National Carbon Offset Standard

Carbon Neutral Program

Public Disclosure Summary

CITY OF SYDNEY 2030

Sydney2030/Green/Global/Connected

city of villages

An Australian Government Initiative

2015-16

Sydney2030/Green/Global/Connected

city of villages

CITY OF SYDNEY 2030

Contents

Declaration

To the best of my knowledge and having met the requirements of the National Carbon Offset Standard Carbon Neutral Program (NCOS CNP), the information provided in this report is true and correct.

	date 21/12/16
Kim Woodbury Chief Operating Officer	

Type of carbon neutral certification: Organisation

Verification

Date of most recent external verification/audit: December 2016

Auditor: Christopher Wilson, Pangolin Associates

Auditor assurance statement link: http://www.cityofsydney.nsw.gov.au/vision/towards-2030/sustainability/carbon-reduction/carbon-neutral/carbon-neutral-documents

1. Carbon neutral information

Introduction

In 2007 the City of Sydney Council resolved to become carbon neutral for its own operations. In November 2011, the City's carbon neutrality was officially recognised under the National Carbon Offset Standard based on its 2009/10 emissions. It has subsequently retained annual certification under the National Carbon Offset Standard (NCOS).

This inventory pertains to greenhouse gas emissions released due to activities associated with City of Sydney Council operations in the period of 1-July 2015 to 30-June 2016. The gross emissions during this period were 39,566 tCO_2-e.

The City of Sydney Council

The City of Sydney is the local government authority responsible for the city centre and more than 30 suburbs. The City of Sydney's role is to provide services for our residents as well as for the daily influx of workers and visitors. On any given day, Sydney's population swells to more than a million people.

The core functions of the City are defined by the Local Government Act 1993[1], the City of Sydney Act 1988[2] and other legislation. A non-exhaustive overview of City of Sydney services and facilities include:

- Aquatic centres
- Community centres, services and facilities
- Cultural activities
- Domestic waste service
- Economic development
- Events and sponsorships
- Health and building inspections
- Infrastructure (roads, footways, drainage, street lighting)
- Parking services
- Parks and open space
- Strategic planning and development consent
- Sustainability

The City owns approximately 250 properties, many of which are tenanted. The City also owns 8,599 street lights and there are a further 13,000 street lights owned by the electricity network provider but deemed to be within the City's financial control (pays for energy and maintenance).

The City's operations are mostly run out of a main administration building, multiple depots, parks, libraries, venues and community centres.

[1] http://www.legislation.nsw.gov.au/#/view/act/1993/30
[2] http://www.legislation.nsw.gov.au/inforce/e7c1b3ab-b509-e447-af90-f93662ed3bbf/1988-48.pdf

Sustainable Sydney 2030, developed in 2008 with the most consultation ever undertaken by the City of Sydney, set ambitious targets including 70% reduction of 2006 greenhouse gas emissions for the local government area and City organisation.

The City's draft *Environmental Action 2016-2021, Strategy and Action Plan* includes the following targets for the City organisation:

- 44 per cent reduction in greenhouse gas emissions by end June 2021, based on 2006 levels
- 70 per cent reduction in greenhouse gas emissions by 2030 based on 2006 levels
- 50 per cent of electricity demand met by renewable sources by end June 2021

Sustainable Sydney 2030 proposes a Green, Global and Connected city and has significantly increased the expectations and service delivery by the City of Sydney.

This report is about the processes and results of the City of Sydney being a carbon neutral organisation, and it does not refer to the Local Government Area (LGA).

In 2007 the City of Sydney Council resolved to become carbon neutral for its own properties and operations. In 2011 the City was certified carbon neutral under the National Carbon Offset Standard (NCOS) and has retained its annual certification.

Greenhouse gases

The City of Sydney greenhouse gas emissions inventory includes the gases covered by the UNFCCC/Kyoto Protocol including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorinated carbons (PFCs) and sulphur hexafluoride (SF_6) and nitrogen trifluoride (NF_3). However, there are no known sources of PFCs, SF_6 or NF_3 relevant to the City's operations.

The City includes greenhouse gas emissions from the ozone depleting R22 refrigerant within its inventory. This is an option accorded within the Greenhouse Gas Protocol *Required Greenhouse Gases in Inventories - Accounting and Reporting Standard Amendment* Feb 2013. Until R22 is phased out it will continue to be a source of greenhouse gas emissions and is therefore included.

Emission sources within certification boundary

Our emissions boundary is based on the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard[3] and includes all Scope-1 and Scope-2 emissions, as well as a range of Scope-3 emissions.

Geographic boundary

The City of Sydney local government area (LGA) covers 26.15 square kilometres of inner Sydney from Sydney Harbour at Rushcutters Bay to Glebe and Annandale in the west, Sydney Park and Rosebery in the south, and Centennial Park and Paddington in the east. This inventory pertains to providing services to constituents within the geographical area in Figure 1.

[3] http://www.ghgprotocol.org/standards/corporate-standard

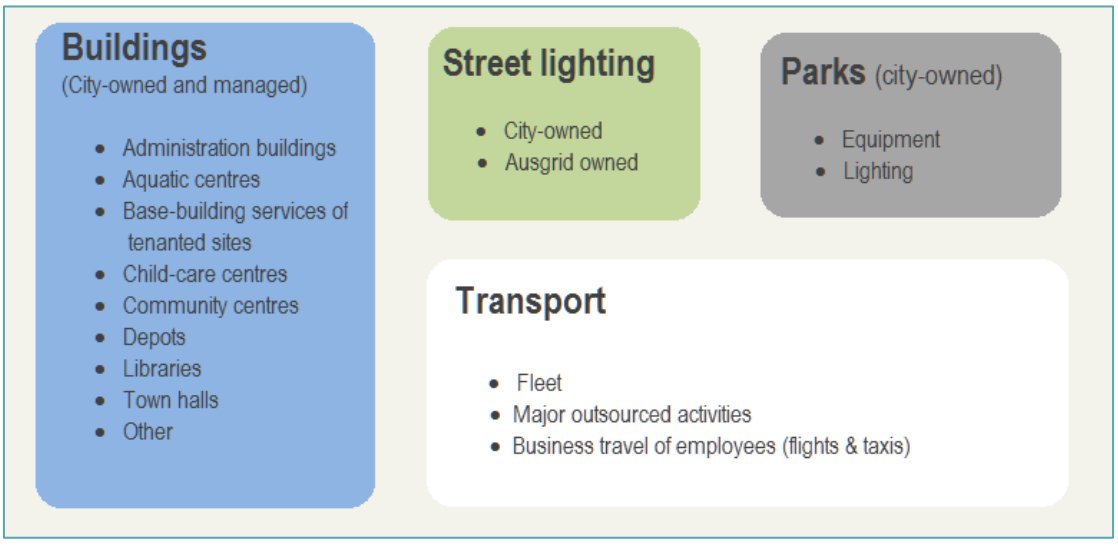
Figure 1 – Local Government Area

Organisational boundary

The City of Sydney organisational boundary includes emissions sources where the City is considered to have operational control, as defined by the *National Greenhouse and Energy Reporting Act* 2008[4] and the *Greenhouse Gas Protocol – A Corporate Accounting and Reporting Standard guidance*, chapters 3 and 4[5], for emissions resulting in the delivery of services where the City has capacity to implement environmental policies.

For the City of Sydney, this means services required under the *Local Government Act* 1993 and Sustainable Sydney 2030 and includes core business, statutory responsibilities, service provision, Council facilities, services and other assets as depicted in Figure 2.

Figure 2 - Organisational boundary



[4] http://www.environment.gov.au/climate-change/greenhouse-gas-measurement/nger
[5] http://www.ghgprotocol.org/standards/corporate-standard

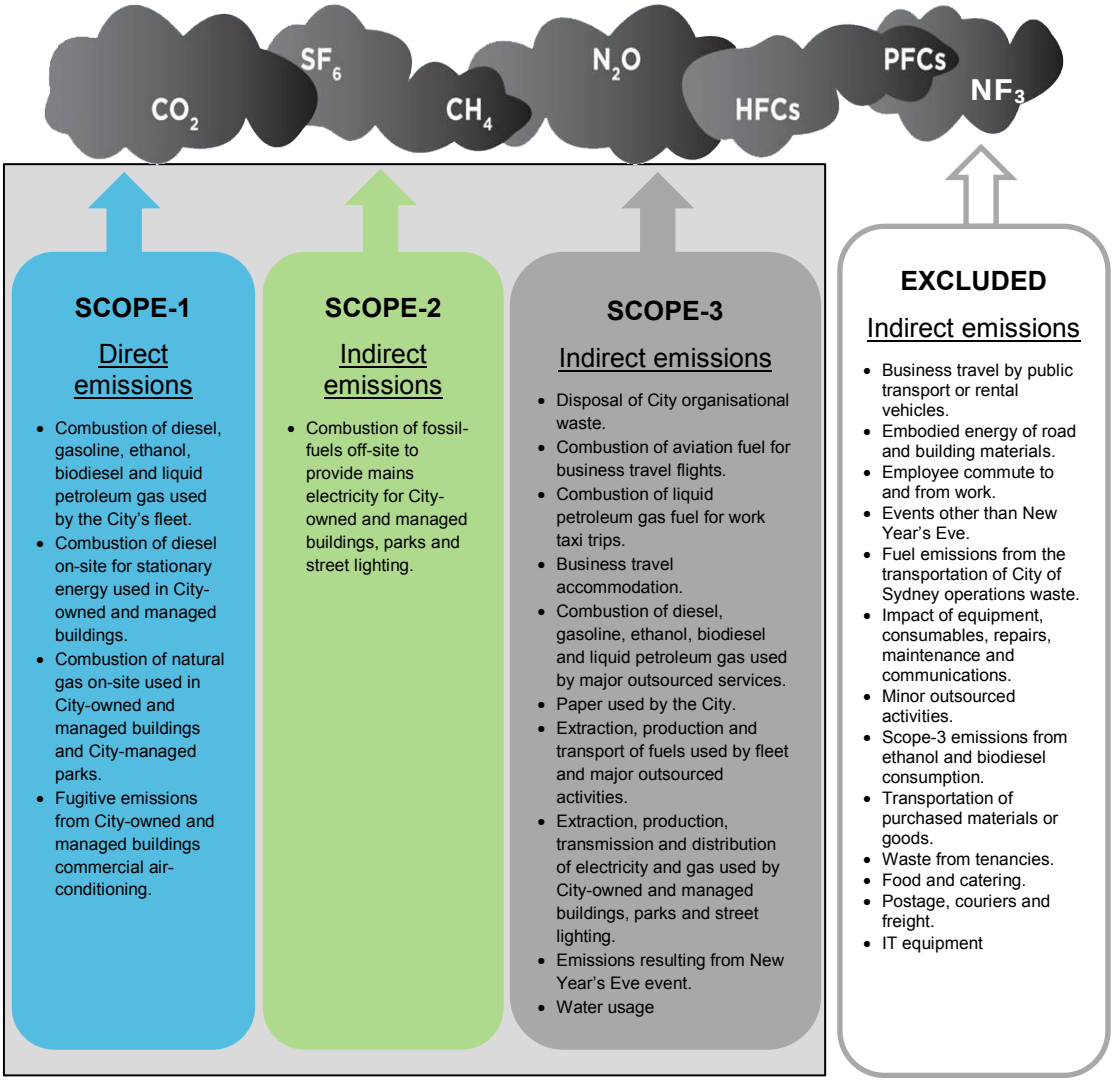
Operational boundary

Operational control is the predominant control approach as described above. In accordance with the *National Greenhouse and Energy Reporting Act* 2008, Section 11, the City includes all Scope-1 and Scope-2 emissions based on aggregated data for facilities and core activities. In addition, there are a range of Scope-3 emissions sources. Figure 3 shows all emissions that have been included or excluded.

The City has chosen to include other emissions sources which are within its financial control (e.g. fuel emissions from major contractors).

The definitions for Scope-1, Scope-2 and Scope-3 emissions have been interpreted from the National Carbon Offset Standard (NCOS) Version 3, November 2015 and the *Greenhouse Gas Protocol – A Corporate Accounting and Reporting Standard guidance*, chapters 3 and 4[6].

Figure 3 - Diagram of the boundary of the subject of certification



[6] http://www.ghgprotocol.org/standards/corporate-standard

The City of Sydney includes many Scope 3 emissions sources within its inventory. Some Scope 3 emissions sources have been excluded for reasons in accordance with Section 4.2.3 of the National Carbon Offset Standard, including:

- Emissions likely to be negligible (relative to other Scope 3 emissions);
- If determining emissions is not currently possible given available technology;
- If determining emissions will be very costly relative to their likely significance;
- If there is insufficient data.

It is not considered that the Scope-3 exclusions compromise the overall integrity of the reported inventory. The City of Sydney has publicly tested its emissions reduction targets and carbon neutral assertions within the media, local and international events and programs such as the *C40 Cities Climate Leadership Group*, the *Carbon Neutral Cities Alliance (CNCA)* and the *CDP Cities Carbon Disclosure Project*. Review of other local and international Governments at varying stages of carbon neutrality has not identified any material emissions sources which are not reported by the City of Sydney.

Contractors fuel usage

Emissions from Contractors Fuel usage have been included within the City's inventory as Scope-3 emissions since 2006. Contractor emissions are outside of the City's operational control however are included on the basis that they are providing core local government services that would otherwise need to be provided by the City. These emissions have been calculated using Scope-1 + Scope-3 emissions factors based on the amount and type of fuel used by contractors. However they are reported as Scope-3 emissions within the City's inventory as they have been produced by third-parties and there are data quality uncertainties.

While the NGER Legislation[7] requires contractors to provide activity data to relevant reporting entities, the Legislation does not discuss the contractor's responsibility for data accuracy. City of Sydney has always formally and clearly requested the required data from its contractors in a suitable manner. However, it is difficult for City of Sydney to ensure the quality of this data. City of Sydney will improve its approach to obtaining contractors data in the future, as it is working to create new ways to conduct some degree of data checking to assess its accuracy and completeness.

[7] Source: NGER Legislation and Contractors/Subcontractors (http://environmentalaccounting.org.au/wp-content/uploads/2013/10/NGER-Contractors-Reporting-Paper.pdf)

2. Emissions reduction measures

Part A. Emissions over time

Figures 4 and 5 and Tables 1 and 2 show year-on-year changes to the City's greenhouse gas emissions by scope and by major business unit since 2005/06 - the year against which the City's greenhouse gas reduction target was established through Sustainable Sydney 2030.

In previous NCOS reports a 2010/11 base year was used. From 2013/14 report, the 2005/06 base year has been used for consistency with Sustainable Sydney 2030, City of Sydney Master Plans, sustainability programs, the bi-annual Green Report, Corporate Plan reporting and other communications channels.

The 2005/06 base year emissions inventory received independent assurance by the company Banarra Pty Ltd[8] to the same level as required for certification under the National Carbon Offset Standard, to a reasonable level for Scope 1 and 2 emissions, and to a limited level for Scope 3 emissions.

There have been no material changes to the emissions boundary since 2005/06. Business travel accommodation and water, which have been included in this reported year sum up to less than 200 tCO_2-e or 0.3% of the whole inventory.

Total greenhouse gas emissions have reduced by 25 per cent since 2006. The percentage reductions are greater for some specific sectors, for example greenhouse gas emissions from our buildings are 36 per cent below 2006 levels.

Progress toward the City's interim 2016 target and the target for 2030 to reduce greenhouse gas emissions by 70 per cent are also shown.

Table 1 - Emissions by scope (tCO2-e)

	n/a 2005/06 BASELINE	n/a 2006/07	n/a 2007/08	n/a 2008/09	Year-1* 2009/10	Year-2* 2010/11	Year-3* 2011/12	Year-4* 2012/13	Year-5* 2013/14	Year-6* 2014/15	Year 7 2015/16
Scope-1	4,053	4,338	4,465	5,022	4,744	4,449	4,649	4,174	4,539	4,626	4,736
Scope-2	37,760	38,709	38,439	35,506	35,073	33,821	31,835	29,633	28,109	27,812	26,111
Scope-3	11,159	11,429	11,490	11,208	10,213	10,066	10,217	10,137	8,121	7,766	8,719
TOTAL	**52,972**	**54,475**	**54,395**	**51,736**	**50,030**	**48,336**	**46,701**	**43,945**	**40,769**	**40,204**	**39,566**

**Carbon Neutral Certification Year*

[8] Acquired by KPMG in 2015.

Table 2 - Emissions by major type (tCO_2-e)

	n/a 2005/06 BASELINE	n/a 2006/07	n/a 2007/08	n/a 2008/09	Year-1* 2009/10	Year-2* 2010/11	Year-3* 2011/12	Year-4* 2012/13	Year-5* 2013/14	Year-6* 2014/15	Year-7 2015/16
Buildings	28,775	29,075	28,626	25,750	25,203	24,718	23,150	21,847	19,711	20,468	18,996
Street Lighting	15,131	15,699	16,057	15,636	15,269	14,783	14,653	13,730	12,404	11,942	11,382
Parks	2,502	2,636	2,610	2,850	2,878	2,578	2,468	2,197	2,206	1,824	1,648
Fleet	2,669	3,022	2,954	3,212	3,225	3,175	2,710	2,373	2,417	2,293	2,244
Other	3,896	4,042	4,148	4,288	3,455	3,082	3,720	3,798	4,031	3,677	5,296
TOTAL	**52,972**	**54,475**	**54,395**	**51,736**	**50,030**	**48,336**	**46,701**	**43,945**	**40,769**	**40,204**	**39,566**

**Carbon Neutral Certification Year*

Figure 4 - Emissions by scope

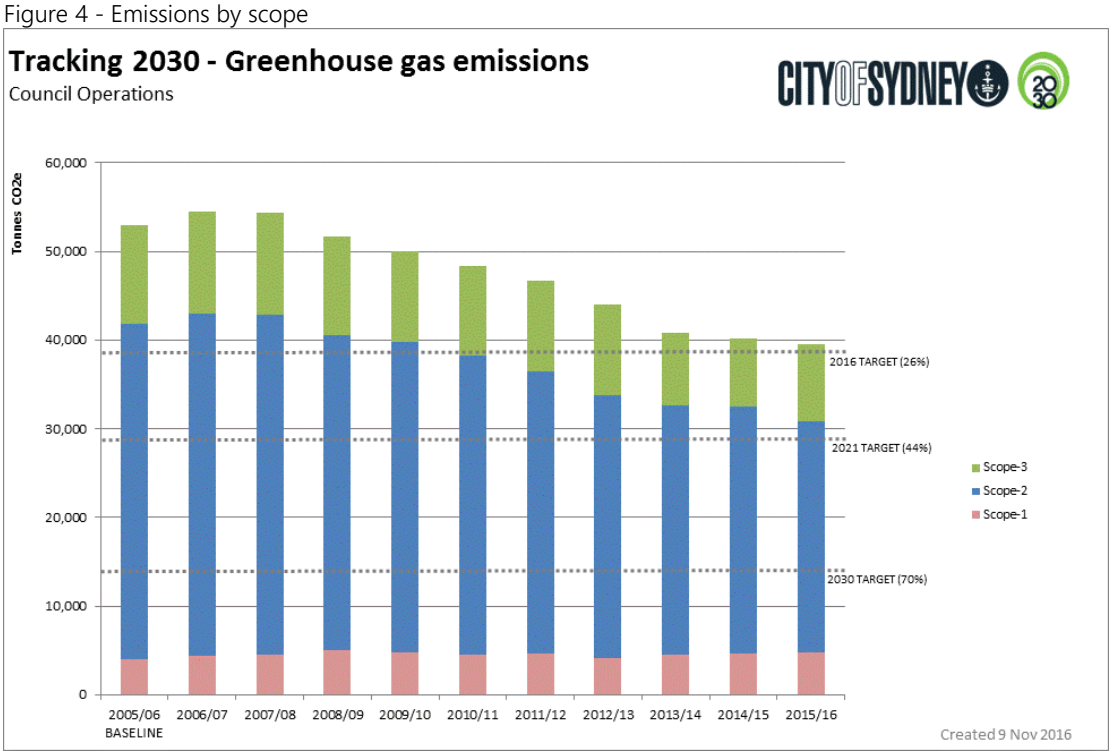
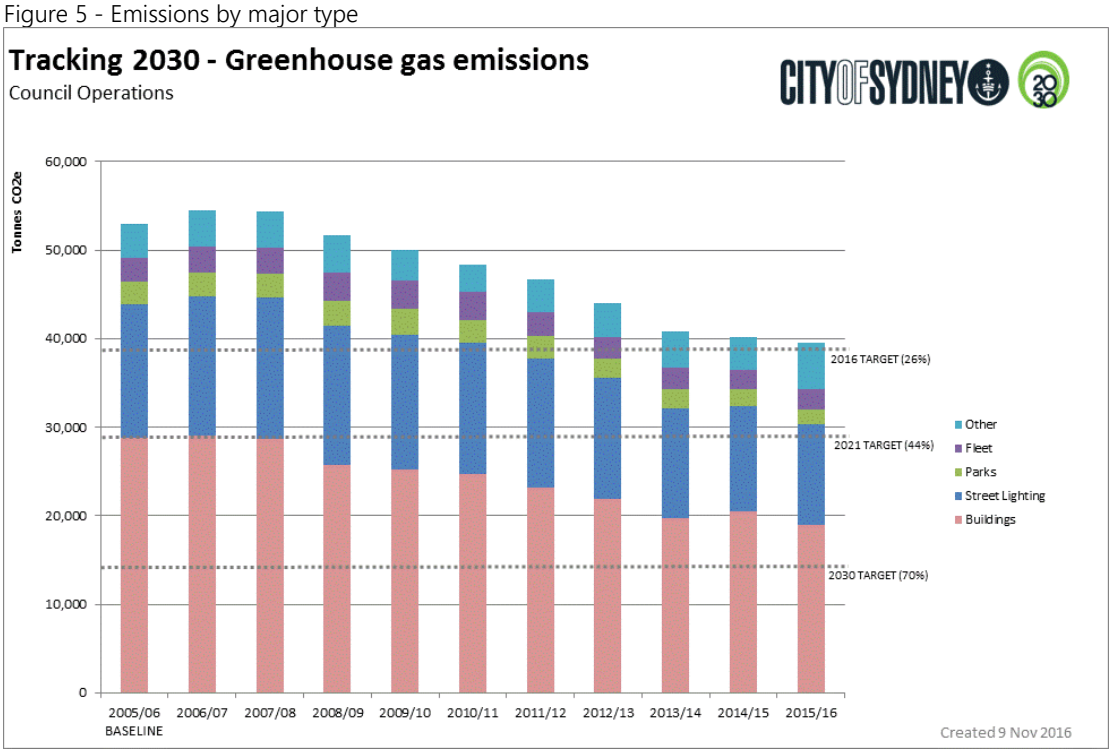


Figure 5 - Emissions by major type



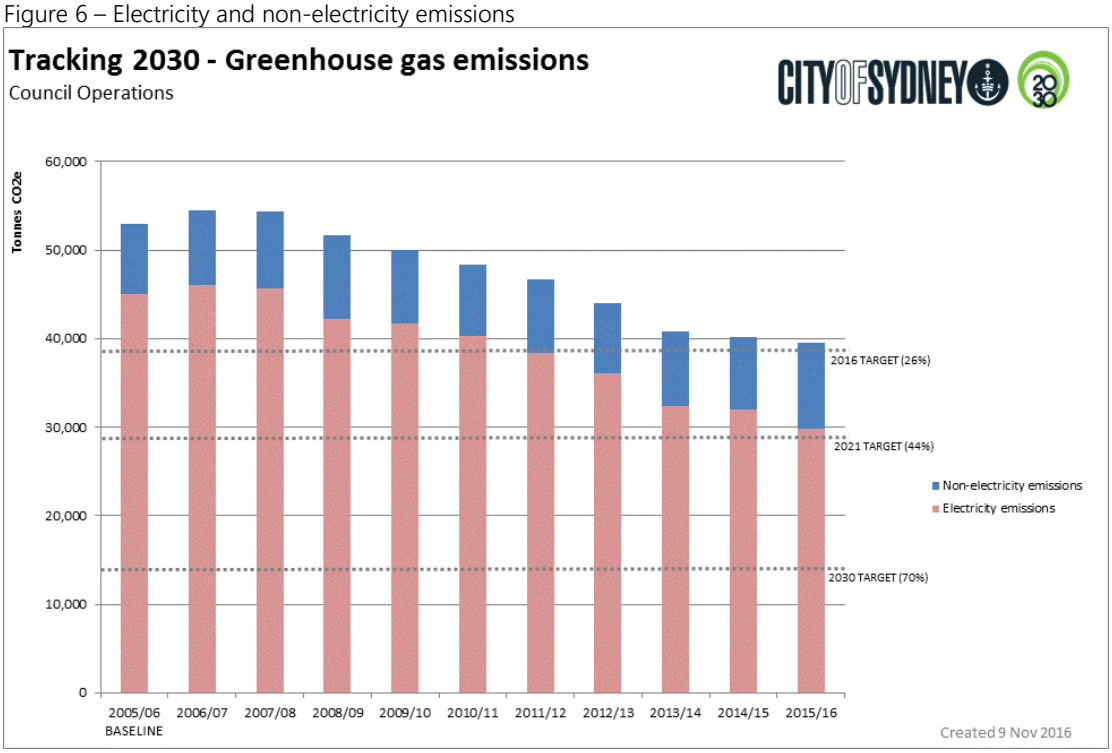
Part B. Emissions reduction strategy

The emissions reduction strategy focusses on the City's planned or intended actions to achieve its target to reduce 2006 emissions by 70 per cent by 2030. This is an absolute target, based on the City playing its fair share to constrain global average temperature increases to below 2 degrees Celsius.

In the first instance, the City will continue to deploy energy efficiency and solar PV as part of its current tenders and commitments. In addition the City will continue to identify feasible opportunities to reduce emissions through technologies, management practices and the design and operation of its properties and other assets.

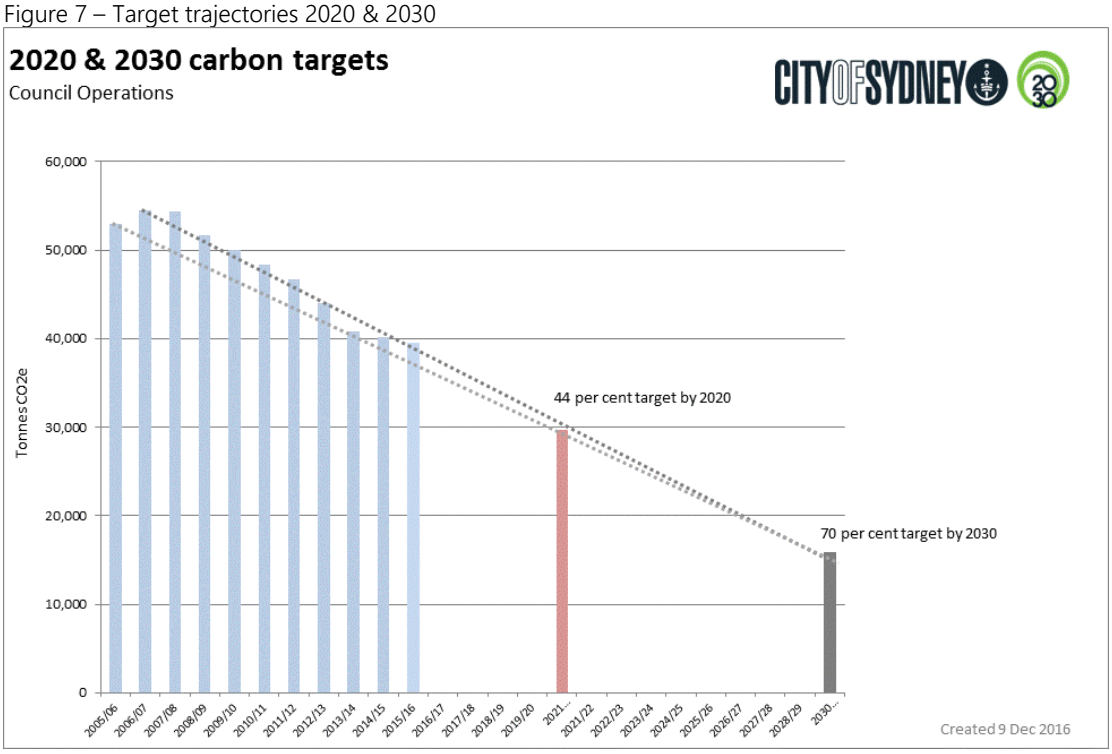
Figure 6 shows that the majority of emissions are from electricity which reflects the highly emissions intensive NSW grid due mostly to coal-fired generation. The majority of emissions reductions achieved to date, as well as future savings, will come by reducing grid electricity through energy efficiency and renewable energy.

Figure 6 – Electricity and non-electricity emissions



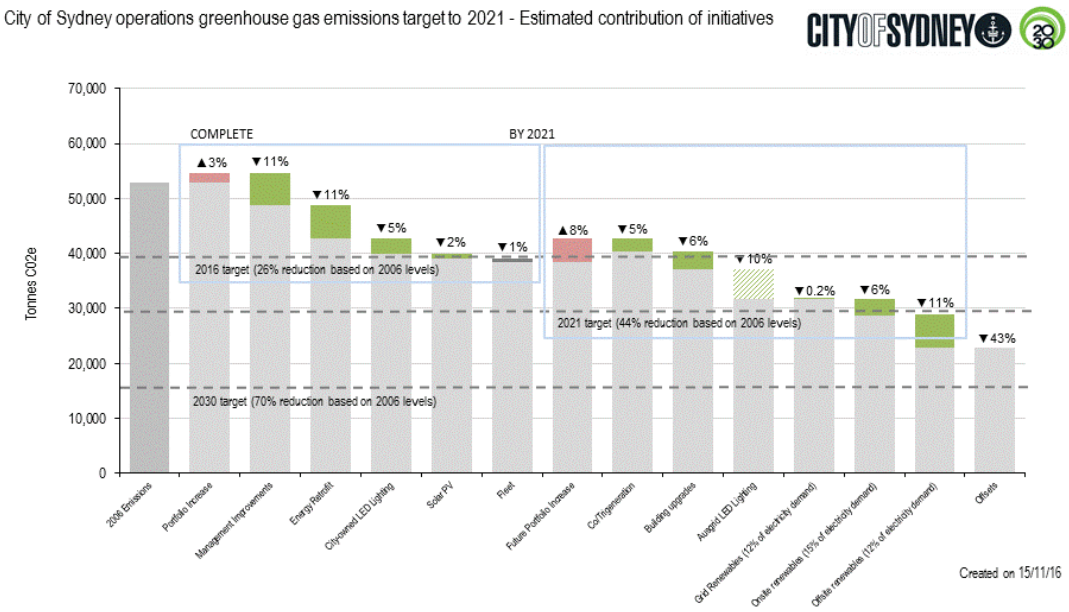
Figures 7 shows the emissions reduction tasks for achieving the City's interim 2020 and longer term 2030 targets.

Figure 7 – Target trajectories 2020 & 2030



The emissions savings shown in Figure 8 indicate a range of opportunities to achieve the 2030 target to reduce 2006 emissions by 70 per cent. These charts are continually revised as new information and opportunities become available and are included within the twice-yearly City of Sydney Green Report.

Figure 8 – Tracking 2030 emissions



Part C. Emissions reduction actions

Emissions reduction measures implemented in the current reporting period 2015/16 are shown in table 3.

Table 3. Emissions reduction measures

Emission source	Reduction measure and calculation method	Scope	Status during the reporting period	Overall Project Reduction (t CO_2-e)
Management improvements	Calculated by subtracting completed projects and most recent actual annual emissions from the 2006 baseline to show changes that have occurred due to changes in management and other influences	2 & 3	In **progress**.	5,821
Stage 1 Building Energy and Water Efficiency Retrofit (Origin/Ecosave)	A collection of projects tendered as one project to achieve a 23 per cent greenhouse gas emissions reduction from the City's property portfolio	2 & 3	Installation and measurement and verification were **completed**. All works, measurement and verification of greenhouse gas and water savings were completed.	6,054
City-owned LED lighting	Tender to replace the most energy inefficient lighting luminaires to reduce energy and emission consumption	2 & 3	Installation **completed.** Three year roll out program covering 6,448 luminaires.	2,816
Solar PV project	Tender to install approximately 1.2 megawatts of solar PV to 30 or more City-owned buildings	2 & 3	Based on panel installation **completed** to date.	1,036
Fleet	Maintain fleet emissions at 2014 levels until 2016.	1	In **progress**.	642

Emission source	Reduction measure and calculation method	Scope	Status during the reporting period	Overall Project Reduction (t CO_2-e)
Future portfolio increase	Estimated impact of additional new properties.	2 & 3	**Not initiated**	-4,494 (i.e. increase to emissions)
Co/Trigeneration	Install cogeneration or trigeneration at 2 to 3 of the City's aquatic centre	2 & 3	**Concept** stage	2,403
Stage 2 Building Energy Retrofit	Further energy efficiency upgrades across multiple City properties.	2 & 3	Tender documentation ready and **approved** to go to market.	5,963
Ausgrid-owned LED lighting	Ausgrid to upgrade lighting to LED which the City pays bill for.	2 & 3	**Concept** stage	5,334
Renewable Energy	Installation of on-site and off-site renewable energy projects to meet target for 30 per cent renewable energy by 2030	2 & 3	Installation in **progress.** Solar photovoltaics tender awarded for design, installation, commissioning, and monitoring.	9,022
Environmental Management	Implement environmental management processes to ensure all City staff are aware of their responsibilities in regards to environmental management. Continuous improvement of environmental management	2 & 3	In **progress.** Influence, hasn't been quantified.	Not quantified
Utility Consumption Management	Educate City staff to interpret the STEvE reports and take corrective action to reduce energy use.	2 & 3	In **progress**. Integration into City processes on-going . Influence, hasn't been quantified.	Not quantified

3. Emissions summary

Emission sources and totals for the period 2015/16 are listed in table 4.

Table 4. Emissions inventory

Emission source	Scope	Activity data	t CO_2-e
Purchased electricity for buildings, parks & streetlighting	2	31,084,349 kWh	26,111
Purchased electricity for buidings, parks & streetlighting	3	31,084,349 kWh	3,730
Natural Gas in Buildings & Parks	1	33,967,293MJ	1,750
Natural gas for buildings & parks	3	33,967,293MJ	435
Transport diesel & biodiesel (post 2004 vehicles fleet)	1	1,001.626 kL	1,943
Transport diesel (post 2004 vehicles)	3	704.661 kL	98
Transport ULP & ethanol (post 2004 vehicles)	1	87.103 kL	192
Transport ULP fleet (post 2004 vehicles)	3	83.113 kL	10
Contractor diesel	1	360.023 kL	979
Contractor biodiesel	1	1.894 kL	0.2
Contractor diesel	3	360.023 kL	50
Contractor ULP	1	96.812 kL	224
Contractor ULP (ethanol)	1	0.994 kL	0.01
Contractor ULP	3	96.812 kL	12
Business travel – flights & accommodation	3	-	174
Business travel - taxis	3	50,404 km	15
Refrigerants	1	assumed leakage 498 kg	847
Stationary diesel	1	1.224 kL	3
Stationary diesel	3	1.224 kL	0.2
Municipal solid waste	3	1,928 t	2,314
New Year's Eve event	3	-	552
Paper (A4, A3 & plotter)	3	-	19
Water	3	457,144 kL	106
Total Net Emissions			39,566

4. Carbon offsets

Part A. Offsets summary

The City's 2015/16 greenhouse gas emissions were 39,566 tCO_2-e. However, 45,000 tCO_2-e of offsets were purchased in advance to ensure timely reporting under NCOS.

The City ensures information about its carbon neutral program - including offset certificates - is transparent and available for public scrutiny on its website www.cityofsydney.nsw.gov.au/carbon. Offsets are purchased and retired in arrears at the end of the reporting period.

Offset retirements that relate to the current reporting period 2015/16 are shown in table 5.

Table 5 - Offsets Summary

Offset type	Registry	Date of retirement	Quantity (tCO_2-e)	Serial Number
Purchased offsets for 2015/16 greenhouse gas emissions				
VCUs	Markit	07/11/2016	13,851	2472-106150627-106152360-VCU-018-MER-TH-13-416-01012009-31122009-0
VCUs	Markit	07/11/2016	25,715	2301-95828364-95854079-VCU-009-MER-VN-1-843-01012010-31122010-0
Sub-total			39,566	
Purchased offsets carried forward				
VCUs	Markit	07/11/2016	783	2301-95854080-95854861-VCU-009-MER-VN-1-843-01012010-31122010-0
VCUs	Markit	07/11/2016	2,975	2302-95854862-95857836-VCU-009-MER-VN-1-843-01012011-28022011-0
VCUs	Markit	07/11/2016	1,676	2300-95826688-95828363-VCU-009-MER-VN-1-843-02082009-31122009-0
Sub-total			5,434	
Total			45,000	

Part B. Offsets purchasing and retirement strategy

Purchased offsets that are surplus to the 2015/16 period will used to offset future year emissions. Remaining offsets are purchased and retired in arrears at the end of the reporting period for any amounts not purchased previously.