Queensland Competition Authority

Draft position paper

Approach to climate change related expenditure

April 2023

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We wish to acknowledge the contribution of the following staff to this report:

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Disclaimer

(1) This draft position paper is designed to provide basic guidance on how the Queensland Competition Authority (QCA) may approach climate change related spending proposals in carrying out its relevant regulatory functions. It is intended to enable parties to submit applications to the QCA with a better appreciation of how spending proposals might be reviewed. We consider this will promote coherent and credible spending proposals and negotiated outcomes.

(2) This draft position paper:

- (a) is non-binding
- (b) does not cover all aspects of the applicable spending approval procedures
- (c) does not use formal or legal language
- (d) should not be considered a substitute for professional advice.

(3) Each spending proposal is likely to be different. The QCA will take into account the particular circumstances of the regulated business and its customers when considering an application. Whereas this draft document provides general guidance on approaches that might be taken, the QCA is not bound to act in a manner consistent with such guidance in considering a specific application.

EXECUTIVE SUMMARY

This review

Businesses are increasingly considering climate change when making spending and investment decisions. That also applies to businesses that we regulate.

While we have frameworks and processes in place to assess whether expenditure is prudent and efficient, we are considering whether they appropriately accommodate climate change related expenditure. This includes providing for such expenditure to occur in a timely manner.

This paper presents our preliminary views on these matters, after considering submissions we received on our October 2022 discussion paper.

Preliminary views

Businesses in unregulated markets are modifying their capital and operating expenditure profiles in response to climate change, consistent with community expectations. We are therefore open to considering prudent and efficient climate change related expenditure proposals from regulated businesses, and we provide clarity in this paper on how the provisions in the QCA Act and our existing approval frameworks can accommodate consideration of both adaptation and mitigation expenditure. It is not evident that our existing processes for considering expenditure need to materially change in order to consider this type of expenditure—although we recognise that the nature and drivers of such expenditure may differ from those we have considered in the past.

More specifically, we consider that:

- Our existing regulatory frameworks are appropriate for considering climate change related proposals for both adaptation and mitigation expenditure, but we can provide (and have provided in this paper) further clarification on how these frameworks apply when we assess such proposals.
- While we are not actively promoting climate change related expenditure proposals, we are open to considering such proposals from regulated businesses on their merits.
- Regulated businesses should be encouraged to consult and reach agreement with their users/customers on climate change related expenditure proposals, wherever possible. However, the absence of agreement does not mean we will reject a proposal—if sufficient justification is otherwise provided for the proposal.
- Our current scope, standard and cost approach to assessing prudency and efficiency of expenditure can be applied to climate change related proposals—however, we stress that assessment of efficient cost should be on a whole-of-life basis and encompass private and social costs (including externalities).
- Regulated businesses should put forward coherent and credible business cases to support climate change related expenditure proposals. These business cases should be consistent with internal planning documents—such as asset management plans and climate change strategies.
- Business cases supporting proposed adaptation expenditure should address the demonstrated need for the expenditure; consultation with customers; consideration of adaptation options; and efficient cost analysis. In most cases, approval for adaptation proposals should be sought on an ex ante basis.
- Business cases supporting proposed mitigation expenditure should address similar matters as for adaptation expenditure—but may be more directly linked to issues such as legislative or government requirements; broader community concerns; externalities; and the appropriateness of offsets.

- Climate change related expenditure proposals, for both adaptation and mitigation expenditure, are more likely to be considered prudent and efficient where it can be demonstrated that the expenditure would be undertaken by an efficient firm operating in a workably competitive market.
- There may be merit in producing a guideline on how we would approach future decisions on climate change related expenditure proposals. We are considering publishing a draft of such a guideline as part of our final position paper. Any guideline would not be binding on us, and we would reserve the right to review it where necessary.
- An appropriate regime for managing climate-related risks will depend on the circumstances and may include commercial insurance, self-insurance, pass-through mechanisms or a combination thereof. In assessing proposals to manage risk, our view is that risk should be managed efficiently and should be allocated appropriately between parties.

Further matters for consultation

We seek further stakeholder views, including on:

- the relationship between our legislative obligations and approval frameworks and climate change related expenditure proposals
- whether, at a high level, our existing processes for assessing prudency and efficiency of expenditure proposals can be effectively applied to proposals for climate change related expenditure
- factors regulated businesses should have regard to when developing business cases to support submissions seeking approval of climate change related expenditure—the factors include justification for such expenditure and the extent to which the expenditure is supported by customers
- the application of our expenditure assessment approach to adaptation expenditure proposals, and how the approach can be best applied to solve problems through long-term planning and consultation
- the most effective ways for our expenditure assessment approach to support prudent and efficient mitigation expenditure that provides value for money abatement outcomes
- whether we should produce a draft guideline, as part of our final position paper, on how we intend to consider climate change related expenditures—and what matters the guideline should cover
- the extent to which our regulatory regime can effectively support efficient management by regulated businesses of the risk of unexpected future events—including through providing for appropriate consideration of insurance, self-insurance allowances and pass-through mechanisms
- whether the QCA's existing processes for considering financing costs and asset stranding risk are sufficiently developed and flexible to deal effectively with any such matters related to climate change.

Stakeholders' comments will inform the preparation of our final position paper on our processes for approving prudent and efficient climate change related expenditure.

Stakeholders' comments are due by **23 June 2023**.

Further information

A public forum for stakeholders that have made submissions, as well as other interested parties, will be held on Monday 15 May 2023.

For further information about this project please contact Leigh Spencer on 07 3222 0555.

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SUBMISSIONS

Closing date for submissions: 23 June 2023

Public involvement is an important element of the decision-making processes of the Queensland Competition Authority (QCA). Therefore, submissions are invited from interested parties concerning this draft position paper. The QCA will take account of all submissions received within the stated timeframes.

Submissions, comments or inquiries regarding this paper should be directed to:

Queensland Competition Authority
GPO Box 2257
Brisbane QLD 4001
Contact: Leigh Spencer

Tel (07) 3222 0555

www.qca.org.au/submissions

Confidentiality

In the interests of transparency and to promote informed discussion and consultation, we intend to make all submissions publicly available. However, if a person making a submission believes that information in the submission is confidential, that person should claim confidentiality in respect of the document (or the relevant part of the document) at the time the submission is given to us and state the basis for the confidentiality claim.

The assessment of confidentiality claims will be made by us in accordance with the *Queensland Competition Authority Act 1997*, including an assessment of whether disclosure of the information would damage the person's commercial activities and considerations of the public interest.

Claims for confidentiality should be clearly noted on the front page of the submission. The relevant sections of the submission should also be marked as confidential, so that the remainder of the document can be made publicly available. It would also be appreciated if two versions of the submission (i.e. a complete version and another excising confidential information) could be provided.

A confidentiality claim template is available on request. We encourage stakeholders to use this template when making confidentiality claims. The confidentiality claim template provides guidance on the type of information that would assist our assessment of claims for confidentiality.

Public access to submissions

Subject to any confidentiality constraints, submissions will be available for public inspection at our Brisbane office, or on our website at www.qca.org.au. If you experience any difficulty gaining access to documents, please contact us on (07) 3222 0555.

1 ABOUT THIS INVESTIGATION

1.1 Context

Climate change is leading to more adverse weather events and more unpredictability about these events. While rainfall and streamflow have increased in some parts of Australia, and decreased in others, heavy rainfalls are becoming more frequent and intense. There has also been an increase in extreme fire weather and in the length of the fire season. Compound events are also occurring more frequently when extreme weather and climate events occur consecutively within a short time, or when multiple types of extreme events coincide.[1]

At the same time, there has been an increase in greenhouse gas emissions, with the global annual mean carbon dioxide concentration reaching 414 parts per million (ppm) and the CO2 equivalent of all greenhouse gases reaching 516 ppm in 2021, the highest levels on earth in two million years.[2] In this context, the Intergovernmental Panel on Climate Change's 2023 report notes that:

> Global surface temperature in the first two decades of the 21st century (2001-2020) was 0.99 [0.84 to 1.10]°C higher than 1850-1900. Global surface temperature has increased faster since 1970 than in any other 50-year period over at least the last 2000 years (high confidence). The likely range of total human-caused global surface temperature increase from 1850–1900 to 2010–2019 is 0.8°C to 1.3°C, with a best estimate of 1.07°C.[3]

In response, governments have made a range of commitments in respect of climate change. There has also been an increasing focus on climate change and broader environmental, social and governance (ESG) matters from consumers, investors, insurers and banks.

Climate change is likely to present a range of risks and challenges to regulated businesses and their customers, particularly in an environment where risk—including transition risk—has to be managed and resilience built across the supply chain amid increasing uncertainty and change.

Key risks may reflect:

- damage to infrastructure—due to changes in weather patterns as a result of climate change (such as flooding or rising sea levels) or increased heat stress
- changing market conditions—due to changes in customer demand (such as reduced demand for thermal coal)
- evolving government policy—around Commonwealth and state emissions reduction targets (and the implications for regulated businesses making long-lived investments in this context)
- funding, insurance issues and/or other related corporate pressures—including where access to funding or insurance is tied to emissions levels or to achieving emissions reduction targets, or where other businesses in the supply chain place pressure on regulated businesses to reduce emissions
- investor preferences—for example, where investors decline to invest in particular 'dirty' industries or reduce investment in those industries

[1] BOM and CSIRO, *State of the Climate 2020*, n.d., pp. 1–2, 8. See also The McKell Institute, *The Cost of Extreme Weather, Building resilience in the face of disaster*, September 2022.
[2] BOM and CSIRO, *State of the Climate 2022*, n.d., p. 3. Carbon dioxide concentrations were below 300 ppm before the industrial revolution.
[3] IPCC, *Synthesis Report of the IPCC Sixth Assessment Report (AR6)*, 2023, p. 6.

- reputational issues—where pressure to reduce or offset emissions is viewed as being consistent with a business's social licence to operate.

In this environment, the risks of capital expenditure being ill-planned, ill-timed, not fit for purpose, ill-designed or made obsolete may impact not only the regulated business. They can also have implications for customers through increased costs to fund works or through disruption. These risks may be accentuated given the speed and scale of the changes being made in response to climate change.

There may also be opportunities for regulated businesses and their customers, including through cost savings and innovation across supply chains.

1.2 Matters we are investigating

Climate change expenditure by regulated businesses can be broadly divided into two categories:

- **Adaptation expenditure** focuses on enhancing the resilience of infrastructure to better cope with extreme weather events. Such expenditure includes replacement capital expenditure, enhanced greenfield expenditure and asset upgrades.

  A typical example could relate to replacing or upgrading an asset to reduce the expected impact of a future weather-related event (like flood damage).

- **Mitigation expenditure** focuses on reducing carbon dioxide equivalent emissions. Such expenditure relates to responding to changes in government policies, community sentiment or external corporate factors (such as funding requirements) and maintaining a social licence to operate.[4]

  A typical example could relate to direct expenditure, such as converting a fleet of vehicles with internal combustion engines to electric motors, or indirect expenditure, such as the purchase of offsets.[5]

These expenditures are discussed in more detail in Chapters 2, 7 and 8.

1.3 Scope of the review

This review considers whether our existing regulatory processes are sufficiently robust and flexible to appropriately support climate change related expenditures by regulated businesses and provide a regulatory environment conducive to prudent and efficient expenditures being undertaken in a timely manner.

Our view is that prudent and efficient expenditure should be supported, whether it is climate related or not. Consistent with this view, we are open to considering climate change expenditure proposals by regulated businesses and have sought to provide clarity on how our approval frameworks can consider such expenditure.

[4] For example, the Commonwealth Bank of Australia has announced that for power generation, thermal coal mining, and oil and gas extraction, it has implemented emission reduction glidepaths and targets. See Commonwealth Bank, *2022 Annual General Meeting—Chair's Address*, ASX announcement, 12 October 2022, p. 5.

[5] An 'offset' is used to mitigate greenhouse gases where a party is unable to, or chooses not to, reduce its own emissions (see Box 2, p. 11).

The focus of this paper is not on the level of various inputs to the building blocks methodology, including rates of return, as we consider these matters can be appropriately accommodated within the existing assessment frameworks.[6]

1.4 Review process

We invite stakeholders to comment by 23 June 2023. An indicative timeframe for key milestones for this review is provided below.

Figure 1: Indicative timeframe

1.5 Accommodating climate change expenditure in the regulatory framework

While the specific features of our approval processes vary across regulated businesses, these processes focus on whether the proposed investment is prudent and efficient.

In light of increasing and more unpredictable climate events, government policies and ESG considerations, there has been a greater focus in recent years on climate change expenditure, both adaptation and mitigation.

While some types of climate change expenditure (like on adaptation related to flooding) have previously been considered under our frameworks, other types of climate change expenditure (like mitigation) typically have not.

We sought stakeholders' comments in 2022 on whether our regulatory frameworks can appropriately function and create a regulatory environment conducive to prudent and efficient investment.

We received submissions from nine stakeholders:

- regulated businesses—Aurizon Network, Dalrymple Bay Infrastructure (DBI), Gladstone Area Water Board (GAWB) and Seqwater
- users—Dalrymple Bay Coal Terminal User Group, Queensland Resources Council (QRC) and Pacific National
- other interested parties—Queensland Health and Urban Utilities.

Stakeholders had mixed views on the adequacy of our existing regulatory frameworks for assessing and approving climate change related expenditure. Most of them considered that the frameworks were fit for purpose, although a number sought further guidance on how the

[6] Stakeholders' views on these matters should be provided in the context of the various assessment processes that we conduct from time to time, including the assessment of draft access undertakings.

frameworks would be applied to climate change expenditure. In contrast, some water businesses said the existing frameworks were not suitable for considering this type of expenditure.

Key matters stakeholders raised include:

- explicitly linking climate change expenditure to the object of Part 5 of the QCA Act
- publishing a guide to provide confidence about how climate change expenditure will be assessed
- measures to reduce the cash flow impact of climate expenditure, including introducing a climate change fund (e.g. through an industry levy)
- limiting the scope of ex post assessments of climate change expenditure
- the need for robust business cases and consultation to support expenditure claims
- providing certainty as to how climate change mitigation expenditure will be approved
- the need for us to consider the potential impact of climate change on other matters, such as rates of return and asset stranding risks.

In contrast, the DBCT User Group said, among other things, that:

- we should focus on restraining the exercise of monopoly power by regulated businesses 'rather than attempt to add to the wide array of climate change policies'
- regulatory classification and treatment of climate change expenditure should not create an incentive to game the regulatory process by classifying expenditure in a manner to achieve the most favourable approach.[7]

Our view is that our established regulatory regime can accommodate consideration of climate change expenditure, although further guidance on how the regulatory framework can support prudent, efficient and timely expenditure may be necessary.

In this context, we encourage regulated businesses to consult and reach agreement with their customers where possible on the nature and appropriate level of climate change expenditure, as well as provide robust and comprehensive justifications for such expenditure.

Clarifying how aspects of our regulatory regime can apply to climate change expenditure (as opposed to promoting climate change expenditure) is not outside the scope of our role—it is good regulatory practice. This review simply provides guidance on how such expenditures can be accommodated within our processes.

Having had regard to stakeholder comments, we consider the key issues include:

- the extent to which guidance should be provided on whether, and to what extent, climate change expenditure proposals are consistent with our legislative obligations, including under the QCA Act
- providing further clarity on how climate change expenditure proposals will be considered under our existing regulatory frameworks, including in relation to prudency and efficiency
- the matters that regulated businesses should have regard to in submitting expenditure proposals for consideration. These include providing a business case to support expenditure

[7] DBCT User Group, sub. 3, pp. 1, 9.

proposals, with the case demonstrating the need for action; evidence of consultation with customers; consideration of delivery options; and cost effectiveness of outcomes.

The following chapters consider:

- contextual matters—the types of climate change expenditure and their drivers (Chapter 2)
- the relevance of QCA Act factors—the appropriateness of providing additional guidance on how the various elements can apply to climate change (including the object of Part 5 of the QCA Act and the public interest criterion) (Chapter 3)
- assessment of prudency and efficiency—the history of development of our processes, and how they have been applied across the sectors we regulate (Chapter 4)
- the adequacy of existing frameworks—how they can apply to climate change expenditure and whether refinements are necessary (Chapter 5)
- the need for robust business cases to support prudent and efficient climate change expenditure—setting out the key elements that are desirable, including in relation to demonstrating why such expenditure is prudent and efficient (Chapter 6)
- climate risk processes—providing guidance to regulated businesses on matters that will facilitate the consideration and approval of efficient climate related adaptation expenditure (Chapter 7)
- climate mitigation processes—considering factors relevant to how such expenditure can be considered under our regulatory frameworks, including where the expenditure also impacts the broader community (Chapter 8)
- a guideline on climate change expenditure—the matters such a guideline might cover (Chapter 9)
- insurance and risk management—the risks faced by regulated businesses and their customers and how such risks should be allocated and borne (Chapter 10)
- other matters—that is, whether our approvals framework can accommodate matters traditionally considered as part of our building blocks assessment (such as financing costs and asset stranding risk) (Chapter 11).

1.6 Further consultation questions

We are interested in stakeholders' comments on any aspect of this draft position paper. The following questions are intended to help guide the preparation of stakeholder submissions.

Chapter 3: QCA Act

(1) To what extent is climate-related expenditure consistent with the access undertaking approval criteria in s. 138(2) of the QCA Act? Do the matters discussed in Chapter 3 appropriately capture the relevant considerations we ought to have regard to?

Chapter 5: Adequacy of existing frameworks

(2) At a high level, do stakeholders accept that our processes for assessing prudency and efficiency of expenditure proposals can be effectively applied to proposals for climate change related expenditure (adaptation and mitigation)?

Chapter 6: Assessment

(3) How can our assessment approach for climate-related spending, including the expected standard of strategic planning and business cases, most effectively align with regulated businesses' existing internal processes?

Chapter 7: Adaptation

(4) How can the assessment approach for adaptation spending best be applied to encourage parties to solve problems through long-term planning and consultation with customers?

Chapter 8: Mitigation

(5) How can the assessment approach facilitate prudent and efficient mitigation expenditure that provides value for money and meets the community's supported environmental goals?

Chapter 9: Guideline

(6) Should we produce a guideline that indicates how we will consider climate change related expenditures? If yes, what matters should it contain, other than the matters outlined in Chapter 9?

Chapter 10: Insurance

(7) How can the regulatory regime promote efficient climate risk approaches, including insurance and pass-through mechanisms, that balance the interests of regulated businesses and their customers?

Chapter 11: Other matters

(8) Are our existing processes for considering financing costs and asset stranding risk sufficiently developed and flexible to deal effectively with any such matters related to climate change?

2 CLIMATE CHANGE RELATED EXPENDITURE

2.1 The need for climate change related expenditure

Given the growing likelihood and intensity of climate events and the evolving climate commitments of governments, regulated businesses are increasingly factoring climate change considerations into their decision-making, particularly in the context of long-lived assets.[8]

That said, the nature and objectives of such expenditures differ between those focused on adapting to climate change and those aimed at mitigating emissions.

2.2 Adaptation expenditure

2.2.1 What is adaptation expenditure?

Adaptation expenditure involves enhancing the resilience of infrastructure in anticipation of climate change and more extreme climate-related events. Stakeholders noted a range of physical risks arising from climate change, including:

- less rainfall, runoff and catchment yield, leading to reduced water availability
- more intense rainfall and flood events, leading to damage to catchments
- increased storm and cyclone intensity
- harsher bushfire weather
- increased average temperatures and drier conditions leading to asset degradation
- droughts.[9]

Climate change is a significant driver of six of the nine key risks identified by the Bureau of Infrastructure and Transport Research Economics (BITRE) in a recent report on supply chain resilience (Figure 2).

Figure 2: Key risks to road and rail supply chain infrastructure

Source: BITRE, Road and Rail Supply Chain Resilience Review – Phase 1, 2023.

[8] Examples of climate change events impacting regulated businesses were provided in submissions, including Pacific National, sub. 6, pp. 2–3; Urban Utilities, sub. 9, p. 4, Seqwater, sub. 11, pp. 7, 14–15.

[9] GAWB, sub. 5, p. 2; Urban Utilities, sub. 9, p. 4; Aurizon Network, sub. 2 (Frontier), pp. 8, 23; DBI, sub. 4, p. 23.

Adaptation expenditure can include building new infrastructure or enhancing existing infrastructure that is designed to manage climate related weather events (such as flood defences); or it can relate to upgrading other existing infrastructure so it better withstands climate events (such as by building roads and bridges to higher standards or raising them). Planning and investing in resilience can benefit customers through enabling essential services to continue (or recover more quickly) following significant events.[10]

Adaptation expenditure can occur when existing capital assets are due to be replaced, or when existing capital assets are pre-emptively upgraded. Alternatively, adaptation expenditure can occur when upgrading brownfield sites or when undertaking greenfield expenditure.

Adaptation expenditure to increase resilience to climate change events (such as increased storms or higher temperatures) can take various forms, including:

- replacement capital expenditure—for example, where damaged or life-expired assets are replaced with capital assets of a higher standard to better withstand climate events. An example is upgrading rail infrastructure to better accommodate heat stress (namely replacing wooden sleepers with concrete sleepers).[11] Replacement capital expenditure would ordinarily not change the configuration of the broader infrastructure
- enhanced greenfield expenditure—for example, where the development of new infrastructure is configured to better withstand anticipated future climate events
- asset upgrades—for example, where existing assets that are not necessarily life-expired are upgraded. This could include where existing dam walls are raised, flood levees enhanced, or bridges upgraded to address increased bridge scour[12] from higher precipitation levels
- additional maintenance expenditure—for example, from greater precipitation or heat stress causing damage to assets
- specific projects—for example, where new works are undertaken to improve the resilience of the existing infrastructure.

Particular types of climate change expenditure that may be undertaken by regulated businesses include those in Box 1.

[10] Urban Utilities, sub. 9, p. 5.

[11] F Nemry and H Demirel, *Impacts of Climate Change on Transport: A focus on road and rail transport infrastructures*, JRC (Joint Research Centre) scientific and policy reports (JRC72217), European Commission Publication Office, 2012, p. 44.

[12] Bridge scour is the process of erosion around a bridge foundation caused by flooding—as defined by the Ohio-Kentucky-Indiana Water Science Center (*Bridge scour countermeasures*, US Geological Survey website, US Government, 28 July 2016, accessed 7 October 2022).

Box 1: Types of adaptation expenditure—sector-specific examples

- **Rail**—following a flood event, a below-rail service provider seeks to rebuild damaged infrastructure (such as bridges and culverts) to a higher standard than previously existed, on the basis that climate change modelling suggests flood events are likely to become more prevalent in the future.
- **Ports**—a coal terminal owner proposing an expansion of capacity seeks to build additional resilience into the expansion—for example, through extra stockyard protection or more robust marine infrastructure, on the basis that cyclones in central Queensland are predicted to be more severe in future due to climate change.
- **Water**—a dam operator seeks to enhance or accelerate its dam safety program and expenditures, on the basis that climate change is leading to more intense and more frequent major rainfall events in south-east Queensland, thereby altering the risk profile of its infrastructure assets.

As such, when undertaking adaptation works, a regulated business may need to have regard to the need for works to be undertaken in response to climate change, the appropriate level of climate resilience that is necessary and the timing of any works.

2.2.2 Adaptation expenditure and climate uncertainty

Stakeholders broadly accepted that climate change considerations are becoming increasingly important in decision-making.

Queensland Health recommended a holistic approach to climate change expenditure to minimise the adverse outcomes, while Urban Utilities said the likelihood and costs of events driven by climate change will continue to be uncertain and unpredictable.[13]

A key challenge with adaptation expenditure is that it may involve expenditure on long-lived assets in an environment of uncertainty about climate impacts. In considering the impacts of climate change on road and rail infrastructure, the European Commission said:

> Protection of river bridges may be needed over the next decades for about 20% of the stock in order to mitigate scour risk associated with increasing river flood. Given that bridges are designed for long life spans (>100 years) and that their maintenance and repairing activities have to be planned long in advance, future climate-related risk should be included in corresponding prior cost-benefit studies.[14]

Frontier, on behalf of DBI, added that uncertainty is intrinsic to climate risk, with the impacts of climate change likely to be felt in a non-linear way 'as hazards reach thresholds beyond which the affected physiological, infrastructure or ecological systems work less well or break down altogether'.[15] Frontier also said that:

> the key challenge associated with assessing the need for adaptation expenditure is the uncertainty over the level of resilience required by regulated businesses against future climate change related events, and over the appropriate timing of such investments.[16]

[13] Queensland Health, sub. 10, p. 1; Urban Utilities, sub. 9, p. 9. See also GAWB, sub. 5, p. 5.
[14] F Nemry and H Demirel, *Impacts of Climate Change on Transport: A focus on road and rail transport Infrastructures*, JRC (Joint Research Centre) scientific and policy reports (JRC72217), European Commission Publication Office, 2012, p. 73.
[15] DBI, sub. 4, appendix 2 (Frontier), p. 9.
[16] DBI, sub. 4, appendix 2 (Frontier), p. 19.

Separately, the DBCT User Group said there would be difficulties 'identifying expenditures that are solely or principally climate change related'.[17]

2.2.3 Planning for adaptation expenditure

While adaptation expenditure can be incurred on an ad hoc basis, regulated businesses are increasingly considering the risks and uncertainty of climate events in their planning processes.

GAWB said:

> One of the key challenges in managing these impacts is balancing proactive management of these risks, such as the planning and building of infrastructure to higher (more resilient) standards, with reactive responses, such as increased maintenance from premature asset degradation and the repair of damaged infrastructure following a major weather event.
>
> The risks associated with the changing climate need to be incorporated into our planning, project design and asset management activities, recognising that the future requirements of the network could be quite different from what they are today.[18]

Likewise, Aurizon Holdings said in its 2022 Sustainability Report:

> the key regions in which Aurizon operates may experience increasingly severe weather events under multiple climate change scenarios. To this end, we continue to build our understanding of climate models and exposures to augment our existing adaptive design approach for our fixed network assets.[19]

More broadly, stakeholders noted that planning for adaptation expenditure is increasingly being considered in developing operational or master plans.

For instance, Seqwater noted that it had a range of asset management and investment plans and processes that consider climate change, including its:

- Asset Portfolio Master Plan—which is related to capital planning and investment
- Integrated Master Plan—which guides decision-making on proposed capital expenditure and operation over the long term
- Capital Investment Lifecycle Framework.[20]

Likewise, Aurizon Network noted that its Asset Maintenance and Renewal Policy and its Design and Construction Asset Strategy guide the physical management and construction standards of its assets.[21]

Similarly, the 2021 Dalrymple Bay Coal Terminal (DBCT) Master Plan notes:

> Climate change considerations (i.e. adaptation and resilience) have been examined in terms of appropriate and additional infrastructure within the marine environment.[22]

[17] DBCT User Group, sub. 3, p. 4.
[18] GAWB, sub. 5, p. 3.
[19] Aurizon, *2022 Sustainability Report*, n.d., Aurizon website, accessed 4 April 2023, p. 49.
[20] Seqwater, sub. 11, p. 17.
[21] Aurizon Network, sub. 1, p. 4.
[22] DBI, *Dalrymple Bay Infrastructure Management Master Plan 2021, Expansion Opportunities at Dalrymple Bay Terminal*, 2021, p. 62.

2.3 Mitigation expenditure

Mitigation expenditure focuses on actions to limit global warming. It can involve:

- reducing the flow of greenhouse gases into the atmosphere, by reducing sources of these gases—for example, by switching to renewable energy or less intensive uses of fossil fuels
- purchasing carbon offsets that accumulate and store these gases, such as in the oceans, forests and soil (see Box 2).

Box 2: What is an offset?

We consider offsets are a separate class of mitigation, compared with other options that involve directly reducing emissions of carbon dioxide or other greenhouse gases.

The key characteristic of an offset is that the party using it is still emitting greenhouse gases. The 'offset' does not stop those emissions; rather, it counterbalances them. This happens by the offset provider either sequestering carbon from the atmosphere, or avoiding an activity that would release greenhouse gases.

One of the most common forms of offset is an Australian Carbon Credit Unit (ACCU), approved by the Commonwealth Government. This is a 'tradeable offset' that has a transparent market price. It is also possible for a business to develop its own offsets by, for example, reforesting land.

Direct mitigation is different from an offset—it involves the party taking measures to emit less carbon dioxide or other greenhouse gases. This can be by doing less of an activity or doing it with 'green' energy that does not involve emissions. Green energy can be generated by the party or can be purchased from a third-party supplier.

As with adaptation expenditure, regulated businesses are increasingly considering mitigation expenditure in their planning. These considerations typically have regard to Commonwealth or state government commitments regarding reducing climate change emissions.

For instance, the Australian Government's policy is to reduce greenhouse gas emissions by 43 per cent below 2005 levels by 2030 and to put Australia on track to achieve net zero emissions by 2050.[23] Likewise, the Queensland Government recently committed to a 70 per cent renewable energy target by 2032 and an 80 per cent target by 2035; a 50 per cent reduction in electricity sector emissions relative to 2005 levels by 2030; and a 90 per cent reduction in electricity emissions by 2035–36.[24] Further, on 30 March 2023, the Safeguard Mechanism (Crediting) Amendment Bill 2023 was passed and is now awaiting royal assent. The Bill includes a hard cap on scheme-wide greenhouse gas (GHG) emissions with a ratchet down formula.[25]

Beyond mitigation targets, governments are increasingly prioritising projects and initiatives that act to reduce emissions—which may have implications for regulated sectors. For example, a 70 per cent renewable energy target will have implications for Queensland's electricity networks in

[23] Department of Climate Change, Energy, the Environment and Water, *Australia submits new emissions target to UNFCCC*, news release, Australian Government, 16 June 2022; *Climate Change Act 2022* (Cth), Part 2, section 10. See also DBI, sub. 4, appendix 2, p. 11.

[24] A Palaszczuk (Premier and Minister for the Olympics), *Energy and Jobs Plan: Premier's 2022 State of the State address*, media statement, Queensland Government, 28 September 2022. See also Seqwater, sub. 11, pp. 21–22.

[25] Refer to Clayton Utz, *Last minute Safeguard Mechanism Reforms introduce new obligations*, 3 April 2023, Clayton Utz website, 2023, accessed 5 April 2023.

respect of connection services.[26] The Queensland Government also plans to have no regular reliance on coal-fired power generation by 2035.

Regulated businesses are increasingly seeking to align their climate polices with those of the government. For example, the 2021 DBCT Master Plan notes:

> DBIM has also committed to achieving net zero Scope 1 and Scope 2 greenhouse gas emissions[27] from DBT operations by 2050, and is actively working on a strategy to shorten that timeframe.
>
> DBIM has also committed to the following strategic actions:
>
> - Develop a net zero road map for Scope 1 and 2 greenhouse gas emissions;
> - Review Scope 3 emissions and assist partners to reduce these where feasible;[28]

DBI also noted a range of initiatives by its customers in respect of mitigation, including:

- several mining companies developing concepts for electrification of haul trucks to reduce scope 1 emissions
- Rio Tinto committing to net zero scope 1 and 2 emissions by 2050
- Whitehaven Coal undertaking a feasibility study to consider implementing solar electricity generation.[29]

Other stakeholders also noted their focus on mitigation measures, including:

- GAWB—which has committed that, at a minimum, it will reduce its carbon emissions in line with Queensland Government targets[30]
- Seqwater—which has a corporate greenhouse gas emissions target of net zero emissions by 2050 'in line with both the Queensland Government policy and community expectations'[31]
- Pacific National—which has been developing decarbonisation approaches such as trip optimisation and has recently published its ESG report.[32]

Likewise, in pursuing a goal of net zero emissions by 2050, Aurizon Holdings says in its Climate Strategy and Action Plan:

> We will continue to explore renewable energy and carbon abatement opportunities to complement direct abatement initiatives and offset hard-to-abate emissions across our operations.[33]

There is also increasing pressure from businesses in other parts of the supply chain to mitigate greenhouse gas emissions. For example, BHP's policy is:

- for direct suppliers—targeting net zero by 2050 for the operational greenhouse gas emissions of its direct suppliers

[26] See also Queensland Government, *Transitioning to a low-carbon energy sector*, n.d., p. 2.
[27] Types of emissions (i.e. scope 1, 2 and 3) are described in section 2.3.1.
[28] DBI, *Dalrymple Bay Infrastructure Management Master Plan 2021 Expansion Opportunities at Dalrymple Bay Terminal*, 2021, p. 63.
[29] DBI, sub. 4, para 56.
[30] GAWB, sub. 5, p. 4.
[31] Seqwater, sub. 11, p. 22.
[32] Pacific National, sub. 6, p. 4.
[33] Aurizon, *2020 Climate Strategy and Action Plan*, 2020, p. 13, Aurizon website, accessed 5 April 2023. See also pp. 4–5.

- for shipping of BHP products—targeting net zero by 2050 for greenhouse gas emissions from all shipping of BHP products
- for steelmaking and other downstream processes—partnering with customers and others to try to accelerate the transition to carbon neutral steelmaking and other downstream processes.[34]

We note that the climate commitments of governments and organisations have rapidly changed over time (and have become stricter). For example, the Australian Government's floor target to reduce greenhouse gas emissions by 43 per cent below 2005 levels by 2030 is 15 percentage points more ambitious than its previous 2030 target.[35,36] The regulation of greenhouse gas emissions under the pending safeguard amendments will also impose stricter obligations on covered facilities.

Likewise, the Queensland Government's recent targets are more comprehensive than previously announced and increase the short-term renewable energy target from 50 per cent to 70 per cent.

In this environment of evolving targets and commitments, regulated businesses may make long-term decisions on expenditure, expansions or other projects, which involve assets with long life spans (potentially extending beyond 2050). There is a risk of asset stranding or asset obsolescence in such circumstances, particularly where asset investments were not made in anticipation of further tightening of climate commitments by governments or organisations.

2.3.1 Scope 1, 2 and 3 emissions

In the context of measuring and acting to mitigate greenhouse gas emissions in industrial and commercial settings, it is common for businesses (and other parties) to identify different types of emissions, in particular:

- Scope 1 emissions—these are direct emissions from a company's owned or controlled sources. Attempts to reduce these emissions in the operations of the businesses we regulate may be an important part of mitigation activities undertaken by these businesses. Mitigation activities could include actions to alter fuel mixes, reduce fugitive emissions (particularly for the service providers involved in coal transportation), more efficiently operate infrastructure facilities (including dams and coal terminals) and deliver maintenance activities more efficiently. It may also involve the appropriate use of offsets, including tradeable offsets.
- Scope 2 emissions—these are indirect emissions from purchased or acquired energy. In practice, this type of emission is likely to be the focus for the majority of mitigation activity for the businesses we regulate. This is with the knowledge that these businesses are generally large infrastructure businesses that consume substantial amounts of energy in their operations.
- Scope 3 emissions—these are indirect emissions that occur in the value chain of the reporting business. Scope 3 emissions can be further divided into upstream and downstream emissions. Upstream emissions encompass the indirect emissions in a business's value chain

[34] BHP, *Climate change*, BHP website, 2022, accessed 11 October 2022.
[35] A Albanese (Prime Minister and Minister for Climate Change and Energy), *Australia legislates emissions reduction targets*, media release, Australian Government, 8 September 2022.
[36] Section 10 of the *Climate Change Act* indicates that the 43 per cent target is a floor target, and the note accompanying the section states: 'The achievement of a target involves reducing Australia's net greenhouse gas emissions to a level that is at or below the target. Accordingly, nothing in subsection 1 limits Australia's ability to reduce its net greenhouse gas emissions beyond 43% below 2005 levels by 2030.'

related to purchased or acquired goods and services, while downstream emissions encompass the indirect emissions within the value chain that relate to sold goods and services, with the emissions occurring after they leave the control of the business.

3 FACTORS IN THE QCA ACT

3.1 Features of climate change expenditure

Climate change considerations are becoming increasingly relevant to regulated businesses and their customers. While many aspects of climate-related expenditure reflect matters to which we currently have regard under our legislative framework, other aspects of such expenditure potentially raise novel issues.

Stakeholders identified a range of unique features of climate change expenditure, including:

- externalities associated with mitigating carbon emissions[37]
- climate-related risks
- social licence considerations of action or inaction on climate change[38]
- government targets for mitigating carbon emissions.

While stakeholders subject to Part 5 of the QCA Act considered that the existing regulatory regime can already accommodate consideration of climate change expenditure, they had differing views on whether further guidance should be provided in this respect.

The DBCT User Group said:

> More generally, it is important that the scope of economic regulation remains focused on restraining the exercise of monopoly power by the regulated entities, rather than attempt to add to the wide array of climate change policies. Attempting to use economic regulation in such a way could lead to unintended consequences …[39]

The DBCT User Group also said any change in the assessment of the prudency of climate change related expenditure:

- would be an interventionist approach
- would be inconsistent with giving primacy to negotiated outcomes
- may inadvertently reopen or conflict with the existing user agreements.[40]

The DBCT User Group further noted that considering positive externalities generated by the actions of regulated businesses in economic regulation was not appropriate. It said:

> attempting to take into account one particular kind of externality produced by monopoly infrastructure through the approach to economic regulation of that infrastructure, when not all participants in the industry use such infrastructure, should not be considered as the appropriate means for Government to carry out such interventions.[41]

[37] In summary, an externality is an output of a business or commercial activity that affects other parties (either positively or negatively) but is not captured in the market price of the activity. Externalities are discussed in more detail in sections 5.3 and 8.5.

[38] DBI defined a social licence to operate as 'an intangible, dynamic construct that broadly refers to the ongoing acceptance of an entity (individual, project, organization and/or industry) by its stakeholders, as evidenced by the entity's ability to engage with its stakeholders and respond to the ever-changing demands on, and expectations of, the entity' (DBI, sub. 4, para. 19, p. 7).

[39] DBCT User Group, sub. 3, p. 1.

[40] DBCT User Group, sub. 3, p. 3.

[41] DBCT User Group, sub. 3, p. 10.

In contrast, DBI proposed that we provide further guidance on how climate change expenditure is consistent with the object of Part 5 (s. 69E) by:

> clarifying that the economic efficiency objective under Part 5 of the QCA Act encompasses climate risk mitigation and sustainable procurement, particularly where the investment:
>
> - generates substantial positive externalities in relation to environmental and climate considerations;
> - is consistent with government targets and ambition;
> - is necessary for the regulated entity to remain sustainable, such as maintaining long term access to financing through financial markets;
> - is necessary to address the ESG considerations of the regulated entity; and/or
> - promotes the long-term interests of users in terms of: (a) reducing the long run cost of supplying services; or (b) increasing the prospect of supply over the long run by ensuring the commercial sustainability of the business.[42]

3.2 QCA preliminary views

3.2.1 Economic regulation and climate change expenditure

We understand that some overseas jurisdictions have explicitly amended legislation to require utility regulators to have regard to climate change considerations when making regulatory decisions. For example, in California, the Public Utilities Commission (CPUC) is mandated through statute to require regulated energy businesses to increase their use of renewable energy over time.[43] Similarly, some overseas regulators expressly seek to promote specified environmental outcomes as part of their review processes. For example, the website for the United Kingdom's water regulator (Ofwat) states:

> Ofwat plays a critical role in driving and enabling the water sector to protect and improve the environment. As part of our price review process, we ringfence investment for environmental initiatives and ensure water companies deliver environmental improvements efficiently, using our regulatory tools to make sure they prioritise this.[44]

In Australia, we are also aware of initiatives to include emissions reductions in the objective of the national energy laws.[45] Moreover, the object of Western Australia's *Electricity Industry Act 1994* was recently amended to explicitly provide for efficient investment for the long-term interests of consumers in relation to, among other things, environmental consequences.[46]

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[42] DBI, sub. 4, para. 79.1, p. 17.

[43] California Energy Commission, 2021 *SB 100 Joint Agency Report, Achieving 100 Percent Clean Electricity in California: An Initial Assessment*, summary, March 2021.

[44] Ofwat website, *Ofwat and the environment*, accessed 12 April 2023.

[45] C Bowen (Minister for Climate Change and Energy), *Next step to include emissions reductions in the National Energy Objectives*, media release, Australian Government, 20 December 2022.

[46] The *Electricity Networks Access Code, Amendments (No. 2) 2020* (WA) amends the *Electricity Regulation Act 1994* (WA). It now provides that '[t]he objective of this Code ("Code objective") is to promote efficient investment in, and efficient operation and use of, services of networks in Western Australia for the long-term interests of consumers in relation to—(a) price, quality, safety, reliability and security of supply of electricity; (b) the safety, reliability and security of covered networks; and *(c) the environmental consequences of energy supply and consumption, including reducing greenhouse gas emissions, considering land use and biodiversity impacts, and encouraging energy efficiency and demand management'* [emphasis added] (Western Australia Government, *Gazette*, 18 September 2020, no. 157, p. 3047). The Code provides that 'consumers' has the meaning of being 'a person who consumes electricity'.

That said, we acknowledge that differences between the various roles and priorities of regulators may drive their respective levels of focus on climate change matters. For instance, some regulators may be industry-wide, multi-purpose regulators, with a very broad remit, whereas we are largely a multi-industry, single-purpose (competition and market power) regulator. Likewise, some regulators are expressly required by legislation to have regard to climate change considerations, while others are not.

Further information on the climate change priorities of regulators can be found in section 4.3 and Appendix B.

3.2.2 Our role

We do not consider that the DBCT User Group's position that the scope of economic regulation is to focus on restraining market power appropriately characterises our role under the QCA Act.

The QCA Act was introduced pursuant to the National Competition Policy reforms agreed by the jurisdictions, with the second reading speech stating:

> The purpose of this Bill is to implement competition policy related initiatives consistent with the Government's broader policy agenda, including social and equity considerations, *environmental objectives* and the continued delivery of community service obligations.[47] [emphasis added]

Consistent with this, there are a range of provisions in the QCA Act that contemplate us having regard to environmental considerations in exercising our various functions.

For instance, Part 3 of the QCA Act, relating to the pricing practices of monopoly business activities (such as water businesses), requires us to have regard to factors in any investigation that can encompass climate change expenditure.[48]

Likewise, the regulation of access to services provided by significant infrastructure is subject to the provisions of Part 5 of the QCA Act, namely ss. 138(2) and 120, which provide a range of criteria to which we must have regard in approving access undertakings and arbitrating disputes. Some of these criteria relate directly to environmental considerations.

The below matters relate to Part 5 of the QCA Act, given that was the focus of submissions by the DBCT User Group and DBI.

3.2.3 Application of Part 5 of the QCA Act to climate-related expenditure

We consider that our obligations under Part 5 of the QCA Act are consistent with enabling prudent and efficient expenditure, whether it is climate related or not. We therefore consider there is merit in stakeholders being provided with clarity on how our legislative and approval frameworks can consider climate change expenditure.

Such a position is consistent with the negotiate–arbitrate framework and should not affect existing negotiated agreements (including those related to the coal handling service at DBCT). As

[47] Queensland Parliament, *Record of proceedings*, 30 April 1997, full transcript, second reading of the Queensland Competition Authority Bill, p. 1131.

[48] For example, s. 26 of the QCA Act requires the QCA in an investigation to have to regard to, among other things, 'the impact on the environment of prices charged by the government agency or other person carrying on the monopoly business activity' (subsection (g)); the 'need for pricing practices not to discourage socially desirable investment or innovation by government agencies and persons carrying on non-government business activities' (subsection (j)); and 'legislation and government policies relating to ecologically sustainable development' (subsection (k)).

with other types of expenditure proposals, climate change related proposals will be assessed according to their merits and pursuant to our responsibilities under the QCA Act.

Our position to provide clarity on the application and scope of our legislative provisions is also consistent with the approach we have taken in relation to certain other matters including:

- our guideline on the arbitration of disputes in relation to the DBCT service, that considers procedural matters relating to disputes about the DBCT service and provides our insights on various matters to be considered by us in making access determinations[49]
- our outlines of the application of various elements of the approval criteria for draft access undertakings in our decisions[50]
- our outline of the application of the various elements of the access criteria for declaration of a service under Part 5 of the QCA Act[51]
- our handbook on the declaration or revocation of services under Part 5, which provides detailed information on the access criteria and our indicative process for considering declaration or revocation requests.[52]

3.2.4 Clarifying the relevance of the object clause in Part 5 to climate change

While it is always open for Parliament to amend the QCA Act, there is presently no explicit reference to environmental considerations in the object clause for Part 5 of the QCA Act, nor in the s. 138(2) factors for considering draft access undertakings or the s. 120(1) factors for considering access disputes.

The object clause of Part 5 of the QCA Act (s. 69E) states:

> The object of this part is to promote the economically efficient operation of, use of and investment in, significant infrastructure by which services are provided, with the effect of promoting effective competition in upstream and downstream markets.[53]

DBI requested that we explicitly articulate how climate change expenditure is consistent with s. 69E. On this point, DBI noted:

> Investments directed at climate risk mitigation and sustainable procurement can promote the interests of customers in the long term by lowering long run costs through improving access to a greater pool of capital providers and suppliers, at lower cost.[54]

Similarly, DBI's consultant, Frontier Economics, noted that a climate change expenditure framework will promote the economically efficient operation and use of regulated infrastructure through, among other things:

> [i]nvestment in prudent and efficient levels of infrastructure resilience, providing asset reliability and security of supply consistent with meeting customers long term demand for regulated services; and
>
> Reasonable investment in decarbonisation activities, where such investments: appropriately improve environmental outcomes (i.e., internalise negative environmental externalities created

[49] QCA, *Arbitration of disputes in relation to the DBCT service*, guideline, version 3, December 2021.
[50] QCA, *Queensland Rail's Draft Access Undertaking*, decision, June 2016 (Chapter 10: Legal overview); QCA, *DBCT Management's 2015 draft access undertaking*, final decision, November 2016 (Chapter 2: Legislative framework).
[51] QCA, *Declaration reviews: Aurizon Network, Queensland Rail and DBCT,* final recommendations, March 2020 (Chapter 2: QCA's approach to the statutory criteria).
[52] QCA, *Applying for declaration or revocation under Part 5 of the QCA Act—handbook for applicants*, March 2022.
[53] QCA Act, s. 69E.
[54] DBI, sub. 4, para. 93, p. 19.

> by the business) when delivering regulated services, are supported by customers, are consistent with the Sustainability Strategy of the business (e.g. in the case of DBIM, that has been developed jointly with the user-owned independent operator), or are required by government regulations or statute aimed at the regulated businesses directly.[55]

Likewise, Frontier Economics noted that an expenditure framework can promote economically efficient investment in regulated infrastructure through:

- [p]roviding up front regulatory certainty about how regulatory proposals for climate-related expenditure will be assessed, and what ex-post review uncertainties the regulated entity will be exposed to; and
- Providing a transparent framework for user engagement in investment decisions.[56]

Links to climate change

The object clause focuses on the economically efficient operation of, use of and investment in infrastructure, which then promotes workable or effective competition in dependent markets.[57]

Our view is that whether climate change expenditure is consistent with the object clause will depend on the specific circumstances of the individual expenditure proposal. For instance:

- Prudent and efficient adaptation expenditure to enable the facility for the service to operate in light of uncertain and unpredictable future climate events is likely to be consistent with the object clause. Likewise, prudent and efficient adaptation investment that improves the reliability of the service and reduces costs on a whole-of-life basis is likely to be consistent with the object clause.

  This is because in both cases upstream and downstream markets are dependent on the continued availability of services provided by natural monopolies with bottleneck characteristics (such as ports or rail facilities), and the continued provision of the service by the regulated facility is consistent with promoting competition in those markets.

- Prudent and efficient mitigation expenditure may be consistent with the object clause if it is necessary to comply with mandated government targets or is required by users as part of satisfying scope 3 emissions reduction requirements. Mitigation expenditure in these circumstances is likely to be consistent with the ongoing efficient operation and use of the bottleneck facility and the availability of the relevant service, and so is likely to be consistent with the promotion of competition in upstream and downstream markets.

However, linking mitigation expenditure to the object of Part 5 of the QCA Act may be less clear in other circumstances. For example, it may be more difficult for a regulated business to demonstrate that mitigation expenditure is consistent with the object of Part 5 if mitigation expenditure is not required by government legislation; is not necessary for the continued efficient provision of the service; and is opposed by users and access seekers.

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[55] DBI, sub. 4, appendix 2 (Frontier), p. 26.
[56] DBI, sub. 4, appendix 2 (Frontier), p. 26.
[57] The terms 'workable' and 'effective' competition are used interchangeably in competition literature. The Productivity Commission has noted that '[e]ffective competition requires that firms should be subject to a reasonable degree of competitive constraint from actual or potential competitors, or from customers, as opposed to a theoretical—and unattainable—ideal of perfect competition' (Productivity Commission, *National Access Regime*, inquiry report no. 66, 2013, p. 72). We have also provided an expansive discussion of this concept in our handbook for applying for declaration or revocation under Part 5 of the QCA Act (QCA, *Applying for declaration or revocation under Part 5 of the QCA Act—handbook for applicants*, March 2022, pp. 74–77).

Therefore, our view is that while some climate change expenditure will be consistent with the object clause, it will be more difficult to establish a nexus to that clause in other circumstances. We therefore do not consider it appropriate to explicitly link climate change considerations to the object of Part 5 of the QCA Act.

That said, the approval of expenditure pursuant to s. 138(2) does not rest on the satisfaction of the object of the Act alone. Rather, our role in approving draft access undertakings requires us to have regard to all factors in s. 138(2), and there are other elements of s. 138(2) that may be more clearly linked to environmental outcomes than just consideration of the object clause (see below).

3.2.5 Other elements

Public interest

The public interest is a broad test that will be shaped by the context of the particular assessment.[58]

In the Pilbara matter, the High Court said:

> [W]hen used in a statute, the expression "public interest" imports a discretionary value judgment to be made by reference to undefined factual matters … when a discretionary power of this kind is given, the power is "neither arbitrary nor completely unlimited" but is "unconfined except in so far as the subject matter and the scope and purpose of the statutory enactments may enable the Court to pronounce given reasons to be definitely extraneous to any objects the legislature could have had in view".[59]

Our view is that environmental concerns are within the ambit of the public interest.

For example, it is generally accepted that mitigation of emissions generates benefits that extend beyond the regulated business and users and impact the broader community.

In *Waratah Coal v Youth Verdict Ltd*, the Land Court of Queensland, in considering the granting of a mining lease to Waratah Coal, had to consider whether, among other things, the mining lease would be in the public interest.[60] In refusing to approve the mining lease and the related environmental authority, President Kingham said:

> As a matter of law, I have decided I can take the emissions into account in applying the principles of ecologically sustainable development (for the EA application) and in considering whether the applications are in the public interest (on both the ML and the EA applications).
>
> …
>
> … there is sufficient certainty in the science to understand the relationship between emissions and temperature. This helps in weighing arguments about the significance of the contribution of emissions from combustion of the Project coal to climate change.[61]

Some adaptation expenditure may also be in the public interest, including where inaction may lead to broader community impacts. For example, climate considerations may require adaptation

[58] See QCA, *Queensland Rail's Draft Access Undertaking*, decision, June 2016, p. 273. A discussion of the term 'public interest' can also be found in our handbook on applying for declaration or revocation under Part 5 of the QCA Act (QCA, *Applying for declaration or revocation under Part 5 of the QCA Act—handbook for applicants*, March 2022, pp. 89–90).

[59] *The Pilbara Infrastructure Pty Ltd v Australian Competition Tribunal* [2012] HCA 36 at [42].

[60] The Land Court was required to make recommendations, but not the final decision, on the applications. The Minister for Resources would decide the mining lease application. The Chief Executive of the Department of Environment and Science would decide the environmental authority application and has subsequently denied it. See DES, *Waratah Galilee Coal Mine EA refused*, Queensland Government, media release, 3 April 2023.

[61] *Waratah Coal Pty Ltd v Youth Verdict Ltd & Ors (No 6)* [2022] QLC 21 at [25], [28].

expenditure to fortify a dam wall, where failure to do so may lead to a dam collapse. Likewise, climate considerations may require adaptation expenditure to protect water security.

Other factors

Climate change expenditure may also be related to other factors in s. 138(2), for instance:

- the legitimate business interests of the owner/operator of the service (s. 138(2)(b))—adaptation expenditure may help protect the facility providing the service or reduce the costs of insurance, while mitigation expenditure may be consistent with the social licence of the business in respect of emissions. Alternatively, mitigation expenditure may be prudent in expectation of government emissions requirements or expected future emissions requirements
- the interests of those that seek access to the service (s. 138(2)(e))—mitigation expenditure by the provider of the service may be consistent with the achievement of scope 3 emissions reduction objectives held by customers in the supply chain
- any other matters (s. 138(2)(h))—this provision is expressed in broad terms and enables us to have regard to other matters that we consider relevant. These matters could include environmental considerations, the behaviour of other like businesses in workably competitive markets and community expectations and human rights.[62]

Weight

The matters listed in s. 138(2) of the QCA Act may give rise to competing considerations, which need to be weighed in deciding whether it is appropriate to approve a draft access undertaking. For example, potential tensions in respect of mitigation expenditure may include those between:

- the legitimate business interests of the owner/operator of the service (s. 138(2)(b)) in pursuing mitigation expenditure, given government and community expectations
- the interests of those that seek access to the service (s. 138(2)(e)), who may consider that such expenditure is not necessary to enable access to the service
- the public interest (s. 138(2)(d)), where there are community-wide benefits in reducing emissions.

Our view is that it is generally for us to determine the appropriate weight to be given to the various factors when considering an application to approve climate-related expenditure pursuant to the application of s. 138(2).[63] Such an approach is not different to how other applications are considered.

Chapters 6 to 8 contain information on the specific matters that we may have regard to in assessing and weighing the merits of any climate-related expenditure claim.

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[62] Some climate-related expenditure may also support a range of human rights outlined in the *Human Rights Act 2019* (Qld). For example, mitigation expenditure that reduces greenhouse gas emissions may be consistent with the right to life (s. 16) and the protection of families and children (s. 26). In the Waratah Coal matter, President Kingham said 'several human rights would be limited by the project … In relation to climate change, I have found that the following rights of certain groups of people in Queensland would be limited: the right to life, the cultural rights of First Nations peoples, the rights of children, the right to property and to privacy and home, and the right to enjoy human rights equally. Doing the best I can to assess the nature and extent of the limit due to the Project, I have decided the limit is not demonstrably justified' (*Waratah Coal Pty Ltd v Youth Verdict Ltd & Ors* (No 6) [2022] QLC 21 at [44]).

[63] *Minister for Aboriginal Affairs v Peko-Wallsend Ltd* (1986) 162 CLR 24, 41 (Mason J).

Consultation question 1

To what extent is climate-related expenditure consistent with the access undertaking approval criteria in s. 138(2) of the QCA Act? Do the matters discussed in Chapter 3 appropriately capture the relevant considerations we ought to have regard to?

4 ASSESSING PRUDENCY AND EFFICIENCY—EXISTING PROCESSES

4.1 Approving prudent climate change expenditure

Our framework for approving expenditures by regulated businesses has been to consider whether the expenditures have been prudently and efficiently incurred. That is, we investigate whether expenditures are prudent in terms of scope, standard and cost.

We are now assessing whether our framework remains relevant when regulated businesses undertake climate change related expenditures, particularly in an environment where they seek to incorporate increased resilience into assets or engage in mitigation expenditure. Some such expenditure may not be strictly necessary to provide the regulated service, but may be needed for the ongoing reliable provision of the service or for meeting government policy obligations or broader community expectations.

4.2 QCA processes

In our discussion paper, we sought stakeholders' feedback as to whether our regulatory processes enable prudent climate change related expenditure to be undertaken in a timely manner. We identified some circumstances where the assessment of such expenditure may raise challenges within the existing frameworks, including:

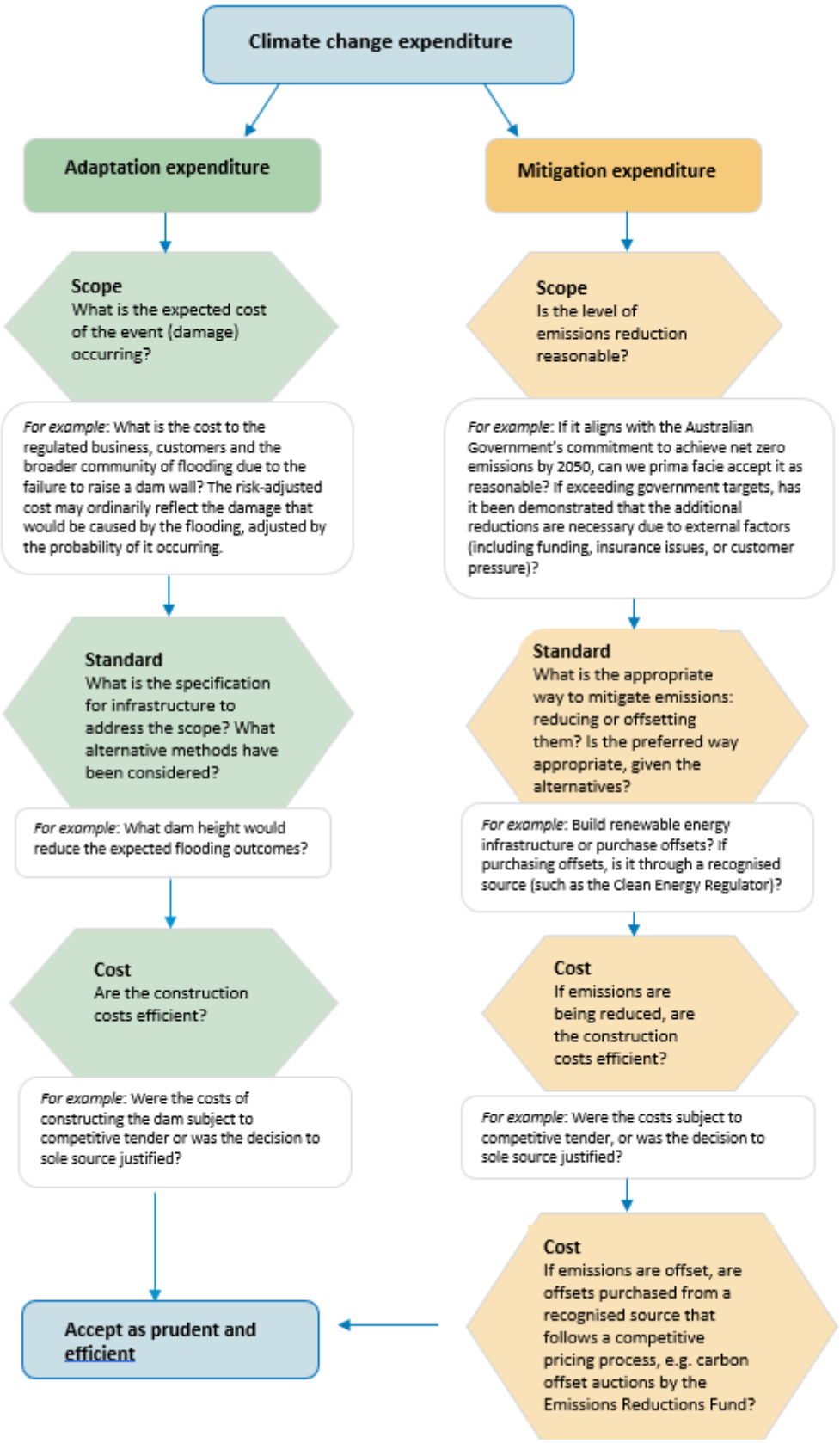
- Existing infrastructure to be upgraded has not yet reached its life-expired date.
- There is uncertainty about the likelihood of climate-related events in the future (including where data regarding climate events may be based on historical data).
- There are differences between the willingness of a regulated business to undertake climate change related expenditure (for both adaptation and mitigation) and the willingness of customers to pay for such expenditure.
- The expenditure may mitigate negative externalities that affect third parties, and the regulated party or some or all of its customers are reluctant to fund the costs.[64]
- There are disagreements between customers about the nature of investments and asset lives (some disagreements are in the context of governments' commitments on emissions reduction targets).
- Options for replacement assets have varying lives.
- There is a time lag between expenditure and regulatory approval of expenditure.
- There is uncertainty about the final amount we may approve as prudent.
- Businesses are seeking to undertake long-lived investments in an environment where climate policies and obligations are rapidly evolving.

[64] For example, the failure to undertake adaptation expenditure such as upgrading the integrity of a dam wall may have safety implications for communities downstream in the event of a major flood. Likewise, the failure to undertake mitigation expenditure such as direct expenditure to reduce emissions contributes to greenhouse gases in the atmosphere, resulting in broad community impacts. In such cases, it may be appropriate to not only weigh the costs of such expenditure against the benefits to users, but also have regard to broader community benefits.

- There are alternative options for mitigating emissions (including different types of direct works as well as the availability of offsets).
- Spending on mitigation activities is proposed, which may not be strictly necessary to provide the regulated service—but may be needed to meet government policy requirements or community expectations.

Our current approach to assessing capital and operating expenditures across regulated sectors and the way that approach might be applied to climate change spending are outlined below (Figure 3).

Figure 3: Assessing prudency and efficiency of adaptation and mitigation expenditures



4.2.1 History of capital expenditure processes

We have for almost two decades applied a prudency and efficiency approach to assessing capital and operating expenditures.

The capital expenditure process is designed to promote appropriate investment by giving regulated infrastructure owners comfort that if they invest in accordance with the framework, they will be able to recover their efficient costs over time. The approach considers three aspects of prudency:

- Scope—are the works needed?
- Standard—are the works of an appropriate standard and not over-designed, given the alternative options?
- Cost—are the costs reasonable for the work done?

This section briefly reviews why and how the prudency approach for capital expenditure was developed for ports and railways and was applied to water infrastructure. It also discusses related approaches applied to operating expenditure.

The prudency approach was implemented in the middle of the 2000s, principally for the central Queensland coal infrastructure networks, in response to a rapid increase in demand for port and rail services from the coal industry. The customers wanted capacity increases, while the service providers were concerned they might not be able to fully recover money spent on new infrastructure.

Ports

During the investigation that led to the approval of the 2006 DBCT access undertaking, DBI proposed that the terminal be expanded on the basis of one of two possible triggers (increased demurrage or increased rail transport costs) that were copied from the Port Services Agreement. But in examining this framework, we were not convinced that the proposed expansion triggers could be effectively activated to ensure that expansions occurred and delay costs were reduced.[65]

In our 2004 draft decision on DBI's draft access undertaking, we noted:

> Incorporating a formal capacity expansion expenditure approval process into the access undertaking … has the advantage of providing certainty to DBCT Management [DBI] as to whether expansion costs will be recognised within the RAB. In this regard, terminal expansions based on non-reference tonnes (e.g. short term contracts) may not attract the same level of assurity from the Authority as would an expansion based on long term reference tonne contracts. Moreover, the Authority believes that the absence of a process has the potential to make DBCT Management reluctant to commit to future capital investments. The Authority believes a reluctance to invest in expansions could impose greater costs on industry than the costs associated with premature or inappropriate investments.[66]

In response, in developing the first access undertaking for DBCT in 2006, we developed an expansion approval framework to facilitate and approve capital expenditure associated with terminal capacity expansions.

> The purpose of the framework was to not only encourage and facilitate capacity expansions at the terminal but to also provide regulatory certainty as to how capacity expansion costs would be assessed.[67]

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[65] QCA, *Dalrymple Bay Coal Terminal Draft Access Undertaking*, final decision, April 2005, p. 41.
[66] QCA, *Dalrymple Bay Coal Terminal Draft Access Undertaking*, draft decision, October 2004, pp. 51–52.
[67] QCA, *Dalrymple Bay Coal Terminal Draft Access Undertaking*, decision, June 2006, p. 18.

This process involved us accepting upfront that capital expenditure was appropriate to be included in the regulatory asset base having regard to the scope, standard and cost of the works, if:

- the scope is consistent with the current approved Master Plan
- DBI secured from access seekers firm contracts for at least 60 per cent of the proposed terminal capacity increment
- 60 per cent of existing access holders (i.e. users) do not oppose the expansion
- the standard and specifications of the proposed works and all relevant contract terms do not involve any unnecessary works or contain design standards that exceed those necessary to comply with the construction standards of the terminal
- tenderers are selected and contracts are awarded in accordance with the approved tender process (costs).[68] In other words, if there was a rigorous process for the selection of the approved tenderer, the costs were accepted as reasonable.

The expansion approval process enabled DBI to gradually seek approval for various contract packages necessary for the expansion of the terminal, rather than the aggregate costs being subject to a prudency review once the works were completed and the expansion commissioned.

These processes have been broadly retained in the 2021 DBCT access undertaking.[69]

Rail

Around the same time as the port regime was introduced, an analogous prudency process was put in place for investment in rail infrastructure, as part of a master planning framework for capacity expansions.[70] The 2006 QR Network access undertaking included measures for the maintenance of the regulatory asset base that:

- limited the circumstances under which we could reduce the value of assets in the regulatory asset base[71]
- implemented a 'prudency of scope, standard and cost' approach to including new assets in the regulatory asset base
- provided for preapproval of scope and standard (including that the scope can be preapproved if it is accepted by customers accounting for 60 per cent of tonnages)[72]
- implemented customer groups for master planning.

This regime is still in place for Queensland Rail's West Moreton asset base. It is also included in Aurizon Network's 2017 access undertaking, although it has been supplemented (and largely

[68] QCA, *Dalrymple Bay Coal Terminal Draft Access Undertaking*, decision, June 2006, pp. 18–20.
[69] DBI, *2021 DBCT Access Undertaking*, cl. 12.5.
[70] QCA, *QR's 2006 Draft Access Undertaking*, position paper, June 2006, pp. 4–6.
[71] The three reasons an asset's value could be reduced were discovering that it was included based on false or misleading information; a deterioration in demand to the point that prices without optimisation would result in further decline in demand (a 'death spiral'); and a clear possibility of bypass. These reasons are still reflected in Aurizon Network's current undertaking, the 2017 access undertaking (see sched. E, cl. 1.2.).
[72] Queensland Rail, *2006 QR undertaking*, schedule FB, cl. 2.2.2(d).

replaced) by a new mechanism for Aurizon Network and its customers to agree on the scope and standard for maintenance and sustaining capital expenditure.[73]

An example of how the prudency approach has been applied for a rail project with similarities to climate change related investments is set out in Box 3.

Box 3: Toowoomba Range Stabilisation project

Queensland Rail's $20.5 million project to improve drainage and stabilise sections of slope on the Toowoomba Range crossing highlighted a number of factors that may affect future climate change related investments.[74]

While the work was not specifically justified as an adaptation in response to climate change, it was prompted by major flood events in 2011 and 2013 that caused extensive damage to Queensland Rail's steep section of track down the escarpment east of Toowoomba.

After the flood damage, Queensland Rail undertook extensive geotechnical analysis to identify sections of track that were particularly at risk of landslips from future heavy rainfall. Based on that study, it proposed works to reinforce two sections of rock and fill, supporting 530 metres of track near Spring Bluff.

Queensland Rail then sought preapproval in 2018 for the scope and standard of its planned stabilisation project, as the expected scale and cost of the project exceeded what had been included in the forecasts when its tariff was assessed (the 'capital indicator'). After the project was completed in late 2020, Queensland Rail submitted it for approval of the cost, as part of its next capital expenditure claim.

Some key features of the project are relevant to future projects related to climate change. For example:

- The justification for the work (the 'scope' or 'need') was:
  - based on uncertain future events (rather than something more tangible and measurable like an increase in contracted demand)
  - tied to reliability of service and preventing or mitigating future disruptions.
- The project reinforced the existing infrastructure without creating more capacity.
- The effectiveness of the project will only be clear after years or decades of the types of events it was designed for.[75]

As reliability of service was fundamental to the project, a key variable was the risk appetite of the customers. Queensland Rail provided letters of support from customers to accompany its initial preapproval submission.

[73] The maintenance and renewals strategy and budget process, set out in cl. 7A.11 of the 2017 Aurizon Network access undertaking, was part of a package of amendments agreed by Aurizon Network and its customers that were approved in 2019. See QCA, *Aurizon Network's 2019 draft amending access undertaking*, decision, November 2019, pp. 12–14.

[74] More information on the Toowoomba Range Stabilisation project, including Queensland Rail's submission, stakeholder comments, expert reports and our decision, is available on the QCA website at *Capital expenditure preapproval*.

[75] The slope held up with no landslips and minimal damage in the heavy rain in February 2022. See R Chan, 'Works increase reliability of West Moreton line in wet weather', *Rail Express*, 3 May 2022, accessed 13 September 2022.

Water

In general, our processes for assessing the prudency and efficiency of capital investment for the water sector are similar to those used in the ports and rail sectors. However, there are some differences in how we apply prudency processes to the water sector, given specific elements of the requirements placed on water infrastructure operators (e.g. to undertake dam safety upgrades from time to time) and the evolution of the water regulatory frameworks over time.

In our 2020 final report on price monitoring for GAWB, we considered capital expenditure to be prudent if it:

- is required as a result of a legal obligation (compliance), new growth, replacement or renewal of existing infrastructure, or
- achieves an outcome that is explicitly endorsed or desired by customers, external agencies, or participating councils (e.g. improved reliability or quality of supply of services).[76]

We said that we consider capital expenditure is efficient if:

- the scope of the works represents the best means of achieving the desired outcomes after having regard to the options available, including non-network solutions, and substitution possibilities between operating and capital expenditures
- the standard of the works conforms to technical, design and construction requirements in legislation, industry and other standards, codes and manuals
- the cost of the defined scope and standard of works is consistent with conditions prevailing in the relevant markets.[77]

4.2.2 Operating expenditure

Prudent and efficient spending is just as important for operating expenditure as it is for capital investment. We have pursued this objective in our periodic pricing reviews and price monitoring investigations, by examining operating expenditure through public consultation and expert reports. While capital expenditure reviews have often incorporated an ex post element, the operating expenditure reviews have generally been ex ante, with the forecast costs for maintenance and other functions approved in advance of the relevant regulatory period.

In our 2020 final report on price monitoring for GAWB, we said that we consider operating expenditure is:

- prudent if it can be justified by reference to an identified need or cost driver
- efficient if it minimises GAWB's long-term cost of providing water supply services.[78]

[76] QCA, *Gladstone Area Water Board price monitoring 2020–25 Part A: Overview*, final report, May 2020, p. 49.
[77] QCA, *Gladstone Area Water Board price monitoring 2020–25 Part A: Overview*, final report, May 2020, p. 50.
[78] QCA, *Gladstone Area Water Board price monitoring 2020–25 Part A: Overview*, final report, May 2020, p. 15.

In our recent review of Seqwater's bulk water prices for 2022–26, we specifically addressed the potential for operating expenditure to be related to climate change. We said we would consider prudent and efficient costs that were:

> reasonably required to achieve an outcome that is explicitly endorsed by customers (for example, specific reliability outcomes) or broadly accepted changes in community expectations in relation to corporate responsibility (such as commitment to climate change mitigation).[79]

4.2.3 Stakeholder concerns with the Seqwater position

Some stakeholders commented on the application of our existing regulatory frameworks to proposed mitigation expenditure, in the context of the 2021 Seqwater bulk water pricing review. In particular, DBI suggested that our position on this matter meant that the risk that mitigation expenditure on ACCUs (i.e. offsets) would not be approved under our existing frameworks was too great—implying that otherwise potentially prudent expenditure on mitigation would be disincentivised.[80]

As part of its proposal in that 2021 review, Seqwater sought approval for mitigation expenditure on offsets. Specifically, it said:

> We are proposing an increase in operating expenditure of $1 million per annum towards the optimal implementation approach from July 2022, that may include the purchase of carbon offsets (e.g. Large Generation Certificates, Australian Carbon Credit Units) and/or other abatement options. This would reduce our greenhouse gas emissions by around 10–20% from forecast business as usual emissions.[81]

Our consultants (Atkins) reviewed the proposal and identified that the proposed additional expenditure, focused on offsets, was not consistent with Seqwater's own emissions reduction hierarchy. Seqwater's emissions reduction hierarchy made clear that avoidance, efficiency and use of renewable energy should take precedence over emission offsets.[82] In our draft report, we rejected the proposal, as we were not satisfied that Seqwater had adequately assessed options other than offsets, including options that may have been less costly.[83] In effect, we considered that, while the proposed investment may have been prudent, it was unlikely to be efficient.

DBI referred to its recent FEL2 study for the proposed 8X expansion project at DBCT and said that the study assessed the potential for the project to achieve net zero emissions (such that all emissions due to the related construction works were abated). It noted that significant quantities of steel and concrete will be used in construction, as well as fuel for construction vehicles and equipment—and pointed out that, at this time, emissions from fuel, steel and concrete are difficult to abate, with no viable alternatives available.[84]

DBI further said that it had considered the purchase of ACCUs to offset the emissions associated with the proposed 8X project. However, it was concerned that the regulatory precedent posed by our position on the Seqwater proposal created too great a risk. It said:

> As a result, if more certainty as to prudency could not be obtained, the relevant emissions would remain unabated and therefore a Net Zero Project would not be feasible under the circumstances.

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[79] QCA, *Seqwater Bulk Water Price Review 2022–26*, final report, March 2022, p. 17. See also the discussion of greenhouse gas emissions abatement, p. 25.
[80] DBI, sub. 4, p. 24.
[81] Seqwater, *Bulk Water Price Submission 2023–26*, submission to the QCA, 30 June 2021, p. 101.
[82] Atkins, *Review of expenditures and demand for the investigation of Seqwater's bulk water prices for 2022–26*, draft report, November 2021, p. 81.
[83] QCA, *Seqwater Bulk Water Price Review*, draft report, November 2021, p. 36.
[84] DBI, sub. 4, p. 24.

> … DBIM would not purchase ACCUs or any other form of carbon credit unless the QCA indicated that such expenditure may be considered prudent.[85]

DBI has misunderstood the main point of our position on the Seqwater proposal. To be clear, we are not opposed to the use of offsets by regulated businesses as part of mitigation activities, where firms demonstrate that offsets are prudent and efficient—particularly the purchase of ACCUs, noting that the recent independent review of the ACCU scheme arrangements (the 'Chubb review') found they are essentially sound.[86] Our concern with the Seqwater proposal related to its inconsistency with Seqwater's own emissions reduction hierarchy and the lack of proper consideration of potentially more efficient alternatives.

As discussed in more detail in further chapters, we consider that the general scope, standard and cost approach to assessing prudency and efficiency of expenditure proposals is fit for purpose for assessing mitigation activities (including offsets). In that context, we note that a proposal to invest in offsets may be considered prudent and efficient where, for example, a business case for the proposal is able to effectively demonstrate that:

- the scope of the proposed mitigation activity is prudent—perhaps because it has the support of users/customers, or is otherwise appropriately justified by reference to legislative/policy requirements, community expectations or otherwise reflects activity that an efficient business in a workably competitive market may undertake
- the standard is prudent and efficient—with other alternative forms of mitigation having been properly considered before offsets are determined to be the best/most efficient option
- the cost is reasonable—if offsets have been established as a prudent and efficient form of mitigation, then costs could be considered reasonable if ACCUs have been purchased on the market at the prevailing market price.

4.3 Other jurisdictions

Governments and regulators across Australia and around the world are seeking to implement approaches to climate change that serve public policy goals, while balancing the interests of infrastructure providers, their customers, as well as the broader community.

- For adaptation, they want to promote effective preparation for climate change while avoiding overinvestment.
- For mitigation, they tend to look for an approach that aligns with government emissions reduction targets.

The National Infrastructure Commission, an advisory body set up by the United Kingdom government, said it is difficult to create the right incentives for infrastructure operators:

> Government, regulators and infrastructure operators need to strike a balance between short term cost saving measures, which could mean having too little spare capacity to deal with shocks and stresses, and 'gold plating'—providing excess resilience at high cost (which would ultimately fall to consumers and taxpayers). Not effectively maintaining a system can have significant costs and impacts.[87]

[85] DBI, sub. 4, p. 24.
[86] I Chubb, A Bennett, A, Gorring and S Hatfield-Dodds, *Independent Review of Australian Carbon Credit Units*, final report, December 2022.
[87] National Infrastructure Commission (UK), *Anticipate, react, recover: Resilient infrastructure systems*, May 2020, p. 15.

In Australia, the Productivity Commission said that 'climate change looms large over Australia's productivity performance. Its potential physical impacts, and the policy steps taken in response, will affect Australia's productivity growth over coming decades.' It added that:

> Adaptation policy should support individual, household and business decisions about what regions, sectors, and occupations they are best placed to transition into. Governments have a role in helping people make informed decisions and should avoid policy settings that inadvertently constrain them. [and]
>
> The centrepiece of Australia's abatement policy should be a Safeguard Mechanism … Abatement policies outside the Safeguard Mechanism framework should show how they are complementary to it and have their implicit carbon abatement costs independently estimated and made public. Policies found not to be complementary should be phased out.[88]

Regulators in Australia have differing approaches to addressing climate change related expenditure. For example:

- In Victoria, the Essential Services Commission (ESC) suggested that water companies proposing spending on climate change adaptation and mitigation should consider the requirements of the ESC's existing expenditure assessment approach.[89]
- In New South Wales, the Independent Pricing and Regulatory Tribunal (IPART) indicated that its 'standard' expectation is that a water business will propose cost-efficient spending to manage and adapt to the impacts of climate change, while its 'advanced' expectation is for climate change to be incorporated into forecasting models.[90]
- For Australian energy networks, the Australian Energy Regulator (AER) set out a detailed framework for resilience-related expenditure, including assessing risk against the cost of the investment and demonstrating that the option chosen is the best of the feasible possibilities considered.[91]
- For competition regulation more generally, the Australian Competition and Consumer Commission (ACCC) has indicated that it is open to considering environmental benefits when assessing applications for competition law exemptions in accordance with the net public benefit test in the *Competition and Consumer Act 2010*. In that context, the Chair of the ACCC recently commented that:

  > the transition to a low-carbon economy may lead to new types of collaboration between companies which may require competition exemptions. Our ability to take environmental benefits into account as part of our 'net public benefit' authorisation test means we are well placed to consider proposals, and we are open to engagement.[92]

Economic regulators outside Australia sometimes have roles that include pushing businesses they regulate to take action on climate change. For example:

- In the United Kingdom, various industry-specific regulators have explicit climate change policies promoting resilience (adaptation), mitigation, or both. These include the Water

[88] Productivity Commission, *5-year Productivity Inquiry: Managing the climate transition*, Inquiry report—volume 6, February 2023, p. 1.
[89] ESC, *2023 water price review*, guidance paper, October 2021 (August 2022 amendment), ESC website, accessed 5 April 2023, p. 17.
[90] IPART, *Draft Water Regulatory Framework*, technical paper, May 2022, p. 14.
[91] The AER indicated that the 'best' option will be the option that likely achieves the greatest net benefits of the feasible options considered. See AER, *Network resilience: A note on key issues*, April 2022, pp. 11–12.
[92] G Cass-Gottlieb, *Opening Address to the Law Council Annual Competition and Consumer Law Workshop*, transcript, 9 September 2022.

Services Regulation Authority (Ofwat)[93], the Office of Gas and Electricity Markets (Ofgem)[94] and the Office of Rail and Road (ORR).[95] In late 2022, the United Kingdom government wrote to several regulators asking them to review their regulatory frameworks for compatibility with its 2050 net zero target and its interim carbon budgets.[96]

- The New Zealand Commerce Commission has introduced re-openers for gas pipeline companies' capital and operating costs to address unforeseen changes in policy and regulatory settings relating to climate change and the transition to net zero. The Commerce Commission also shortened asset lives to address expected reductions in the economic lives of the gas networks.[97]
- The Canadian Energy Regulator, responsible for electricity and pipeline networks, has detailed guidelines for how parties developing projects must address both climate change resilience and mitigation.[98] The Canadian government also sets out how project proponents must provide a 'credible plan for achieving net-zero emissions by 2050.'[99]
- A number of state-based utilities regulators in the United States have statutory targets they must have regard to (see Box 4).

It is clear that regulators are becoming increasingly focused on the implications of evolving climate change policy and climate-related weather events for the appropriate regulation of monopoly infrastructure.

That said, it is not evident that there is a clear and consistent approach by regulators in Australasia and elsewhere to accommodating the challenges of climate change policy in regulating monopoly infrastructure. While some regulators (like IPART) have published broad, principle-based guidance notes on climate change matters, other regulators (like the AER and the Commerce Commission (NZ)) have developed more detailed frameworks and processes for considering climate change expenditures and events.

More detail on regulatory approaches to climate change related expenditure in Australia is contained in Appendix B.

[93] See Ofwat, *Ofwat's 3rd Climate Change Adaptation Report*, February 2022.
[94] See Ofgem, *Our strategy and priorities*, Ofgem website, accessed 11 October 2022.
[95] See Office of Rail and Road (ORR) (United Kingdom), *Consultation on developing ORR's approach to environment and sustainable development*, ORR website, accessed 11 October 2022.
[96] See Department for Business, Energy and Industrial Strategy (UK) and K Kwarteng, *Strategic priorities and cross-sectoral opportunities for the utilities sectors: open letter to regulators*, gov.uk website, 31 January 2022, accessed 11 October 2022.
[97] Commerce Commission (NZ), *Default price-quality paths for gas pipeline businesses from 1 October 2022*, final reasons paper, May 2022, p. 7.
[98] See Canada Energy Regulator, *Filing Manual – Guide A – Facilities Applications*, including Table A-2: Filing Requirements for Biophysical Elements, CER website, accessed 12 October 2022.
[99] See Government of Canada, *Strategic assessment of climate change: A new impact assessment system*, Strategic Assessment of Climate Change website, 2022, accessed 12 October 2022.

Box 4: United States utilities regulators

In the United States, essential utilities (electricity, water, transport) are regulated by state agencies. In most states, these regulators are Public Utilities Commissions (PUCs) which are established by statute.[100] Typically, their involvement in implementing climate change policy reflects the specific policy position of the state. For instance:

- In California, which has statutory and executive climate change targets, the Public Utilities Commission (CPUC) is mandated through statute to escalate the renewable energy requirements of the regulated electricity businesses, such that by 2045, 100 percent of retail electricity sold in California must be zero-carbon.[101]
- In New York state, which has statutory targets, the Public Service Commission (NYPSC) is mandated under the Climate Act to produce comprehensive reviews of the state's renewable energy program every two years, including how the NYPSC is procuring renewable energy and will have 100 per cent zero-emission electricity by 2040.[102]
- In Minnesota, which has statutory targets, the Minnesota Public Utilities Commission (MPUC) is required by statute to calculate the likely future social cost of carbon dioxide for utilities when undertaking resource planning.[103]
- In Florida, which has no climate change emission target, the Public Service Commission (FPSC) is mandated through statute to establish protection planning (adaptation) and to develop renewable energy and lessen fossil fuel use.[104]

[100] I Paul and D Grab, 'How state power regulators are making utilities account for the costs of climate change', *The Conversation*, 1 April 2019.
[101] California Energy Commission, 2021 *SB 100 Joint Agency Report, Achieving 100 Percent Clean Electricity in California: An Initial Assessment*, summary, March 2021.
[102] New York State Climate Action Council, *Scoping Plan, Executive summary*, December 2022.
[103] Minnesota Legislature, *2022 Minnesota Statutes: 216H.06 Emissions consideration in resource planning*, Office of the Revisor of Statutes website, accessed 31 March 2023.
[104] The Florida Senate, *2019 Florida Statutes, title XXVII, chapter 366, section 92: Florida renewable energy policy*, Florida Senate website, accessed 31 March 2023.

5 ADEQUACY OF EXISTING FRAMEWORKS

In response to our discussion paper, stakeholders expressed mixed views about the adequacy of our existing regulatory frameworks for assessing and approving climate change related expenditure. The majority of stakeholders considered that the existing frameworks are, at a high level, fit for purpose for this task—but suggested that further guidance from us as to how the frameworks would be applied to climate change related expenditure would be beneficial. However, some water sector businesses considered that the existing frameworks are not suitable, as they create too much uncertainty regarding whether proposed climate change related investments will be approved.

5.1 Background

Our discussion paper reviewed in some detail the existing regulatory frameworks that apply to our assessment of expenditure proposals across the varying sectors that we regulate.[105] The paper also asked several specific questions that sought stakeholders' views as to the effectiveness of the existing regulatory frameworks for assessing climate change related expenditure proposals.[106]

The discussion paper pointed to the three aspects of prudency and efficiency that the existing approach considers:

- Scope—are the works needed?
- Standard—are the works of an appropriate standard and not over-designed, given the alternative options?
- Cost—are the costs reasonable for the works done.[107]

The discussion paper also outlined the different types of procedural mechanisms that sit within our existing regulatory frameworks and provide for ex ante or ex post assessments of prudency of expenditures, or for expenditure requirements to otherwise be revisited within regulatory periods. We asked stakeholders to consider whether such mechanisms are sufficiently flexible to allow for assessment of climate change related expenditures, in an environment where the policy and regulatory requirements may change rapidly.[108]

Examples of the procedural mechanisms identified include:

- the streamlined approval process for non-expansion capital expenditure (NECAP) in the 2021 DBCT access undertaking, which effectively provides that NECAP will be deemed prudent if it has been recommended by the independent operator and approved by the existing users of the coal terminal
- customer vote processes for expansionary capital expenditure, such as the processes contained in Aurizon Network's 2017 access undertaking and the '60/60' requirements in the 2021 DBCT access undertaking

[105] QCA, *Approach to climate change related expenditure,* discussion paper, October 2022, pp. 16–22.
[106] QCA, *Approach to climate change related expenditure,* discussion paper, October 2022, pp. 4–5.
[107] QCA, *Approach to climate change related expenditure*, discussion paper, October 2022, p. 19.
[108] QCA, *Approach to climate change related expenditure*, discussion paper, October 2022, p. 10.

- 'trigger' mechanisms that provide for variations to revenue requirements and tariffs within regulatory periods, such as the review event and endorsed variation event provisions contained in the rail access undertakings
- 'true-up' mechanisms that provide for revenue caps and reference tariffs to be updated annually (also applying in rail access undertakings)
- the draft amending access undertaking (DAAU) process in Part 5 of the QCA Act—for more substantive changes that may be required to approved access undertakings
- other mechanisms that provide for pricing-related matters to be revisited during regulatory periods, such as the mid-term pricing review that applies to GAWB and the reset of key revenue cap values that occurs under Aurizon Network's 2017 access undertaking.[109]

The discussion paper noted that we consider the mechanisms and processes we have developed over time for assessing prudency and efficiency of expenditure are robust and effective across the various sectors we regulate. However, the paper also identified that the challenges presented by climate change, particularly in a policy and regulatory environment that is evolving rapidly, may raise new issues that need to be accommodated within these frameworks. We particularly drew stakeholders' attention to the following issues:

- whether the existing processes appropriately incentivise and reward regulated service providers for setting net zero targets in alignment with government policies, and pathways to achieve those targets, as part of acting to meet their social licence expectations
- the extent to which our processes encourage service providers to develop and implement risk management frameworks and asset management plans that have appropriate regard to risks arising from climate change
- the extent to which the processes remain fit for purpose in an environment where regulated businesses may need to prepare for and/or respond to more frequent or more severe climate change related significant weather events—such as cyclones, floods, major rainfall events and heatwaves
- the extent to which we should have regard to climate change considerations as part of the approval process for new access undertakings under Part 5 of the QCA Act[110]
- whether the prudency and efficiency assessment processes are sufficiently flexible to enable appropriate regard to be given to the need for regulated businesses to meet the legitimate expectations of relevant third parties—including governments, investors, customers, regulators (e.g. the Australian Securities and Investments Commission (ASIC) and the ACCC) and the general community
- the potential interaction between the need for service providers to receive regulatory approval of climate change related expenditures, and obligations for the service providers to meet new and expanding risk and climate change related disclosure requirements that are externally imposed

[109] QCA, *Approach to climate change related expenditure*, discussion paper, October 2022, p. 10.

[110] For example, climate change considerations may fall within the ambit of s. 138(2)(d) (the public interest) and (h) (other issues). If so, the question arises as to how much weight should be given to these considerations. These matters are discussed in detail in Chapter 3 of this paper.

- more generally, how effectively these processes operate in an environment where businesses face increased uncertainty around the need to undertake both adaptation and mitigation expenditures, to respond to climate change related risks and opportunities.

5.2 Stakeholders' views

The majority of stakeholders were of the view that the mechanisms in our existing regulatory frameworks are likely to be fit for purpose for assessing the appropriateness of climate change related expenditure proposals. However, some did propose that we could nonetheless provide additional guidance as to how we would apply existing frameworks to such proposals. For example:

- DBI said its current access undertaking is sufficiently flexible to accommodate necessary climate change related expenditure. But it suggested we could provide further detail about our approach to assessing this type of expenditure to reduce regulatory risk (including that expenditure would not be approved after the event) by clarifying the application of the object of Part 5 of the QCA Act to climate change related expenditure; publishing a guide to give regulated entities greater confidence about the basis upon which expenditure will be assessed and approved; and setting out the framework for conducting any necessary ex post assessment.[111]
- The QRC said the existing regulatory frameworks are well suited to supporting climate change related expenditure. It emphasised that customers will support these types of expenditure proposals (specifically for Aurizon Network) but only where the proposals are supported by robust and detailed business cases. It added that customer vote processes should be used to support proposals related to mitigation expenditure.[112]
- Pacific National expressed the view that the current procedures in the regulatory frameworks provide an appropriate base for assessing climate change related expenditure. It did, however, suggest some areas of potential enhancement to existing procedures such as greater harmonisation with other jurisdictions; additional transparency; focusing on a collaborative approach to risk and uncertainty; and an openness to considering all alternatives, including in relation to technological developments.[113]
- The DBCT User Group said existing procedures in the regulatory frameworks are already appropriate for assessing proposed climate change related expenditure. It specifically noted that the agreements recently negotiated between DBI and all of the existing users of DBCT depend on the maintenance of the current prudency arrangements for assessing expenditure proposals. It said we should be mindful of the primacy of negotiated outcomes in the negotiate–arbitrate regulatory framework, and that we should exercise a great deal of caution in considering any changes to existing processes as it may impact the risk profile of the parties to the negotiated agreements at DBCT.[114]
- Seqwater said our broad approach to assessing prudency and efficiency remains appropriate when explicitly considering adaptation or mitigation expenditure, but that the issue is more one of how the approach is applied in practice. More specifically, Seqwater argued that there should not be a trade-off between efficiency and least cost, and robustness and

[111] DBI, sub. 4, p. 3.
[112] QRC, sub. 7, p. 14.
[113] Pacific National, sub. 6, p. 6.
[114] DBCT User Group, sub. 3, pp. 1, 3.

resilience—rather, in assessing prudency and efficiency of proposed adaptation expenditure, the assessment should incorporate consideration of an 'efficient' level of resilience across a range of potential climate scenarios. For mitigation proposals, a key issue in assessing prudency is to consider the 'drivers' of the expenditure—which are likely to be the need to manage regulatory and policy risks; and/or manage reputational risk as part of maintaining a 'social licence' to operate.[115]

On the other hand, some water-sector businesses were of the view that more significant amendments to existing processes may be needed to deal effectively with climate change related expenditure proposals, given uncertainties regarding climate change. In particular:

- GAWB said that climate change related expenditure requires a fundamentally different approach to assessing prudency and efficiency. It was particularly concerned that application of the existing frameworks by us may create uncertainty that would disincentivise prudent climate change related investments. More specifically, it said that current regulatory frameworks do not deal with uncertainty because investment decisions made by regulated businesses are vulnerable to us (and/or our consultants) forming an alternative view on prudency and efficiency (e.g. in an ex post review of capital expenditure). It stressed that any ex post reviews should not apply hindsight to the assessment.[116]

  GAWB concluded that a fundamentally different approach to application of the prudency and efficiency 'lens' is needed. It suggested that we should focus on ex ante rather than ex post assessments of prudency and efficiency of climate change related expenditure and that frameworks should provide sufficient flexibility to allow regulated entities to respond to fast-changing needs and priorities. It said there is a need for us to provide guidance on the principles and criteria we will apply to assessments, to give greater certainty to the regulated businesses.[117]

- Urban Utilities said the existing regulatory frameworks favour least cost options—and do not incentivise resilience expenditure. It said the frameworks do not cope well with uncertainty because they focus on maintaining existing service levels; demonstrating compliance; or meeting customer expectations. It added that ex post optimisation by us is a risk to any investment made within an uncertain and changing environment. Urban Utilities recommended that, to improve certainty, we should make clear what information we require to demonstrate prudency for decisions regarding insurance and pass-through arrangements.[118]

5.3 QCA preliminary views

We consider it is appropriate for us to support efficient and prudent investment in climate change related expenditure.

Our view is that, at a high level, our existing regulatory frameworks are fit for purpose for assessing and approving climate change related expenditure proposals from regulated businesses. A number of reasons support this view:

- The existing processes for assessing prudency and efficiency of expenditures, based on the scope, standard and cost approach, are well established and have worked effectively in

[115] Seqwater, sub. 11, pp. 5–6.
[116] GAWB, sub. 5, pp. 1, 5–6.
[117] GAWB, sub. 5, pp. 6–8.
[118] Urban Utilities, sub. 9, pp. 10–11.

assessing and approving regulated businesses' capital and operating expenditure proposals over a long period of time.

- The multi-faceted procedural mechanisms contained in the access undertakings and other regulatory instruments, providing for both ex ante and ex post expenditure approvals (depending on the circumstances), contain a number of avenues for regulated businesses to seek approval of expenditure—including within regulatory periods.
- The existing frameworks for expenditure assessments appear to be sufficiently flexible to allow for appropriate assessment of climate change related expenditures—we already have some examples of where similar expenditure has been assessed and approved by us (such as Queensland Rail's Toowoomba Range crossing project[119] and the recent decision on Aurizon Network's proposed increase to the energy charge components of its reference tariffs (the 'EC DAAU')[120], including a renewable energy component).
- The mechanisms in the existing frameworks that place emphasis on customer consultation and involvement, such as customer voting processes and procedures that focus on the primacy of negotiation and cooperation, provide a high degree of certainty to regulated businesses that expenditures will be approved where customers have indicated support.
- Most stakeholders were of the view that the mechanisms in the existing regulatory frameworks are likely to be fit for purpose for assessing climate change related expenditure—including the stakeholders representing users of regulated services (the QRC, the DBCT User Group and Pacific National), as well as Aurizon Network and DBI.
- While the processes are largely untested in application to mitigation expenditure proposals, we think that at a high level they are likely to still be applicable. For example, the scope, standard and cost approach to assessing prudency and efficiency of a mitigation proposal would look at what is being mitigated and why (scope); what approach is proposed (standard); and how the price was determined (cost).

We note the criticisms of the appropriateness of the existing frameworks made by the water sector businesses, particularly in relation to perceived uncertainty and the potential to disincentivise prudent climate change related investments, but we do not think these matters are sufficiently problematic to indicate that the existing frameworks require fundamental change.

We note in particular Urban Utilities' view that the existing regulatory frameworks favour 'least cost' options in terms of spending proposals. We consider that this position represents an unnecessarily narrow interpretation of the past and potential future application of the existing frameworks.

Our view is that prudent and efficient investments by regulated businesses, including climate change related expenditure proposals, should be delivered at an efficient cost. However, the efficient cost is not necessarily the least cost in the short term. Rather, efficient cost should be assessed as the lowest whole-of-life cost, including both the initial cost and associated costs, over the life of an asset (or as a strategy of mitigation activities) having regard to the risks associated with operating the asset, such as the likelihood and impact of adverse weather events. In this regard, our approach to assessing expenditure proposals (including future climate change related proposals) is to take a broad perspective when defining costs—with whole-of-life cost considerations then naturally underpinning the concept of efficient cost in the presence of risk.

[119] See QCA, *Queensland Rail's 2019–20 capital expenditure claim*, decision notice, 17 June 2021.
[120] See QCA, *Aurizon Network's electric energy charge DAAU*, decision notice, 16 November 2022.

Further, we consider that assessments of efficient cost should also take account of costs to third parties (i.e. social costs) where it is appropriate to do so. This includes consideration of externalities. Externalities (sometimes referred to as 'spillovers' or external effects) exist where production or consumption decisions made by an individual, firm or government have effects on others that the decision-maker does not have an incentive to take into account. As a result, activity levels may be too high where external costs (such as pollution) are present and not adequately taken into account, and too low where there are external benefits (such as positive community welfare effects).

In summary, we consider that an appropriate assessment of efficient cost will take into account all costs and risks associated with an expenditure proposal, encompassing both private and social costs (including externalities).[121] Such an approach does not constitute a change in the application of our existing frameworks for assessing expenditure proposals, but rather a clarification of the interpretation of efficient cost in the assessment of proposals (including climate change related proposals).[122] We still consider that minimising costs is efficient and desirable, as long as all benefits and costs are properly defined and accounted for in the assessment process.

The concept of efficient cost, including private and social costs (and externalities), is discussed in more detail in Chapters 7 and 8—in the context of consideration of adaptation and mitigation expenditure proposals.

At the same time, we do think a number of the suggestions made by various stakeholders as to how the existing frameworks may be further refined or enhanced have merit. These include:[123]

- further emphasising the importance of regulated businesses seeking to consult and cooperate with their customers in developing climate change related expenditure proposals
- us providing greater guidance to stakeholders, particularly the regulated businesses, as to how climate change related expenditure proposals will be assessed in accordance with the existing regulatory frameworks
- clarifying how and when ex ante and ex post assessment processes should be used to make assessments of relevant expenditures.

Our preliminary view is that we should not have a bias towards approving climate change related expenditure. Rather, our role is to provide clarity about how the regulatory regime can work to reduce uncertainty and delays relating to our consideration of climate change related expenditure proposals, although we are mindful that any framework should not be viewed as prejudging any application. We consider that providing clarity on our approvals process for climate change expenditure is consistent with good regulatory practice.

Where possible, regulated businesses and users should be encouraged to reach agreement on the climate change initiatives that are to be proposed, consistent with the negotiate–arbitrate framework.

[121] An assessment of 'efficient cost' is consistent with an appropriately designed and applied benefit–cost analysis that determines the net present value of a project proposal (and any competing alternatives).

[122] As noted in section 3.2.5, we consider that environmental concerns are within the ambit of the public interest criterion contained in ss. 120(1)(d) and 138(2)(d) of the QCA Act. Mitigation of emissions may generate positive benefits that extend beyond the regulated business and users and impact the broader community, while some resilience expenditure may also be in the public interest (including where inaction may lead to broader community impacts).

[123] These matters are discussed in detail in the subsequent chapters of this paper.

As climate change adaptation expenditure is largely for the benefit of users, they are in the best position to assess the costs, benefits and risks of climate action (or inaction). This may be less clear for mitigation expenditure, although there may still be situations where users seek to encourage regulated businesses to undertake increased mitigation activities—for example, where coal miners want to reduce emissions in their supply chains (scope 3 emissions). Issues related to mitigation expenditure and the applicability of existing frameworks to assessing various scenarios are discussed in detail in Chapter 8.

Consultation question 2

At a high level, do stakeholders accept that our processes for assessing prudency and efficiency of expenditure proposals can be effectively applied to proposals for climate change related expenditure (adaptation and mitigation)?

6 ASSESSMENT FRAMEWORK: STRATEGY AND BUSINESS CASE

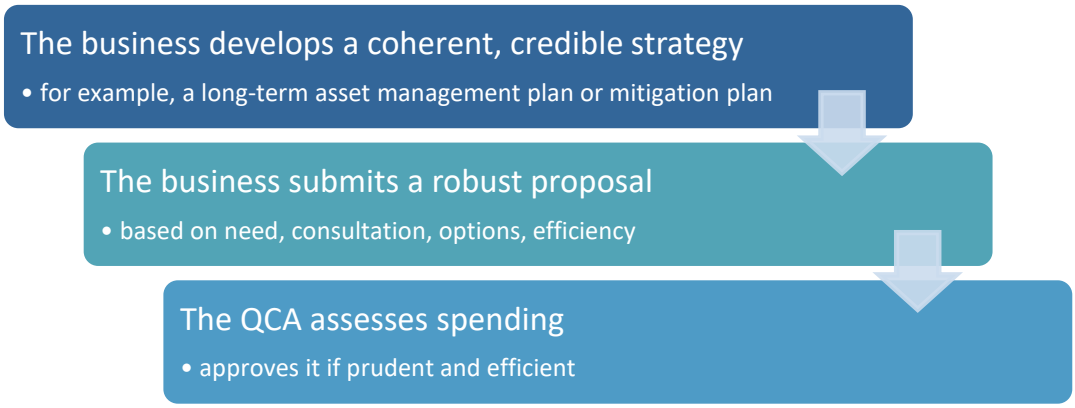
Regulated businesses should be able to make prudent and efficient climate-related investments in the reasonable expectation they will earn returns commensurate with the regulatory and commercial risks involved. They should also be able to recover prudent and efficient climate-related operating expenditure. Our approach to reviewing such spending needs to bridge the gap between:

- regulated businesses' reasonable expectation they will be able to recover their efficient climate-related spending
- customers' concern that such spending, if it is not necessary, or if it is more costly than other options, will contribute to excessive prices for regulated services.

We have divided the discussion of our preliminary views on an overall assessment framework for climate-related spending into:

- what regulated businesses should prepare, namely
  - a coherent and credible strategy that should underpin any spending proposal (section 6.1)
  - a business case and robust proposal that addresses four key elements—need, consultation, options and efficiency (section 6.2)
- our assessment processes (section 6.3) (see Figure 4).

Figure 4: Steps for prudent and efficient climate-related spending



Our preliminary views as they relate to adaptation and to mitigation are discussed in Chapters 7 and 8.

6.1 Coherent and credible strategy

Spending on infrastructure does not take place in a vacuum. Equally, reducing carbon emissions only makes sense as part of a consistent approach that would be undertaken by a business in a workably competitive environment. So, any climate-related spending should be justified as part of a coherent and credible medium- to long-term strategy, with clear objectives. This may take the form of a company-wide asset management strategy, a master plan or a well-articulated mitigation policy. Some examples of longer-term strategic planning can be found in section 2.2.

These clear strategies will identify and explain the problem the business wants to solve and provide a predictable and consistent context for understanding proposed spending. The

strategies should consider different approaches, such as insurance or pass-through mechanisms, for managing the risks the business is seeking to address (see Chapter 10). The strategies will reflect consultation with customers, and at the same time assist customers in understanding why and how the regulated business wants to invest or commit to operating expenditure.

Value for money and least cost

A coherent strategy will also help avoid another trap—that is, considering only the immediate cost of proposed spending. The investment or operating expenditure with the lowest upfront cost may not be efficient or deliver value for money over time.

Efficient cost should be assessed as the lowest risk-adjusted net present value, including both the initial cost and associated costs over the life of an asset or mitigation strategy. Providing value for money involves selecting the most appropriate and effective option to achieve climate-related outcomes and then delivering it at least overall long-term cost (see section 5.3 for a discussion of efficiency). This assessment of efficient costs will also, where appropriate, reflect externalities.[124]

The long-term strategy will inevitably, and necessarily, evolve over time. But we would expect most changes to be incremental, and for business cases for individual spending proposals to sit under, and be consistent with, the overall long-term approach. That is, any business case for specific expenditure should be consistent with the long-term strategy of the business.[125]

Specific matters relating to long-term strategies for adaptation and mitigation are discussed in sections 7.2 and 8.2.

6.2 Business case

The case for spending—whether it be on adaptation or mitigation—should be robust and cover all matters the regulated business considers necessary to justify a proposal to its own board. However, we will expect the business case to, at a minimum, address four key considerations, namely demonstrated need, consultation with customers, demonstrated consideration of options, and efficient cost (see Table 1). All of these should be included in any application for approval of a climate-linked project.

These considerations would apply to most investment and capital expenditure proposals, regardless of whether a business was regulated—that is, similar material would be required by the board of a well-managed business operating in a workably competitive environment. So preparing such business cases (and the long-term strategies that guide them) should not be a material burden for a regulated business—we would expect it will already be producing them for internal purposes.

[124] Externalities, including as they relate to mitigation, are discussed in sections 5.3 and 8.5.

[125] In cases where the expenditure may not be consistent with the longer-term strategy, it should be demonstrated that the nature of the expenditure could not reasonably have been anticipated as part of the strategic planning process.

Figure 5: Framework for a robust business case and spending proposal

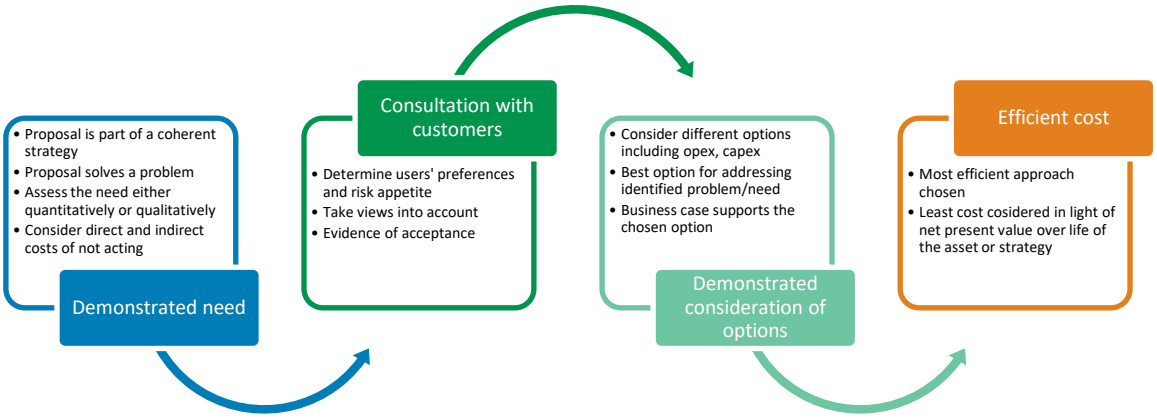


Table 1: The four key elements of a robust business case for climate-related spending

Consideration	Treatment in climate-related business case
Demonstrated need	Any climate-related spending proposal should solve an identified problem. It should fulfil a demonstrated need, whether it be for increasing or sustaining the service potential of the facility, or mitigating carbon emissions. The need may reflect externalities, community expectations, government priorities as well as direct impacts on customers and the infrastructure owner. This might be demonstrated through a quantitative approach or, where that is not possible or feasible, through a qualitative analysis. Need should be demonstrated with reference to a coherent long-term strategy, and not be ad hoc (see section 6.1).
Consultation with customers	The proposal should have regard to customers' views. What have customers said about their preferred approach to the climate-related spending? Have customers been provided with robust and transparent information? How have their views been taken into account when choosing the appropriate approach? This could be demonstrated through customer letters of support or, as is done for some regulated businesses, a customer vote process. The consultation on an individual investment may be less important than consultation on a coherent overall strategy, either for asset management or mitigation (see section 6.1). Importantly, while we are likely to view stakeholder support for a proposal favourably, the absence of such support will not necessarily mean that an expenditure proposal will not be accepted by us.
Demonstrated consideration of options	There should be consideration of alternative ways of addressing the identified need—that is, solving the problem. What options have been considered in assessing both the scope and standard of the planned spending? What are the pros and cons of those options? Are the options consistent with any hierarchy of options identified in the long-term strategy? The business case should explain how and why the proposed approach has been selected over the alternatives to address the climate-related risk or achieve the desired level of mitigation.
Efficient cost	The efficient cost should reflect value for money, rather than a simplistic choice of lowest upfront cost. It should be considered over the life of an asset for infrastructure investments, and as part of a long-term strategy for operating expenditure, including mitigation. The upfront cost could be established through an appropriate process, such as a competitive tender.

These four considerations are not independent from each other. For example, the demonstrated need should, in most cases, have regard to the views of customers, while the efficient cost will inform the consideration of options, and vice versa. These principles apply to all industries, although the emphasis will reflect the circumstances of particular regulated businesses. For example, investment by DBI is typically proposed by the user-owned company that operates the terminal, which would in most circumstances address the requirement for consultation with customers.

Specific matters about business cases for adaptation and mitigation are discussed in sections 7.3 and 8.3.

6.3 Assessment approach

We are open to approving prudent and efficient spending that achieves climate-related objectives, either for adaptation or mitigation. Such spending is standard practice for well-governed businesses in competitive industries, and it is appropriate that our frameworks support regulated businesses to make these expenditures as well, subject to prudency and efficiency requirements.

Our preliminary views on an overall assessment framework for climate-related expenditure broadly reflect our assessment processes for other types of spending proposals. We do not consider that our climate framework changes our approach to assessing prudency.[126]

Our first preference is that regulated businesses and their customers reach consensus on strategies and spending approaches that suit all parties. Where there is an agreed capital investment or operating expenditure proposal, our role is likely to be light-handed.

However, we acknowledge stakeholders' comments that a clear assessment framework will assist the parties in negotiating how to proceed.[127] Then each stakeholder can make decisions knowing how we will review a spending proposal.

The exact mechanism for the review will vary by industry, depending on the specific regulatory framework. The scope and standard of proposed capital spending by Aurizon Network, for example, would be reviewed under the provisions in its access undertaking (Schedule E). For water businesses, the review would have regard to matters in any direction notice and to the relevant provisions of the QCA Act (see section 4.2.1).

In assessing any spending proposal, user consent is as relevant as it is for non-climate-related spending. But consent is not determinative—there may be cases where spending that is opposed by stakeholders is appropriate for us to approve, including by having regard to broader community interests and expectations. For any investment or operating expenditure, with or without user support, we would expect to see evidence that it is part of a long-term strategy, rather than being ad hoc. Relevantly, we will consider the interests of parties not at the table, including potential future customers and third parties affected by externalities.[128]

[126] We do not consider that the concerns raised by the DBCT User Group are relevant, namely that our approach could 'inadvertently re-open or conflict with the existing [DBCT] User Agreements' (see DBCT User Group, sub. 3, p. 3).

[127] DBI, sub. 3, para 80, p. 18; Pacific National, sub. 6. pp. 6–7; Aurizon Network, sub. 2 (Frontier), pp. 25–26; GAWB, sub. 5, p. 8; Seqwater, sub. 11, pp. 6, 9, 37.

[128] This position reflects our processes to date. For example, we adopted a similar approach in our 2006 decision to approve the 2006 draft access undertaking for DBCT. In that decision, we said we had 'taken the view that, to the extent the undertaking reflects a negotiated position between [DBI] and users, the 2006 access undertaking is in

6.3.1 Applying existing frameworks: ex ante and ex post

Our existing regulatory processes include both ex ante and ex post assessments. While climate-related spending can be assessed ex post, we consider a well-supported business case, which explains how a proposal delivers on the objectives of a long-term strategy, lends itself to ex ante assessment. This is consistent with suggestions from stakeholders. Seqwater said:

> QCA's ex ante prudency and efficiency review should be largely about whether the regulated business has followed its systems and processes for identifying and managing climate-related risk, rather than seeking to prescribe the precise scenarios or techniques which businesses should adopt. Upfront guidance that the QCA will follow such an approach would help to underpin regulatory certainty and therefore facilitate prudent and efficient climate-related investment.[129]

In many cases, we will be assessing any climate-related spending proposals using some form of our 'prudency of scope, standard and cost' framework.[130] This prudency assessment approach is consistent with the business case approach discussed above, and with achieving value for money. Scope is the assessment of the need for the proposed spending; standard roughly covers consultation and options; and cost is common to both the business case and prudency guidance.

Reviewing the scope and standard of a climate-based spending proposal in advance will promote coherent and credible planning, while also addressing infrastructure owners' concerns about certainty.[131] Cost can be considered in advance; however, it is more common, particularly for capital expenditure, that ex post cost review is appropriate.

Ex post cost review

The cost of an investment can be estimated while it is being planned; however, the actual cost may only be known once the project has gone out to tender and been completed, with any resulting variations, including for matters that were not able to be reasonably anticipated ex ante. That is why, even where scope and standard of a spending proposal have been approved ex ante, the final cost review, particularly for capital expenditure, is best completed ex post.

The process for assessing climate-related spending, in most respects, will be the same as that for other categories of investment and operating expenditure. The ex post review will tend to focus on upfront costs, given the ex ante review will have addressed the net present value of long-run costs. Therefore, we will have regard to the process by which the contractor (or in-house provider) was chosen and other evidence that demonstrates the cost was efficient.

We will, where necessary, make an ex post assessment of the scope and standard of proposed climate-related measures. But a regulated business will need to explain why that review could not have been completed ex ante. And our expectation that the proposal includes a robust justification, supported by a long-term strategy, will remain the same as for an ex ante assessment.

Specific aspects of our scope, standard and cost assessment approach, as they relate to adaptation and mitigation, are discussed in sections 7.4 and 8.4.

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the interests of these parties … [we have] also had regard to the interests of future access seekers that were not involved in the negotiations leading up to the submission of the 2006 access undertaking.' (QCA, *Dalrymple Bay Coal Terminal 2006 Draft Access Undertaking,* June 2006, p. iii).

[129] Seqwater, sub. 11, p. 37.

[130] See section 4.2 for a history of how and why this prudency approach was developed.

[131] See DBI, sub. 4, paras 104–107, p. 21.

6.3.2 Information known at the time

Some stakeholders asked for confirmation that, when we assess an investment or operating expenditure after it has been completed, they will be judged only on what they could have known at the time.[132]

For example, GAWB said:

> The focus in assessing climate-related capital expenditure should be whether the decision to invest is consistent with the actions of a business acting prudently and efficiently, having regard to the relevant information and circumstances at the time the decision is made.[133]

Similarly, DBI said:

> [I]f the QCA provided certainty as to the scope and limitations of its ex-post reviews on expenditure relating to climate change, for example to the circumstances prevailing at the time, for consistency with sustainability objectives, government legislation and societal expectations, then more certainty will exist for DBIM to undertake such expenditure.[134]

Regulated businesses should expect that we will assess their decisions based on the information that was reasonably available when those decisions were made—and provided to us. But that principle is easier to apply when the businesses are transparent about how they are making those decisions, as part of their consultation before committing to spending. Customers who are expected to fund some or all of any expenditure once it is approved need to have sufficient information to make an informed decision on whether to support it. The QRC said the regulated business should actively consult with its customers 'so that the preferences of its customers are understood when making such decisions'.[135] We consider active consultation is a good approach.

Matters claimed to be 'known at the time', which the business only raises during a later ex post review, may be a sign of inadequate consultation or planning. For example, it is hard to see how a spending decision could be informed by the preferences of customers when they have not been asked. And it is important to note that the test is 'could have known at the time'—failure to take into account a consideration that should have been obvious is not an excuse.

Consultation question 3

How can our assessment approach for climate-related spending, including the expected standard of strategic planning and business cases, most effectively align with regulated businesses' existing internal processes?

[132] DBI, sub. 4, p. 26; GAWB, sub 5., p. 9; DBI, sub. 4, appendix 2 (Frontier), p. 31, Seqwater, sub. 11, p. 6.
[133] GAWB, sub. 5, p .9.
[134] DBI, sub. 4, p. 26.
[135] QRC, sub. 7, p. 3.

7 ADAPTATION

Investments to adapt to climate change will, for the most part, be assessed by us in the same way we review other spending (see Chapter 6). However, there are some considerations specific to adaptation that warrant separate guidance. This chapter provides our preliminary views on:

- asset management strategies (section 7.2)
- business cases for adaptation spending (section 7.3)
- our assessment approach for adaptation proposals (section 7.4).

Specific aspects relating to mitigation are discussed in Chapter 8.

7.1 Introduction

Infrastructure investments have always been made in the face of uncertainty about future weather-related events, ranging from drought to strong winds to flooding. Bridges, dams, embankments and other structures and earthworks have been designed based on the best information available at the time about the expected frequency and severity of these events (see also section 2.2). Overall, the goal is to make the infrastructure sufficiently resilient to meet customers' service expectations and keep the community safe, at an efficient cost.

The difference with climate change is that past experience is becoming a less reliable predictor when assessing what is required to provide the necessary resilience. Greater extremes of climate will mean some infrastructure that was appropriate for past expectations needs to be reinforced—or possibly even relocated—to address the expected future weather events. Frontier Economics, on behalf of Aurizon Network, said:

> Customers may be willing to fund adaptation expenditure by Aurizon Network ahead of the occurrence of natural disasters to increase the resilience of the rail network and to minimise the risk of supply disruptions.[136]

In many respects, reinforcing infrastructure is equivalent to paying insurance premiums—it is a physical rather than financial way of addressing risk. However, given the importance of regulated infrastructure, particularly where the infrastructure is a bottleneck having implications for the broader economy, adaptation will often be preferable to accepting a higher risk of future disruption.

Our role as a regulator is to facilitate prudent and efficient investment in adaptation projects. And the starting point for establishing that prudency and efficiency will be a well-articulated asset management strategy, which informs the business case for a specific investment.

7.2 Asset management strategies

Adaptation investments only make sense if they are aimed at achieving or maintaining a particular level of service in the face of changing climate expectations. These measures should be included in an asset management strategy that:

- sets out objectives such as an expected capacity, at an agreed level of reliability

[136] Aurizon Network, sub. 2 (Frontier), p. 29.

- provides a framework for achieving those goals.

Individual projects can then be considered in the context of how they fit into the framework and contribute to achieving the objectives. Where possible, the objectives should be measurable, and the strategy should include provisions for monitoring infrastructure performance.

In most circumstances, an asset management strategy for climate change will look similar to—or form part of—a business's overall strategy for its infrastructure. The strategy, including a risk management process, will provide a basis for weighing different investments and deciding which ones are appropriate to progress and submit for approval (see Figure 6).

Figure 6: Example of a risk rating matrix

		Consequence		
		Low	Medium	High
Likelihood	Low	Low	Low	Medium
	Medium	Low	Medium	High
	High	Medium	High	High

Source: BITRE, Road and Rail Supply Chain Resilience Review—Phase 1, Building an evidence base of road and rail supply chain resilience*, Australian Government, February 2023, p. 35.*

A risk rating matrix, or similar analytical tool a business uses in its risk management processes, may help prioritise different investments, particularly in an environment of increasing climate uncertainty. Frontier Economics, on behalf of Aurizon Network, said:

> In assessing prudent and efficient ex ante resilience expenditure the QCA should encourage regulated entities to pragmatically incorporate the uncertainty inherent in climate change related risks into their proposals for adaptation expenditure. Aurizon Network is likely to be best placed to undertake this analysis, as it does as part of its *Strategy In Uncertainty* approach to enterprise strategic planning.[137]

Risk analysis drives different outcomes for Aurizon Network's approach to culverts, and water companies' approaches to dams, for example.

Aurizon Network has culverts dispersed across a wide area. There is a high likelihood of flooding or washouts of culverts somewhere on its network in any given year, but in many cases the repairs can be done quickly, limiting the disruption to customers, so the consequences of the localised damage are typically low. Aurizon Network said in its submission that it had determined a major drive to reinforce its existing culverts was not worth the cost.[138]

In contrast, a dam owner might have a failure of its dam as a low likelihood, but with a high consequence. For catastrophic events like a dam failure affecting a major population centre, there is no acceptable level of risk and the appropriate strategy will be to prevent, rather than mitigate,

[137] Aurizon Network, sub. 2 (Frontier), p. 29.
[138] Aurizon Network, sub. 1, p. 4. This cost–benefit outcome will not apply in all cases. Key bottleneck infrastructure where repairs can take a long time may have a different approach. See the cyclone Debbie example under 'Consultation' below.

the prospect of the event occurring. Several owners of major dams in Queensland are planning reinforcement projects. Seqwater said:

> Rather, the key challenge is to ensure the regulatory framework is applied appropriately to ensure climate change risk is managed prudently and efficiently–in the context of Seqwater's bulk water level of service expectations of the community, which may be a less forgiving risk environment than other utilities or infrastructure services.[139]

Long-term planning can also consider the appropriate balance between capital and operating expenditure in response to climate-related events. As GAWB said:

> One of the key challenges in managing these impacts is balancing proactive management of these risks, such as the planning and building of infrastructure to higher (more resilient) standards, with reactive responses, such as increased maintenance from premature asset degradation and the repair of damaged infrastructure following a major weather event.
>
> The risks associated with the changing climate need to be incorporated into our planning, project design and asset management activities, recognising that the future requirements of the network could be quite different from what they are today.[140]

Consultation

Damage to infrastructure can have disproportionate impacts on customers, compared to impacts on asset owners. This makes consulting with customers crucial to developing an appropriate asset management plan. Aurizon Network provided a good example of the relative financial effects of damage to its tracks—its direct cost of repairs after cyclone Debbie in 2017 was $16.9 million, while the indirect costs in lost coal exports were estimated by the Queensland Government to approach 1,000 times as much, at more than $1.5 billion.[141] Frontier Economics, as Aurizon Network's consultant, said:

> The increased frequency and duration of network outages is likely to result in an increase in indirect costs to customers. This could include lost coal sales, business interruption and remediation costs for the mine operation, and demurrage will be less likely to be offset by rerouting options and shipment deferrals as the duration of the interruption grows.[142,143]

Given customers, particularly for transport infrastructure, are expected to pay for adaptation expenditure and are affected by damage to the facility, they are best placed to assess the level of service reliability they require and the consequences of not having it.[144] As Aurizon Network said:

> [T]he appropriate balance between resilience and remediation in response to physical risks is best determined between the access provider and its customers subject to effective mitigation of transitional risks.[145]

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[139] Seqwater, sub. 11, p. 41.
[140] GAWB, sub. 5, p. 3.
[141] See Aurizon Network, sub. 2 (Frontier), pp. 24–25. Queensland Rail's Toowoomba Range Stabilisation project was a good example of specific rather than general reinforcement, directed at bottleneck infrastructure where disruption would have a high consequence for customers (see Box 3, p. 28).
[142] Aurizon Network, sub. 2 (Frontier), p. 26.
[143] Pacific National also noted that along with customers, rail operators are negatively impacted when weather events impede operations. It said that '[f]rom a safety and operational perspective rail operators have a vested interest in wanting rail infrastructure that is fit for purpose and ensuring appropriate investment occurs to improve asset resilience' (Pacific National, sub. 8, p. 8).
[144] This may be different for water businesses—for example, a dam failure will have a broader impact than just the effect on customers.
[145] Aurizon Network, sub. 2 (Frontier), p. 8.

The DBCT User Group said that while the existing framework for assessing the prudency of expenditure at DBCT is appropriate, customers are best placed to know their own risk preferences:

> The User-owned Operator and Users are best placed to assess the trade-offs involved due to wearing both the costs of investment in robustness / resilience and the costs of any reinstatement/maintenance/interruptions to operations where the relevant risks eventuate.[146]

Similarly, Pacific National said:

> A collaborative approval process for climate-change related expenditure is likely to optimise outcomes of the entire network. It should provide additional surety that it is prudent investment and minimise over-capitalisation on projects, particularly where expenditure may not be strictly necessary to provide the regulated service.[147]

A long-term strategy, reflecting the risks, and customers' preferences on how to handle the risks, will provide a strong basis for choosing whether and how to adapt infrastructure to cope with climate change.

7.3 Business case for adaptation

The general framework for a climate-linked business case is set out in section 6.2. Specific aspects of our framework—need, consultation, options and efficiency—as they apply to adaptation, are discussed in this section. Mitigation-specific considerations are discussed in section 8.3.

7.3.1 Demonstrated need

The business case supporting any adaptation investment that replaces or augments an existing asset will in most cases be based on an identified increase in risk of damage and disruption, compared with the initial risks identified when the existing infrastructure was built. The business case may quantify the expected incidence and cost of the climate-related risk by applying a statistically robust method, for example an actuarial assessment. But in some cases, this approach will not be feasible, given the uncertainty about future climate effects. In this situation, the analysis may be qualitative. Indeed, some need may be absolute—there is no acceptable risk of a dam wall failure that might inundate a major city, for example.

We do not accept the view of Urban Utilities that the existing frameworks' focus on maintaining existing service levels means these frameworks are unable to cope with uncertainty.[148] The need for the expenditure can be demonstrated based on broader factors than just direct financial cost, including the need for preventative works in light of uncertainty, government policy obligations and alignment with community expectations.

The need will consider both the expected cost for the regulated party to repair damage from a weather-related event and the indirect disruption costs to users, in light of customers' service requirements.

7.3.2 Consultation with customers

The risk appetites of customers will often be fundamental to deciding the appropriate standard of infrastructure resilience, particularly given they will be expected to fund a substantial

[146] DBCT User Group, sub. 3, p. 9.
[147] Pacific National, sub. 6, p. 6.
[148] Urban Utilities, sub. 9, pp. 2, 9–10.

investment through the regulated tariff or price.[149] For example, how much do they want adaptation investment to reduce the chance of future supply chain disruptions? And at what cost? In some cases, more of the consultation will have taken place at the asset management strategy level, reducing the need to consult about specific projects (see sections 6.1 and 7.2).

7.3.3 Adaptation options

The planning for any proposed infrastructure investment should include considering alternative ways of achieving the same outcome. These options may include operating expenditure, or changes in the way the infrastructure is used.[150] So for water infrastructure, behaviour changes by customers may be an alternative to some drought-related adaptation projects. And a rail operator may find that temporary speed restrictions address potential weaknesses in the track structure after heavy rainfall. There may also be different standards of resilience (i.e. reflecting different reliability standards) that reflect a trade-off between cost of service and expected impact of future disruptions.

7.3.4 Efficient cost and proportionality

Is the risk-weighted cost of the expected climate-related event proportionate to the proposed adaptation investment? The assessment may take the form of a cost–benefit analysis or similar framework. While the final cost will be assessed ex post (see section 6.3.1), any investment decision should be based on the best estimate of the NPV of the costs and benefits of the capital project.

7.4 Ex ante and ex post review

Most climate-related infrastructure investments will come under our existing capital expenditure assessment frameworks, which provide for a final review before the investments are approved to be included in the regulatory asset base. This gives assurance to customers that they are not being asked to fund inefficient investments. It also helps support the principle that a regulated business should be able to expect that, except in extreme circumstances, it will be able to recoup those efficient costs over the economic life of the assets.

Given one of the biggest factors in choosing appropriate climate-related investments is likely to be avoiding effects on customers (e.g. expected disruption to services if there is catastrophic damage), the approach to addressing such events should very much be settled by agreement with customers. However, there may be circumstances where a climate-related investment has not been subject to the preapproval process discussed in section 6.3. In such cases, we would still expect that the material supporting a claim for regulatory approval would cover the considerations for an ex ante review: need, consultation, options and efficiency (Table 1).

Scope, standard and cost

As discussed in Chapters 4 and 6, much of our assessment of capital expenditure is based on a scope, standard and cost approach. In general, similar considerations will apply to capital expenditure that is required to adapt to climate change.

[149] An exception will be externalities. For example, dam safety may not have a material effect on customers' security of supply, but it is a fundamental investment consideration for water businesses.

[150] For example, it may be more efficient to reinstate sections of rail track after flooding than to reinforce extensive sections of the network in all areas where there might be a flood.

Scope

The scope will generally align with the 'need' in a business case. Our assessment will have regard to consistency with an asset management strategy, and to other matters discussed under business case, including consultation with customers (section 6.2).

Standard

The prudent standard will be the most efficient way to solve the problem or fulfil the need identified in the scope. We may seek independent technical engineering advice, and we will expect stakeholders to have been consulted and options to have been considered.

Cost

We will assess the efficient cost for a climate adaptation investment in the same way as for any capital project. We will consider expected whole-of-life cost, and value for money. We will also look for evidence that the upfront cost has been determined through a transparent methodology such as a public tender.

In most cases, the prudency of the cost of the investment will be assessed ex post. In some cases, prudency of scope and standard will be considered ex post—although those factors will more often be covered by an ex ante assessment, customer vote or similar process.[151]

Consultation question 4

How can the assessment approach for adaptation spending best be applied to encourage parties to solve problems through long-term planning and consultation with customers?

[151] For example, DBI's streamlined NECAP process, where the investments have already been agreed with (and indeed proposed by) the customer-owned operating company. See section 5.1.

8 MITIGATION

As with adaptation expenditure, mitigation expenditure will generally be assessed in the same way as other types of expenditure. However, there are a number of measures regulated businesses and their customers can take to prepare mitigation proposals that will likely lead to efficient outcomes. This chapter covers:

- mitigation strategy (section 8.2)
- business case for mitigation (section 8.3)
- assessment approach (section 8.4)
- externalities (section 8.5)
- offset use (section 8.6).

8.1 Introduction

Businesses, including those we regulate, are facing increasing pressure to reduce their carbon emissions due to government policies and community expectations (see section 2.3).

As a consequence, businesses are increasingly engaging in mitigation, both through their own actions and through their supply chains.

Our role in assessing proposals for mitigation expenditure aligns with our role for adaptation expenditure. That is, we aim to facilitate prudent and efficient mitigation expenditure that is consistent with a business's strategy to reduce emissions from providing regulated services.

8.2 Mitigation strategy

As with adaptation investments, mitigation investments should not be ad hoc in nature, but should be part of a strategy that aims to coherently achieve appropriate levels of abatement to address climate change. The strategy should set out:

- the desired objective of a regulated business's mitigation strategy
- a framework or pathway for achieving the objective.

Mitigation expenditure that is supported by a robust strategy is more likely to facilitate our assessment of whether the expenditure is prudent and efficient. Ideally this strategy would be forward-looking and have quantifiable information that can be easily used as the basis for the justification of the subsequent business case. However, given the inherent uncertainty about climate policy and outcomes, some of the assessment may need to rely on qualitative analysis (see section 1.5).

At this stage, no business we regulate is subject to mandatory greenhouse gas abatement requirements as specified by the Australian Government's Safeguard Mechanism.[152] While we

[152] The federal government's Safeguard Mechanism is defined in Part 3H of the *National Greenhouse and Energy Reporting Act 2007*. The Safeguard Mechanism sets a greenhouse gas emission cap for high-emitting facilities, with the policy intention that the emission cap will over time be reduced and a business's emissions will need to fall below the cap. Currently, one regulated business (Aurizon Network) has related parties that are subject to the mechanism, and this business and some others also deal with customers that are subject to it. Publicly available Safeguard Mechanism data shows that, for example, Anglo American, Aurizon Operations, Glencore International,

think this will remain the case, if it were to change, we would review our approach and provide appropriate guidance.

As for adaptation, in considering whether a mitigation expenditure aligns with a regulated business's climate strategy, we will have regard to whether the strategy is consistent with that adopted by a well-managed business operating in a workably competitive environment.

Potential matters that a regulated business's climate change strategy may consider include:

- alignment with Commonwealth or state government emissions reduction targets
- compliance with any relevant legislation or voluntary industry-wide strategies
- a rationale for why alignment with the chosen target is appropriate (e.g. to avoid asset stranding, achieve ESG priorities or meet community expectations).

Some Australian businesses already have comprehensive mitigation strategies in place, for example, Aurizon Holdings[153], Pacific National[154] and Transgrid.

Transgrid's mitigation strategy is described below (Box 5).

Box 5: Transgrid's 2022 sustainability report

Transgrid is a privately owned corporation that operates high voltage powerlines in New South Wales and the Australian Capital Territory. It is regulated by the AER. Its annual sustainability report is one example where a regulated business has sought to align its approach to mitigation with broader national and international objectives for mitigation.

The main features of Transgrid's sustainability report are:

- aligning its strategic priorities to the United Nations' sustainability development goals[155]
- aligning operational targets to goals
- illustrating how operational planning is working towards meeting those goals[156]
- disclosing the annualised greenhouse gas emissions for two reporting periods, including the source of emissions and whether they are categorised as scope 1, 2 or 3[157]
- being transparent by publishing the strategy on the website.[158]

8.3 Business case for mitigation

Building on the general framework (Chapter 6), our approach for mitigation expenditure closely aligns with the approach proposed for adaptation (section 7.3). Where expenditure proposals

Pacific National and Stanmore Resources all face mandatory emissions requirements. This list is not exhaustive and is based on 2021–22 data. See Clean Energy Regulator, *Safeguard facility reported emissions 2021-22*, 31 March 2023, Australian Government, accessed 17 April 2023. Similarly, some state-owned essential services providers choose to align themselves to the Queensland Government's target, which has the effect of being a voluntary opt in to the abatement regime. For example see Seqwater, *Seqwater Annual Report 2021–22*, 2022, p. 6.

[153] Aurizon Holdings, *Supporting long-term sustainable growth*, Aurizon website, accessed 10 March 2023.

[154] Pacific National, *ESG Report FY2022*, 2022.

[155] Transgrid, *Sustainability Report: Financial Year 22*, 2022, p. 9.

[156] Transgrid, *Sustainability Report: Financial Year 22*, 2022, pp. 13–19.

[157] Transgrid, *Sustainability Report: Financial Year 22*, 2022, pp. 27–28.

[158] Transgrid, *Corporate reports*, Transgrid website, n.d., accessed 10 March 2023.

have both an adaptation and mitigation component, one robust business case will be sufficient—although the justification for each type of expenditure should be provided.

In general, we propose to apply a proportionality principle when considering mitigation expenditure. That is, the greater the proposed mitigation expenditure, the greater the scrutiny that we are likely to apply to the proposal. For example, a business case for a large-scale mitigation capital expenditure project will reasonably be expected to be more robust and quantitative in nature, and require a greater consideration of the various options, than an incidental proposal for operating expenditure.

8.3.1 Demonstrated need

As for adaptation, the business case supporting any mitigation investment will in most cases be based on an identified need to mitigate—that is, a problem to solve.

Where quantitative elements such as greenhouse gas emissions data are provided, this will help to establish the need for the proposed expenditure. Qualitative factors can also be used to demonstrate the need for the expenditure. Factors such as government policy and legislation, changing industrial behaviours ('best practice' considerations), community expectations and financial imperatives will all contribute to demonstrating the need or justification for mitigation.

Where relevant, the mitigation expenditure proposal should demonstrate:

- benefits to the regulated business (e.g. alignment with community expectations)
- benefits to users (e.g. reducing scope 3 emissions)
- broader community-wide benefits from reducing emissions (e.g. externality impacts).

The distribution of benefits will vary depending on the nature of the proposal.

8.3.2 Consultation with customers

Some stakeholders' submissions identified consultation as being insufficient[159] and made specific calls to improve communication between regulated businesses and their users.[160]

We consider it will be important for businesses to consult with their customers, as the customers will ultimately bear much of the costs of mitigation. Open and transparent stakeholder consultation is consistent with good business practice and demonstrates that a business is committed to aligning its operational requirements with the needs of its customers. Consultation is particularly important for larger expenditures.

An example of where the regulated business and its customers have consulted and reached agreement on mitigation expenditure, is the renewable energy commitment at DBCT (Box 6).

[159] QRC, sub. 7, p. 4.
[160] Pacific National, sub. 6, p. 6.

Box 6: Dalrymple Bay renewable energy commitment

In 2021, DBI secured contracts to get 100 per cent of its electricity from renewable energy from January 2023 onwards. Both DBI and the DBCT User Group supported the expenditure.

DBI said the renewable energy contracts 'will help underpin our commitment to achieving net zero Scope 1 and Scope 2 greenhouse gas emissions by 2050, with DBT's electricity emissions representing approximately 98% of DBT's Scope 2 greenhouse gas emissions each year'.[161]

DBI committed to work 'alongside the Operator, i[n] developing a Climate Change Strategy that will consider climate change risk and resilience, energy consumption, efficiency and a net zero roadmap for the terminal for reduction in its Scope 1 and Scope 2 greenhouse gas emissions.'[162]

In its submission, the DBCT User Group used its approval for the electricity contract to affirm its commitment to mitigation expenditure. It said 'there are already examples of DBCTPL committing to incurring climate change related expenditure, such as entry into electricity supply arrangements with 100% renewal benefits in the form of renewable electricity large-scale generation certificates from 1 January 2023.'[163]

In this regard, our preference will remain for regulated businesses and their users to consult on what type of mitigation is appropriate.

For example, users may have a preference for specific investments that give them indirect benefits—such as where installation of solar panels allows them to derive lower energy costs. Likewise, users may prefer regulated businesses to perform mitigation through operational expenditure over capital expenditure.

That said, while customer support is desirable, we do not consider it to be a precondition for the approval of mitigation expenditure. Moreover, there may be circumstances where we consider that, in light of the regulated business's justification, the mitigation expenditure is prudent and efficient even where it does not have universal support from users. Where this is the case, as part of our process for assessing the regulated business's justification for a proposal, we will consider the reasons given by customers for not supporting the proposal (Chapter 6, Table 1).

8.3.3 Consideration of options

The planning for mitigation activities should also consider alternative ways of achieving the regulated business's mitigation goals, including different types of direct and indirect mitigation activities.

In this context, a key focus for us will be whether a business has followed an approach consistent with its mitigation strategy. For example, if a business's mitigation strategy outlines a hierarchy of options that prioritises direct mitigation at first instance, it would be incongruous to explore offsets without first demonstrating that direct mitigation was either not feasible or prohibitively costly (see section 4.2.3).

[161] DBI, *Annual Report 2021*, 2021, p. 10.
[162] DBI, *Annual Report 2021*, 2021, p. 14.
[163] DBCT User Group, sub. 3, p. 2.

The firm's assessment of the various options would also need to be proportional to the proposed expenditure.[164] For example, where a regulated business proposes building new infrastructure with specific claims of being (net) zero emissions, then the options analysis should consider, where reasonable, the need to report the amount of greenhouse gases created and abated throughout the planning, construction and running time of the infrastructure—which in turn would be compared against other options. Alternatively, where a regulated business proposes to offset a small level of emissions with only an incidental increase in operational expenditure, then the need for reporting and monitoring of emissions would be lessened also.

Where all users support the mitigation expenditure, our review of whether the expenditure is appropriate is likely to be light-handed and focus on the impacts on potential future users and other stakeholders, including the broader community.

8.3.4 Efficient cost

The regulated businesses should also provide an analysis of the efficient cost of the proposed option. For mitigation achieved through large-scale capital expenditure, this should be in the form of a cost–benefit analysis (or similar quantitative analysis) of the considered options. For some operational expenditure, this might simply be evidence of tendering quotes or current ACCU prices (see section 2.3, Box 2).

For mitigation, benefits should ideally be quantified for use in the analysis. These can be both indirect (financial and non-financial) benefits for the regulated business and its customers, or externality benefits for the community. Where these benefits cannot be quantified, then a well-explained, qualitative justification may be sufficient.

For example, where rail upgrades result in more freight being transferred from trucks to rail, then a non-financial benefit might be an enhanced reputation as a provider of clean transport. Where this reputational effect results in access to 'green' financing, then it can be shown that there has been a financial benefit also.

In the case where a project or activity reduces a negative externality, the proposal might quantify the effect. For example, where removing freight from road to rail reduces road congestion and scope 3 emissions, these benefits to the community could be quantified.

8.4 Assessment approach for mitigation

Given the particular characteristics of mitigation expenditure, some stakeholders requested a more flexible approval approach. GAWB said:

> Some combination of [mitigation] strategies is … likely to be required … this cannot be a 'one size fits all' approach and needs to be assessed for each business on a case-by-case basis… the regulatory approach needs to enable the business to retain sufficient flexibility to adapt its approach over the course of a regulatory period.[165]

Similarly, Urban Utilities said:

> The potential arises for traditional assessment frameworks to ignore or dismiss proactive climate change mitigation and resilience expenditure that is neither tied to legislative requirements or

[164] In assessing any proposal, we would be mindful of any potential incentive of a regulated business to disaggregate projects to reduce scrutiny.
[165] GAWB, sub. 5, p. 10.

> explicit outcomes, but nevertheless is required by a comparable efficient entity to meet the expectations of the community, customers, industry regulators and capital markets.[166]

As with adaptation, our assessment approach for mitigation will be built on existing mechanisms. Our assessment will depend upon a robust mitigation strategy (see sections 6.1 and 7.2) and a comprehensive and well justified business case that contains the key elements (see sections 6.2 and 7.3).

Under a mitigation pathway approach, non-specific, unplanned or highly speculative mitigation expenditure would face greater scrutiny before being accepted as prudent. On the other hand, customer-endorsed and legally required abatement would face less scrutiny. In this regard, our assessment approach will vary depending on which drivers lie behind the proposed mitigation: legal requirements, customer endorsement, or the business's strategy. For example, ESG-aligned expenditure that is supported by stakeholders would tend to be easier to accept as prudent and efficient than expenditure that is not customer endorsed and is not clearly related to a well-articulated strategy. This approach is illustrated in Figure 7 and aligns with our principles in Table 2.

Figure 7: Mitigation expenditure pathway approach

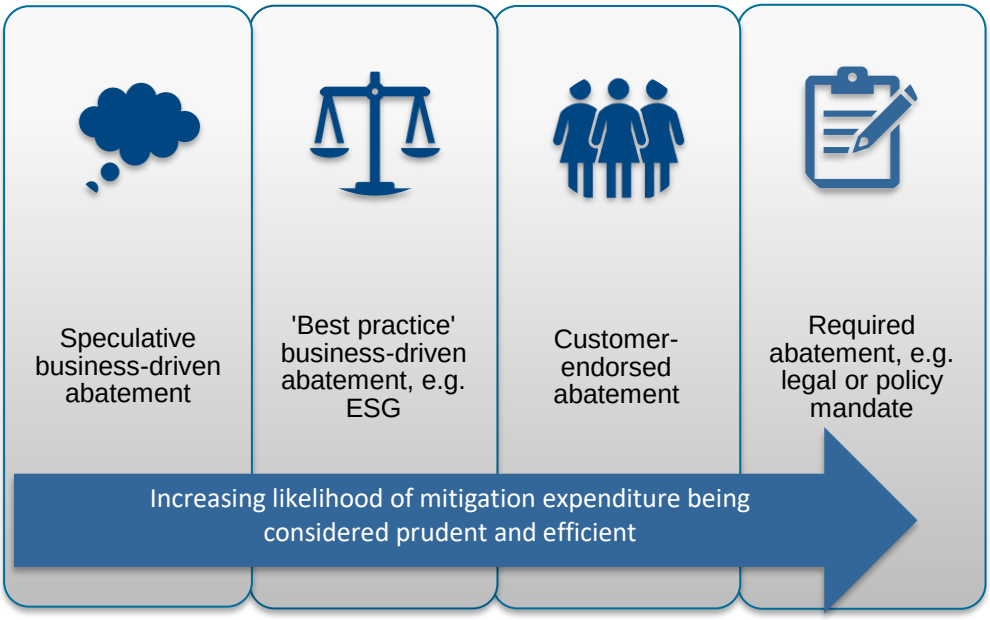

Table 2: Levels of scrutiny for mitigation expenditure approaches

Consideration	Scrutiny in assessment of prudency and efficiency
Speculative business-driven abatement	Where mitigation expenditure proposals are highly speculative and have uncertainty associated with their deliverability, such as projects at a research and development stage, then we consider that mitigation expenditure is unlikely to be able to be assessed as prudent and efficient.[167]
'Best-practice' business-driven abatement	Where business-driven abatement is not a legal requirement or customer endorsed but is considered 'best practice', we consider that mitigation expenditure can be demonstrated to be prudent and efficient. But in such

[166] Urban Utilities, sub. 9, p. 3.
[167] Subject to prevailing operational and abatement practices, such highly speculative practices may become more or less acceptable over time.

Consideration	Scrutiny in assessment of prudency and efficiency
	circumstances, we are likely to require a robust justification for the expenditure.
Customer-endorsed abatement	Where a regulated business receives customer endorsement of its proposed mitigation expenditure that is additional to the legal requirements, we consider that customer endorsement will act as a compelling justification for establishing prudency. In this instance, our consideration of efficiency would focus on whether there were adverse intergenerational consequences, such as an unjustified cost burden on future customers. This would typically be revealed by an approach such as a cost–benefit analysis.
Legal or policy mandate for abatement	Our simplest assessment of mitigation expenditure would be for mitigation that is legally required. In this instance, prudency of mitigation expenditure is readily established by a legal obligation. We would then seek to confirm that the proposed expenditure is the lowest whole-of-life cost method of achieving the abatement. This is typically done by an approach such as an options analysis.

Some matters we may consider in assessing the prudency and efficiency of a mitigation proposal are whether:

- the choice of mitigation expenditure is consistent with the mitigation strategy
- mitigation is necessary for the facility to retain its social licence to operate
- the mitigation proposal removes, reduces or counterbalances the regulated business's emissions
- the means of mitigation are demonstrated to be efficacious to their purpose in achieving necessary abatement
- the mitigation proposal is transparent and accountable
- the proposed option is likely to represent efficient cost over the whole-of-life of the activities
- broader issues of sustainability or social and governance obligations have been considered, where relevant[168]
- the proposal delivers a net social benefit[169]
- the proposal is aligned to current 'best practice' (see Box 7).

[168] International Organization for Standardization (ISO), *IWA 42:2022(en) Net zero guidelines*, accessed 10 March 2023.

[169] Net social benefit is when a proposed expenditure is expected to generate benefits that exceed its costs. These benefits and costs can be financial (the cost of purchasing solar panels) or non-financial (the benefit of reduced emissions) in nature. Both benefits and costs are quantified, if possible, for the life of the expenditure in question and are compared on a net present value basis.

Box 7: What is best practice?

Best practice refers to the most effective practices adopted by similar businesses. We encourage businesses to conduct their own assessment of best practice, rather than rely on a detailed QCA definition. We are open to submissions on best practice, which undoubtedly changes with advancements in technology and policy. At the time of writing (April 2023), we suggest that best practice mitigation should be informed by:

- international standard organisations
- strategies adopted by similar regulated businesses operating in other domestic or international jurisdictions
- Clean Energy Regulator guidance
- strategies adopted by businesses subject to the Safeguard Mechanism.

Scope, standard and cost

While mitigation spending can have different drivers from other spending we assess, we consider our traditional scope, standard and cost approach will in many cases be flexible enough to apply to the specific issues associated with proposed mitigation expenditure.

Scope

As with adaptation expenditure, the scope for mitigation expenditure should align with the need for the expenditure, which should be consistent with a business's mitigation strategy—for example, reflecting a long-term commitment to reducing emissions to align with government targets, or enhanced targets that meet particular community expectations, funding considerations, stakeholder requests or to reflect broader community expectations. We would also have regard to what similar businesses are doing in workably competitive environments.

Standard

Where we are required to assess the standard of proposed expenditure, we will consider current best practices and the extent to which these align with national and international mitigation standards. An example of current business practice is the mitigation hierarchy mentioned in the 2021 Seqwater report (see section 4.2.3).

Cost

For mitigation, as for adaptation, the cost element of our assessment will focus on efficient cost. Efficient cost will include up-front cost, whole-of-life costs and any identified externalities. So, a direct mitigation proposal that addresses the scope and standard element and has a higher upfront cost than an indirect option can still be seen as prudent and efficient—where it can be reasonably shown to be more efficient over the life of the asset, including addressing relevant externalities.

We will also have regard to the process for deriving the costs of the capital works or operating expenditure—for instance was the preferred supplier engaged following a competitive tendering process?

For any subsequent ex post review of cost, businesses will need to provide clear justification of any divergence between the forecast cost in the business case and the subsequent ex post cost (see section 6.3.1).

8.5 Externalities

As mentioned previously, externalities relate to impacts on third parties that are not party to the transaction of interest (and these impacts are not captured in market prices). In the case of mitigation, externalities relate to the benefits to the community at large from actions to mitigate greenhouse gas emissions, and conversely, the harm from not mitigating.

Externalities are not always considered in transactions between producers and consumers. However, given the growing importance of climate change, they are increasingly thought of as genuine elements to be managed through economic activity. This is particularly the case with scope 3 emissions, which are the emissions created by upstream and downstream users.

The issue of externalities creates a tension that is captured in Pacific National's and the DBCT User Group's submissions. Pacific National said:

> Positive externalities such as those associated with a transfer of freight from road to rail, can be a reasonable justification for government provision or increased government funding of an infrastructure asset.[170]

The DBCT User Group said:

> the benefit of positive externalities does not make expenditure by an infrastructure owner reasonable or prudent and should not be taken into account in the approach to economic regulation.[171]

Where businesses and users seek to reduce scope 3 emissions, they are addressing an externality, and this may have broader, intangible benefits for businesses and users—for example reputational impacts. On the other hand, users may pressure businesses to reduce their scope 1 and 2 emissions faster than they otherwise would, as this means they can demonstrate that they are reducing their own scope 3 emissions. It is open for us to have regard to a project's impact on externalities when assessing the appropriateness of mitigation expenditure, as part of a well-justified proposal for such expenditure. Among other factors, a relevant consideration for us is whether the expenditure is in the public interest (see Chapter 3).

Sustainability planning and community expectations

While the externalities associated with climate change are relevant to considering the public interest, they can also be directly relevant to businesses and their customers—for example, where regulated businesses undertake sustainability planning. This occurs where businesses, either through regulation or through good business practice, report on broader environmental, social and governance issues associated with their business operations. As Seqwater noted in its submission:

> in recent years there has been an increase in corporate regulatory obligations targeting large corporations … This increased regulation is targeted at addressing sustainability, including environmental, social, and governance (ESG) issues throughout corporate Australia and is being led by a Government response to greater public and governmental awareness of ESG benefits, increased scrutiny of corporate action, and calls for greater corporate accountability.[172]

In any review of how regulated businesses manage community expectations in their planning, we will have regard to current 'best practice'.

[170] Pacific National, sub. 6, p. 8.
[171] DBCT User Group, sub. 3, p. 10.
[172] Seqwater, sub. 11, p. 13.

8.6 Offset use

There is commentary about both the appropriateness of offsets as a form of abatement and appropriate use of offsets—whether their use is in the manner in which they were intended.[173] An offset does not stop a business's emissions; rather, it counterbalances them (see section 2.3, Box 2). Offsets play a role in contributing to overall mitigation in emissions—but were not intended to be the sole form of mitigation action.[174]

The International Organization for Standardization's net zero guidelines (IWA 42:2022(en)) provide a comprehensive set of principles and standards for company plans for meeting net zero. It states the principles for offsets:

> 9.1.1 … Offsets should only be used when there are no alternatives available. The organization should invest early in high-quality, long-term removals if it anticipates a need to rely on these to achieve net zero by its target date
>
> 9.2.1 … The organization should use the full potential of all mitigation actions and not rely on use of a single action (e.g. removal, credits or investments in offsets) as a reason to underuse other actions
>
> 10. 1 … If the organization offsets emissions, only those counterbalancing residual emissions[175] should count towards its net zero target. The organization should not use offsets towards achievement of interim targets
>
> 13.2.2 … The organization should publish its criteria and processes to ensure that actions taken to counterbalance residual emissions, including offsets and credits, are of high quality and verifiable.[176]

In this context, DBI noted:

> that, in general, the QCA's approach should prioritise, where possible, direct mitigation options for circumstances where the costs, benefits and risks of these options can be evaluated easily by the regulated entity, and where the regulated entity largely controls the outcomes of such options. The QCA should also consider carbon offsets as an alternative option for mitigating emissions that are more difficult to abate, where the marginal price of carbon offsets reflects the efficient costs of meeting the net zero policy commitments.[177]

Overall, we are open to offsets, including tradeable offsets, as a mitigation strategy (or part thereof), where this reflects a value for money approach to achieving the desired mitigation in an efficient manner and at efficient cost. In doing so, we would expect that the business has demonstrated that choosing offsets is efficacious; that is, it is able to effectively achieve the desired mitigation outcome. So, if regulated businesses propose to pursue offsets, they need to be able to demonstrate why other alternatives would be more expensive or otherwise less effective in achieving desired abatement outcomes. The business will also need to demonstrate

[173] See Climate Change Authority, *Review of International Offsets*, August 2022, pp. 1–4.
[174] United Nations, 'Article 6.4: Mechanism', *Paris Agreement*, accessed 16 March 2023.
Businesses subject to the Safeguard Mechanism will be required to publicly justify their use of offsets to the Clean Energy Regulator if they use 30 percent or more offsets to meet their baseline. The likely intention of this is to incentivise greater use of direct abatement technology. Refer to Clayton Utz, *Last minute Safeguard Mechanism Reforms introduce new obligations*, 3 April 2023, Clayton Utz website, accessed 5 April 2023.
[175] Counterbalancing specific emissions has the effect of making the business more accountable for its emissions, including its types of emissions. An alternative would be for the business to purchase offsets in an ad hoc manner and not review whether specific emissions can be easily abated through direct action.
[176] ISO, *IWA 42:2022(en) Net zero guidelines*, Online Browsing Platform, accessed 10 March 2023.
[177] DBI, sub. 4, p. 20.

that the decision to use offsets is consistent with its mitigation strategy and any option hierarchy it may contain (see section 4.2.3 regarding the 2021 Seqwater investigation).

Consultation question 5

How can the assessment approach facilitate prudent and efficient mitigation expenditure that provides value for money and meets the community's supported environmental goals?

9 GUIDELINE FOR CLIMATE-RELATED EXPENDITURE PROPOSALS

Several stakeholders said a guideline on how we would approach future decisions on climate-related spending would be useful.[178]

This draft position paper already contains a significant amount of material that regulated businesses might consider as part of preparing a climate-related expenditure submission.

Moreover, the matters we are likely to consider when assessing climate change related expenditure proposals are broadly aligned with the matters we would consider when assessing other types of expenditure proposals. This reflects our view that our legislative obligations and existing regulatory frameworks are sufficiently broad to accommodate consideration of climate-related proposals.

That said, we accept that a guideline that specifically signals how we may consider climate-related expenditure proposals may assist stakeholders. Climate change expenditure may have some characteristics that other types of expenditure may not, for instance:

- adaptation expenditure may occur in an environment of increasing climate uncertainty; it may also occur where the standard of some infrastructure may need to accommodate an additional degree of robustness
- mitigation expenditure may occur in an environment of evolving government requirements and may require consideration of direct mitigation and offsets; and the impacts of such expenditure may extend beyond the regulated business and its customers.[179]

We envisage that a guideline could include a series of matters that a regulated business may wish to have regard to, as outlined in this draft position paper, across aspects of the QCA Act, including Part 3 and Part 5.

For example, a guideline could provide further detail on:

- how a business can demonstrate the alignment of its expenditure proposal with the specific aspects of its long-term strategy, such as any asset master plans or climate strategy plans
- the requirements for a properly supported submission and business case and a step-by-step explanation of how such material can be compiled
- the nature of our role ex ante (with the focus on the business case and the consistency of the expenditure with a long-term strategy) and ex post (with the focus on the cost outcome or the process by which the cost outcome was realised, such as the nature of the tendering process)
- how we may consider a proposal where it has differing degrees of support among customers or has potential impacts beyond the business and its customers/potential customers
- how we will view mandatory mitigation requirements compared to voluntary mitigation activities

[178] GAWB, sub. 5, p. 8; DBI, sub. 4, appendix 1, p. 25; DBI, sub. 4, p. 3.
[179] For instance, expenditure that reduces greenhouse gas emissions therefore reduces a negative externality imposed on the broader community.

- our expectations regarding stakeholder consultations, including the timing of consultations and the nature of the information provided as part of any consultations
- how we view government-endorsed offsets, compared to other offsets.

Any guideline we may prepare is not intended to be a compliance hurdle for submitters seeking approval for climate-related expenditure. Nor is it intended to constrain how any business prepares its submission. As such, a guideline would not seek to be prescriptive or exclusively identify the matters that a business ought to have regard to when making a submission seeking approval of climate-related expenditure. Ultimately, the nature and content of any submission are matters for the submitter in making a sound case for its expenditure proposal.

Rather, we envisage that a guideline would be indicative of the matters that we may consider as part of forming a view on whether the climate-related expenditure ought to be accepted as prudent and efficient. These matters are likely to reflect many of the considerations that a well-managed, efficient business operating in a competitive environment is likely to have regard to when forming a view on whether to undertake such expenditure. We would expect to update the guideline periodically on the basis of regulatory and other policy developments, as well our own experience in addressing the issues under the QCA Act.

We are considering publishing a draft guideline document with the final position paper. If published, we intend that it would cover both adaptation and mitigation expenditure, and potentially include indicative submission templates. The guideline would not be binding on us, and we would reserve the right to review the guideline where necessary.[180]

Consultation question 6

Should we produce a guideline that indicates how we will consider climate change related expenditures?

If yes, what matters should it contain, other than the matters outlined in Chapter 9?

[180] The process for producing the guideline may be similar in some respects to the process for the DBCT arbitration guideline that was produced during the last DBCT undertaking process and finalised late in 2021.

10 INSURANCE AND RISK MANAGEMENT

Businesses can manage the financial risk of unexpected future events through a variety of mechanisms that mitigate or transfer risks to other parties who are better able to manage them. These measures, used by regulated asset owners and/or their customers, include:

- commercial insurance (see section 10.2)
- consequential loss and business interruption (section 10.3)
- alternative insurance arrangements, including pass-through and review events (section 10.4)
- self-insurance allowances (section 10.5)
- assessing insurance and risk approaches (section 10.6).

10.1 Introduction

The changing climate is increasing both the frequency and intensity of catastrophic events. As a result, infrastructure is more likely to be damaged, and damaged more severely; therefore, risk management is more complicated and more important. This makes insurance more desirable in some respects, but at the same time it is becoming increasingly difficult or expensive to secure.

We do not have a single regulatory approach to assessing insurance and risk management—the appropriate way to efficiently manage risks will depend on the circumstances. However, as a general principle, we consider risks should be managed efficiently—and appropriately allocated between the regulated business, its customers and (potentially) third parties. Where the business bears these risks, it should be appropriately compensated for the efficient costs of doing so.

We approve efficient insurance expenditure and efficient costs of alternatives to commercial insurance for managing risk. But given the differences in the individual businesses we regulate and their circumstances, the efficient strategies will vary across firms. For example, the regulated rail businesses (Aurizon Network and Queensland Rail) have different risk management regimes to those of the water businesses whose prices we monitor, or to those of DBI.

As with many judgements about risk, a key factor will be the views of stakeholders. Their preferences about trade-offs between insurance premiums and deductible amounts, and between commercial insurance and alternative mechanisms such as pass-throughs, are important considerations for regulated businesses. There is also a related question of whether it is better to reduce the expected amount of damage—and therefore reduce the expected consequences of catastrophic events—through adaptation (see Chapter 7). As the AER said in its draft decision on pass-through mechanisms for Transgrid:

> While a prudent service provider could take steps to reduce the likelihood and cost impacts of these events, and could insure or self-insure against them, expenditure beyond a certain level aimed at completely eliminating the risk is likely to be imprudent or inefficient. In such circumstances we consider a sharing of risk between the TNSP [transmission network service provider] and its customers is appropriate and more likely to be in the long term interest of consumers with respect to price.[181]

[181] AER, *Transgrid transmission determination 2018 to 2023, Attachment 13—Pass through events*, draft decision, September 2017, pp. 13-11 to 13-12.

One of the key elements of any insurance regime is the allocation of risk. We have long held to the principle that a risk should be borne by the party best able to manage it. We also consider that customers should not necessarily bear the full cost of insurance for risks that can be controlled by the regulated party, as that blunts the incentive to manage those risks efficiently. That said, we note that in some cases, it will be appropriate for a business to insure, at least partially, against both controllable and uncontrollable risks. In assessing insurance and risk management proposals, we will have regard to, among other things, how risks would be managed and allocated by an efficient business in a workably competitive environment, whether the actions of the regulated business are aligned with its broader approach to managing risk, and the views of customers.

10.2 Commercial insurance

Commercial insurers cover a wide range of risks, including many whose incidence and severity are affected by climate change. Stakeholders say that the cost of insurance for natural catastrophes has been increasing.[182] And for businesses with a link to coal, insurance is getting particularly hard to obtain. Many insurers are no longer underwriting the coal industry and related businesses or are planning to stop soon.[183]

Even before these constraints, some of the assets owned by businesses that we regulate were uninsurable at anything but a prohibitive cost. This has resulted in businesses finding alternatives. For example, Aurizon Network has long chosen not to insure its rail network for weather damage (natural catastrophes).[184] Urban Utilities said it was reacting to tightening insurance markets by spending on resilience (adaptation).[185] But virtually all businesses will have some sort of insurance. For example, the providers of many debt instruments require that a business take out certain insurances.

Businesses are coping with higher premiums by accepting larger deductibles—or in other words, taking on more of the risk themselves. For many regulated businesses, they are either compensated for the risk through self-insurance allowances, or the risk is transferred to their customers through pass-through mechanisms.

10.3 Consequential loss and business interruption

Even the best-prepared business can face a catastrophic event that stretches its resources to the limit. Adaptation can help minimise the impact of climate-related incidents. And insurance can cover the repair costs, up to a point. But some events—the loss of a major bridge, or a prolonged drought that empties a crucial dam—may create long-term disruption to operations, with downstream economic consequences (see Box 8).

[182] GAWB, sub. 5, p. 4; Pacific National, sub. 6, p. 3; Urban Utilities, sub. 9, pp. 5–6; Aurizon Network, sub. 1, pp. 5–7.
[183] DBI, sub. 4, appendix 2 (Frontier), pp. 13–14; Aurizon Network, sub. 2 (Frontier), pp. 15–16; Aurizon Network, sub. 1, p. 5; DBI, sub. 4, p. 22; QRC, sub. 7, p. 2.
[184] Aurizon Network, sub. 1, pp. 6–7.
[185] Urban Utilities, sub. 9, p. 5.

Box 8: Case study—Sydney Desalination Plant tornado

The repair of the Sydney Desalination Plant after a tornado tore the roof off a key building highlights some of the challenges for determining an appropriate insurance approach.

The $2 billion water treatment plant south of Sydney Airport was hit by the freak storm in December 2015, and was not ready to resume production until three years later.

The impact was reduced because reservoirs had ample water and the plant was idle when the tornado hit, and it was not needed during the repair period. But neither was it available as required under its contract with its customer, Sydney Water.

Sydney Desalination has suggested substantial changes to its insurance regime in its pricing proposal for the period starting 1 July 2023. In particular, it said it would reduce the cost of business interruption insurance by cutting the force majeure coverage for its fixed service charge from 100 per cent to 2.5 per cent.

Customers would then be liable to pay for 97.5 per cent of Sydney Desalination's service charge if there is a force majeure event. This would be a significant change from the existing insurance, where the fixed service charge is fully covered, and customers have no liability if a force majeure event means the service cannot be delivered.[186]

Sydney Desalination said the change in business interruption coverage would save $8 million (real 2022–23 dollars) over its four-year regulatory period.[187]

Sydney Water, the sole buyer of water from Sydney Desalination's plant, opposed the changed insurance approach, saying it was contrary to the long-term interests of its customers. It said assuming force majeure liability would shift a 'significant proportion of risk' to its customers, which they should not be required to accept.[188]

The Sydney Desalination proposal is still under review, but it illustrates the potential and substantial changes in the allocation of risk arising from changes in insurance markets.

[186] IPART, *Review of prices for Sydney Desalination Plant Pty Ltd from 1 July 2023,* issues paper, November 2022, pp. 16–17.

During a long interruption to service, both a regulated business and its customers are likely to suffer a substantial, or complete, loss of revenue, further hampering efforts to cope and recover. And claims for business interruption may not make sense if they are subject to a mechanism to pass the cost through to the very customers who are making the claim against the regulated business. Still, the customers may need to progress such claims to gain access to their own insurance.

Different regulated businesses have different ways of coping with such events. Aurizon Network, for example, is shielded through its regulatory and contractual regime from many claims for consequential loss.[189]

Depending on the circumstances, business interruption insurance may be the prudent and efficient approach to catastrophic damage. For other regulated businesses, it may make sense to have a mechanism such as pass-through for sharing losses from a prolonged shutdown. Or, as discussed in section 7.2, the best approach may be to reinforce the infrastructure, or build in redundancy, to make disruptions to the service less likely.

10.4 Pass-through arrangements

For climate-related events (mostly flooding) where the damage is significant, pass-through arrangements are already a key mechanism for covering a regulated business's costs for repairing damage, where commercial insurance is too expensive. Pass-through arrangements can be particularly appropriate for costs that are beyond the business's control. These arrangements avoid some of the potential adverse incentive effects.

Stakeholders generally said they favoured or supported pass-through arrangements.[190] Several said that, for climate change related expenditure, clear guidelines on how we would assess any claims or disputes would be useful.[191] Some regulated businesses emphasised that they were concerned about optimisation risk from an ex post assessment of climate-related investment.[192]

While adaptation expenditure can reduce, or sometimes prevent, the damage from a weather-related event, it cannot eliminate all damage to infrastructure. This is where underwriting by customers becomes relevant. The resulting pass-through of repair costs is governed by 'review event' provisions in the Aurizon Network and Queensland Rail undertakings. Similar approaches apply to varying degrees, formally or informally, for other regulated or monitored businesses.

As climate-related events become more prevalent, robust pass-through arrangements such as review events are likely to become more important.

The efficient approach to restoring infrastructure after major damage can depend very much on the effect on customers. The losses to customers in missed exports or production can be orders of magnitude higher than the cost to the regulated business of making repairs.[193] As GAWB said

[187] Sydney Desalination Plant, pricing submission to IPART, *Prices from 1 July 2023 to 30 June 2027*, September 2022, pp. 157–58.
[188] Sydney Water, submission to IPART, *Review of prices for Sydney Desalination Plant Ltd from 1 July 2023*, issues paper, 31 January 2023, pp. 23–24.
[189] See *Aurizon Network's 2017 standard access agreement*, cl. 25.1.
[190] QRC, sub. 7, pp. 2–3, 5.
[191] DBI, sub. 4, appendix 2 (Frontier), pp. 25–31; Urban Utilities, sub. 9, p. 15; Pacific National, sub. 6, p. 9.
[192] Aurizon Network, sub. 1, pp. 8–10; DBI, sub. 4, p. 25; Urban Utilities, sub. 9, pp. 11–12.
[193] As discussed in section 6.2, Aurizon Network said it spent $16.9 million restoring services after cyclone Debbie in 2017. The indirect costs to customers in lost exports were more than $1.5 billion.

in its submission, sometimes it is better to pay more and restore services quickly, given the supply chain consequences of lack of availability of the service:

> Further, in terms of (necessarily reactive) operating expenditure associated with actions such as emergency response, the priority is restoring services as quickly and effectively as possible, at a time where the business may be competing for scarce resources. This may necessitate a flexible procurement framework where the key trade-off is cost.[194]

Given such review events are already weather-related in most cases, we consider that the existing approach of having a technical consultant review the efficiency of the expenditure will generally continue to be appropriate.

Repairs and revenue timing

Aurizon Network said its weather-related claims (review events) to date have been for relatively low-cost repair bills, and the two-year lag between incurring the cost and recovering it had not been a significant burden.[195] However, it was concerned that in the future, repair costs could be much higher and incurred more often, so the effect of the lag between expenditure and recovery could be material. Aurizon Network (through its consultant Frontier Economics) raised the possibility of 'pre-payment' of flood recovery costs through a levy, and ring-fenced fund. Aurizon Network said any such arrangement would need to be negotiated with customers, rather than 'imposed' in any sense.[196] We would consider any such agreed proposal on its merits at the time. However, there is potential for the contributors to such a fund and the beneficiaries to be quite different, given Aurizon Network's wide service area, which is dispersed across five rail systems in central Queensland.

Under the building blocks model used to assess pricing for the businesses we regulate, cashflows are adjusted so that their timing is revenue neutral, in a present value sense. This means that the cashflow effect of the lag in recovery of large repair outlays would only be an issue if it threatened the financial viability of the regulated business. If that were to happen, there are various mechanisms, including draft amending access undertakings, that can be used to avert a crisis for the regulated business. These may provide less certainty than the sort of upfront fund suggested by Aurizon Network. But such ex post mechanisms also avoid the problems of managing a ring-fenced fund, and allow for a solution that reflects the particular circumstances at the time.

10.5 Self-insurance

Self-insurance allowances are included in a regulated business's cashflows to reflect the expected costs of future events not covered by commercial insurance. Self-insurance can mean different things to different parties. It sometimes refers to deductibles on commercial policies. For businesses we regulate, the typical practice has been to use self-insurance allowances for small deductibles (e.g. floods under $1 million for Aurizon Network), and pass-through arrangements for larger deductibles or uninsured amounts (see section 10.4).

Self-insurance can give incentives for efficient investment in and operation of assets—the regulated business is exposed to costs that exceed its approved allowance but gets to keep the difference where the costs are lower than its self-insured amount. Ideally, this will drive the business to maintain and operate its assets to minimise the number and severity of climate-

[194] GAWB, sub. 5, p. 6.
[195] Aurizon Network, sub. 2 (Frontier), pp. 24, 27.
[196] Aurizon Network, sub. 1, p. 33.

related incidents. But it might also lead to overinvestment, in cases where a lower level of resilience and higher reliance on insurance and repair would be more efficient.

Some stakeholders said they did not support self-insurance, as it was not transparent and raised risks of double-counting. They preferred pass-through mechanisms in cases where third-party insurance could not be secured at a reasonable cost.[197] The QRC said:

> there is a risk that self-insurance by regulated entities is used to boost profits above regulated rates, while doing little to address the risks faced by customers.[198]

We have approved self-insurance allowances that are prudent and efficient. And, given there is no evidence of the sort of abuse suggested by the QRC, we will continue to approve such allowances where appropriate. However, the self-insurance we have approved to date has been for relatively small amounts and has in some cases been more a mechanism for estimating future maintenance costs (e.g. for derailments on Aurizon Network's tracks) than a 'true' self-insurance allowance.

If self-insurance were to play a significant role in addressing climate-related risk and expenditure issues, the amounts involved would likely be substantially larger, with the potential for the cost of self-insured events to be material compared to the balance sheet of a regulated business. In such cases, it might be appropriate for the regulated businesses to implement more formal insurance processes such as reserve funds as part of its self-insurance arrangements.

Any major self-insurance scheme might have significant administration costs, for evaluating the level of risk, assessing the level of provisioning, and managing any claims on the self-insurance. It may also raise issues of transparency and oversight. It might be best that such self-insurance be implemented only as an agreed outcome negotiated between a regulated business and its customers, after considering alternatives such as commercial insurance. If large-scale self-insurance was implemented, there could be challenges in determining if a reserve fund was efficient, and in taking into account the impacts on other stakeholders beyond a regulated business and its customers.

10.6 Determining the appropriate way to manage climate change related risk

Ultimately, the appropriate way for a regulated business to manage risks will depend on the circumstances and there is no 'one size fits all' approach. That said, we would expect that the business manages and allocates risk in a manner that is prudent and efficient—no different from a business in a workably competitive market. In assessing a risk or insurance proposal, we may have regard to:

- the views of users, as they will bear much of the costs of being unable to access the services provided by a facility
- the availability and cost of insurance for all or some of the facility and, if only part of the facility is insured, whether the level of cover was appropriate
- the consequence for upstream and downstream markets of a facility being out of service after catastrophic damage
- the extent to which the risks are controllable or uncontrollable
- whether the business can mitigate the cost impact of the risks

[197] QRC, sub. 7, pp. 2–3, 5.
[198] QRC, sub. 7, p. 3.

- the transparency, or lack thereof, surrounding any choice to self-insure
- the ability to clearly define the event, and the loss, to enable recovery of efficient costs if pass-through is adopted
- the approaches similar businesses have adopted to managing the risks of similar events.[199]

We would expect that any proposal to manage risk be justified and evaluated, having regard to alternatives. In particular, for essential infrastructure, adaptation to prevent or minimise catastrophic damage may be a better form of insurance.

Consultation question 7

How can the regulatory regime promote efficient climate risk approaches, including insurance and pass-through mechanisms, that balance the interests of regulated businesses and their customers?

[199] See also AER, *Guidance note on insurance coverage pass through events*, final guidance note, July 2021.

11 OTHER MATTERS

Our discussion paper on the approach to climate change related expenditure said that we were not seeking submissions on the appropriate quantum or design of rates of return or depreciation profiles, as we considered these matters can be accommodated within the existing regulatory frameworks.[200] Instead, the discussion paper indicated that the review was primarily focused on climate change related adaptation and mitigation expenditures.[201]

Nonetheless, the paper noted that we were aware some stakeholders may consider there to be relevant linkages to some other matters that are also related to our regulatory roles (such as consideration of financing costs and asset stranding risks).[202] Stakeholders' views on these matters are discussed below.

11.1 Background

Our discussion paper noted that the other matters we were referring to might, for example, include financing impacts and other risks to infrastructure assets.

11.1.1 Financing impacts

Lenders, investors and insurers are all placing increasing emphasis on climate change risks and mitigation activities. Potential considerations may include:

- Any impacts of climate change on the ability of firms to raise equity and debt. We said the experience of listed, regulated businesses, such as the recently floated DBI and Aurizon Network's parent company, may be relevant to the former (i.e. raising equity). The extent to which some firms may have to pay a premium for debt finance or put more resources and effort into raising debt in potentially shallower markets may be relevant to the latter. With regard to raising debt finance, we noted that it is also possible that environmental obligations tied to financing activities may increase costs in the short term but lead to broader benefits in the longer term as firms become better able to meet lenders' requirements.
- For coal-industry-exposed regulated businesses, we asked about the amount of differentiation in financial markets between coal producers and other businesses in the coal supply chain—that is, the extent to which participants in these markets view coal miners and coal-related infrastructure businesses similarly, or the extent to which they take a more nuanced view of the underlying cash flow and risk drivers of these businesses.
- We also pointed to the potential linkages between financing matters and the adaptation and mitigation activities described in the discussion paper. For example, we asked whether increased adaptation expenditure to increase the resilience of infrastructure assets reduces the perceived risk levels associated with financing regulated businesses. And equally, whether shareholder or lender pressure to reduce emissions means that capital may not be available unless businesses meet certain minimum mitigation expectations.

[200] QCA, *Approach to climate change related expenditure*, discussion paper, October 2022, p. 28.
[201] QCA, *Approach to climate change related expenditure*, discussion paper, October 2022, p. 27.
[202] QCA, *Approach to climate change related expenditure*, discussion paper, October 2022, p. 27.

11.1.2 Other risks to infrastructure assets

Such risks may include, for example, asset stranding risks. We suggested this may be most relevant to the regulated businesses that have coal industry exposed infrastructure assets, but also noted the following:

- The long-term outlook for Queensland metallurgical coal remains strong. We said that Resource Management International (RMI) recently concluded that the Bowen Basin, and in particular the Goonyella rail system corridor[203], is in a very strong competitive position to maintain a dominant metallurgical coal market share in the medium to long term.[204] And similarly, a recent Queensland Treasury analysis found it likely that international demand will support Queensland's coal exports over the coming two decades, with the long-term prospects for the state's metallurgical coal likely to be more robust than for thermal coal.[205]
- The long-term outlook for Queensland thermal coal may be more problematic. We pointed to our final decision on Queensland Rail's 2020 draft access undertaking, where we specifically noted that Queensland Rail's West Moreton line coal customers (who produce thermal coal) are likely to be vulnerable to sustained economic shocks.[206] But we also observed that in 2022, prices for Queensland thermal coal achieved all-time record levels in real terms.[207]
- While asset stranding risk may at some stage become a significant issue for one or more businesses that we regulate, in general, we thought that existing regulatory processes are effectively set up to deal with such an issue—for example, through making adjustments to depreciation profiles. However, we added that one matter that stakeholders may wish to consider is whether our regulatory frameworks' procedural mechanisms are sufficiently flexible to deal with sudden economic shocks.[208]

11.2 Stakeholders' views

Two stakeholders (Aurizon Network and DBI) commented in detail on issues related to the 'other matters' described in our discussion paper. Both supported their comments with material in consultant reports provided by Frontier Economics.

Aurizon Network (and Frontier) raised issues relating to 'transitional risks'. Aurizon Network described the key climate change transitional risk relevant to its central Queensland coal network as being 'the uncertainty of long-term demand arising from changes in policy and technology'.[209] It argued that changes in medium- and long-term demand uncertainty arising from transitional risks require us to consider how the regulatory framework should address these risks before they

[203] The Goonyella rail system corridor, leased and operated by Aurizon Network, is used to haul coal to DBCT and Hay Point Coal Terminal at the Port of Hay Point.
[204] RMI, *DBCT 2019 DAU: Review of the Economic Life of DBCT Assets*, report prepared for the QCA, February 2021, p. 4.
[205] Queensland Treasury, *A Study of Long-Term Global Coal Demand,* September 2020, p. 3.
[206] QCA, *Queensland Rail draft access undertaking*, decision, February 2020, p. 38.
[207] See discussion in Department of Industry, Science and Resources, *Resources and Energy Quarterly*, December 2022, pp. 65–67.
[208] QCA, *Approach to climate change related expenditure,* discussion paper, October 2022, pp. 27–28.
[209] Aurizon Network, sub. 1, p. 8.

are realised. It said transitional risks can affect medium- and long-term demand risks in the following ways:

- demand for coal (i.e. the output of Aurizon Network's customers—the challenges facing thermal coal are greater than those facing metallurgical coal)
- the ability of miners to attract capital (for development of new mines or mine expansions)
- the costs of obtaining finance
- changes in counterparty credit risks.[210]

Aurizon Network concluded that our climate change review should provide appropriate guidance to climate-exposed businesses and their customers on how transitional risks will be assessed by us in subsequent regulatory reviews.[211]

Aurizon Network also commented on current issues associated with access to finance for fossil-fuel-exposed businesses, noting that an increasing number of financial institutions are withdrawing capital or reducing their exposure to those sectors. It said this has implications for the counterparty credit risks of its customers, an issue that is not identified or addressed in the discussion paper, and which it says the regulatory framework will need to respond to appropriately in a timely manner.[212]

Frontier (on behalf of Aurizon Network) provided evidence of what it called the 'coal effect' and said this effect impacts borrowing rates, supply of debt finance and credit ratings for coal-exposed businesses. It said we should be open to the possibility that this 'coal effect' might have an impact on regulatory parameters such as the benchmark credit rating, benchmark gearing and allowed cost of debt. It suggested that we should be open to regulated businesses providing evidence of the existence and magnitude of any 'coal effect'.[213]

Frontier also proposed that we should set out what information and evidence we would require from regulated businesses on an ex ante basis to demonstrate stranding risk.[214] It suggested that increased stranding risk associated with climate change could then be dealt with via either an uplift to the WACC (the 'fair bet' approach[215]) or accelerated depreciation. Frontier pointed to examples related to accelerated depreciation, where regulators in Western Australia (ERAWA) and New Zealand (the Commerce Commission) have allowed reduced asset lives for gas pipelines to reflect the likelihood that increasing emissions targets will mean pipelines' economic lives are less than their physical asset lives.[216]

In addition, Frontier identified a scenario whereby current customers of Aurizon Network may support more adaptation expenditure to increase the resilience of the network (with the expenditure to go into the regulatory asset base). However, future customers who may be operating in a declining coal market may be unwilling or unable to continue to pay for past adaptation expenditure. This potential stranding risk may disincentivise Aurizon Network from

[210] Aurizon Network, sub. 1, pp. 9–10.
[211] Aurizon Network, sub. 1, p. 11.
[212] Aurizon Network, sub. 1, p. 11–12.
[213] Aurizon Network, sub. 2 (Frontier), p. 20.
[214] Aurizon Network, sub. 2 (Frontier), p. 39.
[215] Frontier described this approach as involving provision of a premium over and above the regulator's estimate of the WACC to reflect the expected value of potential stranding (i.e. the probability of stranding and the value of the regulated business's assets that could be stranded). See the discussion in its report at Aurizon Network, sub. 2 (Frontier), pp. 40–43.
[216] Aurizon Network, sub. 2 (Frontier), pp. 52–54.

investing in resilience expenditure even if the investments are supported by current customers. Frontier said we should set out clearly, as a matter of principle, that:

- our regulatory framework should provide regulated businesses with a realistic opportunity to recover past prudent and efficient expenditure over the long term
- regulatory allowances should be set such that resilience expenditure that is deemed to be prudent and efficient at the time it was made may be recovered over the expected economic life of the assets
- the expected economic life of the assets should be reassessed periodically.[217]

DBI suggested some businesses are facing increasing difficulty in raising capital due to ESG concerns, including issues related to climate change. It added that this difficulty is also being felt by other businesses in vulnerable supply chains (e.g. coal miners). It indicated that financiers make limited distinction between thermal and metallurgical coal at this time.[218]

DBI acknowledged that we were not seeking submissions on the appropriate quantum or design of rates of return but argued that the allowed rate of return is intertwined closely with regulated businesses' incentives to manage climate-related risks. It said that changes we make in relation to the regulatory framework will affect the businesses' ability to access capital. That is, allowing businesses to comply with carbon-neutral legislative policies and improve their ESG profile will enable them to lower their cost of capital by reducing any 'ESG premium' the market applies; conversely, a regulatory framework that gives businesses less incentive to comply with carbon-neutral policies and improve their ESG profiles will likely increase any 'ESG premium'. DBI encouraged us to consider our frameworks in the context of the relationship between addressing climate-related risks and the extent to which the cost of capital is affected by ESG considerations.[219]

Frontier (on behalf of DBI) reiterated the point that coal-exposed businesses are facing increasing difficulty raising capital—noting that a growing number of banks and asset managers around the world, including in Australia, are placing restrictions on their lending and investment activities for fossil fuel projects.[220] It also commented again on asset stranding risk—arguing that we should set out clearly that the expected economic life of regulated assets should be reassessed periodically, using up-to-date information available at the time (and assessments should include consideration of climate-related risks and other relevant criteria).[221]

11.3 QCA preliminary views

In general, we consider that the points raised by Aurizon Network and DBI (and Frontier) do not include novel issues that would suggest changing the basic position expressed in the discussion paper—that is, the 'other matters' can be accommodated within our existing regulatory frameworks.

While acknowledging there may be issues associated with climate change that impact on regulated businesses' ability to raise capital (debt and equity), we consider these potential effects

[217] Aurizon Network, sub. 2 (Frontier), pp. 30–31.
[218] DBI, sub. 4, pp. 9–11.
[219] DBI, sub. 4, p. 18.
[220] DBI, sub. 4, appendix 2 (Frontier), p. 12.
[221] DBI, sub. 4, appendix 2 (Frontier), p. 24.

are able to be appropriately considered as part of a specific application of our well-developed rate of return framework, on a case-by-case basis.

In that regard, we relatively recently completed a comprehensive review of our rate of return methodology. The final report of that review sets out in detail the approaches and methods we take/intend to take in determining regulated rates of return, and their underlying parameters, as part of our regulatory reviews. The review was intended to promote confidence in our methods and provide stakeholders with transparency over our cost of capital approach. The methods identified focus on assessing 'reasonableness'—both of proposals made by regulated businesses and of bottom-up rate of return estimates (via 'top-down' reasonableness checks).[222]

Importantly, we stressed that the estimates of individual parameters identified in the final report should be regarded as indicative and may change over time as financial market conditions change, or if there are relevant developments that warrant further consideration. In other words, the review was not intended to provide a binding methodology for rate of return assessments, but rather to provide our latest consideration of these matters to guide stakeholders. We said that our intention was that in future regulatory reviews that require an assessment of rates of return, we would consider all submissions on their merits.[223]

We consider that the flexibility inherent in the methodological outcomes of our rate of return review means that stakeholders should have confidence that the types of matters raised by Aurizon Network and DBI (and Frontier), in the context of financing costs and climate change, can be appropriately considered in our regulatory reviews. That said, our view is that consideration of such matters is an evidentiary matter—it will involve our assessment of the evidence on its merits. We will be open to considering the 'coal effect' on borrowing costs and credit ratings, for example, based on an assessment of evidence within the context of the existing methodological framework for determining rates of return.

We continue to hold the view that, while asset stranding risk is a potential issue for one or more of the businesses we regulate (particularly the coal industry exposed businesses), existing regulatory processes are effectively set up to deal with these issues—for example, through making adjustments to regulatory depreciation profiles.

We note the points made by Frontier (on behalf of both Aurizon Network and DBI) relating to the need for our regulatory frameworks to allow a realistic opportunity to recover prudent investments over the long term (including resilience related expenditure) and for the expected economic life of regulated assets to be reassessed periodically. Our view is that our existing processes for reviewing, and from time to time amending, depreciation profiles (and regulatory asset lives) for regulated assets should already provide sufficient assurance to regulated businesses that these matters can be flexibly considered. For example:

- As part of the last two reviews of the DBCT access undertaking (i.e. consideration of the 2019 and 2015 draft access undertakings), we undertook detailed reassessments of the economic life of the terminal's assets—including commissioning consultants' reports and specifically considering asset stranding risk. While these reassessments did not result in changes to the depreciation profile for the DBCT assets, we would expect that further

[222] QCA, *Rate of return review*, final report, November 2021, p. iii.
[223] QCA, *Rate of return review*, final report, November 2021, p. iii.

reassessments would occur as part of future considerations of draft access undertakings applying to the DBCT service.[224]

- We have periodically reassessed the depreciation profile applying to Aurizon Network's assets, as part of our consideration of various draft access undertakings over multiple regulatory periods. For assets included in the regulatory asset base as at the approval of the 2006 undertaking, straight-line depreciation is applied using asset lives (truncated to a maximum life of 50 years). But since the approval of the 2010 undertaking, an accelerated depreciation profile is applied to new assets, using a rolling 20-year life.[225] We have previously noted that this change provides acknowledgement of asset stranding risk, as it has the effect of bringing forward the return of capital for new long-lived assets.[226]

Consultation question 8

Are our existing processes for considering financing costs and asset stranding risk sufficiently developed and flexible to deal effectively with any such matters related to climate change?

[224] See QCA, *DBCT 2019 draft access undertaking*, final decision, March 2021, pp. 163–182; and QCA, *DBCT Management's 2015 draft access undertaking*, final decision, November 2016, pp. 124–137.
[225] See QCA, *Aurizon Network's 2017 draft access undertaking*, decision, December 2018, p. 53.
[226] QCA, *Aurizon Network's 2017 draft access undertaking*, decision, December 2018, p. 54.

GLOSSARY

ACCC	Australian Competition and Consumer Commission
ACCU	Australian carbon credit units
AER	Australian Energy Regulator
ASIC	Australian Securities and Investment Commission
ASX	Australian Stock Exchange
BITRE	Bureau of Infrastructure and Transport Research Economics
BOM	Bureau of Meteorology
CER	Clean Energy Regulator
CPUC	California Public Utilities Commission
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAAU	draft amending access undertaking
DBCT	Dalrymple Bay Coal Terminal
DBI	Dalrymple Bay Infrastructure
ERAWA	Economic Regulation Authority (Western Australia)
ESC	Essential Services Commission (Victoria)
ESCOSA	Essential Services Commission (South Australia)
ESG	environmental, social, governance
FPSC	Florida Public Service Commission
GAWB	Gladstone Area Water Board
ICRC	Independent Competition and Regulatory Commission (Australian Capital Territory)
IPART	Independent Pricing and Regulatory Tribunal (New South Wales)
IPCC	Intergovernmental Panel on Climate Change
MPUC	Minnesota Public Utilities Commission
NECAP	non-expansion capital expenditure
NYPSC	New York Public Service Commission
Ofgem	Office of Gas and Electricity Markets (United Kingdom)

Ofwat	Water Services Regulation Authority (United Kingdom)
ORR	Office of Rail and Road (United Kingdom)
OTTER	Office of the Tasmanian Regulator
ppm	parts per million
PUC	Public Utilities Commission
RAB	regulatory asset base
QCA	Queensland Competition Authority
QCA Act	*Queensland Competition Authority Act 1997*
QRC	Queensland Resources Council
WACC	weighted average cost of capital

APPENDIX A: LIST OF SUBMISSIONS

We received the following submissions after we published a discussion paper in October 2022. The submissions are available on our website.[227]

Stakeholder	Submission number	Submission	Date
Aurizon Network	1	Submission on the QCA discussion paper	16 December 2022
	2	Consultant's report (Frontier Economics, *Climate change related expenditure and frameworks*, report for Aurizon Network, December 2022)	16 December 2022
Dalrymple Bay Coal Terminal (DBCT) User Group	3	Submission on the QCA discussion paper	16 December 2022
Dalrymple Bay Infrastructure (DBI)	4	Submission on the QCA discussion paper, including a consultant's report (Frontier Economics, *Climate-related risks and regulated infrastructure*, report for Dalrymple Bay Infrastructure, December 2022)	16 December 2022
Gladstone Area Water Board (GAWB)	5	Submission on the QCA discussion paper	16 December 2022
Pacific National	6	Submission on the QCA discussion paper	16 December 2022
Queensland Health	10	Submission on the QCA discussion paper	19 December 2022
Queensland Resources Council (QRC)	7	Submission on the QCA discussion paper	16 December 2022
Seqwater	11	Submission on the QCA discussion paper	9 February 2023
Urban Utilities	8	Cover letter	16 December 2022
	9	Submission on the QCA discussion paper	16 December 2022

[227] QCA, *Climate change expenditure review 2022–23*, QCA website, 2023.

APPENDIX B: OTHER JURISDICTIONS

Table 3: Other Australian jurisdictions: some perspectives on climate change expenditure

Regulator	Source document	Climate-change-specific considerations
AER	*Network resilience: A note on key issues* (2022) *Rate of return: Overall rate of return, equity and debt omnibus,* final working paper (2021)	In the context of resilience, investment decisions should be based on maintaining service levels that achieve the greatest net benefit of feasible options considered. While climate risk is becoming a feature of investment decisions, it is not yet clear that overall systemic risk has increased—that is, there is no realisation of asset stranding risk in relation to climate change. Any future asset stranding risks should be dealt with through depreciation mechanisms—not rates of return.
IPART (New South Wales)	*Our statement and framework for tackling climate change* (2021)	Future regulatory reviews will identify whether there is a need to consider climate change risk, mitigation or adaptation. If necessary, it will feature in the terms of reference for future reviews.
ICRC (Australian Capital Territory)	*Regulated water and sewerage services prices 2023–2028*	The regulated business was required to address climate change in its pricing proposal and incorporated specified climate modelling in its submission.
ESCOSA (South Australia)	*SA Water Regulatory Determination 2024: Guidance paper 3—Assessing the regulatory business plan* (2022)	Climate change related expenditure that addresses risk (e.g. adaptation expenditure) can be included in revenue caps. Climate change expenditure that addresses opportunities will need to meet a higher bar.
ESC (Victoria)	*2023 water price review,* guidance paper (2021, amended August 2022)	The business must address climate change through a risk management framework. The business's price/revenue submission must be sufficient to meet its policy obligations under the Victorian Government's Climate Change Strategy.
OTTER (Tasmania)	*Investigation into Taswater's prices and services for the period 1 July 2022 to 30 June 2026*, final report (2022)	The business's climate resilience spending was included in strategic initiative operating expenditure and will be assessed ex post.
ERAWA (Western Australia)	West Australian Government, *Gazette,* 18 September 2020, no 157, Electricity Networks Access Code Amendments (No. 2) 2020.	Reducing greenhouse gas emissions is codified as efficient investment and operating expenditure.

APPENDIX C: QUESTIONS FROM THE DISCUSSION PAPER

The climate action problem

(1) To what extent are the risks of more frequent or severe extreme weather events already impacting the businesses of regulated entities? Please provide evidence where available and appropriate.

(2) Is there evidence to suggest that regulated entities are facing difficulties in accessing insurance for their assets or accessing insurance at reasonable cost? Is self-insurance thereby becoming a more prudent option for these businesses?

(3) Most organisations, including regulated entities, now have detailed climate change strategies and planning documents in place. To what extent are these strategies a response to government policies, and to what extent are they externally driven (e.g. in response to financing requirements or shareholder activism)? Do these external drivers put pressure on businesses to exceed the minimum requirements of government policies?

(4) Are regulated entities being encouraged or pressured by their customers to take further action on climate change? For example, do customers want regulated entities to reduce their scope 2 emissions by using an increasing proportion of renewable energy in their businesses? How do customers value actions taken by regulated entities that might provide for the customers to claim reduced scope 3 emissions in their supply chains?

Effectiveness of existing regulatory frameworks

(5) Do the QCA's existing regulatory frameworks create appropriate incentives for regulated entities to efficiently manage risks associated with climate change? If not, how might the frameworks be improved in this regard?

(6) Are existing mechanisms in the QCA's regulatory frameworks for dealing with newly arising expenditure requirements (e.g. pass-through mechanisms, review events and draft amending access undertaking (DAAU) processes) sufficient to deal with climate change related expenditure? If not, how might these mechanisms need to be amended?

(7) The QCA's standard approach to assessing the prudency and efficiency of capital expenditure claims by regulated entities involves applying frameworks that assess scope, standard and cost. Are these existing frameworks suitable for assessing climate change related expenditures? And do they provide the right incentives for entities to appropriately have regard to climate change considerations—and alternative ways of achieving the desired objectives—when undertaking expenditure? If not, how should they be enhanced?

For example, in considering the prudency of capital expenditure, is there a trade-off between efficiency and least cost, and robustness and resilience? If so, how can these trade-offs be managed?

(8) Are processes in the regulatory frameworks that are designed to provide regulated entities with a degree of certainty to make investment decisions (e.g. provisions that allow for preapproval of the scope of projects or customer vote mechanisms) sufficiently flexible to enable climate change related investments to proceed where appropriate?

Corporate and regulatory insights

(9) How should differences between regulated entities' willingness to supply and customers' willingness to pay for adaptation and/or mitigation expenditure be reconciled? What if the

willingness to pay differs among customers or groups of customers? In considering these matters, how should potential externalities be assessed? This includes positive externalities that may accrue to the broader community from increased mitigation activities.

(10) How do organisations justify climate change related expenditures to their boards and other internal stakeholders? To what extent can these processes inform the QCA's assessment of this type of expenditure?

(11) How do organisations consider different types of mitigation expenditures? How do they decide between alternative options (e.g. direct mitigation versus purchase of offsets) and justify those decisions? What lessons can be learned for the QCA's regulatory processes?

(12) What lessons can be learned from the insurance industry's assessment of climate change related risks? How should the QCA approach the assessment of actuarial information provided to it as part of future expenditure claims?

Does the QCA's approach to assessing self-insurance claims provide a model for assessing proposed climate change related spending? What might the criteria be for a climate change related application? What types of supporting material should an entity provide?

(13) Do stakeholders have experiences with other regulatory work or frameworks, in Australia or overseas, that the QCA ought to have regard to in undertaking this climate change project? If so, what lessons could be learned from such experiences?

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