University of Galway
ANNUAL ENERGY STATEMENT 2021

For explanation of figures and data, see footnotes below.

Energy savings since energy efficiency baseline

51.7%

Actual consumption
40,602,879 kWh

Avoided consumption
43,376,780 kWh

Gap to target
N/A

Electricity
26,843,707 kWh

13.1% more than 2020

Thermal
13,573,541 kWh

7% less than 2020

Transport
185,631 kWh

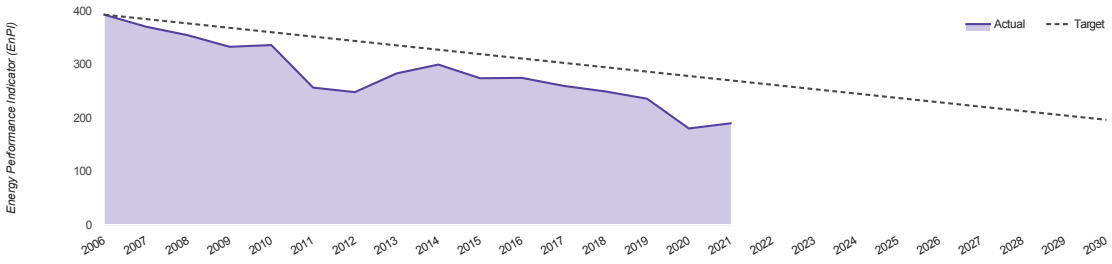
0.1% less than 2020

Energy-related CO_2 emissions

7,331,135 kg CO_2

Equivalent to the amount absorbed by 43,987 trees

Energy performance to date



5.4% worse than 2020

51.7% better than energy efficiency baseline

Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target

University of Galway improved its energy performance in 2021 by:

Improving its energy management practices
Implementing energy awareness programme(s)
Improving the energy performance of its lighting system(s)
Installing new onsite renewable energy generation capacity
Improving the energy performance of its pumping system(s)

Additional comments on energy performance

The National University of Ireland, Galway's transitioned from 2011 standard to the new 2018 Energy Management System is compliant with the requirements of the International Standards Organisations ISO50001:2018 Standard. Our system is independently certified by Luicdeon Certification Services for the past 10 years. Our on-going EnMS programme underpins our approach to delivering energy performance improvements whilst complying with current energy legislation and other requirements. NUI Galway Energy Team were delighted to be shortlisted for the SEAI Energy Team award 2021, this achievement further encouraged the University and the Energy team to set new goals to achieve the targets set out in the Climate Action Plan 2021. These goals are also listed in the NUI Galway 2020-2025 Strategy document under the Sustainability Pillar. We have therefore invested further in our monitoring and targeting system using accurate, up to date metering equipment, that gives us access to real-time energy usage data for each building. Furthermore, we are carrying out DEC (Display Energy Certificate) analysis, and publication, exercises and are using these to raise energy awareness and to monitor the energy performance of buildings that are used by the students. NUI Galway continue to invest in new renewable technologies, PV and Solar Projects, Air to Water Heat Pump Technologies, Biomass boilers. We have increased our electric car charging point on campus and invested in an new electric van for our on site postal service. NUI Galway are delighted to be involved in the SEAI/HEA Pathfinder program for Decarbonization of Heating systems Aras De Brun project. The above commentary is as submitted by National University of Ireland, Galway through SEAI's public sector energy monitoring & reporting (M&R) system

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

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 of Galway for 2021 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 energy efficiency baseline (Deterioration in energy efficiency since baseline)

The percentage saving (or deterioration) shown is the percentage improvement (deterioration) in the energy performance of University of Galway since its EE baseline period. The energy performance is tracked between the EE baseline and 2030 using an Energy Performance Indicator (EnPI).

Actual consumption

Actual consumption is the total energy consumed by University of Galway in 2021, 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 of Galway in 2021 had it not made the reported efficiency gain since its energy efficiency baseline.

Gap to target

The gap to target is an estimate, based on 2021 data, of the additional energy savings required by 2030 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 2021 and 2030.

Energy-related CO_2 emissions

The energy-related CO_2 emission values shown are attributable to the energy consumption reported by University of Galway.

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 of Galway since its energy efficiency baseline and out to 2030.

Project energy savings

The energy savings shown for specific projects are absolute savings per year, as reported by University of Galway, 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.

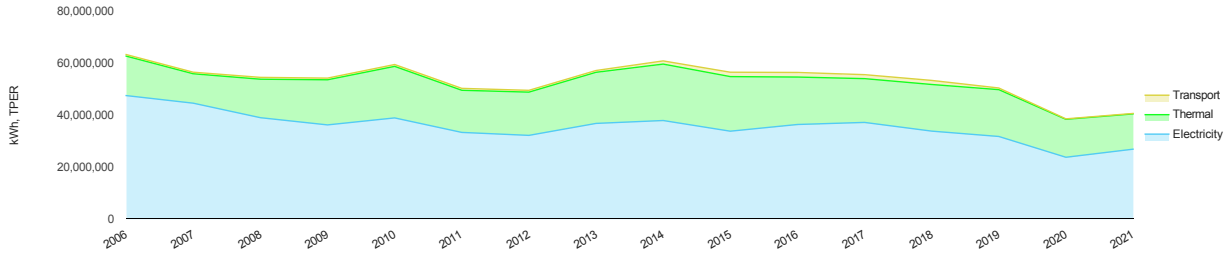
University of Galway
ENERGY CONSUMPTION 2021

For explanation of figures and data, see footnotes below.

2021 energy consumption

40,602,879 kWh

Energy Consumption to date



Energy Consumption - 2021 (TPER)

5.4%
more than 2020

2,078,968 kWh
more than 2020

30.1%
less than energy efficiency baseline

17,483,576 kWh
less than energy efficiency 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 of Galway
RENEWABLE ENERGY 2021

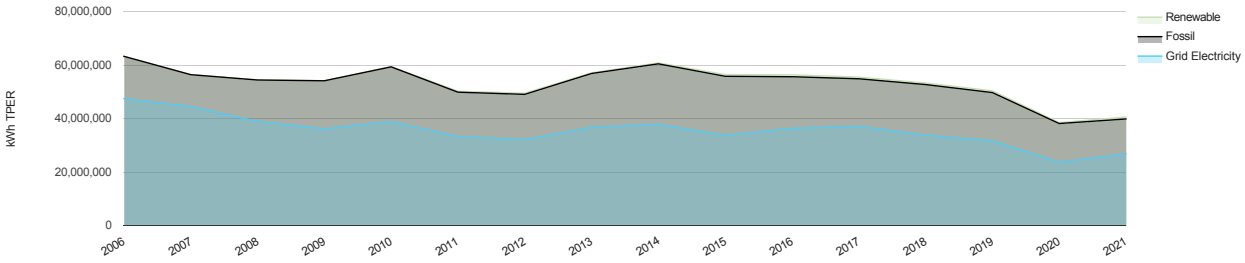
For explanation of figures and data, see footnotes below.

2021 renewable energy consumption

Renewable: 719,698 kWh

Renewable share is 1.8 %

Renewable energy contribution to date



All energy – renewable contribution

Grid electricity

26,843,707 kWh

13.1% more than 2020

Fossil

13,039,474 kWh

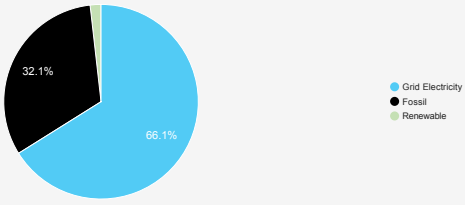
9.7% less than 2020

Renewable

719,698 kWh

106.6% more than 2020

Share of energy consumption



Thermal energy - renewable contribution

Fossil

12,854,653 kWh

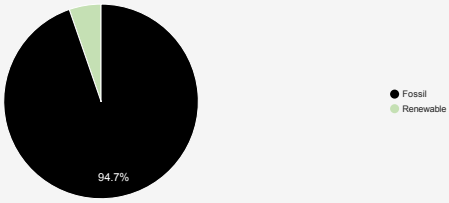
9.9% less than 2020

Renewable

718,888 kWh

114.5% more than 2020

Share of energy consumption



Transport energy - renewable contribution

Fossil

184,821 kWh

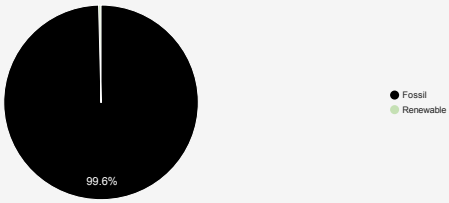
7% more than 2020

Renewable

810 kWh

93.8% less than 2020

Share of energy consumption



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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 of Galway that has been calculated using the national biofuel contribution figures for 2021

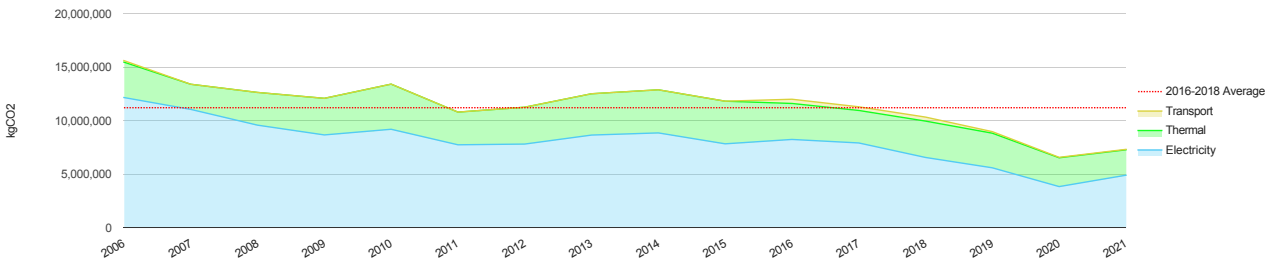
University of Galway
ENERGY-RELATED CO2 EMISSIONS 2021

For explanation of figures and data, see footnotes below.

2021 CO_2 emissions

7,331,135 $kgCO_2$

Energy-related CO_2 emissions to date



CO_2 emissions - 2021

11.3%
more than 2020

746,000 $kgCO_2$
more than 2020

Complete report

Energy-related CO_2 emissions

The energy-related CO_2 emission values shown are attributable to the energy consumption reported by University of Galway.

Electricity-related CO_2 emissions

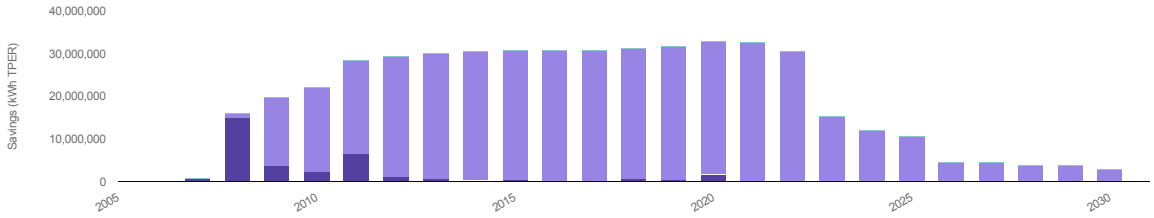
The energy-related CO_2 emissions attributable to electricity imported from the grid by University of Galway have been calculated using the average emission factor for electricity generation in Ireland for the relevant year. The electricity consumed by University of Galway in any given year may have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

University of Galway

PROJECT ENERGY SAVINGS 2021

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 year from 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 each fu from project(s) planned for implementation before that year.

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	884,372	-	-	-
2008	14,998,504	884,372	-	-
2009	3,740,685	15,882,876	-	-
2010	2,288,629	19,623,562	-	-
2011	6,434,005	21,912,190	-	-
2012	1,087,230	28,346,194	-	-
2013	604,690	29,433,424	-	-
2014	290,239	30,038,114	-	-
2015	451,832	30,328,354	-	-
2016	-	30,780,186	-	-
2017	-	30,780,186	-	-
2018	870,519	30,369,382	-	-
2019	470,035	31,239,902	-	-
2020	1,766,817	31,134,314	-	-
2021	-	32,690,028	-	-
2022	-	30,417,416	-	-
2023	-	15,283,079	-	-
2024	-	11,958,880	-	-
2025	-	10,646,950	-	-
2026	-	4,513,157	-	-
2027	-	4,513,157	-	-
2028	-	3,925,006	-	-
2029	-	3,780,324	-	-
2030	-	2,948,522	-	-

Complete report

TPER and TFC

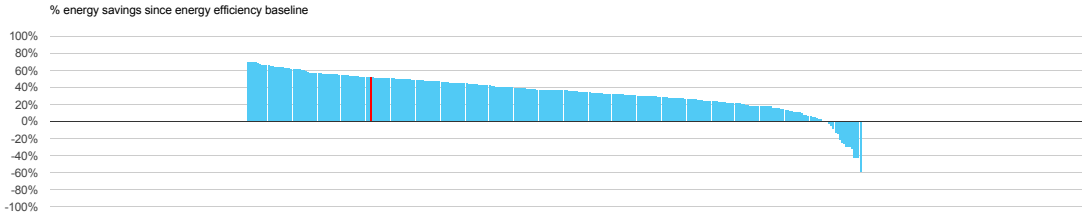
Most of the energy values shown above are expressed as primary energy, or total primary energy requirement (TPER). This is a measure of all the energy consumed by the organisation and accounts for the energy that is consumed and/or lost in transformation, transmission and distribution processes. The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

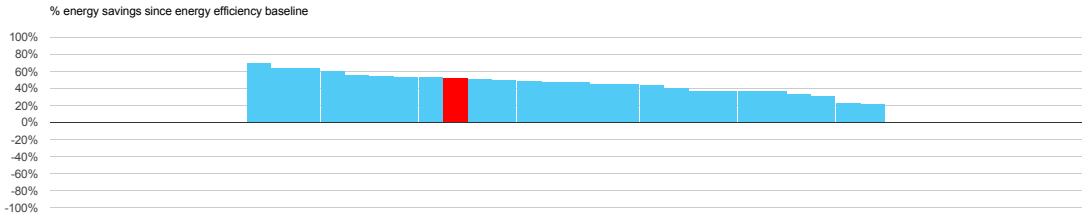
University of Galway
PERFORMANCE BENCHMARKING 2021

Your savings compared to all public bodies



University of Galway is the 60th best performer out of 295 public bodies. Please note that another 52 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.

Your savings compared to others in Third Level



University of Galway is the 9th best performer out of 26 public bodies. Please note that another 0 public bodies were removed from this comparison because they either submitted insufficient data to calculate a savings re or aspects of their data need to be improved or verified.

Savings of Third Level public bodies

Public body	2021 Energy consumption (TPER)	2021 Energy savings (since energy efficiency baseline) %	SEAI comment
Royal Irish Academy of Music	314,458	69.1	Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target
St. Angela's College Sligo	1,826,212	64	Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target
Marino Institute of Education	3,356,302	63.2	Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target
Atlantic Technological University, Donegal	5,413,080	59.9	Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target
Dublin City University	53,209,315	56	Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target
Waterford Institute of Technology	14,389,412	54.8	Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target
Institute of Technology Carlow	8,155,212	53.4	Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target
Munster Technological University - Cork	22,473,587	53	Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target
University of Galway	**40,602,879**	**51.7**	**Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target**
National College of Art and Design	3,666,085	50.4	Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target
Munster Technical University Kerry Campus	6,675,542	49.9	Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target
Atlantic Technological University Sligo	7,277,724	48.7	Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target
Maynooth University, NUIM	33,546,035	47.4	Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target
University College Dublin	99,608,943	46.8	Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target
Dublin Institute for Advanced Studies	1,421,058	45.6	Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target
Technological University Dublin	39,748,115	45.4	Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target
University College Cork	90,684,108	43.6	Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target
Athlone Institute of Technology	9,458,317	40.7	Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target
Royal College of Surgeons in Ireland	17,412,623	37.7	Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target
Galway Mayo Institute of Technology	11,858,307	37.5	Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target
University of Limerick	63,646,884	36.8	Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target
Trinity College Dublin	110,624,331	36.2	Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target
Mary Immaculate College Limerick	8,456,060	33.4	Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target
Limerick Institute of Technology	13,530,098	30.9	Overall status (2021): more efficient than energy efficiency baseline & on track for 2030 target
Dún Laoghaire Institute of Art, Design & Technology	5,177,014	22.9	Overall status (2021): more efficient than energy efficiency baseline, but not yet on the path for 2030 target
Dundalk Institute of Technology	12,732,846	21.3	Overall status (2021): more efficient than energy efficiency baseline, but not yet on the path for 2030 target

Complete report