

# Carbon and Energy

## Why this is important to Stockland

We have a long-standing commitment to improve our energy efficiency, reduce our carbon emissions and manage our climate change risk. We recognise our role to influence the energy efficiency of our assets, and have taken a proactive approach to developing energy efficiency programs and implementing action plans over a number of years.

The increasing cost of energy, particularly electricity, poses a challenge for the property industry and for all Australians. As electricity is an increasing proportion of our assets' operating expenditure, improvements in energy efficiency enable us to reduce cost and improve our operational efficiency. Integrating energy efficiency considerations into the design and construction of our assets can also help to reduce the energy requirements (and electricity costs) of our tenants and residents.

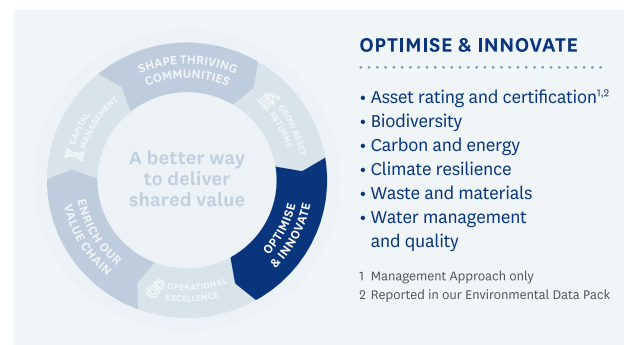
The increasing cost of power also means that renewable energy options such as solar have become cost-effective choices for our energy supply. The declining cost of solar infrastructure works in tandem with the increasing cost of conventional energy combine to make solar a sound business investment. We look to design and technology innovation and access to alternative energy supplies to help us and our customers realise a cost efficient, low-carbon future. Improving the energy efficiency and encouraging the long-term electrification of our assets and communities not only improves environmental outcomes, but also provides cost-of-living benefits and economic advantages for our business.

This Deep Dive document is a component of our FY20 sustainability reporting suite, which is publicly available on our [website](#). Our sustainability reporting is prepared in adherence to the International Integrated Reporting Framework principles of materiality, stakeholder responsiveness, reliability and completeness; in accordance with the GRI Standards<sup>1</sup>(Comprehensive); and is **third party assured**. The material in this Deep Dive is supported by a wider collection of performance metrics contained in our **Environmental Data Pack**.



This Deep Dive is to be read in conjunction with our published approach to carbon and energy, available as part of our sustainability reporting suite at **Our Management Approach to Carbon and Energy**.

### Stockland's Sustainability Strategy



<sup>1</sup> The GRI Standards are global standards for sustainability reporting published by the Global Reporting Initiative (<https://www.globalreporting.org/standards/>)

## Our key achievements

- Partnered with the Clean Energy Finance Corporation on a \$75 million senior debt facility to help deliver on our 2030 Net Zero Commitment for our Retirement Living and Industrial portfolio and Corporate Head Offices, based on the World Green Building Council Net Zero Carbon Buildings Commitment.
- Recognised as a global leader in disclosure and action on climate change, achieving a place on CDP's Climate A-List for the fourth year in a row (the only Australian company to have achieved this status).
- Achieved a 32% reduction in emissions intensity across Commercial Property against a FY17 baseline.
- Achieved more than \$123 million savings from energy efficiency initiatives since FY06.
- Completed a further 2.3MW of solar capacity in FY20 at Yennora (NSW), Gladstone (Qld), Toll Drive Altona (Vic), Truganina (Vic) and Baringa (Qld), bringing our total portfolio solar capacity to 18MW and expected generation capacity of approximately 24GWh in renewable energy annually. This takes our total investment in renewables to over \$33 million.
- Exceeded our residential energy performance design target of 10% reduction in carbon emissions against compliance standards, achieving a 46% reduction.
- Exceeded our retirement living energy performance design target of 10% reduction in carbon emissions against compliance standards, achieving a 12% reduction at Newport (Qld) and a 31% reduction at Shine (Qld).
- Achieved a 4 star Green Star Design & As Built rating v1.1 at Newport and Shine Birtinya.
- Achieved a 5 star Green Star Design & As Built v1.1 rating for our Stockland Birtinya (Qld) retail town centre.
- Achieved a 6 star Green Star Interiors v1.2 rating for our Brisbane Corporate Head Office fitout.
- Delivered a certified Zero Net Carbon Home in partnership with Creation Homes at our Orion project, as part of a pilot project with Sustainability Victoria. The home is designed to produce enough renewable energy to offset the annual greenhouse gas emissions of its estimated energy use and was certified using Sustainability Victoria's As Built verification methodology.
- Installed renewable energy systems at 42 homes at Highlands (Vic), with plans for up to 10 of these homes to achieve Climate Active carbon neutral certification.
- Awarded re-certification of a 6 star Green Star Communities rating for Aura (Qld), maintaining our position as the highest-rated masterplanned community in Australia.

### Savings from energy efficiency

# >\$123m

initiatives since FY06

### Reduction in emissions intensity

# 32%

in Commercial Property against FY17 baseline

### Powered by solar energy

# 36.6%

of our Retail Town Centres

# FY20 targets and progress

## Commercial Property

### Optimise and innovate

Objective	Target	FY20 progress	Status	Future priorities
<b>Reduce emissions and improve climate change resilience within our portfolio</b>	Achieve net zero carbon by 2030 for our Industrial portfolio and Corporate Head Offices based on the World Green Building Council Net Zero Carbon Buildings Commitment	Procured a Green Power contract for the supply of electricity to our new Melbourne Corporate Office.	In progress	Deliver our first net zero carbon building in a new project with the construction of the first stage of our M_Park workplace development in Macquarie Park, Sydney.  Deliver a net zero target in operation at our Melbourne Corporate Office, including a Green Star Interiors rating and WELL rating for the tenancy.
	Achieve a 60 per cent carbon intensity reduction target for Retail Town Centre, Workplace and Business Parks assets by FY25 against the FY06 baseline	Achieved a carbon intensity reduction of 64.6 per cent against the FY06 baseline for the Retail Town Centre, Workplace and Business Parks portfolio.	Achieved	Continue to work towards further improving carbon reduction intensity target for Retail Town Centre, Workplace and Business Parks assets by FY25 against the FY06 baseline.
	Reduce carbon intensity in our Retail Town Centre portfolio by 10 per cent by FY20 against the FY17 benchmark	Achieved a carbon intensity reduction of 38 per cent against the FY17 benchmark for our Retail Town Centre portfolio.	Achieved	Maintain carbon intensity in our Retail Town Centre portfolio at the FY20 baseline.
	Reduce carbon intensity in our Workplace portfolio by five per cent by FY20 against the FY17 benchmark	Exceeded our five per cent carbon intensity reduction target, achieving a 13 per cent reduction against the FY17 benchmark.	Achieved	Maintain carbon intensity in our Workplace and Business Parks portfolio at the FY20 baseline.
	Achieve a 4.5 stars NABERS Energy portfolio average for our Retail Town Centre portfolio by FY20	Exceeded NABERS Energy target, achieving a portfolio average rating of 4.72 stars.	Achieved	Maintain an average NABERS Energy portfolio rating for our Retail Town Centre portfolio at the FY20 baseline.
	Achieve a 5 stars NABERS Energy portfolio average for our Workplace and Business Parks portfolio by FY20	Achieved a NABERS Energy portfolio average rating of 4.82 stars.  Target was not achieved due to lower than expected occupancy in a number of assets, and the divestment of some higher performing assets.	Not achieved	Maintain an average NABERS Energy portfolio rating for our Workplace and Business Parks portfolio at the FY20 baseline.
<b>Invest in alternative energy supplies to reduce our emissions</b>	Continue to install electric vehicle charging stations across our Retail Town Centre portfolio	Installed a new ChargePoint dual charger at Stockland Forster (NSW) and three additional Tesla destination chargers at Stockland Balgowlah (NSW).	Achieved	Continue to install electric vehicle charging stations across our Retail Town Centre portfolio.
	Install a further 1.9 MW of solar photovoltaic capacity across two retail town centres (Gladstone and Baringa) and one logistics (Yennora) asset by the end of FY20	Completed a further 2.3MW of solar capacity in FY20 at Yennora (NSW), Gladstone (Qld), Toll Drive Altona (NSW), Truganina (Vic) and Baringa (Qld) bringing our total portfolio solar capacity to 18MW with the capacity to generate approximately 24GWh in renewable energy annually.	Achieved	Continue to invest in renewable energy as opportunities arise in our operating assets and development projects.

## Communities

### Residential

#### Optimise and innovate

Objective	Target	FY20 progress	Status	Future priorities
<b>Reduce emissions and improve climate change resilience within our portfolio</b>	Exceed relevant minimum energy-related performance design compliance standards by 10 per cent within our residential communities in FY20.	Exceeded our residential energy performance design target of 10% reduction in carbon emissions against compliance standards, achieving a 46% reduction within our residential communities delivered in FY20. <sup>1</sup>  Delivered a certified Zero Net Carbon Home in partnership with Creation Homes at our Orion project, as part of a pilot project with Sustainability Victoria.	Achieved	Exceed relevant minimum energy related compliance standards by 15 per cent within our residential communities.  Complete a Life Cycle Assessment for one residential Townhome dwelling compared to a code-compliant home using the findings to assist future homes design development.
	Offer solar and battery packages to 72 homes within our Highlands (Vic) project in partnership with a large industry supplier and monitor energy performance.	Completed 42 installations with energy performance data being collected for 30 homes. The remaining homes did not take up the offer.	Achieved	Certify up to 10 Carbon Neutral homes at Highlands (Vic) in accordance with the Climate Active Assessment tool in partnership with the CEFC and GBCA.

<sup>1</sup> Measured as a percentage reduction in modelled emissions outside of Stockland's Scope 1 and 2 Operational Boundary.

## Retirement Living

### Optimise and innovate

Objective	Target	FY20 progress	Status	Future priorities
<b>Reduce emissions and improve climate change resilience within our portfolio</b>	Achieve net zero carbon by 2030 for our Retirement Living portfolio based on the World Green Building Council Net Zero Carbon Buildings Commitment and with support from the CEFC.	Reviewed solar power opportunities for Newport RL(Qld).	In progress	Review net zero energy homes opportunities within future Retirement Living developments or redevelopments, including a review of solar and battery systems implementation, building air tightness and improvements to the thermal performance of the residential units.
	Exceed relevant minimum energy-related performance design compliance standards by 10 per cent in all new developments.	Achieved 4 star Green Star Design & As Built certification for Newport and Shine Birtinya (Qld).	Achieved	Exceed relevant minimum energy related compliance standards by 10 per cent in all new developments by targetting 4 star Green Star Design & As Built.
	Continue to roll out solar installations to meet or exceed our target of five installations across clubhouses and community centres in our retirement living communities in FY20.	Completed installations at Bay Village (SA). Installations in progress across villages in Victoria and SA, including Arilla (Vic), Selandra Rise (Vic), Templestowe (Vic), Plenty Valley (Vic) and Highlands (SA).	Achieved	Continue to roll out an additional two solar installations across clubhouses and community centres in our retirement living communities including Newport (Qld).
	Formalise solar guidelines and supporting documentation that apply to village residents.	Created tender documentation for solar installations across Victorian Retirement Living villages.	In progress	Create supporting documentation for residents.
	Implement key recommendations from our pilot sub-metering and monitoring program and share lessons learned.	Report completed with findings presented to village operation teams.	Achieved	Commence the planning of an energy efficiency improvements program across operational villages as part of the CEFC 2030 Net Zero Commitment.

## Transitioning targets for FY21

Due to the business challenges associated with the COVID-19 pandemic, we have delayed the launch of our new 2030 Sustainability Strategy and its associated long-term targets. Our new strategy and next three-year cycle of energy and carbon targets (FY22-24) will be launched during FY21. Where feasible, we have rolled over our FY20 three-year targets for an additional year to maintain our focus on sustainable outcomes for our stakeholders. We will also launch our Group Net Zero Commitment and Pathway Strategy in FY21.

# FY20 performance and case studies

## Total greenhouse gas (GHG) emissions: location-based

We reduced our Scope 1 emissions in FY20 primarily due to decreases in emissions associated with our Workplace and Business Parks and Residential development works. There was also a decrease in gas consumed across our Retirement Living Communities and Retail Town Centres portfolio.

Our Scope 2 emissions decreased largely due to reduced gross energy consumption across our Commercial Property assets and the streamlining of data collection in Communities enabled by the transition to online contractor WHS&E reporting, which has reduced the need for estimation of data.

The table below outlines our Scope 1, 2 and 3 emissions over the last five years. For a detailed breakdown of our Scope 1, 2 and 3 emissions please refer to our **Environmental Data Pack**.

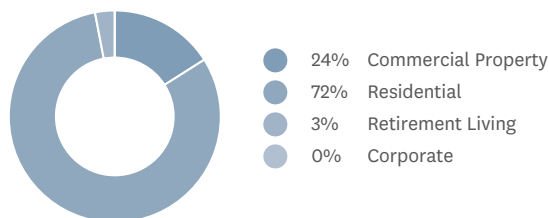
### Scope 1, 2 and 3 emissions (tCO<sub>2</sub>-e)

	FY20	FY19	FY18	FY17	FY16
Stockland group total Scope 1	21,028	24,230	25,453	26,884	35,036
Stockland group total Scope 2	53,751	70,545	82,591	87,860	89,881
<b>Stockland group total Scope 1+2 emissions</b>	<b>74,779</b>	94,775	108,044	114,744	124,917

### Total Scope 1 emissions by business unit

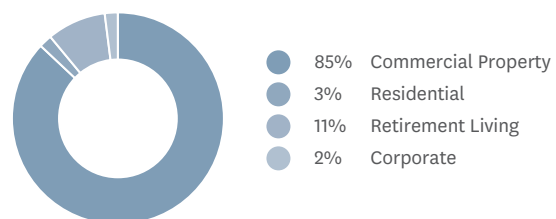
The chart below outlines the percentage allocation of our Scope 1 emissions by business units. Communities (Residential and Retirement Living) constitutes the largest proportion of our Scope 1 emissions due to contractor construction activity during development.

Residential communities with large construction activities in FY20 included: Aura (Qld), Newport and Kalina (Qld), Willowdale and Elara (NSW), Mt Atkinson and Edgebrook (Vic) and Red Hill (ACT).



### Total Scope 2 emissions by business unit

Commercial Property constitutes our largest proportion of Scope 2 emissions and remains the focus of our strategic energy efficiency initiatives and our investment in renewable energy generation. Scope 2 emissions have decreased significantly due to the increased implementation of solar power systems across our Retail Town Centres.



## Total greenhouse gas (GHG) emissions: market-based

Stockland recognises the introduction of the market-based method defined by the GHG Protocol Scope 2 Guidance. We are reporting using this method, in addition to the location-

based method, at the Group level in FY20. Although Residual Mix Factors (RMF) are yet to be published for the Australian electricity market, our preliminary calculations show that the change in reporting basis this year would have less than a 4% impact (reduction) in gross Group emissions, and allows for the accounting of carbon credits that we have sold.

	FY20	FY19	FY18	FY17	FY16
Stockland group total Scope 1	21,028	24,230	25,453	26,884	35,036
Stockland group total Scope 2	66,498	77,673	78,745	85,754	86,856
<b>Stockland group total Scope 1+2 emissions</b>	<b>87,526</b>	101,903	104,198	112,638	121,892

	FY20	FY19	FY18	FY17	FY16
Total transmission and production losses (from purchased electricity, gas, water and fleet fuel)	7,518	10,469	13,216	14,675	14,782
Waste disposal <sup>1</sup>	11,494	13,803	14,892	11,990	20,571
Vehicle hire and hire car travel	26	38	64	35	42
Airline travel	1,912	3262	5694	4415	4233
<b>Total Scope 3 emissions</b>	<b>20,950</b>	27,572	33,866	31,115	39,628

<sup>1</sup> From FY16 we expanded our boundary to include scope 3 emissions from waste generated at our Commercial Property assets.

## Commercial Property

### NABERS Energy Ratings

#### Retail

Following the NABERS Energy ratings undertaken in FY20 on our Retail Town Centre portfolio, the area weighted portfolio average for NABERS Energy has improved to 4.72 stars (4.34 stars in FY19), exceeding our target of 4.5 stars by FY20 in absolute terms. This year we rated some of our smaller Retail Town Centres for the first time due to the introduction of a new NABERS methodology for the rating of small retail centres. Therefore, considering changes in the rated portfolio for FY20, the like-for-like portfolio average is 4.82 stars.

Ten assets improved their rating in FY20 with 11 out of 26 assets at 5 stars or better and five assets at 6 stars, which is the highest rating possible. Our investment in solar PV over the last five years is having a major upward influence on ratings. We were pleased that our Stockland Birtinya (Qld) Retail Town Centre has achieved a first-time rating of 6 stars after its first year following development.

#### Workplace and Business Parks

In our Workplace and Business Parks portfolio, from 14 assets rated in FY20, one rating fell and two improved, with six out of 14 assets at 5 stars or better. A key improvement was achieved this year with the Optus Campus (NSW) earning a 5 star rating. The NABERS Energy area weighted portfolio average has improved to 4.78 stars (4.64 stars in FY19) for our Workplace portfolio and 4.84 stars (4.37 stars in FY19) for our Business Parks portfolio. Therefore, the combined portfolio average for Workplace and Business Parks is 4.82 stars, which is an improvement on the FY19 result of 4.37 stars.

However, we have not achieved our target FY20 portfolio average of 5 stars in absolute terms. The target was not achieved due to lower than expected occupancy in a number of assets and the sale of some higher performing assets. However, on a like-for-like basis, the portfolio

average is 4.97 stars. There are no ratings this year for 11-17 Khartoum Road, Macquarie Park (NSW), as this site is subject to redevelopment, and 350 Wellington Road Mulgrave (Vic) due to vacancy during refurbishment.

We anticipate an uplift in the next rating period when we will see the benefits of major HVAC upgrades at the Optus Campus (NSW) and Mulgrave Corporate Park (Vic), which have been completed this year.

More information on our NABERS ratings across our portfolio is provided in the [Environmental Data Pack](#).

### Green Star

#### Workplace and Business Parks

During FY20, as part of our involvement in the development of the next generation of Green Star rating tools, we had the opportunity to participate in the Green Building Council of Australia's 'Future Focus Early Access' program. Our participation in this program gave us privileged access to the new Green Star rating tool for New Buildings, allowing us to gain early insight into the development of new credits as they were taking shape and apply some of these to the first stage of M\_Park, Building A. Our M\_Park project in Macquarie Park in Sydney is targeting a 5 star rating under the Green Star Design & As Built v1.3 rating tool. These insights into new credits will position us well for the later stages of the M\_Park development, which will need to be registered under the New Buildings tool after it is launched later in 2020.

Through our involvement in the Early Access program we were able to explore the opportunity for a commitment to net zero carbon emissions for Building A once in operation. The most significant learning for the project team was around the requirements for a commitment to net zero carbon, including the exclusion of gas-fired plant and equipment to be fully electric and 100% powered by renewables. This major early insight enabled us to pursue a business case to commit to net zero for the project.

More information on our Green Star ratings across our portfolio is provided in the [Environmental Data Pack](#).



## CASE STUDY

### EARLY ENERGY EFFICIENCY COMMITMENT DELIVERS LONG-TERM RESULTS

In late 2019 we achieved a post-development 5 star NABERS Energy rating for our Stockland Green Hills (NSW) Retail Town Centre, complementing the centre's 5 star Green Star As Built rating. This was a proud achievement for the whole team, a journey that began four years earlier at the time of contract procurement.

At Stockland we use NABERS ratings to help us set and achieve energy and carbon targets in our Commercial Property portfolio. We undertake NABERS ratings annually for our Workplace and Retail assets, and enter into Commitment Agreements to achieve high NABERS ratings in our Workplace developments. NABERS Commitment Agreements help to bridge the gap between design and performance by providing more certainty that a high rating will be achieved in operation through good design, energy modelling, equipment specification and energy monitoring and management.

Right from the start our Green Hills development team had a strong focus on energy efficiency in operation. However, at the time, there was no Commitment Agreement protocol for Retail developments, only Office. So, the Stockland Project Management, Sustainability and Legal teams worked together to embed clauses equivalent to an Office NABERS Commitment Agreement into the Multiplex contract, ensuring the project delivery team remained focused and engaged beyond practical completion and during the defect liability period. We contracted Multiplex to achieve a 4.5 star NABERS Energy rating, which was a challenging contractual obligation as they were only responsible for the development, not the operation of the centre.

For almost two years after project completion, Stockland and Multiplex along with sub-contractors, the ESD consultant, and the Independent Commissioning Agent, continued to collaborate, monitoring monthly energy performance and tuning operations to optimise efficiency and occupant comfort. Ultimately the 4.5 Star NABERS Energy target contractual requirement was exceeded.

With the addition of a 1.8 MW solar installation, one of the largest rooftop solar systems in the country, and our sustained focus on energy efficiency, we were able to drive down grid energy consumption and peak demand to outperform the benchmarks for Green Star and NABERS and achieve the dual 5 star rating results.

Exceeding our sustainability aspirations on Stockland Green Hills demonstrates the importance of setting clear project objectives and targets as well as agreed contract conditions at the project procurement stage.



## Energy efficiency

We have actively invested in energy efficiency improvements across our Commercial Property developments and operations since we set our first energy and emissions targets in FY09. Energy is an important operational expenditure item for our business, and as a result we have adopted an active management approach to deliver strong financial returns whilst reducing our carbon footprint. We have achieved more than \$123 million savings from energy efficiency innovations since FY06.

Our energy efficiency investments made in FY20 are projected to generate total energy savings of approximately 998,000 kWh annually. These investments include Building Management System (BMS) upgrades and retro-commissioning across five sites in our Business Parks and Workplace portfolio, which will improve the control logic and hence the efficiency of the heating, ventilation and air conditioning (HVAC). Of the total energy savings, the BMS upgrades are projected to save approximately 146,000 kWh per annum, which equates to approximately four per cent of the total base building annual consumption. We are also in the process of a significant HVAC and services upgrade at Optus Centre, which will improve the overall control strategy and efficiency of the air conditioning system without compromising on thermal comfort. The upgrade is expected to take the asset to a 5 stars NABERS Energy rating

We continue to pilot innovative technology, including a new building analytics platform in two shopping centres to help drive air conditioning efficiency, and the installation of higher efficiency EC Fans across two different shopping centres. EC Fans are more efficient compared to traditional fan and motor technology as they have integrated variable speed control capabilities, allowing the fan to match air flow requirements, which is especially effective at part speeds. The projected annual savings for this initiative is approximately \$7,000. The building analytics platform continuously analyses large amounts of data, which then produces improvement opportunities. Since the implementation of the building analytics platform, \$30,000 worth of opportunities have been identified with 21% of these items resolved.

## Renewable energy

By the end of FY20 we had installed a further 2.3MW of solar PV capacity across three logistics assets, including our largest logistics installation of 770 kW at Yennora Distribution Centre and two retail centres at Stockland Gladstone and Stockland Baringa. This takes our total operational solar PV capacity to 18MW, with an annual estimated generation of 24GWh, and brings the total investment in renewable energy to over \$33 million.

The table below illustrates the increase in our solar generation over the past five years.

### Renewable energy generated using solar power – Retail

	FY20	FY19	FY18	FY17	FY16
Solar generation (kWh)	22,246,182	12,958,224	3,274,463	2,387,168	1,940,689
Per cent of Retail Town Centre portfolio electricity usage	36.6%	19.9	5.1	3.6	2.8
Solar capacity installed (at period end) (kW)	16,781	16,400	4,360	2,260	1,360

### Renewable energy generated using solar power – Logistics

	FY20	FY19	FY18	FY17	FY16
Solar generation (kWh) <sup>1</sup>	60,114	-	-	-	-
Per cent of Logistics portfolio electricity usage	3.9%	-	-	-	-
Solar capacity installed (at period end) (kW)	770	-	-	-	-

<sup>1</sup> Figures relate to total electricity generation from photovoltaic power within financial year.

## CASE STUDY

### TAKING ACTION TOWARDS A LOW-CARBON FUTURE

As a real estate owner, manager and developer, we recognise we can make a valuable contribution towards a low-carbon future. In December 2019, we partnered with the Clean Energy Finance Corporation (CEFC) on a \$75 million debt facility to help deliver on our 2030 Net Zero Commitment for our Retirement Living and Industrial portfolio, and for our Corporate Head Offices. This relates to our World Green Building Council Net Zero Carbon Buildings Commitment.

This agreement will help Stockland to deliver a series of renewable energy, energy efficiency and low-carbon homes projects, enabling us to continue to innovate and transform the industry, while continuing to be recognised as a market leader in sustainability.

One of the key deliverables of the agreement is the installation of solar across our Logistics and Retirement Living assets, with the objective of establishing an inter-asset energy trading platform to enable us to achieve our 2030 net zero commitment.

This will enhance our generation capacity, allow us to offset our emissions internally and make our assets more resilient to future shocks and stresses. We have engaged an external consultant to help us better understand how we can establish the inter-asset energy trading platform. We continue to review opportunities to install solar across our operational assets. These projects not only help with meeting our CEFC objective, but they also help to promote low-carbon technology and educate residents and the community on the environmental and economic benefits renewables can offer.

Stockland is also collaborating with the CEFC to deliver low-carbon homes at our Highlands development in Victoria. Of the 72 homes that were offered a 5kW solar PV, battery and inverter system, 42 homes accepted the offer and have had their installations completed. We are aiming for 10 of these homes to achieve the Climate Active Carbon Neutral Standard in partnership with the GBCA, an outcome made possible by our dedicated project team, including partner builders and suppliers who continue to challenge the status quo. This industry-first certification will set an important precedent for what is possible for future sustainable homes, not just positively impacting environmental performance but helping to ensure Stockland creates healthy, safe and resilient homes for our customers.



## Performance against emissions reduction targets

We track our greenhouse gas emissions on a per square metre intensity basis as a means to understand our energy impacts while taking divestments and investments into account. Our greenhouse gas emissions intensity has been

steadily decreasing across Commercial Property, and we will continue to monitor and invest in technology to assist us in maintaining our FY20 performance as a baseline into FY21.

The table below outlines our greenhouse gas emissions intensity data for the last five years.

### Commercial Property greenhouse gas emissions intensity (kg CO<sub>2</sub>-e/m<sup>2</sup>)

	FY20	FY19	FY18	FY17	FY16
Workplaces	53.64	61.18	60.41	61.70	64.98
Retail Town Centres	32.66	42.25	49.54	52.92	56.58
<b>Commercial Property</b>	<b>37.09</b>	<b>46.32</b>	<b>52.00</b>	<b>54.93</b>	<b>58.55</b>

In FY20 we reduced our Retail Town Centre portfolio emissions intensity by 22.7 per cent compared with FY19. These decreases are attributable to continued energy monitoring, and capital investments in efficiency initiatives such as installation of highly energy-efficient fans, heating, ventilation, air conditioning optimisations and solar PV. Our

Workplace emissions intensity decreased by 12. compared with FY19, driven by upgrades and retro-commissioning of HVAC equipment and new monitoring services.

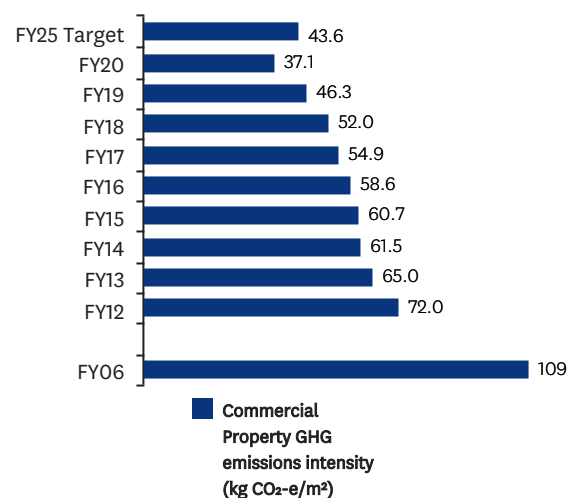
The table below outlines our Commercial Property year-on-year emissions intensity reductions over the last five years.

### Commercial Property annual changes in emissions intensity

	Annual Intensity Change (%)				
	FY20	FY19	FY18	FY17	FY16
Workplace and Business Parks	-12.3%	1.0%	-2.0%	-5.0%	-4.0%
Retail Town Centres	-22.7%	-14.7%	-6.0%	-6.0%	-3.0%
<b>Commercial Property</b>	<b>-19.9%</b>	<b>-10.9%</b>	<b>-5.0%</b>	<b>-6.0%</b>	<b>-4.0%</b>

We have set emissions reduction targets every three years in support of our overarching target to reduce emissions intensity by 60 per cent across our Commercial Property portfolio by FY25, using the FY06 baseline. The chart below indicates our performance in FY20.

### Progress toward our FY25 emissions intensity target (kg CO<sub>2</sub>-e/m<sup>2</sup>)



## CASE STUDY

### TRANSFORMING THE WAY WE WORK WITH SUSTAINABLE DESIGN

It's a well known fact that our physical environment impacts our mood and general wellbeing. In the same way, the interior design of our workplace can directly influence our productivity, performance and job satisfaction. This was the challenge accepted by the team leading our 'Better Way to Work' employee strategy – how to transform our Brisbane Corporate head office from a traditional cubicle style office to an open plan fitout enabling productivity-based working, better collaboration, and increased flexibility for our staff and visitors.

The retail centre themed 'Arcade' and communities themed 'Park' were core design principles, representing Stockland and what we do as a business. We wanted to provide an environment for our people that would allow them to collaborate, as well as work in a way that matched their personal preferences or tasks. We integrated new indoor and outdoor spaces, community and open breakout spaces, greenery and a central stylised shopfront arcade. We installed activity-based workstations to enable staff to work more flexibly, with a selection of sit-to-stand desks and fixed workstations.

Sustainability was embedded throughout the design, construction and operation, and a high performing indoor environment quality was achieved through:

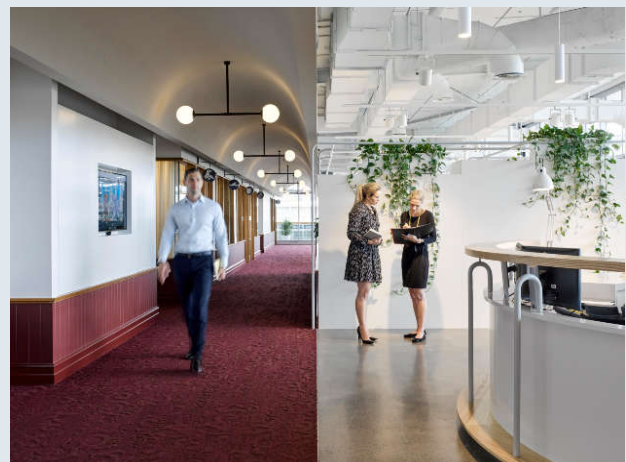
- products with ultra-low VOCs, including paints, sealants, carpets and furnishings
- Good Environmental Choice Australia (GECA) certified workstations and office furniture
- biophilic design to provide increased connectivity to the natural environment, including direct nature (native plantings), indirect nature (exposed VJ wood panelling in keeping with a strong Queensland theme), and space and place conditions.
- plants installed throughout the office and on external balconies to provide a natural air filter of office airborne contaminants

- increased outside air supply to reduce recirculated air, coupled with CO<sub>2</sub> monitoring to modulate ventilation rates to suit
- natural daylighting and unimpeded views to the outside, including the large natural green wall covering the side face of the Brisbane Convention Centre and water views of the Brisbane River
- exposed ceiling and polished concrete floors to increase the sense of space and further enhancing occupant wellbeing
- acoustic sound absorbing panelling installed to open areas to reduce reverberation noise, and high-performance windows and doors to meeting rooms to provide increased levels of privacy and noise separation.

Our Digital Workplace Strategy, including the transition to laptops for all mobile staff, and web-based communication services, removed the need for individual desk-based phones. Continuous Wi-Fi coverage throughout the office and balconies allows staff to move freely around the office while they do their work.

Our Brisbane Corporate office fitout was awarded a 6 star Green Star Interiors v1.2 rating by the Green Building Council of Australia, industry recognition of a design that exemplifies world leadership. A number of initiatives attracted Green Star innovation credits, including contractor education, ultra-low VOC products, ultra-low levels of construction waste sent to landfill, and The Building Occupants Survey System to identify staff indoor environment satisfaction pre-and post fitout.

We also achieved a NABERS Tenancy Energy Rating of 4.5 stars year-on-year since occupation, achieved through the application of energy efficient appliances and devices (laptops instead of desktops), as well as occupant-controlled zoned lighting, including a mixture of focused and diffuse lighting matched to the various working environments.



## Communities

### Residential

As part of our commitment towards energy efficiency, we have successfully partnered with Sustainability Victoria to deliver a number of Zero Net Carbon (ZNC) homes at two of our residential communities in Victoria. The Zero Net Carbon Home Pilot Program will see us design, construct and market two ZNC homes at our Highlands and Braybrook Orion communities. The project provides an opportunity for us to collaborate with two of our volume home builder partners, VCON Homes (Highlands) and Creation Homes (Orion), to deliver zero net carbon homes.

The first phase of the program, delivered during FY19, focused on the development of the ZNC design and construction methodology required to meet the net zero target. In FY20 the construction of the home at Orion was completed. We worked with the project partners to research home buyer drivers and value propositions. The research is being used to develop our communication strategy with potential home buyers to ensure net zero homes can be competitive in the marketplace over the long term.

The FY20 energy targets set for our Residential portfolio focus on the energy and emissions efficiency of the residential product that we build (as opposed to product built by third party builders on land that we sell). These targets aim to deliver a 10 per cent improvement on existing energy and carbon compliance benchmarks established by regulation within the states where we operate, and apply to our built form Medium Density product.

We measured the performance of our homes constructed during the year across all our projects. Data was collected for 556 dwellings across eight projects nationally, including Altrove (NSW), Eastside Highlands, Waterlea and Orion (Vic), Calleya (WA), and Vida at North Lakes, Sway at Oceanside and Bokarina Beach (Qld). Overall we achieved a 46 per cent improvement over compliance benchmarks, which represents over 2000 tonnes (CO<sub>2</sub>) per year reduction on carbon emissions compared to homes constructed to regulation in each state. Our Waterlea project in Victoria was our best performer with a score of 96 per cent improvement against code compliance. Initiatives delivered at Waterlea include an average of 7.4 star NatHERS, 5 star air conditioning systems, LED lighting throughout, gas boosted solar hot water, and 3.5kW of solar PV per dwelling. Our NSW projects scored the lowest as a result of the high benchmark established by the BASIX compliance platform, which requires high performance baseline energy requirements for home approvals. We will increase our target from 10% to 15% improvement over

local building code compliance requirements in FY21 in recognition of our FY19 and FY20 results.

Some examples of broader energy and carbon reduction initiatives delivered within our Residential portfolio during FY20 include:

- Mandated 2.5kW of solar on approximately 700 homes at Minta Farm (Vic). A Tesla Powerwall II was also installed at the sales office to showcase the technology to customers.
- Offered 72 homes on Sustainable Drive in Highlands (Vic) 5kW solar and 9.3kWh battery packages in FY19 as part of the team's initiative to help customers make homes more affordable and energy efficient. The solar and battery packs were installed on 42 homes during FY20 and energy data collection established for 30 of these homes.
- Installed solar and battery power supply at the sales office at Kalina (Qld), enabling the office to operate independent of the grid at most times. This set-up enabled the early establishment of the sales and information centre. Sales staff have learned how to operate the solar and battery system to ensure the battery retains sufficient charge to power the office early in the morning before solar panels begin operating.
- Installed LED street lighting at Aura, Birtinya Island and Bokarina Beach (Qld), Calleya (WA) and Willowdale (NSW).
- Mandated Peak Smart air conditioners at Aura on the Sunshine Coast to help manage local energy grid reliance.
- Delivered connected cycle-ways and footpaths at Pallara and Aura in Queensland, helping to connect people and reduce reliance on cars as well as manage urban heat island impacts.
- Established a shade-way at Minta Farm in Victoria to address heat island impacts by planting established trees on either side of a shared, three metre path that runs east to west across the community.
- Implemented covenants on homes built within the our masterplanned communities on the Sunshine Coast requiring cool roofs to be installed to help manage energy use in homes and heat island impacts.
- Commenced an energy efficiency comparison of homes delivered at Elara with code construction homes delivered at Altrove in Sydney. Blower door testing and heat mapping reviews have been completed with embodied carbon modelling in progress.
- Achieved 7 star or greater NatHERS ratings on all homes at our Aura (Sunshine Coast) and our North Shore (Townsville) display villages in Queensland, and our next display village at Cloverton in Victoria will look at incentivising 7 star home construction. Regulation through the National Construction Code around the country generally refers to 6 stars minimum compliance.

With an additional star, home owners will see greater comfort and less reliance on air conditioning, saving money and reducing energy demand. At North Shore we provide a handbook to all customers that provides advice for building a naturally comfortable home appropriate for Far North Queensland conditions.

- Partnered with Blue Tribe Co and NSW Department of Planning, Industry & Environment (DPIE) to develop a mass media program to be filmed and piloted in FY21. The aim of the program is to mainstream sustainable housing through targeted communications to the masterplanned community market.

### Retirement Living

Following on from a series of energy efficiency audits completed across the portfolio in FY19, a day and night operational performance audit was completed at Patterson Lakes (Vic) in FY20. Key findings included:

- opportunities to implement solar power to offset daytime electricity consumption from common areas;
- a review of air conditioning operations and controls to reduce unnecessary electricity consumption from common areas due to incorrect temperature set points and user control settings;
- a review of behavioural practices to identify potential inefficiencies in using appliances such as laundry dryers; and
- opportunities to transition fuel types from gas to electric (where there is opportunity to complement with renewable energy and sustainable plant options).

In FY20 Newport Retirement Village (Qld), our newest vertical (apartment style) retirement village, became operational with the first residents moving into their new apartments around September 2019. Newport has been

designed and certified to a 4 star Green Star Design & As Built rating. The village has embedded energy and water efficient design principles as well as natural daylight and ventilation principles (for when ambient conditions permit) for improved occupant health and wellbeing. Newport has been established as an embedded network and designed to be solar ready. In FY20 we completed a feasibility review to determine the solar power generating potential from the available roof space to reduce grid imported electricity. This solar power would be used to serve the village's common areas, including the clubhouse. This application of renewable technology aligns with one of our key CEFC agreement commitments, which is to target a 25% greenhouse gas emission reduction once the village becomes operational and a solar power system has been implemented. For further information on Newport, refer to the case study below.

We continued to review our net zero energy opportunities at Stockland Willowdale Retirement Village (NSW) during FY20, including delivering a workshop with builders and suppliers to create opportunities for industry to support the implementation of energy efficiency measures targeting net zero energy outcomes for homes.

In line with our 2030 Net Zero Commitment for our Retirement Living and Logistics portfolios and Corporate Head Offices, we have continued to review opportunities to implement solar power at a select number of retirement communities to offset common area power consumption. A number of our villages in Victoria are currently engaged in reviewing solar opportunities for their community centres, including at Arilla, Highlands, Selandra Rise, Templestowe and Plenty Valley. Solar systems have been installed to the Bay Village community centre and work-shed.

## CASE STUDY

### HIGH PERFORMANCE RETIREMENT LIVING

Opened in September 2019, Stockland Newport Retirement Living (Qld) joined Stockland Shine Retirement Village (Qld) in achieving a 4 star Green Star Design & As Built v1.1 rating. Our Newport and Shine retirement villages are the first two retirement living projects in Australia to be certified using the Green Star Design & As Built rating tool, demonstrating our commitment to incorporate best practice sustainable design across energy, water and innovation, as well as create highly connected and accessible communities that enhance liveability.

The Newport coastal-inspired development provides resort-style living, with all apartments built to **Livable Housing** Australia's Silver standard to provide assurance that homes are easier to access, navigate and live in, as well more cost effective to adapt when circumstances change. The apartments integrate passive design principles such as natural ventilation and passive heating/cooling, which actively reduces energy demand while improving comfort and wellbeing. All electric appliances, including reverse cycle air conditioning, are energy efficient, and the site utilises an embedded electricity network to help residents save money on their electricity bills. There is also an efficient centralised site-wide hot water system and an air-sourced heat pump for the swimming pool. These features have helped to achieve an average NatHERS rating of 8 stars across all apartments.

In keeping with Stockland's aim to combat water scarcity, all fixtures have been hand-picked for their WELS rating, including shower heads, taps and toilets. In addition, drip irrigation technology and air conditioning systems based on waterless heat rejection technology (no cooling towers) help to reduce the site's water consumption while also enabling our residents to make savings on their water bills.



Not only are all apartments energy and water efficient, but they are also healthy and enjoyable spaces in which to live. All kitchen exhausts discharge externally, helping remove cooking smells and moisture from the home which can result in the build-up of mould and lead to adverse health effects. We have also specified low VOC paints and carpets to improve indoor air quality. We believe Newport's high-performance apartments provide our residents with appropriate thermal comfort, positively impacting their overall health and wellbeing. We know that health and wellbeing is also enhanced by connection to nature and to community. Residents report that coastal views and regular social catch-ups at the community centre are highlights of the development.

To further raise public awareness around sustainable living, we created a sustainability-themed video, which is now hosted on the Stockland Newport Retirement Living website, and a marketing brochure illustrating the various initiatives embedded within the village.



For more information on high performance retirement living see the customer testimonial can be found at:  
<https://youtu.be/QQ34eU2HyqA>