



**ANZ GREEN BOND
IMPACT REPORT**

12 DECEMBER 2019

INTRODUCTION

ANZ issued a \$600 million, 5 year fixed rate green bond to wholesale investors in June 2015 (Green Bond).

The bond finances a portfolio of approximately AUD 700 million loan assets in renewable energy projects and commercial low carbon buildings in the Asia Pacific region that meet the Eligibility Criteria for Use of Proceeds as set out in our Framework. These projects are listed in the table on page 7.

Since our initial issuance, we have examined what can be done to enhance the transparency and usefulness of related reporting to investors. Following extensive engagement with the Climate Bonds

Initiative (CBI) and investors, we have undertaken detailed research into best practice impact reporting to better understand key considerations when reporting on the impact of asset investment on communities and the environment.

We are pleased to present our second Green Bond Impact Report which assesses the impact of our use of proceeds as of 30 September 2019. We also welcome all feedback in respect of our reporting and contact details are set out page 8 of this report.



Given the Eligible Assets in our Green Bond are low carbon buildings and renewable energy projects (which are in part financed by ANZ) we have focussed on the following best practise impact reporting indicators:



ANNUAL RENEWABLE ENERGY PRODUCED



ANNUAL ENERGY SAVINGS FROM LOW CARBON BUILDINGS



ANNUAL GREENHOUSE GAS (GHG) EMISSIONS REDUCED OR AVOIDED

Detail on the methodology and calculations that underpin these indicators is set out on page 8 of this report.

KPMG has provided independent limited assurance over the content of this report.

A copy of KPMG's independent limited assurance report is available [here](#).

IMPACT ASSESSMENT

LOW CARBON BUILDINGS

Buildings financed in part by ANZ’s Green Bond have been specifically designed to minimise operational energy use and the associated emissions arising from that use of energy. The portfolio of low carbon buildings has a weighted-average NABERS energy rating of 4.99, well above the average of 4.30 stars for equivalent sized buildings in the same asset locations.

The weighted average emissions intensity of the eight buildings in Victoria covered by the Green Bond is 59.4kgCO₂/m² (Scope 1, 2 and 3; Base Building). For the five buildings in New South Wales that have a Base Building rating, the carbon intensity is 77.9kgCO₂/m². Collectively, the buildings covered by the Green Bond are showing improved performance over time and are tracking below the carbon intensity target for each city specified by the Climate Bonds Initiative over the period 2015-2020¹. For Sydney this target is 84.74kgCO₂/m² and in Melbourne it is 82.85kgCO₂/m².

The low carbon buildings achieve combined energy savings of 8.98 million kWh compared to the average equivalent office building in the cities that they are located⁴. This is enough power to meet the electricity needs of more than 1,570 Australian households³ for a year. The lower energy use of the buildings combined with switching to lower carbon sources of energy such as gas and renewables translates into greenhouse gas emissions savings of over 10,600tCO₂-e. This is equivalent to taking more than 3,300 cars off the road³ for an entire year. ANZ measures the proportion of lending we provide and we use this to derive our proportional impact.

TOTAL PROJECT IMPACT



4.99

The weighted-average energy rating of low carbon buildings – well above the average of 4.30 stars



8.98 million kWh

The combined energy savings achieved



1,578

The equivalent households powered by these energy savings³

1,578
TOTAL IMPACT



119
ANZ PROPORTIONAL
IMPACT



10,604 tCO₂-e

The estimated greenhouse gas emissions saved overall by the projects



3,302

The equivalent cars off the road for a year³

3,302
TOTAL IMPACT



391
ANZ PROPORTIONAL
IMPACT

¹ Emission performance trajectories start at the carbon intensity of the top 15% most energy-efficient buildings in a city and end at zero emissions in 2050. Trajectories have a linear pathway. The Climate Bonds Initiative Commercial Buildings Criteria requires issuers to satisfy emissions performance targets for buildings they want included in a bond portfolio. Targets are expressed in kgCO₂/m² terms and derived from emissions performance trajectories.



CASE STUDY
**SOUTHERN CROSS
TOWERS**

The ANZ Green Bond Eligible Asset portfolio includes ANZ's lending to Southern Cross Towers located in Melbourne's Central Business District.

Southern Cross Towers comprises two buildings that house combined office space of around 122,000m² spread over 58 levels and include a number of innovative design features to limit energy use.

Among the major tenants of the two buildings are Australian and Victorian Government agencies that are required to meet minimum energy performance standards for their leased office space in accordance with the National Green Leasing Policy. This policy aims to reduce the environmental impact of buildings by requiring building owners to maintain a minimum energy base building rating of 4.5 stars under the National Australian Built Environment Rating System (NABERS) and a 4 star NABERS Water rating.

Both buildings have managed to attain these ratings since they commenced operation, with the smaller west tower at 111 Bourke St having a 5 star base building energy rating and a 4.0 star water rating.

IMPACT ASSESSMENT

RENEWABLE ENERGY PROJECTS

The wind power projects financed in part by ANZ’s Green Bond are helping to displace electricity generated from the burning of fossil fuels. This helps to lower the overall emissions intensity of the grid that final energy users draw their electricity from.

There are 13 wind power projects financed in part by ANZ’s Green Bond, 12 of which are fully operational. These 12 operating projects are helping to displace electricity generated from the burning of fossil fuels in four separate countries – Australia, New Zealand, Taiwan and the Philippines.

These projects will play an important role in delivering each country’s emissions reduction targets pledged as part of the Paris Climate Change Agreement. This is especially important in Australia, where the electricity sector currently contributes around a third of Australia’s national total².

The 12 operational wind projects financed by ANZ generated approximately 2.19 million MWh of renewable energy in the 12 months to 30 September 2019².

In total these projects will supply enough power to meet the annual electricity needs of approximately 543,900 households³, with ANZ’s pro-rated contribution being 224,157 households³ in the countries that the wind power projects are located i.e. Australia, New Zealand, Taiwan and the Philippines. We note that average household electricity consumption in the Philippines is considerably below that of Australia, New Zealand and Taiwan. The impact of this is that for every megawatt-hour of electricity generated from wind turbines in the Philippines, there are more houses able to have their electricity needs entirely met by the supply of renewable energy.

Given wind power projects displace electricity generated from the burning of fossil fuels, they achieve savings in greenhouse gas emissions that are proportionate to the carbon intensity of local grids. Overall, the projects are estimated to have saved over 1.21 million tonnes of CO₂ equivalent greenhouse gas emissions in the year ending September 2019². This is the equivalent of taking around 377,900 average Australian cars³ off the road (of which ANZ’s pro-rated contribution is more than 160,718 cars³). This represents around 2.7% of the entire Australian passenger fleet³.

ANZ measures the proportion of lending we provide and we use this to derive our proportional impact.

TOTAL PROJECT IMPACT



2.19 million MWh

The renewable energy supplied by the 12 operational wind projects financed by ANZ



543,900

The equivalent households powered by this energy

543,900
TOTAL IMPACT



224,157
ANZ PROPORTIONAL IMPACT



1.21 million tonnes

The estimated greenhouse gas emissions saved overall by these projects



377,912 cars

The equivalent cars off the road for a year

377,912
TOTAL IMPACT



160,718
ANZ PROPORTIONAL IMPACT




CASE STUDY
GRANVILLE
HARBOUR
WIND FARM

The ANZ Green Bond Eligible Asset Portfolio includes ANZ’s project finance lending to the Granville Harbour Wind Farm.

Electricity production is a major source of greenhouse gas emissions and approximately a third of Australia’s annual emissions come from the burning of fossil fuels to produce electricity². As part of Tasmania’s Energy Strategy the Tasmanian Government specifically stated that it will take further advantage of Tasmania’s significant renewable energy resources and maximise its contribution of renewable energy in the National Energy Market.

The Granville Harbour Wind Farm is located on the west coast of Tasmania. The approx. AUD 280 million Project has a rated capacity of 112 MW and will help Tasmania achieve its goal of becoming 100 percent reliant on renewable energy by 2022.

The Project comprises 31 Vestas wind turbine generators spread over 840 hectares of land. The Project is currently in construction, providing 125 jobs for Tasmanian workers, with a team of ten permanent employees needed to manage the site on an ongoing basis.

On completion, the project is expected to provide around 400GWh of electricity annually to power approximately 46,000 households annually.

DATA

The Impact Assessment table below lists the environmental benefits arising from Eligible Assets that are financed, in whole or in part, by ANZ's Green Bond proceeds. These Eligible Assets are organised by sector and are categorised by asset class as follows – renewable energy projects (RE) and low carbon buildings (LCB) – with all amounts listed being as at 30 September 2019².

Note: Climate impact indicators are tracked on a project/asset level basis and have not been pro-rated for the portion of ANZ's contribution to the overall funding of the projects or buildings.

Asset Name	Year of Signing	Country	Type	Asset Description	Energy Produced ² (GWh p.a.)	Energy Savings ⁴ (MWh)	Energy Capacity (MW)	Annual GHGs Avoided ² (ktCO ₂ eq/yr)
Bald Hills	2013	Australia	RE	Wind Farm	351	N/A	107	288
Burgos	2014	Philippines	RE	Wind Farm	280	N/A	150	188
Changbin	2006	Taiwan	RE	Wind Farm	223	N/A	104	139
Chungwei	2008	Taiwan	RE	Wind Farm	145	N/A	76	90
Coonooer Bridge	2015	Australia	RE	Wind Farm	80	N/A	20	65
Granville Harbour ⁵	2018	Australia	RE	Wind Farm	400	N/A	112	328
Mahinerangi	2010	New Zealand	RE	Wind Farm	97	N/A	36	11
Miaoli	2008	Taiwan	RE	Wind Farm	111	N/A	50	69
Murra Warra ⁶	2018	Australia	RE	Wind Farm	81	N/A	429	67
Taralga	2013	Australia	RE	Wind Farm	286	N/A	107	235
Tararua (stages 1,2 and 3)	2006	New Zealand	RE	Wind Farm	535	N/A	161	62
Southern Cross	2015	Australia	LCB	Cnr Bourke & Exhibition Sts, Melbourne	N/A	4,274	N/A	1.84
Collins Square	2016	Australia	LCB	Five building complex: towers 1, 2, 3 and 4 and the Goods Shed South	N/A	2,999	N/A	7.43
Liberty Place ⁷	2015	Australia	LCB	161 Castlereagh St, Sydney	N/A	-572	N/A	0.42
Frasers Green Loan	2019	Australia	LCB	Five NSW Buildings in Rhodes and Haymarket; 1 building in Southbank, Victoria	N/A	2,277	N/A	0.92

**Eligible Asset Portfolio Balance
(as at 30 September 2019)⁸**

\$730.3m

⁵ Granville Harbour Wind Farm is not yet operational, in which case the "energy produced" data is based on forecast annual generation once the project becomes fully operational (Sourced from <https://www.economicregulator.tas.gov.au/Documents/20190809%20Granville%20Harbour%20Operations%20Pty%20Ltd%20Electricity%20Generation%20Licence.pdf>). Construction is scheduled to be finalised in mid-2020.

⁶ Stage 1 of the Murra Warra windfarm commenced generation in April 2019 with production gradually ramped up throughout the reporting period as more turbines came on line.

⁷ Liberty Place has a higher than average energy intensity than other buildings as it utilises two gas fired co-generation units to meet part of the building's electricity needs and also water/space heating. This saves on carbon emissions by generating electricity at a carbon intensity of around half that of the grid in NSW.

⁸ Please refer to this [link](#) for a Use of Proceeds report updating the Eligible Asset portfolio balance as at 30 September 2019, 31 October 2019 and 30 November 2019.

METHODOLOGY

2 Calculation of Electricity Generation and Avoided Emissions Impact of Financed Renewable Energy Projects

ELECTRICITY GENERATION DATA

All reported figures for renewable electricity generation are based on actual generation quantities dispatched to local grids for the year ending September 2019 (or closest available period where data was available). ANZ has relied on a number of different sources to quantify the total amount of renewable energy generated from these renewable energy projects that are outlined below:

- **Australian-based assets connected to National Electricity Market (NEM) Grid:** Four wind power projects covered under ANZ's green bond dispatch electricity directly into the NEM. A fifth project is scheduled to commence generation in 2020. For three of the four operational assets, ANZ has relied on 'sent-out generation' figures extracted from the database managed by the Australian Energy Market Operator (AEMO) (sourced via Energy One Ltd). For the remaining asset connected to the NEM, ANZ has relied on the total number of Renewable Energy Certificates (RECs) generated by the project for the year ending September 2019.
- **New Zealand-based assets:** There are four wind power projects covered under ANZ's green bond that are situated in New Zealand and dispatch electricity into the national grid. For three of the projects, generation data was extracted from the Electricity Market Information database managed by the Electricity Authority of NZ. Electricity generation data for the other wind power project was supplied by the developer.
- **All other electricity generating assets:** There are four other wind power projects that are covered under ANZ's green bond – three in Taiwan and one in the Philippines. All electricity generation data for these projects was supplied by the developers.

CALCULATION OF AVOIDED EMISSIONS

The wind power projects covered under ANZ's green bond are helping to displace electricity generated from the burning of fossil fuels. This helps to lower the overall emissions intensity of the grid that final energy users draw their electricity from. The calculation of avoided emissions from the covered wind projects is based on multiplying the renewable electricity dispatched into local grids by the emissions intensity of the grid from which ANZ has relied on the following sources:

- **Australian-based assets connected to National Electricity Market (NEM) Grid:** Table 6 of the [National Greenhouse Account \(NGA\) Factors 2019](#) outlining the emission factor for the NEM when calculating net emissions abatement.
- **All other electricity generating assets:** Sourced from the 2019 edition of the International Energy Agency's document 'CO₂ Emissions from Fuel Combustion'. Applies relevant in-country emission factors for the 2017 Calendar Year

3 Calculation of equivalencies

CARS EQUIVALENT OFF THE ROAD

The reporting of the equivalent number of cars taken off the road is based on dividing the total emissions avoided from the wind power projects during 2018-19 by the annual emissions produced by an average Australian passenger vehicle. The average Australian vehicle is assumed to produce 3.21 tonnes of CO₂-e per year which is based on a survey of motor vehicle use in Australia for the year ending 30 June 2018 and published by the Australian Bureau of Statistics (available [here](#)).

NUMBER OF HOUSES SUPPLIED WITH 100% RENEWABLE POWER

The reporting of the equivalent number of houses supplied with 100% renewable electricity from the wind powered projects is calculated by dividing the total electricity produced by the wind power projects in a given country by the average household electricity use that applies for that country. For Australia, average household energy consumption is sourced from data published by the Australian Energy Regulator in their 2017-18 Annual Report on Compliance and Performance of the Retail Energy Market (available [here](#)). For all other countries, average household electricity use is sourced from data published by the World Energy Council (available [here](#)). For example, to calculate the equivalent number of houses in Australia that would be supplied with 100% renewable energy involves dividing the cumulative amount of electricity produced by all seven projects by the average amount of electricity consumed by an Australian household. The same procedure would be followed for the projects located in New Zealand, Taiwan and the Philippines. The total number of houses in each country whose electricity needs would be met by the wind power projects are then added up to provide the overall equivalent number of houses.

4 Calculation of Avoided Energy Use and Emissions of Financed Low Carbon Buildings

Buildings covered under ANZ's green bond have been specifically designed to minimise operational energy use and the associated emissions arising from that use of energy. There are 14 green buildings covered under ANZ's green bond with all having received at least one or more energy ratings under the National Australian Built Environment Rating Scheme (NABERS) - a national rating system that measures the environmental performance of Australian buildings. It is therefore possible to benchmark the actual operational energy use and greenhouse gas emissions performance of these buildings against statewide averages that are updated and published annually by the scheme's administrator. The 2018-19 Annual Report that was used in the calculation of energy and emissions savings is available [here](#).

CALCULATION OF ENERGY SAVINGS

The energy use of the covered buildings is based on the energy used in base building infrastructure divided by the net lettable area of the building. This information is sourced from the public databases of [NABERS](#) and the Australian Government's [Commercial Building Disclosure](#) Program. Base building energy use covers all of the power that a building uses with the exception of the tenanted space.

The calculation of the energy savings achieved by each covered building is based on the following formula:

$$(\text{Average Statewide Base Building Energy Intensity} - \text{Building 'A' Energy Intensity}) \times \text{Net Lettable Area of Building 'A'}$$

The calculated energy savings for each building are then aggregated to return a cumulative energy savings figure for all covered buildings.

CALCULATION OF GREENHOUSE GAS SAVINGS

The calculation of the greenhouse gas emissions savings achieved by the covered buildings is based on the same methodology applied for the calculation of energy savings. The greenhouse gas emissions figures applied in the calculations are sourced from the latest NABERS Energy Rating certificates issued for each building which reflect the combined emissions totals of Scope 1, Scope 2 and Scope 3 emissions from building energy use.

ASSURANCE

KPMG has provided independent limited assurance over the content of this report.

A copy of KPMG's independent limited assurance report is available [here](#).

FURTHER INFORMATION

Enquiries in relation to this report or ANZ Green Bonds can be directed to DebtIR@anz.com

Please refer to this [link](#) for a Use of Proceeds report updating the Eligible Asset portfolio balance as at 30 September 2019, 31 October 2019 and 30 November 2019.

For further information please visit www.debtinvestors.anz.com

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