

The Frontier Line

Net zero carbon in real estate:
Leaders and laggards

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Part two

About us

Frontier has been at the forefront of institutional investment advice in Australia for over 25 years and provides advice on \$600 billion of assets across the superannuation, charity, public sector, insurance and university sectors.

Frontier's purpose is to empower our clients to advance prosperity for their beneficiaries through knowledge sharing, customisation, technology solutions and an alignment and focus unconstrained by product or manager conflict.



Jennifer Johnstone-Kaiser
Head of Property

Jennifer Johnstone-Kaiser leads Frontier's real estate research program providing consulting and research for clients, both domestically and globally. Jennifer has significant global experience across the US, Australia and Asia.

Previously, Jennifer was the Country Head and Director of Business Development with Savills Investment Management and Mercer's Head of Real Estate - Asia Pacific. Jennifer is a Senior Fellow of Finsia. She holds a Master of Finance and Bachelor of Business, Property (Distinction).



Ricci Steckoll
Consultant

Ricci joined Frontier in March 2020. He has responsibility for undertaking manager and investment research with a focus on property and infrastructure.

Prior to joining Frontier, Ricci spent four years at Deloitte within the financial modelling team, with a predominate focus on transactions across a diverse range of sectors including, retail, property and technology. Ricci holds a Bachelor's Degree of Engineering (Civil) with honours and a Bachelor of Commerce (Finance) both from Monash University. He has also passed CFA Level I.



Chris Tran
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Chris joined Frontier as an Associate in October 2021. As part of the Real Assets Team, he has responsibility for undertaking manager and investment research with a focus on property, infrastructure, and private equity sectors.

Prior to joining Frontier, Chris worked for over four and a half years in corporate finance with Pitcher Partners and ASIC, consulting on M&A and valuation engagements for his clients and stakeholders. Chris holds a Bachelor of Commerce (Finance/Accounting) from the University of Melbourne and is currently studying towards his CFA.

Introduction

“Real estate cannot be lost or stolen, nor can it be carried away.
Purchased with common sense, paid for in full, and managed with
reasonable care, it is about the safest investment in the world.”
– Franklin D. Roosevelt, Former US President

Times have changed and climate change around the globe could be an existential threat evidenced by rising sea levels and extreme weather events. Real estate values can be eroded without accelerated management of these risks. Investment managers have a fiduciary responsibility to manage net zero transition and preserve real estate values.

In Part one of the “Net zero in real estate” series, we delved into industry trends and challenges, and learnt that the real estate sector is one of the biggest carbon emitters, contributing close to 40% of global carbon emissions.¹ Part two looks at the results of our manager surveys and tracks their path toward their stated net zero carbon (NZC) targets, how they plan to achieve that and the reasons for disparity (if any) in their progression.



¹ Global Alliance for Buildings and Construction “2020 Global status Report for Building and Construction”, 2020

A report card on real estate managers

To understand the steps real estate investment managers are taking to reach net zero, Frontier surveyed 16 Australian and global real estate managers. The survey comprised questions on setting of Scope 1, 2 and 3 emissions targets, embodied carbon, the use of carbon offsets, sustainable financing and NZC reporting.

Managers' Scope 1, 2 and 3 emissions reduction journeys

The managers shown in Table 1 are a cross-section of the managers surveyed and a proxy for the progression across peers.

Table 1: Managers and their net zero targets

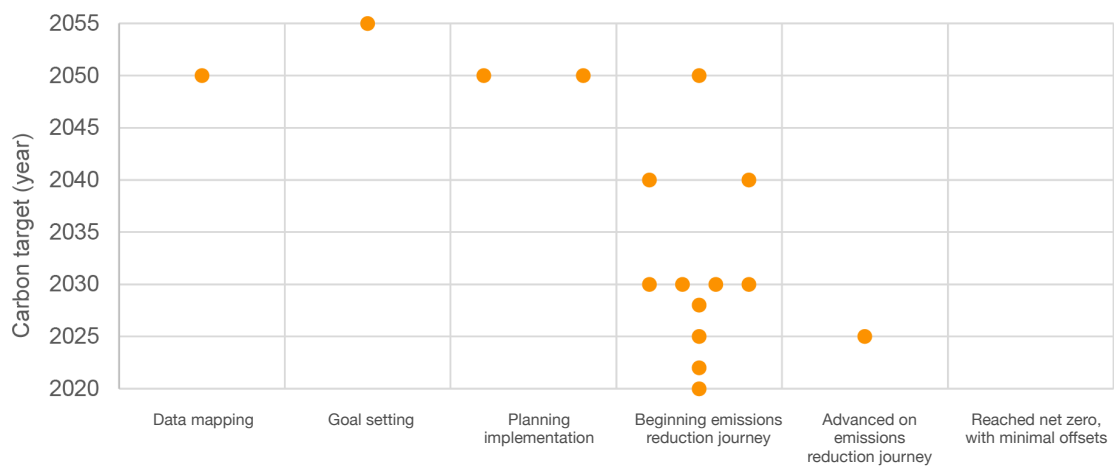
Scope 1 and 2 targets		Scope 3 targets
Australian managers		
Manager 1	Net zero by 2025	Absolute zero by 2040
Manager 2	Carbon neutrality ^{NB} already achieved in 2020	N/A
Manager 3	Net zero by 2030	Still in development
Manager 4	Carbon neutrality ^{NB} already achieved in 2022	Reducing by 25% (from 2019 baseline) by 2030
Manager 5	Carbon neutrality ^{NB} targeted for 2023	N/A
Manager 6	Net zero by 2030 abstaining from the use of carbon offsets	N/A
Manager 7	Net zero by 2030	N/A
Manager 8	Net zero by 2028	N/A
Manager 9	Net zero by 2025	N/A
International managers		
Manager 10	70% reduction from current levels of Scope 1 and 2 emissions by 2025 (no formal net zero target)	N/A
Manager 11	Net zero by 2030	Net zero across the value chain by 2040
Manager 12	Net zero by 2040	Net zero 2040 goal includes Scope 3 emissions
Manager 13	Net zero by 2050, interim target of 50% reduction (from 2019 baseline) by 2030	Incorporated within Scope 1 and 2 target
Manager 14	Net zero by 2050	N/A
Manager 15	Net zero by 2050, interim target of 50% reduction by 2030	N/A
Manager 16	Net zero by 2050	N/A

Source: Managers, Frontier

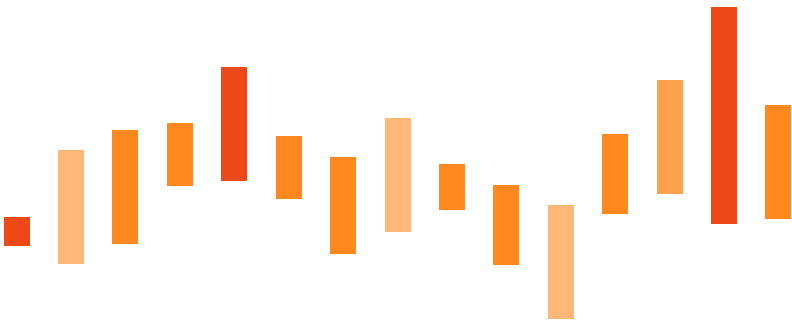
^{NB} Carbon neutrality is defined as when an organisation's emissions are balanced and when the emissions produced are calculated and then offset via carbon offsetting projects. It differs from net zero carbon, which seeks to reduce the absolute carbon emissions, while minimising the use of offsets.

Additionally, we analysed managers' progress on their net zero target. Chart 1 shows managers with shorter NZC targets are likely to be further advanced on the journey; managers with 2050 and later NZC targets are likely to be less advanced on the journey and have yet to start implementation of energy reduction initiatives. Ironically, while many international gateway cities, such as Los Angeles, Paris and New York, are highly advanced with relevant legislation, some global managers appear to lag their Australian counterparts in their NZC ambitions.

Chart 1: Managers' net zero journey and targets



Source: Managers, Frontier



Scope 1 and 2 emissions

After analysing the survey results it is evident most managers (circa 70%) have targets well in advance of 2050 (as seen in Chart 2). Such targets reflect the maturity of the market, and the relative ease at which Scope 1 and 2 emissions reductions can be achieved for the real estate sector compared to other harder-to-abate sectors. Technological advancements coupled with a better understanding of net zero pathway have meant many managers have actively sought to bring their targets further forward than previously planned.

Two managers claimed to have already achieved carbon neutrality (not increasing carbon emissions and achieving carbon reduction using offsets) in 2020 and 2022, respectively. However, this is predominately through the acquisition of bulk carbon offsets, rather than drastic reductions in the emissions of the assets. One of the managers has been certified by Climate Active as being carbon neutral. It reduced carbon emissions by about 30% over two years to 2021 (consistent with the overall market emission reductions from lockdowns) and has purchased carbon offsets for the remaining 70% of the emissions.

Across the board, managers have committed to, and are implementing, a step change approach to achieving net zero.

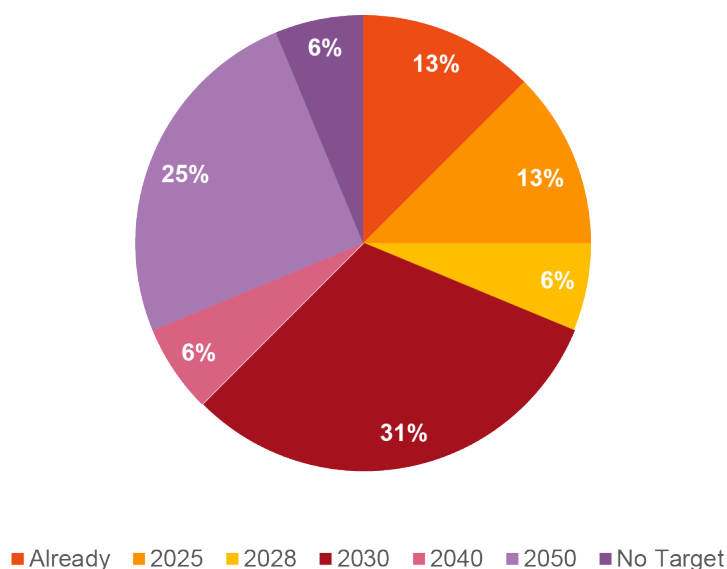
As discussed in Part one, this will be undertaken through:

- energy efficiency initiatives (e.g. LED lighting)
- deploying renewable energy on-site (e.g. rooftop solar panels)
- procuring off-site renewable energy
- electrification of key building infrastructure (i.e. transitioning from gas).

Many managers have also indicated they are willing to utilise offsets. Another commercial property manager has continuously reduced emissions by 25% from FY21 to FY22 and by 66% from FY15. This has been achieved by upgrading building facilities and ensuring all buildings meet a NABERS rating of at least five stars, while also procuring renewable energy for all New South Wales located assets. The manager has planned for improvements to building energy efficiency to continue and it will procure renewable energy for all its assets.

Another manager has set a 'real zero' target, aiming to benchmark the live carbon data and seek to eliminate all Scope 1 and 2 emissions by its target date without the use of carbon offsets. Overall, the impact will be to reduce actual carbon emissions focusing on the step change approach to reducing genuine carbon footprints.

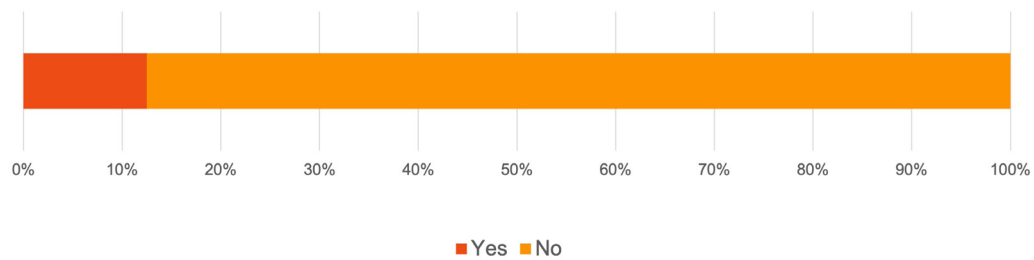
Chart 2: Proportion of managers across various net zero target dates



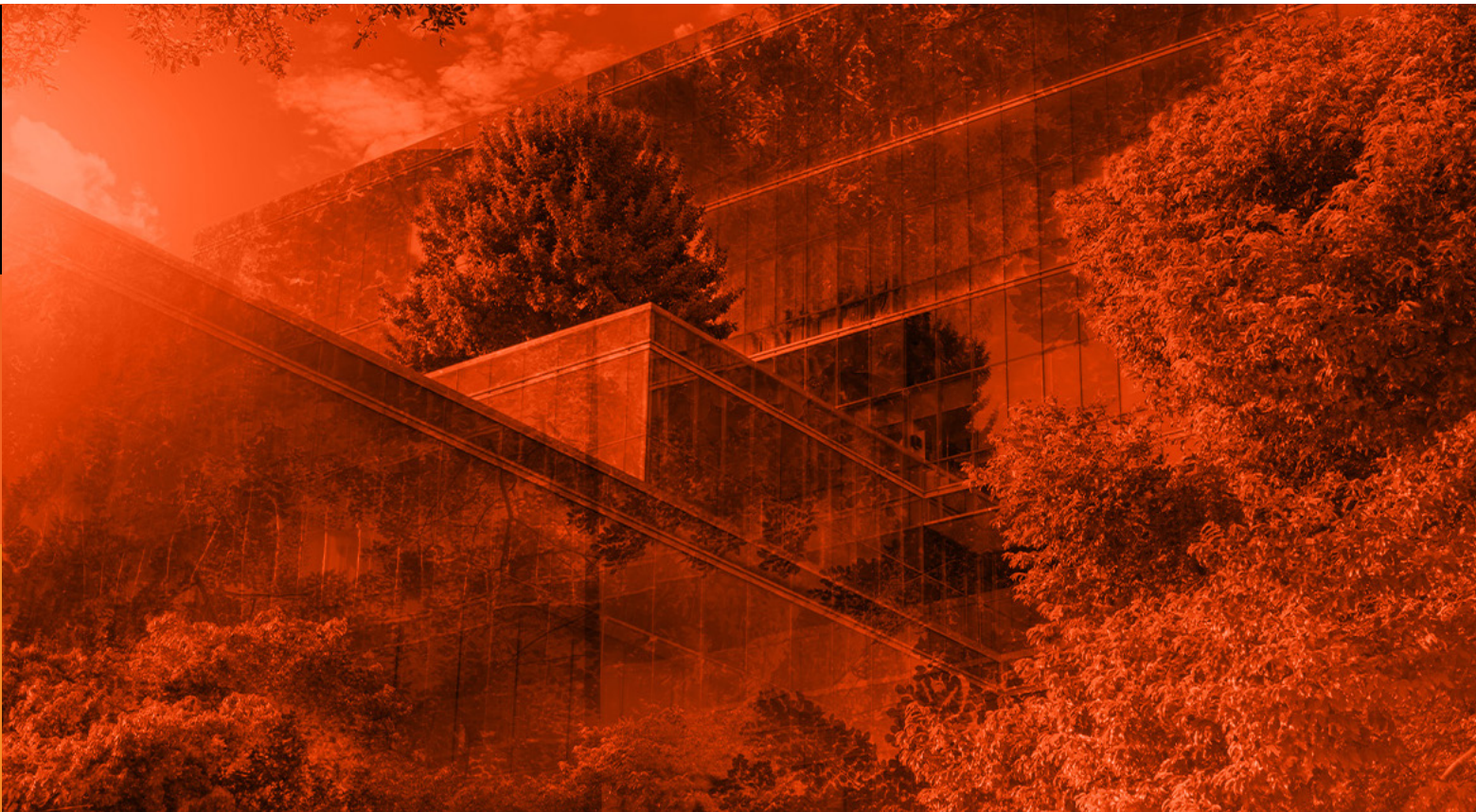
Source: Managers, Frontier

Given overall emissions will need to decrease by 40% by 2030 to ensure global temperature rise remains below 1.5°C, interim targets should be a key component of a manager's net zero commitments. Very few managers have provided interim targets, however, this is less pertinent for managers with a target date well in advance of 2050. A good example of a manager's interim target is a commitment to reduce the Scope 1 and 2 emissions intensity of underlying assets by 50% by 2030 (from a 2019 baseline), in conjunction with the portfolio net zero 2050 goal (across all emission Scopes).

Chart 3: Proportion of managers with interim net zero targets



Source: Managers, Frontier

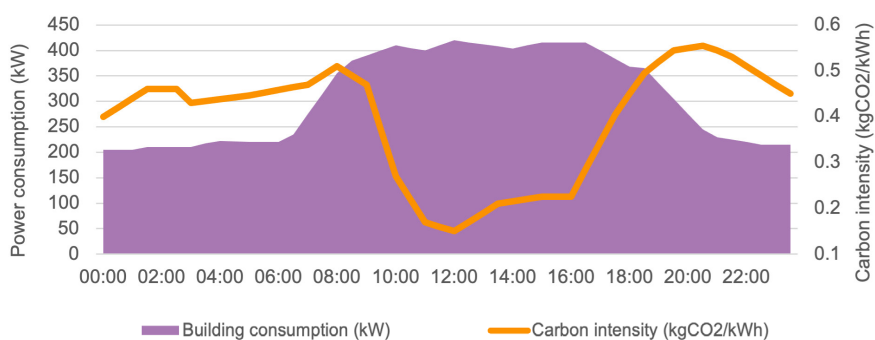


Beyond net zero: Australian fund targeting 'real zero for real assets'

The manager believes the real estate industry should be applying a technological overlay in measuring a building's carbon footprint to create a clearer pathway to net zero targets.

Technology advancements mean real-time carbon tracking makes it possible to match building electricity use to real-time carbon intensity. The result is an accurate reflection of a building's carbon footprint and the discovery that the operational hour of a building often coincides with periods when electricity has the lowest carbon intensity due to the abundance of solar in the grid. When you overlay a building's consumption and the carbon intensity of electricity at any time you can see the carbon savings made through accurate reporting.

Chart 4: Building consumes electricity when carbon intensity is at its lowest



Recognising the supply and demand sides of the energy markets' need to transition, by prioritising demand management, the manager believes building managers can focus on matching energy usage with the low carbon intensity electricity sourced from the grid or generated on-site. This will allow them to implement new methods of carbon reduction including demand management and load shifting strategies; using additional energy when it is cheapest and at its lowest carbon intensity and reducing energy use when it is not.

The manager is a leader in the real estate sector's role in this transition, using active energy demand management to reduce building emissions to zero. Real zero for real assets.

Key considerations when assessing Scope 1 and 2 emissions

- The real estate industry is generally moving from net zero by 2050 to shorter net zero targets.
- Some managers are already claiming carbon neutrality – questions remain whether the use of offsets is achieving the desired aim of reducing the actual carbon footprint.
- Many managers have yet to set interim emissions reduction targets, however, for managers with targets prior to 2050 this is less of a consideration.
- Some global managers appear to lag Australian managers in setting and implementing net zero objectives however, increased regulation is likely to improve compliance. That said, one US manager has recently converted its entire residential portfolio in Texas from gas consumption to wind powered energy. Several cities and counties in California have legislated all new residential construction be electrified.

Scope 3 emissions (tenant-controlled) reductions targets

Most managers are just beginning the process of understanding and defining their formal net zero goals. Managers have noted Scope 3 emissions are challenging, as neutralising specific Scope 3 emissions need behavioural and process changes for their tenants. Alignment of net zero goals between building owners and tenants is paramount to any successful strategy.

A manager who is well advanced in this process has sought to map the tenant's renewable energy commitments, engaged with tenants through ESG-related forums, installed on-site renewable energy and lastly, secured 'green' leasing deal clauses. These leases focus on the procurement and delivery of renewable energy and emissions data disclosure across the board. Another manager has indicated it is carbon neutral on Scope 3 emissions, in addition to Scope 1 and Scope 2, however, they have predominately used offsets to reach carbon neutrality. Additionally, there are questions on whether this is considered to be only operating emissions or embodied carbon too.

Tenant collaboration – Scope 3

Many managers have yet to consider tenant-controlled emissions as a part of the emissions reduction plans; some have aligned to the Science Based Target initiative (SBTi) which mandates Scope 3 emissions targets.

One manager has started to consider net zero for Scope 3 aligning it with their target for Scope 1 and 2 emissions. Engagement with tenants includes:

- Smart metering to allow for the measurement of tenant-controlled power.
- 'Green' leases across the portfolio as leases expire. Green leases come in many forms but usually allow for a mutual agreement around electricity use disclosure, procurement of renewable energy by the tenant and waste, water, and energy efficiency management. A powerful tool can be the bulk procurement of off-site energy generation or the installation of on-site renewable energy for industrial and retail sites. Both initiatives may drive down the price of electricity while incentivising tenants to reduce building emissions.
- Reduction in tenant outgoings (such as contractual expenses, including energy, rates and maintenance) is a key conversion point.

Building managers will not be able to reach net zero on their own and will need buy-in and engagement from tenants.

Key considerations when assessing Scope 3 emissions targets

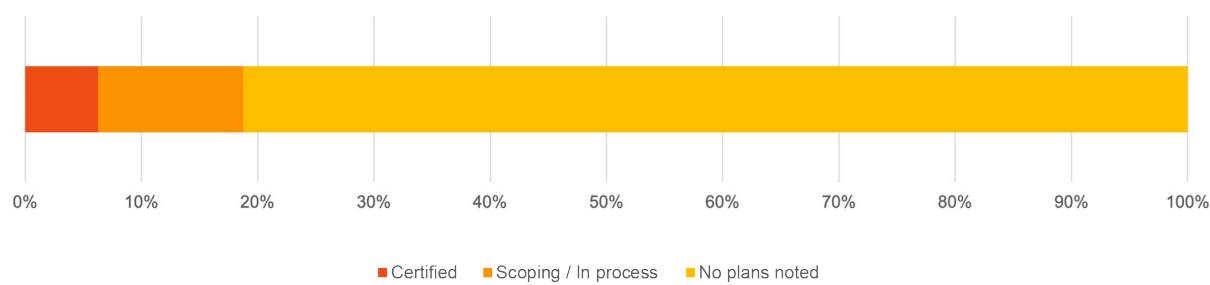
- Considering most managers do not have a dedicated plan to reduce tenant-controlled Scope 3 emissions, when will they start the planning process? Will it be too late?
- Has the manager got a dedicated plan to collect tenant data, engage with tenants and try and reduce tenant-controlled emissions?
- The use of offsets, is again, a consideration and the need for offsets should be reduced overtime.

Science Based Target initiative (SBTi)

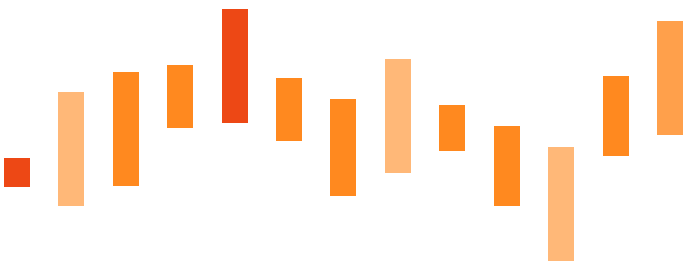
Another facet of net zero targets is the Science Based Target initiative (SBTi), where managers submit a letter of commitment on their net zero goals by 2040 for certification by this independent organisation. Although not mandatory, the certification provides reputational benefits to managers by certifying their goals and procedures in line with best practices (interim targets and inclusive of Scope 3). From our survey, only one manager had received certification by the SBTi so far, with a few others actively aligning their net zero policies and procedures to SBTi's methodology and goals.

There are many organisations and commitments which align to SBTi, such as the Net Zero Carbon Buildings Commitment coordinated by the World Green Building Council. Managers and investors who sign up to those initiatives have agreed to align to a science-based target. Although it should be noted the SBTi has its limitations, not considering the step-change approach to reductions, with some initiatives reducing carbon more than others, but rather drawing a linear line from emissions today to net zero in 2040.

Chart 5: Managers with the Science Based Target initiatives (SBTi)



Source: Managers, Frontier



Embodied carbon reduction – the real challenge

Outside typical operational carbon emissions, embodied carbon reduction is becoming a key focus area for managers starting existing property refurbishments or greenfield developments.

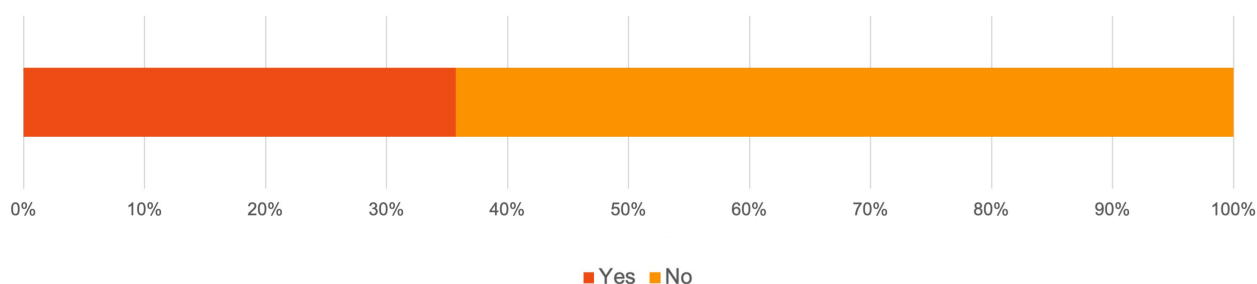
Largely, managers have acknowledged that embodied carbon is excluded within their existing net zero targets. The tracking of embodied carbon within an existing portfolio is still in its infancy among most managers, with many only establishing their ability to enact lifecycle carbon analysis as part of the development phase. There are some managers who have started to track embodied carbon, through the development of a base-line design, and use consultants and assessment tools to reduce emissions from the base-line design.

To reduce the level of embodied carbon in buildings, managers have identified specific strategies including the refurbishment of existing buildings (rather than demolition and new builds) and utilising recycled materials and low carbon alternatives (e.g. structural timber, recycled steel).

An industrial manager has been developing to LEED (Leadership in Energy and Environmental Design) sustainability standards for over a decade which has an increased focus on sustainable designs. Through the accreditation process the manager has started to undertake whole building lifecycle analysis to understand the impact of embodied carbon and apply a benchmark to future developments, using low carbon or recycled building materials. The analysis not only considers embodied carbon but also operating emissions and creating space that is more energy efficient ensuring lower emissions across the lifecycle.

Quantitative tracking of embodied carbon is generally in its infancy among managers currently, however, industry-wide steps are underway to define how this will be tracked in the future.

Chart 6: Managers measuring and assessing embodied carbon



Source: Managers, Frontier

Key considerations when assessing embodied carbon

- Measurement of the carbon emissions lifecycle of a building, and potentially prioritising refurbishments of existing buildings over new developments.
- Engagement with consultants and various carbon measuring tools to assess carbon emissions of different materials and designs.
- Supporting the advancement of carbon neutral or low carbon building materials, including cement, steel and timber.

Carbon offsets – usage and reliability

Carbon offsets are purchased regularly by managers as part of their strategy to achieve net zero, seeking to offset their carbon footprints over specific periods. Some managers view carbon offsets as a last resort after all other carbon mitigation strategies have been exhausted, where there still is residual carbon within the portfolio. Frontier views the reduction strategy plus offsets favourably, whereby carbon offsets are considered the final option to meeting carbon neutrality.

As a market-leading example, a manager rated by Frontier does not plan to utilise offsets to meet emissions reductions targets, believing offsets are inappropriate to reduce emissions within the built environment (especially when utilised to offset Scope 1 and 2 emissions, and Scope 3 emissions stemming from tenant electricity usage) and ought to only be used in harder-to-abate sectors.

Additionally, managers are very particular about the source and certification of carbon offsets with one indicating they have only purchased certified carbon offsets from Australian sources (i.e. Australian Carbon Credit Units by the Clean Energy Regulator, known colloquially as ACCUs) which support indigenous environmental and social projects.

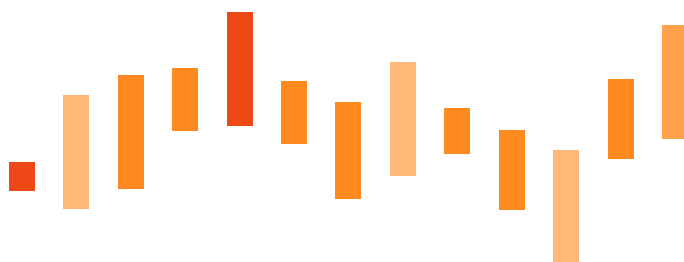
From our survey, we have observed carbon offsets being utilised more recently to accelerate managers' ability to claim carbon neutrality (providing positive reputational benefits). Ultimately, Frontier views such approaches negatively. Rather, we consider managers who focus on mitigating Scope 1 and 2 emissions (in absolute terms) as their primary focus as promoting best practice.

We have observed another manager having a suitable approach to utilising carbon offsets, which is to first measure, reduce and then invest to better mitigate emissions. And to only use carbon offsets when necessary. If the use of offsets is needed, the manager should aim to utilise three principles²:

- **Additionality** – where mitigation or removal would have not otherwise occurred.
- **Colocation** – ensuring it is in the same geographic region as the operations.
- **ESG co-benefits** – ensuring local social and environmental benefits beyond emissions reductions. While offsets should be a last resort, managers should have a plan to scrutinise and maximise their benefits.

Key considerations when assessing the use of carbon offsets

- Are managers using the carbon offsets to claim carbon neutrality without reducing real world emissions from their assets?
- The type of carbon offsets being used – do they sequester carbon from the atmosphere or just avoid carbon usage? Where is the location of the carbon offsets i.e. what geography?
- Carbon offsets are dilutive to returns and therefore the impact of purchasing them on fund level returns should be considered – managers should consider purchasing off their own balance sheet.



² MetLife Investment Management, "Carbon Neutrality in Real Estate: Strategies for Success", 2021

Green financing and sustainability-linked loans in real estate

In terms of green financing (i.e. loans linked with certain sustainability or green targets negotiated with lenders or bond investors), our survey of managers indicate Australian managers are leaders in the use of sustainability-linked loans relative to their international peers. International managers have largely noted it is not an area of immediate focus but will investigate its viability in the future.

A market-leading example of what green financing can entail was highlighted by an Australian manager, who has ambitious goals for green financing to be 100% of the loan portfolio by 2025 to align with their beyond net zero plan. Ideally, this alignment between lenders and borrowers is viewed as good practice, however, the fiduciary requirements of the manager coupled with the need to improve sustainability of the assets may be difficult to balance. Additionally, the ambition of the lender needs to be considered. Many lenders may issue green financing to meet ESG objectives without considering the real impact of the targets set.

Climate Active

Climate Active is a partnership between the Australian Government and Australian businesses to drive voluntary climate action in Australia, providing carbon neutral certification for buildings and organisations that meet certain emissions reduction metrics.

At the organisational level, several Australian real estate managers currently report to Climate Active for carbon neutral certification.

At the building/asset level, almost all managers, both Australian

and international, do not report individual Australian assets to Climate Active for certification currently.

International managers by virtue of their domicile, do not report to Climate Active at the organisation level.

The certification of carbon neutrality by Climate Active should not be the only goal. Rather, managers should seek to push boundaries within the industry to implement new initiatives beyond net zero, to work toward absolute or a real zero target.

Emerging investment opportunities

Frontier has observed an emerging trend of managers launching funds associated with the 'greening' of real estate assets. Many of the strategies target acquisitions of existing buildings and utilise capital expenditure quickly to reduce the carbon intensity of the assets. The asset is typically divested once it has received the 'green' premium. Some of the strategies also include a small exposure to greenfield development, where reducing embodied carbon and carbon over the asset lifecycle will be a key priority. This approach could potentially attract a premium from the market. Although investment horizons are typically two to three years, they are likely to be effective in reducing carbon. Clients and prospective investors need to be aware of the strategies implemented in reducing and shifting carbon intensity at the point of sale and the risk-adjusted returns of the strategy.

Frontier can help assess any new investment opportunities or an assessment of the ESG credentials of your current real estate portfolio.

The final word



The real estate industry continues to improve significantly towards decarbonisation with peak bodies, regulators, governments, and investors all moving towards net zero. Gateway cities are and will continue to lead the drive to cut carbon emissions with legislation.

Despite most managers now measuring, tracking, and reporting their operating emissions and setting adequate net zero targets, carbon emissions have continued to increase across the sector, even as the sector has become more efficient. Frontier's report card on investment managers underscores an unexpected disparity in advancement and alignment. We think remuneration structures that embed alignment to financial and ESG performance goals are critical to achieving improved outcomes.

Incremental asset level improvements alone are unlikely to create a meaningful contribution to achieving NZC target dates. Real-time monitoring and measurement of energy use in conjunction with tenants is critical and well overdue. Managers who are leading the way with proptech investments in underlying start-ups can exponentially drive efficiency gains from real-time consumption data, innovative building systems and real-time transition to renewable energy.

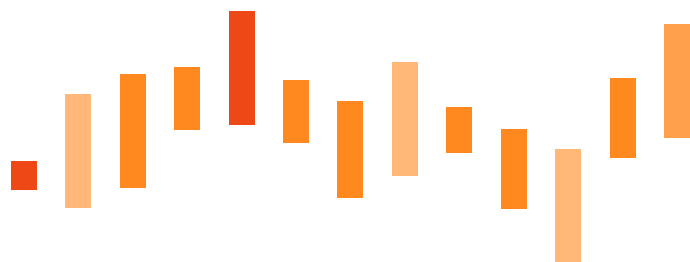
Frontier recommends clients consider reviews of portfolios to identify gaps and specifically, manager progress of NZC plans and other ESG related aspects.

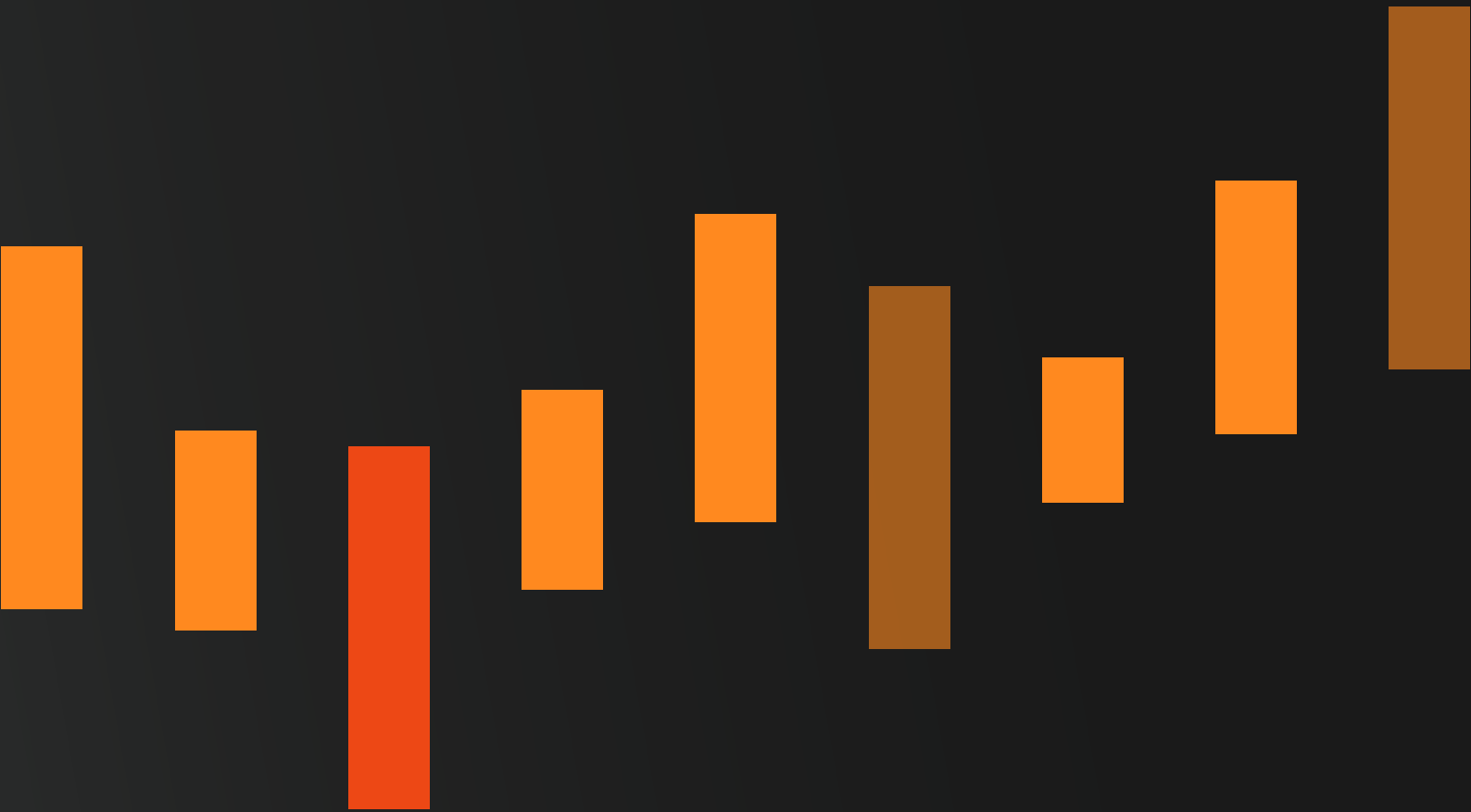
We continue to monitor the sector and identify compelling strategies. We are happy to chat with investors as we progress our research. Frontier can help assess any new investment opportunities, or an assessment of the ESG credentials of your current real estate portfolio.



Want to learn more?

We hope this paper has generated many ideas for your own portfolios. If this is the case, please reach out to Frontier to discuss how we can work with you in this space.





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