\), p. 13-16.](#)

- 2.34 Economic network stranding gives rise to the potential for asymmetric risk for regulated suppliers. The commitment to keep assets in the RAB should be sufficient to provide them with an opportunity to recover the cost of their investment and to make a normal return. But if operations cease prior to full recovery of the RAB, or consumers are not willing to pay the required charges, then GPBs may be unable to recover the cost of their investment and may make less than normal profits.
- 2.35 A long-term decline in delivered natural gas volumes is expected as New Zealand transitions to a low-carbon economy. This may lead to an increased risk of economic network stranding.
- 2.36 It is important not to precisely equate declining demand for individual assets or even declining volumes across networks with declining aggregate willingness to pay on the part of consumers and so the potential for revenue recovery in the future.
- 2.37 Small consumers, like residential and small business consumers, currently contribute much more revenue per unit of gas transported than larger users. It may be possible to increase prices for these consumer groups to at least partially offset reductions in revenue from (major) consumers that have reduced demand or exited the network.
- 2.38 In the short term, tariff restructuring such as increased fixed charges may be able to offset lower delivered volumes and limit the impacts on achievable potential revenue, which potentially reduces the risk of economic network stranding. However, tariff restructuring is unlikely to offset potential revenue from lower gas volumes in the long run as it increases the risk of disconnections.
- 2.39 Increasing fixed charges implies increased average charges, which means consumers end up paying more for less energy (in total). The sensitivity of demand to price rises will differ between different consumer types. For some consumers gas is discretionary so consumers can disconnect in the long run to avoid higher charges where there are more cost-effective alternatives (e.g., electric space heating).

And consumers are exposed to increased long term price uncertainty

- 2.40 Consumers will always be exposed to some degree of price uncertainty under Part 4 regulation. This is because we can only set price or revenue caps for periods of up to five years at a time and IMs must be reviewed every seven years. Price uncertainty is a feature of competitive markets and not a problem in its own right.
- 2.41 For price uncertainty to be a problem in the context of gas pipeline services, it would need to undermine the purpose of our regulation. Practically, there may be some threshold where uncertainty undermines consumer confidence in continuing to invest in and use gas (especially for major gas users).

- 2.42 In general, allocating demand risk to consumers supports relatively stable long-term consumer price expectations if there are expectations of stable demand growth. But with increased demand uncertainty there is now increased long-term price uncertainty. The uncertain timing and impact of changes in demand (or the shutdown of major users such as Methanex) would exacerbate these problems.
- 2.43 Price uncertainty may have a 'chilling effect' on consumer investments, potentially leading to an inefficient decline in demand for gas pipeline services.

Chapter 3 Options for addressing asset stranding risk in the Building Block Model with expectations of declining demand

Purpose of this chapter

- 3.1 This chapter outlines some options for changing how we address asset stranding risk through the IMs in order to maintain ex-ante FCM, given the context of expected long-term declines in demand for gas pipelines. We are seeking feedback on these options.

Introduction

- 3.2 Addressing asset stranding risk is challenging; even more so now because of the significant increase in uncertainty over assets' economic lives and expected consumer demand.
- 3.2.1 While a decline in aggregate volumes is expected, the pace of change and impact on the potential for revenue recovery is highly uncertain.
- 3.2.2 The economic life of the assets and the profile of demand are uncertain.
- 3.2.3 The impact on individual assets and parts of the networks is even more uncertain.
- 3.3 In response to our IM Review P&I paper, we received different views on how best to address asset stranding risk resulting from declining long-term demand. In general, suppliers favoured approaches where consumers continue to bear asset stranding risk, and consumers, particularly major gas users, favoured approaches where suppliers bear the risk of asset stranding. Either way, we need to be able to continue to apply the BBM in the context of a likely decline in use of natural gas.
- 3.4 Broadly speaking, options for changing IMs consistent with the BBM and ex-ante FCM principle range from retaining the status quo (with some refinements), to more material changes to our approach that can enable reallocation of asset stranding risk to suppliers. In all options, the resulting IMs need to be able to address asset stranding risk in a way that is consistent with the Part 4 purpose in the context of expected declines in demand in the long term.
- 3.5 We could continue to address long-term demand uncertainty (at least to some extent) by making regular adjustments to asset lives and/or consider the option of changing the depreciation method as new information becomes available. Adjustments to asset lives and the method of depreciation can be supported by other regulatory tools:

- 3.5.1 we can set shorter regulatory periods (the minimum is four years for a DPP and three years for a CPP) for timely adjustments. In DPP3, we used a four-year regulatory period;
 - 3.5.2 we can use price smoothing mechanisms to manage starting price adjustments between regulatory periods. In DPP3, we smoothed the starting price adjustment over the four-year regulatory period, rather than having a one-off starting price adjustment; and
 - 3.5.3 we can cap increases in average prices or allowed revenues. In DPP3 we capped real average price increases to 10% per annum over the four-year regulatory period. There is a trade-off between how much we can cap increases while we maintain an ex-ante expectation of normal returns.
- 3.6 Alternatively (or in addition), we could consider exposing suppliers to increased asset stranding risk. In practice, and to the extent that the risk is asymmetric to the downside, – to be consistent with the ex-ante FCM principle this would mean providing some form of additional compensation such as an ex-ante risk premium while either:
- 3.6.1 reducing the level of assurance we give of being able to recover the costs of investments through the RAB; and/or
 - 3.6.2 exposing suppliers to the risk that assets might be removed from the RAB.
- 3.7 In our Fibre IMs, we included an ex-ante allowance to compensate Chorus for bearing some stranding risk. In the case of Chorus’s Fibre assets, the ex-ante allowance applies to all assets in the RAB.³¹
- 3.8 In the remainder of this chapter, we identify and assess options for maintaining ex-ante FCM in the BBM in the context of declining demand.
- 3.9 Our analysis is specific to setting DPPs. This paper does not consider specific changes to IMs for CPPs. However, we note that there is already an ability for GPBs to apply under a CPP for an alternative depreciation method where, given the supplier’s circumstances, the alternative method would better meet the Part 4 purpose. The alternative depreciation method could involve a change to asset lives or switching to a different method of depreciation (that is, something other than straight-line depreciation).
- 3.10 Our analysis is set out in the following three sections:

³¹ [Commerce Commission “Fibre input methodologies: Main final decisions – reasons paper” \(13 October 2020\)](#), para 6.984 and referred to at para 3.312.

- 1) further changes to IMs to better align regulatory asset lives with economic asset lives;
- 2) changes to IMs to support the use of alternative depreciation methods, given expectations of declining consumer demand; and
- 3) tools to support reallocation of asset stranding risk to suppliers.

3.11 For each of these sections (or types of IM change), we have identified specific options which we consider may be practical alternatives to the current arrangements. These options all have potential advantages, but also disadvantages relative to retaining the status quo.

3.12 These options are not exhaustive. We welcome feedback from stakeholders on our analysis and how well these options would work in practice, and when they would best be implemented. We welcome any additional suggestions of practical alternatives from stakeholders that promote the overarching objectives of the IM Review better than the status quo.

3.13 In general, the options presented are not mutually exclusive. For example, we could adopt an approach that exposes suppliers to increased stranding risk for some assets (e.g., new assets), and continue to rely on adjustments to depreciation for other assets (e.g., existing assets). To implement such an approach, we would need tools to manage changes to asset lives and/or the depreciation method, as well as tools that support reallocation of some asset stranding risk to suppliers.

3.14 Before discussing the options for changing the approach to asset lives and/or the method of depreciation, we first discuss how we set depreciation allowances in DPPs under current IMs, and how any changes to the depreciation building block would need to be made consistently between IMs for ID, and IMs for DPPs.

Depreciation forecasts in Default Price Paths are currently dependent on historical information disclosure

3.15 The IMs for ID currently play a central role in managing asset stranding risk. This is because we use the RAB from ID to represent suppliers' existing financial capital which, along with the forecast of new investments, is used as the basis for calculating depreciation allowances when setting a DPP.

3.16 Under current IMs for ID, depreciation for each existing asset for a year is calculated by dividing the asset's opening RAB value by the remaining asset life (in years). At the end of each year after deduction of depreciation for the year, assets are then indexed for CPI to maintain their real (depreciated) value over time. This effectively results in straight-line depreciation of individual assets in real terms.

- 3.17 Summing the depreciation of all of the assets for a year gives the total depreciation for that GPB for that year, as reported through ID. Note that there is no simple fixed relationship between the depreciation method for individual assets and the implied aggregate depreciation profile.
- 3.17.1 In steady state conditions the aggregate depreciation profile will be stable, regardless of the depreciation method, if there is a large portfolio of individual assets with varying asset lives, and expiring assets are replaced on a like-for-like basis.
- 3.17.2 Where investment is declining and the RAB is shrinking (in real terms) over time, straight-line-depreciation of individual assets would result in a declining aggregate profile of depreciation over time (in real terms).
- 3.18 To set a DPP we need to set a forecast depreciation building block (the aggregate depreciation profile) for the regulatory period. Under current IMs, we separately forecast allowances for existing assets and forecast new assets expected to be commissioned during the regulatory period. Both forecasts are simplifications of actual expected depreciation.

Our current approach for existing assets

- 3.19 For existing assets, we use the historical depreciation expense reported in ID as the basis for forecasting depreciation for the regulatory period in a DPP. Existing assets are those assets which are forecast to exist from the end of the base year prior to the start of the DPP period.³²
- 3.19.1 We estimate an implied remaining average life for existing assets by dividing the total RAB by the depreciation expense reported in ID for the base year. The base year is the ID year we use to set the DPP (DY21 in the case of DPP3).
- 3.19.2 If an asset life adjustment factor is applied during the DPP (using the mechanism introduced in DPP3), the actual applicable asset lives are then equal to the implied remaining average life for existing assets, multiplied by the asset life adjustment factor.
- 3.19.3 The annual depreciation expense for existing assets in the DPP is then equal to the annual opening RAB value divided by the implied remaining average life for existing assets.

³² The base year of a DPP is typically the second-to-last year of the preceding regulatory period.

- 3.19.4 In rolling the assets forward to the next reset through the IMs for ID, assets that are expected to be disposed of are removed from the RAB, and the RAB is indexed for CPI. If an adjustment factor has been applied to existing assets, then suppliers are required to pass through the adjustment to individual existing assets at the start of the DPP (see 3.42).
- 3.20 We are aware of a potential misalignment under current IMs between the IMs for DPPs and ID. Our current IMs may over-compensate (and therefore be inconsistent with the objective in the Part 4 purpose statement to limit suppliers' ability to extract excessive profits) if a significant portion of a supplier's existing assets become fully depreciated during a regulatory period. This issue also arises in the IMs for Electricity Distribution Businesses (**EDBs**).
- 3.20.1 The forecast allowance for existing assets is effectively a continuation of the (historical) depreciation expense in the base year (adjusted for any applicable asset life adjustment factor, CPI indexation and asset disposal).
- 3.20.2 However, the depreciation expense for existing assets should decline from the base year level as assets drop out of the RAB and depreciation of those asset ceases. The decline in depreciation expense can be significant within a regulatory period and is not accounted for in our current approach.
- 3.21 Even if we are to retain straight-line depreciation and make no further changes to our approach to asset lives in ID, we will address this misalignment in order to ensure that suppliers are not overcompensated. We will consider how best to address this in our draft decision on the IM Review. In option B below we discuss a potential solution to this issue, which would involve forecasting the depreciation allowance for existing assets based on detailed asset register information which we would collect from suppliers (3.68).

Our current approach for new assets

- 3.22 A different approach is taken in the DPP for new assets. This does not rely on historical information disclosure. New assets are those assets which are forecast to be commissioned during the DPP period.
- 3.22.1 For new assets, the IMs start by specifying a 45-year remaining life in the year of commissioning for DPP purposes.
- 3.22.2 If an asset life adjustment factor is applied during the DPP, the implied average life for each GPB for forecast commissioned assets during the DPP would equal 45-years multiplied by the asset life adjustment factor that has been applied in the DPP.

- 3.22.3 New assets then enter the RAB in ID with asset lives that depend on Schedule A of the IMs (standard physical asset lives) and how suppliers have adjusted individual asset lives for existing assets in the past (see paragraph 3.43).

Input Methodologies need be consistent between Default Price Paths and Information Disclosure

- 3.23 It is important to note that while our DPP forecasts are based on the aggregate RAB, the roll forward of the RAB by GPBs is done on an individual asset basis.
- 3.24 The potential options discussed below for changing the approach to asset lives and/or the depreciation method would need to be made consistently in both the IMs for DPPs and ID (this includes addressing the potential misalignment discussed above in paragraph 3.20 for existing assets).
- 3.25 Note, for the options affecting depreciation below, for which we have presented detailed analysis (A-C), assets would continue to be depreciated in the IMs for ID on an individual asset basis. For these options it should be assumed that we will align aggregate depreciation IMs for DPPs and ID. We invite feedback from stakeholders on the best approaches to achieve this.
- 3.26 We could instead consider a more fundamental change in our approach to depreciation and calculate depreciation on the aggregate RAB in ID rather than individual assets. We briefly discuss this option below in the context of alternative depreciation methods (see paragraph 3.84).

1) Potential further changes to IMs to better align regulatory asset lives with economic asset lives

Introduction

Asset lives should generally reflect assets' economic lives

- 3.27 The economic lifetime of an asset is its expected useful lifetime. It depends on how the asset is used, demand for the asset, and under what conditions it is typically replaced.
- 3.28 Using economic asset lives in the BBM is one way to ensure that ex-ante FCM is maintained. Using economic asset lives has a number of advantages:
- 3.28.1 It reduces the likelihood that individual assets will become stranded in the first place and reduces the risk of economic network stranding of the RAB.
- 3.28.2 It reduces the need for ex-ante compensation to support incentives to invest consistent with the ex-ante FCM principle.

- 3.28.3 It reduces the likelihood that remaining consumers will pay for assets dedicated to consumers that have disconnected which may increase the risk of further disconnections.

Economic asset lives are now less than expected physical asset lives

- 3.29 When we first set the Gas IMs in 2010, we noted that as a “standard approach, physical lives are the best, most objective proxy for economic lives”. An asset’s expected physical life is the expected life that an asset will be available to meet its original purpose. In supporting our decision at the time, we noted that in “most cases physical lifetimes will be in line with economic lifetimes” and that there was no “specific justification” for assuming shorter economic assets lives at the time. We acknowledged the risk that “market changes” in the demand for natural gas could result in the economic life of gas pipeline assets being shorter than physical asset lives. But we noted it was difficult to establish with sufficient certainty when anticipated market changes would eventuate.³³
- 3.30 In Gas DPP3 we concluded that our assumption that physical asset lives are a reasonable proxy for economic lives is no longer appropriate for many gas pipeline assets.
- 3.31 The remaining useful life of GPB assets conveying natural gas, which is the service regulated under Part 4, is likely to be shorter than the remaining expected physical lives.
- 3.31.1 Declining demand is likely to lead to some assets no longer being useful, well before they are physically unable to support conveyance of natural gas.
- 3.31.2 There is a material risk of partial or full network closure, in which case some or all remaining assets would cease to be useful.
- 3.32 Repurposing to alternative gasses may offer an opportunity for certain assets to continue operating for their expected physical (or available) asset lives. However, the economic life of an asset depends on the range of possible outcomes for gas pipelines. There is now a material likelihood that the useful life of GPB assets is shorter than their physical lives and so the (expected) economic asset lives are now less than the (expected available) physical asset lives.

³³ [Commerce Commission “Input Methodologies \(Electricity Distribution and Gas Pipeline Services\) Reasons Paper” \(December 2010\)](#), p. 327.

We have identified some potential limitations with our current approach to adjusting asset lives to better reflect economic asset lives

- 3.33 Prior to our DPP3 final decision we changed IMs to allow asset life adjustments if we are satisfied that doing so would allow asset lives to better reflect their economic lives and better promote the purpose of Part 4.³⁴
- 3.34 A number of submitters to the IM Review P&I paper suggested changes to the DPP3 asset life adjustment mechanism. Suggestions included:
- 3.34.1 revoking the DPP3 amendments entirely;³⁵
 - 3.34.2 restricting asset life adjustments to new assets only;³⁶
 - 3.34.3 specifying asset life reductions for specific new assets through the IMs rather than making adjustments in the DPP; and³⁷
 - 3.34.4 requiring suppliers to apply for any adjustments and provide “substantial evidence” in support of their application.³⁸
- 3.35 We have undertaken a preliminary review and analysis of the existing IMs in light of feedback we have received. This includes reviewing the asset life adjustment mechanisms introduced for DPP3.
- 3.36 While we have not ruled out any of these suggestions, we note the following issues and we have not expanded on these options further in this paper.
- 3.36.1 Revoking the amendments entirely, as some stakeholders suggest, would not allow asset lives to reflect assets’ economic lives, even if doing so would promote the long-term benefit of consumers.

³⁴ [Commerce Commission “Amendments to input methodologies for gas pipeline businesses related to the 2022 default price-quality paths – Reasons Paper” \(30 May 2022\).](#)

³⁵ For example, [Major Gas Users’ Group v Commerce Commission – Notice of Appeal – High Court \(29 June 2022\)](#), para 14; and [Greymouth Gas “Submission on IM Review Process and Issues Paper and draft Framework Paper” 11 July 2022](#), para 37.

³⁶ For example, [Major Gas Users’ Group v Commerce Commission – Notice of Appeal – High Court \(29 June 2022\)](#), para 3c.

³⁷ *Ibid*, para 3ci. i

³⁸ [Methanex “IM Review - Process and Issues/Draft Framework Submission” 11 July 2022](#), para 9.

- 3.36.2 In the context of setting DPPs it is likely to be unworkable to require suppliers to individually apply for and substantiate the need for any adjustment in the context of a sector-wide decline in demand. The sector-wide nature of the drivers for the adjustment mechanism in the gas sector requires a sector-wide response.³⁹ Furthermore, suppliers would be unlikely to apply for asset life increases, whereas, under the current IMs we can increase assets lives if doing so is expected to promote the long-term benefit of consumers.
- 3.36.3 There are practical issues with attempting to specify assets' economic lives in the IMs (i.e, by explicitly updating Schedule A to mandate specific economic lives rather than physical lives). This would require us to predict now what the economic assets lives will be for assets commissioned over the next regulatory period (potentially out past 2030). This would be challenging given the uncertainty facing the gas sector at this time.
- 3.37 There may be merit in considering options for applying the BBM consistent with ex-ante FCM, that treat asset lives differently for sunk versus incremental investments. For example, we could decide at a DPP to not adjust asset lives for existing assets, but allow asset lives for new assets to reflect expected economic assets lives at the time of commissioning. To implement such a decision in a DPP, we would need to offer ex-ante compensation for existing assets to support ex-ante FCM and promote the Part 4 purpose. We discuss this option further below. (see paragraph 3.107).

Potential limitations of the current IMs

- 3.38 Considering the feedback we have received and our own analysis, we have identified some potential limitations with current settings relating to asset lives.

³⁹ We introduced a mechanism to adjust the asset lives of EDBs given the anticipated impact of emerging technology on those businesses. The EDB mechanism requires EDBs to formally request an adjustment prior to the commencement of the next DPP period and provide supporting evidence. For GPBs we do not require an application from regulated suppliers before implementing an adjustment. This difference reflects the sector-wide nature of the drivers for the adjustment mechanism in the gas sector.

The current asset life adjustment mechanism first applies to depreciation allowances; suppliers then pass through the adjustment to individual assets

- 3.39 As part of setting the DPP, we can specify an adjustment factor to apply to the average asset lives for each GDB and the GTB so that the asset lives better reflect economic lives and not physical lives. This adjustment factor applies to both existing and forecast new assets expected to be commissioned during the regulatory period.⁴⁰
- 3.40 Once the DPP is set, suppliers are required to pass the adjustment through to individual assets in the RAB. The adjusted asset lives for individual assets then form the basis for the forecast depreciation of existing assets in the next regulatory period. As discussed above (3.15), our current forecast depreciation allowance for existing assets is based on the historical rate of depreciation reported through ID.
- 3.41 The current IMs specify different approaches for passing through the adjustment factor for existing assets, compared to new assets commissioned during the regulatory period.

When an adjustment factor is applied to existing assets, suppliers must pass that adjustment through to existing assets at the start of the Default Price Path

- 3.42 When an asset life adjustment factor is applied during the DPP, then actual applicable asset lives in the DPP are equal to the implied remaining average life for existing assets, multiplied by the asset life adjustment factor. This results in a change in the quantum of depreciation that we forecast for existing assets in a DPP period: the shorter the life, the greater the amount of depreciation for existing assets per annum.
- 3.43 Under current IMs for ID, suppliers are then required to pass through the same quantum of depreciation to individual existing assets at the start of the DPP. Suppliers have discretion on how to adjust (reduce or extend as the case may be) asset lives in ID for existing assets to better reflect economic asset lives, subject to the following constraints:⁴¹

⁴⁰ Under the current IMs, the same adjustment factor applies to both existing and forecast new assets. Applying the same factor in DPP3 allowed asset lives for new and existing assets to better reflect economic asset lives. Even if we make no other changes to the DPP3 mechanism through the IM Review, for future resets, we will need the ability to apply different adjustment factors for new and existing assets. This is because in the DPP depreciation allowance any past adjustment factors that apply to existing assets persist to the next DPP through a shorter weighted average asset life. If we do not apply a further reduction to the asset life assumption for new assets, by default, the standard 45-year assumption would apply.

⁴¹ [Gas Distribution Services Input Methodologies Amendment Determination \(No.2\) 2022](#) [2022] NZCC 15, section 2.2.8 (5)(a); and [Gas Transmission Services Input Methodologies Amendment Determination \(No.2\) 2022](#) [2022] NZCC 16, section 2.2.8 (5)(a).

- 3.43.1 forecast depreciation for existing assets in ID in each year of the regulatory period, in aggregate, is equivalent to the value of the forecast depreciation for existing assets in the applicable DPP determination for that GDB; and
- 3.43.2 the average remaining asset life at the start of regulatory period in ID approximates the adjusted asset life for existing assets in the applicable DPP at the start of the regulatory period.

The default assumptions for new assets in Information Disclosure depend on how asset lives have been adjusted for existing assets

- 3.44 The assumed average life for new assets forecast to be commissioned during the DPP equals 45-years multiplied by the asset life adjustment factor that has been applied in the DPP. As with the adjustment to existing asset lives, this results in an increase in the quantum of depreciation that we forecast for a DPP period.
- 3.45 Unlike for existing assets, this increase is not explicitly passed through to new assets in the RAB. Instead, under current IMs, the default assumptions for new assets entering the RAB in ID depend on:
 - 3.45.1 Schedule A of the IMs (standard physical asset lives); and
 - 3.45.2 how suppliers have adjusted individual asset lives for existing assets.
- 3.46 Specifically, new assets enter the asset register with asset lives shortened from Schedule A commensurate with the average percentage change that has occurred for existing assets of that class for that GPB.⁴²
- 3.47 In DPP3 we noted that this method avoids specifying new standard physical assets lives (Schedule A), while ensuring the extent of adjustment for new assets is consistent across asset types.

Default asset life assumptions for Information Disclosure for new assets commissioned in a regulatory period may not best reflect economic asset lives

- 3.48 Under current IMs, asset lives can be adjusted to better reflect assets' economic lives. However, there are potential limitations with the current approach.
- 3.49 As a result of the changes introduced prior to setting DPP3, the default assumptions for new assets can now better reflect economic asset lives. However, there may be potential issues with the resulting assumptions and there may be better alternatives.

⁴² Ibid.

- 3.49.1 Economic lives for some assets may now be entirely independent of assets' physical lives, whereas the default assumptions remain dependent on the standard physical asset lives in Schedule A.
- 3.49.2 The asset stranding risk for individual new assets depends on the nature of the expected decline in pipeline usage (and the potential for repurposing). This may not be strongly related to asset class. For example, it may be more dependent on where assets are clustered geographically.
- 3.50 Furthermore, the application of different adjustment factors between GPBs, and GPBs' own discretion to apply those adjustments across individual existing assets, could result in situations where there are significantly large variations in default asset life assumptions for very similar new assets across different GPBs.
- 3.51 We have considered a range of options but are not aware of any better default assumptions that we could make.
 - 3.51.1 Relying entirely on standard asset lives through an updated Schedule A is unlikely to result in economic asset lives for new assets when they are commissioned.
 - 3.51.2 Redefining the default assumptions for new assets entering the asset register to only be a function of existing asset lives (e.g., the average of existing assets of a class for that GPB) would delink the default assumptions from Schedule A for most investments. However, we cannot be sure that resulting assets lives would better reflect assets' economic lives than the current default assumptions, given the uncertain nature of the asset stranding problem.
- 3.52 Instead, we consider that a credible alternative to our current approach may be to allow suppliers flexibility to set economic asset lives for new assets entering the registry consistent with GAAP. We would retain the ability ahead of the next price reset to adjust asset lives to better reflect economic asset lives if doing so promotes the Part 4 purpose. We discuss this as option A below.

Asset lives may be able to better reflect economic asset lives if suppliers can propose economic asset lives for existing assets consistent with GAAP at Default Price Path resets

- 3.53 At each DPP reset, any adjustment we make is made with limited information and applies to the aggregate RAB. Suppliers can then adjust individual assets to better reflect assets' economic lives but are constrained by the extent of our aggregate adjustment.

- 3.54 Given the degree of long-term demand uncertainty, suppliers may be better placed to manage asset stranding risk for individual assets if they can propose updated economic asset lives for all existing assets. Suppliers may also have better information about the nature of the existing asset base than we can access directly.
- 3.55 We discuss as option B below, an alternative approach of allowing suppliers to propose updated economic asset lives (consistent with GAAP) for all existing assets just at a DPP reset. In this case we could compare the current distribution of asset life assumptions with the proposal, and either accept the proposal or replace the assumptions provided with other assumptions if doing so is expected to promote the long-term benefit of consumers (for example to spread adjustments over multiple regulatory periods to avoid consumer price shocks).
- 3.56 While this would mean relying more on suppliers to determine the extent of asset life adjustments over time, we can ensure that any changes to asset lives that affect BBM depreciation are NPV-neutral. We can do this by only allowing changes at a reset and if necessary, we could introduce an ex-post wash-up at the following price reset. GPBs would therefore remain limited in their ability to extract excessive profits (section 52A(1)(d)).
- 3.57 We acknowledge there are likely to be varied impacts on individual consumers of any changes that affect DPP depreciation allowances, but we can minimise the impact of price increases through other DPP mechanisms. For example, within a regulatory period, we can cap and smooth price increases. With option B we could also require that larger adjustments are spread across multiple regulatory periods to manage any consumer price shocks.

We are seeking feedback on the appropriate timing of any further changes to IMs

- 3.58 In DPP3 we noted that as part of the IM review:

We may have the opportunity to consider how GPBs have, or intend to, translate the shortening of average asset lives for DPP purposes into the shortening of lifetimes for particular assets in their ID RABs, as well as GPBs' own actions taken to mitigate their residual risk.⁴³

- 3.59 As of yet, we have not been able to observe the impacts on individual asset lives of our DPP3 decision through ID as the regulatory period has only just begun. However, we would welcome any insights from suppliers on how they intend to apply the average asset life adjustment in year 1 of DPP3 (ending 30 September 2023).

⁴³ [Commerce Commission "Default price-quality paths for gas pipeline businesses from 1 October 2022 – Final Reasons Paper" \(31 May 2022\), para 6.59.3.](#)

A. Amend current approach to give suppliers discretion to set economic asset lives for new assets consistent with GAAP (retain current approach for existing assets)

Possible Input Methodology changes

3.60 We could provide suppliers with discretion to set economic asset lives for new assets entering the asset register in a way that is consistent with GAAP. Under GAAP:⁴⁴

The future economic benefits embodied in an asset are consumed by an entity principally through its use. However, other factors, such as technical or commercial obsolescence and wear and tear while an asset remains idle, often result in the diminution of the economic benefits that might have been obtained from the asset. Consequently, all the following factors are considered in determining the useful life of an asset:

(a) expected usage of the asset. Usage is assessed by reference to the asset's expected capacity or physical output.

(b) expected physical wear and tear, which depends on operational factors such as the number of shifts for which the asset is to be used and the repair and maintenance programme, and the care and maintenance of the asset while idle.

(c) technical or commercial obsolescence arising from changes or improvements in production, or from a change in the market demand for the product or service output of the asset.

(d) legal or similar limits on the use of the asset, such as the expiry dates of related leases.

3.61 At the time of a price reset, we could require suppliers to disclose the economic asset life assumptions used for assets commissioned within the regulatory period that is coming to an end. With option A we would retain the ability ahead of the next price reset to adjust asset lives to better reflect economic asset lives if doing so promotes the Part 4 purpose. We could consider the appropriateness of the assumptions made during the previous regulatory period for newly commissioned assets when determining the level of any applicable asset life adjustment factor.

3.62 This approach would eliminate the need for Schedule A.⁴⁵

3.63 We would also need to separately consider consistent IMs for DPPs relating to forecast new assets commissioned. An option would be to rely on the most recent disclosed economic asset life assumptions in ID for new assets as the basis for our DPP forecast allowance for new assets commissioned during the DPP. This would replace the current 45-year default assumption.

⁴⁴ [External Reporting Board "New Zealand Equivalent to International Accounting Standard 16 Property, Plant and Equipment \(NZ IAS 16\)"](#) (November 2004), para 56.

⁴⁵ Although we could still leave Schedule A as an option. For example, Schedule A lives might still be appropriate for some for shorter-lived assets.

3.64 We note that there are already some precedents in our regulatory practice for allowing suppliers to set asset lives consistent with GAAP.

3.64.1 Part 4 IMs allow the GAAP life to be applied for non-network or right-of-use assets.⁴⁶

3.64.2 Chorus can apply GAAP for setting asset lives for its Fibre network which is Price-Quality regulated under Part 6 of the Telecommunications Act.⁴⁷

Pros

3.65 Suppliers are likely to be best placed to estimate the economic lifetime of individual assets at the time of commissioning and so the resulting asset lives should be closer to economic lives.

3.66 A requirement to apply GAAP and scrutiny ahead of the next price reset should limit the risk that asset lives are shortened below economic lifetimes.

Cons

3.67 Suppliers would have an informational advantage, and it may be difficult for us or other stakeholders to assess whether the asset lives used for new assets are appropriate.

B. Allow suppliers to propose updated economic asset lives (consistent with GAAP) for all existing assets at a DPP reset

Possible Input Methodology changes

3.68 We could allow suppliers to propose updated economic asset lives for all existing assets at a DPP reset in a way that is consistent with GAAP.

3.68.1 At each DPP reset, we would source a breakdown of the distribution of the value of assets by remaining asset life through a section 53ZD notice.⁴⁸

3.68.2 Suppliers would need to provide us with two sets of data: One with a breakdown of the distribution of the value of assets by remaining asset life before any asset's lives are adjusted, and another with the proposed distribution of updated economic asset lives consistent with GAAP.

⁴⁶ [Gas Distribution Services Input Methodologies Amendment Determination \(No.2\) 2022 \[2022\] NZCC 15](#), section 2.2.8 (1)(e); and
[Gas Transmission Services Input Methodologies Amendment Determination \(No.2\) 2022 \[2022\] NZCC 16](#), section 2.2.8 (1)(e).

⁴⁷ [Fibre Input Methodologies Determination 2020](#), section 2.2.8(2).

⁴⁸ We sourced equivalent data as part of our long-term financial modelling, which informed our Gas DPP3 decision to apply an asset life adjustment factor. See the Inputs_AS worksheet of our [long term financial model](#) used to assess asset stranding risk.

- 3.69 We could then assess the proposed adjustments, and either accept the proposal or replace the assumptions provided with other assumptions if doing so is expected to better promote the Part 4 purpose.
- 3.70 We could use the specific distribution of the value of assets by remaining asset life to forecast the depreciation allowances for existing assets for that regulatory period. This approach would address the current misalignment between the DPP, and ID assumptions discussed above (see paragraph 3.20).
- 3.71 By limiting asset life adjustments to DPP resets (as is also the case with current IMs) and if necessary, introducing an ex-post wash-up at the next price reset⁴⁹, we can ensure that any changes to asset lives that affect BBM depreciation are NPV-neutral. GPBs would therefore remain limited in their ability to extract excessive profits (section 52A(1)(d)).
- 3.72 We would have the ability to replace the assumptions provided with other assumptions if doing so is expected to better promote the Part 4 purpose. For example, we could require that larger adjustments are spread across multiple regulatory periods to manage the impact of consumer price shocks and we could lengthen asset lives if that would mean asset lives would better reflect economic assets lives.
- 3.73 We could accompany option B with option A to so that asset lives for new assets commissioned during the (upcoming) regulatory period also reflect economic asset lives when they are added to the RAB.

Pros

- 3.74 This approach may result in asset lives that better reflect economic asset lives than the current approach.
- 3.75 A requirement to apply GAAP when proposing economic asset lives and scrutiny ahead of the next price reset should limit the risk that asset lives are shortened below economic lifetimes.
- 3.76 We would retain the ability to manage the effects on consumers by smoothing price adjustments over multiple years and regulatory periods.

⁴⁹ To the extent that the assumed depreciation allowance diverts from ID over a regulatory period, the difference could be subtracted (or added) from allowed revenues in the following regulatory period.

Cons

- 3.77 Suppliers would have more influence over the aggregate depreciation profile and because they have an informational advantage, it may be difficult for us or other stakeholders to assess whether the proposed asset life adjustments are appropriate.

2) IM changes to support the use of alternative depreciation methods

Introduction

There are potential benefits from aligning the depreciation method with expectations of declining consumer demand

- 3.78 Changes to the depreciation method that applies to some, or all assets, may result in an aggregate depreciation profile that better reflects total long-term demand expectations. This could promote the Part 4 purpose as follows:
- 3.78.1 In the context of declining demand, it might help avoid long-term expectations of price escalation that could have a chilling effect on users' decisions to continue to use and invest in gas appliances and equipment.
 - 3.78.2 Users may be more likely to pay cost-reflective prices over time. This can support the maximum use of the assets over time.
 - 3.78.3 It may reduce the risk of economic network stranding of the RAB and the need for ex-ante compensation to support incentives for investment consistent with section 52A(1)(a) of the Act.
- 3.79 We note that many stakeholders submitted on our P&I paper that removing RAB indexation would achieve a similar outcome.⁵⁰ While RAB indexation does push out recovery of capital in nominal terms, its central purpose is to maintain the regulatory value of the RAB in real terms over time. The frontloading of cashflows achieved by removing RAB indexation may also be achieved through alternative depreciation methods in a more controlled way, better reflecting the use of assets over their economic lives.

⁵⁰ See for example: [Vector "Submission on the IM Review 2023 – Process and Issues Paper" 11 July 2022](#), para 96-99.

We currently apply straight-line depreciation to individual assets, but there are alternative methods

- 3.80 Current IMs provide for straight-line depreciation of individual assets over the lifetime of the asset in DPPs. Straight-line depreciation allows for a constant recovery of capital (in real terms under the Gas IMs) over the life of the asset. Straight-line depreciation is a simple and widely-used approach, and may be appropriate when the use of an asset is uniform from one year to another.
- 3.81 We have undertaken a preliminary review of options for changing the method of depreciation, including looking at the approaches taken by overseas regulators. There are a range of alternative depreciation methods which could apply to individual assets in the RAB.
- 3.81.1 **Diminishing value (or declining balance).** We initially proposed this method for Chorus’s financial loss asset.⁵¹ With diminishing value, the rate of depreciation for an asset is a fixed percentage of the remaining asset value. This method results in a level of depreciation that declines annually, with bigger declines in earlier years of an asset life than in later years. For individual assets it can result in significant undepreciated value in the final year of an asset’s life which would need to be recovered in that final year. While this may be an issue for individual assets, it is unlikely to significantly impact on the aggregate depreciation profile for GPBs given the large number of assets and the spread of asset lives in GPBs asset bases. The Netherlands Authority for Consumers and Markets applies a form of variable diminishing value in a similar context.⁵²
- 3.81.2 **Tilted annuity.** We applied this method for Chorus’s financial loss asset⁵³. This method results in a rate of depreciation that declines annually, but (depending on the tilt) with bigger declines in earlier years of an asset life, than in later years.⁵⁴

⁵¹ [Commerce Commission “Chorus’ price-quality path from 1 January 2022 – Draft decision – Reasons paper” \(16 June 2021\)](#).

⁵² The extent of ‘tilt’ is defined through the ‘Diminishing value multiple’ which is typically set to 2. See [Oxera “Regulatory tools applied to gas networks to accommodate energy transition” \(26 August 2021\)](#). This report was prepared by Oxera on behalf of Powerco, Vector and First Gas) which was submitted in response to our DPP3 Process and Issues paper for a description of how the Netherlands Authority for Consumers and Markets apply diminishing value.

⁵³ Fibre fixed line access services are regulated under Part 6 of the [Telecommunications Act 2001](#).

⁵⁴ [Australian Energy Regulator “Regulating gas pipelines under uncertainty – Information Paper” \(November 2021\)](#), section 4.12.2.

3.81.3 **Sum-of-digits depreciation.** This approach results in the rate of depreciation for an asset declining linearly (by the same absolute amount each year) from the year it is commissioned down to zero when it reaches its assumed asset life. This method is used by the Office of Gas and Electricity Markets (Ofgem) which is the energy regulator for Great Britain. It applies to all post 2002 assets. Ofgem has taken this approach for gas distribution assets since 2013⁵⁵ and for gas transmission assets from 2022 onwards⁵⁶.

Straight-line depreciation may result in aggregate depreciation that best reflects long term demand expectations

3.82 As discussed above (see paragraph 3.17), there is no simple fixed relationship between the depreciation method for individual assets and the implied aggregate depreciation profile. Given this complex relationship, it would likely be necessary to undertake specific analysis on each GPB's existing assets and long-term capital expenditure plans before changing the method that is applied.

3.83 If for example we were to expect declining investment and a shrinking RAB (in real terms) over time, then continued use of straight-line-depreciation would effectively result in some form of front-loaded depreciation profile for the aggregate RAB (in real terms). In this case there may be little benefit from changing the depreciation method.

It may be simpler to apply an alternative method to the Regulatory Asset Base itself, but this would have its own challenges

3.84 The challenges with aligning the depreciation method for individual assets and the aggregate depreciation profile could be avoided if we were to calculate depreciation on the aggregate RAB in ID rather than individual assets.

3.85 In this option we would simply need to choose a depreciation method and set a relevant asset life for the aggregate RAB.

⁵⁵ [Ofgem "Decision on strategy for the next gas distribution price control – RIIO-GD1" \(31 March 2011\), para 8.7-8.11.](#)

⁵⁶ [Ofgem "RIIO-2 Final Determinations – Finance Annex \(Revised\)" \(2 February 2021\), chapter 10.](#)

- 3.86 While it may be a viable option, it would result in a disconnect between the characteristics of individual assets and the rate of depreciation. The benefit of the current approach is that if asset lives reflect economic asset lives and the depreciation method reflects expected use of the assets then it should result in economic depreciation of the aggregate RAB. Without those underpinnings to determining the aggregate rate of depreciation, we would have to apply a larger degree of judgement in price resets and/or in the IMs. This could result in more uncertainty for suppliers and consumers. We would also need to consider how we would continue to undertake performance reporting under ID.
- 3.87 For the detailed option that follows, we discuss how assets could continue to be depreciated in the IMs for ID on an individual asset basis if an alternative method could be applied to all individual assets in the RAB (or all assets commissioned after a specified year).
- 3.88 For this option, the forecast depreciation allowances to be applied in DPPs would need to be a function of expected future depreciation rather than a function of historical depreciation (as is currently the case). We discuss in option B how we might practically forecast allowances in the context of allowing flexible asset life assumptions for existing assets in ID.
- 3.89 As with adjusting asset lives, changes to the depreciation method can be NPV-neutral with respect to the WACC (as long as depreciation is appropriately aligned between the IMs for DPPs, and the IMs for ID). This means that suppliers remain limited in their ability to make excessive profits.

C. Applying a front-loaded depreciation method to individual assets

Possible Input Methodology changes

- 3.90 Given the relatively low-cost nature of DPPs we could apply:
- 3.90.1 the same depreciation method for all network assets; and
 - 3.90.2 the same depreciation method for all four GDBs (a different method could still be applied for the GTB which has its own IMs).
- 3.91 In order to profile aggregate depreciation to reflect aggregate consumer demand we could specify that some form of variable diminishing value or tilted annuity is to apply to all assets. The rate of change can be explicitly controlled through the use of variable diminishing value and tilted annuity to reflect changes in the long-term aggregate demand outlook.

- 3.92 The IMs could provide flexibility for the degree of ‘tilt’ (common to all assets) to be determined at the time of the price reset. Then we could specify objectives that constrain its application. For example, we could specify that the objective of a diminishing value multiple is to limit expectations of escalating unit prices in the long term.
- 3.93 Alternatively, we could apply a different method for older existing assets compared to newer (or new) assets. This would provide another ‘lever’ for controlling the relationship between depreciation of individual assets and the aggregate depreciation profile for a DPP.
- 3.93.1 By carefully choosing the year from which an alternative method applies we may be able to better construct an expected aggregate profile of depreciation that reflects long-term aggregate consumer demand expectations.
- 3.93.2 It would make the sum-of-digits depreciation method a practical option as we would have some control over the long-term depreciation profile by choosing the year from which sum-of-digits depreciation is to apply.

Pros

- 3.94 We would have more control over the aggregate depreciation profile, either through the degree of ‘tilt’ specified, or by choosing the year from when to apply an alternative method (relative to straight line depreciation for all assets).
- 3.95 We can continue to manage the risk of consumer price shocks through smoothing adjustments over multiple regulatory periods and capping of annual increases.

Cons

- 3.96 This option is more complex than applying straight-line depreciation to all assets and may therefore increase implementation and compliance costs. As discussed, straight-line depreciation is simple, and with declining investment it may already result in an aggregate depreciation profile that broadly reflects declining demand.
- 3.97 While actually changing the method for some or all assets may be relatively straight forward from an accounting perspective, the real challenges would be determining which method to use, any degree of tilt and from when to apply an alternative method.

3) Potential tools to support reallocation of asset stranding risk to suppliers

Introduction

Benefits and costs of allocating long-term demand risk to suppliers

- 3.98 Current IMs allocate stranding risk largely to consumers; but they may not always be best placed to manage these risks. For example, the choice of what and when to invest in new assets is (largely) in the control of GPBs subject to any capital expenditure approval rules we implement.
- 3.99 The main advantage of allocating more asset stranding risk to suppliers is that it may provide an additional financial incentive for suppliers to better manage the risk (to the extent they can) which may result in stronger incentives to innovate and improve efficiency. This would also reduce the chance of substantial price shocks to current and/or future consumers. This would be the desirable thing to do, where suppliers are better placed than consumers to manage that risk (considering the wider suite of tools available to manage consumer price impacts over time).
- 3.100 If asset stranding risk is allocated to suppliers, it would increase suppliers' incentives to avoid or mitigate the risk of asset stranding. This is because asset stranding would result in negative financial impacts. GPBs should already face strong incentives for efficient investment, but further allocation of risk to supplier could strengthen suppliers' incentives to improve efficiency.
- 3.101 From a practical perspective, allocating more stranding risk to suppliers, could reduce the need to adjust economic asset lives or the depreciation method at each regulatory period.
- 3.102 The primary disadvantage is the difficulty in calculating the extent of compensation required, given uncertainty, and that suppliers have an informational advantage. In our Fibre IMs reasons paper, we noted advice from Martin Lally (2008) that highlights these challenges.⁵⁷

Ex-ante compensation suffers from the difficulty that it is simply impossible to know what the appropriate level should be. Thus, to ensure investment is forthcoming, one must err on the generous side. Even this may not be enough. If an extreme asymmetric event occurs to the extent that the ex-ante compensation received up until that time is insufficient to cover it, the regulated business is liable to claim that the ex-ante compensation should be raised. By contrast, if the asymmetric events do not occur to the extent envisaged, the regulated business will remain silent. So, even if the ex-ante allowance is appropriate, there will still be a bias towards subsequent increases. To draw an analogy, when governments choose to compensate farmers for extreme weather conditions, they do so ex-post rather than ex-ante for the reasons just noted.

⁵⁷ [Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" \(13 October 2020\)](#), attachment F: Extracts from Martin Lally, *The weighted average cost of capital for Electricity Lines Businesses*, October 2008.

- 3.103 If the purpose of the compensation is for the risk that individual stranded assets might be removed from the RAB, then we would also need a process to identify and exclude economically stranded assets from the RAB, depending on the extent of the stranding risk being compensated for. This could be a challenging and contentious exercise.

Potential ways we could allocate more risk to suppliers

- 3.104 There are a wide variety of ways we could allocate more asset stranding risk to suppliers. In all cases we would need to allow compensation to maintain an expectation of ex-ante FCM, but only some options would require stranded assets to be removed from the RAB.
- 3.104.1 We could retain assets in the RAB, but choose not to adjust asset lives or the profile of capital recovery for existing assets in response to changes in the long-term demand outlook. This could result in a material risk of economic network stranding and ex- ante compensation would be necessary to support an ex-ante expectation of FCM.
- 3.104.2 We could identify specific assets that are to be removed from the RAB if asset stranding occurs and provide ex-ante compensation for the resulting asset stranding risk. For example, it may be possible, prior to an investment taking place to specify that certain new investments are to be removed from the RAB if asset stranding occurs and accompany this by ex-ante compensation to support ex-ante FCM. This may be appropriate to provide incentives for GPBs to invest in new assets that have a high probability of becoming stranded in the near term, but which are also necessary to support the continuation of safe and reliable gas supplies in the near term. Alternatively, there may be some existing assets for which there is a relatively low probability of very significant asset stranding for which consumers would struggle to manage the price implications. In either case there would be a material risk of partial capital recovery on those assets which would likely require ex-ante compensation. We would also need to change the IMs to allow stranded assets to be removed from the RAB if stranding occurs.

3.104.3 We could remove all assets that are no longer used from the RAB. This would result in a material risk of partial capital recovery on those assets and would be likely to require ex-ante compensation. It would also require changes to the IMs to allow stranded assets to be removed from the RAB.⁵⁸

3.104.4 We could remove all stranded assets from the RAB, including by writing down assets if there is expected to be permanently under-utilised capacity. This would result in a material risk of partial capital recovery on those assets and to support ex-ante FCM it would be likely to require ex-ante compensation. It would also require changes to the IMs to allow stranded assets to be removed from the RAB.

We could change the Input Methodologies to enable us to allocate more stranding risk to suppliers at the time of Default Price Path resets

3.105 We note that any changes we make to IMs now will only directly affect consumer prices at future price resets (DPP4 is due in 2026).

3.106 We do not consider that it is possible to set the appropriate level of compensation in the IMs that should apply to GPBs at this time.⁵⁹ However, there may be value in having tools in the IMs that would support reallocation of asset stranding risk to suppliers consistent with the ex-ante FCM principle at a future reset.

3.106.1 Under current IMs we do not have specific provisions that allow for ex-ante compensation at the time of a price reset. We may already be able to provide ex-ante compensation through expenditure allowances. However, there may be merit in including explicit provisions in the IMs to support reallocation of asset stranding risk to suppliers. These provisions would not specify the level of compensation, only that it can be applied. This could be implemented within the existing IMs. We discuss this as option D below.

3.106.2 Stranded assets currently remain in the RAB. Under certain circumstances where asset stranding has occurred, it may be necessary to enable assets to be removed from the RAB. We discuss this as option E below. Option E would also need to be accompanied by ex-ante compensation to support ex-ante FCM (ie option D)

⁵⁸ Note that there are specific provisions in the Commerce Act for GPBs that allow for gas pipelines to be deregulated (see sections 55A(5) and (6)). Deregulation of pipelines assets would have the same impact as removing those assets from the RAB.

⁵⁹ We note that in the Fibre IMs, where we already apply an ex-ante allowance for the stranding risk, the level of compensation is specified in the asset valuation IMs as a function of the outstanding RAB.

D. Mechanism to enable ex-ante compensation in Default Price Paths

Possible Input Methodology changes

- 3.107 We could add a mechanism into the IMs that provides for ex-ante compensation in DPPs if necessary to support an expectation of ex-ante FCM.
- 3.108 The mechanism would only specify that we could provide compensation, not the level of compensation.
- 3.109 For GPBs subject to DPP regulation, the level of compensation would be specified at the time a price path is set, given the risk assessment at that time. This could be done through the price path determination.
- 3.110 The compensation would need to reflect the risk of partial capital recovery for individual assets, or economic network stranding risk for the RAB present at that time. It may be possible to use the Dixit and Pindyck approach to estimating compensation for bearing asset stranding risk for GPBs.⁶⁰ However, other methods may be better suited to the context of the asset stranding risk facing GPBs.⁶¹

Pros

- 3.111 Inclusion of specific provisions that allow for ex-ante allowances in the IMs may provide more clarity and certainty to both suppliers and consumers about the tools available for use in DPP resets.

Cons

- 3.112 When setting a price path, we would still need to decide whether to provide compensation and the level of compensation that is being provided. This would likely add complexity to the DPP process.

E. Allow stranded assets to be removed from the Regulatory Asset Base

Description

- 3.113 We could introduce means into the IMs to remove assets from the RAB that are stranded assets.⁶² This would need to apply in conjunction with an ex-ante compensation allowance (option D) consistent with the ex-ante FCM principle.

⁶⁰ [Commerce Commission “Fibre input methodologies: Main final decisions – reasons paper” \(13 October 2020\)](#), attachment G: Estimating compensation for bearing asset stranding risk.

⁶¹ As a submission on our Gas DPP3 Process and Issues paper, we received a report on behalf of Vector by: [CEG Economics “Stranding risk – depreciation vs uplift”](#) (August 2021). Chapter 3 discusses the potential implications of applying the Dixit and Pindyck approach in the context of regulating GPBs.

⁶² We would need to ensure that when assets are removed from the RAB, there would not be loss recognised as income in the regulatory accounts. The intent of option E is that that there would be no ex-post compensation or recognised income if assets are removed from the RAB as they would have already received ex-ante compensation.

3.114 This provision could be restricted in its application or could apply more broadly to all assets in the RAB.

3.114.1 It could be restricted to only apply to pre-specified assets (such as infrastructure that is dedicated to specific large industrial users).

3.114.2 Even if it applies to all assets, it could be restricted to only cover assets that are no longer useful, in which case assets with significant excess capacity would remain in the RAB at their initial cost.

3.114.3 It could apply to all economically stranded assets. Where assets remain useful but are underutilised (partially stranded), this would effectively amount to asset value write downs. We note the views of Greymouth Gas and the Major Gas Users Group in response to our IM Review Process and Issues paper that favour a regulatory approach that removes all stranded assets from the RAB.^{63,64}

Pros

3.115 Enabling the removal of stranded assets from the RAB by changing IMs now, could help ensure that we have the tools available at future price resets to best deal with the investment situation facing both GPBs and their customers at that point in time.

Cons

3.116 It will be very difficult more than three years out from the next DPP, to put appropriate bounds on the application of any IMs that allow stranded assets to be removed from the RAB which can introduce uncertainty which impacts on incentives to invest.

3.117 It is not necessary to remove stranded assets from the RAB in order to expose suppliers to increased stranding risk while remaining consistent with the ex-ante FCM principle. For example, we could decide to make no further adjustments to asset lives or the depreciation method, and expose suppliers to the resulting risk of economic network stranding and provide ex-ante compensation.

3.118 Even if we decided it was appropriate to allow stranded asset to be removed from the RAB at a future price reset, it is likely that further revisions to IMs would be needed ahead of using these provisions to provide clarity about the circumstances and rules on when and how stranded assets would be removed from the RAB.

⁶³ [Greymouth Gas "Submission on IM Review Process and Issues Paper and draft Framework Paper" 11 July 2022, para 63.](#)

⁶⁴ [Major Gas Users Group "submission – Process and Issues/Draft Framework" 11 July 2022, para 17a.](#)

- 3.119 When setting a price path, we would need a process for identifying and removing stranded assets from the RAB. This would add significant complexity and cost to the DPP process. From a practical perspective, a full asset revaluation process (or RAB optimisation) may be required at each DPP reset.
- 3.120 It would not be possible to simply rely on suppliers to remove stranded assets from the RAB, as they would be incentivised to not reveal when an individual asset (or part of an asset) has become stranded. The gains from doing so would be an increase in long-term profits. This contrasts with allowing suppliers increased flexibility to adjust assets lives which can be implemented in a way that is NPV-neutral with respect to the WACC (3.56).