

Key sustainability results for 2016 against our baseline year 2013:

- greenhouse gas emissions (GHG) reduced by 21% or 4,842 tonnes
- electricity consumption reduced by 17%
- natural gas consumption reduced by 3%
- water consumption reduced by 4% or 3.5 million litres
- recycled waste increased by 60 tonnes, a 28% improvement
- waste to landfill reduced by 17 tonnes, a 4% improvement
- staff and students recycled 38% of all waste, up from 31% in 2013
- fuel consumption for the vehicle fleet reduced by 19% a saving of 41,800 litres
- Staff patronage on V/Line train travel (myki) increased by 96%
- paper consumption reduced by 36% or 7,255 reams

Greenhouse Gas Emissions

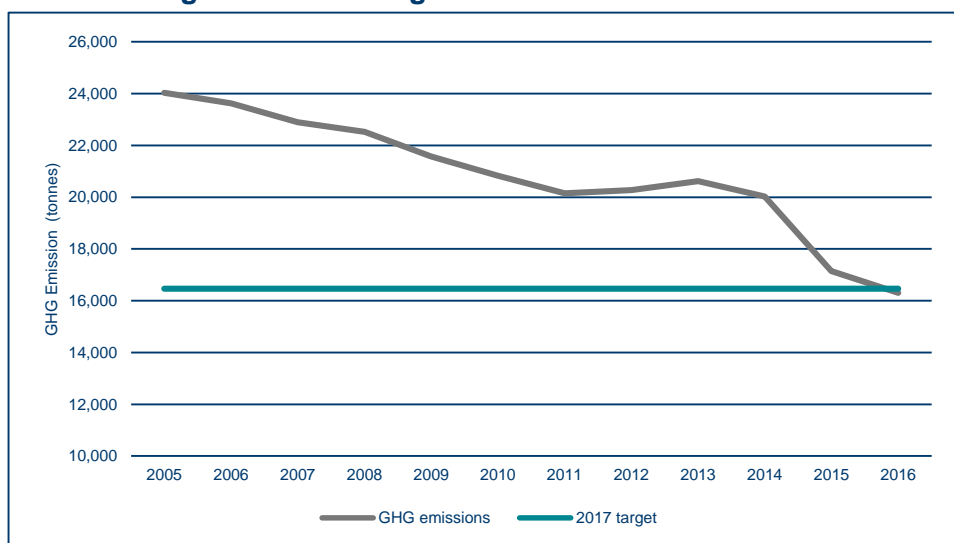
2017 Target – reduce GHG emissions by 20% (baseline 2013)

Result – 21% reduction since 2013

Initiatives for 2017 – Large-scale solar, LED light replacements and new gas heating systems

Our 2017 target to reduce GHG emissions by 20% has been achieved a year early, yippee! FedUni has reduced emissions by 21% in the past 3 years. Emissions will continue to decline with new solar panel installations and LED lighting upgrades planned for 2017.

Greenhouse gas emissions - gross



The University's 2016–20 Strategic Plan Charter aims to reduce emissions by 5% every year through to 2020.

GHG emissions have fallen by 8% in 2016, 10% reduction in 2015 and 3% in 2014.

FedUni was a finalist in the 2016 Green Gown Awards for the progress in reducing GHG emissions.

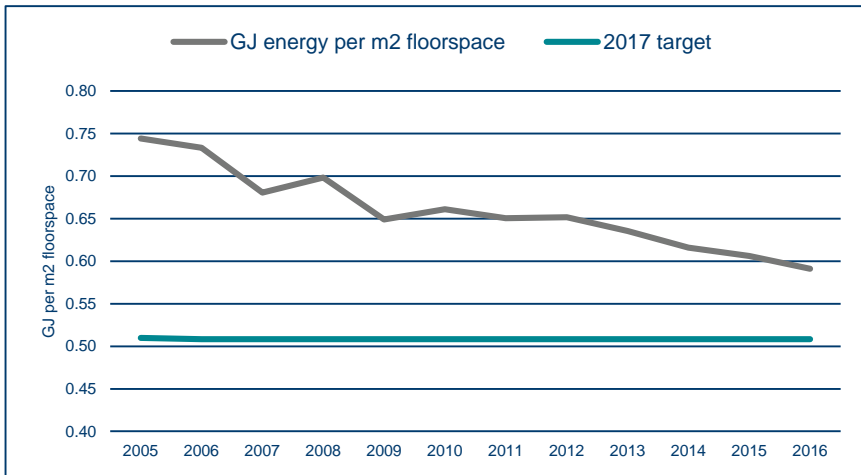
Energy

2017 Target – reduce energy consumption by 20%

Result – 9% reduction since 2013

Initiatives for 2017 – Large-scale solar, LED light replacements and new heating systems

Energy per m² floor space



Energy consumption continues to decline with a 17% decrease in electricity and a 3% decrease in natural gas in the past 3 years.

To the end of 2016, we are well off our target of a 20% reduction; a new gas heating system for Mt Helen was commissioned in late 2016 and will provide greater savings in 2017.

Energy efficiency infrastructure will continue to be rolled out in 2017 including large-scale solar systems, new gas boilers and LED lighting upgrades for all campuses.



The Greener Buildings program funded a 92-kilowatt solar panel system on Mt Helen's Science and Engineering building in 2016.

The panels reduce electricity consumption by 20% in summer and 10% in winter. The panels provide a return on investment within 6 years.

More large-scale solar is planned for SMB, Camp St and Churchill campuses in 2017; large-scale solar will then be installed on every campus.

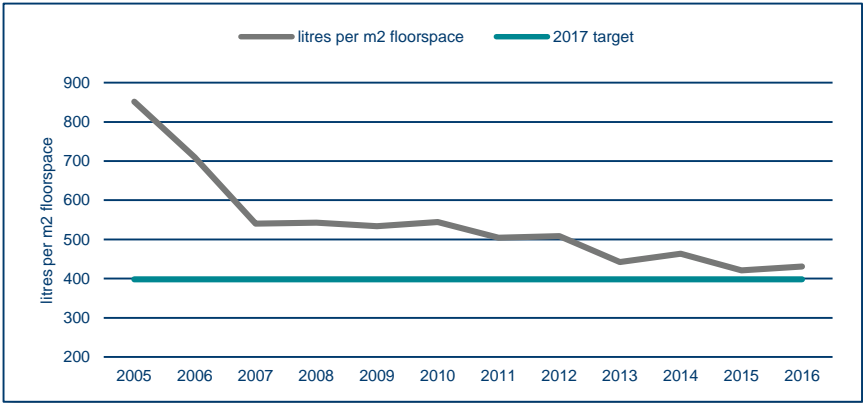
Water

2017 Target – reduce water consumption by 10% (baseline 2013)

Result – 4% reduction since 2013

Initiatives for 2017 – Install a 3G smart meter system that detects burst water pipes within 24 hours.

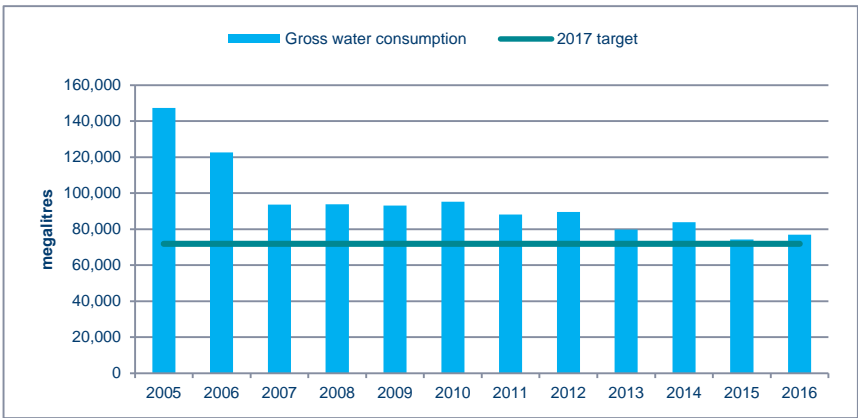
Water Consumption per m² floor space



Potable water consumption reduced by 4% or 3.5 million litres since 2013.

All campuses now have 3G smart water meters which detects unusually high water consumption (e.g. burst water pipes) within 24 hours.

Gross Water Consumption – 10 year trend



2016 was the 3rd lowest consumption of potable water in the past 10 years.

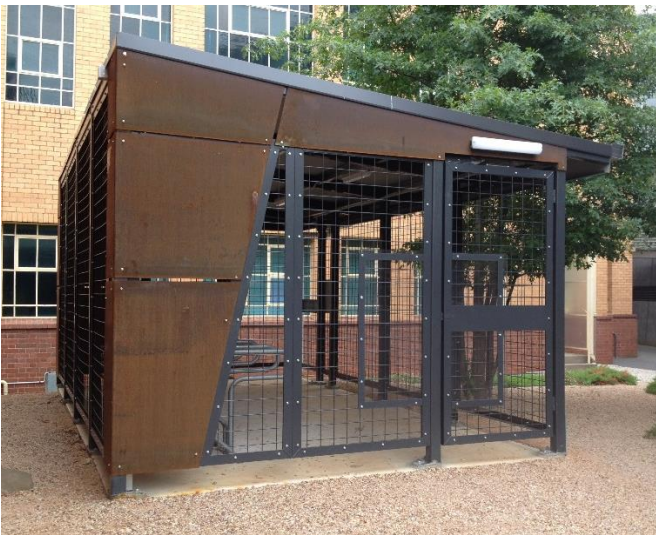
76 million litres was consumed across the university in 2016.

Our 2017 target is to consume 72 million litres.

Secure bike parking facilities were recently installed at Camp St campus.

Camp St has limited car parking and cycling to the campus will provide another commuting option for staff and students.

Features include swipe card access, security lighting and storage for 15 bikes.



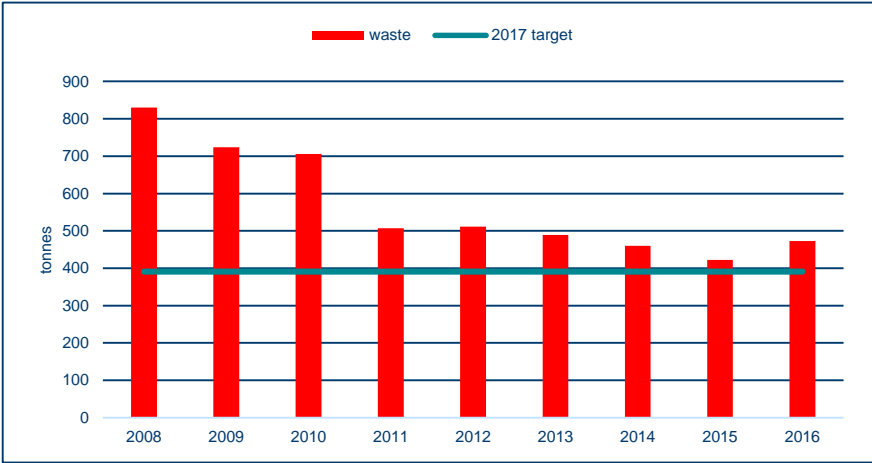
Waste & recycling

2017 Target – Reduce landfill waste by 20% and increase recycling by 20% (baseline 2013)

Result – 4% reduction in landfill waste and 28% increase in recycling

Initiatives for 2017 – Brick, concrete and battery recycling

Landfill volumes

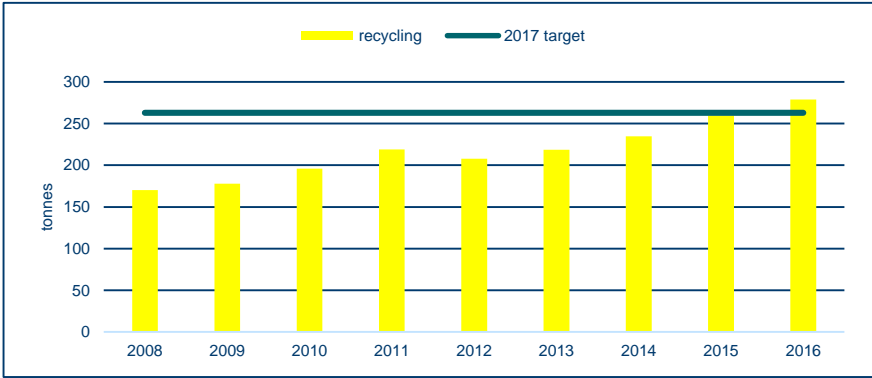


In 2016, the University sent 472 tonnes of waste to landfill, an increase of 50 tonnes compared to 2015. The increase was due to building renovations at Mt Helen campus.

Since 2008 the University has reduced waste to landfill by 43%.

Our 2017 target is 391 tonnes of waste to landfill.

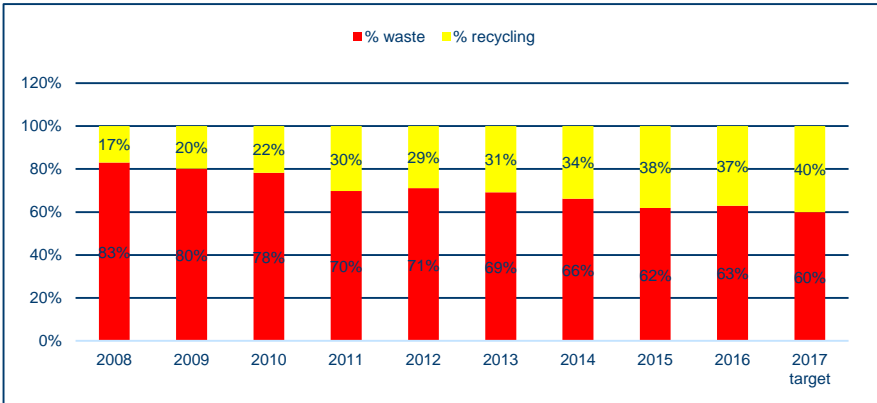
Recycling volumes



Our 2017 target of a 20% increase in recycled waste has been achieved one year early.

Recycling has increased by 28% in the past 3 years. In 2016 the University recycled 278 tonnes of waste.

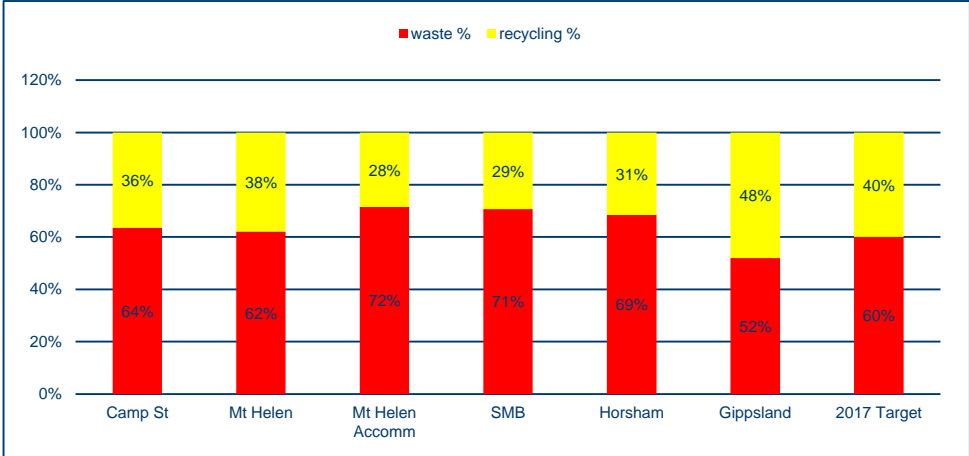
Recycling Rates



Compared to last year recycling rates declined in 2016. This was predominately attributed to an increase in landfill from building renovations.

Our 2017 target is to recycle 40% of all waste.

2016 Recycling rates By Campus

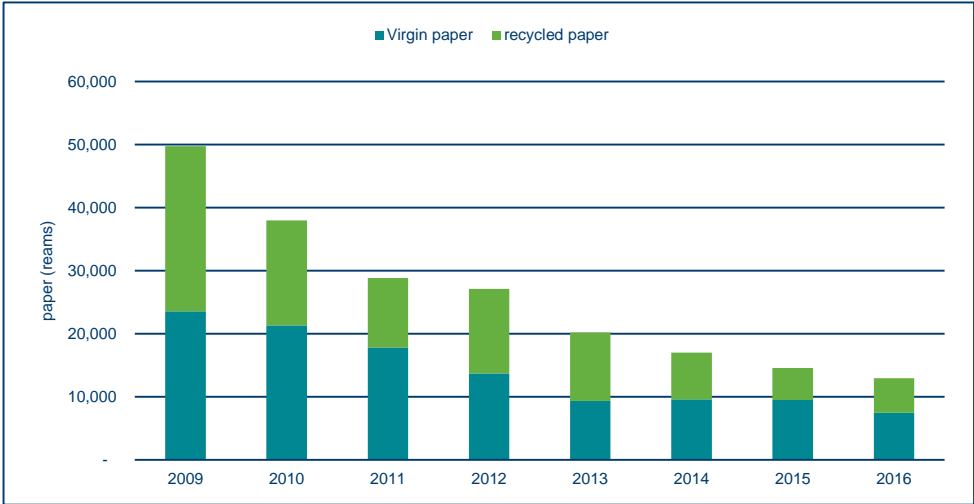


In 2016, Gippsland was the only campus under the 40% recycling target recycling 48% of waste.

Mt Helen campus recycled 38% of their waste and Camp St recycled 36%.

Mt Helen on-campus accommodation is the worst performer recycling 28% of their waste.

Paper Consumption



University purchased 12,933 reams of paper in 2016, a reduction of 36% (7,255 reams) on the previous year.

In 2016, 58% of paper purchased had a recycled component.



The University has replaced over 6,000 light fittings to LED in the past 2 years.

Every new LED light reduces electricity consumption by 50%-80% and maintenance costs through the long life fittings.

Where appropriate, we also install occupancy sensors in such places as classrooms, toilets and staff tea rooms.

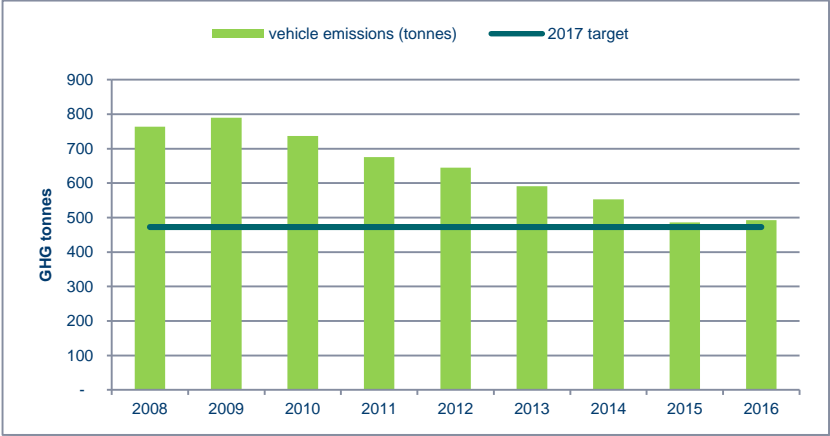
University Travel

2017 Target – Reduce University vehicle emissions by 20% (baseline 2013)

Result – 19% reduction since 2013

Initiatives for 2017 – Hybrid vehicle purchases, promotion of public transport travel

Motor Vehicle fleet - GHG emissions

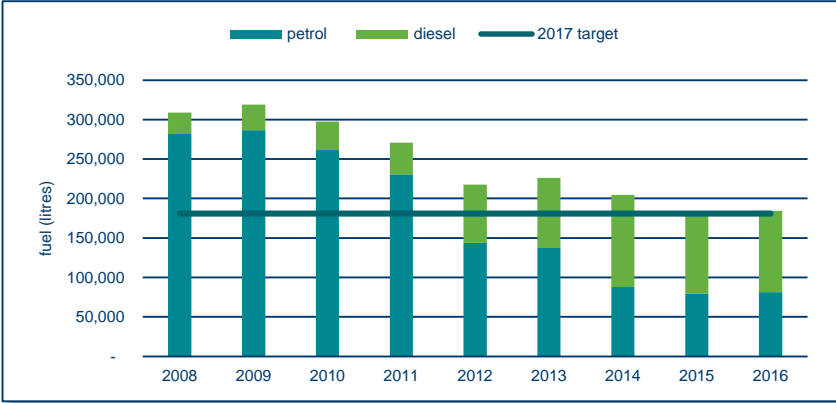


FedUni has 101 fleet vehicles and these combined to emit 493 tonnes of GHG gases in 2016.

Since 2013 vehicle emissions have fallen by 19% but consumption may increase in future years with the opening of Berwick campus.

These saving are attributed to more staff utilising public transport and improvements in vehicle efficiency through the adoption of diesel and 4-cylinder vehicles.

Vehicle Fuel Consumption

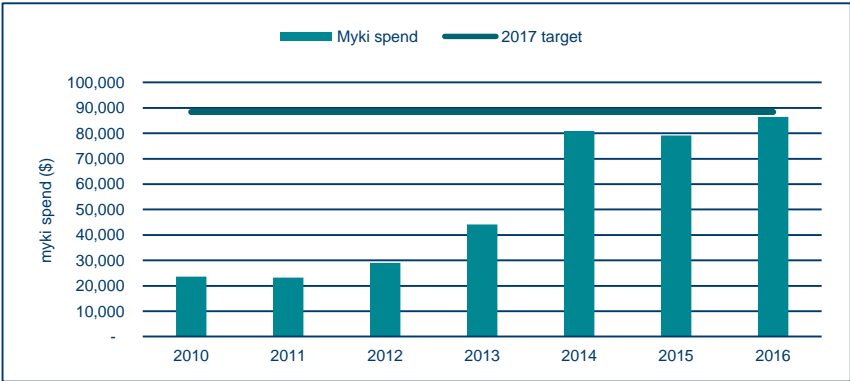


Our 2017 target was almost achieved a year early with a 19% reduction in fuel consumption to the end of 2016. This equates to a saving of 41,800 litres of fuel.

The savings are attributed to the replacement of petrol vehicles with diesel and recently the purchase of Hybrid Camry and Corollas.

60% of the passenger fleet are diesel, 28% are petrol and 12% are hybrid. 92% of the passenger fleet are 4 cylinder.

V/Line train expenditure



Staff have continued to use V/Line trains and myki travel with an \$86,000 spend in 2016, up from \$78,000 in 2015.

Staff are finding public transport faster and more convenient with myki's easy touch-on, touch-off and auto top-up features.

Our 2017 target is to spend \$88,000 on myki travel.

2016 Carbon Inventory

The University emitted 18,349 tonnes of greenhouse gases in 2016, an 8% reduction on the previous year. The University Strategic Plan calls for a 5% per annum reduction to 2020.

Emissions source	Consumption units	Consumption	Actual Emissions (tonnes) 2015	Actual Emissions (tonnes) 2016	change from previous year	Target emissions (tonnes) 2017
Direct emissions (Scope 1)						
Natural Gas	GJ	66,817	3,410	3,443	1%	2,806
Petrol for vehicles	kL	82	184	189	2%	251
Diesel for vehicles	kL	103	278	280	1%	192
Total Scope 1			3,872	3,911	1%	3,249
Indirect emissions (Scope 2)						
Electricity	kWh	10,563,369	12,765	11,514	-10%	12,087
Optional Emissions (Scope 3)						
Electricity - transmission & distribution losses	kWh	10,563,369	1,469	1,056	-28%	1,523
Flights	km	6,561,121	1,094	1,066	-3%	1,118
Waste - landfill	tonnes	473	549	567	3%	430
Extraction of natural gas	GJ	66,817	258	261	1%	214
Train travel	\$	86,409	46	50	9%	42
Water consumption	kL	76,968	174	180	4%	149
Paper consumption	reams	12,933	53	39	-27%	54
Emissions from fuel extraction	kL	184	24	24	1%	35
Total scope 3			3,667	3,244	-12%	3,565
Scope 1 + 2 + 3			20,304	18,669	-8%	18,901
Reduction measures						
AGL Green power	kWh	269,194	-349	-320		-331
Net Emissions			19,955	18,349	-8%	18,570