

Australian Government
Carbon Neutral Program
Public Disclosure Summary



THIS DOCUMENT WILL BE MADE PUBLICLY AVAILABLE

NAME OF CERTIFIED ENTITY: NEXTDC Limited

REPORTING PERIOD: 1 July 2017 to 30 June 2018

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 National Carbon Offset Standard Carbon Neutral Program.

Signature		Date	8 November 2018
Name of Signatory	Chih-Yao Alex Teo		
Position of Signatory	Head of Corporate Development and Investor Relations		

Carbon neutral certification category	Organisation Standard
Date of most recent external verification/audit	15 November 2018
Auditor	
Auditor assurance statement link	NextDC Assurance Audit Report Final v4.0



Australian Government
Department of the Environment and Energy

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1. Carbon neutral information

1A. Introduction

NEXTDC Limited (“NEXTDC”) is a public technology company listed on the Australian Securities Exchange as part of the ASX200 with revenues of \$161.5m in the financial year 2017/18; serving over 970 customers and over 470 partners.

NEXTDC is Australia's leading independent data centre operator with facilities across five capital cities including Brisbane, Canberra, Melbourne, Perth and Sydney with its headquarters being in Brisbane. We deliver Data Centre-as-a-Service solutions to our customers, including colocation and connectivity solutions along with professional services such as Remote Hands technical assistance, business continuity and infrastructure management software. At 30 June 2018, NEXTDC contracted over 40.2MW power utilisation and supported 8,671 interconnections.

With a focus on sustainability and renewable energy, NEXTDC delivers industry leading engineering solutions that champion innovative technologies that deliver our customers with energy efficiencies never before achieved in the data centre industry in Australia. For further information regarding NEXTDC's Investor Relations activities visit: <https://www.nextdc.com/our-company/investor-centre>

NEXTDC's vision is to improve society through the advancement of technology and is committed to delivering greater energy efficiencies and sustainable initiatives across our entire footprint. Climate change is one of the most challenging and complex issues facing the planet. NEXTDC recognises the need to continuously work towards building a sustainable environment, building resilience and exploring new opportunities that arise as a result. Environmental Sustainability is about ensuring we focus our attention on measurable objectives to reduce the environmental impact of our data centres, including but not limited to:

- Tune mechanical and electrical plant (MEP) to maximise energy efficiency
- Reduce the risk of an environmental incident
- Reduce NEXTDC's contribution to landfill
- Minimise operational Greenhouse Gas (GHG) emissions and to offset the remainder to have a net neutral impact on the climate

NEXTDC's NCOS Carbon Neutral certification includes the Australian business operations of NEXTDC under the National Carbon Offset Standard for Organisations (“the Standard”).

Based on an operational consolidation approach, the organisational carbon inventory boundary includes all operational data centres, referred to as facilities B1, P1, M1, C1, and S1. Data centres that came online throughout the reporting period were considered for the timeframe they were in operation (Facility B2 and M2).

The reporting period for this inventory is 1 July 2017 to 30 June 2018 (FY17/18). This is the first inventory under the Standard and it has been independently assured to support the validity and transparency of the carbon neutral claim in line with provisions 2.2 and 2.7 of the Standard.

All potential sources of the six greenhouse gases referenced in the Kyoto Protocol were considered as required under the Standard. These are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF₆), and nitrogen trifluoride (NF₃) emissions. This inventory presents them as carbon dioxide equivalents (CO_{2-eq}) and classifies Scope 1, 2, and 3 emissions where applicable.

This GHG inventory has been prepared in accordance with the *Australian National Carbon Offsetting Standard (NCOS)* and the *WRI/WBCSD Greenhouse Gas Protocol Corporate Accounting and Reporting Standard* which it is based upon. It is furthermore aligned with the Carbon Neutral Initiative guidelines, as well as the Australian National Greenhouse and Energy Reporting Act 2007 and supporting legislation and documentation.

1B. Emission sources within certification boundary

Quantified sources

The following emission sources have been included:

Scope	Source
Scope 1	Solar Electricity Generation
Scope 2	Electricity purchased from the grid, VIC
Scope 2	Electricity purchased from the grid, NSW and ACT
Scope 2	Electricity purchased from the grid, SWIS
Scope 2	Electricity purchased from the grid, QLD
Scope 3	Diesel combustion (stationary), indirect emissions
Scope 3	Electricity purchased from the grid, VIC (network distribution emissions)
Scope 3	Electricity purchased from the grid, NSW and ACT (network distribution emissions)
Scope 3	Electricity purchased from the grid, SWIS (network distribution emissions)
Scope 3	Electricity purchased from the grid, QLD (network distribution emissions)
Scope 3	Municipal Solid Waste (MSW)
Scope 3	Recycled Cardboard
Scope 3	ULP combustion (transport), indirect emissions
Scope 3	Diesel combustion (transport), indirect emissions
Scope 3	Reticulated water
Scope 3	Flights, Economy Class, Short Haul
Scope 3	Flights, Economy Class, Medium Haul
Scope 3	Flights, Economy Class, Long Haul
Scope 3	Flights, Premium Economy Class, Short Haul
Scope 3	Flights, Premium Economy Class, Medium Haul
Scope 3	Flights, Premium Economy Class, Long Haul
Scope 3	Flights, Business Class, Short Haul
Scope 3	Flights, Business Class, Medium Haul

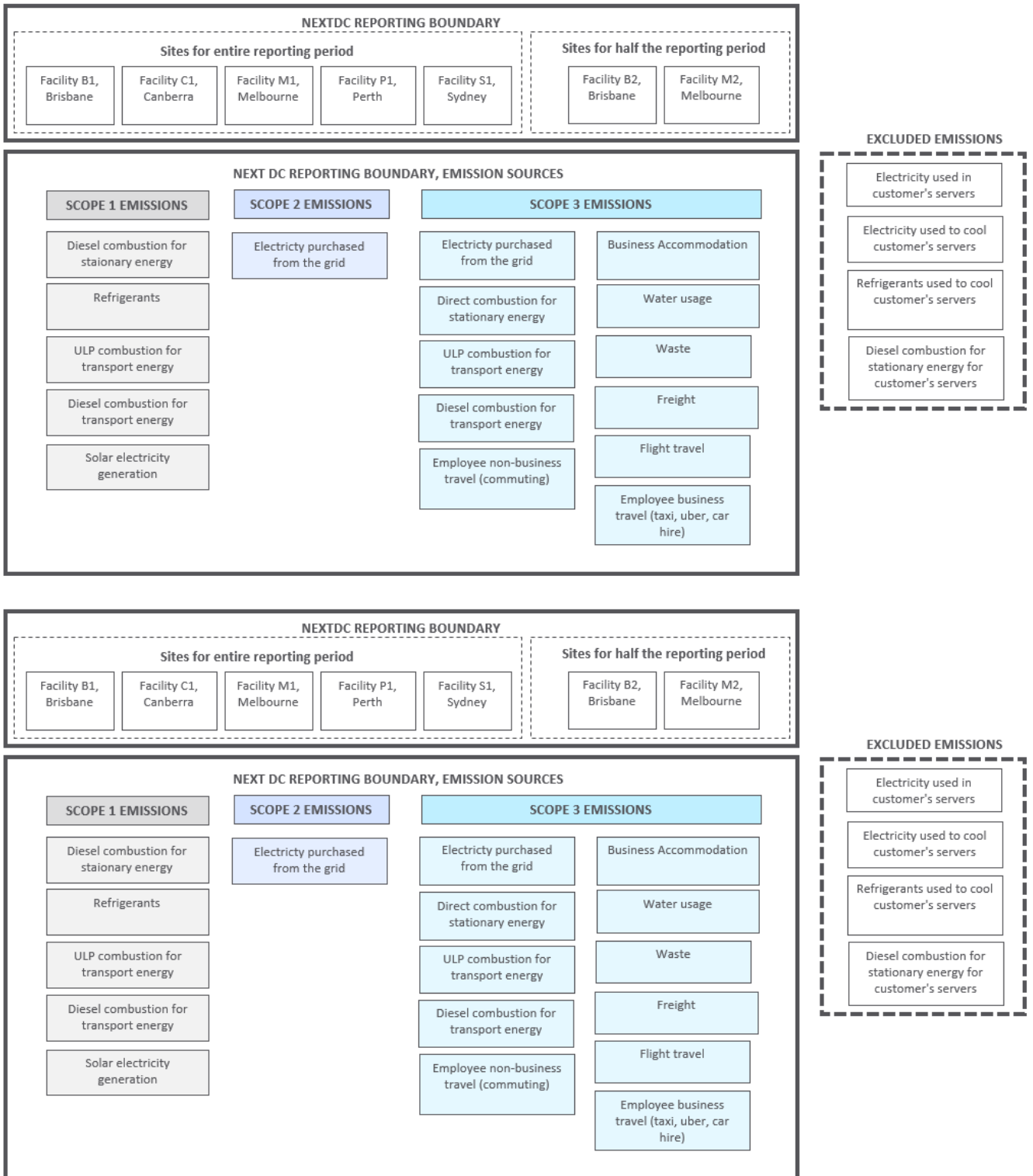
Scope 3	Flights, Business Class, Long Haul
Scope 3	Flights, First Class, Short Haul
Scope 3	Flights, First Class, Medium Haul
Scope 3	Flights, First Class, Long Haul
Scope 3	Accommodation
Scope 3	Australian Road Freight
Scope 3	Emissions from staff commuting via car
Scope 3	Emissions from staff commuting via tram
Scope 3	Emissions from staff commuting via train
Scope 3	Emissions from staff commuting via bus

Excluded sources:

The following items have been excluded from this inventory, as they are outside the defined boundary.

- Electricity used in customers servers
- Electricity used to cool customer servers
- Refrigerants used to cool customers servers
- Diesel combustion for stationary energy for stationary energy for customer's servers

1C. Diagram of the certification boundary



2. Emissions reduction measures

2A. Emissions reduction strategy

NEXTDC is dedicated to the continuous monitoring and improvement of the management of our data centres, we are committed to:

- Improving energy efficiency
- Minimising our impact on the environment and natural resources, and
- Meeting and exceeding the minimum environmental legislative Requirements

NEXTDC have identified the following actions to reduce emissions:

- Doubling of free water side cooling
- Upgrades to lighting with LEDs
- Technology upgrades including new chillers to increasing capacity and efficiency

NEXTDC customers and data centres will have increasing IT power requirements year-on-year. NEXTDC controls the non-IT power usage portion of the data centre environment. The performance of this is measured through the Power Usage Effectiveness (PUE) rating metric for each of our data centres.

NEXTDC already operates in a highly efficient manner, as evidenced in our Uptime Institute and NABERS certifications achieved at S1 Sydney and M1 Melbourne.

In FY18 NEXTDC's average PUE across all data centres was 1.34. This represents a decrease of 1.5% from the previous period and aligns with our corporate environmental objective, which is to achieve a target PUE rating of below 1.40 in every data centre.

2B. Emissions reduction actions

The following environmental objectives have been established for FY18:

1. Tune our mechanical and electrical plant (MEP) to maximise energy efficiency.
2. Minimise CO2 emissions.
3. Reduce NEXTDC's contribution to landfill

1. Tune MEP to maximise energy efficiency (minimise PUE)

- Implementing the latest data centre recommendations from The American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE). For the newest data centres, the data hall supply air temperature will increase from 22 to 25 degrees Celsius and relative humidity across a much broader band, which allows NEXTDC to improve energy efficiency without reducing infrastructure reliability.
- Optimum placement of the floor grills, increasing the temperature of the return air from the data halls thus improving the mechanical plant efficiency.
- Air-side free cooling. Using external air sources coupled with the optimum placement of floor grills further improves energy efficiency.
- Water-side free cooling. Depending on the ambient conditions, external water cooling assistance is automatically activated at S1, M1 and P1 to improve mechanical plant efficiency.
- Rack blanking panels. Racks are checked regularly and blanking panels are placed in the empty spaces, significantly reducing the energy required to cool the data halls.
- Energy monitoring systems. Through the collection of comprehensive performance data, targeted

adjustments in the MEP's operation are made which helps to improve our operational efficiency and enables us to achieve higher energy efficiency ratings.

2. Minimise emissions

- NEXTDC's generators are also set to run at maximum efficiency, helping to reduce their emissions.
- NEXTDC monitors our carbon emissions for reporting and participates in the National Greenhouse and Energy Reporting Act ("NGER") initiative by the Clean Energy Regulator annually.

3. Reduce landfill contribution

- All cardboard from customers' installations are recycled.
- Broken fluorescent light- tubes are recycled.
- All e-waste (end of life batteries, computers, phones, etc.) is recycled.
- NEXTDC does not permit the disposal of e-waste in our bins.
- NEXTDC utilise rotary UPS systems, significantly reducing the lead acid batteries found in conventional UPS systems.

NEXTDC will attempt to quantify emission reductions from our initiatives in future reporting periods.

3. Emissions summary

Table 2. Emissions Summary		
Scope	Emission source	t CO ₂ -e
1	Business Travel	13
1	Diesel	4
1	Refrigerants	14
2	Electricity	3,679
3	Business Travel	96
3	Diesel	0
3	Electricity	445
3	Flights	404
3	Freight	198
3	Staff Commute	0
3	Waste	16
3	Water	2
Total Gross Emissions		4,871
GreenPower or retired LGCs		0
Total Net Emissions		4,871

4. Carbon offsets

4A. Offsets summary

Table 3. Offsets Summary				
Date of cancellation	Offset project, unit type and registry	Serial numbers	Vintage	Quantity
<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: auto;"> <p>NEXTDC is not certifying the audited baseline year and will purchase carbon offsets to achieve carbon neutrality for the first year of certification (FY19) after the end of the reporting period in line with the NCOS guidelines.</p> </div>				
Total offsets cancelled				
Net emissions after offsetting				
Total offsets banked for use future years: (if any)				

4B. Offsets purchasing and retirement strategy

NEXTDC will offset our emissions in arrears, on a quarterly or annual basis throughout the reporting period via the Qantas Future Planet Program. More information on projects can be found on the Qantas Future Planet website: <https://www.qantasfutureplanet.com.au/>.

This will be followed by an annual true-up process to ensure that the number of cancelled eligible offset units is at least equal to actual emissions.

4C. Offset projects (Co-benefits)

Please see section 4A. NEXTDC is not certifying the audited baseline year and will purchase carbon offsets to achieve carbon neutrality for the first year of certification (FY19) after the end of the reporting period in line with the NCOS guidelines.

5. Use of trade mark

Table 4. Trade mark register	
Where used	Logo type
Sustainability report	Certified Organisation
Website	Certified Organisation
Business cards and stationery	Certified Organisation
Marketing materials (online and print)	Certified Organisation
Email signature	Certified Organisation
LinkedIn	Certified Organisation
Newsletters	Certified Organisation

6. Have you done more?

Over the past year, NEXTDC achieved a National Australian Built Environment Rating System (NABERS) 4.5-star rating for energy efficiency at M1 and S1 and ISO 14001 certification for Environmental Management at M1, S1 and C1. NEXTDC's second generation data centres, including B2 in Brisbane, M2 in Melbourne and S2 in Sydney are designed to target a level of energy efficiency not previously attained in the industry, as well as the ISO 14001 certification.

NEXTDC owns and operates our own solar array on the roof of M1 Melbourne and has also been a principal partner involved in the Melbourne Renewable Energy Project since inception in 2014. In FY18, financial close on this project was achieved, enabling the construction of the 80MW Crowlands Wind Farm in Victoria. This momentous achievement is a first for a data centre operator in the Asia Pacific region.