

EDUCATION DIRECTORATE

ABOUT THE DIRECTORATE

The Education Directorate delivers quality public school and early childhood education to shape every child's future and lay the foundation for lifelong development and learning. Our vision is that every student will learn, thrive and be equipped with the skills and attitudes to lead fulfilling, productive and responsible lives. We strive to ensure that every child and young person in the ACT benefits from high quality, accessible education and early childhood education and care.

The Directorate oversees the management and maintenance of 87 public schools at 91 sites, including 76 preschools and three Education Support Office (ESO) sites. Strategic priorities for carbon emission reduction are informed by the pathway outlined in AP2: A new climate change strategy and action plan for the Australian Capital Territory and the Carbon Neutral ACT Government Framework. Our emission reduction program is focused on maximising the efficient and sustainable use of energy resources while enhancing the thermal comfort of student learning and teaching spaces. The Directorate pursues a strategic approach that targets school buildings as a system, implementing solutions that incorporate the building envelope, mechanical systems and control systems while also building capacity within schools to identify and solve site specific issues.

KEY PERFORMANCE INDICATORS

The Directorate's performance targets identify key areas for increased operational efficiency of buildings and reduction in the emissions from fleet vehicles managed by ESO. The targets are set out below.

A carbon emission reduction target of 3% across the schools and the ESO, comprised of:

- > A reduction in gas consumption of 2% across the school portfolio and ESO;
- > A reduction in electricity consumption of 3% across the school portfolio and 5% at the ESO site, Hedley Beare Centre for Teaching and Learning (HBCTL); and,
- > ESO fleet fuel reduction target of 3%.

In addition to integrating energy performance considerations into new school buildings, upgrades, repairs and maintenance, the Infrastructure and Capital Works branch of the Directorate implements a building tuning program that targets emission reduction through gas use efficiency. Schools selected for the program are identified by their gas use intensity (MJ gas/Gross Floor Area), with the highest intensity users being targeted for energy efficiency investment. Each year focus schools are selected across each school type (early childhood school, primary school, primary to year 10, high school and college).

Energy use by Gross Floor Area (Megajoules/m²) is a key performance indicator of energy intensity and is used to track the performance of individual schools year on year and to compare energy use intensity between schools of the same type, for example to compare high schools against their peers. The performance indicator assists the Directorate in identifying schools for further investigation for energy conservation measures while also allowing performance against these measures to be tracked over time.

COMMENTS ON THIS QUARTER

- > The Whole of Directorate (schools and ESO combined) carbon emission reduction target of 3% is on track to be achieved with Year to Date (YTD) performance at Q3 2017-18 tracking at an 18.32% reduction. It is noted that the emission reduction is facilitated significantly by falling electricity emission factors¹ in the ACT, exclusion of electricity emissions sees YTD performance tracking at a 4% reduction (gas and fuel only), highlighting the performance of the Directorate.
- > The electricity reduction target of 5% at HBCTL is on track to be achieved. An LED lighting upgrade commencing in June 2018 will see reductions continue in 2018-19.
- > The gas reduction target of 2% across ESO, including HBCTL, Callum Office and 220 Northbourne Avenue, is on track to be achieved.
- > The school portfolio electricity reduction target of 3% and gas reduction target of 2% are on track to be achieved.
- > The ESO fuel target of 3% reduction in fuel use is on track to be achieved.

¹ An emission factor is a measure of the intensity of carbon dioxide or equivalent greenhouse gas emissions produced by a given activity. The ACT Government's 100% renewable electricity target will reduce emissions from electricity to zero at 2020.

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COMMENTS

ACHIEVEMENTS

- > The Erindale Education and Recreation College Building Management System continued to deliver improvements with reductions of 38% and 26% for gas and electricity respectively being achieved in Q3 2017-18 when compared with Q3 2016-17. This represents a 31% year to date (YTD) reduction in energy consumption on last year.
- > Roof upgrades at Melrose High School and Mount Stromlo High School have contributed to significant gas use reductions (20% and 11% YTD respectively). Additional savings are anticipated from the Mount Stromlo High School upgrade as project performance is yet to be viewed over a full twelve-month cycle.
- > Building tuning initiatives targeting building envelope upgrades at Southern Cross Early Childhood, Calwell High School, Wanniasa Hills Primary school and North Ainslie Primary School demonstrated gas use reductions between 11% and 27%.

UNCERTAINTIES/CONSTRAINTS

- > The increase in ESO usage resulted from an increase in gas consumption at the Hedley Beare Centre for Teaching and Learning (HBCTL). While the percentage increase is significant it is noted that the quantum of increase is relatively low and therefore not anticipated to impact end of year performance. The cause of the increase is being investigated with the site manager.

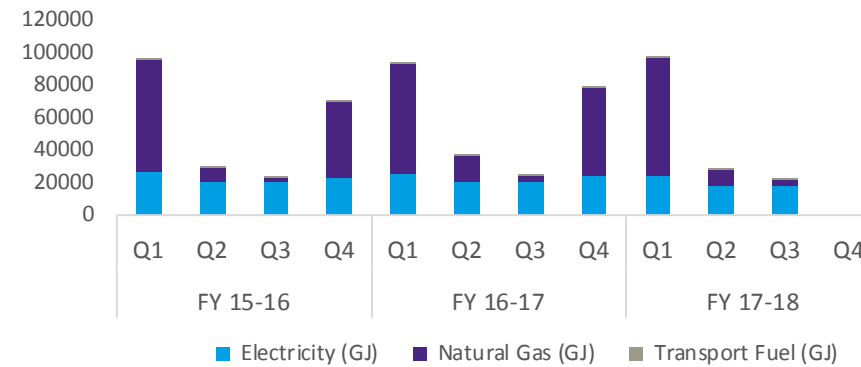
FOCUS AREAS/OPPORTUNITIES

- > Summer (Q3) gas consumption at some sites, including HBCTL, continue to present an opportunity for gas use reduction.
- > Energy conservation measures at one building tuning school, Harrison School, have yet to demonstrate a saving as the works were completed post the 2017-18 peak gas consumption period. Savings are anticipated in the coming financial year.
- > The new school in North Gungahlin will not impact the Directorate's future emissions as the school site will source 100% of its energy requirements from electricity.

DATA EXTRACTED

20/06/2018

3 YEAR ENERGY CONSUMPTION PROFILE



SCHOOLS QUARTERLY ENERGY CONSUMPTION

	Q3 17-18	Difference*	tCO ₂ -e [^]
Electricity (GJ)	17,091	-13.16	2041
Gas (GJ)	3,665	-4.03	189
Total energy (GJ)	20,756	-11.68	2,230

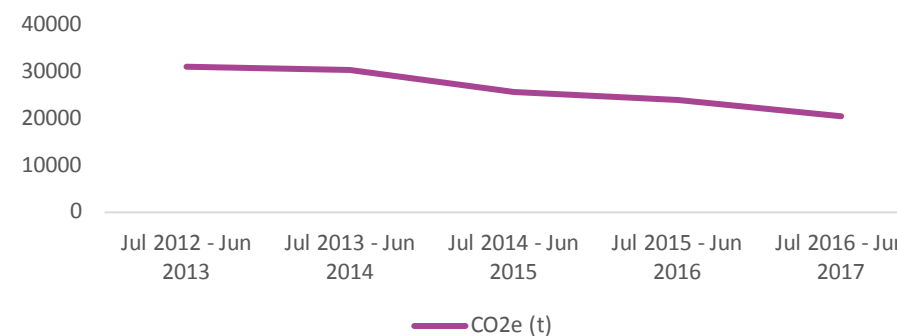
* Compared to the same period previous year
[^] Related to current reporting period

SCHOOLS FINANCIAL YEAR TO DATE ENERGY CONSUMPTION

	YTD 17-18	Difference*	tCO ₂ -e [^]
Electricity (GJ)	58,165	-8.90	6,947
Gas (GJ)	83,329	-4.02	4,294
Total energy (GJ)	141,494	-6.09	11,241

* Compared to the same period previous year
[^] Related to current reporting period

EMISSIONS PROFILE SINCE 2012-13



DG INDICATOR

Q3 2017-18

(January to March 2018)

A carbon emission reduction target of 3% across the school and ESO comprised of: A reduction in gas consumption of 2% across the school portfolio and ESO; a reduction in electricity consumption of 3% across the school portfolio and 5% at HBCTL and an ESO fleet fuel reduction target of 3%.

FINANCIAL YEAR TO DATE ENERGY CONSUMPTION AT FOCUS SITES

Location	Energy (GJ) [#]	Difference*	tCO ₂ -e [^]
Hedley Beare Centre for Teaching and Learning	3093	-13.05	255
Erindale College/Theatre	7,395	-30.99	584
Southern Cross Early Childhood School	749	-15.24	55
Calwell High School	1,610	-23.42	130

[#] Electricity and Natural Gas only

* Compared to financial year to date 2016-17

[^] Related to current reporting period

EDUCATION SUPPORT OFFICES QUARTERLY ENERGY CONSUMPTION

	Q3 17-18	Difference*	tCO ₂ -e [^]
Electricity (GJ)	734	-8.88	88
Gas (GJ)	85	82.82	4
Fuel (GJ)	83	-13.84%	6
Total energy (GJ)	902	-4.87	98

* Compared to the same period previous year

[^] Related to current reporting period

EDUCATION SUPPORT OFFICES FINANCIAL YEAR TO DATE ENERGY CONSUMPTION

	YTD 17-18	Difference*	tCO ₂ -e [^]
Electricity (GJ)	2,125	-0.32	254
Gas (GJ)	1,759	-6.84	91
Fuel (GJ)	280	-10.8	20
Total energy (GJ)	4,164	-3.92	365

* Compared to the same period previous year

[^] Related to current reporting period