University College Cork

ANNUAL ENERGY STATEMENT 2019

For explanation of figures and data, see footnotes below.

Energy savings since baseline

44.5 %

Actual consumption	Avoided consumption	Gap to target
90,660,601 kWh	72,694,264 kWh	N/A

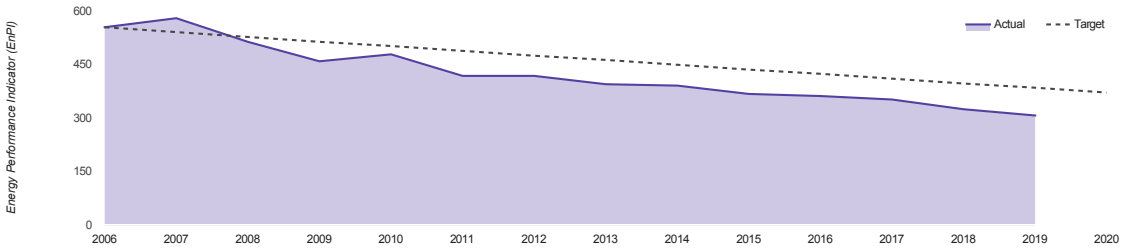
Electricity	Thermal	Transport
61,512,795 kWh	28,936,388 kWh	211,418 kWh
2.9% less than 2018	4.1% less than 2018	9.6% less than 2018

Energy-related CO_2 emissions

16,312,723 kg CO_2

Equivalent to the amount absorbed by 97,877 trees

Energy performance to date



5.6% better than 2018 44.5% better than baseline

Overall status (2019): more efficient than baseline & on track for 2020 target

University College Cork improved its energy performance in 2019 by:

Improving its energy management practices
Implementing energy awareness programme(s)
Improving the energy performance of its significant energy users

Additional comments on energy performance

Despite an increase in floor area and the energy intensity of its buildings, University College Cork continued to reduce its overall energy consumption in 2019. Certified since 2011 to the ISO 50001 Energy Management system, the University continues to promote energy conservation across its campus, encouraging and incentivising our significant energy users to conserve energy. Our Engineering Services team and third party partners continue to optimise our existing assets and reduce energy use while our projects department ensure energy avoidance and efficiency are central design themes on projects. A sample of projects completed in 2019, with grant aid from SEAI, include the expansion of our PV arrays, LED roll out in our Environmental Building and upgrading of our existing BMS platforms. The University remains fully committed to a program of continuous improvement in its energy performance and will investigate and explore new innovative ways of implementing energy improvements across its building stock.

The above commentary is as submitted by University College Cork through SEAI's public sector energy monitoring & reporting (M&R) system.

Projects Implemented in 2019

Project name	Total savings (kWh TFC)	Total savings (kWh TPER)
Food Science Building	18,000	34,121
System Optimisation	347,000	469,217
Boole optimisation	32,000	60,659
Cavanagh Optimisation	12,000	22,747
Student Centre	10,000	14,978
ERI Optimisation	20,000	37,912
Glucksman Optimisation	40,000	75,824
BSU	70,000	132,692
Lighting Upgrade	36,000	53,921
Total:	585,000	902,072

Complete report

Annual energy statement

This annual energy statement contains all of the information specified by SEAI for inclusion in an annual statement on a public body's energy efficiency, as required under Regulation 5(5) in SI 426 of 2014. The performance results and other data published in this statement are based on data reported by University College Cork for 2019 through SEAI's public sector energy monitoring & reporting (M&R) system.

TPER and TFC

Almost all energy values shown above are expressed as primary energy, or total primary energy requirement (TPER). This is a measure of all the energy consumed by the organisation and accounts for the energy that is consumed and/or lost in transformation, transmission and distribution processes. The savings values shown for specific named energy projects are also expressed as total final consumption (TFC), which does not account for the energy consumed and/or lost in transformation, transmission and distribution processes.

Energy savings since baseline (Deterioration in energy efficiency since baseline)

The percentage saving (or deterioration) shown is the percentage improvement (deterioration) in the energy performance of University College Cork since its baseline period. The energy performance is tracked between the baseline and 2020 using an Energy Performance Indicator (EnPI).

Actual consumption

Actual consumption is the total energy consumed by University College Cork in 2019, expressed as primary energy consumption. It includes electricity, thermal (heat) energy and transport consumption.

Avoided consumption

Avoided consumption is the amount of additional energy that would have been consumed by University College Cork in 2019 had it not made the reported efficiency gain since its baseline.

Gap to target

The gap to target is an estimate, based on 2019 data, of the additional energy savings required by 2020 to reach the efficiency target. The calculation of this value incorporates several simplifying assumptions, including that the organisation's activity level will remain constant between 2019 and 2020.

Energy-related CO_2 emissions

The CO_2 emission values shown are attributable to the energy consumption reported by University College Cork.

Energy performance indicator

The Energy Performance Indicator (EnPI) is a way of measuring an organisation's energy performance. Each year, an EnPI is calculated by dividing the organisation's energy consumption by a measure of its activity (activity metric). A decreasing EnPI indicates an improvement in energy efficiency because less energy is being used per unit of activity. An increasing EnPI indicates deterioration in efficiency. The EnPI graph shows the actual and target energy performance for University College Cork since its baseline and out to 2020.

Project energy savings

The energy savings shown for specific projects are absolute savings per year, as reported by University College Cork, i.e. they are the reductions in consumption attributable to each project. They do not account for any changes in activity level within the organisation.

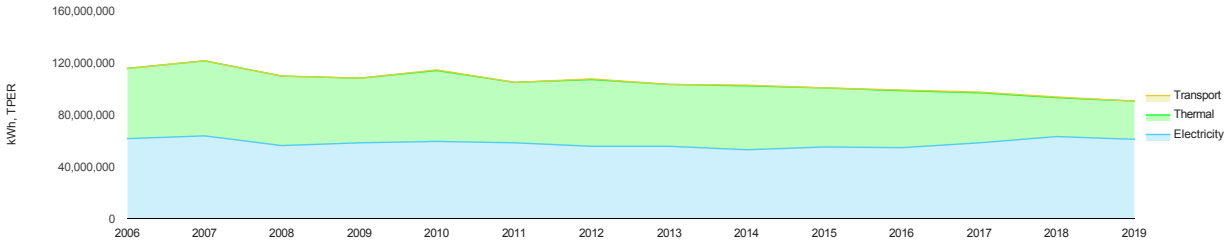
University College Cork
ENERGY CONSUMPTION 2019

For explanation of figures and data, see footnotes below.

2019 energy consumption

90,660,601 kWh

Energy Consumption to date



Energy Consumption - 2019 (TPER)

3.3 %
less than 2018

3,079,663 kWh
less than 2018

21.7 %
less than baseline

25,152,022 kWh
less than baseline

Complete report

Primary energy

All energy values shown above are expressed as primary energy, or total primary energy requirement (TPER). This is a measure of all the energy consumed by the organisation and accounts for the energy that is consumed and/or lost in transformation, transmission and distribution processes.

University College Cork
RENEWABLE ENERGY 2019

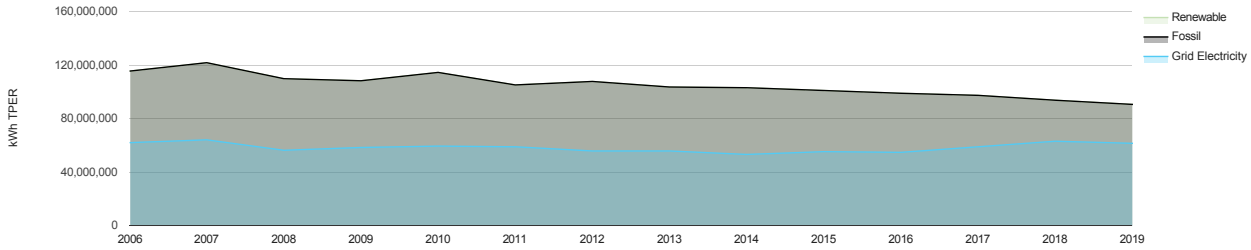
For explanation of figures and data, see footnotes below.

2019 renewable energy consumption

Renewable: 33,120 kWh

Renewable share is 0 %

Renewable energy contribution to date



All energy – renewable contribution

Grid electricity

61,489,257 kWh

2.9% less than 2018

Fossil

29,138,224 kWh

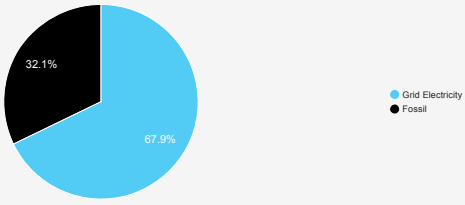
4.2% less than 2018

Renewable

33,120 kWh

1.7% less than 2018

Share of energy consumption



Thermal energy - renewable contribution

Fossil

28,936,388 kWh

4.1% less than 2018

Renewable

0 kWh

0% more than 2018

Share of energy consumption

Transport energy - renewable contribution

Fossil

201,836 kWh

10.6% less than 2018

Renewable

9,582 kWh

18.1% more than 2018

Share of energy consumption

Complete report

Primary energy

All energy values shown above are expressed as primary energy, or total primary energy requirement (TPER). This is a measure of all the energy consumed by the organisation and accounts for the energy that is consumed and/or lost in transformation, transmission and distribution processes.

Electricity

Electricity imported from the grid is not broken down between renewable and fossil sources; instead all of this electricity consumption is classified as 'grid electricity'. Electricity reported by the organisation as having been generated within one the organisation's facilities from renewable sources (e.g. solar PV) is included in the 'renewable' figures.

Biofuel

The vast majority of road transport fuels placed on the market in Ireland contain a single-digit percentage of biofuel. This percentage is calculated annually and is trending upwards over time, in line with national policy. The 'renewable' consumption figures shown above include an amount of biofuel consumption for University College Cork that has been calculated using the national biofuel contribution figures for 2019

University College Cork

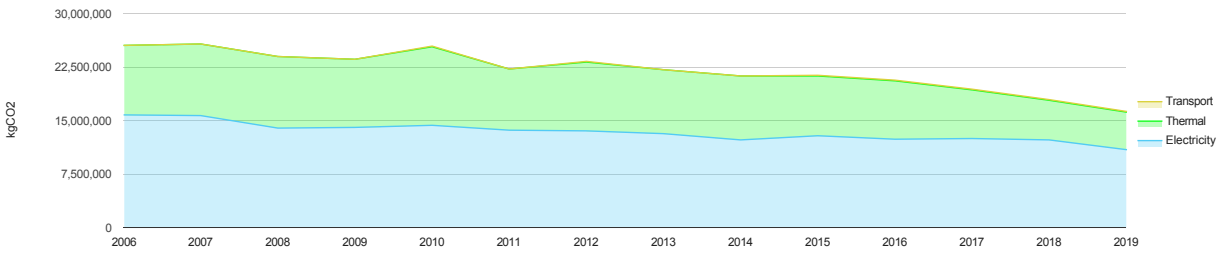
ENERGY-RELATED CO2 EMISSIONS 2019

For explanation of figures and data, see footnotes below.

2019 CO_2 emissions

16,312,723 $kgCO_2$

CO_2 emissions since baseline



CO_2 emissions - 2019

9.2 %

less than 2018

1,654,012 $kgCO_2$

less than 2018

35.1 %

less than baseline

8,808,901 $kgCO_2$

less than baseline

Complete report

Energy-related CO_2 emissions

The CO_2 emission values shown are attributable to the energy consumption reported by University College Cork.

Electricity-related CO_2 emissions

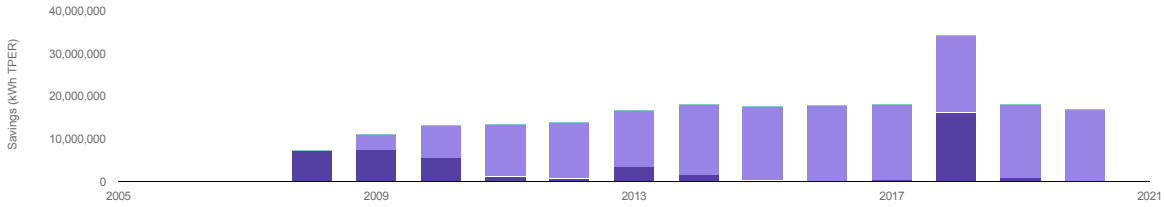
The CO_2 emissions attributable to electricity imported from the grid by University College Cork have been calculated using the average emission factor for electricity generation in Ireland for the relevant year. The electricity consumed by University College Cork in any given year may have come from a source that was less or more carbon intensive than the national average.

University College Cork

PROJECT ENERGY SAVINGS 2019

For explanation of figures and data, see footnotes below.

Annual energy savings from reported projects



coloured bar above corresponds to one of the coloured stripes in the table headings below. The dark blue/purple bars show savings already achieved in each year from project(s) implemented in that year. The light blue/purple bars indicate savings still being made in each yea ect(s) implemented in a previous year. The green bars show savings for project(s) that have not yet been implemented. Dark green indicates savings expected in each future year from project(s) planned for implementation in that year. Light green indicates savings expected in e from project(s) planned for implementation before that

Year	Projects Implemented in Year (kWh TPER)	Projects Implemented in a Previous Year (kWh TPER)	Projects Planned for Implementation in a Year (kWh TPER)	Projects Planned for Implementation in a Previous Year (kWh TPER)
2006	-	-	-	-
2007	-	-	-	-
2008	7,248,072	-	-	-
2009	7,533,090	3,504,182	-	-
2010	5,617,359	7,520,523	-	-
2011	1,377,161	12,094,326	-	-
2012	807,652	13,007,212	-	-
2013	3,610,947	13,061,308	-	-
2014	1,662,417	16,490,329	-	-
2015	331,039	17,460,586	-	-
2016	304,662	17,622,680	-	-
2017	474,054	17,615,774	-	-
2018	16,255,961	17,999,228	-	-
2019	902,072	17,201,336	-	-
2020	-	17,141,936	-	-

Projects Implemented in 2019

Project name	Total savings (kWh TFC)	Total savings (kWh TPER)
Food Science Building	18,000	34,121
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ERI Optimisation	20,000	37,912
Glucksman Optimisation	40,000	75,824
BSU	70,000	132,692
Lighting Upgrade	36,000	53,921
Total:	585,000	902,072

Complete report

TPER and TFC

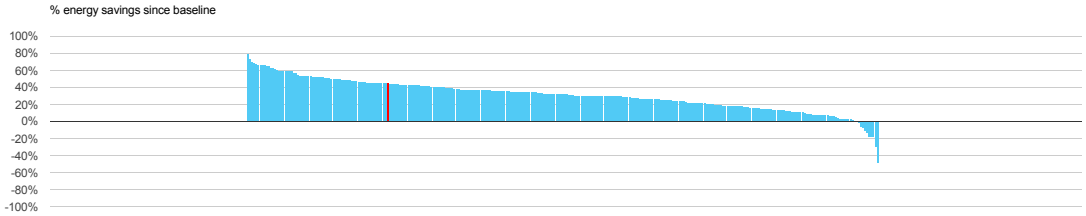
Most of the energy values shown above are expressed as primary energy, or total primary energy requirement (TPER). This is a measure of all the energy consumed by the organisation and accounts for the energy that is consumed and/or lost in transformation, transmission and distribution processes. The savings values shown for specific named energy projects are also expressed as total final consumption (TFC), which does not account for the energy consumed and/or lost in transformation, transmission and distribution processes.

Energy savings

The energy savings shown are absolute savings per year, as reported by University College Cork, i.e. they are the reductions in consumption attributable to each project. They do not account for any changes in activity level within the organisation.

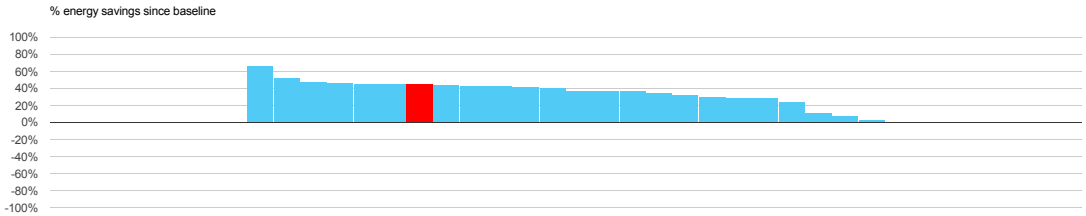
University College Cork
PERFORMANCE BENCHMARKING 2019

Your savings compared to all public bodies



University College Cork is the 68th best performer out of 303 public bodies. Please note that another 47 public bodies were removed from this comparison because they either submitted insufficient data to calculate a savi result or aspects of their data need to be improved or verified.

Your savings compared to others in Third Level



University College Cork is the 7th best performer out of 24 public bodies. Please note that another 0 public bodies were removed from this comparison because they either submitted insufficient data to calculate a savings result or aspects of their data need to be improved or verified.

Savings of Third Level public bodies

Public body	2019 Energy consumption (TPER)	2019 Energy savings (since baseline) %	SEAI comment
Technological University Dublin - Blanchardstown Campus	5,880,865	65.7	Overall status (2019): more efficient than baseline & on track for 2020 target
Letterkenny Institute of Technology	5,722,292	52.4	Overall status (2019): more efficient than baseline & on track for 2020 target
Dublin City University	64,315,973	46.8	Overall status (2019): more efficient than baseline & on track for 2020 target
Munster Technical University Kerry Campus	7,184,280	46.1	Overall status (2019): more efficient than baseline & on track for 2020 target
National College of Art and Design	4,079,197	45.7	Overall status (2019): more efficient than baseline & on track for 2020 target
Cork Institute of Technology	24,384,259	45.6	Overall status (2019): more efficient than baseline & on track for 2020 target
University College Cork	90,660,601	44.5	Overall status (2019): more efficient than baseline & on track for 2020 target
Limerick Institute of Technology	13,710,663	44.2	Overall status (2019): more efficient than baseline & on track for 2020 target
Waterford Institute of Technology	18,193,869	42.9	Overall status (2019): more efficient than baseline & on track for 2020 target
Institute of Technology Carlow	8,809,942	42.5	Overall status (2019): more efficient than baseline & on track for 2020 target
TU Dublin, Tallaght	8,257,298	41.4	Overall status (2019): more efficient than baseline & on track for 2020 target
National University of Ireland, Galway	50,664,872	39.7	Overall status (2019): more efficient than baseline & on track for 2020 target
Institute of Technology Sligo	8,850,801	37.6	Overall status (2019): more efficient than baseline & on track for 2020 target
Maynooth University, NUIM	37,106,720	37.2	Overall status (2019): more efficient than baseline & on track for 2020 target
Royal College of Surgeons in Ireland	18,041,437	36.2	Overall status (2019): more efficient than baseline & on track for 2020 target
University College Dublin	117,516,004	35.2	Overall status (2019): more efficient than baseline & on track for 2020 target
Trinity College Dublin	117,740,328	31.9	Overall status (2019): more efficient than baseline & on track for 2020 target
University of Limerick	70,149,138	29.8	Overall status (2019): more efficient than baseline, but not yet on the path for 2020 target
Galway Mayo Institute of Technology	13,060,476	29.4	Overall status (2019): more efficient than baseline, but not yet on the path for 2020 target
Athlone Institute of Technology	11,265,681	29.3	Overall status (2019): more efficient than baseline, but not yet on the path for 2020 target
Technological University Dublin	34,241,183	23.8	Overall status (2019): more efficient than baseline, but not yet on the path for 2020 target
Dún Laoghaire Institute of Art, Design & Technology	5,674,449	11.4	Overall status (2019): more efficient than baseline, but not yet on the path for 2020 target
Royal Irish Academy of Music	748,032	7.8	Overall status (2019): more efficient than baseline, but not yet on the path for 2020 target
Dundalk Institute of Technology	13,550,514	2.9	Overall status (2019): more efficient than baseline, but not yet on the path for 2020 target

Complete report