

Australian Government
Carbon Neutral Program
Public Disclosure Summary




NAME OF CERTIFIED ENTITY: Barangaroo Precinct

REPORTING PERIOD: 23-June 2015 through to 30 June 2019

Declaration

To the best of my knowledge, the information provided in this Public Disclosure Summary is true and correct and meets the requirements of the Climate Active Carbon Neutral Standard and Carbon Neutral Program.

Signature 	Date 07 December 2019
Name of Signatory Annie Tennant	
Position of Signatory General Manager, Sustainability and Culture, Barangaroo South	

Carbon neutral certification category	Precinct
Date of most recent external verification/audit	07 November 2019
Auditor	Pangolin Associates (Christopher Wilson)
Auditor assurance statement link	



Australian Government
Department of the Environment and Energy

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1. Carbon neutral information

1A. Introduction

The Barangaroo Precinct ('Barangaroo') comprises three main areas: Barangaroo Reserve, Barangaroo South and Central Barangaroo.

Barangaroo Reserve is a six hectare waterfront park located at the headland of the northern end of Barangaroo. The park was delivered by the NSW State Government and opened in August 2015. In addition to expansive lawns and landscaped areas, lookouts, walking and cycle paths, and tidal rock pools, Barangaroo Reserve also comprises the Cutaway, an expansive, underground event space, and a 300 space underground car park.

Barangaroo South is a mixed use precinct, consisting of commercial office space, retail areas and residential apartments along with wide pedestrian friendly lanes and public realm areas that interface with the harbour, city and broader Barangaroo Precinct. The site is serviced by a central basement, housing a district cooling plant (DCP) with harbour heat rejection, a recycled water treatment plant (RWTP) and other shared infrastructure including loading docks, waste and recycling transfer and storage facilities and a bicycle storage hub with end of trip facilities.

The development of Barangaroo South commenced in 2012 with the first building International Tower 2, and today comprises International Towers 1, 2 and 3 (Buildings C3, C4 and C5), Anadara and Alexander (Buildings R8 and R9), International House (Building C2), Barangaroo House (Building R1) and Exchange Place (Building R7). The total Gross Floor Area (GFA) of the operational portion as at end of financial year 2019 is approximately 335,000m².

Lendlease hold the development rights for Barangaroo South which is still in development with remaining buildings including a low-rise commercial tower (Building C1), high rise residential towers (R4A, R4B and R5) and the Crown Sydney Hotel Resort scheduled for completion in the period 2019-2023. At full build out Barangaroo South is expected to have a total building GFA of approximately 515,000m².

Central Barangaroo sits between the Barangaroo Reserve and Barangaroo South and will deliver cultural, civic and community outcomes that will enrich the character and experience of the precinct, fulfill the NSW Government's commitment to delivering 50% public open space across the 22 hectare precinct, and complete the sweep of experiences along Sydney CBD's western waterfront. It is estimated that an additional 90,000m² GFA will be included on the 5.2 hectare Barangaroo Central site. Central Barangaroo and the broader precinct will be supported by a new Metro Station located at the north of the site, which is expected to be operational by 2024. Central Barangaroo is also scheduled for completion by the end of 2024.

While Barangaroo has become part of the fabric of the broader Sydney CBD, it is of such a scale that it has become a significant community precinct in its own right, with an estimated residential and worker population of around 20,000 people, plus an estimated 18 million visitors annually.

The Barangaroo precinct has committed to the goal of offsetting greenhouse gas emissions and achieving recognition as a carbon neutral precinct. This commitment has required a holistic approach by:

- Maximising energy efficiency within the buildings and associated infrastructure;
- Maximising the use of onsite renewables;
- Adopting onsite low carbon energy generation;
- Allocating monies for the establishment of a community carbon fund;

- Setting operational carbon budgets and targets; and
- Ensuring that there are adequate leasing agreements and financial accounting processes that safeguard and quarantine budgets for further improving efficiencies and offsetting residual emissions.

The NSW State Government are owners of the land at Barangaroo. Infrastructure NSW is the NSW Government agency responsible for overseeing the development and management of the Precinct on behalf of the State Government. In the context of Carbon Neutral certification under the Climate Active Carbon Neutral Standard (CACNS) for Precincts, Infrastructure NSW in conjunction with Barangaroo South developer Lendlease Millers Point (LLMP) are responsible for preparing the current carbon account, purchasing eligible offset units and maintaining the relevant reports for the Precinct's carbon neutral claim. INSW oversees the administration of the Precinct and has responsibility for managing and maintaining the public realm and the ongoing operation of the precinct wide initiatives. Lendlease as ground lessee and developer of Barangaroo South, has responsibilities to report on both base building, central infrastructure and tenant operational emissions as these relate to the CACNS reporting boundary.

Figure 1 defines the operational boundary for the Barangaroo Precinct which coincides with the geographic boundary of the site. The boundary is consistent with precinct planning documents, and aligns with the community's expectations of the precinct border.

Figure 1 Barangaroo Precinct Physical Boundary

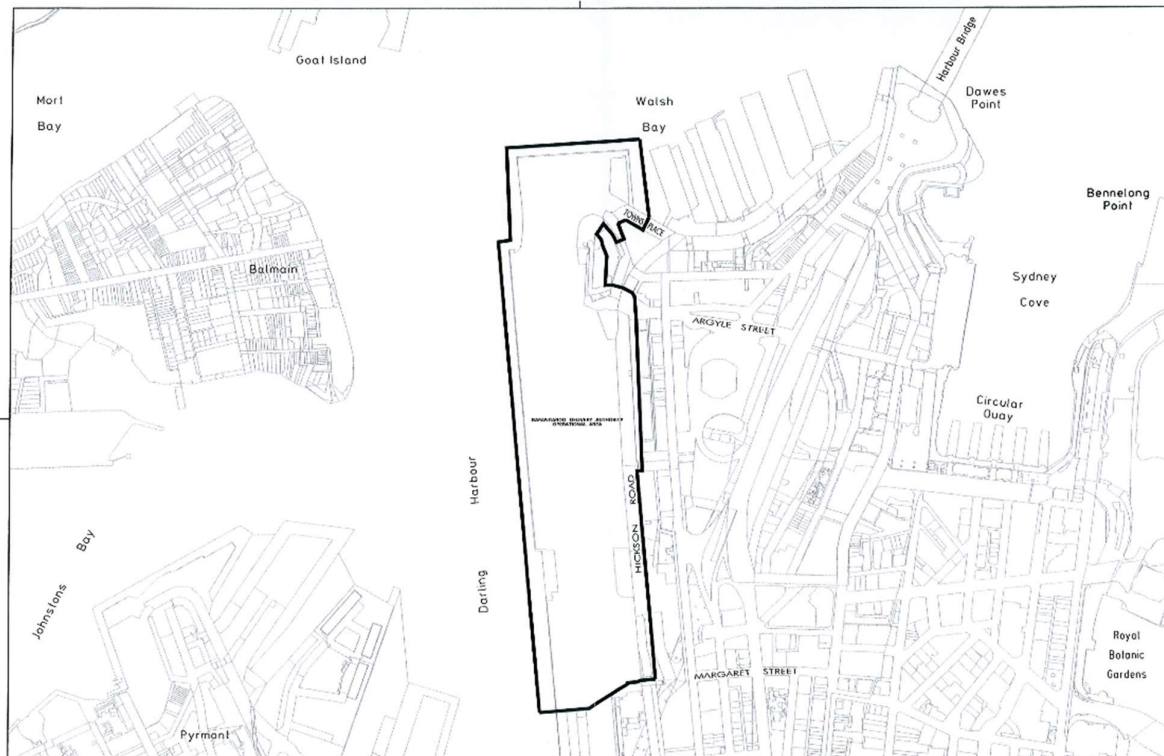


Figure 2 below defines the current operational area for the Precinct in Barangaroo South which is the current built out area that is being considered in the current CACNS certification.

Figure 2 Current Operational area (Barangaroo South)



FY19 Base Year

Building	Reporting Period				Operational Date
	FY16	FY17	FY18	FY19	
Public Domain	✓	✓	✓	✓	June 2015
Basement	✓	✓	✓	✓	June 2015
International Tower 1 (C3)		✓	✓	✓	October 2016
International Tower 2 (C4)	✓	✓	✓	✓	June 2015
International Tower 3 (C5)	✓	✓	✓	✓	May 2016
Anadara & Alexander (R8 & R9)	✓	✓	✓	✓	November 2015
Exchange Place (R7)		✓	✓	✓	October 2016
International House (C2)		✓	✓	✓	May 2017
Barangaroo House (R1)			✓	✓	December 2017

The emissions inventory has been prepared based on the Climate Active Carbon Neutral Standard for Precincts (CACNS). Barangaroo has applied a geographical boundary approach to the emissions boundary, with Scope 1, Scope 2 and Scope 3 emissions considered in line with the CACNS. Material scope 3 emissions have been included where data was available or reasonable estimations could be made.

1B. Emission sources within certification boundary

Appendix A summarises all greenhouse gas emissions sources that occur as a result of operating the precinct and applies the four principles of geographic boundary, precinct operations, relevance and materiality, to determine whether emissions sources are to be included in the carbon account for the precinct. Where emissions are considered non quantifiable or an allowable exclusion, the exclusion is clearly stated and

justified against these criteria.

Quantified sources

The following emission sources have been assessed within the provisions in the CACNS:

Scope 1

- Natural gas combustion (public domain, buildings, central utilities)
- Diesel consumption (buildings, central utilities)
- Fugitive emissions from electrical switchgear, refrigerants and recycled water treatment plant

Scope 2

- Grid supplied electricity (public domain, buildings and tenants, central utilities)
- Precinct embedded network electricity distribution losses

Scope 3

- Solid waste transport and treatment
- Electricity losses through transmission and distribution
- Natural gas losses through extraction and distribution
- Diesel emissions - refining and distribution
- Precinct water supply (public domain, buildings, central utilities)
- Precinct water treatment (municipal) (public domain, buildings, central utilities)
- Precinct office and retail worker and resident transboundary transport
- Precinct waste treatment (buildings, central utilities)

Excluded sources

The following emission sources have been excluded in line with the provisions of the CACNS for Precincts. The impact of excluding these sources is not expected to materially affect the overall total emissions.

The below emission sources recommended under CACNS have been excluded due to the lack of control from the Land Owner over these activities undertaken by businesses operating in the precinct. In undertaking the relevance test provided by CACNS (as adapted from GHG Protocol – Corporate Standard), the following emissions were deemed immaterial and outside the control of the Land Owner:

- Occupier/tenant impacts
 - Paper usage
 - Embodied emissions of food and drink supplied within the precinct (food and beverage retail (<1% of current total GFA));
 - Business related travel
 - All other business impacts
- Food and drink consumed in precinct
- Embodied emissions from event catering

Non-quantified sources

The below emission sources recommended under CACNS have not been quantified for failing the materiality test (representing less than 1 per cent of the total carbon account for the precinct):

- LPG consumption (i.e. portable heating)
- Diesel and Petrol consumption (public domain and Barangaroo Reserve)
- Events temporary generation and intra-precinct transport
- Landlord/management business related travel

- Barangaroo Reserve and public domain waste emissions (including events)
- Barangaroo Reserve electricity and water use
- Site management & maintenance vehicles -cleaning and maintenance activities are limited to those that are contracted directly to the Land Owner e.g. public realm. Other cleaning activities onsite would form part of the organisational boundaries of building owners and tenants with electricity use captured as part of the precinct.

It is estimated that the emissions sources non-quantified under the Materiality criteria represent less than 3.8% of the total carbon account in aggregate which is less than the 5% total threshold that the CACNS for Precincts allows.

The only other non-quantified emissions made from the carbon account of the precinct are the electricity and water usage in Barangaroo Reserve and some emissions relating to events held within the precinct.

The Barangaroo Reserve has been undergoing major remodeling in the Cutaway, the only built out area in the Reserve. The water harvesting system is also being fine-tuned to optimise its operations given the soil quality in the area from past activities as a container port. As such emissions from electricity and water use in the Barangaroo Reserve have not been included in the current reporting as accurate data on the actual operational usage is not available. Emissions from the electricity and water usage have also shown to not be Material. It is envisaged that future reporting will aim to include these emissions once the Cutaway remodeling and the water harvesting system is back to normal operations.

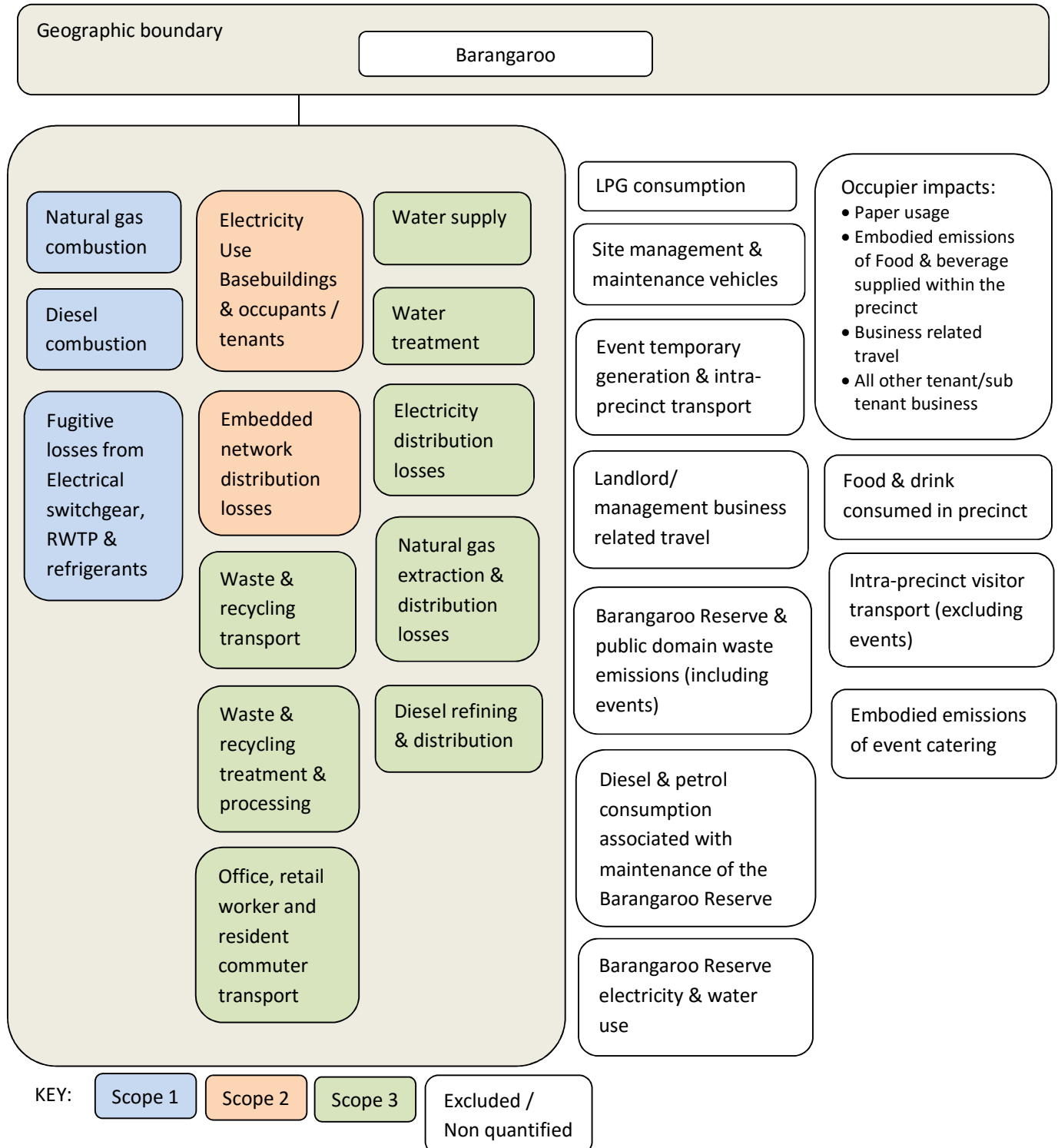
With regard to events it should also be noted that reliable data is not currently available to accurately measure the emissions associated with events previously held within the precinct. As detailed in Appendix A, some emissions sources associated with events have not been quantified or excluded from the carbon account under the Relevance and Materiality criteria.

It is envisaged that future events at the precinct will be contractually required to be independently certified as carbon neutral under the CACNS for Events at which point all emissions from precinct events will then be considered to contribute zero emissions to the precinct's carbon account.

1C. Diagram of the certification boundary

Figure 3 below describes the activities included within the system boundary of the Precinct. Reference should be made to Figure 1 Barangaroo Precinct Physical Boundary in section 1A for further information regarding the physical / geographic boundary.

Figure 3 Activities included within the Precinct system boundary



2. Emissions reduction measures

2A. Emissions reduction strategy

The energy and carbon strategy for the precinct has always been to reduce greenhouse gas emissions through onsite initiatives such as highly efficient buildings and central infrastructure, and to offset the remaining emissions through the purchase of carbon offsets and/or renewable energy certificates. This is currently supported by a number of onsite initiatives as well as contractual mechanisms included in development agreements and lease agreements for the precinct.

Central infrastructure is a key component of the emissions reduction strategy included in the early stages of development. The onsite centralised infrastructure includes:

- A highly efficient central chilled water plant with harbour heat rejection;
- An embedded electricity network;
- Significant onsite solar photovoltaics; and
- A recycled water treatment plant.

In addition to these key initiatives a number of contractual mechanisms within the development agreements, ground and tenancy lease agreements to ensure energy and carbon efficiency is implemented through design and achieved / evidenced throughout operations.

The key mechanisms in the lease agreements for the precinct include:

- Lease carbon benchmarks (Carbon Neutrality Clause); and
- Energy management plans.

The carbon neutrality clause requires tenants to develop and implement strategies to reduce site energy, transport and waste emissions attributable to the use and occupation of the building through building and infrastructure efficiencies and the use of onsite renewable energy.

The carbon neutrality clause also quantifies the energy efficiency target for each building type through a 'benchmark rate'. The benchmark rate, stated in units of kgCO₂/m² for each building type, incentivises energy efficiency of tenants through an excess payment mechanism. Where greenhouse gas emissions for the year exceed the specified benchmark rate the tenants are required to make a financial contribution towards offsetting the excess emissions. It is important to note that the benchmark rates are stringent targets, selected to drive energy efficiency (for example, the benchmark rate for commercial office buildings is equivalent to a 5.5 star NABERS Energy whole building rating), not standard practice or business as usual targets.

In addition, the ground lease agreements also require the building owners to develop an Energy Management Plan for the building which is to include strategies for achieving the minimum building requirements which are:

- For commercial buildings: NABERS Energy 5 Star, NABERS Water 5 Star, NABERS Waste 5 Star;
- For retail buildings: Green Star Performance 6 Star;

Under the ground lease agreement, the Energy Management Plans are to be approved by the iNSW and reviewed and amended every two years to reflect market, policy and technology changes.

2C. Emissions reduction actions

Buildings within the Barangaroo Precinct that are currently in operation have demonstrated continued emissions reductions since the baseline year level. Emissions reductions can be primarily attributed to energy efficiency improvements achieved through building tuning activities and the diligent monitoring of plant and equipment operating out of hours. There has also been effort to reduce emissions associated with waste through continued engagement with incoming and existing tenants to ensure packaging and foodware distributed is either recyclable or compostable, significantly reducing waste to landfill and ensuring that optimal recycling practices within the Barangaroo Precinct are achieved. A clear education strategy combined with centralised waste contracting, clear signage and well coordinated waste handling and tracking procedures have delivered a consistent average annual waste diversion from landfill of between 79 and 81 percent.

Since commencement of operations all commercial office buildings have achieved reductions in an average energy use intensity by 1 to 4 percent, whilst simultaneously increasing occupancy levels by 7 to 18% over the same period.

In addition to the building tuning, investment in a number of initiatives have also contributed to the energy-related emissions reductions achieved by the buildings since their operation, including the following:

- Installation of motion detection system to control toilet exhausts
- Solar sensors replaced time scheduled control of exterior lighting systems
- Main foyer lighting scenes altered for weekends to reduce energy consumption
- Review of common area core lighting control schedules
- Regular calibration of strategic controlling sensors
- Review of solar blind strategy – blinds down to minimise solar heat gain from early morning sun

Planned investments and strategies to further reduce emissions within Barangaroo include the following:

- Outside air damper control strategy to be altered for temperature extremes above 32⁰ C or below 7⁰ C and during smokey outdoor air conditions
- Separate retail boiler implementation project
- Additional electrical meters to be installed within some retail switchboards for improved separation and visibility of end use energy data
- Additional diesel fuel meters to be installed for more streamlined monitoring of liquid fuel consumption

3. Emissions summary

This section provides a summary of emission sources and totals for the reporting period.

Table 2a. Emissions Summary						
Scope	Emission source	FY16	FY17	FY18	FY19	TOTAL
		(tCO2-e)	(tCO2-e)	(tCO2-e)	(tCO2-e)	(tCO2-e)
1	Natural Gas Distributed in pipeline	720	2,022	2,733	2,729	8,203
1	Liquid fuels, Diesel (stationary energy)	69	35	3	105	212
1	Fugitive emissions (Refrigerants)	1,568	1,568	1,568	1,568	6,271
1	Switch Gear SF6	37	37	37	37	147
1	RWTP (Fugitive Emissions)	15	30	38	37	121
2	Net Purchased electricity	13,015	27,192	34,165	36,140	110,512
3	Transboundary transport (workers and residents)	1,237	2,735	3,263	3,294	10,529
3	Waste - commercial solid waste	66	297	1,530	481	2,375
3	Reticulated Potable Water Supply	19	39	52	50	159
3	Waste Water Treatment	25	45	55	54	179
3	Purchased electricity (distribution loss)	1,859	3,931	4,167	4,016	13,973
3	Natural Gas Distributed in pipeline (metropolitan)	179	502	679	678	2,038
3	Liquid fuels, Diesel (stationary energy)	4	2	0.13	5	11
Total Gross Emissions		18,813	38,434	48,289	49,194	154,729
Voluntarily Retired LGCs		6,197	13,105	16,666	17,847	53,815
Emissions Reduced Through Voluntarily Retired LGCs		5,950	12,450	15,333	16,062	49,794
Total Net Emissions		12,863	25,984	32,956	33,132	104,935

Table 2b Emissions Summary - Net emissions (Less LGC RECs)					
Emissions Scope	FY16	FY17	FY18	FY19	TOTAL
	tCO2-e	tCO2-e	tCO2-e	tCO2-e	tCO2-e
Scope 1	2,409	3,691	4,378	4,476	14,954
Scope 2	7,809	16,315	20,499	21,684	66,307
Scope 3	2,645	5,978	8,079	6,972	23,674
Total Net Emissions	12,863	25,984	32,956	33,132	104,935

4. Carbon offsets

4A. Offsets summary

Offsetting in arrears has been used to claim carbon neutrality for the period 23 June 2015 through to 30 June 2019. The carbon account for the precinct for the period 23 June 2015 through to 31 December 2017 has been determined based on actual operational data and estimated data sets. Any estimates were based on the best available information available at the time and have been necessarily conservative. A total of 53,815 Large Scale Renewable Energy Generation Certificates (LGC RECs) and 104,935 tCO₂-e of Australian Carbon Credit Units (ACCUs) have been retired to offset these emissions for the period.

The Table 3a and 3b provides a summary of the offset type, registry and serial numbers of the carbon offsets and LGC RECs cancelled to meet the Barangaroo South carbon neutral claim against the Climate Active Carbon Neutral Standard for Precincts covering the period 23 June 2015 through to 30 June 2019.

Table 3a. Large Scale Renewable Energy Generation Certificates (LGC RECs) Summary							
Projects supported by LGC purchase	Eligible offset units	Registry	Cancellation date	Serial numbers (including hyperlink to registry transaction record)	Vintage	Quantity	Equivalent Emission Reduction (tCO ₂ -e)
Capital Wind Farm – NSW	LGC	REC Registry	15/11/2019	127614-146922	2019	17,847	16,513
Sapphire Wind Farm – NSW	LGC	REC Registry	3/12/2019	343644-358347 & 456188-475162	2019	33,679	31,162
Capital Wind Farm – NSW	LGC	REC Registry	3/12/2019	127166-127520, 147339 & 145461-146922	2019	1,818	1,682
Borg Charmhaven – Solar – NSW	LGC	REC Registry	3/12/2019	1 - 252	2019	252	233
Stennett Rd Ingleburn Solar - NSW	LGC	REC Registry	3/12/2019	1 - 160	2019	160	148
Taronga Western Plains Zoo Solar – NSW	LGC	REC Registry	3/12/2019	80-92 & 100 - 145	2019	59	55
Total LGCs cancelled						53,815	49,794

Table 3b. Offsets Summary						
Projects supported by offset purchase	Eligible offset units	Registry	Cancellation date	Serial numbers (including hyperlink to registry transaction record)	Vintage	Quantity
West Arnhem Land Abatement Stage 2 Project	KACCU	ANREU	3/12/2019	3,785,026,405 - 3,785,056,404	2018-19	30,000
Wollert Landfill Gas Project	KACCU	ANREU	3/12/2019	3,787,805,440 - 3,787,818,754 & 3,787,818,755 - 3,787,820,182	2019-20	14,743
Bierbank & Lanherne Regeneration Project	KACCU	ANREU	3/12/2019	3,780,978,747 - 3,780,992,298	2018-19	13,552
Mullagalah II Regeneration Project	KACCU	ANREU	3/12/2019	3,790,596,120 - 3,790,603,490	2019-20	7,371
Lindermans Regeneration Project	KACCU	ANREU	3/12/2019	3,784,197,105 - 3,784,203,241	2018-19	6,137
Mullagalah Regeneration Project	KACCU	ANREU	12/11/2019	3,782,580,092 - 3,782,580,203 & 3,788,363,234 - 3,788,365,974 & 3,788,353,346 - 3,788,363,233	2018-19 2018-19 2019-20	12,741
Hillview Park Regeneration Project	KACCU	ANREU	12/11/2019	3,784,346,525 - 3,784,349,449 & 3,784,349,450 - 3,784,352,871	2018-19	6,347
Uteara Regeneration Project	KACCU	ANREU	12/11/2019	3,784,146,915 - 3,784,151,914 & 3,784,151,915 - 3,784,153,173	2018-19	6,259
Tuncoona Forest Regeneration Project	KACCU	ANREU	12/11/2019	3,784,591,808 - 3,784,595,099	2018-19	3,292
Paroowidgee Regeneration Project	KACCU	ANREU	12/11/2019	3,784,165,365 - 3,784,169,857	2018-19	4,493
Total offsets cancelled						104,935
Total offsets banked for use future years						0

It is envisaged that RECS will ultimately be supplied through a long-term purchase agreement between iNSW and an offsite solar facility and retired to offset the Scope 2 electricity emissions associated with operation of the Barangaroo precinct. Scope 1 and 3 emissions will continue to be offset using CACNS eligible carbon units.

4B. Offsets purchasing and retirement strategy

Purchase and retirement of offsets will occur in arrears, and is to coincide with the financial year disclosure for each reporting period.

4C. Offset projects (Co-benefits)

Both Infrastructure NSW and Lendlease have aspirations to support local NSW renewable energy projects through the purchase and retirement of large scale generation certificates (RECs) for purchased electricity emissions.

Furthermore, there is a preference to procure Australian Carbon Credit Units (ACCUs) created under the Australian Carbon Farming Initiative for scope 1 and 3 residual emissions. Infrastructure NSW and Lendlease will seek to support offset projects that provide additional social and environmental outcomes and in particular support Aboriginal and Farming Communities. Examples of offsets retired for Barangaroo South that provide additional co-benefits include:

1. West Arnhem Land Abatement Stage 2 Project (NT)

Arnhem Land in the Northern Territory is prone to extreme, devastating wildfires that affect the landscape, people, plants and animals. Reinstating traditional burning practices has demonstrated a significant reduction in carbon emissions along with highly valued social, cultural, environmental and economic benefits for indigenous landowners. The project provides employment and training opportunities while supporting Aboriginal people in returning to, and remaining on and managing their country, as well as the preservation and transfer of knowledge, maintenance of Aboriginal languages and the wellbeing of the traditional custodians.

This project is owned exclusively by Aboriginal people with custodial responsibility for those parts of Arnhem Land under active bushfire management.

2. Mullagalalah Regeneration Project I and II (NSW)

Widespread land clearing in NSW has significantly impacted local ecosystems. Located in Western NSW, this project works with landholders to regenerate and protect native vegetation. The area harbours a number of indigenous plant species which provide important habitat and nutrients for native wildlife. By erecting fencing and actively managing invasive species, the project avoids emission caused by clearing and achieves key environmental and biodiversity benefits.

5. Use of trade mark

Table 4. Trade mark register	
Where used	Logo type
Stationary, Email Footer, etc.	Climate Active Precinct
Lendlease Annual Report	Climate Active Precinct
Lendlease Website	Climate Active Precinct
Barangaroo South website	Climate Active Precinct

Appendix A: Relevance and Materiality Testing

Emissions Source	Scope	In Geographic Boundary?	Operational Control	Materiality Order of Magnitude (% Total Emissions)	Relevance Test (a, b, c, d, e)	Relevant and/or Material	Included/ excluded or non quantified from account	Justification for Exclusion
Site management and maintenance vehicles - direct in boundary emissions	1	Yes	Landlord/ Management	<0.5%	Deemed relevant	Yes	Non quantified	Emissions are not considered material and accurate data is not yet available. To be considered for inclusion in future reporting
Intra-precinct public transport	1	Yes	Landlord/ Management, Tenants, Occupiers	<0.5%	Deemed relevant	Yes	Non quantified	Emissions are not considered material and accurate data is not yet available. To be considered for inclusion in future reporting
Natural gas consumption (public domain, buildings, central utilities, events) - direct in boundary emissions	1	Yes	Landlord/ Management, Tenants, Occupiers	~5%	Deemed relevant	Yes	Included	
Diesel consumption (buildings, central utilities) - direct in boundary emissions	1	Yes	Landlord/ Management, Tenants, Occupiers	<0.5%	Deemed relevant	Yes	Included	
Diesel consumption (Barangaroo Reserve, public domain) - direct in boundary emissions	1	Yes	Landlord/ Management	<0.04%	Deemed relevant	Yes	Non quantified	Emissions are not considered material.
Petrol consumption (Barangaroo Reserve, public domain) - direct in boundary emissions	1	Yes	Landlord/ Management	<0.01%	Deemed relevant	Yes	Non quantified	Emissions are not considered material.
LPG consumption (buildings, events) - direct in boundary emissions	1	Yes	Landlord/ Management, Tenants	<0.5%	Deemed relevant	Yes	Non quantified	Emissions are not considered material and accurate data is not yet available. To be considered for inclusion in future reporting
Refrigerant fugitive emissions (Green Utility)	1	Yes	Landlord/ Management, Tenants	~5%	Deemed relevant	Yes	Included	
Switchgear fugitive emissions (Green Utility)	1	Yes	Landlord/ Management, Tenants	<0.1%	Deemed relevant	Yes	Included	
Recycled Water Treatment Plant fugitive emissions (Green Utility)*	1	Yes	Landlord/ Management, Tenants	<0.5%	Deemed relevant	Yes	Included	

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Emissions Source	Scope	In Geographic Boundary?	Operational Control	Materiality Order of Magnitude (% Total Emissions)	Relevance Test (a, b, c, d, e)	Relevant and/or Material	Included/ excluded or non quantified from account	Justification for Exclusion
Events temporary generation	1	Yes	Landlord/ Management, Event Management	<0.5%	Deemed relevant	Yes	Non quantified	Emissions are not considered material and accurate data is not yet available. To be considered for inclusion in future reporting
Electricity consumption (public domain, buildings, central utilities, events) - indirect emissions	2	No	Landlord/ Management, Tenants, Occupiers	~75%	Deemed relevant	Yes	Included	
Electricity consumption (Barangaroo Reserve) - indirect emissions	2	No	Landlord/ Management, Tenants, Occupiers	<1%	Deemed relevant	Yes	Non quantified	Emission are considered not considered material even though it is deemed relevant. The Cutaway has been undergoing remodelling and therefore readings are not representative of actual operational electricity usage. Will be considered for inclusion in future reporting
Embedded Network Distribution Losses**	2	No	-	~5%	Deemed relevant	Yes	Included	**Note. These emissions are currently estimated
Natural gas consumption (public domain, buildings, central utilities, events) - indirect emissions from the extraction, production and transport of fuel burned at generation	3	No	Landlord/ Management, Tenants, Occupiers	~1%	Deemed relevant	Yes	Included	
Diesel consumption (public domain, buildings, central utilities, events) - indirect emissions from the extraction, production and transport of fuel burned at generation	3	No	Landlord/ Management, Tenants, Occupiers	<0.1%	Deemed relevant	Yes	Included	
LPG consumption (public domain, buildings, central utilities, events) - indirect emissions from the extraction, production and transport of fuel burned at generation	3	No	Landlord/ Management, Tenants, Occupiers	<0.1%	Deemed relevant	Yes	Non quantified	Emissions are not considered material and accurate data is not yet available. To be considered for inclusion in future reporting.

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Electricity consumption (public domain, buildings, central utilities, events, embedded network) - indirect emissions attributable to the electricity lost in delivery in the transmission and distribution network	3	No	Landlord/ Management, Tenants, Occupiers	~10%	Deemed relevant	Yes	Included	
Precinct water supply (public domain, buildings, central utilities)	3	No	Landlord/ Management, Tenants, Occupiers	<0.5%	Deemed relevant	Yes	Included	
Barangaroo Reserve water supply	3	No	Landlord/ Management, Tenants, Occupiers	<0.01%	Deemed relevant	Yes	Non quantified	Emission are considered not considered material even though it is deemed relevant. The water harvesting system is being fine-tuned and therefore readings are currently not representative of actual operational potable water usage. Will be considered for inclusion in future reporting
Precinct water treatment (municipal) (public domain, buildings, central utilities)	3	No	Landlord/ Management, Tenants, Occupiers	<0.5%	Deemed relevant	Yes	Included	
Barangaroo Reserve waste water treatment (municipal)	3	No	Landlord/ Management, Tenants, Occupiers	<0.01%	Deemed relevant	Yes	Non quantified	Emission are considered not considered material even though it is deemed relevant. The water harvesting system is being fine-tuned and therefore readings are currently not representative of actual operational waste water usage as it is based on potable water consumption. Will be considered for inclusion in future reporting
Precinct waste treatment (buildings, central utilities)	3	No	Landlord/ Management, Tenants, Occupiers	<1%	Deemed relevant	Yes	Included	

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Public Disclosure Summary

Emissions Source	Scope	In Geographic Boundary?	Operational Control	Materiality Order of Magnitude (% Total Emissions)	Relevance Test (a, b, c, d, e)					Relevant and/or Material	Included/ excluded or non quantified from account	Justification for Exclusion
Staff, and resident commuting (transboundary transport)	3	Some	Staff/Residents	7%	✓	X	✓	X	X	Yes	Included	
Visitor commuting (excluding events) (transboundary transport)	3	Some	Visitors	<1%	X	X	X	X	X	No	Excluded	
Precinct waste treatment (Barangaroo Reserve, public domain, events)	3	No	Landlord/ Management	<0.2%	Deemed relevant					Yes	Non quantified	Emissions are not considered material and accurate data is not yet available. To be considered for inclusion in future reporting
Management office (201 Kent Street) electricity and gas consumption	3	No	Landlord/ Management	<0.2%	X	X	✓	✓	X	Yes	Non quantified	Although the management office is outside the boundary of the precinct the emissions are considered relevant to the operation of the precinct. They have been excluded on the basis that they are not material
Management office (201 Kent Street) water and wastewater	3	No	Landlord/ Management	<0.01%	X	X	✓	✓	X	Yes	Non quantified	Although the management office is outside the boundary of the precinct the emissions are considered relevant to the operation of the precinct. They have been excluded on the basis that they are not material and accurate data is not available.
Management office (201 Kent Street) waste	3	No	Landlord/ Management	<0.01%	X	X	✓	✓	X	Yes	Non quantified	Although the management office is outside the boundary of the precinct the emissions are considered relevant to the operation of the precinct. They have been excluded on the basis that they are not material and accurate data is not available.
Occupier paper usage	3	No	Occupiers	<0.5%	X	X	X	X	X	No	Excluded	Emissions are not considered relevant or material.

Barangaroo Precinct
Climate Active Carbon Neutral Standard
Public Disclosure Summary

Emissions Source	Scope	In Geographic Boundary?	Operational Control	Materiality Order of Magnitude (% Total Emissions)	Relevance Test (a, b, c, d, e)					Relevant and/or Material	Included/ excluded or non quantified from account	Justification for Exclusion
Occupier food and drink supply (food and beverage outlets)	3	No	Occupiers	<0.5%	X	X	X	X	X	No	Excluded	Emissions are not considered relevant or material.
Food and drink consumed in precinct	3	No	Occupiers	<0.5%	X	X	X	X	X	No	Excluded	Emissions are not considered relevant or material.
Landlord/Management business related travel	3	No	Landlord/ Management	<0.5%	X	X	X	✓	X	No	Excluded	Emissions are not considered relevant or material.
Tenant business related travel	3	No	Tenants	<0.5%	X	X	X	X	X	No	Excluded	Emissions are not considered relevant or material.
Occupier business related travel	3	No	Occupiers	<0.5%	X	X	X	X	X	No	Excluded	Emissions are not considered relevant or material.
Events temporary generation and transport	1	Yes	Landlord/ Management, Event Management	<0.5%	X	X	X	✓	X	No	Excluded	Emissions are not considered relevant or material.
Events catering	3	No	Landlord/ Management, Event Management	<0.5%	X	X	X	✓	X	No	Excluded	Emissions are not considered relevant or material.