

Carbon Offsets

Report for the Victorian water industry

September 2020



Contents

Executive Summary	3	Victorian Water Corporations – Laws, Standards and Requirements	23
Introduction	5	Selecting Carbon Offsets	25
What is a carbon offset?	5	Carbon offset integrity principles	25
Using carbon offsets to reduce emissions under the SoO-e	5	Offsets permitted under CACNS	27
Managing risks	9	Offset integrity – key issues	29
About this project	10	Validity of offsets – issues arising from offset integrity principles	30
Project Methodology	11	Additionality	30
Decision-Making Framework for Carbon Offset Use by Water Corporations	12	Permanence	32
1. Offsets use should be consistent with a comprehensive emission reduction strategy	13	Measurement	34
2. Choice of offsets should be informed by customer values and preferences	14	Leakage	34
3. Offsets must fully comply with the principles in CACNS	14	Unintended consequences	35
4. Offsets projects should do no harm	15	Harm to local communities	35
5. Offset use should be flexible to accommodate policy and regulatory change	15	Environmental impacts	36
6. Offset use should be transparent in all respects	16	Perverse incentives	36
Policy and Regulatory Context	17	Evolving knowledge and policy landscape	37
Victoria	17	Best practice offset procurement to ensure regulatory compliance	39
National	20	High levels of due diligence – projects and standards	39
International	22	Transparency	41
		Supplementary criteria	43
		Integration with organisational values and strategic direction	44
		Link to international standards and goals	45

This publication has been produced by VicWater with support from the Carbon Offsets Working Group.
The report was prepared by Proud Mary Consulting Pty Ltd with funding provided by Melbourne Water.

Executive Summary

Victorian water corporations are subject to significant greenhouse gas reduction targets under the *Statement of Obligations (Emission Reduction)* (SoO-e). To achieve these targets, they can use certain carbon offsets under the Commonwealth Government's Climate Active Carbon Neutral Standard (CACNS, formerly National Carbon Offset Standard (NCOS)) to offset their emissions to meet their targets.

There is a wide range of carbon offsets available to water corporations under the CACNS. All water corporations can use self-generated, Victorian CACNS-eligible offsets, and Melbourne Water can purchase CACNS-eligible offsets from Victorian, Australian and international markets. These offsets are created from an extremely diverse range of projects and therefore require careful scrutiny to ensure they deliver genuine emissions reductions and do not generate negative social or environmental impacts.

The 'Decision-Making Framework for Carbon Offset Use by Water Corporations' included in this report is designed to help water corporations navigate the choices that must be made in selecting offsets to comply with the obligations established by the SoO-e.

All offsets available to water corporations need to meet offset integrity principles established in CACNS and be accredited under one of five offset accreditation standards. The CACNS provides that offset buyers should undertake their own due diligence on offset projects and underpinning methodologies. This means purchasers should examine offset projects and determine whether the project satisfies the offset integrity principles.

In addition, purchasers should scrutinise the accreditation standard used to certify the project, as there is evidence that some standards (including some listed as eligible under CACNS) certify projects that do not meet these principles. Without proper scrutiny of projects and standards to ensure they meet the offset integrity principles outlined in CACNS, there is a real risk that offsets do not achieve their claimed benefit. This would mean they do not achieve genuine emissions reductions, and therefore do not comply with water corporations' regulatory obligations under the SoO-e.

To avoid the risk of purchasing ineffective and therefore non-compliant offsets, water corporations need to take steps to screen out non-performing offset projects to ensure that offsets they consider for purchase do in fact meet the integrity principles required by CACNS. Offset projects can also be associated with social and environmental harm – offset selection needs to scrutinise offset projects to ensure they do not cause such harm. The social and environmental harm that offset projects can cause can also lead to significant reputational damage to the offset purchaser.

Working closely with VicWater and the Victorian Water Sector, Melbourne Water engaged Proud Mary Consulting to develop guidance and decision-making support tools to help the sector navigate the complexities of sourcing carbon offsets. This report includes information about the policy context for offsets for water corporations in Victoria, and about how to meet the regulatory requirements of CACNS. It summarises best practice strategies for offset sourcing to ensure regulatory compliance and meeting the objectives of Victoria's water sector in the *Decision-Making Framework for Carbon Offset Use by Water Corporations*.

Offsets exist within complex and evolving global and Australian policy and regulatory frameworks. To ensure cost effectiveness and compliance over time, offset selection must be robust in the face of potential policy and regulatory change. Offset sourcing cannot rely on a 'set and forget' approach, and water corporations need access to substantial capability to assess offset quality. The Decision-Making Framework reflects the sector's desire to implement Victorian policy in reducing emissions and embrace leading-practice approaches to achieve this. It is also intended to help the sector anticipate and adapt to regulatory change and will provide a foundation from which to build the capacity to successfully use carbon offsets in the water sector.

This report illustrates some of the challenges with carbon offset selection. It is intended to be a resource to build understanding in the Victorian water sector of carbon offsets and to support the adoption and application of a decision-making framework for carbon offset use and selection for the sector. While Melbourne Water has access to a broader range of offsets than other water corporations, the decision-making framework that guides their selection can be applied to both self-generated Victorian offsets, Australian and international offsets.

Introduction

What is a carbon offset?

A carbon offset is a reduction of greenhouse gas emissions that compensates for emissions released somewhere else.¹ Carbon offset projects either reduce carbon already in the atmosphere (by sequestering it in 'carbon sinks') or reduce emissions released² (for example by improving energy efficiency, replacing fossil fuels with renewable energy sources or by capturing and destroying greenhouse gases as they are emitted).

Eligible carbon reduction projects can receive 'credits' which can be used by the organisation undertaking the carbon reduction activity or traded and used by a third party as an 'offset'. Carbon offsets credits are typically specified as the equivalent of one tonne of carbon dioxide equivalent (CO₂-e). The terms 'offset' and 'credit' are sometimes used interchangeably. By purchasing offset credits (one credit for every tonne of emissions), governments, organisations and individuals can 'cancel out' their emissions to meet emissions reduction targets and ultimately to claim 'carbon neutrality'.

To facilitate efficient use and exchange of carbon offsets, standards and certification procedures have been developed that are designed to guarantee the quality and credibility of carbon offsets. Certifications such as Certified Emissions Reductions (CERs) have been developed under the Kyoto Protocol, an international agreement on reducing emissions that preceded the Paris Agreement. Australian Carbon Credit Units (ACCUs) were developed by the Australian Government under the *Carbon Farming Initiative Act 2011* (Cth). Other standards such as the Verified Carbon Standard (VCS) and the Gold Standard (GS) have been developed by non-government organisations to service the voluntary market for offsets. These standards are increasingly used by governments to validate carbon offsets used in the compliance market as well.³

Using carbon offsets to reduce emissions under the SoO-e

The SoO-e requires water corporations to reduce greenhouse gas emissions from their activities and permits some use of offsets to do so.

The Carbon Management Hierarchy underpins the use of offsets, including in the international framework for carbon trading established by the Kyoto Protocol. The hierarchy was reflected in the 2016 DELWP guidance to water corporations on the development of their emission reduction pledges, and is reflected in the SoO-e, which:

- requires water corporations to 'implement actions that reduce emissions resulting from their water corporation operations' (clause 1-2)
- includes a general prohibition on the use of offsets, subject to exceptions (clause 3-2)
- provides for self-generated offsets as an 'adjustment' to emissions reduction obligations (clause 3-1.3), and
- makes a specific exemption for Melbourne Water based on the limited options available for directly reducing scope 1 emissions from wastewater treatment (clause 3-3).

¹ Broekhoff, D., Gillenwater, M., Colbert-Sangree, T., and Cage, P. 'Securing Climate Benefit: A Guide to Using Carbon Offsets.' (Stockholm Environment Institute & Greenhouse Gas Management Institute, 2019), 6

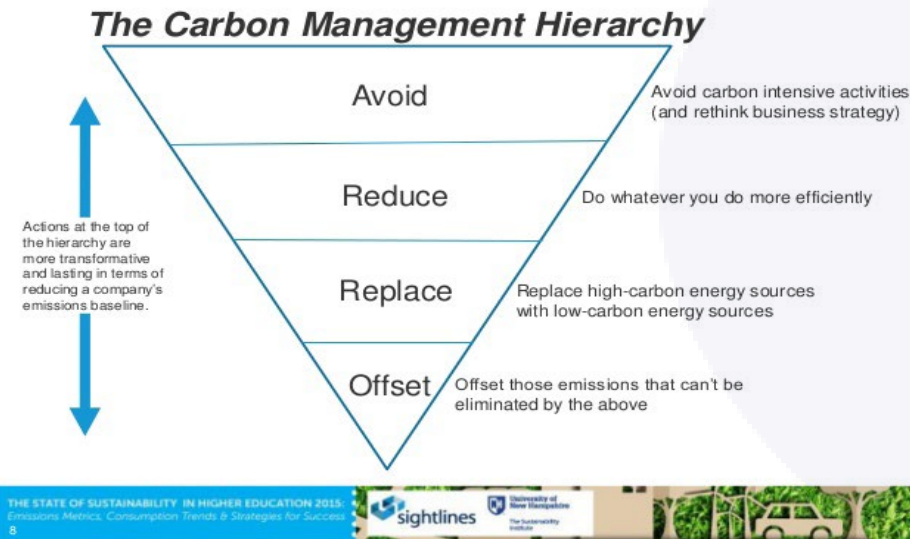
² Chan, S., 'Eligible claims in the voluntary carbon market' (2001) 28 Environment and Planning Law /Journal 9, 11

³ Ecosystem Marketplace, "Carbon Market: Overview" (Website) <<https://www.ecosystemmarketplace.com/marketwatch/carbon/>>

The carbon management hierarchy as embodied in the SoO-e can be illustrated as follows⁴:

Carbon Management Hierarchy

"Best practice" approach



Actions in the top section of the inverted pyramid are preferable to those towards the bottom because they are more transformative, long-lasting and are more sustainable for an organisation over the long term.⁵ Applying the hierarchy supports cost-effective emissions reduction over the long term as renewable energy prices decrease and offset prices increase.

Carbon offsets are seen by some as 'an interim solution - a way to accelerate action in the near term, but one that must ultimately (and explicitly) be replaced by more comprehensive policy action in the future.'⁶ *Water for Victoria* recognises the carbon management hierarchy, providing that the water sector 'focus on reducing its own emissions as a priority'⁷.

At the organisational level, this means that carbon offsets must be part of a broader strategy for reducing an organisation's carbon emissions. An emissions reduction strategy should clearly demonstrate why carbon offsets are necessary to achieve emissions reductions now, and how the use of offsets fits into a long-term plan for the organisation to achieve net zero emissions.

⁴ Kadamus, J. and Andrews, J., 'Exploring the State of Sustainability in Higher Education 2015' (Presentation, Sightlines, January 2016) <<https://www.slideshare.net/Sightlines/exploring-the-state-of-sustainability-in-higher-education-2015>>

⁵ Note, for example, that Broekhoff et al. state that '[i]n the future, international policy efforts could make it more difficult for organizations to establish valid voluntary offset claims.' Broekhoff, D., Gillenwater, M., Colbert-Sangree, T., and Cage, P. 'Securing Climate Benefit: A Guide to Using Carbon Offsets.' (Stockholm Environment Institute & Greenhouse Gas Management Institute, 2019), 13

⁶ Broekhoff, D., Gillenwater, M., Colbert-Sangree, T., and Cage, P. 'Securing Climate Benefit: A Guide to Using Carbon Offsets.' (Stockholm Environment Institute & Greenhouse Gas Management Institute, 2019), 16; see also Cames, M. et al., 'How additional is the Clean Development Mechanism?' (Report, Institute for Applied Ecology, March 2016), 11-12

⁷ Victorian Government, *Water for Victoria*, p. 31

An emissions reduction strategy should also address the economic transition risk of increasing emission reduction requirements and rising carbon offset prices. Managing this transition risk is part of each water corporation's role, as set out in DELWP's guidance for water corporations on managing climate risk.⁸ The price of offsets is expected to rise significantly, as global, Australian and Victorian requirements for emissions reduction become more ambitious in line with the requirements of the *Paris Agreement*⁹ and Victoria's *Climate Change Act*.¹⁰

Without a clear strategy to reduce an organisation's emissions to net zero, the use of offsets instead of directly reducing emissions maintains the risk of exposure to an ongoing and rising cost liability. Relying on offsets without a credible long-term plan to achieve net zero emissions can cause organisations to 'continue to pursue high-emitting activities - and invest in high-emitting equipment and facilities - effectively "locking in" higher emissions over the long run.'¹¹

Over the long-term, the projects that generate offsets have the potential to provide climate solutions that do no harm either as natural carbon sinks or as negative emissions technologies. In the meantime, Cames et al. propose that 'crediting approaches should play a time-limited and niche role focusing on those project types for which additionality can be reasonably assured.'¹² Wade et al. propose a 'Best Practice Carbon Management model' to support compliance and harness the opportunities of the transition to a low-carbon future.¹³



Attributes of firms achieving Best Practice Carbon Management.

⁸ Victorian Government, Department of Environment, Land, Water and Planning *Managing Climate Change Risk Guidance for Board Members and Executives of Water Corporations and Catchment Management Authorities* June 2019

⁹ Article 4(3) of the *Paris Agreement* requires that parties' emission reduction commitments become more ambitious over time.

¹⁰ The *Climate Change Act 2017* sets a long-term target of net zero emissions by 2050 and provides for increasing ambition in interim targets to reduce emissions across the economy (s 14 (2)) – see 'Policy and Regulatory Framework' below.

¹¹ Broekhoff, D., Gillenwater, M., Colbert-Sangree, T., and Cage, P. 'Securing Climate Benefit: A Guide to Using Carbon Offsets.' (Stockholm Environment Institute & Greenhouse Gas Management Institute, 2019), 16

¹² Cames, M. et al., 'How additional is the Clean Development Mechanism?' (Report, Institute for Applied Ecology, March 2016), 12

¹³ Wade, Belinda and Griffiths, Andrew (2020). Examining best practice carbon management within Australian organisations: cases from contrasting sectors. *Australasian Journal of Environmental Management* 27 (2) 1-17

News

Why offsetting is fooling people into thinking they're contributing to a greener future

Follow

EMMA GATTEN
ENVIRONMENT EDITOR

21 FEBRUARY 2020 • 9:30PM

Carbon credits undercut climate change actions says report

By Matt McGrath
Environment correspondent, BBC News

Carbon offsetting may increase pollution as experts warn the rich: 'You can't buy a clean conscience'

The Sydney Morning Herald

Green fades in the wash

Dirty planet but a clean conscience? The truth about airplane carbon offsetting

Julia Buckley, CNN • Updated 23rd November 2019

Kyoto protocol's carbon credit scheme 'increased emissions by 600m tonnes'

Major UNFCCC carbon trading scheme hit by serious corruption allegations involving organised crime in Russia and Ukraine

Fifa accused of greenwashing in World Cup carbon offset scheme

Buying carbon offsets may ease eco-guilt but not global warming

Voluntary carbon offsets are a 'Wild West' market ripe for fraud, exaggeration, and poorly run projects that probably do little to ease global warming.

Carbon Credits Likely Worthless in Reducing Emissions, Study Says

Managing risks

Using carbon offsets has many implications for an organisation that need to be carefully considered. This report outlines some of the key issues that arise in the use of offsets and describes how to avoid problems and risks in the use of offsets.

Many of the risks discussed relate to the nature and quality of the offsets themselves. However, at a broader level, the way offsets are used can carry risks such as non-compliance with regulatory requirements and unanticipated costs. Many of these risks can be managed through a carefully considered approach to offset use that is integrated into organisational strategy and management mechanisms.

Another critical risk that may arise is damage to an organisation's reputation from poor carbon offset selection. To show how real this risk is, below is a selection of headlines about carbon offsets.

This risk underscores the importance of a well informed and thorough approach to using carbon offsets. This report is intended to support the implementation of such an approach in the Victorian water sector.

About this project

Under the SoO-e, water corporations and in particular Melbourne Water have access to a wide range of carbon offsets. Melbourne Water has engaged Proud Mary Consulting to draw together Victorian water sector views to develop a sound decision making framework for sourcing carbon offsets to meet the requirements of the SoO-e. Informed by collaboration and discussion with the Victorian Water Sector, Proud Mary has developed the 'Decision-Making Framework for Carbon Offset Use by Water Corporations' (Decision-Making Framework), included in this report, to provide a foundation for further development and implementation of a robust, leading-practice approach to using offsets. This project provides guidance to avoid risks and support good decision making in selecting offsets to reduce emissions, within the scope of the current regulatory framework in Victoria.

Melbourne Water has the highest total greenhouse gas emissions of any Victorian water corporation, including the highest scope 1 emissions from wastewater treatment. Melbourne Water is preparing its price submission for the 2021-2026 period and will need to source carbon offsets in that period. As a result, it needs to consider which offsets it will source and how many it will source in the immediate term.

Although Melbourne Water faces these decisions before most other Victorian water corporations, its actions may inform the direction of the water sector as a whole. Melbourne Water has therefore prioritised engagement with the sector to develop its approach. The Decision-Making Framework developed for carbon offset selection in this project can be applied to offsets for the water sector as a whole, should that be useful. As the first pricing submission that includes carbon offsets, Melbourne Water's approach may establish expectations for carbon offset selection for regulators and government departments.

Melbourne Water has a strategy and a range of initiatives to reduce its greenhouse gas emissions. As part of its strategy, Melbourne Water is considering the role of carbon offsets and which offsets are suitable. This project is designed to support Melbourne Water's decision-making when sourcing offsets, and to support any other Victorian water corporation that is reviewing the current or future use of offsets to meet its carbon targets.

Melbourne Water will use the outcomes of this project to:

- Inform its 2021-2026 price submission and seek support for its offset strategy from stakeholders and regulators.
- Reflect state policy requirements, including effective, cost-efficient and genuine carbon reduction.
- Develop offset cost estimates and budgets.
- Manage reputational risks from offset purchases.
- Consider customer and community engagement on emission reduction and offset preferences.
- Inform sourcing offsets from the market.

Project Methodology

The project developed an information paper using desktop research on carbon offsets that provided:

- The policy context and regulatory requirements that underpin the use of carbon offsets in the Victorian Water Sector
- Information about carbon offsets and how they work, including the offset integrity principles
- Challenges that arise in sourcing offsets
- An outline of best practice offset procurement

The paper was informed by a survey of and interviews with water corporations, discussions with carbon offset market participants and the University of Melbourne's Energy Transition Hub. The survey and interviews with water corporations identified the main issues of concern with regards to sourcing offsets as:

- The overall quality of offsets: all the offset integrity principles were raised
- The quality of Australian Carbon Credit Units
- Whether international offsets are 'real'
- The potential impact of using offsets on a corporation's reputation.

The survey and interviews also identified two further offset policy issues that are not within the scope of this report:

- Which offsets should water corporations have access to?
- Where should offsets be sourced from (Victoria, Australia or the World)?

On 24 April 2020 Proud Mary facilitated a workshop with participants from the Victorian Water Industry Association and sixteen of the State's nineteen water corporations to consider the use of offsets within the water sector. The workshop discussions have informed this report on guidance for using carbon offsets, and in particular the Decision-Making Framework.

Decision-Making Framework for Carbon Offset Use by Water Corporations

Water corporations must meet regulatory requirements for the use of carbon offsets as set out in the *Statement of Obligations (Emission Reduction)* (SoO-e). Within the scope of those requirements, there is a broad range of choices to be made about which offsets to purchase. All water corporations can use Victorian self-generated offsets that are eligible under the *Climate Active Carbon Neutral Standard*, and Melbourne Water can also use Australian and international offsets that are eligible under that standard.

This Decision-Making Framework is designed to assist water corporations to navigate those choices and to identify offsets that achieve cost-efficient emission reductions, meet the requirements of relevant policy and regulations, meet organisational and customer values, and avoid compromise to environmental and social wellbeing or organisational reputation.

With regard to offsetting emissions, the SoO-e requires:

- Genuine emissions reduction (SoO-e clause 1-2)
- Efficient emissions reduction at the lowest possible cost (SoO-e clauses 1-2 and 1-3)
- Offsets to be consistent with the *Climate Active Carbon Neutral Standard* (CACNS), formerly NCOS (SoO-e clauses 3-1.3 and 3-2)

Broadly, CACNS requires offsets to be consistent with internationally recognised offset integrity principles *and* accredited by one of five offset accreditation standards.

Additionally, the ESC's PREMO framework requires water corporations to understand and respond to customer values and preferences through the price submission process. Given the cost implications of reducing emissions, this is an essential consideration in the decision-making process for carbon offsets.

The Decision-Making Framework addresses these requirements in three steps:

- A) *Achieving genuine, cost-efficient emissions reductions required by the SoO-e: deciding to use offsets*
- B) *Selecting offsets that meet regulatory requirements and reflect customer values*
- C) *Demonstrating accountability and compliance with SoO-e requirements*

The Decision-Making Framework contains six **Statements of Principle** (in bold) supported by explanatory guidance. It has been informed by discussions with the Victorian Water Sector, with the intention of capturing sector-wide requirements, and making the Decision-Making Framework useful to any water corporation sourcing carbon offsets. It is intended that this Framework continue to evolve through collaborative efforts across the sector and in line with evolving best practice.

- A) *Achieving genuine, cost-efficient emissions reductions required by the SoO-e: deciding to use offsets*

This step focuses on the decision to use offsets as part of an approach to reducing emissions in line with the requirements of the SoO-e. In particular, it provides guidance to identify whether and to what extent offsets are an efficient and cost-effective way to reduce emissions.

1. Offsets use should be consistent with a comprehensive emission reduction strategy

Offsets should be used as part of a long-term strategy to achieve net-zero emissions. All Victorian water corporations have committed to achieving net-zero emissions, with some committed to achieving this by 2030.

The Carbon Management Hierarchy illustrates that sustainable and cost-effective emissions reductions over the long term should be achieved by avoiding emissions where possible, reducing emissions through efficiency measures, and replacing high-emissions technology and energy sources with low-emissions alternatives. However, the hierarchy recognises that immediate replacement of infrastructure and large-scale changes to business activities may not be technically or financially viable and provides for offsets to be used as a transitional mechanism to reduce emissions.

A long-term strategy should take these issues into account to ensure that the decision to use offsets is consistent with the SoO-e requirements to reduce emissions in an efficient and cost-effective manner. The strategy should address how to reduce scope 1 emissions, such as plans to invest in research and development, new technology and facility upgrades, and map out the proposed use of carbon offsets over time.

To ensure that net-zero emissions is achieved efficiently, the long-term strategy should take into account the expectation that offset prices are projected to rise over time.

B) Selecting offsets that reflect customer values and meet SoO-e requirements

This step provides guidance for choosing which offsets to use, including accounting for customer preferences (as required by the ESC PREMO framework) and ensuring offsets genuinely reduce emissions (SoO-e section 1-2) consistent with the requirements of the CACNS (SoO-e sections 3-1.3 and 3-2). These factors determine the range of offsets that can be used by water corporations to comply with their regulatory obligations, from which the lowest-cost option can then be selected.

2. Choice of offsets should be informed by customer values and preferences

Within the range of compliant offsets available, selection of offsets should be guided by the water corporation's customer values and preferences for project type, location, and price.

Guided by the ESC PREMO framework, water corporations should take steps to understand customer preferences regarding offsets. This can include conducting market research and/or seeking feedback from customers about offset use. This can be incorporated into existing engagement or feedback processes with water corporation customers and should be periodically revisited. It may also be necessary to develop information resources and education tools to help customers become more informed about carbon offsets and how they are used by water corporations.

By engaging with customers about offsets, water corporations should seek to understand what the community values and the extent to which they prioritise co-benefits (such as biodiversity outcomes, local jobs and investment), and the extent to which location is an important feature of these co-benefits, and offset projects generally.

Where customers express a preference for local projects (for example, in their service area), there will be a smaller set of offset projects available, usually at higher prices than those available from a wider market. Customers may be prepared to pay a higher price for local benefits such as an improved local environment from revegetation, catchment protection, and local employment. Where there is evidence of this preference, and having particular regard to price impacts on vulnerable customers, a water corporation may prioritise higher cost offsets to satisfy this preference.

3. Offsets must fully comply with the principles in CACNS

The CACNS sets out seven offset integrity principles based on international standards that it uses to determine offset eligibility under the standard. Each of the principles must be met to ensure the integrity and effectiveness of carbon offsets.

Adherence to the integrity principles can only be assured by project level scrutiny, not just by purchasing any accredited offsets. The CACNS provides that offset buyers should undertake their own due diligence on offset projects.

Water corporations should undertake due diligence regarding all projects from which offsets are to be purchased. To do this effectively may require capacity development to build the skills and knowledge within the organisation to scrutinise projects. Additionally, it is important to ensure there is sufficient time built into procurement processes and workloads to permit thorough due diligence.

Compliance with CACNS also requires that offsets are accredited under one of five different accreditation standards. These standards use different methodologies and cover a wide range of project types for projects from diverse geographic regions with widely varying prices. There is evidence of varying credibility, environmental integrity and co-benefits amongst the range of accreditation standards, methodologies and projects. Water corporations should also investigate the accreditation standard under which offsets are accredited.

4. Offsets projects should do no harm

Some offset projects have been found to cause environmental and social harm, and factors such as a lack of transparency mean this continues to be a real and present risk. Scrutiny is required at the project level to screen out projects that have a credible risk of causing harm to people or the environment.

Investing in such projects carries serious reputational risks for Victorian water corporations and could undermine community, customer and stakeholder confidence in the use of offsets and efforts to reduce emissions. Water corporations should exclude projects causing or likely to cause environmental and social harms from consideration.

In addition to doing no harm, water corporations have indicated their strong interest in generating positive outcomes for their customers, community, service area and catchment. This interest reflects the corporations' understanding of customer values and preferences and should continue to be explored through engagement with customers (see Statement of Principle 2 above). When weighing up the range of factors to be considered in an offset purchasing decision, it is appropriate to consider potential benefits of offset projects to the local community and environment, aligned with customer preferences, as this can provide a greater return on investment for the water corporation and its customers.

5. Offset use should be flexible to accommodate policy and regulatory change

The use of offsets should be flexible to adapt to policy and regulatory change and avoid locking into an offset strategy that may be 'regulated out'. As compliance frameworks are strengthened at the international, national, and state level, some types of offsets may become stranded assets, unable to be used to offset emissions. This risk is especially significant with regard to low-quality offsets but may also affect specific types of projects that become attractive investments in themselves and are therefore no longer additional (such as renewable energy). Failure to anticipate this risk and maintain access to a diverse portfolio of high-quality offsets may substantially increase the cost of offsets and undermine their efficiency, in contravention of the SoO-e requirements.

Offsets sit within complex regulatory and policy frameworks that are subject to change. Allowable offsets under the Commonwealth Government's CACNS have changed in the past and may change again.

One way of anticipating and minimising the impact of regulatory change is to select good quality offsets to accommodate the possibility that regulatory requirements become more stringent in the future. Water corporations should consider whether the offsets they purchase are likely to be eligible for use under the Commonwealth Safeguard Mechanism (which caps emissions from large greenhouse gas emitting facilities) should the Safeguard Mechanism be changed to apply to them and require emissions reductions.

Water corporations should seek to maintain access to a diverse portfolio of offsets to minimise the risk of becoming 'locked in' to offsets that cease to be eligible following regulatory changes. Water corporations should also regularly review their approach to procuring offsets and their offset portfolio to ensure it reflects current best practice and is optimally positioned to respond to any anticipated regulatory change.

Maintaining diversity and flexibility in an offset portfolio is an acceptable reason to consider higher-priced offsets if necessary as it reduces the risk of stranded investments in the medium to long term.

C) Demonstrating accountability and compliance with SoO-e requirements

This step ensures that regulatory compliance is clearly demonstrated and recorded, providing confidence to regulators, customers and the public that water corporations are meeting their obligations under the SoO-e.

6. Offset use should be transparent in all respects

Offset purchases and use should be subject to full and detailed public disclosure, including the role of offsets in an organisation's emission reduction strategy, the rationale for choosing offset certification standards, methodologies and projects, and steps taken to verify offset integrity. Water corporations should disclose the details of projects and should provide information about the full range of offsets included in their portfolio. Broad summaries are not enough to demonstrate transparency.

Water corporations should make this information available on their website, as well as including details in annual reports and other published documents.

Offset reporting must be consistent with CACNS guidance. Minimum requirements include:

- a description of the project generating the offset unit
- the type of unit (e.g. Australian Carbon Credit Unit (ACCU), Certified Emission Reduction (CER), Verified Emission Reduction (VER), Verified Carbon Unit (VCU))
- the serial numbers of the units
- the vintage of the units (e.g. 2015)
- the date of retirement/cancellation
- a working hyperlink to the record of cancellation in the public registry.

Policy and Regulatory Context

Victoria

The Victorian State Government has adopted climate change policies that require all Victorian water corporations to reduce their greenhouse gas emissions.

Ambitious climate change action: the Climate Change Act 2017 and Water for Victoria

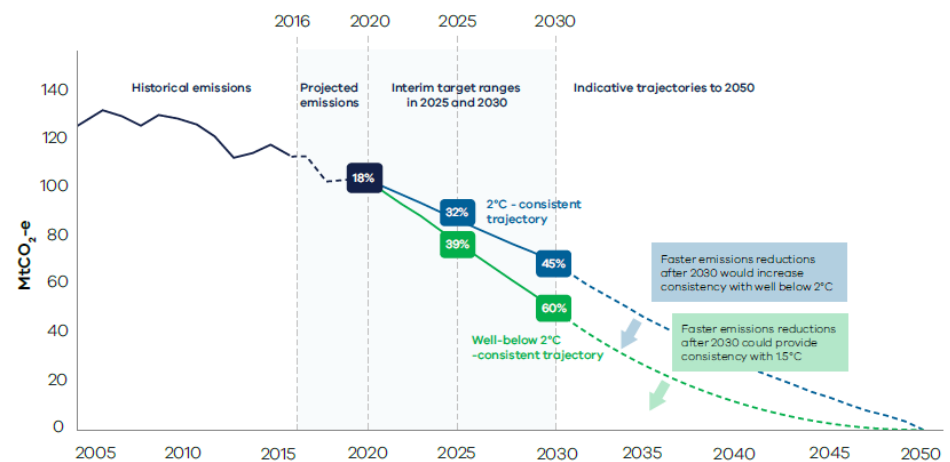
The State has created a legal framework for responding to climate change – the Victorian *Climate Change Act 2017*. The Act establishes objectives for the State to reduce emissions, adapt to impacts and transition the economy, and processes to support the achievement of those objectives.

Section 6 of the Act establishes a long-term target of net zero greenhouse gas emissions for the State by 2050. This target is consistent with the goals of the Paris Agreement on climate change and a growing number of Australian States and other nations are adopting a net zero target, either in law or in policy.

Section 10 of the Act requires the Premier and the Minister for Energy, Environment and Climate Change to decide on interim emission reduction targets for the State for the five-year periods to 2025 and 2030 by 31 March 2020. These interim targets are designed to determine the trajectory for Victoria to achieve net zero emissions by 2050.

Before making this decision, the Act requires the Premier and Minister to consider the advice of independent experts. The government appointed an independent expert panel that has published its advice on emission reduction targets for 2025 and 2030 for the State¹⁴:

Figure ES1: Indicative trajectories to net zero by 2050, consistent with the recommended interim target ranges



The Panel has recommended emission cuts of between 45% and 60% by 2030 from a 2005 baseline. Should the State Government decide to reduce emissions consistent with the Panel's recommendations, this policy will need support from a wide range of measures to achieve it.

14 Victorian Government Independent Expert Panel *Interim Emissions Reduction Targets for Victorian 2021-2030* published June 2019.

Section 41 of the Act requires the Minister for Energy, Environment and Climate Change to make a statement (or pledge) on whole-of-government greenhouse gas emissions by 1 August 2020. This statement will outline what government agencies will do to reduce emissions by 2025. Given the water sector is responsible for around one quarter of the State Government's greenhouse gas emissions,¹⁵ water corporations can expect to feature prominently in this pledge.

In *Water for Victoria*, the State Government's comprehensive water policy made in 2016, the State established the policy that '[o]ur water sector will be a leader in the state's climate change mitigation and adaptation actions.' While the water sector has been systematically taking climate change into account in its water resource planning for well over a decade now, *Water for Victoria* created the expectation that the sector will extend its leadership to adaptation more generally and also systematically reduce its emissions.

Statement of Obligations (Emissions Reduction) 2018

To support the policy for the water sector to be a leader in the state's climate change mitigation actions, in 2018 the Minister for Water made the *Statement of Obligations (Emissions Reduction)* (SoO-e) that applies to all Victorian water corporations. The SoO-e requires all water corporations to meet a greenhouse gas emissions reduction target in 2024-2025. The targets are based on pledges made by the water corporations and are relative to their average emissions in the baseline period of 2011 to 2016.

The SoO-e for the water sector precedes the whole-of-government pledge required under the Act and is expected to be incorporated into the whole-of-government pledge. Before 2025 the water corporations will need to make a second pledge for the period 2025 to 2030.

In *Water for Victoria*, the government asked the four metropolitan water corporations to 'examine an early path to achieve net zero emissions by 2030' - these water corporations all indicated that they could achieve net zero emissions by 2030.

The SoO-e establishes emission reduction priorities (clause 1-2):

In reducing their emissions the corporations shall:

- *Implement actions that reduce emissions resulting from water corporation operations; and*
- *Achieve emissions reduction efficiently, making full use of the time available to them to do so.*

The SoO-e also establishes affordability priorities (clause 1-3):

In reducing their emissions, the corporations shall:

- *Pursue actions and targets at the lowest possible cost, seeking to minimise the impact on water customer bills; and*
- *Have particular regard to price impacts on their vulnerable customers.*

Melbourne Water's target under the SoO-e is 204,380 tonnes CO₂-e in 2024-25. This represents an emission cut of 50% below its baseline.

¹⁵ Victorian Government, *Water for Victoria* 2016

The SoO-e sets out rules for calculating emissions, and allows all water corporations to 'reduce their emissions by retiring self-generated offsets that meet the National Carbon Offset Standard (NCOS).'¹⁶ The SoO-e defines self-generated offsets as those generated by or on behalf of a water corporation or a catchment management authority and resulting from activity undertaken in Victoria (clause 3-1.3).

Melbourne Water's scope 1 emissions are mainly methane and nitrous oxide from its wastewater treatment. In recognition of its role in treating the wastewater emissions for metropolitan Melbourne, which makes it the largest emitter of greenhouse gases amongst the water Victorian water corporations, under the SoO-e Melbourne Water may also use 'any offset that meets the NCOS to reduce reportable scope 1 emissions' (clause 3-2). The SoO-e distinguishes scope 1 emissions as there are, at present, relatively few ways to cost-effectively reduce scope 1 emissions from wastewater treatment, whereas there are increasingly cost-effective ways to reduce scope 2 emissions, namely through energy efficiency and renewable energy.

This gives Melbourne Water access to a much wider range of carbon offsets than all the other water corporations. Under the CACNS, offsets must meet internationally recognised offset integrity principles (discussed further below). In addition, they must be accredited under an eligible accreditation standard. Five accreditation standards are eligible under CACNS, and these include offsets created in Australia and internationally.

Other water corporations can only access self-generated Victorian offsets, and are therefore almost entirely limited to offsets under one accreditation standard – Australian Carbon Credit Units (ACCUs).

In 2019 Melbourne Water reported scope 1 emissions of 204,480 tonnes of CO₂-e under the National Greenhouse and Energy Reporting Scheme – it is these emissions that Melbourne Water may offset using offsets that meet the requirements of CACNS. If Melbourne Water were to reduce its emissions proportionately across its scope 1 and 2 emissions, to meet its 2025 target it would need to offset around 100,000 tonnes of CO₂-e in 2025.

The Victorian regulatory framework and particularly the SoO-e establish the parameters for offset use by water corporations. However, within those parameters there are still many options to choose from, which produce different types of risks and benefits. The Decision-Making Framework included in this report is designed to help water corporations make robust decisions about offsets within the parameters of the regulatory regime.

¹⁶ Since the SoO-e was made the NCOS has been replaced with the Climate Active Carbon Neutral Standard (CACNS). This report refers to the CACNS throughout instead of the NCOS.

National

There are several aspects of Commonwealth government policy that affect carbon offsets.

The availability and price of ACCUs depends on Commonwealth government policy which may change; this in turn affects security of supply and price risk management. The policy and legislation that creates ACCUs has been subject to several changes and reviews already and is once again subject to a review by the Climate Change Authority.¹⁷ This creates uncertainty about what project types may be available in the future, which in turn creates uncertainty about price.

The Commonwealth government is also responsible for maintaining and updating the CACNS. The Climate Active program and CACNS are voluntary initiatives that support and guide businesses to account for and reduce carbon emissions. The program offers participating organisations the opportunity to have their carbon neutral status certified and allows certified organisations to use the CACNS brand.

The CACNS sets out eligible carbon offset units that can be used to offset emissions under the standard, and the SoO-e adopts the CACNS as the applicable standard for offset use by water corporations. The Commonwealth has already revised offset units that are available, excluding certain types of offset units and projects. As climate change policy evolves in Australia and internationally, eligible offset units could be revised again. For example, the European Union's Emission Trading Scheme currently permits the use of international units such as Certified Emission Reduction units (CERs) under the Clean Development Mechanism (CDM) but it does not envisage continuing to allow the use of international units after 2020.¹⁸

Melbourne Water's greenhouse gas emissions are also regulated by the Commonwealth government under the *National Greenhouse and Energy Reporting Act 2007* (NGER Act). The NGER Act requires facilities with over 25,000 tonnes and organisations with over 50,000 tonnes of CO₂-e of annual emissions, including Melbourne Water, to report annually to the Commonwealth on their emissions.

The NGER Act also regulates the emissions of designated facilities with substantial emissions under the *Safeguard Mechanism*. The safeguard mechanism started on 1 July 2016 and requires Australia's largest scope 1 greenhouse gas emitters to keep emissions at or below a designated baseline. Melbourne Water's Eastern and Western treatment plants are covered by the safeguard mechanism.

The safeguard mechanism is not designed to reduce emissions at covered facilities, but to constrain emissions increases, although there is a range of means available to adjust baselines upwards. When emissions exceed the

¹⁷ Climate Change Authority, Consultation open for 2020 Review of the Emissions Reduction Fund, 14 April 2020, <http://www.climatechangeauthority.gov.au/consultations>

¹⁸ European Commission, *Use of International Credits* https://ec.europa.eu/clima/policies/ets/credits_en

baseline for a facility, the emitter may purchase Australian Carbon Credit Units to offset the excess emissions.

It is possible that the NGER Act may be amended to require emissions reductions in the future and to apply to a wider range of emitting facilities (that is, facilities with lower emissions that are not covered at present). The Commonwealth *Climate Change Authority* recently recommended that the safeguard mechanism be enhanced to reduce emissions from large emitters, with declining baselines, clear trajectories and the ability to trade emission cuts in excess of those required once baselines have commenced declining and are binding.¹⁹ The Commonwealth Government has indicated it will review the safeguard mechanism by 2020 as part of its review of its climate change strategy, including when and how international carbon offsets could be used.²⁰

A goal of a water corporation's emission reduction strategy and the use and selection of carbon offsets within that strategy should be to comply with Commonwealth policy should it change. However, in the absence of other Commonwealth government emission reduction policies, the key policy and regulatory framework affecting water corporation emissions comes from the Victorian Government.

¹⁹ Australian Government, Climate Change Authority, *Prospering in a Low-Emissions World: An Updated Climate Policy Toolkit for Australia*, March 2020.

²⁰ Australian Government, Department of Energy and Environment, *2017 Review of Climate Change Policies*.

International

In the Paris Agreement on Climate Change the nations of the world have agreed to hold increases in global average temperature to 'well below 2°C' and pursue efforts to limit the temperature increase to 1.5°C. The Agreement recognises that to achieve these temperature goals the world will need to achieve net zero emissions in the second half of this century. An increasing number of developed nations are adopting 2050 as their target year to achieve net zero emissions.

Each party to the Paris Agreement (including Australia) has pledged to reduce its emissions in a nationally determined contribution (NDC). Importantly, the Paris Agreement requires all nations, developed and developing, to make NDCs. This differs from the previous Kyoto Protocol that created obligations to reduce emissions for developed countries only.

Article 6 of the Paris Agreement provides that parties may achieve NDCs through 'internationally transferred mitigation obligations' (ITMOs). While rules to implement this article are still being developed, it points to a future in which nations may trade with each other in the under- or over-achievement of their NDCs, including trading in carbon offsets. How these rules are developed will have implications for international trade in carbon offsets including their price. The mechanism developed under Article 6 is likely to replace the Kyoto Protocol's Clean Development Mechanism (CDM).

The rate of emissions reduction required to achieve the Paris Agreement temperature goals will involve enormous changes to greenhouse gas emitting activities across the world. Each nation will need to develop a range of policies to reduce its emissions. This worldwide activity will drive increasing expectations of national action from all countries, will change the type and number of carbon offsets available in international markets and will create more demand and higher prices for carbon offsets. Water corporations will need to develop offset strategies that can adapt to these changes in the international policy environment.

Victorian Water Corporations – Laws, Standards and Requirements

All Victorian water corporations are governed by a range of Victorian laws, standards and requirements. This section sets out some of the requirements from these institutional arrangements that bear on the selection of offsets by water corporations.

All Victorian water corporations are established under the Victorian *Water Act 1989*. The Act establishes the legal framework for water resource management in the State and establishes the operating regime and requirements for water corporations.

Section 93 of the *Water Act* provides a set of “sustainable management principles” that each corporation must have regard to in performing its functions, exercising its powers and carrying out its duties. These principles include:

- (c) the need to integrate both long term and short term—
 - (i) economic, environmental and equitable considerations; and
 - (ii) Aboriginal cultural considerations; and
 - (iii) social and recreational considerations; and
- (d) the need for the conservation of biological diversity and ecological integrity to be a fundamental consideration.

Principle (c)(i) supports the need to take a long-term view of the role of carbon offsets in reducing emissions, and principle (d) supports seeking ecological co-benefits in offset selection.

Section 7 of the *Public Administration Act 2004* regulates the Victorian public sector, including the water corporations, and includes a set of seven public sector values. Several of these values are relevant to carbon offset selection and management:

- The principle of **responsiveness** requires public officials to *identify and promote best practice*. Applied to carbon offsets, this principle requires water corporations to identify and promote best practice for carbon offset selection and management. This report includes research findings on best practice offset procurement to support achievement of this principle.
- The **integrity** principle requires public officials to be honest, open and transparent in their dealings, use their powers responsibly and to strive to earn and sustain public trust of a high level. This reinforces the principle of transparency for carbon offsets. This principle supports water corporations revealing to their customers and stakeholders the role of offsets in their emissions reduction strategies, which offsets they use and how they were selected.
- This in turn is supported by the principle of **accountability** that requires public officials to submit themselves to appropriate scrutiny.

The Victorian Government procurement framework reflects a commitment to achieving value for money in procurement. This emphasises the need to secure ‘a desired procurement outcome at the best possible price – not necessarily the lowest price – based on a balanced judgment of financial and non financial factors relevant to the procurement.’²¹

The Minister for Water’s *Statement of Obligations – General* includes guiding principles (clause 1.6) that state that ‘in performing its functions and providing its services the Corporation must assist in the task of transitioning Victoria to an environmentally sustainable economy.’ This principle could bear upon the choice of location for carbon offset projects for water corporations.

In addition to these specific requirements for Victorian water corporations, all Australian businesses must comply with the Commonwealth’s *Competition and Consumer Act 2010*, which prohibits organisations from engaging in misleading or deceptive conduct in trade or commerce. The Act also prohibits organisations from making false and misleading representations – a more serious charge that can result in criminal penalties.

When making claims about greenhouse gas emissions and carbon neutrality resulting from the use of carbon offsets, organisations need to ensure that the offsets are genuine, otherwise they risk infringing these requirements. The Australian Competition and Consumer Commission, charged with enforcing the Act, advises that:

Firms which make environmental or ‘green’ claims should ensure that their claims are scientifically sound and appropriately substantiated. Consumers are entitled to rely on any environmental claims you make and to expect these claims to be truthful.²²

21 Victorian Government goods and services procurement guide, <https://www.buyingfor.vic.gov.au/achieving-value-money-goods-and-services-procurement-guide>

22 Australian Competition and Consumer Commission, *Green marketing and the Australian Consumer Law*, 2011, 1

Selecting Carbon Offsets

Carbon offset integrity principles

The CACNS sets out seven offset integrity principles, based on international standards, that it uses to determine offset eligibility under the standard. Four of the principles go to the nature of the project underlying the offset, and three go to the way offsets are transacted:



Carbon offsets must be:

Additional

GHG reductions are additional if they would not have occurred in the absence of a market for offset credits. If the reductions would have happened anyway – i.e., without any prospect for project owners to sell carbon offset credits – then they are not additional.²³

Permanent

Greenhouse gas emissions persist in the atmosphere for very long periods. Carbon dioxide is the most persistent, and methane and nitrous dioxide persist for shorter but still long periods. To genuinely ‘offset’ long-lived emissions, carbon offsets need to persist for the same amount of time as the emissions they are offsetting.

Measurable

Carbon offsets need to be accurately measurable to be genuine.

Address leakage

Leakage refers to negative emissions consequences (i.e. increased emissions) that result from offset projects. Some projects that aim to reduce greenhouse gas emissions and claim offsets for sale may displace emissions elsewhere. For example, if a project that claims to have reduced emissions by avoiding forestry in one location merely displaces that forestry activity to another location, it has not reduced emissions and cannot be considered an offset.

²³ Broekhoff, D., Gillenwater, M., Colbert-Sangree, T., and Cage, P. ‘Securing Climate Benefit: A Guide to Using Carbon Offsets.’ (Stockholm Environment Institute & Greenhouse Gas Management Institute, 2019) 19

Transparent

Given the role of offsets in emission reduction strategies, the complexities of identifying and accounting for genuine offsets and the wide range of methods and projects that claim to create offsets, carbon offset users need to be transparent about their source, down to the project level.

Independently audited

As offsets are complex environmental instruments that transfer emission reduction claims from one party to another, often across international borders, offset claims and their use need to be independently audited to ensure their integrity.

Registered

To ensure offsets are not counted more than once and to track their creation and retirement, carbon offsets must be registered.

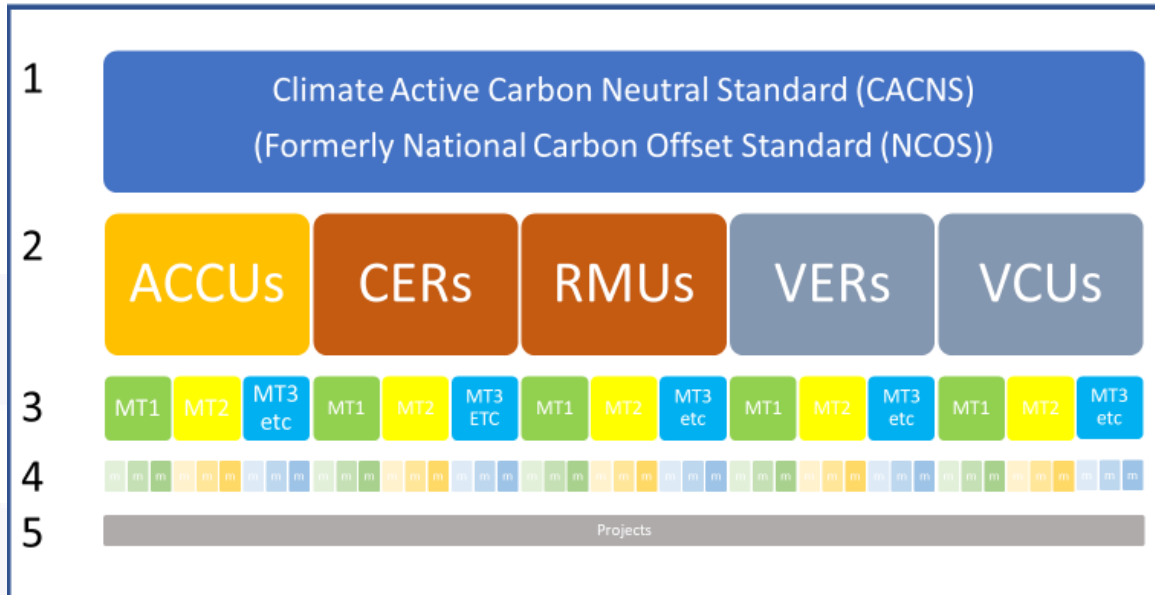
These principles represent a **minimum standard** for the quality of carbon offsets. There is a very diverse range of carbon offsets available in the market. Even amongst eligible CACNS offsets, offsets are available under five different crediting regimes for a wide range of project types, using different methodologies from diverse geographic regions with widely varying prices, with evidence of varying credibility, environmental integrity, and co-benefits.

Offsets permitted under CACNS

The CACNS provides that offset buyers should undertake their own due diligence with respect to the originating offset project and underpinning methodologies.²⁴

In addition to undertaking due diligence, CACNS also requires that offsets be accredited by an eligible standard. The CACNS limits participants to the use of offsets available from five different offset accreditation standards. Each of these accreditation standards has different characteristics, uses its own methodologies to accredit offsets and covers a range of project types.

The following diagram illustrates the five accreditation standards and methodologies that can be used under CACNS:



Key:

Level 1: Climate Active Carbon Neutral Standard (CACNS), formerly the National Carbon Offset Standard (NCOS). Administered by the Commonwealth Department of Energy and Environment.

Level 2: The five listed accreditation standards under CACNS:

- Australian Carbon Credit Units (ACCUs) – Australia
- Certified Emissions Reductions (CERs) - developing countries
- Removal Units (RMUs) – developing countries.
- Verified Emissions Reductions (VERs) - international
- Verified Carbon Units (VCUs) – international.

Level 3: Methodology types, for example, vegetation, agriculture, industry, energy efficiency, renewable energy.

Level 4: Individual methodologies.

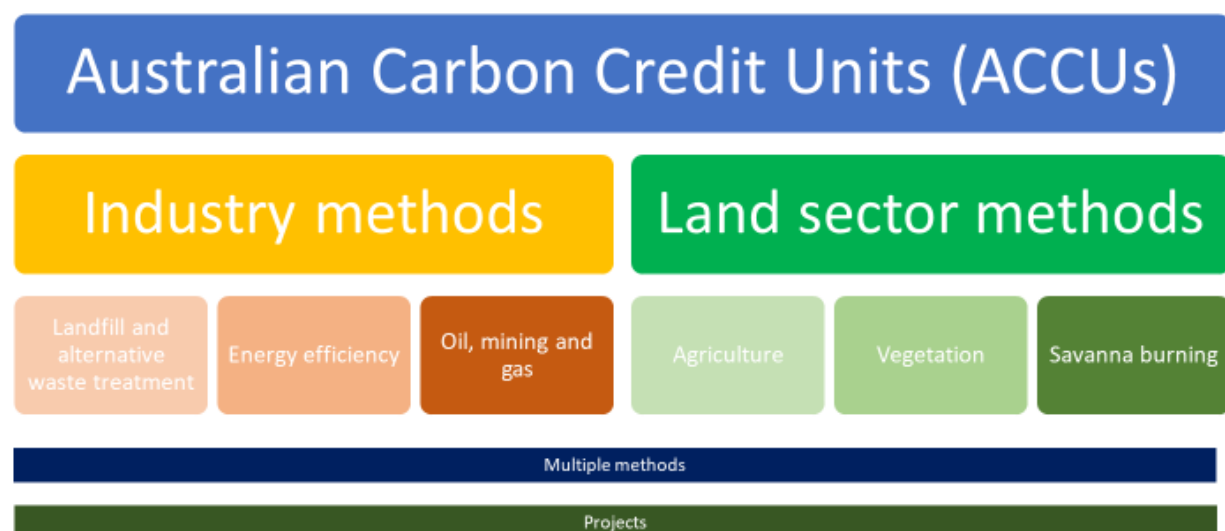
Level 5: Projects

Australian Carbon Credit Units

Victorian water corporations may access self-generated carbon offsets created in Victoria that meet the CACNS (Melbourne Water has access to offsets from elsewhere in Australia and overseas). Of the five standards listed under the CACNS, only three (ACCUs, VERs and VCUs) can be issued in Victoria.

There is limited information available on the issuance of VERs and VCUs in Victoria as these are voluntary standards.

There are currently 70 projects registered in Victoria under the Commonwealth's Climate Solutions Fund (formerly the Emissions Reduction Fund) that can generate ACCUs. The vast majority of ACCUs issued in Victoria are for landfill and waste projects, and other methods producing relatively small numbers of ACCUs are vegetation, agriculture, and energy efficiency. The following diagram further illustrates the ACCU methodologies available under the Climate Solutions Fund:



Offset integrity – key issues

The complexities of carbon offsets derive from their operational, economic and policy characteristics. Carbon offsets must be carefully and judiciously selected and deployed to meet regulatory requirements avoid outcomes that reduce or eliminate their utility in reducing greenhouse gas emissions.

The principles of offset integrity that are designed to ensure offsets achieve their purpose are outlined above. Questions about whether or not these principles are fulfilled can arise in decisions about when to use offsets, which offsets to use, and how to minimise risks. Issues related to four of the CACNS principles are canvassed below to highlight issues to consider when undertaking scrutiny of offsets, projects, standards and brokers.

The following discussion is illustrative rather than comprehensive and seeks to highlight key issues to consider when selecting offsets. It covers the first four of the seven offset integrity principles in CACNS (in darker shade below) that go to the nature of the project underlying the offset:

Additional**Permanent****Measurable****Address
leakage****Transparent****Independently
audited****Registered**

The section below discusses relevant considerations when implementing the principles of additionality, permanence, measurement and addressing leakage. This section should be read in conjunction with the Decision-Making Framework for Offset Selection. While transparency, independent audit and registration of offsets are also crucial, generally they are more straightforward to implement and give rise to less uncertainty in the process of generating and securing offsets.

Following the discussion on offset principles, several unintended consequences are also discussed. Water corporations should make sure to avoid risks of this kind when selecting offsets, as they can cause serious harms and damage the reputation of an organisation using offsets.

Although it takes effort to ensure offset projects meet the requirements of the offset integrity principles, it is not an insurmountable challenge. The section following this one, on best practice procurement of carbon offsets, outlines suggested approaches to address the issues raised below.

Validity of offsets – issues arising from offset integrity principles

Additionality

Additionality is arguably the most complex and the most problematic of the offset integrity principles, and perhaps also the most essential – if a project is not additional, it has not contributed any reduction of greenhouse gas emissions, making the problem of climate change worse. Purchasing non-additional offsets may also cause an organisation to misrepresent their business to their customers, which may have consequences under consumer law.²⁵

Additionality ultimately means that ‘the possibility to sell carbon offset credits must play a decisive (“make or break”) role in the decision to implement’ a project.²⁶ As Schneider describes regarding the CDM (under which Certified Emission Reduction units (CERs) are created, which are listed in the CACNS):

‘[t]he fundamental problem is that the question of whether a project would also be implemented without the CDM is hypothetical: it can never be proved with absolute certainty. The challenge is to find transparent and objective procedures for assessing additionality that avoid a great number of non-additional projects and do not result in a high number of ‘lost opportunities’ (projects that are additional but do not meet the requirements established for demonstrating additionality).’²⁷

Given that it is impossible to determine with absolute certainty the question of whether the project would have gone ahead without offsets, various tests have been developed within schemes such as the CDM to assess the likelihood that a project is truly additional. These include positive lists (though whether these actually guarantee additionality has been questioned²⁸), barrier analysis, investment analysis and common practice analysis.

Barrier analysis requires an assessment of whether there are other barriers preventing the project from going ahead that demonstrate that the ability to sell carbon credits is a determining factor for the project to proceed. However, this analysis can be ‘highly subjective, vague and difficult to validate in an objective and transparent manner.’²⁹

Investment analysis is intended to determine whether the project is financially viable or attractive without the revenue from selling offsets (in which case the project would not be additional). For this test to satisfactorily establish additionality, it must be clear on what basis calculations and assumptions have been made, including the internal rate of return applied. In the context of the CDM, this test has been found to suffer from a lack of data availability and inconsistency in calculations.³⁰

25 Chan, S., ‘Eligible claims in the voluntary carbon market’ (2001) 28 *Environment and Planning Law Journal* 9, 11-12, see also Australian Competition and Consumer Commission, ‘Green marketing and the Australian Consumer Law’ (Guideline, 2011).

26 Broekhoff, D., Gillenwater, M., Colbert-Sangree, T., and Cage, P. ‘Securing Climate Benefit: A Guide to Using Carbon Offsets.’ (Stockholm Environment Institute & Greenhouse Gas Management Institute, 2019) 19

27 Schneider, L., ‘Assessing the additionality of CDM projects: practical experiences and lessons learned’ (2009) 9 *Climate Policy* 242, 243

28 Cames, M. et al., ‘How additional is the Clean Development Mechanism?’ (Report, Institute for Applied Ecology, March 2016), 14

29 Schneider, L., ‘Assessing the additionality of CDM projects: practical experiences and lessons learned’ (2009) 9 *Climate Policy* 242, 246

30 Schneider, L., ‘Assessing the additionality of CDM projects: practical experiences and lessons learned’ (2009) 9 *Climate Policy* 242, 247-8

Common practice analysis involves a determination of whether the proposed project is common practice (and therefore likely to have proceeded anyway), or whether it represents an innovation or unusual activity likely to have been directly stimulated by the possibility of generating offsets. This may be a more objective test, as it does not require an assessment of the way the project developer made decisions. However, it has been applied in the absence of a clear definition of “common practice” and without established parameters for grouping similar technologies and therefore establishing some kind of differentiation.³¹

The common practice analysis requires careful consideration of the project context, as common practice differs from place to place.³² Common practice should be assessed regularly as it will change over time – ironically, the more offset projects employ a particular technology or type of project, the more likely such a project will become common practice and therefore non-additional for future projects.

Various strategies have been developed to help address issues of additionality, which may be applied through standards and can also be applied by organisations themselves. For example, the Verified Carbon Standard (VCS) has developed a negative list of projects that will not be considered additional,³³ which serves as a first negative screening process for additionality. Similarly, while the CACNS permits CDM offsets, it excludes some categories of CER from consideration.³⁴

Many CDM projects are renewable energy projects. In the early years of the CDM when some types of projects were not common practice, they were more likely to have been additional. Now, with renewable energy in many countries being the most cost-effective new source of electricity generation, additionality for renewable energy projects is highly unlikely as the revenue from offsets is unlikely to make a difference to the decision about whether or not to invest. For example, recent analysis suggests that renewable energy generation in all major international energy markets is now cheaper than coal.³⁵

Other ways to identify non-additionality include where a project is delivered in response to legal requirements, including to fulfil a legislated target for emissions reductions. Broekhoff et al. suggest that the proportion of a project’s revenue generated by offsets, the stage of the project at which offset funding is secured and the capacity of the project to continue reducing emissions without selling offsets can also be helpful indicators.³⁶ Alternatively, one way of demonstrating additionality would be to show that there is a risk that a project could cease reducing emissions without the revenue from offsets.³⁷

31 Schneider, L., ‘Assessing the additionality of CDM projects: practical experiences and lessons learned’ (2009) 9 *Climate Policy* 242, 249

32 See recommendations for strengthening the common practice analysis, Cames, M. et al., ‘How additional is the Clean Development Mechanism?’ (Report, Institute for Applied Ecology, March 2016), 15

33 Verified Carbon Standard, v4.0 (Verra, September 2019), 2-3

34 Climate Active Carbon Neutral Standard, Annex 1

35 Carbon Tracker, *How to waste over half a trillion dollars*, March 2020, <https://carbontracker.org/reports/how-to-waste-over-half-a-trillion-dollars/>

36 Broekhoff, D., Gillenwater, M., Colbert-Sangree, T., and Cage, P. ‘Securing Climate Benefit: A Guide to Using Carbon Offsets.’ (Stockholm Environment Institute & Greenhouse Gas Management Institute, 2019) 22

37 Schneider, L. and La Hoz Theuer, S., ‘Environmental integrity of international carbon market mechanisms under the Paris Agreement’ (2019) 19(3) *Climate Policy* 386, 390

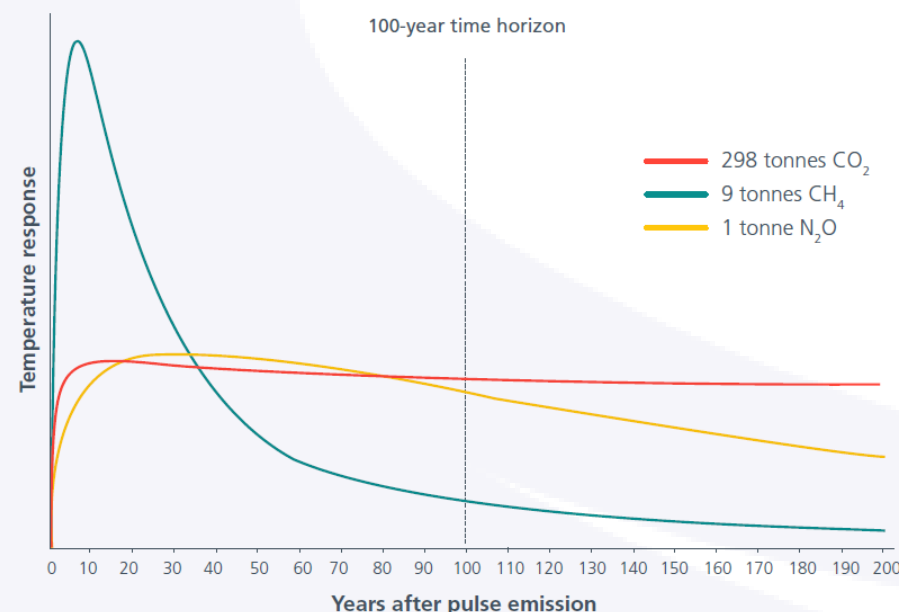
Some of these assessments will be undertaken in the certification process according to the standard used. Some can also be applied by an offset purchasing organisation: for example, an organisation could decide to exclude a type of project from consideration because of a high-risk of non-additionality across that category.³⁸

Although various improvements have been suggested to established methods for determining additionality,³⁹ ultimately, '[t]here is no bulletproof way to ascertain the additionality of most projects.'⁴⁰ Some reviews of carbon offset mechanisms have concluded that due to problems with additionality and some of the other principles discussed below, carbon crediting 'should play a limited role after 2020'.⁴¹ Restricting the standards, methodologies or project types that organisations can use to comply with regulatory requirements may have significant implications for governments and organisations that have to date relied on offsets to comply with emission reduction requirements.

Permanence

We can be certain that greenhouse gas emitted will persist in the atmosphere for very long periods. Carbon dioxide is the most persistent, nitrous oxide somewhat less persistent, and methane is least persistent. However, it is much more difficult to be sure that a carbon offset project and the emissions reductions it generates will persist for the same amount of time as the emission they are offsetting.

The following graph shows the global temperature effects of one-off emissions of carbon dioxide, methane and nitrous oxide released in year zero⁴²:



38 See discussion in Tarnoczi, T.J., 'An assessment of carbon offset risk: a methodology to determine an offset risk adjustment factor, and considerations for offset procurement' (2017) 8(2) *Carbon Management* 143, 150 regarding pre-screening.

39 See Cames, M. et al., 'How additional is the Clean Development Mechanism?' (Report, Institute for Applied Ecology, March 2016), 15-17 and Schneider, L., 'Assessing the additionality of CDM projects: practical experiences and lessons learned' (2009) 9 *Climate Policy* 242, 251-252.

40 Kollmuss, A. & Lazarus, M., 'Discounting offsets: issues and options' (2011) 2(5) *Carbon Management* 539, 542.

41 Cames, M. et al., 'How additional is the Clean Development Mechanism?' (Report, Institute for Applied Ecology, March 2016), 17-18.

42 Upton, S., 'Farms, forests and fossil fuels: The next great landscape transformation?' (Report, New Zealand Parliamentary Commissioner for the Environment, March 2019) 100.

Issues relating to permanence arise particularly in relation to forestry offsets. Where trees have been planted to reduce emissions, there is a risk that they may be cut down in future or destroyed by fire, pests or other environmental causes,⁴³ so that the carbon stored in the forest is released and the offset is ineffective over the long term. This is important where emissions are offset by the sequestration of carbon over time (as in a forest carbon sink), as opposed to projects that avoid emissions or immediately capture and destroy greenhouse gases. As Broekhoff et al. put it, 'scientifically, anything less than a full guarantee against reversals into the indefinite future is not "permanent"'.⁴⁴ Some offset standards have excluded forestry and land-use projects from their certification to avoid issues associated with permanence.⁴⁵ Risk of reversal may also increase as the impacts of climate change become more severe.⁴⁶

Generally offset providers establish a "buffer reserve" that can be deployed in the case of a reversal of an offset project, and measures to mitigate the risk of reversals can be put in place for individual projects.⁴⁷ Legal mechanisms such as an encumbrance on land title protecting the trees or a contract that prevents clearing of trees can also be used to bolster the durability of an offset project.⁴⁸ When purchasing offsets it is important to carefully investigate these measures, and also to understand how long the program or project guarantees the permanence of the offset.

Permanence may also be called into question depending on which type of offset is used to counteract which type of emissions. Although offset schemes tend to treat all greenhouse gases emitted and all tonnes of avoided emissions (offsets) as the same, greenhouse gases behave differently in the atmosphere,⁴⁹ and offsets reduce carbon emissions in different ways, depending on the project.

For example, carbon dioxide stays in the atmosphere for thousands of years, so '[t]o offset fossil carbon dioxide emissions, sequestered carbon would need to remain safely stored in terrestrial carbon pools for very long periods of time'.⁵⁰ This may make biological (e.g. forestry) offsets inappropriate for offsetting carbon dioxide emissions, as the permanence of these offsets cannot be guaranteed in the context of the timeframes for carbon dioxide remaining in the atmosphere. On the other hand, biological offsets may be more appropriate to offset gases that persist for shorter time periods, such as methane and nitrous oxide.⁵¹ Mechanisms for distinguishing between offset types and gases are not widely established in policy or regulation, but this discussion illustrates the complexity of determining and ensuring permanence in carbon offsets.

43 Upton, S., 'Farms, forests and fossil fuels: The next great landscape transformation?' (Report, New Zealand Parliamentary Commissioner for the Environment, March 2019) 9

44 Broekhoff, D., Gillenwater, M., Colbert-Sangree, T., and Cage, P. 'Securing Climate Benefit: A Guide to Using Carbon Offsets.' (Stockholm Environment Institute & Greenhouse Gas Management Institute, 2019) 26

45 Murphy, M. et al., 'Standards in the voluntary carbon market' (2010) 89(1) *Chartered Accountants Journal* 22, 24

46 Upton, S., 'Farms, forests and fossil fuels: The next great landscape transformation?' (Report, New Zealand Parliamentary Commissioner for the Environment, March 2019) 97

47 Broekhoff, D., Gillenwater, M., Colbert-Sangree, T., and Cage, P. 'Securing Climate Benefit: A Guide to Using Carbon Offsets.' (Stockholm Environment Institute & Greenhouse Gas Management Institute, 2019) 26

48 Chan, S., 'Eligible claims in the voluntary carbon market' (2001) 28 *Environment and Planning Law Journal* 9, 15

49 See Upton, S., 'Farms, forests and fossil fuels: The next great landscape transformation?' (Report, New Zealand Parliamentary Commissioner for the Environment, March 2019) p 98

50 Upton, S., 'Farms, forests and fossil fuels: The next great landscape transformation?' (Report, New Zealand Parliamentary Commissioner for the Environment, March 2019) 102

51 Upton, S., 'Farms, forests and fossil fuels: The next great landscape transformation?' (Report, New Zealand Parliamentary Commissioner for the Environment, March 2019) 107

Permanence can also be an issue in the context of an evolving policy framework – ‘[i]t is also highly uncertain for how long projects will reduce emissions, as they might anyhow be implemented at a later stage without incentives from a crediting mechanism’.⁵² This underscores the importance of careful consideration and re-evaluation of the policy context in determining the integrity of carbon offsets. It also highlights the capability needed within an organisation to properly assess carbon offsets they intend to use. Keeping abreast of policy context and change is easier within Australia (although policy is still changeable), but it can be more difficult to assess in international jurisdictions.

Measurement

Challenges in the measurement of offsets arise from the scientific uncertainty inherent in calculating emissions avoided and/or sequestered, and from a lack of consistency in measurement approaches including the determination of emissions baselines. For example, it is difficult to calculate how much carbon is sequestered in a forest each year, and measurement errors could lead to overestimation of the emissions reduction benefits generated by an offset project.⁵³

To minimise measurement challenges, projects must be regularly monitored and verified. Baselines used to calculate emissions should be conservative to minimise the risk of overestimation of benefit.

It is also important to understand when the emissions benefits are generated and when they are applied – for example, a forest may generate emissions reductions over multiple years, but the total offsets could be applied by an organisation to offset their emissions in one year only. These issues are generally managed through registration of offsets to avoid double counting, but the example serves to highlight the challenges of measuring emissions reductions from offset projects and ensuring their equivalence to greenhouse gases emitted elsewhere.

Leakage

Leakage refers to negative emissions consequences (i.e. increased emissions) that result from offset projects. Leakage can occur in many different ways depending on the nature of the project. For example, a forestry project may generate leakage if a plantation on one tract of land causes deforestation activities to occur elsewhere, rather than reducing those activities.⁵⁴ By modifying an ecosystem, an offset project may alter natural cycles, leading to the release of additional carbon: ‘projects that limit deforestation can inadvertently influence the hydrologic cycle as forested trees use water that naturally goes to other plants and grasslands. If those areas lose water, the plants and grasses inhabiting them may die and release carbon.’⁵⁵ Subsidies for renewable energy could reduce the cost of electricity leading to an overall increase in electricity consumption.⁵⁶

52 Cames, M. et al., ‘How additional is the Clean Development Mechanism?’ (Report, Institute for Applied Ecology, March 2016), 17

53 Broekhoff, D., Gillenwater, M., Colbert-Sangree, T., and Cage, P. ‘Securing Climate Benefit: A Guide to Using Carbon Offsets.’ (Stockholm Environment Institute & Greenhouse Gas Management Institute, 2019) 23

54 Broekhoff, D., Gillenwater, M., Colbert-Sangree, T., and Cage, P. ‘Securing Climate Benefit: A Guide to Using Carbon Offsets.’ (Stockholm Environment Institute & Greenhouse Gas Management Institute, 2019) 23

55 Dhanda, K.K. and Murphy, P.J., ‘The New Wild West is Green: Carbon Offset Markets, Transactions and Providers’ (2011) 25(4) *Academy of Management Perspectives* 37, 41

56 Schneider, L. and La Hoz Theuer, S., ‘Environmental integrity of international carbon market mechanisms under the Paris Agreement’ (2019) 19(3) *Climate Policy* 386, 394

Minimising leakage requires a thorough understanding of the context in which a project takes place and a wide-angle view of risks and possible consequences. This may include detailed knowledge of the economic and policy landscape, as well as a sound scientific understanding of relevant ecosystems.⁵⁷

Unintended consequences

Another set of issues that can compromise the strategic objectives and reputation of an organisation using offsets arises from potential unintended consequences arising from offset projects. Distinct from leakage, which is discussed here as relating to unintended increases in emissions, these issues are social, environmental and policy consequences that may result from offset projects.

Harm to local communities

The risk of offset projects disrupting or damaging the health, livelihoods and environment of communities is widely documented, and especially acute where carbon offset credits are transferred internationally. CDM projects have been found to cause harmful impacts including ecological degradation, harmful chemical pollution, evictions, food insecurity, breaches of human rights, social tensions, impacts on livelihoods and economic development, and violence.⁵⁸

Examples (and there are many more than these) of carbon offset projects that have inflicted significant harm on local communities include:

- A project to plant eucalyptus trees in Brazil, funded by the World Bank and BP to offset carbon emissions from an oil refinery in Scotland, reduced water availability (meaning villagers had to travel further and further to find water and plants for food and medicine), spread pesticides and herbicides into the local environment (damaging crops and local water sources) and resulting in the collapse of local small businesses.⁵⁹
- A project providing solar panels to workers on tea plantations in Sri Lanka was implemented through a system of solar loans that increased the debts of already indentured workers and inflamed local ethnic and political tensions.⁶⁰
- A dam project in Guatemala registered under the CDM was 'linked to grave human rights abuses, including the killing of six indigenous people, two of them children.'⁶¹

Some standards incorporate requirements to avoid these consequences and require project proponents to demonstrate how they have consulted with local communities and minimised risk. High levels of transparency and stringent requirements for ethical conduct by offset providers and scrutiny by offset purchasers can help mitigate these risks. Failure to take these steps also risks damage to an offset purchaser's reputation.

57 Dhanda, K.K. and Murphy, P.J., 'The New Wild West is Green: Carbon Offset Markets, Transactions and Providers' (2011) 25(4) *Academy of Management Perspectives* 37, 41

58 Dufrasne, G., 'The Clean Development Mechanism: Local impacts of a global system' (Report, Carbon Market Watch, October 2018)

59 Checker, M., 'Double Jeopardy: Pursuing the path of carbon offsets and human rights abuses' in Böhm, S., and Dabhi, S. (eds) *Upsetting the Offset: The Political Economy of Carbon Markets* (Mayfly Books, 2009), 50-51

60 Checker, M., 'Double Jeopardy: Pursuing the path of carbon offsets and human rights abuses' in Böhm, S., and Dabhi, S. (eds) *Upsetting the Offset: The Political Economy of Carbon Markets* (Mayfly Books, 2009), 48

61 Neslen, A., 'Green' dam linked to killings of six indigenous people in Guatemala' (The Guardian, 27 March 2015) <<https://www.theguardian.com/environment/2015/mar/26/santa-rita-green-dam-killings-indigenous-people-guatemala>>

Environmental impacts

Carbon offsets do not incorporate an inherent requirement of environmental benefit, and they may have negative environmental impacts. For example, plantations cannot replace the biodiversity value of forests no matter what the carbon equivalent generated by the plantation may be. Altering ecosystems through plantations can have significant and far-reaching impacts on soil, water and fire risk.⁶²

Carbon offset projects may also encourage, or at least facilitate, the continued operation of plants and industries that have negative environmental impacts. For example, a carbon offset project could fund a company to capture emissions from one part of its activities while it continues to emit toxic discharges into a local waterway. In effect, this provides a subsidy to a business that is causing environmental harm.⁶³

Murphy et al. noted in 2010 that

[c]o-benefits, such as poverty reduction and environmental improvement, are still a point of contention for offset projects. Although they are often sought after by offset consumers, co-benefits do not necessarily lead to greater GHG reductions and some argue that they detract from the primary goal of GHG mitigation.⁶⁴

Despite this tension between achieving co-benefits and optimising emissions reduction, organisations that purchase environmentally detrimental carbon offsets risk reputational damage and undermine other claims they may make to good corporate social responsibility. Some Victorian water corporations are signatories to the United Nations Global Compact, under which they commit to making the Sustainable Development Goals part of their strategy, culture and day-to-day operations. These commitments create an even stronger imperative to closely scrutinise potential offsets for these risks.

Perverse incentives

Carbon offsets can create perverse incentives that undermine policy efforts to reduce emissions. These perverse incentives take diverse forms. For example, the possibility of selling offsets can discourage regulation to reduce emissions because regulation renders the projects non-additional, thereby restricting the availability of offset credits to sell.⁶⁵ Nefarious project developers may undertake more emissions-intensive activities to create a higher baseline from which to measure emissions reductions (therefore enabling them to sell more offsets),⁶⁶ and/or they may inflate the emissions reductions achieved by a project.⁶⁷ Carbon offsets can also encourage the continuation of high-emitting activities (such as landfilling, where gas can be captured and credited

62 Beder, S. 'Carbon offsets can do more environmental harm than good' (The Conversation, 28 May 2014) <<https://theconversation.com/carbon-offsets-can-do-more-environmental-harm-than-good-26593>>; see also Nuñez, R. and Gender CC, 'Tree Plantations, Climate Change and Women' in Böhm, S., and Dabhi, S. (eds) *Upsetting the Offset: The Political Economy of Carbon Markets* (Mayfly Books, 2009), 102-107

63 This problem has also been raised with regard to the financing of coal-fired power stations under the CDM – see 'Trading in Fake Carbon Credits: Problems with the Clean Development Mechanism (CDM)' (Fact Sheet, Friends of the Earth and International Rivers, available at <<https://foe.org/2008-10-trading-in-fake-carbon-credits-problems-with-the-cdm/>>, 2

64 Murphy, M. et al., 'Standards in the voluntary carbon market' (2010) 89(1) *Chartered Accountants Journal* 22, 24

65 Broekhoff, D., Gillenwater, M., Colbert-Sangree, T., and Cage, P. 'Securing Climate Benefit: A Guide to Using Carbon Offsets.' (Stockholm Environment Institute & Greenhouse Gas Management Institute, 2019) 16, Cames, M. et al., 'How additional is the Clean Development Mechanism?' (Report, Institute for Applied Ecology, March 2016), 17.

66 Schneider, L. and La Hoz Theuer, S., 'Environmental integrity of international carbon market mechanisms under the Paris Agreement' (2019) 19(3) *Climate Policy* 386, 392

67 Cames, M. et al., 'How additional is the Clean Development Mechanism?' (Report, Institute for Applied Ecology, March 2016), 17

as an offset) instead of switching to lower-emissions activities (in the landfill example this could be recycling).⁶⁸ Where the cost of generating offsets is lower than the selling price, the generation of windfall profits can encourage continued production or even overproduction of gases like HFC23 solely for the purpose of destroying it and generating an offset credit.⁶⁹

Improvements to standards and methodologies and concerted policy action (such as regulation) can reduce the impact of perverse incentives. Discounting may also be a useful tool to minimise this risk.⁷⁰ Discounting is a technique applied to strengthen the integrity of carbon offsets by compensating for or insuring against the risk of deficiencies regarding additionality, permanence, measurement and leakage.

Evolving knowledge and policy landscape

Other considerations for assessing the integrity of carbon offsets include the incorporation of existing and evolving scientific knowledge about emissions, sequestration and how to measure the impact of offsets; and potential changes in the policy landscape.

While applying best available science to the delivery and oversight of offset projects should always be prioritised, broad evolutions in global scientific understanding of climate change and atmospheric greenhouse gases may require significant changes to the way offsets are calculated and applied.

One important contemporary example is an emerging view that '[t]reating fossil carbon emissions separately from biological sources and sinks of carbon dioxide, methane and nitrous oxide would help mitigate the main problems of the current approach'⁷¹, namely that all emissions of greenhouse gases are treated the same, even though different gases behave differently and sequestration projects have different qualities (this is discussed in the section on Permanence above) yet all offsets are (generally) treated the same.

Policy may evolve to take account of the fact that 'fossil carbon dioxide and fossil methane are part of the slow geological carbon cycle, while biological methane, nitrous oxide and carbon dioxide emissions from forests, soils and other terrestrial ecosystems are part of fast biological cycles.'⁷² The consequence of adopting this view could be that only certain types of offset credits (for example, biologically derived offsets, such as from tree planting) can be used to offset certain types of emissions (for example, biologically generated emissions from wastewater treatment), which would be a significant change in the way offsets are currently administered and applied.

Developments in scientific understanding are likely to be gradually incorporated into certification standards, and perhaps eventually into international agreements. Organisations should stay abreast of developments to manage the risks of anticipated changes to regulatory requirements. They may also incorporate additional requirements based on new scientific developments into internal criteria to achieve best practice in carbon offsetting.

68 Schneider, L. and La Hoz Theuer, S., 'Environmental integrity of international carbon market mechanisms under the Paris Agreement' (2019) 19(3) *Climate Policy* 386, 392

69 Kollmuss, A. & Lazarus, M., 'Discounting offsets: issues and options' (2011) 2(5) *Carbon Management* 539, 543

70 Kollmuss, A. & Lazarus, M., 'Discounting offsets: issues and options' (2011) 2(5) *Carbon Management* 539, 544

71 Upton, S., 'Farms, forests and fossil fuels: The next great landscape transformation?' (Report, New Zealand Parliamentary Commissioner for the Environment, March 2019) 105

72 Upton, S., 'Farms, forests and fossil fuels: The next great landscape transformation?' (Report, New Zealand Parliamentary Commissioner for the Environment, March 2019) 105

Evolution of scientific understanding is linked to and can drive policy change. Other factors may also contribute, such as the adoption of human rights and/or environmental standards by organisations or governments, evolving ethical perspectives, alternative views emerging about the operation of market instruments, community expectations and a diverse range of other influences. Certification standards will respond to policy change to maintain their currency and viability. Adopting a stringent approach to offset quality (going beyond existing certification standards where needed) can mitigate the risk of relying on offsets that cease to meet policy and certification standards, especially for longer-term offset projects.

Best practice offset procurement to ensure regulatory compliance

A scan of academic and grey literature reveals five complementary approaches that help ensure regulatory compliance by achieving genuine emission reductions, protecting organisational reputation and minimising risks. This section briefly describes these five strategies:

- High levels of due diligence – projects and standards
- Transparency
- Supplementary criteria
- Integration into organisational values and strategic direction, and
- Link to international standards and goals.

High levels of due diligence – projects and standards

Accurately estimating and securing the benefit of carbon offsets is a complex process, yet it is of critical importance: without a high level of certainty that offsets produce a real reduction in greenhouse gas emissions, they are pointless and effectively worsen the global emissions problem. Unfortunately, there is no simple way to guarantee that carbon offsets achieve their purpose, and there is significant potential for project failures and unconscionable behaviour (fraud) by participants in the carbon market.⁷³ It is therefore critical for organisations like water corporations to undertake due diligence on carbon offset projects for themselves, rather than relying on the representations of market participants.

For *self-generated offsets*, due diligence would involve:

- high levels of organisational oversight of offset projects
- rigorous and conservative calculation of emissions baselines and captured or avoided emissions
- investigation of the project context to ensure there are no unintended consequences that increase emissions or create leakage
- a strong understanding and monitoring of the policy and market environments to ensure projects are additional (for example, they are not required under legislation or financially viable without support through an offset mechanism)
- ongoing monitoring of projects to ensure permanence and delivery of emissions reductions in line with expectations, and
- verification of project adherence to offset integrity principles by a reputable third party.

⁷³ Schmidt, C.W., 'Carbon Offsets: Growing Pains in a Growing Market' (2009) 117(2) *Environmental Health Perspectives* A62, 65

Where *accredited offsets* are used, due diligence is required at (at least) two levels of procurement: in choosing an accreditation standard, and in choosing projects certified under that standard.

Organisations must choose which accreditation standard provides them with sufficient certainty about the benefits of purchased offsets and aligns with any organisational goals they may wish to pursue through the purchasing of offsets. Melbourne Water has the choice of five standards listed in the CACNS. Organisations should thoroughly investigate the available standards to discover how credible they are (to what extent have they been found by independent assessments to certify projects that genuinely achieve the offset integrity principles in CACNS), including the methodologies used within the standard, and any additional requirements they incorporate which may strengthen their credibility and/or align with the purchasing organisation's values.

One of the standards available under the CACNS is the CDM that produces CERs. CERs have been found to have significant shortcomings in terms of guaranteeing environmental integrity, including additionality and avoiding over-estimation of emissions reduction. Cames et al. in 2016 found that '[i]t is likely that the large majority of the projects registered and CER issued under the CDM are not providing real, measurable and additional emission reductions.'⁷⁴

In contrast, several standards developed in the voluntary market reflect more stringent requirements for accreditation. For example, '[t]he Gold Standard is intended to go above and beyond the CDM, in particular with regard to project type and co-benefits'⁷⁵ and the VCS includes a list of excluded projects deemed to be non-additional⁷⁶ despite their potential eligibility for accreditation under the CDM.⁷⁷ Offsets under the Gold Standard and the VCS are available under the CACNS.

Investigating the *projects* certified under the chosen standard(s) and selectively identifying which projects to support through the purchase of offsets is also necessary to reduce the integrity risks associated with offset standards and ensure the purchase of carbon offsets aligns with the organisation's values. Although most standards provide for the failure of carbon offset projects by buffering the risk of deficiency or reversal,⁷⁸ organisations can further reduce this risk by choosing offsets generated by projects deemed 'low-risk'⁷⁹ due to their permanence and/or certainty of measurement. These kinds of determinations can be made on a project-by-project basis or by evaluating the methodology used to implement the project under an accreditation standard. It is worth noting that the same project type (for example, reforestation) will have different methodologies under different accreditation standards.

⁷⁴ Cames, M. et al., 'How additional is the Clean Development Mechanism?' (Report, Institute for Applied Ecology, March 2016), 14

⁷⁵ Murphy, M. et al., 'Standards in the voluntary carbon market' (2010) 89(1) *Chartered Accountants Journal* 22, 23

⁷⁶ Verified Carbon Standard, v4.0 (Verra, September 2019), 2-3

⁷⁷ See for example Project 10537: Solar PV based power generation by Voltas Green in Mauritius, <https://cdm.unfccc.int/Projects/DB/KBS_Cert1574421069.55/view>

⁷⁸ Chan, S., 'Eligible claims in the voluntary carbon market' (2001) 28 *Environment and Planning Law Journal* 9, 14

⁷⁹ See for example Broekhoff, D., Gillenwater, M., Colbert-Sangree, T., and Cage, P. 'Securing Climate Benefit: A Guide to Using Carbon Offsets.' (Stockholm Environment Institute & Greenhouse Gas Management Institute, 2019) Annex 1 37

In some cases, carbon offsets can be purchased directly from the certifying organisation. However, it may also be deemed useful or more appropriate for an organisation to purchase carbon offsets through a broker (which may represent project developers, or which may be a project developer itself). In this case, organisations should also conduct due diligence investigations into their broker of choice to ensure they will deliver, that offsets are appropriately registered, and that their operations are verified by third parties as necessary. Dhanda and Murphy note that ‘additionality, certification and standardization, and transparency are the critical differentiators of the top carbon offset providers’.⁸⁰

Exercising due diligence at two or three levels of decision-making in the purchase of accredited offsets may appear to be labour intensive, and ‘[p]art of the challenge is that offset quality is not black and white.’⁸¹ Nevertheless, it is important to undertake this process, as an offset that does not meet offset integrity criteria does not effectively reduce greenhouse gas emissions. The Stockholm Environment Institute’s ‘Securing Climate Benefit: A Guide to Using Carbon Offsets’ includes some suggested questions that organisations looking to purchase offsets can ask to help them make informed decisions, and some strategies for avoiding low-quality offsets.⁸² Maintaining diversity across a portfolio of offsets also helps to reduce the risks⁸³ attached to individual projects, brokers and standards (but should not replace high levels of due-diligence on a project-by-project basis).

The following four best practice approaches can also inform the choice of standard, project and broker.

Transparency

Transparency is essential to ensure the integrity of carbon offsets. Transparent reporting on all stages of the offset cycle (including project design, project implementation, project monitoring and measurement, certification, registration and retirement of offset credits) is the primary means of demonstrating that an organisation is genuinely reducing their emissions through offsetting. A lack of information about offsets and the way in which a project adheres to offset integrity principles is generally considered to be evidence that the requirements for offsets have not been met.⁸⁴

An emphasis on transparency is relevant to projects, standards, brokers and the purchasing organisation itself. Before choosing to support a specific offset project, it is important to seek and review available information about the project. This should include detailed information about how the project meets offset integrity criteria, including how the project is additional, how permanence will be assured, contextual information that indicates whether leakage may be a problem and any social or other environmental impacts, how risks are managed, and how the local community and other relevant stakeholders have been consulted.

80 Dhanda, K.K. and Murphy, P.J., ‘The New Wild West is Green: Carbon Offset Markets, Transactions and Providers’ (2011) 25(4) *Academy of Management Perspectives* 37, 43

81 Broekhoff, D., Gillenwater, M., Colbert-Sangree, T., and Cage, P. ‘Securing Climate Benefit: A Guide to Using Carbon Offsets.’ (Stockholm Environment Institute & Greenhouse Gas Management Institute, 2019) 18

82 Broekhoff, D., Gillenwater, M., Colbert-Sangree, T., and Cage, P. ‘Securing Climate Benefit: A Guide to Using Carbon Offsets.’ (Stockholm Environment Institute & Greenhouse Gas Management Institute, 2019)

83 Tarnoczi, T.J., ‘An assessment of carbon offset risk: a methodology to determine an offset risk adjustment factor, and considerations for offset procurement’ (2017) 8(2) *Carbon Management* 143, 150

84 See for example Schneider, L., ‘Assessing the additionality of CDM projects: practical experiences and lessons learned’ (2009) 9 *Climate Policy* 242

Standards are generally made available on the website of the administering organisation, and these should be carefully reviewed. There may also be a grievance procedure and/or register that contains issues raised about the standard or projects carrying its certification. This can be a useful indicator of transparent certification. Brokers should also provide detailed information about how projects are selected and verified, and how credits are registered and retired. As Broekhoff et al. note, 'project developers and offset credit owners should be forthcoming with answers to such questions (if they are not, it is a red flag).'⁸⁵

Transparency is also important to underpin a best practice approach to purchasing by organisations such as Victorian water corporations. The CACNS requires an organisation that retires offsets to support a carbon neutral claim to publish information about the offsets in their annual report, including the name and type of the project, details about the units purchased, and the registry through which the units have been retired.⁸⁶

However, additional details about the way in which the purchasing organisation selected projects, standard(s) and brokers will build the confidence of the organisation's stakeholders and regulators in the integrity of the offsets purchased by the organisation. This information could include:

- how these decisions align with organisational values
- procedures employed by the organisation to verify offsets and/or to minimise risks of non-additionality, over-estimation or reversal (among others)
- assumptions and uncertainties in the calculation of the organisation's carbon footprint and/or in the emissions reductions achieved through offsetting activities, and
- a clear description of how the purchase of offsets fits into the organisation's long-term strategy to reduce emissions.

Publishing these details transparently can also contribute to the development of better practice in the sector and across the market, as organisations learn from the disclosure of good practice by their peers.

⁸⁵ Broekhoff, D., Gillenwater, M., Colbert-Sangree, T., and Cage, P. 'Securing Climate Benefit: A Guide to Using Carbon Offsets.' (Stockholm Environment Institute & Greenhouse Gas Management Institute, 2019) 32

⁸⁶ Climate Active Carbon Neutral Standard, s 2.5.2

Supplementary criteria

Another approach to ensuring offsets purchased produce real greenhouse gas reductions and do not create unintended harms is to apply criteria that support the offset integrity principles in CACNS and the requirements of the chosen standard(s) in assessing offset projects, intended to weed out projects that may cause harm.

One example of criteria that can be used to undertake due diligence of the originating project (as recommended by the CACNS) is the Quality Assurance Standard (QAS)'s 40 point carbon offset checklist.⁸⁷ Self-described as 'the world's highest audit standard for carbon neutrality', the QAS requires that projects are certified by programs such as CDM, GS or VCS and also meet a diverse range of additional quality criteria covering the application, emissions calculations, information that must appear on websites relating to certified offsets, and renewal of certification. These additional criteria resolve potential uncertainties in offset calculation and verification processes and require high standards of market behaviour and disclosure.

An example of a different type of instrument that establishes additional best practice obligations is the Australian Carbon Industry Code of Conduct, administered by the Carbon Market Institute. The Code of Conduct 'aims to

promote market integrity, consumer protection and appropriate interaction with project stakeholders, including Native Title Holders, representative bodies, land managers and project owners.'⁸⁸ It includes a range of best practice obligations that apply to the pre-project stage, project activities, compliance, and dealings with clients.⁸⁹ By administering the Code, the Carbon Market Institute acts as an independent monitor of activities and participants in the Australian carbon market,⁹⁰ anticipating improved transparency, accountability, environmental and social outcomes, stakeholder engagement, and compliance with standards, regulations and international norms.⁹¹

Supplementary standards are also used to ensure that carbon offset projects produce environmental and/or social co-benefits. Critically, this responds to findings that some carbon offset programs have created serious environmental, health and social harms in local communities.⁹² Although there may be a tension between maximising carbon sequestration and achieving co-benefits,⁹³ there is increasing recognition that climate change and other environmental harms such as biodiversity loss are interdependent threats to the planet,⁹⁴ and a global acknowledgement that responses to climate change must integrate considerations of sustainable development and human rights.⁹⁵

87 QAS, 'Carbon offset standards' (Website) <<https://qasaudit.com/carbon-offset-standards/>>

88 Carbon Market Institute, 'Australian Carbon Industry Code of Conduct' (Website) <<http://marketplace.carbonmarketinstitute.org/code/>>

89 Australian Carbon Industry Code of Conduct, s 2

90 Australian Carbon Industry Code of Conduct, s 3

91 Australian Carbon Industry Code of Conduct, s 1.3

92 Dufrasne, G., 'The Clean Development Mechanism: Local impacts of a global system' (Report, Carbon Market Watch, October 2018)

93 Broekhoff, D., Gillenwater, M., Colbert-Sangree, T., and Cage, P. 'Securing Climate Benefit: A Guide to Using Carbon Offsets.' (Stockholm Environment Institute & Greenhouse Gas Management Institute, 2019) 7

94 Rockström, J. et al., 'A safe operating space for humanity' (2009) 461(24) *Nature* 472

95 Paris Agreement (United Nations, 2015), Preamble; Transforming Our World: The 2030 Agenda for Sustainable Development (A/RES/70/1, United Nations, 2015)

Examples of supplementary standards that assist in identifying projects that avoid harm by certifying environmental and social co-benefits include the Climate Community and Biodiversity (CCB) Standard developed by the Climate, Community and Biodiversity Alliance, and the SOCIALCARBON Standard. The CCB Standard applies to land management projects and certifies that projects have engaged ethically with stakeholders and created net benefits for the community, biodiversity and the climate. It is administered by Verra, the organisation that administers the VCS, and can be applied in conjunction with the VCS to agriculture, land-use and forestry projects.⁹⁶ The SOCIALCARBON methodology assesses the carbon, biodiversity, social, financial, human and natural elements of a project, and provides for continuous monitoring of projects.⁹⁷

Supplementary criteria can be incorporated through the application of an additional certification, such as the CCB or SOCIALCARBON Standards or QAS, or by preferring organisations that are signatory to the Australian Carbon Industry Code of Conduct, for example. Social and environmental sustainability criteria may also be built into a carbon offset certification standard – for example, the Gold Standard was originally designed to ‘to ensure real reductions with measurable contributions to sustainable development.’⁹⁸

Supplementary criteria could also be used to inform an organisation’s internal deliberations about which projects to support, or which standard or broker to use. Drawing on best practice instruments and the organisation’s own values and objectives, and informed by relevant policy guidance such as the Victorian

Government’s Social Procurement Framework,⁹⁹ it is possible to develop a customised set of additional criteria applied by the organisation as part of its internal process of identifying offsets for purchase.

Integration with organisational values and strategic direction

As discussed above, carbon offsetting must be part of an overall organisational strategy to reduce carbon emissions. This strategy should be incorporated into all organisational activities, strategies and plans.¹⁰⁰

Further, at the level of carbon offsets, procurement decisions should be aligned with organisational values and strategic direction. Although some of this will flow from the emissions reduction strategy, the choices built into the selection of offset projects should be informed by organisational values in addition to emissions reduction goals. As noted above, carbon offsets can deliver social and environmental co-benefits, and integrating offsets into organisational strategy may help to prioritise projects that align with the goals and strategic objectives of the organisation.

For example, a water corporation may have a strategic objective to improve catchment health – this objective may inform the selection of offsets of a certain project type (biological/revegetation) and even the geographic location of offsets.¹⁰¹ Integration with organisational values and strategic direction may help to streamline the selection process and strengthen the public narrative about the use of offsets to reduce emissions.

96 Verra, Climate, Community and Biodiversity Standards (Website) <<https://verra.org/project/ccb-program/>>

97 SOCIALCARBON, SOCIALCARBON History (Website) <<http://www.socialcarbon.org/who-we-are/socialcarbon-history/>>

98 Murphy, M. et al., ‘Standards in the voluntary carbon market’ (2010) 89(1) *Chartered Accountants Journal* 22, 23

99 Victorian Government, ‘Ensuring ethical procurement through Supplier Code of Conduct – Buyers’, <https://www.buyingfor.vic.gov.au/ensuring-ethical-procurement-through-supplier-code-conduct-buyers>

100 See Wade, B., Dargusch, P. and Griffiths, A., ‘Defining Best Practice Carbon Management in an Australian context’ 21(1) *Australasian Journal of Environmental Management* 52

101 Note that it would still be important to ensure offsets are additional – projects to be delivered according to a corporate plan or other policy could not be counted as offsets. However, genuinely additional projects may still help to achieve organisational objectives.

For water corporations, a key determinant of organisational direction relevant to offset selection is customer preferences. Given the cost of offsets are reflected in water bills, customers are likely to have a view about how this money is used to reduce emissions and to deliver benefit to the community and the environment. Investigating customer views on offsets, including by incorporating discussion of offsets into existing processes for seeking customer feedback, can help to identify values and preferences that should inform offset selection.

Link to international standards and goals

Offset procurement should, as far as possible, align with relevant international treaty obligations, standards, and goals. This is one way to minimise the risk of regulatory standards changing, as governments draw on international obligations as the basis of national standards. The rules for ‘internationally transferred mitigation outcomes’ (ITMOs) under Article 6 of the Paris Agreement are currently under negotiation and may catalyse modifications to domestic standards such as CACNS (see discussion on International policy context above). Depending on the nature of this new mechanism, organisations may also wish to introduce additional criteria into their procurement of offsets that reflect the spirit of the Paris Agreement, such as choosing to purchase international offsets from countries with more ambitious emission reduction goals.¹⁰²

However, it should also be noted that meeting internationally negotiated offset standards is a necessary but not sufficient requirement to achieve offset integrity (noting, for example, the extensive criticisms of the UN CDM under the Kyoto Protocol¹⁰³). Organisations should ensure they comply with international standards but should not hesitate to apply more stringent standards in line with best practice if necessary.

Other international agreements may also provide strong normative foundations for choices relating to offset procurement. The Sustainable Development Goals (SDGs) are the pre-eminent expression of a global commitment to social and ecological sustainability and transformation. Governments, organisations and communities around the world are committed to achieving these goals, and they have widespread community recognition and credibility. Some offset certification standards such as GS have explicitly linked their standard to the achievement of the ‘global goals’.¹⁰⁴ However, the SDGs could also be integrated into offset procurement at the organisational level as part of developing an internal best practice approach and/or supplementary criteria to inform offset creation and procurement.

102 See discussion in Schneider, L. and La Hoz Theuer, S., ‘Environmental integrity of international carbon market mechanisms under the Paris Agreement’ (2019) 19(3) *Climate Policy* 386

103 See for example Schneing the additionality of CDM projects: practical experiences and lessons learned’ (2009) 9 *Climate Policy* 242; Cames, M. et al., ‘How additional is the Clean Development Mechanism?’ (Report, Institute for Applied Ecology, March 2016), Dufrasne, G., ‘The Clean Development Mechanism: Local impacts of a global system’ (Report, Carbon Market Watch, October 2018); ‘Trading in Fake Carbon Credits: Problems with the Clean Development Mechanism (CDM)’ (Fact Sheet, Friends of the Earth and International Rivers, available at <<https://foe.org/2008-10-trading-in-fake-carbon-credits-problems-with-the-cle/>>)

104 Gold Standard, Gold Standard for the Global Goals (Website) <<https://www.goldstandard.org/impact-quantification/gold-standard-global-goals>>; see also Plan Vivo, a UK-based certifier: <https://www.planvivo.org/about-plan-vivo/the-sustainable-development-goals/>

This publication has been produced by VicWater with support from the Carbon Offsets Working Group.
The report was prepared by Proud Mary Consulting Pty Ltd with funding provided by Melbourne Water. • September 2020



FOR FURTHER INFORMATION CONTACT VICWATER

L2 466 Lt Lonsdale St Melbourne Vic 3000

www.vicwater.org.au