Queensland Competition Authority

Final position paper

Approach to climate change related expenditure

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Level 27, 145 Ann Street, Brisbane Q 4000
GPO Box 2257, Brisbane Q 4001
Tel (07) 3222 0555
www.qca.org.au

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

Duncan Coutts, Ravi Prasad, Leigh Spencer, Stephen Wisenthal

EXECUTIVE SUMMARY

Businesses, including those we regulate, are increasingly considering climate change when making spending and investment decisions.

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

This paper presents our final views on these matters, after considering submissions we received on our April 2023 draft position paper and October 2022 discussion paper.

Businesses in unregulated markets are modifying their capital and operating spending in response to climate change, having regard to evolving community views. Regulated businesses face the same considerations. Our review concluded that our frameworks and processes remain fit for purpose to accommodate these changes, but there is merit in providing regulated businesses and customers with greater clarity on how we may consider climate change related expenditure.

We are open to considering prudent and efficient climate change related expenditure proposals from regulated businesses. And 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 for us 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.

Having had regard to stakeholder comments, our view is that:

- Our existing regulatory frameworks are appropriate for considering climate change related proposals for both adaptation and mitigation expenditure, but we have provided 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 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 appropriate justification for the proposal is provided, we may still approve it.
- 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 strategies to support climate change related expenditure proposals. These strategies should be consistent with internal planning documents—such as asset management plans and climate change policies. They should also have explicit regard to potential impacts on customers.
- 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 expectations or 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 the business can demonstrate that the expenditure would be undertaken by an efficient business operating in a workably competitive market.
- 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 among parties.

We have prepared a guideline, separate to this report, that can provide both regulated businesses and their customers with greater insight on how we may consider the above matters as part of assessing climate change expenditure proposals. This guideline is designed to help regulated businesses develop prudent and fit-for-purpose climate change expenditure proposals that respond to the needs of their customers. It is intended to reflect what businesses in a competitive environment would be doing.

Users of the guideline will need to exercise discretion and apply our guidance with an understanding that it is a general document. Our assessment approach, and the appropriate approach by a particular regulated business, will depend on the circumstances of that business, its customers and its industry at the time.

The guideline is not binding on us and does not (and cannot) fetter our discretion to approve, or not approve, climate change related expenditure proposals. The guideline will also be reviewed periodically.

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1 ABOUT THIS INVESTIGATION

1.1 Context

Climate change is leading to more adverse and unpredictable weather 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, which is 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, debt and equity investors and insurers.

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 resulting from 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)
- financing , insurance issues and/or other related corporate pressures—including where access to financing 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 reducing or offsetting 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 to save costs and innovate across supply chains.

1.2 Scope and focus of the review

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.
- **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 financing requirements) and maintaining a social licence to operate.[4]

This review considered whether our existing regulatory processes remain sufficiently robust and flexible to appropriately support climate change related expenditure (both adaptation and mitigation) by regulated businesses and to provide a regulatory environment conducive to prudent and efficient spending being undertaken in a timely manner.

Our view is that prudent and efficient expenditure, whether it is climate related or not, can continue to be supported and assessed under our existing frameworks. Consistent with this view, we are open to considering climate change expenditure proposals by regulated businesses. In this context, we have provided clarity on how our approval frameworks can consider such expenditure, including through preparing a guideline to assist businesses submitting climate change related spending for approval.

The focus of this review was not on the level of various inputs to the building blocks methodology, including rates of return. Where these matters have been raised by stakeholders through the consultation process, they have been considered and discussed in general terms in the paper. Under our existing processes, it is open for a regulated business to make a submission at any time in respect of matters impacting the regulatory framework.

[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.

1.3 Review process

We invited stakeholders to comment on our discussion paper and draft position paper. We also held a stakeholder forum. The timeline of the key milestones for this review is provided in Figure 1.

Figure 1: Timeframe

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

We initially 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.[5] Most stakeholders[6] considered that the frameworks were fit for purpose, although a number sought further guidance on how the frameworks would be applied to climate change expenditure.

Key matters stakeholders raised in the first round of submissions included:

- providing greater flexibility in our assessment approach, such that regulated businesses are not disincentivised from undertaking appropriate investment
- publishing a guide to provide confidence about how climate change expenditure will be assessed
- limiting the scope of ex post assessments of climate change expenditure
- emphasising the need for robust business cases and consultation to support expenditure claims

[5] 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; others—Queensland Health and Urban Utilities.

[6] Some water businesses said the existing frameworks were not suitable for considering this type of expenditure.

- preventing regulated businesses from gaming the regulatory process by taking advantage of excessive guidance, if we were to exceed our regulatory remit by moving beyond our focus on restraining the exercise of monopoly power.[7]

We subsequently published a draft position paper in April 2023 and held a public forum in May 2023. Following the forum, we received a further five submissions in June 2023.[8]

Key matters stakeholders raised in the second round of consultation included:

- whether publishing a guideline would provide regulatory certainty[9], or potentially prejudge expenditure applications and move beyond our regulatory remit[10]
- support for adopting an 'efficient cost' assessment approach, which included consideration of externalities in considering climate expenditure
- a focus on customer consultation, as customers bear the costs of expenditure
- support for guidance on how a regulated business can recover its capital in the event of demand shocks.

Following consideration of submissions, our position remains that our established regulatory frameworks can continue to accommodate consideration of climate change expenditure.

However, we recognise that responses to climate change are evolving and that consideration of such expenditure is new and represents challenges to both regulated businesses and customers. As such, we have published a guideline on how we may consider climate change expenditure applications and on the factors that businesses may wish to consider when preparing their submissions.

Clarifying how aspects of our regulatory regime can apply to climate change expenditure through the release of a guideline is not outside the scope of our role but is good regulatory practice. The guideline is not intended to prejudge expenditure applications or to provide a series of 'checklists' for regulated businesses. Rather, the guideline reflects matters that any regulated business ought to have regard to in preparing well-considered and reasonable proposals as part of an overall business case. We continue to 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 to provide robust and comprehensive evidence-based justifications for such expenditure.

The following chapters relate to:

- contextual matters—the types of climate change expenditure and their drivers (Chapter 2)
- the QCA Act's regulatory provisions—providing views on the application of the regulatory provisions to climate change expenditure (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)

[7] This opinion was expressed by the DBCT User Group (sub. 3, pp. 1, 9).
[8] Submissions were made by DBI, the DBCT User Group, QRC, Pacific National and Aurizon Network.
[9] This was a position generally held by the regulated businesses.
[10] This was the position generally held by the DBCT User Group and the QRC.

- the need for, and development of, a guideline on climate change expenditure (Chapter 6)
- insurance and risk management—the risks faced by regulated businesses and their customers (Chapter 7)
- other matters—that is, whether our approvals framework can accommodate matters traditionally considered as part of our building blocks assessment (i.e. matters such as financing costs and asset stranding risk) (Chapter 8).

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.[11]

The nature and objectives of such expenditure differ between expenditure focused on adapting to climate change and expenditure aimed at mitigating emissions.

2.2 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.[12]

Climate change is a significant driver of seven 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.

Adaptation expenditure can include building new infrastructure or enhancing existing infrastructure that is designed to manage climate-related weather events (such as flood

[11] 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. Aurizon Network also considered policy, technology and demand shocks (Aurizon Network, sub. 14, pp. 3–4).

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

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.[13] Investing to reinforce infrastructure that is vulnerable, by design, can also reduce costs over the long term.

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 (such as replacing wooden sleepers with concrete sleepers).[14] Replacement capital expenditure would ordinarily not change the configuration of the broader infrastructure
- enhanced greenfield expenditure—for example, where 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 pre-emptively upgraded. This could include where existing dam walls are raised, flood levees enhanced, or bridges upgraded to address increased bridge scour[15] 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.

When planning 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.

2.2.1 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.[16]

[13] Urban Utilities, sub. 9, 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. 44.

[15] 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).

[16] Queensland Health, sub. 10, p. 1; Urban Utilities, sub. 9, p. 9. See also GAWB, sub. 5, p. 5.

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.[17]

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'.[18] 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.[19]

Separately, the DBCT User Group said there would be difficulties 'identifying expenditures that are solely or principally climate change related'.[20] In responding to our draft position paper, the DBCT User Group added:

> [M]ost climate related expenditure proposals will form part of broader projects, or also be sought to be justified as prudent on the basis of other non-climate grounds, such that specific criteria for climate change expenditure that do not apply to other types of expenditure will be difficult to apply in practice;[21]

2.2.2 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.[22]

Likewise, Aurizon Holdings said in its 2022 Sustainability Report:

> [T]he 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

[17] 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.
[18] DBI, sub. 4, appendix 2 (Frontier), p. 9.
[19] DBI, sub. 4, appendix 2 (Frontier), p. 19.
[20] DBCT User Group, sub. 3, p. 4.
[21] DBCT User Group, sub. 15, p. 2.
[22] GAWB, sub. 5, p. 3.

> climate models and exposures to augment our existing adaptive design approach for our fixed network assets.[23]

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.[24]

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.[25]

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.[26]

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.

2.3.1 Scope 1, 2 and 3 emissions

When measuring greenhouse gas emissions and acting to mitigate them 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

[23] Aurizon, *2022 Sustainability Report*, n.d., Aurizon website, accessed 4 April 2023, p. 49.
[24] Seqwater, sub. 11, p. 17.
[25] Aurizon Network, sub. 1, p. 4.
[26] DBI, *Dalrymple Bay Infrastructure Management Master Plan 2021, Expansion Opportunities at Dalrymple Bay Terminal*, 2021, p. 62.

for the businesses we regulate. 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 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.

2.3.2 Mitigation targets and initiatives

As they have for 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 related 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 achieve net zero emissions by 2050.[27] The Australian Government has also implemented the Safeguard Mechanism reforms, capturing more business activity with a hard cap on scheme-wide greenhouse gas emissions that ratchets down over time.[28] Similarly, 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.[29]

Beyond mitigation targets, governments are increasingly prioritising projects and initiatives that reduce emissions—which may have implications for regulated sectors. For example, an 80 per cent 2035 renewable energy target will have implications for Queensland's electricity networks in respect of connection services.[30] 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 governments. For example, the 2021 DBCT Master Plan notes:

> DBIM has also committed to achieving net zero Scope 1 and Scope 2 greenhouse gas emissions 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;

[27] 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.

[28] Department of Climate Change, Energy, the Environment and Water, *Safeguard Mechanism reforms*, fact sheet, Australian Government, May 2023.

[29] 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.

[30] The Queensland Government's Energy and Jobs Plan details priority areas for the revised 2035 renewable energy target. A focus of the plan is to create renewable energy hubs around established electricity infrastructure and fossil fuel generation sites, with the bulk of these sites in regional areas. See Queensland Government, *Queensland Energy and Jobs Plan: Power for generations*, September 2022.

- Review Scope 3 emissions and assist partners to reduce these where feasible;[31]

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.[32]

Other stakeholders also noted their focus on mitigation measures:

- GAWB has committed that, at a minimum, it will reduce its carbon emissions in line with Queensland Government targets.[33]
- Seqwater has a corporate greenhouse gas target of net zero emissions by 2050 'in line with both the Queensland Government policy and community expectations'.[34]
- Pacific National has been developing decarbonisation approaches such as trip optimisation and has recently published its ESG report.[35] Pacific National said it would have to undertake expenditure to achieve the Clean Energy Regulator Safeguard Mechanism targets.[36]

Likewise, in pursuing a goal of net zero emissions by 2050, Aurizon Holdings says in its 2020 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.[37]

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
- 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.[38]

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

[31] DBI, *Dalrymple Bay Infrastructure Management Master Plan 2021 Expansion Opportunities at Dalrymple Bay Terminal*, 2021, p. 63.
[32] DBI, sub. 4, para 56.
[33] GAWB, sub. 5, p. 4.
[34] Seqwater, sub. 11, p. 22.
[35] Pacific National, sub. 6, p. 4.
[36] Pacific National, sub. 16, p. 2.
[37] Aurizon, *2020 Climate Strategy and Action Plan*, 2020, p. 13, Aurizon website, accessed 5 April 2023. See also pp. 4–5.
[38] BHP, *Climate change*, BHP website, 2022, accessed 11 October 2022.

points more ambitious than its previous 2030 target.[39,40] The regulation of greenhouse gas emissions under the Safeguard Mechanism imposes stricter obligations on covered facilities and includes financial sanctions for non-compliance.[41]

Likewise, the Queensland Government's recent targets are more comprehensive than previous targets. The short-term renewable energy target has risen from 50 per cent by 2030 to 70 per cent by 2032.[42]

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

[39] A Albanese (Prime Minister and Minister for Climate Change and Energy), *Australia legislates emissions reduction targets*, media release, Australian Government, 8 September 2022.

[40] Section 10 of the *Climate Change Act* indicates that the 43% 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.'

[41] Department of Climate Change, Energy, the Environment and Water, *Safeguard Mechanism reforms*, fact sheet, Australian Government, May 2023.

[42] The 50% renewable energy target for 2030 is mandated, with 70% by 2032 and 80% by 2035 being a policy commitment. See Queensland Government, *Queensland Energy and Jobs Plan: Power for generations*, September 2022, p. 32.

3 REGULATORY PROVISIONS

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[43]
- climate-related risks
- social licence implications of action or inaction on climate change[44]
- 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 QRC said section 138(2) of the QCA Act provides us with appropriate discretion for assessing expenditures, including climate change related expenditures. The QRC said:

> We consider s138(2)(e) (the interests of persons who may seek access to the service) to be a key consideration, given that customers will generally bear all of the costs of adaptation and mitigation expenditure and most of the risks which such expenditure seeks to address.[45]

The DBCT User Group also accepted that the range of factors that we must have regard to under s. 138(2) is 'sufficiently wide to enable [consideration of] climate related issues in decisions about approvals of access undertakings.[46] However, it added:

> [I]t 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 …[47]

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

[43] 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 Section 5.3 and in the guideline (Section 2.1.2).

[44] 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).

[45] QRC, sub. 13, p. 4.

[46] DBCT User Group, sub. 15, p. 5. See also QRC, sub. 13, attachment A.

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

- may inadvertently reopen or conflict with the existing user agreements.[48]

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:

> [A]ttempting 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.[49]

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.[50]

3.2 QCA 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.[51] 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.[52]

In Australia, we are also aware of initiatives to include emissions reductions in the objectives of the national energy laws, with the wording of the updated objectives agreed by Energy Ministers

[48] DBCT User Group, sub. 3, p. 3; DBCT User Group, sub. 15, p. 11.
[49] DBCT User Group, sub. 3, p. 10.
[50] DBI, sub. 4, para. 79.1, p. 17.
[51] California Energy Commission, 2021 *SB 100 Joint Agency Report, Achieving 100 Percent Clean Electricity in California: An Initial Assessment*, summary, March 2021.
[52] Ofwat, *Ofwat and the environment*, Ofwat website, 2023, accessed 12 April 2023.

in May 2023. The initiative will amend the national electricity, gas and retail energy objectives to include:

> the achievement of targets set by a participating jurisdiction –
>
> i. for reducing Australia's greenhouse gas emissions; or
>
> ii. that are likely to contribute to reducing Australia's greenhouse gas emissions.[53]

The Australian Energy Market Commission (AEMC) is now considering how the emissions component of the objectives can be applied, having regard to the principles of 'predictability and stability', 'simplicity and transparency' and 'consideration of the broader direction of reforms'.[54]

Similarly, 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.[55]

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 focussed) 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 exclusively on restraining market power appropriately and fully 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.[56] [emphasis added]

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[53] AEMC, *Consultation on AEMC guide to applying the emissions component of the national energy objectives*, Consultation paper and draft guide, 2023, p. 2. See also 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.

[54] AEMC, *Consultation on AEMC guide to applying the emissions component of the national energy objectives*, Consultation paper and draft guide, 2023.

[55] The *Electricity Networks Access Code, Amendments (No. 2) 2020* (WA) amended 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'.

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

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. Section 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)).

Likewise, the regulation of access to services provided by significant infrastructure is subject to the provisions of Part 5 of the QCA Act (ss. 138(2) and 120(1)), 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, which 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 in a manner that does not fetter our discretion in applying the legislation.

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 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[57]
- our outlines of the application of various elements of the approval criteria for draft access undertakings in our decisions[58]

[57] QCA, *Arbitration of disputes in relation to the DBCT service*, guideline, version 3, December 2021.
[58] 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).

- 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[59]
- 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.[60]

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.[61]

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.[62]

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 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.[63]

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.[64]

[59] QCA, *Declaration reviews: Aurizon Network, Queensland Rail and DBCT,* final recommendations, March 2020 (Chapter 2: QCA's approach to the statutory criteria).
[60] QCA, *Applying for declaration or revocation under Part 5 of the QCA Act—handbook for applicants*, March 2022.
[61] QCA Act, s. 69E.
[62] DBI, sub. 4, para. 93, p. 19.
[63] DBI, sub. 4, appendix 2 (Frontier), p. 26.
[64] DBI, sub. 4, appendix 2 (Frontier), p. 26. Similar views were expressed in DBI, sub. 12, (Frontier), pp. 6–13.

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.

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.

There are other provisions that are also potentially relevant to climate change expenditure, such as the requirement to consider the public interest, the legitimate business interests of the owner/operator and the interests of those who seek or have rights to access the service.

The guideline considers these and other aspects of the QCA Act that were not the focus of stakeholder comments.

The guideline also notes that addressing climate change may achieve objectives set out in the *Human Rights Act 2019* (Qld). For example, where mitigation and adaptation expenditure reduces greenhouse gas emissions and protects essential infrastructure, these actions are consistent with the right to life (s. 16), property rights (s. 24), the protection of families and children (s. 26), and cultural rights of Aboriginal and Torres Strait Islander peoples (s. 28). [65]

[65] See also the Waratah Coal matter, in which 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]).

4 ASSESSING PRUDENCY AND EFFICIENCY—EXISTING PROCESSES

4.1 Approving prudent climate change expenditure

Our approach 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.

Through this review, we have assessed 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 it 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

As part of our review, 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, such as where:

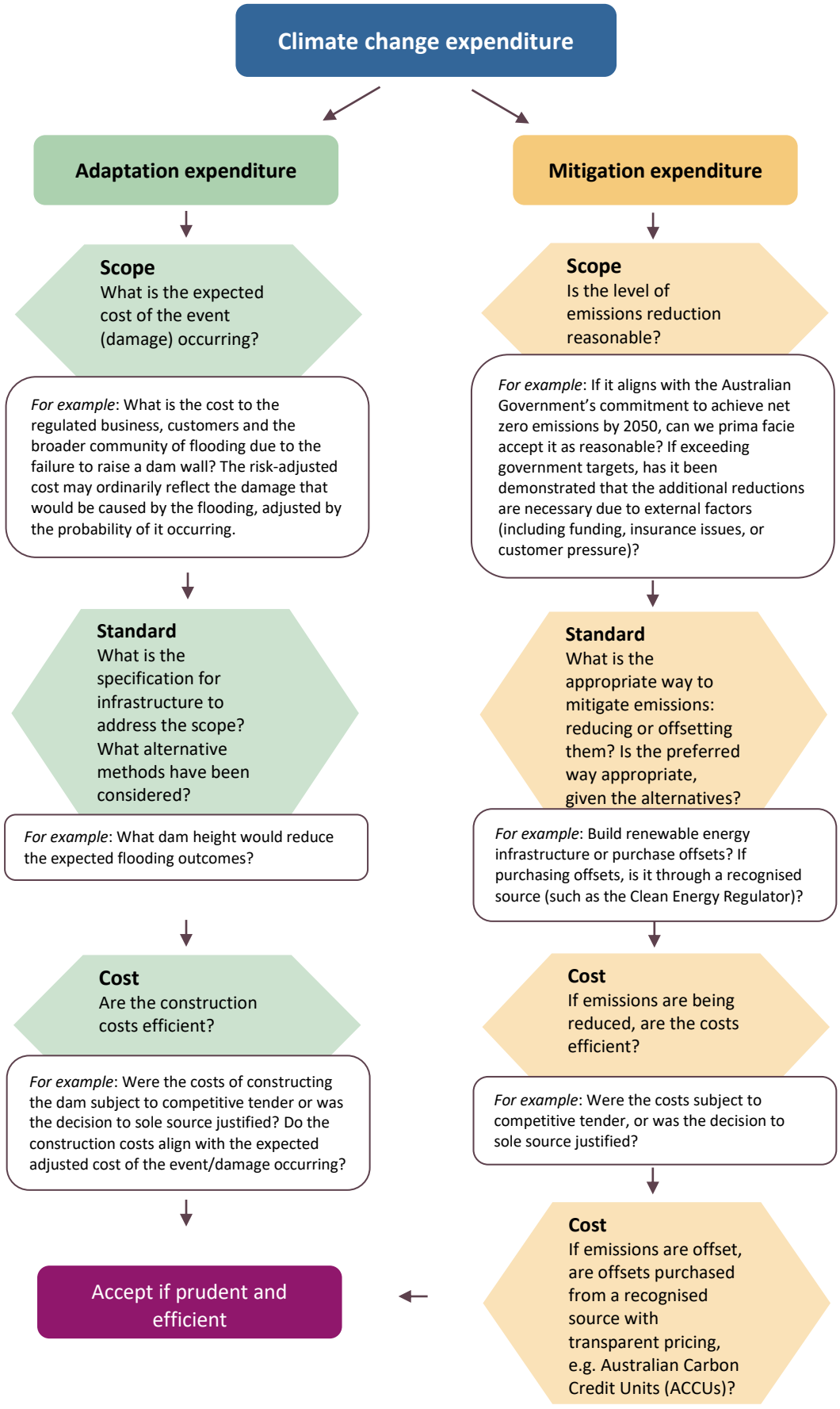
- existing infrastructure to be upgraded has not yet reached its life-expired date
- there is uncertainty about the likelihood of climate-related events in the future (including where data regarding climate events is based on historical data)
- there are differences between the willingness of a regulated 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[66]
- 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

[66] 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 is proposed on mitigation activities that may not be strictly necessary to provide the regulated service—but may be needed to meet government policy requirements or community expectations.

Our approaches to assessing capital and operating expenditures across regulated sectors, and the way those approaches can be applied to climate change spending are outlined in 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 efficient for the work done?

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.[67]

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.[68]

In response to this matter, 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.[69]

[67] QCA, *Dalrymple Bay Coal Terminal Draft Access Undertaking*, final decision, April 2005, p. 41.
[68] QCA, *Dalrymple Bay Coal Terminal Draft Access Undertaking*, draft decision, October 2004, pp. 51–52.
[69] QCA, *Dalrymple Bay Coal Terminal 2006 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).[70] In other words, if there was a rigorous process for the selection of the approved tenderer, the costs were accepted as efficient.

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.[71]

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.[72] 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[73]
- 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)[74]
- 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 replaced) by a new mechanism for Aurizon Network and its customers to agree on the scope and

[70] QCA, *Dalrymple Bay Coal Terminal 2006 Draft Access Undertaking*, decision, June 2006, pp. 18–20.
[71] DBI, *2021 DBCT Access Undertaking*, cl. 12.5.
[72] QCA, *QR's 2006 Draft Access Undertaking*, position paper, June 2006, pp. 4–6.
[73] 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).
[74] Queensland Rail, *2006 QR undertaking*, schedule FB, cl. 2.2.2(d).

standard for maintenance and sustaining capital expenditure.[75] 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 1.

Box 1: 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 climate change related investments.[76]

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.

Several aspects of the project are relevant to future projects related to climate change. The justification for the work (the 'scope' or 'need') was based on uncertain future events (rather than something more measurable like an increase in contracted demand) and tied to reliability of service and preventing or mitigating future disruptions. The project reinforced the existing infrastructure without creating more capacity. And the effectiveness of the project will only be clear after years or decades of the types of events it was designed for.[77]

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.

Key messages

- The project was part of a coherent strategy for reinforcing the range crossing.
- Queensland Rail secured support from customers before submitting the proposal.

[75] The maintenance and renewals strategy and budget process, set out in cl. 7A.11 of Aurizon Network's 2017 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.

[76] 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*.

[77] The slope held up with no landslips and minimal damage in the most recent heavy rain (at the time of publication) 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).[78]

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 expenditure
- 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.[79]

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.[80]

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

In our 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).[81]

4.2.3 Stakeholder concerns with the Seqwater position

As part of this review, 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 Australian carbon credit units (ACCUs)[82] (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.[83]

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.[84]

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.[85] 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.[86] 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.[87]

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:

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[81] 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.
[82] ACCUs are carbon credits issued to proponents of emissions reduction projects by the Australian Clean Energy Regulator. Each ACCU represents one tonne of carbon dioxide equivalent stored or avoided by a project.
[83] DBI, sub. 4, p. 24.
[84] Seqwater, *Bulk Water Price Submission 2023–26*, submission to the QCA, 30 June 2021, p. 101.
[85] Atkins, *Review of expenditures and demand for the investigation of Seqwater's bulk water prices for 2022–26*, draft report, November 2021, p. 81.
[86] QCA, *Seqwater Bulk Water Price Review*, draft report, November 2021, p. 36.
[87] DBI, sub. 4, p. 24.

> 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 … DBIM would not purchase ACCUs or any other form of carbon credit unless the QCA indicated that such expenditure may be considered prudent.[88]

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. This applies in particular to the purchase of ACCUs, given the independent review of the ACCU scheme arrangements (the 'Chubb review') found they are essentially sound.[89] 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.

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 or community expectations, or otherwise reflects activity that an efficient business in a workably competitive market may undertake
- the standard is prudent and efficient—other alternative forms of mitigation have been considered properly before offsets were determined to be the best/most efficient option
- the cost is efficient—if offsets have been established as a prudent form of mitigation, then costs could be considered efficient 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, and the broader community.

- For adaptation, they aim 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

[88] DBI, sub. 4, p. 24.
[89] I Chubb, A Bennett, A, Gorring and S Hatfield-Dodds, *Independent Review of Australian Carbon Credit Units*, final report, prepared for the Australian Government, December 2022.

> to consumers and taxpayers). Not effectively maintaining a system can have significant costs and impacts.[90]

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:

> 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.[91]

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.[92]
- 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.[93]
- In South Australia, the Essential Services Commission of South Australia (ESCOSA) has released a fact sheet setting out its proposed treatment of climate related expenditure proposals. The fact sheet indicates that ESCOSA intends to apply a set of 'screening criteria' to assess such proposals—the screening criteria identify the types of information and supporting material ESCOSA would expect to be supplied by regulated businesses for proposals addressing regulatory requirements; addressing climate related opportunities; addressing climate related risks; and improving understanding of climate related risks. Expenditure proposals that pass through the screening criteria will proceed to further assessment (of prudency and efficiency) but will not be automatically provided for in pricing or revenue determinations.[94]
- 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.[95]

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[90] National Infrastructure Commission (UK), *Anticipate, react, recover: Resilient infrastructure systems*, May 2020, p. 15.
[91] Productivity Commission, *5-year Productivity Inquiry: Managing the climate transition*, inquiry report—volume 6, February 2023, p. 1.
[92] ESC, *2023 water price review*, guidance paper, October 2021 (August 2022 amendment), ESC website, accessed 5 April 2023, p. 17.
[93] IPART, *Draft Water Regulatory Framework*, technical paper, May 2022, p. 14.
[94] ESCOSA, *Treatment of climate-related expenditure proposals,* fact sheet, August 2023.
[95] 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.

- 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 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.[96]

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 Services Regulation Authority (Ofwat)[97], the Office of Gas and Electricity Markets (Ofgem)[98] and the Office of Rail and Road (ORR).[99] 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.[100]
- 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.[101]
- 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.[102] The Canadian government also sets out how project proponents must provide a 'credible plan for achieving net-zero emissions by 2050.'[103]
- A number of state-based utilities regulators in the United States have statutory targets they must have regard to (see Box 2).

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.

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[96] G Cass-Gottlieb, *Opening Address to the Law Council Annual Competition and Consumer Law Workshop*, transcript, 9 September 2022.
[97] Ofwat, *Ofwat's 3rd Climate Change Adaptation Report*, February 2022.
[98] Ofgem, *Our strategy and priorities*, Ofgem website, accessed 11 October 2022.
[99] 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.
[100] 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.
[101] Commerce Commission (NZ), *Default price-quality paths for gas pipeline businesses from 1 October 2022*, final reasons paper, May 2022, p. 7.
[102] Canada Energy Regulator, *Filing Manual – Guide A – Facilities Applications*, including Table A-2: Filing Requirements for Biophysical Elements, CER website, accessed 12 October 2022.
[103] Government of Canada, *Strategic assessment of climate change: A new impact assessment system*, Strategic Assessment of Climate Change website, 2022, accessed 12 October 2022.

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 and ESCOSA) have published broad, principle-based guidance notes or fact sheets 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.

Box 2: 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.[104] 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 per cent of retail electricity sold in California must be zero-carbon.[105]
- 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.[106]
- 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.[107]
- 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.[108]

[104] I Paul and D Grab, 'How state power regulators are making utilities account for the costs of climate change', *The Conversation*, 1 April 2019.
[105] California Energy Commission, 2021 *SB 100 Joint Agency Report, Achieving 100 Percent Clean Electricity in California: An Initial Assessment*, summary, March 2021.
[106] New York State Climate Action Council, *Scoping Plan, Executive summary*, December 2022.
[107] Minnesota Legislature, *2022 Minnesota Statutes: 216H.06 Emissions consideration in resource planning*, Office of the Revisor of Statutes website, accessed 31 March 2023.
[108] 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

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.[109] 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.[110]

We 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 efficient for the works done.[111]

We 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.[112]

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

[109] QCA, *Approach to climate change related expenditure,* discussion paper, October 2022, pp. 16–22.
[110] QCA, *Approach to climate change related expenditure,* discussion paper, October 2022, pp. 4–5.
[111] QCA, *Approach to climate change related expenditure*, discussion paper, October 2022, p. 19.
[112] 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.[113]

We considered 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, we 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[114]
- 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

[113] QCA, *Approach to climate change related expenditure*, discussion paper, October 2022, p. 10.
[114] 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.

- 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 said 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). DBI said measures to reduce this risk could include 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.[115] In response to our draft position paper, DBI reiterated that it considers our existing frameworks to be broadly appropriate to manage climate change risks, but also re-emphasised its view that there is merit in us developing a guide or guideline.[116]
- 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.[117]

  In response to our draft position paper, the QRC emphasised its view that the existing regulatory frameworks are appropriate for considering climate change related proposals for both adaptation and mitigation expenditure. But it added that regulated businesses should be encouraged to consult and reach agreement with customers on climate change related expenditure proposals (where possible).[118] The QRC also again stressed the need for regulated businesses to develop robust business cases to support such proposals.[119]
- 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.[120] Pacific National also stressed that, in accordance with the existing regulatory frameworks, efficiency assessments

[115] DBI, sub. 4, p. 3.
[116] DBI, sub. 12, p. 1.
[117] QRC, sub. 7, p. 14.
[118] QRC, sub. 13, p. 1.
[119] QRC, sub. 13, p. 2.
[120] Pacific National, sub. 6, p. 6.

of climate change related proposals should be conducted on a whole-of-life basis,[121] which includes consideration of externalities (positive and negative).

- 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 we should exercise a great deal of caution in considering any changes to existing processes, as changes may impact the risk profile of the parties to the negotiated agreements at DBCT.[122]

  In response to the draft position paper, the DBCT User Group explicitly stated that the existing provisions of the QCA Act and the 2021 DBCT access undertaking already provide for an assessment of prudency based on factors that can and do accommodate assessment of climate change related expenditure. It added that this is demonstrated by the fact that such expenditure is already occurring (e.g. with renewable power supply being contracted for use at DBCT).[123]

- 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 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.[124]

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.[125]

  GAWB concluded that a fundamentally different approach to applying 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-

[121] Pacific National, sub. 16, p. 1.
[122] DBCT User Group, sub. 3, pp. 1, 3.
[123] DBCT User Group, sub. 15, p. 2.
[124] Seqwater, sub. 11, pp. 5–6.
[125] GAWB, sub. 5, pp. 1, 5–6.

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.[126]

- 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 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.[127]

5.3 QCA 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 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 (see Box 1)[128] and the decision on Aurizon Network's proposed increase to the energy charge components of its reference tariffs (the 'EC DAAU')[129], 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.

[126] GAWB, sub. 5, pp. 6–8.
[127] Urban Utilities, sub. 9, pp. 10–11.
[128] See QCA, *Queensland Rail's 2019–20 capital expenditure claim*, decision notice, 17 June 2021.
[129] See QCA, *Aurizon Network's electric energy charge DAAU*, decision notice, 16 November 2022.

- 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 Urban Utilities' view that the existing regulatory frameworks favour 'least cost' options in terms of spending proposals. We consider 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.

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 (positive and negative). 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 are 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).[130] 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).[131] 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.

[130] 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).

[131] 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).

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:[132]

- further emphasising the importance of regulated businesses seeking to consult and cooperate with their customers in developing climate change related expenditure proposals
- 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 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.

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). The ways we will apply existing frameworks to assessing mitigation and adaptation spending are discussed in detail in the guideline published at the same time as this final position paper.

[132] These matters are discussed in detail in the subsequent chapters of this paper and in the related guideline we published.

6 GUIDELINE FOR CLIMATE-RELATED EXPENDITURE PROPOSALS

We have published a guideline on our approach to climate-related expenditure that accompanies this final position paper. The guideline takes into account stakeholders' comments on the discussion paper we published in October 2022 and the draft position paper we published in April 2023. But it does not specifically summarise or respond to those comments. This chapter provides those summaries and responses, including:

- the merits of having a guideline (Section 6.2)
- aspects of the assessment framework (Section 6.3)
- comments on adaptation (Section 6.4)
- comments on mitigation (Section 6.5).

6.1 Background

In making submissions on our discussion paper, several stakeholders said a guideline on how we would approach future decisions on climate-related spending would be useful.[133]

In our draft position paper, we accepted that a guideline that specifically signals how we may consider climate-related expenditure proposals may assist stakeholders. Climate change expenditure may have some characteristics not exhibited by other types of expenditure, 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.[134]

In seeking submissions on our draft position paper, we suggested a guideline could include a series of matters that a regulated business may wish to have regard to across aspects of the QCA Act, including Part 3 and Part 5.

6.2 Merits of a guideline

Stakeholders responding to our draft position paper had diverging views on whether we ought to develop and publish a guideline on climate change expenditure proposals by regulated businesses.

Having considered stakeholders' views, we considered that it is appropriate for us to develop and publish a guideline that regulated businesses may wish to have regard to in submitting expenditure proposals to us pursuant to the existing regulatory frameworks in the QCA Act.

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

We accept the views of the DBCT User Group and the QRC that the existing regulatory frameworks can accommodate the consideration of climate change related regulatory proposals.[135] In particular, we accept that existing regulatory frameworks can consider whether climate change related expenditure is prudent in terms of scope, standard and cost (see Chapter 4). However, we also recognise that climate change expenditure is in many respects a new and evolving area. Frontier (on behalf of DBI) said in respect of such expenditure that there is:

- a greater level of inherent uncertainty related to the scale and timing of expenditure required to adequately manage the physical impacts of climate change;
- the material and growing role of government policies in driving expenditure requirements; and
- the tendency for the beneficiaries of expenditure to extend beyond the regulated entity or its customers.[136]

Regulated businesses and customers will benefit from additional guidance on the matters that may be relevant to developing regulatory proposals. This will facilitate prudent expenditure proposals that are fit for purpose, and are aligned with the needs of the customers who will ultimately bear the costs of climate change expenditure if it is approved by us.

That said, we have had regard to stakeholder concerns about a potential guideline in drafting it and clarifying its role in the context of our legislative approval processes. In particular, we are mindful of the concerns of the DBCT User Group that 'guidelines would effectively pre-judge or interfere with future merit assessments' or 'would introduce tests and considerations that are not reflected in the statutory or regulatory framework'.[137]

The guideline is not intended to be a compliance hurdle for submitters seeking approval for climate-related expenditure. It also does not:

- prescribe the matters that the regulated business must satisfy in advance of a proposal being considered by us
- fetter our discretion in making decisions on whether to approve or not approve climate-change related expenditure[138]
- provide a mechanical 'checklist' for regulated businesses to comply with in submitting proposals, as this would reduce innovation in developing regulatory proposals
- constrain how any business prepares its submission.

As such, our guideline does 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 change 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, our guideline indicates the matters that we may consider in 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 will have regard to when forming a view on whether to undertake such expenditure.

[135] DBCT User Group, sub. 15, pp. 2, 5; QRC, sub. 13, pp. 1–2.
[136] DBI (Frontier), sub. 12, p. 9.
[137] DBCT User Group, sub. 15, p. 3.
[138] QRC, sub. 13, p. 2.

In particular, our guideline's purpose is to set out matters we may consider relevant when assessing whether a regulatory proposal for climate related expenditure is appropriate to approve, in accordance with our legislative obligations. To this end, we note the views of Frontier that:

> Following the processes and considerations contained in the Guideline should provide a degree of assurance to stakeholders that a regulated entity's proposed expenditures, especially in uncertain situations, are in line with practices followed by well-managed and efficient businesses operating in a competitive environment.[139]

6.2.1 Encouraging consultation and negotiation

The guideline emphasises the importance of customer engagement in developing regulatory proposals. We accept 'the important role of customer views given the customers are principally exposed to funding the costs of such expenditure'[140] and that 'regulated entities should make genuine efforts to reach agreement with customers on climate change related expenditure'.[141]

Relevantly, the guideline notes we are more likely to consider climate change expenditure appropriate to approve if such expenditure is supported by the business's customers.

We disagree with the DBCT User Group's view that the guideline is not consistent with the negotiate–arbitrate regime approved by us in respect of DBCT, and is not consistent with 'giving primacy to commercial negotiations' and creates 'the potential for windfall gains'.[142]

On the contrary, the guideline should facilitate consultation and negotiation between stakeholders, as it provides greater insight into the factors we may consider relevant in considering climate change expenditure. Moreover, as the guideline is relevant to future, not past expenditure, and does not mandate approval of certain types of spending, it is not evident how it could create windfall gains to DBI or any other regulated business.

6.2.2 Status of the guideline

The guideline will not be binding on us. It reflects a range of matters that we would have regard to in considering a proposal to approve climate change expenditure. We also reserve the right to review the guideline as necessary.

We expect to update the guideline periodically on the basis of regulatory and other policy developments, as well our own experience in addressing climate-related spending under the QCA Act, once it has been in operation long enough to be used by regulated businesses, customers and us. Subject to evidence that it has an impact and is being used, we expect to seek comment on the first version of the guideline 18 months to two years after its initial publication.

6.3 Assessment framework

Stakeholders broadly supported our assessment framework.[143] They endorsed our focus on regulated businesses developing coherent strategies, and on business cases that addressed demonstrated need, effective consultation, review of options, and efficient costs.[144] As much of

[139] DBI (Frontier), sub. 12, p. 10.
[140] DBCT User Group, sub. 15, p. 4.
[141] QRC, sub. 13, p. 2.
[142] DBCT User Group, sub. 15, p. 11.
[143] The assessment framework was set out in chapter 6 of the draft position paper. Most of the content of that chapter is now included in chapter 2 of the guideline published with this final position paper.
[144] QRC, sub. 13, pp. 1–2; DBI (Frontier), sub. 12, pp. 6–8; Pacific National, sub. 16, pp. 1–2.

the material on the assessment framework in the draft position paper (chapter 6) is now included in the guideline, this section concentrates on stakeholder comments.

When a regulated business seeks approval for climate change related spending we will have regard to whether the regulatory proposal:

- aligns with a coherent strategy that reflects consultation with customers
- is supported by a robust business case that demonstrates the need for the spending, shows customers were consulted, sets out how options were considered and shows the cost is efficient.

This ought to be uncontroversial, given the proposals should reflect what a well-managed business in a workably competitive market will be doing in any event.

Urban Utilities said our frameworks' focus on maintaining existing service levels meant the frameworks were unable to cope with uncertainty.[145] 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 explicit outcomes, but nevertheless is required by a comparable efficient entity to meet the expectations of the community, customers, industry regulators and capital markets.[146]

We consider our existing assessment approaches provide an appropriate balance between flexibility and scrutiny. 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 guideline sets out 'spectrums of scrutiny' for proposals (section 3.4 for adaptation and section 4.4 for mitigation). The guideline clearly provides for approving spending proposals in some cases where there is not an explicit, mandated requirement, or broad customer support, albeit with a higher level of scrutiny.

6.3.1 Business cases

Stakeholders were concerned that a business case prepared for internal purposes would not have sufficient rigour for a regulatory submission. The DBCT User Group said the internal business case 'will principally be concerned with benefits to the infrastructure service provider—and not sufficient to address the costs as those will simply be assumed to be borne by the users in any case'.[147] The QRC said:

> The onus should be on the regulated entity to prepare business cases to a standard which is appropriate for assessment by the QCA … Regulated entities which are able to pass through costs to customers do not have a commercial need to prove the financial benefits of expenditure when seeking internal approvals …[148]

For the avoidance of doubt, we will not accept companies' internal business cases unless they meet our standards. In some cases, those businesses cases will be sufficient and that will reduce the regulatory burden on the businesses. But where their internal documents fall short, the regulated businesses will need to address any deficiencies before submitting them to us. Our guideline makes clear what we expect.

[145] Urban Utilities, sub. 9, pp. 2, 9–10.
[146] Urban Utilities, sub. 9, p. 2.
[147] DBCT User Group, sub. 15, p. 8.
[148] QRC, sub. 13, p. 4.

The DBCT User Group and the QRC also said that business cases should address the differing interests between regulated businesses and their customers, and variations in objectives among customers as well. The DBCT User Group said:

> [The QCA] should require a separate identification of the costs and benefits to users and the costs and benefits to the regulated infrastructure service provider, such that any discrepancies between the entities paying the costs and those obtaining benefits from the investments are made clear.[149]

The QRC said:

> Given that the costs and benefits to individual customers may differ (including between Aurizon Network and customers and between individual customers) the analysis of costs and benefits should address these differing perspectives[150]

Where there is not a general consensus about planned spending on adaptation or mitigation, the regulated business's proposal will need to address those differences of view and explain how it takes the costs and benefits potentially accruing to the different stakeholders into account. Our preference will be for an efficient outcome that best reconciles the preferences of all parties, including current and future customers and, where appropriate, affected third party stakeholders (e.g. the broader community).

6.3.2 Case studies and checklists

DBI's consultant, Frontier Economics, suggested we provide more specific advice, including additional case studies to illustrate what an appropriate proposal might look like. It said:

> [C]ase studies might provide guidance on how the QCA will consider the appropriate weight of factors when considering an application to approve climate related expenditure pursuant to s. 138(2) of the [QCA] Act.

and:

> The Guideline could provide practical guidance on how a regulated entity can align a proposed project with the public interest, community expectations or maintenance of social license.[151]

Other stakeholders were concerned that the guideline would make it too easy for spending to be approved. The QRC said a guideline should 'not provide a checklist of requirements which, if satisfied, suggest approval of expenditure'.[152] The DBCT User Group said any guideline should:

> make it clear that providing any such checklist of evidence will not conclusively result in an investment being assessed as prudent, because the merits of a prudency assessment will always need to be considered in the context of each individual project[153]

Our guideline outlines how a regulated business should prepare a spending proposal and is informed by our experience with relevant past assessments and approval processes. However, it is not our intention to promote a 'box-ticking' exercise. Rather, we want and expect regulated businesses to provide well-reasoned strategies and business cases that address our approval criteria and show how specific projects efficiently meet the needs of customers and other stakeholders.

Moreover, while this position paper contains some examples of regulatory actions, we have formed the view that it is not appropriate to include such examples or case studies in the

[149] DBCT User Group, sub. 15, p. 8.
[150] QRC, sub. 13, p. 3.
[151] DBI (Frontier), sub. 12, p. 12.
[152] QRC, sub. 13, p. 2.
[153] DBCT User Group, sub. 15, p. 4.

guideline to the extent it may suggest that we will approve certain types of spending. We are concerned that such specific examples might stifle innovation by regulated businesses and their customers. Our position in respect to a regulatory proposal on climate change spending will depend on the circumstances.

6.3.3 Information known at the time

Some stakeholders asked for confirmation that, when we assess an investment or operating expenditure after it has been completed (i.e. ex post assessment), their choices will be judged only on what they could have known at the time of the expenditure.[154]

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.[155]

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.[156]

The guideline sets out that we will not expect a regulated business to have made decisions based on information it could not have known at the time. However, this principle will be easier to apply if the business has actively consulted with its customers before undertaking the expenditure and shared the available information during that consultation. This is discussed in Section 2.3.2 of the guideline.

6.4 Adaptation

Investments in adaptation will, for the most part, be assessed by us in the same way as other spending. However, there are some considerations specific to adaptation that warrant separate consideration in our guideline.[157] This section addresses stakeholder comments on how adaptation should be treated in a guideline.

6.4.1 Asset management strategies

Stakeholders said long-term strategies should consider the appropriate balance between capital and operating expenditure in response to climate-related events. 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.[158]

[154] DBI, sub. 4, p. 26; GAWB, sub 5, p. 9; DBI, sub. 4, appendix 2 (Frontier), p. 31; Seqwater, sub. 11, p. 6.
[155] GAWB, sub. 5, p. 9.
[156] DBI, sub. 4, p. 26.
[157] The approach to adaptation was set out in chapter 7 of the draft position paper. Most of the content of that chapter is now included in chapter 3 of the guideline published with this final position paper.
[158] GAWB, sub. 5, p. 3.

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.[159]

Seqwater said:

> [T]he 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.[160]

Frontier Economics, on behalf of DBI, said:

> Climate-resilience should be a necessary condition to project prudency and efficiency. Investing in infrastructure that is vulnerable, by design, to an accepted range of climate-related risks is likely to be lower cost in the short term but higher cost in total over the life of the asset.[161]

Our guideline sets out how a coherent strategy for adaptation and asset management should consider whole-of-life costs. Individual proposals should be assessed for how they fit in with that long-term strategy.

6.4.2 Consultation on adaptation

Damage to infrastructure can have disproportionate impacts on customers, compared to impacts on asset owners. This makes consulting with customers crucial when developing an appropriate asset management plan. 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.[162]

Frontier also 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.[163,164]

Given customers, particularly those using transport infrastructure, are expected to pay for adaptation expenditure and are affected by damage to the facility, they are best placed to assess

[159] Aurizon Network, sub. 2 (Frontier), p. 29.
[160] Seqwater, sub. 11, p. 41.
[161] DBI (Frontier), sub. 12, p. 7.
[162] Aurizon Network, sub. 2 (Frontier), p. 29.
[163] Aurizon Network, sub. 2 (Frontier), p. 26.
[164] 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).

the level of service reliability they require and the consequences of not having it.[165] 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.[166]

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.[167]

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.[168]

We consider consulting with customers and other stakeholders is an important part of developing a long-term adaptation strategy and any associated business cases. The strategy should not only reflect the risks of climate change, but also customers' preferences on how to handle those risks. As set out in our guideline, effective consultation will provide a strong basis for choosing whether and how to adapt infrastructure to cope with climate change.

6.5 Mitigation

As with adaptation expenditure, mitigation expenditure will generally be assessed in the same way as other types of expenditure.[169] We aim to facilitate prudent and efficient mitigation expenditure proposals that are consistent with a business's strategy to reduce emissions from providing regulated services.

6.5.1 Mitigation strategy

A range of businesses already have comprehensive mitigation strategies in place—for example:

- Aurizon Holdings will source 25 per cent of its energy from renewable sources from 2024 onwards[170]
- Pacific National intends to reduce carbon intensity by 10 per cent by 2030[171]

[165] This may be different for water businesses—for example, a dam failure will have a broader impact than just the effect on customers.
[166] Aurizon Network, sub. 2 (Frontier), p. 8.
[167] DBCT User Group, sub. 3, p. 9.
[168] Pacific National, sub. 6, p. 6.
[169] The approach to mitigation spending was set out in chapter 8 of the draft position paper. Most of the content of that chapter is now included in chapter 4 of the guideline published with this final position paper.
[170] Aurizon has a range of climate initiatives, including setting a target to reduce operational emissions intensity by 10% by 2030, after reducing emissions intensity by 20% between 2010 and 2020—Aurizon Holdings, *Supporting long-term sustainable growth*, 2022 Sustainability Report, p. 5, accessed 10 March 2023.
[171] Pacific National, *ESG Report FY2022*, 2022, p. 6.

- Transgrid, which operates high-voltage power lines in NSW and the ACT, has sought to align its approach to mitigation with broader national and international objectives.[172]

The guideline seeks to provide both regulated businesses and customers with information on how we may consider mitigation expenditure under our approval criteria and frameworks. Such expenditure is a relatively new and emerging area of consideration and is likely to acquire increasing importance in the future. It is therefore appropriate to provide guidance on how mitigation expenditure may be considered by us. We are not prescriptive in the use of the guideline for expenditure proposals—regulated businesses and their customers may wish to consult the guideline when reviewing their level of mitigation planning.

We accept that mitigation expenditure is funded by customers and benefits regulated businesses in reducing their emissions. The DBCT User Group said that:

> where users are being required to pay costs of greenhouse gas mitigation measures like carbon offsets, claims of benefits to users which are not verified by users themselves need to be treated with great caution …[173]

Mitigation expenditure also has benefits for customers and third parties. Where mitigation expenditure prolongs the useful life of infrastructure, this has benefits for customers and for the broader Queensland economy. Indeed, there is evidence of customers identifying mitigation action for the regulated businesses to undertake.

6.5.2 Consultation on mitigation

The renewable energy commitment at DBCT (Box 3) provides a good example of where customers have proposed and supported spending on mitigation and shows the benefits of working to develop an agreed approach.

[172] The main features of Transgrid's sustainability report are aligning its strategic priorities to the United Nations' sustainability development goals, aligning operational targets to goals and illustrating how operational planning is working towards meeting those goals. See Transgrid, *Sustainability Report: Financial Year 22*, 2022.
[173] DBCT User Group, sub. 15, p. 2.

Box 3: Dalrymple Bay renewable energy commitment

In 2021, DBI secured contracts to get 100 per cent of its electricity from renewable energy sources from January 2023 onwards. The DBCT User Group, as operator, proposed the expenditure and DBI gave its support to 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'.[174] DBI committed to work 'alongside the Operator, i[n] developing a Climate Change Strategy … [including a] net zero roadmap for the terminal for reduction in its Scope 1 and Scope 2 greenhouse gas emissions.'[175]

In its initial submission to the climate change expenditure review, 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 [Dalrymple Bay Coal Terminal Pty Ltd] 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'.[176]

Key messages

- The project was part of a coherent strategy for mitigating greenhouse gas emissions.
- Customers (as owners of the terminal operator) secured support from the regulated business to mitigate its carbon dioxide emissions.

As with any proposal, we will scrutinise the claimed level and incidence of the benefits and will have regard to customer views as part of considering whether to approve proposed mitigation expenditure—as we do for regulatory proposals more broadly.

6.5.3 Assessment approach for mitigation

Several stakeholders said that, given the particular characteristics of mitigation expenditure, a more flexible approval approach was required. GAWB said:

> [T]his 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.[177]

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 explicit outcomes, but nevertheless is required by a comparable efficient entity to meet the expectations of the community, customers, industry regulators and capital markets.[178]

[174] DBI, *Annual Report 2021*, 2021, p. 10.
[175] DBI, *Annual Report 2021*, 2021, p. 14.
[176] DBCT User Group, sub. 3, p. 2.
[177] GAWB, sub. 5, p. 10.
[178] Urban Utilities, sub. 9, p. 3.

However, the DBCT User Group said current regulatory approaches were already flexible enough:

> [T]he existing provisions of the Queensland Competition Authority Act … and Dalrymple Bay Infrastructure undertaking … already provide for assessment of prudency based on factors that can and do accommodate assessment of climate related expenditure … [as] demonstrated by the fact that climate related expenditure is already occurring …[179]

Through our assessment approach we have approved expenditure that can be considered climate change related (Box 1). Existing frameworks can assess and approve appropriate, well-supported climate-related expenditure. However, we consider our framework needs to maintain flexibility, especially in the face of growing political and community ambitions to mitigate emissions.

The approach to mitigation that is set out in our guideline retains sufficient flexibility to accommodate the changing circumstances of regulated businesses and leaves room for the businesses to design and propose solutions that are most appropriate in the circumstances. It does not reflect a 'one size fits all' approach. We will not reject proposals outright because there is not a legal requirement to mitigate. The guideline encourages negotiated outcomes between regulated businesses and their customers, and the composition of these agreements by nature will not be prescribed in legislation. Publishing our guideline signals that our approach is flexible in the face of climate change related uncertainty.

We note the position of the DBCT User Group that the QCA Act and DBCT undertaking already have flexibility to accommodate climate change expenditure. The DBCT regulatory framework is structurally different in many respects to those in place for other services we regulate. A guideline provides clarity to all regulated businesses and their customers around how climate change expenditure can be dealt with flexibly in our assessments.

6.5.4 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 them.

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.[180]

The DBCT User Group said:

> [T]he 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.[181]

[179] DBCT User Group, sub. 15, p. 2.
[180] Pacific National, sub. 6, p. 8.
[181] DBCT User Group, sub. 3, p. 10.

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.

In practice, externalities exist with most economic decisions as they will be likely to create spillover costs and benefits from an associated economic activity that were not intended. Pacific National highlights that addressing negative externalities in rail may instead shift the negative externality to road transit. Pacific National said:

> In addition to considering positive externalities associated with any shift from road to rail ... QCA should also consider negative externalities and assess whether greater adaptation or mitigation expenditure could potentially result in higher access charges.[182]

Our approach to climate change expenditure is not to prioritise or incentivise the creation of positive externalities (i.e. the removal of negative externalities); instead, we are open to considering their effects where the business case and options analysis warrant. Businesses and their customers should consult on what externalities they consider are in their collective interests to support, given their role in supplying the economic resources that make greenhouse gas production possible[183] and the potential impacts on those parties not currently represented within the transaction.[184]

Where businesses operating in a workably competitive market are facing pressure to reduce their emissions, it is appropriate that our regulatory frameworks enable regulated businesses to do so as well. To do otherwise could incentivise inefficient behaviour. That is, it could encourage economic activity that, if subject to competitive market discipline, would not ordinarily occur. For example, where coal road freight is priced higher than non-coal road freight because road operators are reflecting negative externalities in their prices, then we would consider whether it is appropriate for coal rail freight pricing to reflect a negative externality.

Our approach is to make it clear that broader societal costs can be considered in prudency assessments. It is open for us to have regard to a project's 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.[185]

[182] Pacific National, sub. 16, p. 1.
[183] Such as supplying coal.
[184] Those parties could include future customers, current or future upstream or downstream parties, or the broader Queensland community.
[185] Seqwater, sub. 11, p. 13.

Frontier (on behalf of DBI) in its second submission noted:

> Most corporate sustainability frameworks explicitly place a business's stakeholders at the centre of the identification of material sustainability issues, including climate change risks and opportunities.[186]

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

We do not share the DBCT User Group's concern that aligning our assessment approach to observable, quantifiable and transparent business practices occurring in workably competitive markets is an 'impossible test to apply in practice'; nor do we share its concern that this would give regulated businesses 'strong incentives to potentially, overinvest because they will obtain benefits from ESG-related investing'.[187]

Our approach is to adapt our regulatory assessment to the legal requirements, community expectations and government policy direction where appropriate while remaining consistent with our obligations under the QCA Act. We acknowledge the long-standing preference of regulated businesses and their customers for regulatory certainty, as stated by Pacific National:

> … we ask that consideration is given to how the users of network infrastructure are regulated, including regulation by other jurisdictions and the interplay of Queensland and other state and national regulations.[188]

This position paper and the guideline provide clarity about our assessment approach. Regulated businesses and their customers can continue to have confidence that our past practices are a good indication of our future processes.

6.5.5 Offset use

There is broad national and international commentary about both the appropriateness of offsets as a form of mitigation and appropriate use of offsets—whether their use is in the manner in which they were intended.[189] An offset does not abate a business's emissions; rather, it counterbalances them. Offsets play a role in contributing to overall mitigation in emissions—but are not intended to be the sole form of mitigation.[190,191]

Outlining principles for offset use, DBI stated 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.[192]

Our guideline provides principles for offset use and these will be applied in any assessment we perform. In keeping with our preference for 'best practice' mitigation, we will expect offset use

[186] DBI, sub. 12, p. 7.
[187] DBCT User Group, sub. 15, p. 10.
[188] Pacific National, sub. 16, p. 2.
[189] See Climate Change Authority, *Review of International Offsets*, August 2022, pp. 1–4.
[190] United Nations, 'Article 6.4: Mechanism', *Paris Agreement*, accessed 16 March 2023.
[191] 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% 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.
[192] DBI, sub. 4, p. 20.

to be considered as part of a robust options analysis. Offsets should be considered against comparable direct mitigation options, giving appropriate weight to efficient cost and associated externalities. Our willingness to consider offsets as prudent should not be misconstrued as 'rubber stamping' their use.

Where regulated businesses propose to use offsets to achieve their mitigation goals, they can be assessed for prudency and efficiency in a similar way to any other form of expenditure. An example of offset use by a firm in a workably competitive market is detailed in Box 4.

Box 4: Offset use in the steel industry

BlueScope Steel has produced its *Climate Action Report*,[193] a strategy document that commits BlueScope to net zero by 2050, with an interim 2030 target. BlueScope has facilities subject to the Safeguard Mechanism.[194] The report details that while steel-making continues to make inroads in energy efficiency, 'decarbonisation of hard-to-abate industries like iron and steelmaking relies on breakthrough technologies'.[195] The report highlights that these technologies are predicted to be available in the 2040s.

BlueScope says offsets will be required to meet its climate mitigation targets (and comply with the Safeguard Mechanism). Its principle for offsets is to 'use quality and cost-effective carbon offsets, only where direct abatement is not feasible'.[196] Cost-effective offsets are defined as those 'offered at an attractive market price and that also make sense when assessed against other abatement opportunities'.

Key messages

- BlueScope will avoid emissions as its priority for mitigation but use offsets to mitigate emissions that cannot be directly abated.
- BlueScope has clear principles and prudency standards for the use of offsets.

[193] BlueScope Steel, *Climate Action Report*, September 2021.
[194] Clean Energy Regulator, *Safeguard Data*, National Greenhouse and Energy Reporting, 28 July 2023, CER website, accessed 4 August 2023.
[195] BlueScope Steel, *Climate Action Report*, September 2021, p. 16.
[196] BlueScope Steel, *Climate Action Report*, September 2021, p. 39.

7 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 (Section 7.2)
- consequential loss and business interruption (Section 7.3)
- alternative insurance arrangements, including pass-through and review events (Section 7.4)
- self-insurance allowances (Section 7.5)

We discuss our approach for assessing insurance and risk approaches in Section 7.6.

7.1 Risk management and climate change

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 (for example, see Box 5). 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 6 and our guideline). 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.[197]

[197] 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.

7.2 Commercial insurance

Commercial insurers cover a wide range of risks, including many risks whose incidence and severity are affected by climate change. Stakeholders said that the cost of insurance for natural catastrophes has been increasing.[198] 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.[199]

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).[200] Urban Utilities said it was reacting to tightening insurance markets by spending on resilience (adaptation).[201] 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.

7.3 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 5).

[198] 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.
[199] 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.
[200] Aurizon Network, sub. 1, pp. 6–7.
[201] Urban Utilities, sub. 9, p. 5.

Box 5: Regulatory example—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, so it was not needed during the repair period. But neither was the plant available as required under its contract with its customer, Sydney Water.

Sydney Desalination 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 have been liable to pay 97.5 per cent of Sydney Desalination's service charge if there was a force majeure event. This would have been a significant change from the existing insurance, where the fixed service charge was fully covered, and customers had no liability if a force majeure event meant the service could not be delivered.[202]

Sydney Desalination said the change in business interruption coverage would have saved $8 million (real 2022–23 dollars) over its four-year regulatory period.[203]

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.[204]

Sydney Desalination and Sydney Water subsequently agreed that full business interruption insurance for force majeure events was in the interests of both parties, and worth the $8 million cost. The Independent Pricing and Regulatory Tribunal (IPART) of New South Wales accepted this in its final decision on Sydney Desalination's prices.[205]

Key points

- Changes in insurance markets can drive substantial shifts in risk allocation.
- Customers in this case preferred to keep the business interruption risk insured.

[202] IPART, *Review of prices for Sydney Desalination Plant Pty Ltd from 1 July 2023,* issues paper, November 2022, pp. 16–17.
[203] Sydney Desalination Plant, pricing submission to IPART, *Prices from 1 July 2023 to 30 June 2027*, September 2022, pp. 157–58.
[204] 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.
[205] IPART, *Sydney Desalination Plant Pty Ltd Review of prices to apply from 1 July 2023*, final report, June 2023, pp. 50–51.

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.[206]

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.

7.4 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. However, it will be important to avoid some of the potential adverse incentives, including that the regulated business chooses not to invest in efficient adaptation projects that would have reduced the losses covered by the pass-through.

Stakeholders generally said they favoured or supported pass-through arrangements.[207] Several said that, for climate change related expenditure, clear guidelines on how we would assess any claims or disputes would be useful.[208] Some regulated businesses emphasised that they were concerned about optimisation risk from an ex post assessment of climate-related investment.[209]

Underwriting by customers

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.[210] As GAWB said,

[206] See *Aurizon Network's 2017 standard access agreement*, cl. 25.1.
[207] QRC, sub. 7, pp. 2–3, 5.
[208] DBI, sub. 4, appendix 2 (Frontier), pp. 25–31; Urban Utilities, sub. 9, p. 15; Pacific National, sub. 6, p. 9.
[209] Aurizon Network, sub. 1, pp. 8–10; DBI, sub. 4, p. 25; Urban Utilities, sub. 9, pp. 11–12.
[210] 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. See Aurizon Network, sub. 2 (Frontier), pp. 24–25.

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.[211]

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.[212] 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.[213] 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.

7.5 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 7.4).

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-

[211] GAWB, sub. 5, p. 6.
[212] Aurizon Network, sub. 2 (Frontier), pp. 24, 27.
[213] 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.[214] They preferred pass-through mechanisms in cases where third-party insurance could not be secured at a reasonable cost. The QRC said:

> [T]here 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.[215]

Similarly, the DBCT User Group said:

> it is important that particular caution should be paid to prudency claims for self-insurance in relation to climate related matters given the potential for that resulting in an infrastructure provider earning returns above regulated returns where the premium or cost claimed for such insurance is not sourced from a competitive market and the contractual arrangements with users may result in users having to bear the costs of rectification/damage if they occur in any case.[216]

We have approved self-insurance allowances that are prudent and efficient. And, given there is no evidence to date of the sort of abuse suggested by the QRC and the DBCT User Group, we will continue to approve such allowances where appropriate. However, the self-insurance we have approved 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, we would expect the regulated business to demonstrate that the self-insurance was not a mechanism for earning above-regulated returns and that it represented an efficient way to manage risks, for both the customers and the regulated business.

For large-scale self-insurance, it may be necessary for the regulated business to implement more formal processes such as reserve funds, and establish strong governance for the insurance scheme, with participation by the customers. Any such 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 large-scale 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.

7.6 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; 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

[214] QRC, sub. 7, pp. 2–3, 5, sub. 13, p. 3; DBCT User Group, sub. 15, pp. 12–13.
[215] QRC, sub. 7, p. 3.
[216] DBCT User Group, sub. 15, pp. 12–13.

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 or control the cost impact of the risks through measures such as adaptation
- the transparency, or lack thereof, surrounding any choice to self-insure
- the business's 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.[217]

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

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

8 OTHER MATTERS

We did not seek 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.[218] Instead, we indicated that the review was primarily focused on climate change related adaptation and mitigation expenditures.[219]

Nonetheless, some stakeholders may consider there are relevant linkages to other matters that are also related to our regulatory roles (such as to consider financing costs and asset stranding risks).[220] Stakeholders' views on these matters are discussed below.

8.1 Background

Other matters might, for example, include financing impacts and other risks to infrastructure assets.

8.1.1 Financing impacts

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

- Whether climate change is having any impacts on the ability of firms to raise equity and debt. The experience of listed, regulated businesses, such as the recently floated DBI and Aurizon Network's parent company, may be relevant to 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 raising debt. With regard to raising debt finance, 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. Another issue was whether shareholder or lender pressure to reduce emissions means that capital may not be available unless businesses meet certain minimum mitigation expectations.

[218] QCA, *Approach to climate change related expenditure*, discussion paper, October 2022, p. 28.
[219] QCA, *Approach to climate change related expenditure*, discussion paper, October 2022, p. 27.
[220] QCA, *Approach to climate change related expenditure*, discussion paper, October 2022, p. 27.

8.1.2 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. Resource Management International (RMI) concluded that the Bowen Basin, and in particular the Goonyella rail system corridor[221], is in a very strong competitive position to maintain a dominant metallurgical coal market share in the medium to long term.[222] And similarly, 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.[223]
- The long-term outlook for Queensland thermal coal may be more problematic. In our final decision on Queensland Rail's 2020 draft access undertaking 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.[224] But in 2022, prices for Queensland thermal coal achieved all-time record levels in real terms.[225]
- 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. Another question for stakeholders was, however, whether our regulatory frameworks' procedural mechanisms are sufficiently flexible to deal with sudden economic shocks.[226]

8.2 Stakeholders' views

8.2.1 Responses to discussion paper

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'.[227] 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

[221] 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.
[222] RMI, *DBCT 2019 DAU: Review of the Economic Life of DBCT Assets*, report prepared for the QCA, February 2021, p. 4.
[223] Queensland Treasury, *A Study of Long-Term Global Coal Demand,* September 2020, p. 3.
[224] QCA, *Queensland Rail draft access undertaking*, decision, February 2020, p. 38.
[225] See Department of Industry, Science and Resources, *Resources and Energy Quarterly*, December 2022, pp. 65–67.
[226] QCA, *Approach to climate change related expenditure,* discussion paper, October 2022, pp. 27–28.
[227] 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.[228]

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.[229]

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 was 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.[230]

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'.[231]

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.[232] 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[233]) 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.[234]

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 investing in resilience

[228] Aurizon Network, sub. 1, pp. 9–10.
[229] Aurizon Network, sub. 1, p. 11.
[230] Aurizon Network, sub. 1, p. 11–12.
[231] Aurizon Network, sub. 2 (Frontier), p. 20.
[232] Aurizon Network, sub. 2 (Frontier), p. 39.
[233] 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 Aurizon Network, sub. 2 (Frontier), pp. 40–43.
[234] Aurizon Network, sub. 2 (Frontier), pp. 52–54.

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.[235]

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.[236]

DBI 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.[237]

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.[238] 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).[239]

8.2.2 Responses to draft position paper

In response to the draft position paper, Aurizon Network said that it continues to hold the view that the previous approaches applied by the QCA to the assessment of medium to long-term demand risk are not fit for purpose.[240] More specifically, Aurizon Network argued that there is an inherent conflict between regulatory certainty and regulatory responsiveness, particularly to a material and rapid change in circumstances.[241]

Aurizon Network said that, when it comes to considering the demand for coal carrying train services in central Queensland, the QCA's regulatory processes have only addressed the

[235] Aurizon Network, sub. 2 (Frontier), pp. 30–31.
[236] DBI, sub. 4, pp. 9–11.
[237] DBI, sub. 4, p. 18.
[238] DBI, sub. 4, appendix 2 (Frontier), p. 12.
[239] DBI, sub. 4, appendix 2 (Frontier), p. 24.
[240] Aurizon Network, sub. 14, p. 1.
[241] Aurizon Network, sub. 14, p. 2.

willingness and ability of Queensland coal producers to supply coal. It suggested this does not account for the potential for underlying assumptions of ongoing development of mine life extension and new coal deposits to be challenged by direct or indirect policy or judicial intervention, which either effectively prohibits their development or renders them economically or practically infeasible.[242]

Aurizon Network considers it is not evident that existing regulatory processes are sufficiently developed or flexible to respond to these types of policy or technology shocks. It added that, where demand side shocks result in a material and sustained reduction in demand, flexibly responding to the shock after the event may not result in the access provider having the reasonable ability to recover its investment in the regulatory asset base, where the rate of return has not provided ex ante compensation. It said the QCA's processes are not sufficiently developed to mitigate or compensate for asset stranding risks associated with a material and sustained reduction in the demand for coal.[243]

Aurizon Network referred to a hypothetical scenario—whereby a five-year regulatory period commences with an expectation of 18 years of marketable coal reserves from existing producing mines in a coal system, with the regulatory framework assuming that development of new mines justifies an economic life of 25 years. During the regulatory period, a change in government policy sterilises remaining coal reserves in the system with the effect of significantly reducing the economic life. Aurizon Network said that a flexible regulatory framework would reset the economic life in response to policy change, within the term of the regulatory period. This could be given effect through either predefined policy or supply trigger events.[244]

Aurizon Network concluded that the development of clear guidelines and principles on how the regulator would evaluate the rate of return and depreciation arrangements in response to an increase in climate change transitional risks, and how those arrangements should flexibly respond to a material change in such transitional risks within the term of an access arrangement, would represent an appropriate and essential regulatory benchmark to inform negotiation with customers on replacement regulatory arrangements.[245]

By contrast, the QRC noted that it had refrained from making submissions on the appropriate quantum or design of rates of return or depreciation profiles, as the QCA considered these matters could be accommodated within existing regulatory frameworks. It stressed that it supports the QCA's comments in the draft position paper 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.'[246]

8.3 QCA views

As discussed above, some stakeholders expressed the view that climate change raises a number of uncertainties and risks that may not be able to be easily accommodated within the existing regulatory frameworks. These include matters related to financing costs and to unanticipated shocks that might impact medium and long-term demand for a regulated service. We consider that, in response to such uncertainties and risks, the regulatory frameworks are sufficiently

[242] Aurizon Network, sub. 14, p. 2.
[243] Aurizon Network, sub. 14, p. 3.
[244] Aurizon Network, sub. 14, p. 4.
[245] Aurizon Network, sub. 14, p. 5.
[246] QRC, sub. 13, p. 2.

adequate and flexible to allow for appropriate actions in response to occur. This includes through timely and responsive:

- evidence-based reviews of our methodologies for determining key regulatory items
- mechanisms for reopening, where appropriate, regulatory outcomes during a regulatory period—such as through consideration of draft amending access undertakings (DAAUs).

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 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.

We undertook a comprehensive review of our rate of return methodology in 2021. 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).[247]

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.[248]

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:

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

- 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 reassessments would occur as part of future considerations of draft access undertakings applying to the DBCT service.[249]
- 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.[250] 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.[251]

We also consider that our existing regulatory frameworks are fit for purpose for appropriately considering and dealing with issues related to medium to long-term demand risk.

More specifically, we consider that the existing regulatory processes are able to respond flexibly and in a timely manner to unexpected changes in government policy or technology, including to shocks that might have the potential to lead to material and sustained reductions in demand for a regulated service. Our view is that the procedural mechanisms in the regulatory frameworks that provide for matters to be reassessed, including revisited within regulatory periods, are sufficient for effectively dealing with these matters. For access providers, this particularly includes the DAAU process in Part 5 of the QCA Act.

We consider that the DAAU process would be able to be suitably responsive to unanticipated policy or technology shocks that impact demand for a regulated service. The DAAU process is, and has proven to be, a remarkably flexible one. While we are obligated to assess any DAAU submitted under s. 142 of the QCA Act on its merits in accordance with the Act, we would expect that newly proposed arrangements intended to respond to an urgently arising and unexpected shock could be considered relatively quickly within a regulatory period. This would particularly be the case if a DAAU related to urgent amendments to an approved access undertaking that were necessary to ensure continued provision of a regulated service following an unexpected shock.

We note that our regulatory frameworks are designed to allow for expected (ex ante) outcomes to be comparable to those that would be expected in workably competitive markets. This includes providing a regulated business with a realistic opportunity to earn expected revenue sufficient to cover the costs of its prudent and efficient investments over the life of its assets. However, the mechanisms for achieving these outcomes differ—for a business operating in a workably competitive environment, prices adjust to changes in technological or market conditions; whereas for a regulated business subject to price/revenue controls, there are a range of regulatory tools and instruments (such as pass-throughs and adjustments to depreciation profiles) that are available to the regulator to respond to unanticipated shocks. These regulatory

[249] 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.
[250] QCA, *Aurizon Network's 2017 draft access undertaking*, decision, December 2018, p. 53.
[251] QCA, *Aurizon Network's 2017 draft access undertaking*, decision, December 2018, p. 54.

tools and instruments may be enlivened via the flexible processes contained in the existing regulatory frameworks (including the DAAU process).

Given the flexibility and potential responsiveness of the DAAU and similar processes, we consider that additional predefined policy or supply trigger events are unlikely to be necessary. We also consider that additional guidelines or principles on how we would evaluate rates of return and depreciation arrangements in response to climate change risks are not warranted at this time. QCA material that is already in the public domain, such as the final report on our rate of return review and our previous decisions on depreciation matters, should provide stakeholders with sufficient guidance as to how such matters are likely to be dealt with in the future—including in circumstances where regulated businesses need to be responsive to potential challenges raised by climate change.

GLOSSARY

ACCC	Australian Competition and Consumer Commission
ACCU	Australian carbon credit units
AEMC	Australian Energy Market Commission
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 and a draft position paper in April 2023. The submissions are available on our website.[252]

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
	14	Submission on the QCA draft position paper	23 June 2023
Dalrymple Bay Coal Terminal (DBCT) User Group	3	Submission on the QCA discussion paper	16 December 2022
	15	Submission on the QCA draft position paper	23 June 2023
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
	12	Submission on the QCA draft position paper	9 June 2023
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
	16	Submission on the QCA draft position paper	23 June 2023
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
	13	Submission on the QCA draft position paper	22 June 2023
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

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

APPENDIX B: OTHER JURISDICTIONS

Table 1: 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)	*Treatment of climate-related expenditure proposals*, fact sheet (2023)	Climate change related expenditure for regulated businesses will be screened before being subject to merit assessment. Screening criteria will consider the explanation of the intended expenditure, rigorousness of reporting evidence for expenditure, and level of options analysis. The merits assessment will be similar to current practice.
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.

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