

**EDUCATION SERVICES AUSTRALIA**

**ENVIRONMENT REPORT**

**2010–11**



Education  
Services  
Australia

Education Services Australia Limited  
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As used in this Environment Report, 'Education Services Australia' means Education Services Australia Limited.

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## BACKGROUND

Education Services Australia is committed to implementing policies and practices to support environmental sustainability. This is a responsible and ethical course for a modern organisation.

In taking action on environment issues, Education Services Australia:

- contributes to Australia's efforts to reduce environmental impact
- meets expectations of stakeholders, clients and staff
- maximises efficiency and reduces costs
- improves its ability to attract and retain the best talent
- adds credibility to its activities within sustainability education
- strengthens its reputation as a socially responsible supplier of education services.

## ENVIRONMENT POLICY

The Environment Policy provides direction for the company's environment program and public reporting, which should include:

- an emissions inventory
- achievements to date
- details on purchased offsets
- information on external assurance
- identification of future opportunities
- targets for the next financial year.

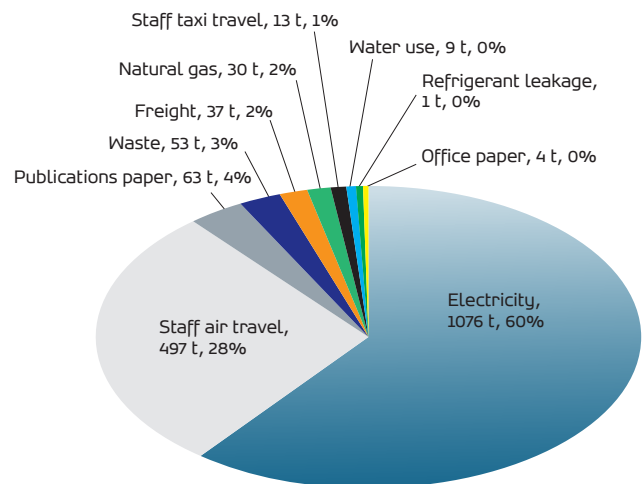
The policy is provided at Appendix 1.

## EMISSIONS INVENTORY

The emissions inventory has been based on the Greenhouse Gas Protocol, 'A Corporate Accounting and Reporting Standard' revised edition, March 2004 (GHG Protocol). This protocol is the most accepted international standard for the preparation of carbon inventories and is an initiative of the World Resources Institute and the World Business Council for Sustainable Development.

Figure 1 provides an overview of emissions by source measured in tonnes of carbon dioxide equivalents (t CO<sub>2</sub>-e) and percentage proportion of the overall inventory. The emission inventory results are summarised in Tables 1 and 2 and form the baseline-year inventory. Detailed results are provided at Appendix 2.

Figure 1: CO<sub>2</sub>-e emissions by source (tonnes and %) 2010-11



Education Services Australia is demand driven, responding to the needs of the Australian Ministers with responsibility for education. As such, its business activities may fluctuate significantly from year to year. To enable longitudinal comparisons, emission inventory results are reported as both absolute and intensity measures. Methodologies are outlined at Appendixes 2 and 3.

The summary of the inventory results based on absolute measures is provided in Table 1.

## Summary of emissions inventory

Table 1: Emissions inventory summary 2010–11

Emission source	CO <sub>2</sub> -e(t)	% of total inventory
Electricity	1,076	60.3
Staff air travel	497	27.9
Publications paper	63	3.5
Waste	53	3.0
Freight	37	2.1
Natural gas	30	1.7
Staff taxi travel	13	0.7
Water use	9	0.5
Office paper	4	0.2
Refrigerant leakage	1	0.1
<b>Total emissions</b>	<b>1,783</b>	<b>100.0</b>
Offsets purchased	1,783	100.0
<b>Total net emissions</b>	<b>NIL</b>	<b>NIL</b>

A single intensity measure – full-time equivalent (FTE) staffing – based on the staffing levels provided in Table 2, is used in this report.

Table 2: FTE staffing 2010–11

FTE	2010–11
Staff	152
On-site contractors	18
Sub-tenants	17
<b>Total</b>	<b>187</b>

Table 3: Emissions inventory summary 2010–11 by staffing (FTE)

Emission source	CO <sub>2</sub> -e/FTE(t)
Electricity	5.76
Staff air travel	3.27
Publications paper	0.41
Waste	0.29
Freight	0.20
Natural gas	0.16
Staff taxi travel	0.09
Water use	0.05
Office paper	0.02
Refrigerant leakage	0.01
<b>Total emissions</b>	<b>10.25</b>
Offsets purchased	10.25
<b>Total net emissions</b>	<b>NIL</b>

Contractors and sub-tenants have been excluded from Table 3 calculations of staff air travel, staff taxi travel and publications paper as they have no impact on these activities.

## OFFSETS

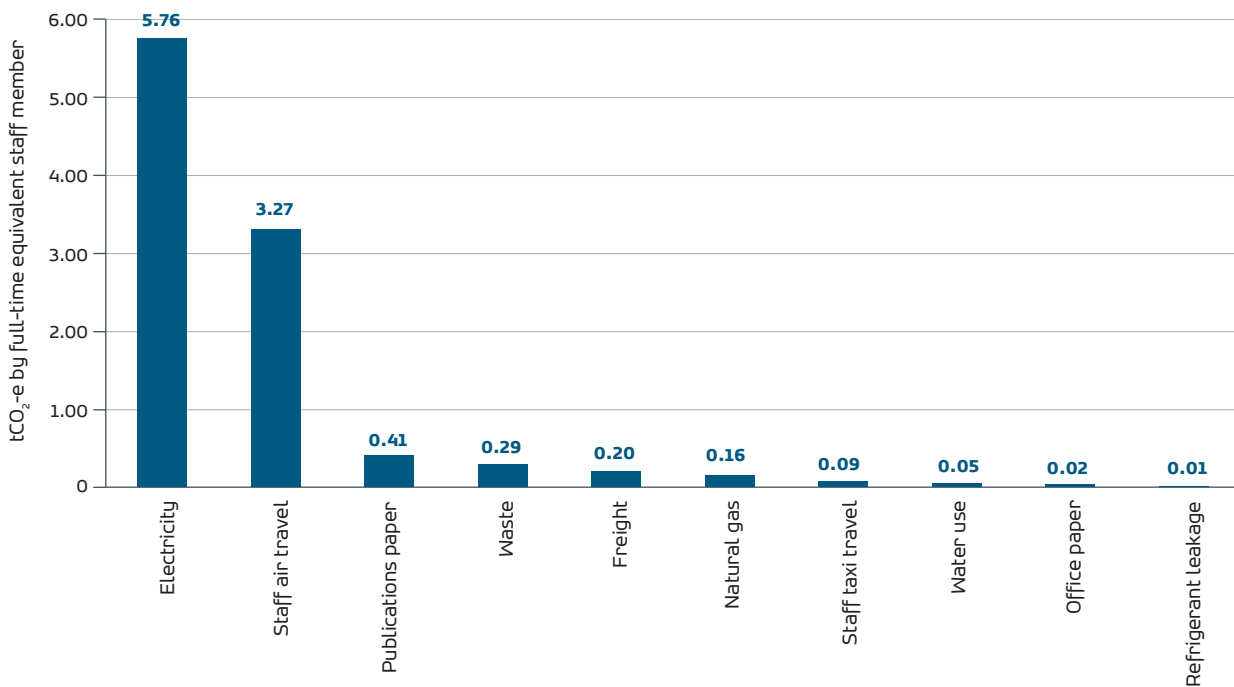
Over 90 per cent of Education Services Australia's emissions come from electricity and air flights. These cannot be eliminated through increased efficiencies alone.

Education Services Australia purchased 1,783 tonnes of carbon offsets through Climate Positive to achieve carbon neutrality in 2010–11. The offsets were sourced from a run-of-river hydro power plant project in Lau Renun, North Sumatra, Indonesia, that is accredited under the Verified Carbon Standard and the Social Carbon Standard. The project has positive impact in the local community, supplies renewable energy to the Indonesian market and reduces greenhouse gas emissions.

## EXTERNAL ASSURANCE

NCOS accreditation requires third-party verification of the emissions inventory. The 2010–11 emissions inventory was externally audited as part of the NCOS application process by independent auditors.

Figure 2: CO<sub>2</sub>-e emissions per FTE 2010–11 (tonnes)



## ACHIEVEMENTS TO DATE

As this is the first Environment Report, achievements include activities that commenced prior to 2010–11.

### Office-based comingled recycling

The offices in Collins St Melbourne were first occupied in May 2008. At that time there was no mechanism to recycle comingled waste in the building. The company created a tenant's cooperative and negotiated with the landlord to introduce comingled recycling, which has been in operation since July 2009.

### Paper recycling

All waste office paper is recycled.

### Printer cartridge recycling

All print cartridges are recycled.

### Computer recycling

Computers too old for their purpose were donated to two charities involved in the education of children.

### Energy audit

The 2010–11 energy audit identified opportunities for increased energy efficiency that will be implemented during 2011–12.

### Light retrofit

The company participated in Paint the Town Green, an initiative of the Victorian Employers Chamber of Commerce and Industry and the Victorian Government to assist businesses reduce their carbon emissions.

Retrofitting fluorescent office lighting and halogen downlights is complete and the subsequent energy savings will become apparent in the 2011–12 inventory.

### Carbon-neutral commitment

The Board agreed in June 2010 to invest in becoming carbon neutral and to apply for NCOS accreditation.

### Carbon Offset Purchases

Education Services Australia purchased offsets equivalent to its 2010–11 net emissions.

## OPPORTUNITIES 2011–12

### Carbon neutrality and national carbon offset standard accreditation

Education Services Australia will apply for carbon neutral accreditation under the Australian Government National Carbon Offset Standard (NCOS) scheme.

The NCOS carbon neutral logo will be incorporated in company branding and communications materials following accreditation.

### Renewable energy

The Melbourne office electricity supply contract is due for renewal in 2011–12. Education Services Australia will seek to source all or part of its electricity supply from Australian Government accredited GreenPower™, noting that only 50 per cent of its electricity consumption is under its own control, the balance being controlled by the landlord.

## Energy consumption

Table 4 summarises the opportunities to reduce the Melbourne office energy consumption that were identified in the 2010–11 energy audit. These are presented over a six-year life cycle, which represents the remaining balance of the current office lease. The impact of taking action compared to business as usual is detailed in Figure 3. Education Service Australia will attempt to address all opportunities during 2011–12.

## Waste and water

Opportunities to reduce waste and water consumption will be investigated.

## Computer recycling

Computers planned for replacement will be donated to charity.

## Recycled paper

Environment Protection Authority Victoria research suggests that 100 per cent recycled paper incurs higher greenhouse gas emissions than virgin forest paper. The company will still investigate changing to 100 per cent recycled office paper as it is anticipated that the wider environmental benefits will outweigh the negative emissions outcomes.

## Video conferencing

Video-conferencing technology will be installed in meeting rooms. A flight or emissions reduction target will be set when a reliable means of tracking flights saved as a direct result of this technology has been devised.

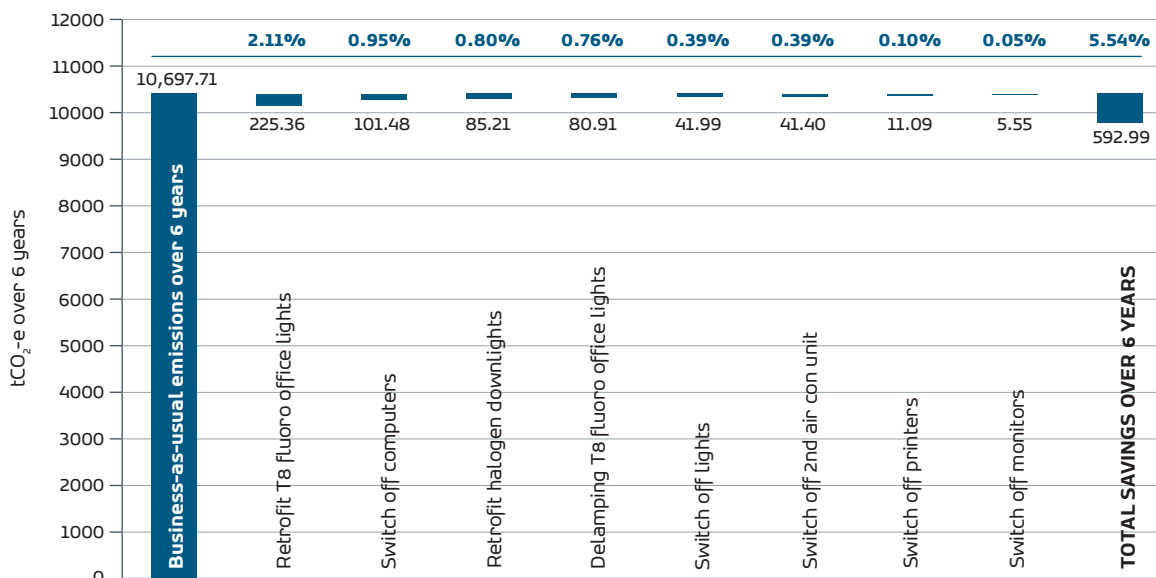
Table 4: Melbourne office energy-saving opportunities 2011–12

Rank	Initiative	Full 6-year project totals		
		Net cashflows (\$)	NPV* (\$)	CO <sub>2</sub> -e saved (t)
1	Retrofit T8 fluoro office lights	11,262	4,582	225.36
2	Switch off computers	15,849	12,841	101.48
3	Retrofit halogen downlights	11,863	9,337	85.21
4	Delamp T8 fluoro office lights	12,436	10,038	80.91
5	Switch off lights	6,557	5,313	41.99
6	Switch off second air conditioning unit during winter	6,467	5,239	41.40
7	Switch off printers	1,732	1,403	11.09
8	Switch off monitors	867	702	5.55
<b>Total</b>		<b>67,033</b>	<b>49,455</b>	<b>593</b>

\* Net present value (NPV)



Figure 3: Effect of energy-efficiency opportunities compared to business as usual



## TARGETS

As this is the first year of review, Education Services Australia has set an annual reduction target. Further research will be undertaken in 2011–12 to identify additional reduction opportunities to inform 2012–13 targets.

Targets have not been set for water and waste as both are under the management of the landlord. The potential to implement water and waste reduction initiatives will be investigated in 2011–12.

## FURTHER INFORMATION

Requests for further information can be directed by email to Michael Collins at [michael.collins@esa.edu.au](mailto:michael.collins@esa.edu.au).

## ENVIRONMENT TARGETS 2011-12

- 8% reduction in electricity consumption per full-time equivalent staff (FTE)
- 6% reduction in emissions per FTE.

## APPENDIXES

### Appendix 1: Education Services Australia Environment Policy

#### *Background*

Education Services Australia is committed to implementing policies and practices to minimise its environmental impact and to support environmental sustainability. The company believes this is a responsible and ethical course for a modern organisation. In taking action on environment issues the company will:

- contribute to Australia's efforts to reduce environmental impact
- meet expectations of stakeholders, clients and staff
- maximise efficiency and reduces costs
- improve its ability to attract and retain the best talent
- strengthen its reputation as a socially responsible supplier of education services
- add credibility to its activities within sustainability education.

#### *Scope*

This policy applies to all Education Services Australia operations with the exception of the Ministerial Council on Education, Employment, Early Childhood Development and Youth Affairs (MCEECDYA), which is outside its operational control.

#### *Commitment*

This policy commits Education Services Australia to:

- minimise its impact on the environment through reduced greenhouse gas emissions and reduced resource usage
- become carbon neutral during the 2011–12 financial year
- implement best-practice carbon-management principles
- report a summary of progress in the company's Annual Report
- report in detail in the annual Environment Report
- include environmental education material where possible in its services, recognising that the capacity to do so is dictated by clients' requirements.

## *Implementation*

Implementation to be reported through the Environment Report will include:

- annual greenhouse gas reduction targets
- annual waste, energy and water reduction targets
- an emissions inventory
- progress reports against targets, which should show trends as well as details of methodologies used in measurement
- details of purchased offsets
- details of future opportunities that will give rise to reductions
- progress reports against identified opportunities
- independent external assurance confirmation.

All targets will be time bound and quantified in absolute terms (total emissions and usage) and in intensity terms (reported by a unit of volume, eg per full-time equivalent employee) and will be reported against a baseline-year emissions measurement.

## *Responsibility*

This policy is the responsibility of the Chief Executive Officer. It will be reviewed annually to ensure ongoing relevance.

## Appendix 2: Emissions inventory scope 2010–11

All Education Services Australia operations are included with the exception of the Ministerial Council for Education, Early Childhood Development and Youth Affairs (MCEEDYA). MCEEDYA is part of Education Services Australia legal structure but is outside the company's operational control.

As many Scope 3 emissions that are both material and measureable have been included.

## Appendix 3: Calculation methodologies and emissions factors

Item	Emissions factor source	Calculation methodology	Assumptions
Refrigerant leakage	See calculation methodology	<p>Kitchen fridges: kg charge and refrigerant type identified for each unit. Global warming potential of each refrigerant obtained and standard leakage rates from DEFRA UK 2011 Guidelines Annex 8b. <math>GWP \times \text{charge} \times \text{leakage rate}</math>.</p> <p>Air conditioning (A/C) units: Same as kitchen fridges</p>	Not all refrigerant data could be obtained for all A/C units. Averages of known units were applied where data was unavailable.
Purchased electricity excluding base building use	<p>National greenhouse accounts (NGA) Factors July 2010, Table 40</p> <p>Victoria: 1.23 kg CO<sub>2</sub>-e/kWh</p> <p>South Australia: 0.72 kg CO<sub>2</sub>-e/kWh</p>	<p>Usage in kWh obtained from supplier invoice data.</p> <p>Usage data <math>\times</math> emissions factor.</p>	
Purchased electricity – tenant’s share of base building use	<p>NGA Factors July 2010, Table 40</p> <p>Victoria: 1.23 kg CO<sub>2</sub>-e/kWh</p> <p>South Australia: 0.72 kg CO<sub>2</sub>-e/kWh</p>	<p>Usage in kWh obtained from landlord’s energy-management system or from landlord’s invoices and percentage share of net lettable area applied to calculate user’s share.</p> <p>Usage data <math>\times</math> emissions factor.</p>	Use of landlord-supplied electricity is directly proportional to net lettable area occupied.

Item	Emissions factor source	Calculation methodology	Assumptions
Staff air travel	DEFRA UK 2011 Guidelines Annex 6L	Flight distance data obtained from company travel agents and multiplied by emissions factor. However, a 9 per cent uplift factor was applied to allow for inaccuracies of scheduled distances vs actual distances flown and a further uplift factor of 1.9 was applied to allow for radiative forcing.	
Staff air travel – domestic <1,000 km	0.1952 kg CO <sub>2</sub> -e/passenger km		
Staff air travel – short-haul international 1,000–3,700 km	0.1093 kg CO <sub>2</sub> -e/passenger km		
Staff air travel – long-haul international economy >3,700 km	0.0964 kg CO <sub>2</sub> -e/passenger km		
Staff air travel – long-haul international business class >3,700 km	0.2794 kg CO <sub>2</sub> -e/passenger km		
General commercial and industrial solid waste	NGA factors July 2010 p 69 Table 43 1.0 t CO <sub>2</sub> -e per 1 tonne of waste	All building bins measured to calculate bin volume, multiplied by the number of annual empties and an estimate of percentage bin capacity used. Outcome × emissions factor.	Percentage of bin capacity that is filled for each empty is estimated.
Emissions from fuel extraction and transmission and distribution (T&D) line losses for purchased electricity	NGA Factors July 2010, Table 40 Victoria: 0.14 kg CO <sub>2</sub> -e/kWh South Australia: 0.13 kg CO <sub>2</sub> -e/kWh	Usage in kWh obtained from supplier invoice data. Usage data × emissions factor.	
Emissions from fuel extraction and T&D line losses for tenant's share of base building electricity	NGA Factors July 2010, table 40 Victoria: 0.14 kg CO <sub>2</sub> -e/kWh South Australia: 0.13 kg CO <sub>2</sub> -e/kWh	Usage in kWh obtained from landlord's energy-management system or from landlord's invoices and percentage share of net lettable area applied to calculate user's share. Usage data × emissions factor.	Use of landlord-supplied electricity is directly proportional to net lettable area occupied.

Item	Emissions factor source	Calculation methodology	Assumptions
Freight	Air freight: DEFRA UK 2011 Guidelines Annex 7f Long-haul international air freight 0.7273 kg CO <sub>2</sub> -e per tonne-km Sea freight: DEFRA UK 2011 Guidelines Annex 7g Container average 0.01875 kg CO <sub>2</sub> -e per tonne-km	Data for kg of product imported from US and UK collected from purchasing records, distances travelled obtained from Google maps based on supplier's location. Kg of freight × distance in km = tonnes-km freight measure × uplift factor × radiative forcing factor × emissions factor. As with passenger flights, a 9 per cent uplift factor was applied to allow for inaccuracies of scheduled distances vs actual distances flown and a further uplift factor of 1.9 per cent was applied to allow for radiative forcing.	Only six months of purchasing data was available so simple extrapolation used to calculate full 12 months of freight.
Natural gas used on-site by landlord as part of base building services	NGA Factors July 2010, p 13 Table 2 51.33 kg CO <sub>2</sub> -e per gigajoule (GJ)	Usage in GJ obtained from landlord's energy-management system or from landlord's invoices and percentage share of net lettable area applied to calculate users share. Usage data × emissions factor.	Use of landlord-supplied natural gas is directly proportional to net lettable area occupied.
Staff taxi travel	See calculation methodology	Dollar spend obtained from financial records and converted into a km-travelled figure using an average \$/km taxi fare based on information from Environment protection agency (EPA) Victoria's Greenhouse Inventory Management Plan: 2007–08 Update Appendix B. Kilometres travelled converted to litres of Liquefied petroleum gas (LPG) consumed based on a consumption conversion factor extracted from same EPA source. Litres of LPG converted into energy consumed using the LPG energy conversion factor per NGA Factors July 2011 for post-2004 vehicles p 18 Table 4. Result multiplied by emissions factor for LPG from NGA Factors July 2011 for post-2004 vehicles p 18 Table 4.	EPA Victoria metrics used are correct.

<b>Item</b>	<b>Emissions factor source</b>	<b>Calculation methodology</b>	<b>Assumptions</b>
Office paper	EPA Victoria report Greenhouse Gas Emissions Factors for Office Copy Paper, May 2011 for imported virgin paper. 1.08 kg CO <sub>2</sub> -e per kg of paper	Office stationery supplier provided details of reams consumed or obtained from invoices and converted to kg at standard weight of 2.5 kg per ream. Weight × emissions factor.	
Landlord-supplied reticulated water use	RMIT Centre for Design 2007 as quoted in EPA Victoria's Greenhouse Inventory Management Plan: 2007-08 Update Appendix F 2.34 kg CO <sub>2</sub> -e per cubic metre of water	Usage in litres obtained from landlord's energy-management system and converted into cubic metre percentage share of net lettable area applied to calculate users share. Usage data × emissions factor. For Adelaide office, landlord provided a dollar charge, which was converted into litres using South Australia Water standard charges as a conversion factor. Usage data × emissions factor.	
Publications paper	Research conducted by The Gaia Partnership for Sustainability Victoria as part of a 2009-10 EMS Publication Audit 2.59 kg CO <sub>2</sub> -e per kg of paper	Publication team provided data of books published, quantity, page count and page weigh, which provides weight of paper consumed. Weight of paper × emissions factor.	Assumes publication-grade paper has same emissions factor as office paper.
Emissions from fuel extraction for natural gas	NGA Factors July 2010, p 63 Table 38 4 kg CO <sub>2</sub> -e per GJ	Usage in GJ obtained from landlord's energy-management system or from landlord's invoices and percentage share of net lettable area applied to calculate users share. Usage data × emissions factor.	Use of landlord-supplied natural gas is directly proportional to net lettable area occupied.



## Appendix 4: Detailed emissions inventory 2010–11

Emissions source	Consumption units	Consumption	Co <sub>2</sub> -e (t)	Proportion of total inventory %
<b>Direct emissions – Scope 1</b>				
Refrigerant leakage	NA	NA	0.978	0.0549
<b>Subtotal – Direct emissions Scope 1</b>			<b>0.98</b>	<b>0.055</b>
<b>Indirect emissions – Scope 2</b>				
Purchased electricity excluding base building	kWh	621,626	621.88	34.88
<b>Subtotal – Indirect emissions Scope 2</b>			<b>621.88</b>	<b>34.88</b>
<b>Indirect emissions – Scope 3</b>				
Staff air travel	km	1,531,333	497.13	27.88
Purchased electricity – tenant’s share of base building use	kWh	280,097	331.12	18.57
Emissions from fuel extraction and T&D line losses for purchased electricity	kWh	621,626	84.23	4.72
Publications paper	kg	24,171	62.60	3.51
General commercial and industrial solid waste	tonnes	53	53.33	2.99
Emissions from fuel extraction and T&D line losses for tenant’s share of base building electricity	kWh	280,097	38.95	2.18
Freight	tonnes × km	94,232	36.70	2.06
Natural gas used on site by landlord as part of base building services	GJ	546	28.03	1.57
Staff taxi travel	kL of LPG	8	12.99	0.73
Landlord supplied reticulated water use	m3	3,692	8.64	0.48
Office paper	reams	1,556	4.20	0.24
Emissions from fuel extraction for natural gas	GJ	546	2.18	0.12
Commingled recyclable waste	tonnes	6	–	0.00
Recycled paper waste	tonnes	57	–	0.00
<b>Subtotal – Indirect emissions Scope 3</b>			<b>1,160.10</b>	<b>65.07</b>
<b>Total emissions</b>			<b>1,782.95</b>	<b>100.00</b>
<b>Reduction measures</b>				
Offsets purchased			1,782.95	
<b>Total net emissions</b>			<b>NIL</b>	