

Project acronym: SAVES 2

Project title: Students Achieving Valuable Energy Savings 2

Contract number: 754203

Project duration: 42 months

Deliverable reference number and title:

D5.4 Quantifying the behavioural change and energy savings attributable to the Student Switch Off campaign in academic year #3

July 2020

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Executive Summary

Student Switch Off (SSO) is an annual inter-dormitory energy-saving campaign that focuses on a predefined set of activities, encouraging students to save energy in their dormitories. Through a series of engagement activities and instruments students are enabled, empowered and motivated to save energy in their dormitories because of changes in their energy behaviour. The dormitory that saves the most energy on each campus at the end of the academic year is announced winner and rewarded for their efforts.

The SSO campaign runs in fourteen universities in seven European countries – Bulgaria, Cyprus, Greece, Ireland, Lithuania, Romania and the United Kingdom. This is the third academic year that SSO has been rolled out in Bulgaria, Ireland and Romania. In Cyprus, Greece and Lithuania the SSO campaign was first rolled out in 2014 as part of the [IEE/13/719/SI2.675836 SAVES project](#), while in the UK the campaign has been running since 2006.

Research methodology

The purpose of the research presented in this report is to quantify the energy savings and behaviour changes that may be attributed to the SSO campaign. The evaluation period is the academic year 2019-2020.

A methodology to calculate the energy savings was developed based on the International Measurement and Verification Protocol (IPMVP) and the “eeMeasure” methodology (<http://eemeasure.smartspaces.eu>) developed for the EC ICT Policy Support Programme (ICT-PSP). This included a methodology for the establishment of a baseline at each dormitory and a common approach for calculating and reporting savings. Consumption data collected at each dormitory in the baseline period was used to establish consumption models. These models provided a basis for comparison over the project period to quantify energy savings.

Changes in the behaviour of students in participating dormitories were evaluated through pre- and post-competition incentivized questionnaire surveys completed by students at the beginning and at the end of the academic year, respectively. As well as identical questions to the pre-competition questionnaire (baseline survey), the post-competition survey (follow-up survey) included SSO specific questions involving familiarization of the respondents with SSO and with the energy dashboard.

Energy savings

In 2019-20, 1.32 GWh of electricity, based on actual data, were saved across all the participating countries compared to the baseline. This saving equates to 489.03 tonnes of CO₂ emissions. Data was also extrapolated for missing months, which gives an additional saving of 1.44 GWh.

Table 1 Energy and carbon savings attributed to the SSO campaign for the 2019-20 academic year - actual data

	Overall SSO savings (2019-20)
kWh saving	1,315,531
% saving	7.72
CO ₂ saving (tonnes)	489.03

Percentage wise, most energy was saved in Lithuania (26.02%) and in Cyprus (25.04%). The UK had the highest absolute energy savings (587,464 kWh) and carbon dioxide savings (135.7 tCO₂) followed by Romania (252,930 kWh and 128.6 tCO₂). In none of the seven countries were the total energy savings negative.

Table 2 Country specific kWh, percentage and carbon dioxide savings in 2019-20 - actual data

Country	Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK
kWh saving	105,292	45,518	68,159	58,918	197,250	252,930	587,464
% saving	7.24	25.04	6.01	3.01	26.02	17.81	5.80
CO ₂ saving (tonnes)	64.32	33.47	48.95	24.70	53.26	128.60	135.73



At university level the biggest energy saving was noted in the University of York (UK), where 290,169 kWh were saved. The biggest percentage saving has been at the Vilnius Gediminas Technical University (Lithuania) where a 26.02% saving is noted. The most carbon dioxide was saved in the University of Bucharest (Romania) (128.6 tCO₂).

Changes in behaviour and in influencers of behavior

To capture the behaviour change of students, two rounds of survey questionnaires were circulated during the 2019-20 academic year; one at the start (baseline survey) and one at the end (follow-up survey). In total, more than 4,700 students living in halls of residence, answered the questionnaires. The findings of the questionnaire survey show positive signs of impact of the SSO campaign on students. In all countries, those questioned in the end of year survey felt better informed about what they can personally do to save energy in their hall of residence or college compared to the beginning of year survey. Overall, a statistically significant increase of +9% is found in respondents' perceived level of information about how to save energy in their hall whereas at country level, statistically significant increases of this level of information are observed in Cyprus (+14%), Ireland (+17%) and the UK (+14%). Positive signs were also shown in the other countries; in Bulgaria (+7%), Greece (+8%), Lithuania (+2%) and Romania (+2%) respondents felt more informed about what they could do to save energy in their hall.

Regarding to what respondents can personally do to save energy in their halls of residence, higher proportions of follow-up respondents in Cyprus (+6%), Ireland (+6%) and the UK (+1%) tried to save energy in everything they did while higher shares of participants in Greece (+7%), Lithuania (+9%), Romania (+2%) and again the UK (+1%) tried to save energy in most things they did than in the baseline survey. In Bulgaria and Greece, a statistically significant higher share of respondents (+17% and +12% respectively) stated "I do quite a few things to save energy" in the end of year survey. In general, a statistically significant higher share of follow-up respondents (+5%) stated "I do quite a few things to save energy" compared to baseline participants whereas statistically significant lower percentages of respondents stated "I do one or two things to save energy" (-6%) and "I don't really do anything to save energy" (-2%) in the end of the year survey.

Overall, in all countries, the vast majority of respondents in both surveys, think that switching off the lights in empty rooms, opening the windows to cool down instead of using a cooling device or system, and avoiding leaving electronic devices on standby mode helps save energy. In addition, with regard to the total sample of respondents, in the follow-up survey, statistically significant higher shares of respondents think that "Put a lid on pans when cooking", (+4%) helps to save energy compared to the baseline.

An increase in the frequency of the following six targeted energy saving actions is observed at the end of year survey: putting a lid on the pan when cooking (Cyprus, Greece, Ireland, Lithuania, Romania and the UK), putting on extra layers instead of turning on the heating (Bulgaria, Greece, Lithuania), boiling the kettle only with the right amount of water (Cyprus, Greece, Lithuania, Romania and the UK), opening windows to cool down instead of a cooling device/system (Bulgaria, Cyprus, Ireland, Romania and the UK), avoiding leaving electronic equipment on stand-by (Lithuania) and switching off lights in empty rooms (Bulgaria, Greece, Lithuania and Romania).

The main reasons for being more energy conscious at the end of the academic year in all countries are that it is a habit adopted from home and because it saves energy. On the contrary, when it comes to reasons that prevent those surveyed from being more energy conscious, respondents in all countries except for Bulgaria, think that it is because of lack of feedback on how much energy they consume. In Bulgaria the biggest share of respondents thinks that the energy they save in their hall won't save them any money. The latter is also pointed out as an important reason that prevented respondents from being more energy conscious in Greece, Ireland, Lithuania, Romania and the UK. Other reasons include: design limitations of the building and its systems (Lithuania and the UK), lack of inspiration from the hall management (in Bulgaria and Lithuania), respondents' personal actions would have had minimal impact on the energy consumption of the hall (Bulgaria, Cyprus and Romania), having other things on their mind (Cyprus, Ireland) and didn't know how to become more energy conscious (Greece).

Respondents from all countries in both surveys agreed that: a) global warming is a problem for society, b) energy conservation contributes to a reduction of climate change impacts, c) everyone including themselves is responsible for the exhaustion of energy sources, d) everyone including themselves is responsible for climate change, e) they feel morally obliged to save energy, regardless of what others do and f) they intend to try harder to reduce their energy use this academic year. Furthermore, in both surveys, a "Disagree" to "Neither agree nor disagree" tendency is reported in all countries with regard to "Most people who are important to me



think that I should use less energy” and “Saving energy means I have to live less comfortably”. In all countries, respondents mostly disagreed that “Saving energy is too much of a hassle”.

In the follow-up survey, respondents from Bulgaria (+13%) and Cyprus (+10%) agreed to a greater extent than in the baseline with the statement “Most people who are important to me try to pay attention to their energy use”. In Lithuania, participants agreed more (+5%) that “In general, I can reduce my energy use quite easily” while those surveyed in the UK agreed more (+3%) with the statement “I feel morally obliged to save energy, regardless of what others do”. In Greece (-15%) and Romania (-14%), follow-up participants reported statistically significant lower levels of agreement with the statement “Saving energy is too much of a hassle” than in the baseline survey.

Familiarization with SSO

At the end of the academic year a statistically significant higher share of respondents (+34%) had heard about the SSO campaign compared to the beginning of the academic year (29%). In all seven countries, more respondents had heard about the SSO campaign at the end of the academic year compared to the beginning. The increase in the number of respondents that had heard of the SSO campaign at the end of the academic year compared to the beginning is statistically significant in Greece (+14%), Ireland (+21%), Lithuania (+22%) and the UK (+55%). Furthermore, a statistically significant higher share (+2%) of those questioned at the end of the year, agreed that the SSO campaign made them more aware on what they can do to save energy in their everyday life.

Use of the energy dashboard

Across the seven SAVES 2 countries varying shares of respondents had visited the dashboard. The biggest share of respondents that had visited the SSO dashboard is found in Cyprus (56%). In Romania, Greece and Ireland this share is 32%, 27% and 20% respectively while in Bulgaria, the UK and Lithuania the share of those who have visited their university’s dashboard is 18%, 17% and 13% respectively.

Thirty-four percent (34%) of those who had visited the energy dashboard across the seven SAVES 2 countries, stated that they first heard about the SSO energy dashboard from emails. “Social media” (27%), probably their SSO Facebook page, was the second most popular response, whereas 12% of the respondents first heard about the dashboard from a display screen at their university.

Overall, 49% of the respondents used to visit the SSO energy dashboard less than once a month. Thirty-one percent (31%) used to view the dashboard every month while 11% viewed the energy dashboard on a weekly basis. Two percent (2%) of those surveyed reported that they visited the dashboard daily whereas 7% never visited the SSO energy dashboard over the academic year.

In total, 23% of those surveyed stated that their visits to the energy dashboard had increased since the beginning of the academic year, 59% of the respondents reported that their visits to the dashboard stayed about the same whereas 18% of those questioned reported a decrease.

Finally, 84% of the participants reported “To learn new ways of saving energy” as one of their top-three reasons for viewing the dashboard and league tables. “To see how my own halls of residence/college is performing” and “To see how my own halls of residence/college is performing relative to other halls of residence/colleges at my university” were also important reasons, placed in the first three ranking positions by 82% and 79% of the respondents, respectively.



1 Introduction

1.1 The Student Switch Off campaign

The Student Switch Off (SSO) campaign is an annual inter-dormitory energy-saving campaign that focuses on a predefined set of activities, encouraging students to save energy in their dormitories. The dormitory that saves the most energy on each campus by the end of the academic year is announced winner and rewarded for their efforts. Energy savings are determined by comparing pre-intervention electricity consumption, with post-intervention electricity consumption, in each dormitory.

Through SSO a number of engagement activities and instruments are used in order to enable, empower and motivate students to save energy in their dormitories and to change their everyday habits to more energy conscious ones. The campaign encourages any action that can help save energy with specific attention given to six energy conservation actions:

- Switch off lights in empty rooms
- Avoid leaving electronic equipment on stand-by
- Put a lid on the pan when cooking
- Boil the kettle only with the amount of water you intend to use
- Put on a jumper or an extra blanket instead of turning on the heating
- Open windows to cool down instead of using a cooling device or system

The SSO campaign runs in fourteen universities in seven European countries – Bulgaria, Cyprus, Greece, Ireland, Lithuania, Romania and the United Kingdom (Table 3). This is the third academic year that SSO has been rolled out in Bulgaria, Ireland and Romania. In Cyprus, Greece and Lithuania the SSO campaign was first rolled out in 2014 as part of the [IEE/13/719/SI2.675836 SAVES project](#), while in the UK the campaign has been running since 2006.

Table 3 Universities, dormitories, and students taking part in the SSO campaign in 2019-20

University	Country	No. of dormitories taking part in SSO	No. of students in dormitories taking part in SSO
University of Cambridge	UK	8	4,915
University of Liverpool	UK	7	4,200
University of Nottingham	UK	16	4,262
University of York	UK	9	5,667
National and Kapodistrian University of Athens	EL	4	1,068
Technical University of Crete	EL	1	76
University of Cyprus	CY	12	208
Dublin City University	IE	4	1,400
National University of Ireland, Galway University	IE	2	1,193
National University of Ireland, Maynooth University	IE	9	1,250
University College Cork	IE	5	1,278
Vilnius Gediminas Technical University	LT	5	3,363
University of Bucharest	RO	13	3,790



University	Country	No. of dormitories taking part in SSO	No. of students in dormitories taking part in SSO
The University of Sofia "St. Kliment Ohridski"	BG	9	3,097
TOTAL		104	35,767

1.2 Student engagement activities in academic year 2019-20

A number of engagement activities were carried out in each university this academic year aiming to increase the students' energy awareness and ultimately achieve energy savings, namely:

- Regular competitions on social media
- Termly climate quizzes
- Face-to-face visits on campus
- Communications training for student ambassadors

Table 4 gives an overview of the engagement statistics in each of the seven countries. Specific activities undertaken as part of the Student Switch Off campaign are described in detail as part of the Annual 2019-20 reports created for each of the seven countries. These are publicly available on the SAVES 2 website (<https://saves.unioncloud.org/>). The various social media platforms used in the campaign are indicated in Table 4; FB denotes "Facebook", SC denotes "Snapchat" and IG denotes "Instagram".

Table 4 Summary of engagement statistics for Student Switch Off for academic year 2019-20

Name of University	No. students living in dormitories	No. students signed up to the campaign	% students signed up to the campaign	Number attending the Ambassador training	Climate quiz entries	Photo / online competition entries	Number of social media followers
University of Cambridge	4,915	966	20%	17	2,080	85	FB: 3,407
University of Liverpool	4,200	729	17%	11	746	107	FB: 849
University of Nottingham	4,262	758	18%	42	1,274	102	FB: 259
University of York	5,667	823	15%	55	1,158	125	FB: 980
National and Kapodistrian University of Athens	1,068	211	20%	4	219	90	FB: 352
Technical University of Crete	76	76	100%	4	173	57	FB: 394 IG: 204
University of Cyprus	208	208	100%	17	184	99	FB: 837
Dublin City University	1,400	940	67%	3	96	22	SC: 75 IG: 217 FB: 102



Name of University	No. students living in dormitories	No. students signed up to the campaign	% students signed up to the campaign	Number attending the Ambassador training	Climate quiz entries	Photo/ online competition entries	Number of social media followers
National University of Ireland, Galway University	1,193	1,193	100%	2	96	22	SC: 75 IG: 216 FB: 67
National University of Ireland, Maynooth University	1,250	1,250	100%	1	96	23	SC: 75 IG: 217 FB: 81
University College Cork	1,278	1,278	100%	2	96	23	SC: 75 IG: 216 FB: 112
Vilnius Gediminas Technical University	3,363	3,363	100%	15	285	20	FB: 296
University of Bucharest	3,790	896	24%	24	721	111	(SSO&SSO+) FB: 1,484 IG: 140
Sofia University "St. Kliment Ohridski"	3,097	3081	99%	7	77	3	FB: 171
TOTAL	35,767	15,772		204	7,301	889	FB: 9,391 IG: 1,210 SC: 300 Total: 10,901

1.3 Overview of report

The purpose of the research presented in this report is to quantify the energy savings and behaviour changes that could be attributed to the SSO campaign. The SSO campaign run in seven European countries – Bulgaria, Cyprus, Greece, Ireland, Lithuania, Romania and the United Kingdom. The evaluation period is the academic year 2019-2020.

Chapter 2 of this report provides a description of the methodology followed for the quantification of energy savings and evaluation of change in behaviour and in influencers of behaviour.

Chapter 3 presents the energy data analysis and savings achieved over the academic year in all seven countries and participating universities. Analysis of data was performed at project level, country level, university and dormitory level. For this report, the data is presented at university, country and project level.

Chapter 4 presents the findings of the questionnaire survey analysis. Changes in the behaviour and influencers of behavior of students in participating dormitories are evaluated through pre- and post-competition questionnaire surveys completed by students at the beginning and at the end of the academic year, respectively.

In Chapter 5 an overview of the main findings of this research is presented.



2 Methodology

The aim of this research is to assess the impact of the Student Switch Off campaign on students living in dormitories. The effectiveness of the SSO campaign is evaluated through the level of achieved:

- a) Energy savings
- b) Behaviour change

2.1 Calculation of energy savings

A methodology to calculate energy savings in each dormitory was developed by Ecovisum, based on the International Measurement and Verification Protocol (IPMVP) and the "eeMeasure" methodology (<http://eemeasure.smartspaces.eu>) developed for the EC ICT Policy Support Programme (ICT-PSP). This included a methodology for the establishment of a baseline for each dormitory and a common approach for calculating and reporting savings.

The methodology used to calculate energy savings included the following elements:

- Kilowatt hour (kWh) electricity consumption data was collected from the pre-intervention academic year(s) for each dormitory building to form their baseline. For universities previously involved in SSO (those in Cyprus, Greece, Lithuania and the UK), this was data from the 2013-14 (or earlier) academic year. For universities who were not involved in the SSO campaign (those in Bulgaria, Ireland and Romania), the data used was from the 2016-17 academic year (or earlier).
- Where significant infrastructure and/or occupancy changes have occurred within the dormitories since the baseline period (for example at the University of York, University of Liverpool and Sofia University "St. Kliment Ohridski"), the baseline has been adjusted to reflect this.
- Where feasible, smart meters feeding data from the participating dormitory buildings were connected to the online dashboard¹ developed by Ecovisum. Where automated data transmission was not possible (i.e. absence of smart meters), manual readings were taken, and corresponding data uploaded to the dashboard. Table 3 illustrates the frequency of the data uploaded to the dashboard, and whether it is automated, or manual.
- The electricity consumption data for each dormitory building during the academic year 2019-20 was compared against the baseline data from that dormitory – meaning the dormitory was competing to beat its own baseline usage.
- To accurately report the energy savings to students, degree day analysis was manually performed on universities that had electric heating to take variations in outside temperature into account, and this was then manually adjusted on the dashboard.
- Where data for a month was missing or was erroneous, it was extrapolated based on the average of the data available for other months. This was done for a number of cases and is indicated in the results section (section 3.3). As a minimum, electricity data was compared for three months of the year. Where more data was available, it was included (the highest number of months compared was 8).
- Carbon dioxide (CO₂) savings were calculated based on the amount of electricity saved in each university, and the applicable carbon conversion factor for that country Table 6 shows the conversion factors per country.

Table 5 Frequency and method of uploading data to the dashboard in 2019-20

University	Data received on the dashboard	Data strategy	Data resolution	Data files uploaded
University of Cambridge	Y	manual	daily	Periodically
University of Nottingham	Y	manual	monthly	Only 2 uploads
University of Liverpool	Y	manual	daily	Periodically

¹ <https://switchoff.nus.org.uk/>



University	Data received on the dashboard	Data strategy	Data resolution	Data files uploaded
University of York	Y	manual	monthly	Periodically
National and Kapodistrian University of Athens	Y	automated (push)	15-minutely	Daily
Technical University of Crete	Y	manual	hourly	c10 days
University of Cyprus	Y	manual	hourly	Weekly
Dublin City University	Y	manual	monthly	Monthly
National University of Ireland, Galway	Y	manual	monthly	Monthly
National University of Ireland, Maynooth	Y	manual	monthly	2-weekly
University College Cork	Y	manual	monthly	Monthly
Vilnius Gediminas Technical University	Y	automated (pull)	hourly	Daily
University of Bucharest	Y	Manual	monthly	monthly
Sofia University "St. Kliment Ohridski"	Y	manual	monthly	monthly

Table 6 Carbon conversion factors for SAVES 2 countries²

Country	carbon conversion factor - kgCO ₂ per kWh
Bulgaria	0.61086
Cyprus	0.73521
Greece	0.71821
Ireland	0.41925
Lithuania	0.27000
Romania	0.50845
UK	0.23104

2.2 Evaluation of behaviour and influencers of behaviour change

Changes in the behaviour of students in participating dormitories were evaluated through pre- and post-competition questionnaire surveys. Students in participating dormitories were encouraged to complete a baseline survey at the beginning of the academic year (October 2019), in order for existing energy-saving attitudes, behaviours and habits to be identified, and a follow-up survey at the end of the academic year (May 2020).

The target response rate for the baseline and the follow-up surveys was 15% of students living in each country's dormitories at the beginning of the academic year. This corresponds to 5,366 respondents for the baseline and the follow-up respectively (Table 7).

² https://iq-tools.com/files/International_elec_2015.pdf

Table 7 Target responses for the baseline and follow-up surveys

Country	Total number of students living in SSO dorms in the beginning of the academic year	Surveys' target: 15% of students living in dorms
Bulgaria	3,097	465
Cyprus	208	31
Greece	1,144	172
Ireland	5,121	768
Lithuania	3,363	504
Romania	3,790	569
UK	19,044	2,857
TOTAL	35,767	5,366

2.2.1 Questionnaire surveys and analysis methods

Online versions of the questionnaire surveys were created on LimeSurvey³ in Bulgarian, English, Greek, Lithuanian and Romanian. Channels used to disseminate the questionnaire surveys were mainly university and students' unions mailing lists. Moreover, questionnaire surveys were also distributed through social media platforms and in hardcopy format.

The majority of questions in the follow-up questionnaire were identical to those asked in the baseline survey in order to allow for comparison and evaluation of possible change from the beginning to the end of the academic year.

There was also a number of questions asked at the end of the academic year that were not relevant for the baseline questionnaire. Those involved familiarization of the respondents with the energy dashboard (<https://switchoff.nus.org.uk/>) and students' future lifestyle with regard to their energy saving efforts. The findings from the survey analysis are found in chapter 4 of this report.

The questionnaire included multiple-choice, dichotomous and rating scale questions. In the first type of close ended questions, participants were offered a set of answers they had to choose from while in the second type respondents could choose from "yes" or "no" options. The third type of questions was Likert-scale and preference rank order type. In Likert scale questions respondents were asked about the level of agreement with specific statements. Each option was given a score, which was used to analyze results. The preference rank order questions required sequential ranking from high to low until all factors were ranked.

Two proportion z-test was used for testing the difference between the baseline and follow-up survey proportions.

- The null hypothesis (H_0) for the test is that the proportions are the same.
- The alternate hypothesis (H_1) is that the proportions are **not** the same.

Independent samples t-test was used to determine whether the differences between the baseline and follow-up survey are statistically significant for each of the two groups.

- The null hypothesis (H_0) for the independent t-test is that the population means from the two unrelated groups are equal.
- The alternate hypothesis (H_1) is that the population means from the two unrelated groups are **not** equal.

In both tests, a significance level to either reject or accept the alternative hypothesis is set at 0.05.

³ <https://www.limesurvey.org/>

In addition, P-values are calculated to support or reject the null hypothesis.

- A small p (≤ 0.05) rejects the null hypothesis.
- A large p (> 0.05) does not reject the null.

P-values smaller than 0.05 indicate statistically significant results.

Descriptive statistics were used to analyze the collected data. Mean values and percentages are presented in the results section.

2.2.2 Data collection from questionnaire surveys

The baseline and the follow-up questionnaires were incentivized. In both cases two €25 and one €50 prize incentive were provided. In the case winners were from the UK, prizes were given in local currency (GBP). The three winners for each survey were chosen through common draws for all countries.

In both surveys the criteria for inclusion in the analysis were: i) respondent lives in a participating university dormitory, ii) respondent is older than 18 years old and iii) respondent answers at least one question related to current lifestyle with regard to saving energy.

The total number of baseline survey entries was 3,757. Out of those respondents, 3,249 were valid entries, meaning that they met the criteria for inclusion in a possible baseline survey analysis (Table 8).

The number of entries that were considered valid for the follow-up analysis was 1,466, although 1,730 participated in total. The low participation in the follow-up survey compared to the baseline survey might be attributed to i) the inability to get an all student email sent in some cases (UK and Ireland) due to the COVID-19 pandemic and other emails being prioritized (i.e for their studies moving online) and ii) the fact that no hardcopies of the follow-up survey were used, an effective tool to increase the number of participants, as it was the case in the baseline survey.

Except for Cyprus, it has been a challenge for the other six countries to meet their target responses in both surveys. However, it must be noted that Cyprus had the lowest response target. Cyprus received 50 baseline and 38 follow-up responses in each survey meeting the target of 31 responses. Greece received 195 baseline responses meeting the target of 172 responses but in the end of the year survey this target was not met (102 follow-up responses received). The other five countries achieved lower number of responses than their target responses. In absolute terms, in the follow-up survey, Cyprus received the lowest number of responses (38) followed by Ireland (55) whilst the UK received the highest number of responses (669). With regard to the baseline survey, the UK received the highest number of responses (1850) followed by Romania (430) whereas Bulgaria (139) and Cyprus (50) received the lowest number of responses.

Table 8: Survey response rate in follow-up survey

		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
Baseline	Valid entries	139	50	195	297	288	430	1,850	3,249
Follow-up	Valid entries	127	38	102	55	116	359	669	1,466

The actual number of responses to individual questions for each country and for each survey (baseline and follow-up) are tabulated in Annex I.



3 Energy data analysis and results

This chapter presents the energy data analysis and savings achieved over the academic year 2019-20 in all seven countries and participating universities. Analysis of data was performed at project level, country level, university and dormitory level. For this report, the data is presented at university, country and project level. The "Our Impact 2019-20" report, includes the full data analysis and is accessible through the project website (<https://saves.unioncloud.org/>).

3.1 Europe wide savings

In 2019-20, 1.32 GWh of electricity were saved across all the participating countries compared to the baseline. This saving equates to 489.03 tonnes of CO₂ emissions.

It is noted that in the "Our Impact 2019-20" academic year 2019-20 extrapolated energy savings are also presented. The extrapolation is for data from missing months for Student Switch Off campaigns lasting fewer than nine months. The extrapolation gives an additional saving of 1.444 GWh to what is presented in Table 9. Data was available for 55% of months (64 out of 117) and was extrapolated for 45% of months (53 out of 117). The relatively high level of extrapolation is the result of the campaign ending sooner due to the outbreak of the COVID-19 pandemic across Europe.

Table 9 Energy and carbon saving in the fourteen SAVES 2 universities in 2019-20

	Overall Student Switch Off savings
Baseline usage (kWh)	17,039,962
2019-20 usage (kWh)	15,724,431
kWh saving	1,315,531
% saving	7.72
CO ₂ saving (tonnes)	489.03

3.2 Country specific savings

Table 10 shows the savings per country. Carbon dioxide savings are based on carbon conversion factors in participating countries (Table 6) therefore it is worth noting that whereas in some countries there may be high energy savings, their carbon dioxide savings may appear to be low because of the low carbon conversion factor (attributed to a cleaner electricity grid). Also, the number of dormitory buildings varies between countries thus leading to differences in the level of absolute kWh savings.

Percentage wise, the most energy was saved in Lithuania (26.02%). On the other hand, the UK had the highest absolute energy savings (587,464 kWh) and carbon dioxide savings (135.73 tCO₂) followed by Romania (252.930 kWh and 128.6 tCO₂).

As per Table 10, it is noteworthy that data consumed by the UK universities accounts for 61% of all usage so the results from this country have a significant impact on the overall savings of the project. Table 11 -Table 17 in section 3.3 detail university-specific savings (electricity and carbon) for each of the seven participating countries.

Table 10 Country specific kWh, percentage and carbon dioxide savings based on meter readings in 2019-20

Country	Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK
Baseline usage (kWh)	1,454,884	181,762	1,134,505	1,955,117	758,171	1,420,530	10,134,993



Country	Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK
Usage 2019-20 (kWh)	1,349,592	136,244	1,066,347	1,896,199	560,921	1,167,600	9,547,528
kWh saving	105,292	45,518	68,159	58,918	197,250	252,930	587,464
% saving	7.24	25.04	6.01	3.01	26.02	17.81	5.80
CO ₂ saving (tonnes)	64.32	33.47	48.95	24.70	53.26	128.60	135.73

3.3 University specific savings

This section details energy and carbon savings in each university participating in SAVES 2 in 2019-20. Savings are presented per participating university in each country.

As per Table 11, energy saving was noted in **Bulgaria**; 7.24% was saved at Sofia University 'St. Kliment Ohridski'. This equates to a saving 105,292 kWh and 64.32 tonnes of CO₂.

Table 11 Energy and carbon savings in Bulgarian SAVES 2 universities in 2019-20

	Sofia University "St. Kliment Ohridski"
Baseline usage (kWh)	1,454,884
2019-20 usage (kWh)	1,349,592
kWh saving	105,292
% saving	7.24
CO ₂ saving (tonnes)	64.32
Months used in analysis	6
Extrapolations/ additional analysis	Baseline adjusted to reflect reduced occupancy in 2019-20, compared to the baseline period

As per Table 12, energy saving was noted in **Cyprus**; 25.04% was saved at the University of Cyprus. This equates to a saving 45,518 kWh and 33.47 tonnes of CO₂.

Table 12 Energy and carbon savings in Cypriot SAVES 2 universities in 2019-20

	University of Cyprus
Baseline usage (kWh)	181,762
2019-20 usage (kWh)	136,244
kWh saving	45,518
% saving	25.04
CO ₂ saving (tonnes)	33.47
Months used in analysis	6

As per Table 13, energy saving was noted at both the **Greek** universities, 25.51% and 3.90% at Technical University of Crete and National and Kapodistrian University of Athens respectively (a country average saving of 6.01%). This equates to a total saving of 68,159 kWh and 48.95 tonnes of CO₂.



Table 13 Energy and carbon savings in Greek SAVES 2 universities in 2019-20

	National and Kapodistrian University of Athens	Technical University of Crete
Baseline usage (kWh)	1,023,717	110,788
2019-20 usage (kWh)	983,820	82,527
kWh saving	39,897	28,262
% saving	3.90	25.51
CO ₂ saving (tonnes)	28.65	20.30
Months used in analysis	5	6

As can be noted from Table 14 below, energy was saved across the **Irish** universities taking part in Student Switch Off (where data was available). A saving of 58,918 kWh and 24.7 tonnes CO₂ was observed, which equates to a 3.01% saving when compared to the baseline.

Due to the COVID-19 pandemic, and many university staff absent from work, energy consumption data was not obtained from National University of Ireland, Galway, and thus energy savings could not be calculated.

Table 14 Energy and carbon savings in Irish SAVES 2 universities in 2019-20

	Dublin City University	National University of Ireland, Galway	National University of Ireland, Maynooth	University College Cork
Baseline usage (kWh)	210,118	n/a	422,961	1,322,038
2018-19 usage (kWh)	203,063	n/a	417,762	1,275,374
kWh saving	7,055	n/a	5,199	46,664
% saving	3.36	n/a	1.23	3.53
CO ₂ saving (tonnes)	2.96	n/a	2.18	19.56
Months used in analysis	5	n/a	5	5

As per Table 15, energy saving was noted in **Lithuania**; 26.02% was saved at the Vilnius Gediminas Technical University. This equates to a saving of 197,250 kWh and 53.26 tonnes of CO₂.

Table 15 Energy and carbon savings in SAVES 2 Lithuanian universities in 2019-20

	Vilnius Gediminas Technical University
Baseline usage (kWh)	758,171
2019-20 usage (kWh)	560,921
kWh saving	197,250
% saving	26.02
CO ₂ saving (tonnes)	53.26
Months used in analysis	5



As per Table 16, energy saving was noted in **Romania**; 17.81% was saved at the University of Bucharest. This equates to a saving of 252,930 kWh and 128.6 tonnes CO₂.

Table 16 Energy and carbon savings in SAVES 2 Romanian universities in 2019-20

	University of Bucharest
Baseline usage (kWh)	1,420,530
2019-20 usage (kWh)	1,167,600
kWh saving	252,930
% saving	17.81
CO ₂ saving (tonnes)	128.60
Months used in analysis	6

As can be noted from Table 17 below, energy was saved across three of the four **UK** universities taking part in Student Switch Off. An overall saving of 587,464 kWh and 135.7 tonnes of CO₂ was observed, which equates to 5.8% saving when compared to the baseline.

Table 17 Energy and carbon savings in UK SAVES 2 universities in 2019-20

	University of Nottingham	University of Liverpool	University of Cambridge	University of York
Baseline usage (kWh)	2,939,653	2,292,082	3,268,030	1,635,228
2019-20 usage (kWh)	2,753,321	2,127,192	3,321,956	1,345,059
kWh saving	186,332	164,890	-53,927	290,169
% saving	6.34	7.19	-1.65	17.74
CO ₂ saving (tonnes)	43.05	38.10	-12.50	67.04
Months used in analysis	5	3	4	3
Extrapolations/ additional analysis (if applicable)	Degree day adjustment of electrically heated halls has been applied	Degree day adjustment of electrically heated halls has been applied		

4 Survey Results

This chapter presents the findings of the questionnaire survey analysis. Changes in the behaviour of students in participating dormitories were evaluated through pre- and post-competition questionnaire surveys (baseline and follow-up surveys) completed by students at the beginning and at the end of the academic year. The analysis of these questionnaires helps identify attitudinal, behavioural and habitual changes relating to energy conservation that could be attributed to the SAVES 2 project.

The majority of questions in the follow-up questionnaire were identical to those asked in the baseline survey in order to allow for comparison and evaluation of possible change from the beginning to the end of the academic year. The findings from the analysis are found in section 4.1 of this chapter.

There was also a number of questions asked at the end of the academic year that were not relevant for the baseline questionnaire. These involved familiarization of the respondents with the energy dashboard (<https://switchoff.nus.org.uk/>). The findings from the SSO energy dashboard specific analysis are found in section 4.2 of this chapter.

The actual number of responses to individual questions for each country and for each survey (baseline and follow-up) are tabulated in Annex I.

4.1 Pre- Post- survey analysis

4.1.1 Respondent characteristics

In total, in the end of the academic year survey, 71% of the respondents were women and 28% were men. In addition, 1% preferred not to state their gender whereas 1% reported their gender as being non-binary or in another way. Compared to men respondents, the number of women in both surveys was higher in all countries, except for the baseline survey in Lithuania in which 57% of respondents were men. The biggest proportion of women respondents in the follow-up survey was found in Ireland, Romania and the UK (82%, 78% and 75% respectively).

In total, the majority of follow-up (65%) and baseline (74%) survey respondents were between 18-20 years of age. Thirty-four percent of those questioned in the baseline survey and 35% of the follow-up respondents were 21-24 years of age. In all countries except for Bulgaria and Greece, most of the respondents were between 18-20 of age in both surveys. In Bulgaria, most of the follow up respondents (63%) were 21-24 years of age while in Greece the proportion of respondents that were between 21-24 years of age was higher than the proportion of respondents between 18-20 in both surveys. In addition, in Greece 18% of the baseline respondents and 17% of those answered in the follow-up survey were between 25-29. Ireland and the UK had the youngest population of respondents in both surveys with the majority (>75%) being between 18-20 years of age. Predominantly, in Ireland and the UK, it is first year university students that have the opportunity to stay in university accommodation, unlike in other countries where students can stay in university accommodation for the duration of their studies

Respondents studied all main subjects of study. The biggest share of respondents (29% baseline; 33% follow-up) studied social sciences. The second most represented subject of study (22% in both surveys) was arts or humanities. In Cyprus, Romania and the UK most of the participants in both surveys studied social sciences. In Lithuania the vast majority (>73%) studied architecture, engineering or technology in both surveys, whilst in Cyprus less than 2% of respondents in both surveys studied health sciences or medicine. In Greece, mathematics or physical studies was the main field of study for 41% of the follow-up participants and 26% of those answered the baseline survey. In Ireland even though architecture, engineering or technology courses are offered, less than 10% of those participated in both surveys studied this field. In Bulgaria, overall there was a good mixture of fields of study in the two surveys although less than 10% of respondents studied health sciences or medicine in both surveys.

Overall, in both surveys, more than 89% of respondents were undergraduates and less than 11% were postgraduates. Most of the respondents in the baseline (63%) and follow-up (56%) surveys were in their 1st year of studies followed by those in their 2nd year of studies (>17% in both surveys). The highest proportion of 1st year respondents was recorded in the UK (81% in baseline and 75% in follow-up) something that is expected since 1st year students in the UK normally live in dormitories. On the contrary, in Greece only 7% of those participating in the baseline survey and 12% of those surveyed in the follow-up were in their first year of studies. However, in Greece the biggest percentage of under-graduate respondents over their second year of



studies was recorded (>61% in both surveys). Finally, the biggest share of post-graduate respondents (more than 14% in both surveys) was recorded in Romania.

The vast majority of the respondents were students studying in their own country. Eighty-five percent (85%) of respondents in the baseline survey and 89% in the follow-up studied in their country of origin. In addition, 10% of those questioned in the baseline survey and 7% of those surveyed in the follow-up were international students originating from outside the European Union (EU). The highest share of international students from outside the EU was recorded in the UK (14% baseline, 13% follow-up). On the other hand, in both surveys, the highest share of international students from within the EU was recorded in Cyprus (26% baseline, 29% follow-up). The demographics of respondents are presented in Table 18; the letter B denotes "Baseline" and the letter F denotes "Follow-up" survey.

Table 18 Demographics of respondents

	Bulgaria		Cyprus		Greece		Ireland		Lithuania		Romania		UK		Total	
	B	F	B	F	B	F	B	F	B	F	B	F	B	F	B	F
Gender																
Woman	57%	68%	74%	65%	51%	54%	69%	82%	42%	54%	71%	78%	64%	75%	63%	71%
Man	42%	32%	24%	30%	44%	45%	30%	18%	57%	45%	28%	21%	35%	24%	36%	28%
In another way/ Non - binary	0%	0%	0%	2%	1%	0%	0%	0%	1%	0%	1%	0%	1%	1%	1%	1%
Prefer not to say	1%	1%	2%	3%	4%	1%	1%	0%	1%	1%	0%	1%	1%	0%	1%	1%
Age																
18-20	53%	36%	64%	63%	29%	30%	77%	75%	68%	55%	61%	59%	85%	80%	74%	65%
21-24	45%	63%	30%	29%	53%	51%	20%	22%	31%	43%	36%	37%	12%	14%	22%	30%
25-29	1%	1%	6%	8%	18%	17%	3%	4%	1%	2%	2%	4%	2%	4%	3%	4%
30+	1%	0%	0%	0%	0%	2%	0%	0%	0%	0%	1%	1%	1%	2%	1%	1%
Field of study																
Architecture / Engineering / Technology	25%	21%	8%	13%	14%	8%	8%	9%	73%	74%	4%	6%	13%	11%	17%	16%
Arts / Humanities	11%	28%	26%	16%	26%	29%	37%	22%	4%	3%	25%	23%	22%	24%	22%	22%
Health Sciences / Medicine	6%	9%	2%	2%	17%	12%	20%	33%	1%	0%	23%	7%	22%	21%	19%	14%
Mathematics / Physical Sciences	26%	18%	24%	32%	26%	41%	13%	14%	6%	9%	7%	7%	13%	15%	13%	15%
Social Sciences	32%	24%	40%	37%	17%	10%	22%	22%	16%	14%	41%	57%	30%	29%	29%	33%
Year of study																
Under Graduate - 1st Year University/Col lege	32%	22%	36%	42%	7%	12%	58%	51%	55%	48%	35%	50%	81%	75%	63%	56%
Under Graduate - 2nd Year University/Col lege	23%	24%	18%	21%	16%	17%	14%	27%	14%	18%	27%	16%	6%	8%	11%	14%
Under Graduate - >2nd Year University/Col lege	42%	52%	38%	29%	67%	61%	21%	16%	29%	32%	22%	14%	6%	8%	17%	20%



	Bulgaria		Cyprus		Greece		Ireland		Lithuania		Romania		UK		Total	
	B	F	B	F	B	F	B	F	B	F	B	F	B	F	B	F
Post Graduate - Studying for Masters	3%	2%	6%	8%	9%	11%	7%	6%	3%	2%	14%	19%	7%	7%	8%	9%
Post Graduate - Studying for Doctorate	0%	0%	2%	0%	1%	0%	0%	0%	0%	0%	1%	1%	0%	2%	1%	1%
Nationality																
Students studying in their country of origin	99%	100%	74%	71%	93%	99%	79%	89%	100%	99%	95%	97%	80%	80%	85%	89%
International students from within the EU	0%	0%	26%	29%	2%	1%	7%	0%	0%	1%	2%	0%	6%	7%	5%	4%
International students from outside the EU	1%	0%	0%	0%	5%	0%	14%	11%	0%	0%	3%	3%	14%	13%	10%	7%

4.1.2 Energy saving efforts

Students were asked to rate their energy saving effort in their everyday life out of a predefined list of options (Figure 1). A two proportion z-test was used to determine whether the differences between the baseline and follow-up survey proportions are statistically significant. P-values smaller than 0.05 indicate statistically significant differences. The results are illustrated in Figure 1 and presented in Table 19.

In the end of year survey, higher proportions of respondents tried to save energy in everything they did (+1% increase) and in most things they did (+2% increase). In addition, a statistically significant higher share of respondents stated that "I do quite a few things to save energy" (+5% increase, $z=-3.24$, $p<0.001$) than in the baseline survey. On the contrary, a statistically significant smaller share of respondents stated that "I do one or two things to save energy" (-6% decrease, $z=3.80$, $p<0.001$). Furthermore, a -2% statistically significant ($z=2.30$, $p=0.01$) reduction is observed in the follow-up survey in those questioned who stated that they didn't really do anything to save energy. In total, 32% of the follow-up survey respondents stated that "I do quite a few things to save energy" (+6% increase) followed by 28% of those who tried to save energy in most things they did (+2% increase) and those stated that "I do one or two things to save energy" (28%, -6% decrease).

According to the follow-up survey results, in Bulgaria (39%) and the UK (35%) the most popular response was "I do one or two things to save energy". In Cyprus (42%) and in Lithuania (44%) most of the respondents stated that "I try to save energy in most things I do". In Greece (37%), Ireland (40%) and Romania (36%), more than one third of those participated stated that "I do quite a few things to save energy".

According to the baseline survey results, in Bulgaria (49%), Greece (32%) and the UK (38%) the most frequent response was "I do one or two things to save energy" whereas in Cyprus (46%), Ireland (30%) and in Lithuania (35%) the most popular response was "I try to save energy in most things I do". In Romania (32%) participants mostly stated that "I do quite a few things to save energy".

The most popular responses given by respondents in each country are described in the following paragraphs.



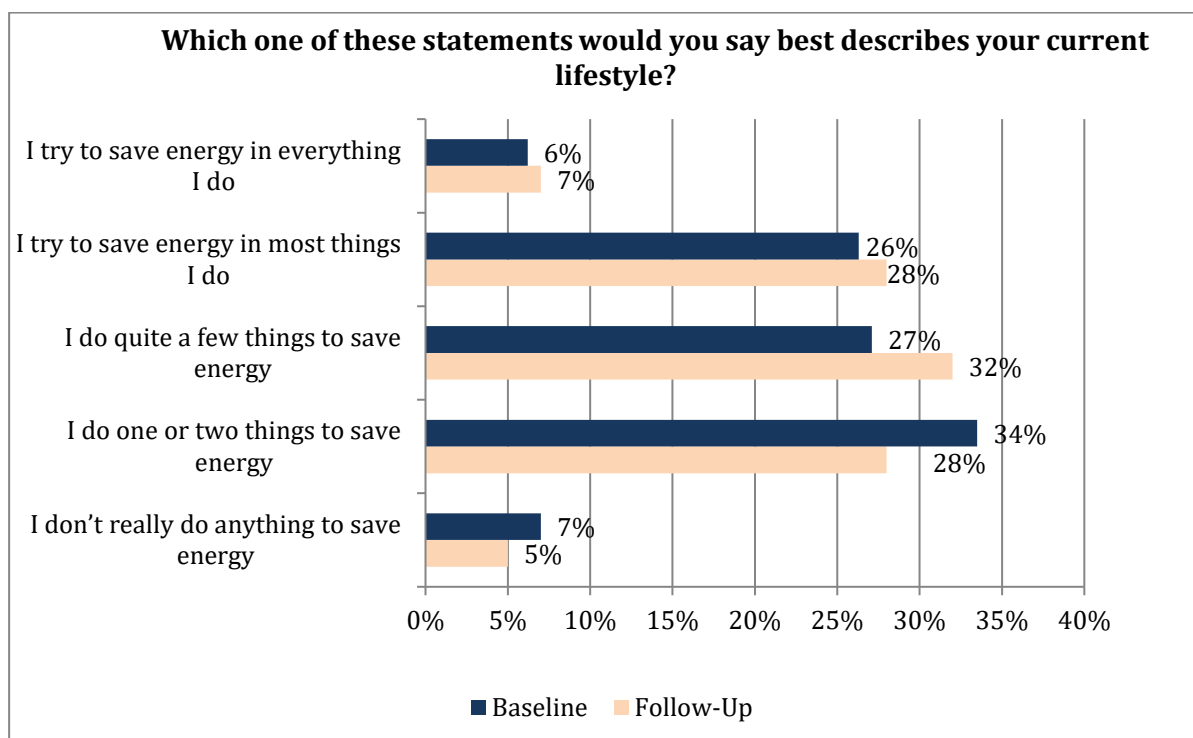


Figure 1. Energy saving efforts - Total sample

In **Bulgaria**, at the end of the academic year, 39% of the respondents stated that they did one or two things to save energy, followed by those that were doing quite a few things to save energy (32%). At the beginning of the academic year 49% of those surveyed stated "I do one or two things to save energy" and 24% "I try to save energy in most things I do"

A statistically significant difference was observed between the baseline and follow-up survey in the statement:

- "I do quite a few things to save energy", +17% increase, ($z=-3.33$, $p<0.01$)

In **Cyprus**, 42% of the participants in the follow-up survey responded that they tried to save energy in most things they did, whereas 24% replied that they tried to save energy in everything they did. Forty-six percent (46%) of those questioned in the baseline survey stated that "I try to save energy in most things I do" and 26% "I do quite a few things to save energy". A +6% increase is observed in the share of those who stated that "I try to save energy in everything I do" and a -5% decrease with regard to "I do quite a few things to save energy" statement. However, the observed differences between the baseline and the follow-up survey were not statistically significant.

In **Greece**, 37% of the follow-up respondents replied that they did quite a few things to save energy, followed by those that tried to save energy in most things they did (33%) while 25% reported "I do one or two things to save energy". At the beginning of the academic year 32% of those surveyed stated "I do one or two things to save energy" and 26% "I try to save energy in most things I do"

A statistically significant difference was observed between the baseline and follow-up survey in the statements:

- "I do one or two things to save energy", -14% decrease, ($z=-2.52$, $p<0.01$)
- "I do quite a few things to save energy", +12% increase, ($z=-2.08$, $p=0.02$)

In **Ireland**, 40% of those who participated in the follow-up survey stated that they did quite a few things to save energy (+12% increase from baseline) followed by those who tried to save energy in most things they did (26%, -4% decrease). In the baseline survey, 30% of those questioned stated "I try to save energy in most things I do" and 29% replied "I do one or two things to save energy". Another 28% reported that "I do quite a few things to save energy". The observed differences between the baseline and the follow-up survey in Ireland were not statistically significant.

In **Lithuania**, those that participated in the follow-up survey were mostly those who tried to save energy in most things they did (44%, +9% increase from baseline). Twenty-four percent (24%) stated that they did quite a few things to save energy (+4% increase) followed by those who did one or two things to save energy (22%, -7%

decrease). In the baseline survey, 35% of the respondents stated that “I try to save energy in most things I do” and another 29% said that “I do one or two things to save energy”. No statistically significant differences were observed between the baseline and the follow-up survey.

In **Romania** 36% of those surveyed in the follow-up survey responded that they did quite a few things to save energy (+4% increase) and 33% responded that they tried to save energy in most things they did (+2% increase from baseline). In the baseline survey, 32% stated that “I do quite a few things to save energy” and 31% replied that “I try to save energy in most things I do”. No statistically significant differences were observed between the baseline and the follow-up survey.

Finally, in the **UK**, 35% of the participants in the follow-up survey responded that they did one or two things to save energy (-3% decrease from baseline), 30% of those surveyed did quite a few things to save energy (+2% increase) and 24% stated “I try to save energy in most things I do” (+1% increase from baseline). No statistically significant differences were observed between the baseline and the follow-up survey.

Table 19 Energy saving lifestyle – per country and total sample

Which one of these statements would you say best describes your current lifestyle?		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
I don't really do anything to save energy	Follow-Up	6%	0%	6%	0%	6%	5%	6%	5%
	Difference from Baseline	-1%	-2%	0%	-3%	-5%	-2%	-2%	-2%*
I do one or two things to save energy	Follow-Up	39%	13%	18%	18%	22%	19%	35%	28%
	Difference from Baseline	-10%	5%	-14%*	-10%	-7%	-2%	-3%	-6%*
I do quite a few things to save energy	Follow-Up	32%	21%	37%	40%	24%	36%	30%	32%
	Difference from Baseline	17%*	-5%	12%*	12%	4%	4%	2%	5%*
I try to save energy in most things I do	Follow-Up	18%	42%	33%	26%	44%	33%	24%	28%
	Difference from Baseline	-6%	-4%	7%	-4%	9%	2%	1%	2%
I try to save energy in everything I do	Follow-Up	6%	24%	6%	16%	4%	8%	5%	7%
	Difference from Baseline	0%	6%	-4%	6%	0%	-1%	1%	1%

*statistically significant difference

4.1.3 Perceived level of information about saving energy in the hall

Respondents were asked about the level of information that they feel they have about what they personally can do to save energy in their hall of residence. Results are presented in Table 20 and illustrated in Figure 2 on a 1 to 5 scale (1 = Very badly informed, 3 = Neither well nor badly informed, 5, = Very well informed). Mean values over 3.5 indicate good perceived level of information on the specific topic. A low standard deviation (SD) indicates that the given answers tend to be close to the mean value, while a high standard deviation indicates that the given answers are spread out over a wider range of values. An independent samples t-test was used to determine whether the differences in the mean values recorded in the baseline and follow-up survey are statistically significant. P-values smaller than 0.05 indicate statistically significant differences in the mean value.

Overall, respondents felt neither well nor badly informed about what they can personally do to save energy in their hall in both the baseline and follow-up surveys. In the follow-up survey (M=3.21, SD=1.06) respondents



felt more informed than those responded in the baseline survey ($M=2.93$, $SD=1.02$) presenting a statistically significant increase of +9% in the mean value, ($t(4710)=-8.48$, $p<0.01$).

At the end of the academic year, respondents in all seven countries felt better informed about what they can personally do to save energy in their hall of residence or college compared to the beginning of the academic year.

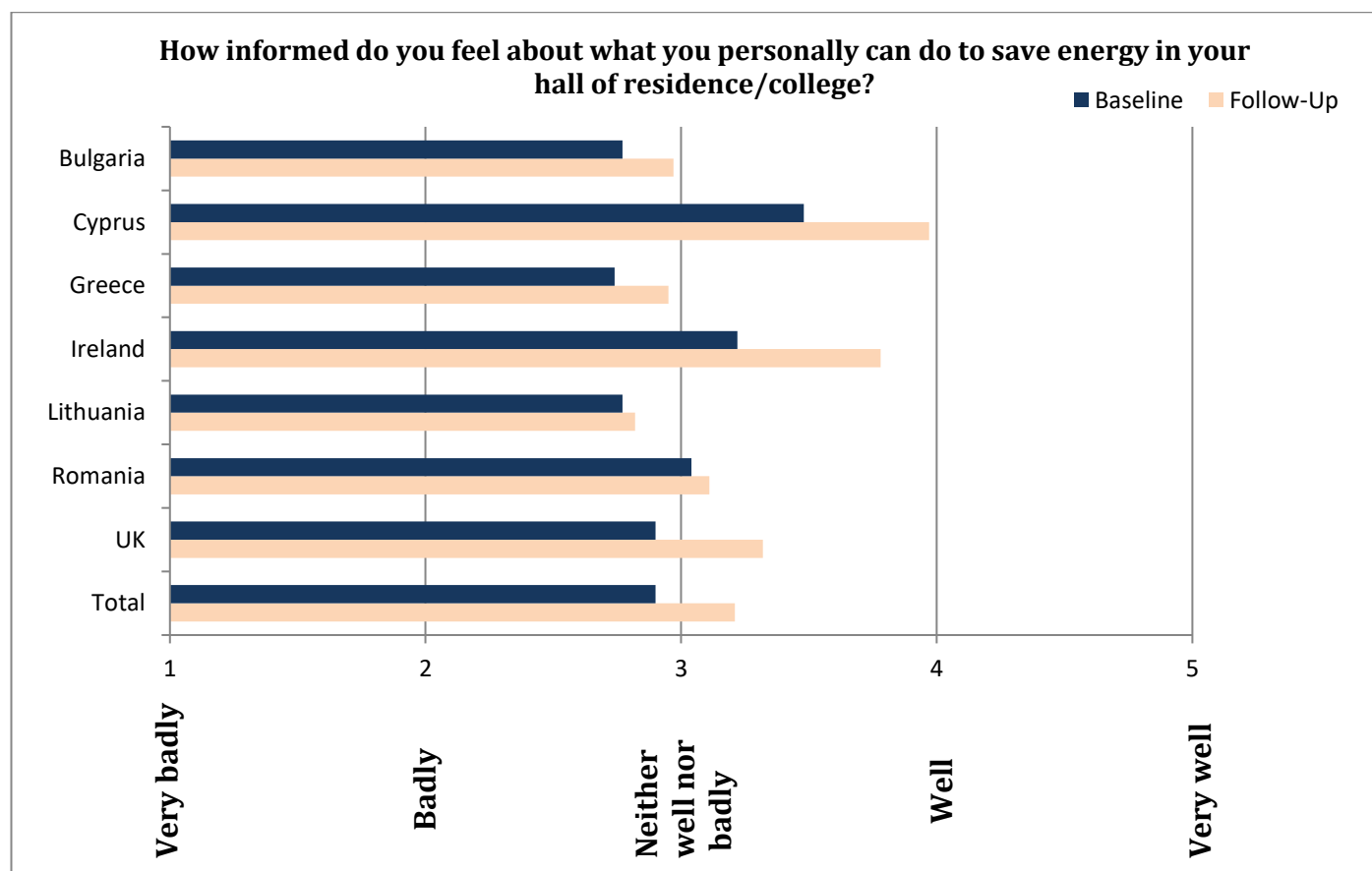


Figure 2 Level of information about what respondents can do to save energy in their hall -Total sample

In **Bulgaria**, those surveyed in the follow-up survey stated that they felt “Neither well nor badly” informed ($M=2.97$, $SD=1.19$) about what they can do to save energy in their hall. However, those that responded in the baseline survey felt less informed ($M=2.77$, $SD=1.16$) presenting a +7% increase in the mean value, which was not statistically significance.

In **Cyprus**, respondents of the follow-up survey felt “Well” informed about what they can do to save energy in their hall ($M=3.83$, $SD=0.89$) while those responded in the baseline survey felt less informed ($M=3.48$, $SD=1.22$). The observed increase of +14% in mean values from the beginning of the academic year in their level of information is statistically significant ($t(86)=-2.05$, $p= 0.04$)

In **Greece**, in the follow-up survey, respondents felt “Neither well nor badly” informed ($M=2.95$, $SD=1.16$) while those that participated in the baseline survey felt less informed than those in the follow-up ($M=2.74$, $SD=1.08$). However, the difference (+8%) in the mean value was not statistically significant.

In **Ireland**, respondents in the follow-up survey felt “Well” informed ($M=3.78$, $SD=0.76$) whereas those that responded in the baseline survey seemed to be feeling “Neither well nor badly” informed ($M=3.22$, $SD=0.94$). The observed +17% increase from baseline is statistically significant ($t(87)=-4.81$, $p<0.01$)

In **Lithuania**, those questioned in the follow-up survey said that they were feeling rather “Neither well nor badly” informed than “Badly” informed ($M=2.82$, $SD=1.05$) while those that responded in the baseline survey felt

relatively badly informed ($M=2.77$ $SD=1.12$). However, the difference (+2%) in the mean value was not statistically significant.

In **Romania**, respondents in the follow-up survey ($M=3.11$, $SD=1.12$) felt “Neither well nor badly” informed. About the same level of information was observed also in the baseline survey ($M=3.04$, $SD=0.97$).

Finally, in the **UK**, respondents in the follow-up survey ($M=3.32$, $SD=0.95$) felt “Neither well nor badly” informed while those questioned in the baseline survey felt less informed than those in the follow-up ($M=2.90$, $SD=0.97$). The observed difference in mean values is statistically significant with a +14% increase ($t(2517)=-9.54$, $p<0.01$) in the level of respondents’ information.

Table 20 Level of information about what respondents can do to save energy in their hall- per country and total sample

How informed do you feel about what you personally can do to save energy in your hall?							
	Baseline		Follow-Up		Change in mean value	Change in mean value (%)	P Value
	M	SD	M	SD			
Bulgaria	2.77	1.16	2.97	1.19	0.20	7%	0.17
Cyprus	3.48	1.22	3.97	0.97	0.49	14%*	0.04
Greece	2.74	1.08	2.95	1.16	0.21	8%	0.13
Ireland	3.22	0.94	3.78	0.76	0.56	17%*	<0.01
Lithuania	2.77	1.12	2.82	1.05	0.05	2%	0.67
Romania	3.04	0.97	3.11	1.12	0.07	2%	0.33
UK	2.90	0.97	3.32	0.95	0.42	14%*	<0.01
Total	2.93	1.02	3.21	1.06	0.28	9%*	<0.01

*statistically significant difference

4.1.4 Feelings about Saving Energy

Respondents were asked to describe, from a targeted list of words, their feelings about saving energy. Some of the feelings are classed as positive (Content, Proud, Optimistic) and some are classed as negative (Guilty, Anxious, Frustrated) whereas the feeling of indifference is also included in the targeted list. A two proportion z-test was used to determine whether the differences between the baseline and follow-up survey proportions are statistically significant. The results are illustrated in Figure 3 and presented in Table 21.

In the follow-up survey, 65% of the total sample selected words with positive meaning (Content, Proud, Optimistic) while 24% selected words with a negative meaning (Guilty, Anxious, Frustrated). Moreover, at the end of the academic year fewer participants (-2%) stated that they felt indifferent about saving energy. In the baseline survey, 61% of the total sample had positive feelings, 25% had negative feelings and 13% felt indifferent about saving energy.

In total, 35% of the respondents in the follow-up survey felt optimistic about saving energy, 21% felt content and 12% guilty. In the baseline survey, 33% of the respondents felt optimistic and 19% felt content. Moreover, in both surveys the same share (9%) of respondents felt proud about saving energy.

Statistically significant differences were observed, between the beginning and the end of the year surveys in the following feelings:

- “Content”, +2% increase ($z=-1.98$, $p=0.023$).
- “Indifferent”, -2% decrease ($z=-2.02$, $p=0.022$).

The most frequently given responses by those surveyed in each country are described in the following paragraphs.



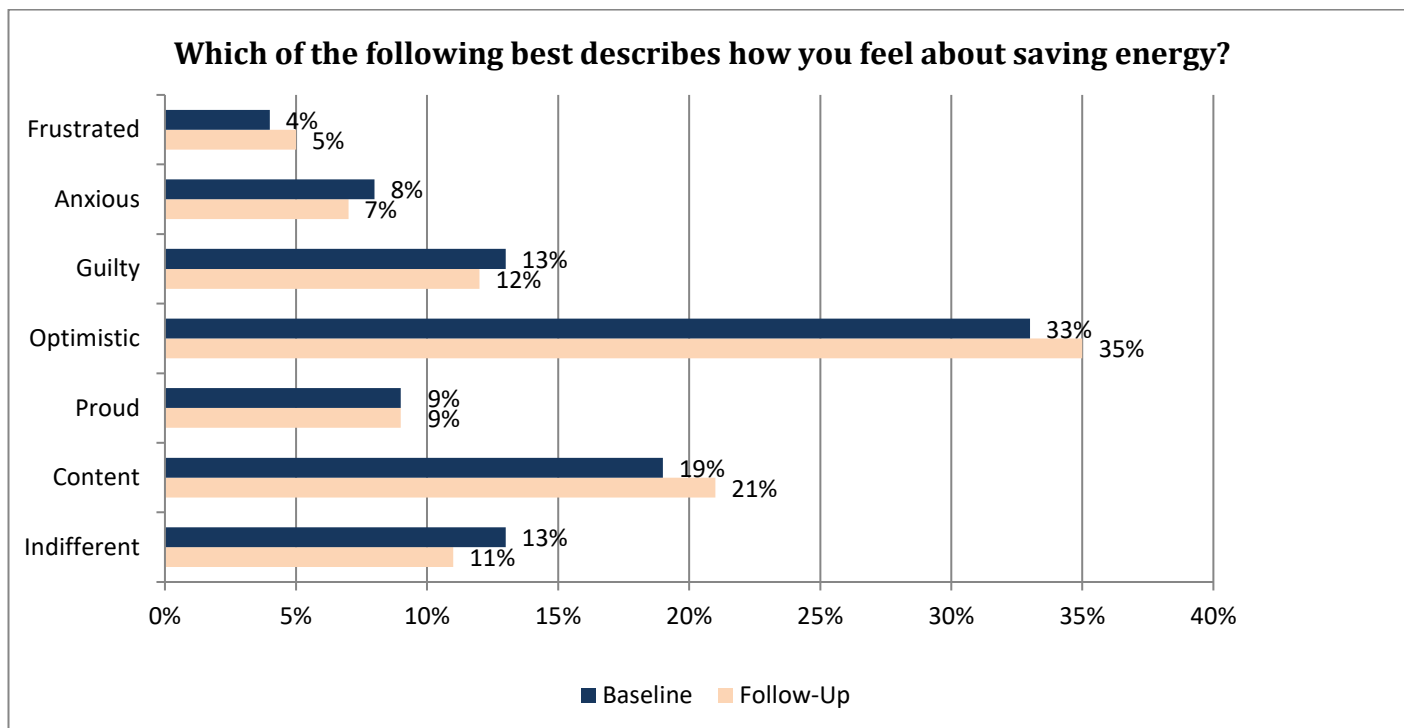


Figure 3 Feelings about saving energy - Total sample

In **Bulgaria**, at the end of the year, 36% of the participants responded that they felt optimistic towards saving energy whereas 18% felt anxious. In the baseline survey, respondents felt mostly optimistic (32%) and anxious (31%).

A statistically significant difference was observed between the baseline and follow-up survey in the statement:

- "Anxious", +13% increase ($z=-2.26$, $p=0.01$)

This observed increase in the share of those who reportedly felt "anxious" might be attributed to the newly acquired knowledge about climate change and its links to saving energy which could be stressful to them as they might feel they were not doing enough to combat climate change.

In **Cyprus**, almost half of the respondents (47%) felt content about saving energy, followed by those that felt optimistic (31%) while no respondent felt frustrated about energy saving (0%). Forty-four percent (44%) of the respondents at the baseline survey felt content, 27% felt optimistic and 17% proud. Differences between the baseline and the follow-up survey were not statistically significant.

In **Greece** 29% of those surveyed responded that they felt content about saving energy, followed by those that were feeling optimistic (27%) whilst 13% felt guilty. Similarly, in the baseline survey, respondents were feeling mainly optimistic (26%), content (20%) and guilty (16%).

A statistically significant difference was observed between the baseline and follow-up survey in the statement:

- "indifferent", -12% decrease ($z=-2.65$, $p<0.01$)

The observed statistically significant decrease in the share of those who felt indifference might be attributed to the reported higher levels of awareness in the end of the academic year on what respondents could do to save energy in their everyday life.

In **Ireland** more than one third of the respondents (37%) felt optimistic about saving energy, while another 24% felt content and another 12% felt frustrated. Those who responded to the baseline survey replied that they felt optimistic (36%), content (18%) and proud (13%). Differences between the baseline and the follow-up survey were not statistically significant.

In **Lithuania**, 43% of the respondents were feeling optimistic about saving energy, while 23% of the respondents felt anxious and 15% of the respondents stated that they felt content. The respondents in the baseline survey felt mainly optimistic (39%) and anxious (23%). Differences between the baseline and the follow-up survey were not of statistical significance.

In **Romania**, 48% of the respondents felt optimistic about saving energy, 23% reported that they felt content and 11% felt proud. In the baseline survey, respondents were feeling mainly optimistic (48%) and content (19%). Differences between the baseline and the follow-up survey were not of statistical significance.

Finally, in **UK**, at the end of the year, 27% of the respondents reported that they felt optimistic about saving energy, 20% felt content whereas 16% felt frustrated. Those who responded to the baseline survey replied that they felt optimistic (29%), content (19%) and guilty (16%).

A statistically significant difference was observed between the baseline and follow-up survey in the statement:

- “Frustrated “, +2% increase ($z=-2.31$, $p=0.01$)

This observed increase in the share of those who reportedly felt frustration might be attributed to things they could not control (for example, centrally controlled heating, automatic lighting or a non-energy conscious flat mate) and as a result they could not save as much energy as they would like to.

Table 21 Feelings about saving energy - total sample and per country

Feelings about saving energy		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
Frustrated	Follow-up	5%	0%	4%	12%	2%	3%	6%	5%
	Baseline	4%	0%	2%	6%	3%	4%	4%	4%
	difference from baseline	1%	0%	2%	6%	-1%	-1%	2%*	1%
Anxious	Follow-up	18%	3%	8%	8%	23%	1%	5%	7%
	Baseline	31%	2%	10%	6%	23%	3%	6%	8%
	difference from baseline	13%*	1%	-2%	2%	0%	-2%	-1%	-1%
Guilty	Follow-up	7%	8%	13%	10%	8%	8%	16%	12%
	Baseline	10%	2%	16%	12%	8%	7%	16%	13%
	difference from baseline	-3%	6%	-3%	-2%	0%	1%	0%	-1%
Optimistic	Follow-up	36%	31%	27%	37%	43%	48%	27%	35%
	Baseline	32%	27%	26%	36%	39%	48%	29%	33%
	difference from baseline	4%	4%	1%	1%	4%	0%	-2%	2%
Proud	Follow-up	2%	8%	11%	6%	4%	11%	10%	9%
	Baseline	2%	17%	6%	13%	2%	10%	10%	9%
	difference from baseline	0%	-9%	5%	-7%	2%	1%	0%	0%
Content	Follow-up	17%	47%	29%	24%	15%	23%	20%	21%
	Baseline	10%	44%	20%	18%	14%	19%	19%	19%
	difference from baseline	7%	3%	9%	6%	1%	4%	1%	2%*
Indifferent	Follow-up	15%	3%	8%	4%	5%	7%	15%	11%
	Baseline	10%	8%	20%	7%	10%	9%	15%	13%
	difference from baseline	5%	-5%	-12%*	-3%	-5%	-2%	0%	-2%*

*statistically significant difference

4.1.5 Behavioural antecedents on energy related topics

Respondents were asked to consider and indicate the extent to which they agree or disagree with given statements regarding the following topics:

- Energy use



- Saving energy
- Climate Change

Results are presented in Table 22 to Table 35 and illustrated in Figure 4 on a 1 to 5 scale (1 = Strongly disagree, 3=Neither agree nor disagree, 5 = Strongly agree). The higher the mean value (M) the greater the agreement with the statement. Mean values over 3.5 indicate agreement with the statement. A low standard deviation (SD) indicates that the given answers tend to be close to the mean value, while a high standard deviation indicates that the given answers are spread out over a wider range of values. An independent samples t-test was used to determine whether the differences in the mean values recorded in the baseline and follow-up survey are statistically significant.

In total, at the end of the academic year, respondents mostly agreed that "Global warming is a problem for society" (M=4.60, SD=0.70) whereas respondents disagreed with the statement "Saving energy is too much of a hassle" (M=2.09, SD=0.83).

Statistically significant differences between the baseline and the follow-up surveys were observed in the following statements:

- "I feel in complete control over how much energy I use in general", +2% increase in the mean value ($t(4394)=-2.24$, $p=0.025$).
- "Saving energy means I have to live less comfortably", +3% increase in the mean value ($t(2729)=2.17$, $p=0.03$)
- "Most people who are important to me think that I should use less energy", -3% decrease in the mean value ($t(4395)=2.14$, $p=0.031$)
- "Saving energy is too much of a hassle", -4% decrease in the mean value ($t(2825) = 3.34$, $p<0.01$).

Respondents from all countries, in both surveys, agreed on six out of the nine provided statements. Those were a) global warming is a problem for society, b) energy conservation contributes to a reduction of climate change impacts, c) everyone including themselves is responsible for the exhaustion of energy sources, d) everyone including themselves is responsible for climate change, e) they feel morally obliged to save energy, regardless of what others do and f) they intend to try harder to reduce their energy use this academic year.

Furthermore, in both surveys, a "Disagree" to "Neither agree nor disagree" tendency is reported in all countries with regard to "Most people who are important to me think that I should use less energy" and "Saving energy means I have to live less comfortably". In all countries, respondents mostly disagreed that "Saving energy is too much of a hassle".

In **Bulgaria**, respondents from the follow-up questionnaire, agreed that everyone including themselves are responsible for the exhaustion of energy resources (M=4.14, SD=0.97), that global warming is a problem for society (M=4.40, SD=0.96) and that everyone including themselves is responsible for climate change (M=3.96, SD=1.17). However, they disagreed with the statements "Most people who are important to me think that I should use less energy" (M=2.23, SD=1.12) and "Saving energy is too much of a hassle".

A statistically significant difference from the baseline survey is observed in the following statement:

- "Most people who are important to me try to pay attention to their energy use ", +13% increase in the mean value ($t(229)=-2.5$, $p=0.01$).

In **Cyprus**, follow-up respondents agreed that energy conservation contributes to a reduction of climate change impacts (M=4.42, SD=0.65), that they feel morally obliged to save energy regardless of what others do (M=4.25, SD=0.65) and that global warming is a problem for society (M=4.53, SD=0.61) while they disagreed that saving energy is too much of a hassle (M=2.00, SD=1.04) and that "saving energy means I have to live less comfortably" (M=2.19, SD=0.75). No statistically significant differences were observed between the beginning and the end of the year surveys.

In **Greece**, respondents at the end of the academic year agreed that global warming is a problem for society (M=4.31, SD=0.53) and that energy conservation contributes to a reduction of climate change impacts (M=4.12, SD=0.55) while they were leaning to agree that everyone including themselves is responsible for the exhaustion of energy sources (M=3.90, SD=0.70) as well for climate change (M=3.95, SD=0.68). Respondents in Greece neither agreed nor disagreed with the statement "I feel in complete control over how much energy I use in general" (M=2.79, SD=0.82) whilst they disagreed that saving energy is too much of a hassle (M=2.01, SD=0.73).



Statistically significant differences from the beginning of the academic year are observed in the following statements:

- "Most people who are important to me think that I should use less energy", +13% increase in the mean value, ($t(260) = -3.04$, $p < 0.01$).
- "Saving energy is too much of a hassle" -15% decrease in the mean value ($t(247) = 1.99$, $p = 0.048$).
- "In general, I can reduce my energy use quite easily", -10% decrease in the mean value, ($t(230) = 3.8$, $p < 0.01$).
- "I intend to try harder to reduce my energy use this academic year", +5% increase in the mean value, ($t(255) = -2.2$, $p = 0.03$).

With regard to the observed -10% decrease in the follow-up survey concerning the statement "in general, I can reduce my energy use quite easily", this might be attributed to the fact that respondents don't have any feedback on their personal energy consumption and this might have prevented them from seeing the impact they had as individuals.

In **Ireland**, at the end of the academic year, respondents agreed that global warming is a problem for society ($M = 4.75$, $SD = 0.74$), that everyone including themselves is responsible for climate change ($M = 4.49$, $SD = 0.73$) as well for the exhaustion of the energy sources ($M = 4.24$, $SD = 0.89$) and that energy conservation contributes to a reduction of climate change impacts ($M = 4.43$, $SD = 0.57$). Furthermore, participants in Ireland neither agreed nor disagreed that they feel in complete control over how much energy they use in general ($M = 3.00$, $SD = 1.00$) while they disagreed the most with the statement that saving energy is too much of a hassle ($M = 1.75$, $SD = 0.69$). No statistically significant differences were observed between the beginning and the end of the year surveys.

In **Lithuania**, follow-up respondents agreed that global warming is a problem for society ($M = 4.43$, $SD = 0.90$), and that everyone including themselves is responsible for climate change ($M = 4.29$, $SD = 0.85$) as well for the exhaustion of the energy sources ($M = 4.36$, $SD = 0.80$). On the other hand, respondents in the end of the year survey disagreed the most with the statement "Most people who are important to me think that I should use less energy" ($M = 2.03$, $SD = 0.96$).

A statistically significant difference from the baseline survey is observed in the following statement:

- "Saving energy means I have to live less comfortably", +2% increase in the mean value ($t(379) = 2.03$, $p = 0.04$).

In **Romania**, respondents at the end of the academic year agreed that global warming is a problem for society, ($M = 4.61$, $SD = 0.65$), that everyone including themselves is responsible for the exhaustion of energy sources ($M = 4.33$, $SD = 0.70$) as well that everyone including themselves is responsible for climate change ($M = 4.36$, $SD = 0.74$) and that energy conservation contributes to a reduction of climate change impacts ($M = 4.18$, $SD = 0.70$). Statistically significant differences between the end and the beginning of the academic year surveys are observed in the following statements:

- "Most people who are important to me think that I should use less energy", -6% decrease in the mean value ($t(713) = 2.17$, $p = 0.03$).
- "Everyone including myself is responsible for the exhaustion of energy sources", +4% increase in the mean value, ($t(708) = -2.65$, $p < 0.01$).
- "Saving energy is too much of a hassle", -14% decrease in the mean value, ($t(729) = 5.21$, $p < 0.01$).
- "Everyone including myself is responsible for climate change", +6% increase in the mean value, ($t(709) = -3.81$, $p < 0.01$).

Finally, in the **UK**, follow-up respondents also agreed that global warming is a problem for society ($M = 4.71$, $SD = 0.64$), that everyone including themselves is responsible for the exhaustion of energy sources ($M = 4.12$, $SD = 0.82$) as well as that they are responsible for climate change ($M = 4.26$, $SD = 0.86$), that energy conservation contributes to a reduction of climate change impacts ($M = 4.22$, $SD = 0.68$), and that they feel morally obliged to save energy regardless of what others do ($M = 4.04$, $SD = 0.81$).

Statistically significant differences are observed in the following statements:

- "Most people who are important to me think that I should use less energy", -7% decrease in the mean value ($t(2354) = 4.35$, $p < 0.01$).
- "As a student living on campus, I should be more concerned about my energy use during my stay there", -5% decrease in the mean value, ($t(2354) = 4.25$, $p < 0.01$).
- "I feel morally obliged to save energy, regardless what others do", +3% increase in the mean value ($t(1185) = -2.56$, $p = 0.01$).



Please consider each of the statements below, and indicate to what extent you agree or disagree with it

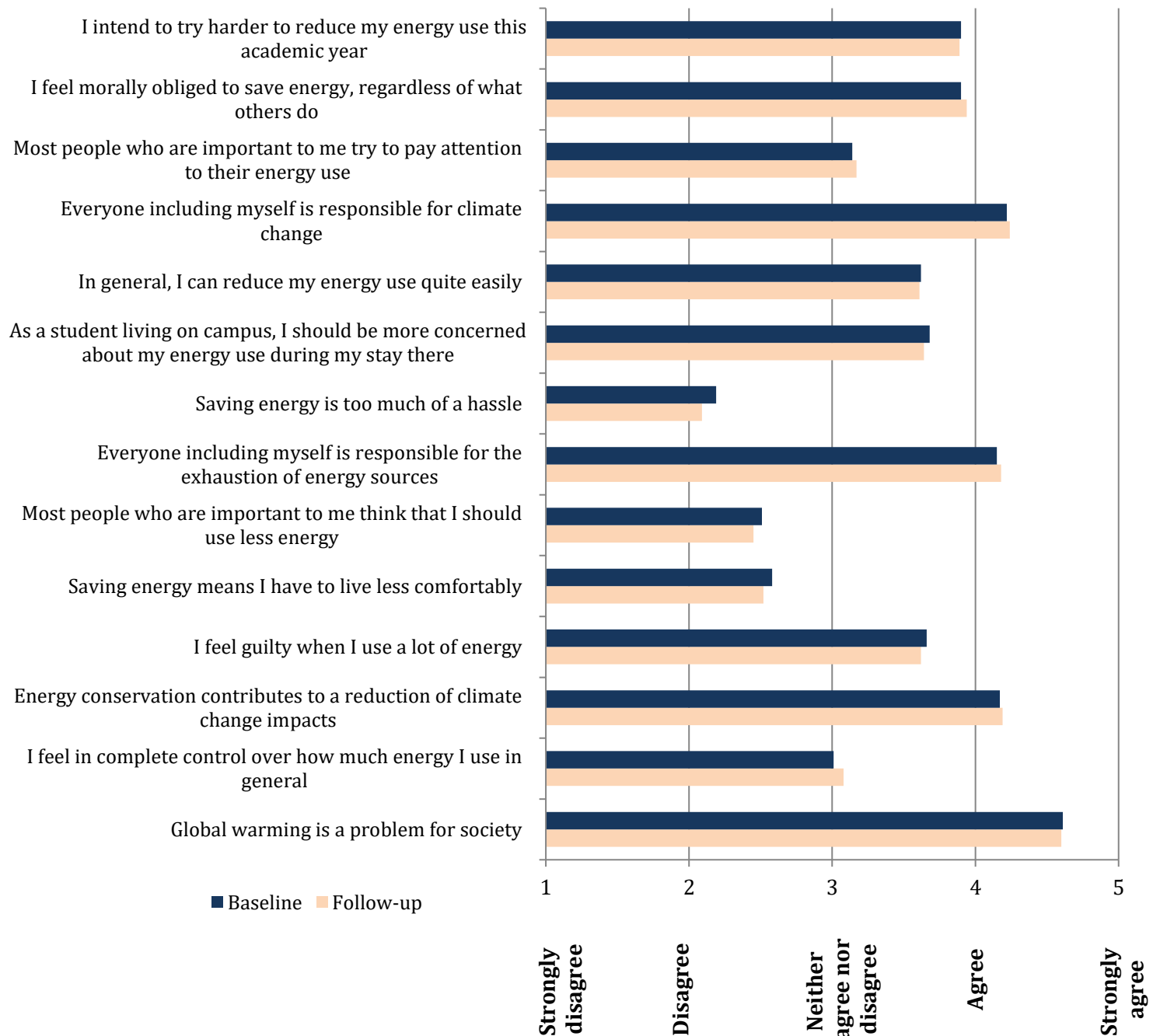


Figure 4 Behavioural antecedents on energy related topics – Total sample

Table 22 Behavioural antecedents on energy related topics – Perceived behavioural control

I feel in complete control over how much energy I use in general							
	Baseline		Follow-Up		Change in mean value	Change in mean value (%)	P Value
	M	SD	M	SD			
Bulgaria	3.86	0.78	3.77	0.89	-0.10	-2%	0.38
Cyprus	3.44	0.85	3.44	0.91	0.01	0%	0.97
Greece	2.86	0.90	2.79	0.82	-0.06	-2%	0.57
Ireland	3.07	0.96	3.00	1.00	-0.07	-2%	0.61
Lithuania	3.19	1.00	3.26	0.89	0.06	2%	0.57
Romania	3.38	0.90	3.37	0.91	-0.01	0%	0.89
UK	2.84	1.14	2.82	0.89	-0.01	-1%	0.73
Total	3.01	1.14	3.08	0.95	0.07	2%*	0.02

*statistically significant difference

Table 23 Behavioural antecedents on energy related topics – Awareness of consequences

Energy conservation contributes to a reduction of climate change impacts							
	Baseline		Follow-Up		Change in mean value	Change in mean value (%)	P Value
	M	SD	M	SD			
Bulgaria	3.93	0.89	3.95	1.05	0.03	1%	0.84
Cyprus	4.40	0.79	4.42	0.65	0.02	0%	0.90
Greece	4.07	0.74	4.12	0.55	0.05	1%	0.51
Ireland	4.32	0.70	4.43	0.57	0.11	3%	0.23
Lithuania	4.12	0.87	3.31	0.75	-0.81	-20%	0.25
Romania	4.19	0.77	4.18	0.70	-0.01	0%	0.89
UK	4.17	0.71	4.22	0.68	0.04	1%	0.19
Total	4.17	0.75	4.19	0.72	0.02	1%	0.34

Table 24 Behavioural antecedents on energy related topics – Emotions

I feel guilty when I use a lot of energy							
	Baseline		Follow-Up		Change in mean value	Change in mean value (%)	P Value
	M	SD	M	SD			
Bulgaria	3.35	1.12	3.19	1.21	-0.05	-2%	0.27
Cyprus	3.83	0.88	3.78	0.89	-0.10	-3%	0.78
Greece	3.33	0.96	3.42	0.81	-0.13	-4%	0.39
Ireland	4.02	0.92	4.04	0.75	0.06	2%	0.90
Lithuania	3.11	1.06	3.32	1.06	-0.08	-3%	0.09
Romania	3.58	1.01	3.63	0.88	0.09	3%	0.41
UK	3.76	0.98	3.73	0.96	0.04	1%	0.61
Total	3.66	1.01	3.62	0.97	-0.01	0%	0.27



Table 25 Behavioural antecedents on energy related topics - Attitudes

Saving energy means I have to live less comfortably							
	Baseline		Follow-Up		Change in mean value	Change in mean value (%)	P Value
	M	SD	M	SD			
Bulgaria	2.31	0.95	2.48	0.93	-0.10	-4%	0.18
Cyprus	2.51	0.95	2.19	0.75	0.01	0%	0.10
Greece	2.68	0.89	2.52	0.84	-0.06	-2%	0.14
Ireland	2.41	0.93	2.25	0.87	-0.07	-3%	0.26
Lithuania	2.64	1.06	2.40	0.98	0.06	2%*	0.04
Romania	2.77	1.04	2.55	0.89	-0.01	0%	0.00
UK	2.57	0.93	2.57	0.90	-0.01	-1%	0.97
Total	2.58	1.14	2.52	0.90	0.07	3%*	0.03

*statistically significant difference

Table 26 Behavioural antecedents on energy related topics – Subjective norms

Most people who are important to me think that I should use less energy							
	Baseline		Follow-Up		Change in mean value	Change in mean value (%)	P Value
	M	SD	M	SD			
Bulgaria	2.24	0.97	2.23	1.12	-0.01	0%	0.94
Cyprus	2.25	1.02	2.47	0.94	0.22	10%	0.26
Greece	2.55	1.02	2.87	0.77	0.32	13%*	0.001
Ireland	2.52	1.01	2.42	0.91	-0.10	-4%	0.54
Lithuania	1.99	0.91	2.03	0.96	0.04	2%	0.71
Romania	2.91	1.08	2.73	1.03	-0.17	-6%*	0.03
UK	2.53	0.92	2.34	0.91	-0.19	-7%*	0.001
Total	2.51	0.99	2.45	0.98	-0.07	-3%*	0.03

*statistically significant difference

Table 27 Behavioural antecedents on energy related topics – Ascription of responsibility

Everyone including myself is responsible for the exhaustion of energy sources							
	Baseline		Follow-Up		Change in mean value	Change in mean value (%)	P Value
	M	SD	M	SD			
Bulgaria	4.14	0.99	4.14	0.97	0.00	0%	0.99
*Cyprus	4.25	0.84	4.14	0.80	-0.11	-3%	0.54
Greece	3.95	0.96	3.90	0.70	-0.05	-1%	0.63
Ireland	4.12	0.91	4.24	0.89	0.11	3%	0.60
Lithuania	4.45	0.67	4.36	0.80	-0.09	-2%	0.25
Romania	4.18	0.90	4.33	0.70	0.16	4%*	0.01
UK	4.12	0.85	4.12	0.82	0.00	0%	0.93
Total	4.15	0.87	4.18	0.80	0.03	1%	0.29

*statistically significant difference



Table 28 Behavioural antecedents on energy related topics – Attitudes

Saving energy is too much of a hassle							
	Baseline		Follow-Up		Change in mean value	Change in mean value (%)	P Value
	M	SD	M	SD			
Bulgaria	2.25	0.98	2.19	0.98	-0.06	-3%	0.63
Cyprus	1.83	0.88	2.00	1.04	0.17	9%	0.43
Greece	2.36	0.91	2.01	0.73	-0.35	-15%*	0.048
Ireland	1.88	0.79	1.75	0.69	-0.14	-7%	0.24
Lithuania	2.27	0.91	2.11	0.75	-0.16	-7%	0.07
Romania	2.47	1.03	2.11	0.81	-0.36	-14%*	0.001
UK	2.14	0.89	2.08	0.83	-0.06	-3%	0.15
Total	2.19	0.92	2.09	0.83	-0.09	-4%*	0.001

*statistically significant difference

Table 29 Behavioural antecedents on energy related topics – Awareness of consequences

Global warming is a problem for society							
	Baseline		Follow-Up		Change in mean value	Change in mean value (%)	P Value
	M	SD	M	SD			
Bulgaria	4.46	0.87	4.40	0.96	-0.05	-1%	0.67
Cyprus	4.63	0.73	4.53	0.61	-0.10	-2%	0.52
Greece	4.44	0.69	4.31	0.53	-0.13	-3%	0.07
Ireland	4.68	0.79	4.75	0.74	0.06	1%	0.59
Lithuania	4.51	0.79	4.43	0.90	-0.08	-2%	0.43
Romania	4.52	0.68	4.61	0.65	0.09	2%	0.07
UK	4.67	0.72	4.71	0.64	0.04	1%	0.26
Total	4.61	0.74	4.60	0.70	-0.01	0%	0.66

Table 30 Behavioural antecedents on energy related topics – Perceived behavioural control

In general, I can reduce my energy use quite easily							
	Baseline		Follow-Up		Change in mean value	Change in mean value (%)	P Value
	M	SD	M	SD			
Bulgaria	3.44	0.98	3.44	1.05	0.00	0%	1.00
Cyprus	3.85	0.65	3.94	0.63	0.09	2%	0.53
Greece	3.47	0.85	3.11	0.71	-0.36	-10%*	0.001
Ireland	3.98	0.75	3.90	0.71	-0.08	-2%	0.39
Lithuania	3.41	0.87	3.57	0.92	0.16	5%	0.12
Romania	3.79	0.78	3.78	0.78	0.00	0%	0.97
UK	3.58	0.86	3.59	0.82	0.01	0%	0.83
Total	3.62	0.86	3.61	0.84	-0.01	0%	0.62

*statistically significant difference



Table 31 Behavioural antecedents on energy related topics – Ascription of responsibility

Everyone including myself is responsible for climate change							
	Baseline		Follow-Up		Change in mean value	Change in mean value (%)	P Value
	M	SD	M	SD			
Bulgaria	4.10	0.99	3.96	1.17	-0.14	-3%	0.32
Cyprus	4.17	0.78	4.25	0.81	0.08	2%	0.63
Greece	4.01	0.90	3.95	0.68	-0.05	-1%	0.56
Ireland	4.34	0.86	4.49	0.73	0.15	3%	0.28
Lithuania	4.34	0.80	4.29	0.85	-0.04	-1%	0.63
Romania	4.12	0.95	4.36	0.74	0.24	6%*	0.001
UK	4.24	0.89	4.26	0.86	0.02	0%	0.66
Total	4.22	0.89	4.24	0.85	0.03	1%	0.37

*statistically significant difference

Table 32 Behavioural antecedents on energy related topics – Subjective norms

Most people who are important to me try to pay attention to their energy use							
	Baseline		Follow-Up		Change in mean value	Change in mean value (%)	P Value
	M	SD	M	SD			
Bulgaria	2.79	1.01	3.15	1.17	0.36	13%*	0.01
Cyprus	3.40	0.89	3.39	0.90	-0.01	0%	0.97
Greece	2.99	0.83	3.17	0.77	0.18	6%	0.08
Ireland	3.34	0.95	3.24	1.03	-0.11	-3%	0.45
Lithuania	2.58	1.01	2.72	1.00	0.13	5%	0.24
Romania	3.23	0.95	3.19	0.92	-0.04	-1%	0.57
UK	3.21	0.95	3.22	0.95	0.01	0%	0.82
Total	3.14	0.97	3.17	0.96	0.03	1%	0.39

*statistically significant difference

Table 33 Behavioural antecedents on energy related topics – Role beliefs

As a student living on campus, I should be more concerned about my energy use during my stay there							
	Baseline		Follow-Up		Change in mean value	Change in mean value (%)	P Value
	M	SD	M	SD			
Bulgaria	3.18	1.02	3.34	1.00	0.16	5%	0.23
Cyprus	4.13	0.82	3.97	0.77	-0.15	-4%	0.39
Greece	3.62	0.89	3.80	0.69	0.18	5%	0.06
Ireland	3.99	0.84	4.04	0.77	0.05	1%	0.72
Lithuania	3.24	1.07	3.29	1.12	0.06	2%	0.65
Romania	3.81	0.87	3.92	0.76	0.11	3%	0.07
UK	3.70	0.87	3.53	0.87	-0.17	-5%*	0.00
Total	3.68	0.91	3.64	0.89	-0.04	-1%	0.15

*statistically significant difference

Table 34 Behavioural antecedents on energy related topics – Personal norms

I feel morally obliged to save energy, regardless of what others do							
	Baseline		Follow-Up		Change in mean value	Change in mean value (%)	P Value
	M	SD	M	SD			
Bulgaria	3.67	0.99	3.65	1.08	-0.02	0%	0.90
Cyprus	4.25	0.93	4.25	0.65	0.00	0%	1.00
Greece	3.85	0.92	3.83	0.65	-0.01	0%	0.90
Ireland	4.13	0.75	4.12	0.71	-0.02	0%	0.88
Lithuania	3.66	1.01	3.74	0.97	0.08	2%	0.46
Romania	3.77	0.95	3.87	0.88	0.10	3%	0.15
UK	3.94	0.88	4.04	0.81	0.10	3%*	0.01
Total	3.90	0.91	3.94	0.86	0.04	1%	0.17

*statistically significant difference

Table 35 Behavioural antecedents on energy related topics – Personal norms

I intend to try harder to reduce my energy use this academic year							
	Baseline		Follow-Up		Change in mean value	Change in mean value (%)	P Value
	M	SD	M	SD			
Bulgaria	3.75	0.76	3.61	0.92	-0.14	-4%	0.22
Cyprus	4.06	0.76	4.11	0.92	0.05	1%	0.79
Greece	3.48	0.82	3.67	0.63	0.19	5%*	0.03
Ireland	4.22	0.76	4.08	0.77	-0.14	-3%	0.21
Lithuania	3.60	0.96	3.68	0.88	0.07	2%	0.50
Romania	4.01	0.80	4.03	0.70	0.02	0%	0.74
UK	3.93	0.80	3.90	0.82	-0.03	-1%	0.51
Total	3.90	0.83	3.89	0.81	-0.02	0%	0.50

*statistically significant difference

4.1.6 Energy saving in everyday life

Respondents were asked to choose which of the six following targeted behaviors can help save energy:

- Switch off lights in empty rooms
- Avoid leaving electronic equipment on standby
- Put a lid on pans when cooking
- Boil the kettle only with the amount of water you intend to use
- Put on a jumper or an extra blanket instead of turning on the heating
- Open windows to cool down instead of using a cooling device or system

A two proportion z-test was used to determine whether the differences between the baseline and follow-up survey proportions are statistically significant for each of the two groups. Findings are summarized for the total sample in Figure 5 and presented in more detail for the total sample and per country in Table 36.

Overall, in all countries, the vast majority of respondents in both surveys think that switching off the lights in empty rooms, opening the windows to cool down instead of using a cooling device or system and avoiding leaving electronic devices on standby mode helps save energy.

In total, at the beginning of the year, 97% of the respondents selected "Switch of lights in empty rooms" as an action they think helpful towards energy saving. This share remained similar in the follow-up survey (96%). "Open windows to cool down instead of using a cooling device or system" and "Avoid leaving electronic equipment on standby" were the second and third most popular selected actions in both surveys considered by respondents



helpful towards saving energy. These actions were selected by 85% and 83% of respondents in the end of the academic year survey, and by 85% and 82% of the baseline participants respectively.

Between the two surveys the following statistically significant difference was observed with regard to the total sample:

- “Put a lid on pans when cooking”, +4% increase, ($z=-2.14$, $p=0.02$).

The most popular responses given by respondents in each country are described in the following paragraphs.

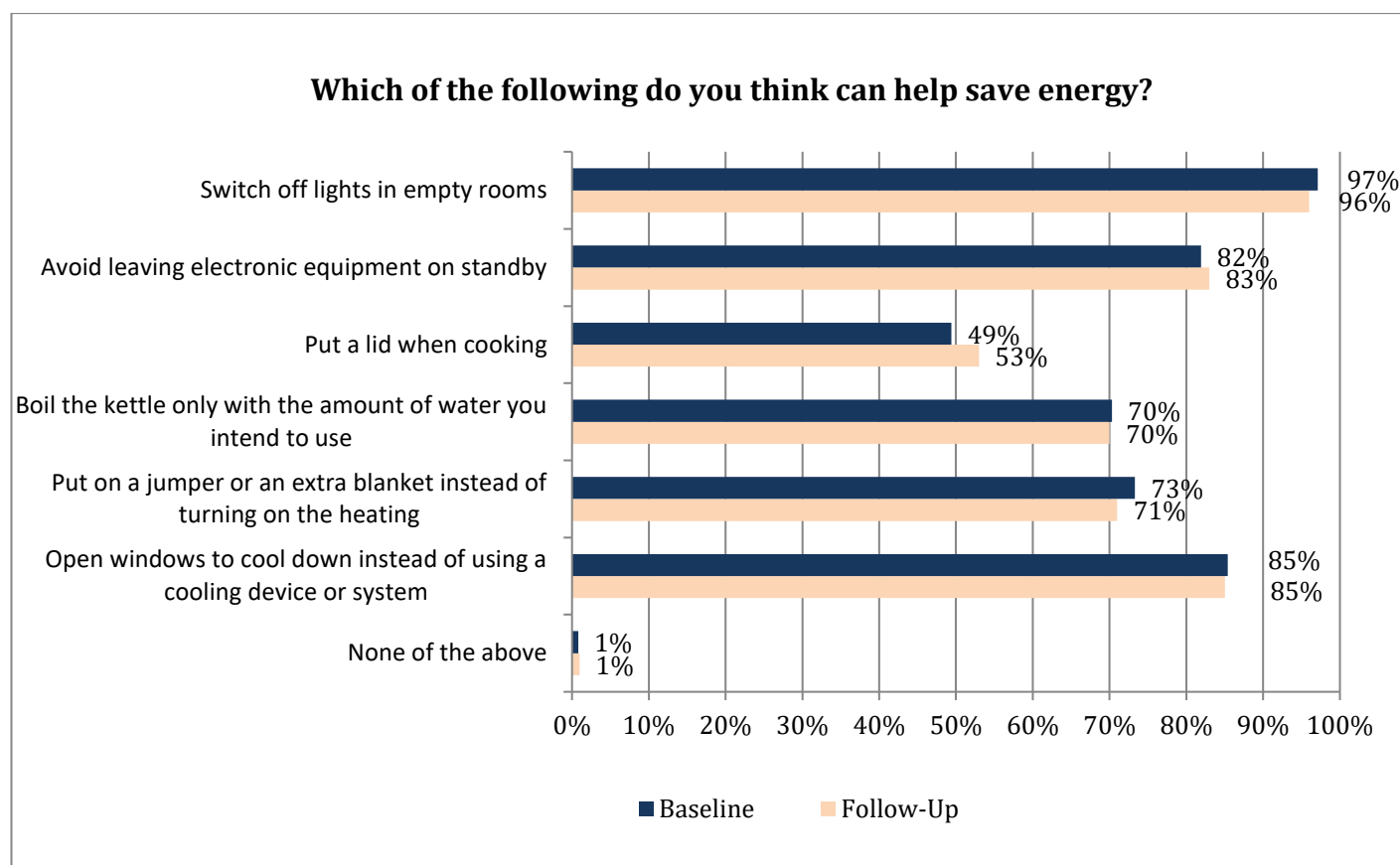


Figure 5 Energy saving in everyday life – Total sample

In **Bulgaria**, 93% of the respondents in the follow-up survey, replied that “Switch off lights in empty rooms” is an action that they think can help save energy, 77% of the respondents said that “Avoid leaving electronic equipment on standby” and 76% picked “Open windows to cool down instead of using a cooling device or system”. In the baseline survey, the actions that were most frequently chosen were “Switch of lights in empty rooms” (98%) and “Avoid leaving electronic equipment on standby” (78%). The biggest differences observed were with regard to “Boil the kettle only with the amount of water you intend to use”, -9% decrease from baseline, and “Put a lid on pans when cooking”, -7% decrease from baseline. However, these differences were not statistically significant.

A statistically significant difference from the baseline survey was observed for the action:

- “Switch off lights in empty rooms”, -6% decrease, ($z=-2.18$, $p=0.02$).

Although the observed -6% decrease, “Switch off lights in empty rooms” remained the most popular action respondents in Bulgaria think can help energy. This decrease might be attributed to that respondents, by the end of the year, were aware of additional energy saving actions other than switching of lights.

In **Cyprus**, 100% of the respondents in the follow-up survey said that “Switch off lights in empty rooms” is an action they think helps save energy, 92% picked “Open windows to cool down instead of using a cooling device or system”, 86% of the respondents picked “Put a lid on pans when cooking” and 75% equally chose “Boil the kettle only with the amount of water you intend to use” and “Put on a jumper or an extra blanket instead of turning on the heating”.

In the baseline survey, respondents mainly chose the actions "Switch of lights in empty rooms" (96%) and "Open windows to cool down instead of using a cooling device or system" (79%). Increases of +13% and +10% with respect to the actions "Open windows to cool down instead of using a cooling device or system" and "Put on a jumper or an extra blanket instead of turning on the heating" were observed from the baseline survey but they were not of statistical significance.

A statistically significant difference from the beginning of the year was observed for the action:

- "Put a lid on pans when cooking", +28% increase, ($z=-2.76$, $p<0.01$).

In **Greece**, 99% of those questioned in the follow-up survey chose "Switch off lights in empty rooms", as an action they considered helpful towards saving energy, 72% chose "Put on a jumper or an extra blanket instead of turning on the heating" and 69% of the respondents believed that "Avoid leaving electronic equipment on standby" was helpful for energy saving. Participants in the baseline survey considered "Switch of lights in empty rooms" (90%) and "Open windows to cool down instead of using a cooling device or system" (68%) as important for saving energy.

Statistically significant differences from the baseline survey were observed for the actions:

- "Switch off lights in empty rooms", +9% increase, ($z=-2.87$, $p<0.01$).
- "Put a lid on pans when cooking", +15% increase, ($z=-2.5$, $p<0.01$).
- "Put on a jumper or an extra blanket instead of turning on the heating", +20% increase, ($z=-3.32$, $p<0.01$).

In **Ireland**, 96% of the respondents in the follow-up survey, considered "Switch off lights in empty rooms" helpful in saving energy whereas another 96% pointed out "Open windows to cool down instead of using a cooling device or system" and 92% chose "Put on a jumper or an extra blanket instead of turning on the heating". In the baseline survey, respondents mainly chose the actions "Switch of lights in empty rooms" (99%), "Open windows to cool down instead of using a cooling device or system" (90%) and "Avoid leaving electronic equipment on standby" (90%). Differences between the baseline and follow-up survey were not statistically significant.

In **Lithuania**, in the follow-up survey, 100% of the respondents chose "Switch off lights in empty rooms" as a helpful action for energy saving, 92% chose "Open windows to cool down instead of using a cooling device or system", 91% chose the action "Avoid leaving electronic equipment on standby" and 69% picked "Boil the kettle only with the amount of water you intend to use". In the baseline survey, the actions considered important were mainly "Switch off lights in empty rooms" (98%), "Open windows to cool down instead of using a cooling device or system" (88%) and "Avoid leaving electronic equipment on standby" (80%).

A statistically significant difference from the baseline survey was observed for the action:

- "Avoid leaving electronic equipment on standby", +11% increase ($z=-2.64$, $p<0.01$).

In **Romania**, 96% of the follow-up survey participants chose "Switch off lights in empty rooms" as an action that helps save energy. The action "Avoid leaving electronic equipment on standby" received 77% whereas 74% of the respondents chose "Open windows to cool down instead of using a cooling device or system". Respondents of the baseline survey, picked "Switch of lights in empty rooms" (94%) and "Avoid leaving electronic equipment on standby" (66%) as important for saving energy.

Statistically significant differences from the baseline survey were observed for the actions:

- "Avoid leaving electronic equipment on standby", +11% increase, ($z=-3.14$, $p<0.01$).
- "Put a lid on pans when cooking", +8% increase, ($z=-2.25$, $p=0.01$).
- "Open windows to cool down instead of using a cooling device or system", +9% increase, ($z=-2.5$, $p=0.01$).

Finally, in the **UK**, 98% of the follow-up survey respondents chose "Switch of lights in empty rooms" as an action they believe can help save energy, 93% chose "Open windows to cool down instead of using a cooling device or system", 89% selected "Put on a jumper or an extra blanket instead of turning on the heating" and 89% chose "Avoid leaving electronic equipment on standby". Findings from the baseline survey showed that the actions that were considered important were "Switch of lights in empty rooms" (98%), "Open windows to cool down instead of using a cooling device or system" (92%) and "Avoid leaving electronic equipment on standby" (88%).

Statistically significant differences from the baseline survey were observed for the actions:

- "Put a lid on pans when cooking", +8% increase, ($z=-3.27$, $p<0.01$).
- "Boil the kettle only with the amount of water you intend to use" +5% increase, ($z=-2.36$, $p=0.01$).



- “Put on a jumper or an extra blanket instead of turning on the heating”, +4% increase, ($z=-2.49$, $p=0.01$).

Table 36 Energy saving in everyday life – Per country and total sample

Which of the following actions do you think can help save energy?		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
Switch off lights in empty rooms	Follow-Up	93%	100%	99%	96%	100%	96%	98%	96%
	Difference from Baseline	-6%*	4%	9%*	-3%	2%	2%	0%	-1%
Avoid leaving electronic equipment on standby	Follow-Up	77%	72%	69%	90%	91%	77%	87%	83%
	Difference from Baseline	-1%	1%	7%	0%	11%*	11%*	0%	1%
Put a lid on pans when cooking	Follow-Up	28%	86%	55%	63%	65%	34%	62%	53%
	Difference from Baseline	-7%	28%*	15%*	7%	6%	8%*	8%*	4%*
Boil the kettle only with the amount of water you intend to use	Follow-Up	54%	75%	55%	84%	69%	56%	81%	70%
	Difference from Baseline	-9%	0%	9%	5%	-5%	7%	5%*	-0,6%
Put on a jumper or an extra blanket instead of turning on the heating	Follow-Up	61%	75%	72%	92%	65%	39%	89%	71%
	Difference from Baseline	6%	10%	20%*	7%	3%	-1%	4%*	-2%
Open windows to cool down instead of using a cooling device or system	Follow-Up	76%	92%	68%	96%	92%	74%	93%	85%
	Difference from Baseline	1%	13%	0%	6,0%	4%	9%*	1%	0%
None of the above	Follow-Up	2%	3%	0%	0%	0%	1%	1%	1%
	Difference from Baseline	2%	3%	-1%	-1%	-1%	0%	0%	0%

*statistically significant difference

4.1.7 Frequency of energy saving action

Respondents were asked to rate the frequency in which they perform a number of energy saving actions on a scale of 1 to 5 (1= Never. 2 = Rarely. 3 = Sometimes. 4 = Often. 5= Always). The higher the mean value (M) the higher the frequency that the action is performed. A low standard deviation (SD) indicates that the given answers tend to be close to the mean value, while a high standard deviation indicates that the given answers are spread out over a wider range of values. An independent samples t-test was used to determine whether the differences in the mean values recorded between the baseline and follow-up survey are statistically significant for each of the two group. The results are illustrated in Figure 6 and tabulated in Table 37 – Table 42.

In the follow-up survey, respondents in total said that the actions they take more often are “Switch off lights” ($M=4.60$, $SD=0.65$) and “Open windows to cool down instead of using a cooling device or system” ($M=4.45$, $SD=0.85$). Regarding the least frequently undertaken action “Put a lid on the pan when cooking”, respondents replied that they take it more often than sometimes ($M=3.36$, $SD=1.13$).

Between the two surveys the following statistically significant differences were observed with regard to the total sample:

- “Put a lid on the pan when cooking”, -2% decrease in mean value ($t(4223) = -2.14$, $p=0.032$).



- "Put a jumper or an extra blanket instead of turning on the heating", -3% decrease in the mean value ($t(4234) = 2.87, p = 0.004$).
- "Boil the kettle only with the amount of water you intend to use", +5% increase in the mean value ($t(2598) = -4.37, p < 0.01$).
- "Switch off lights in empty room", +1% increase in the mean value, ($t(2636) = -2.63, p = 0.008$).

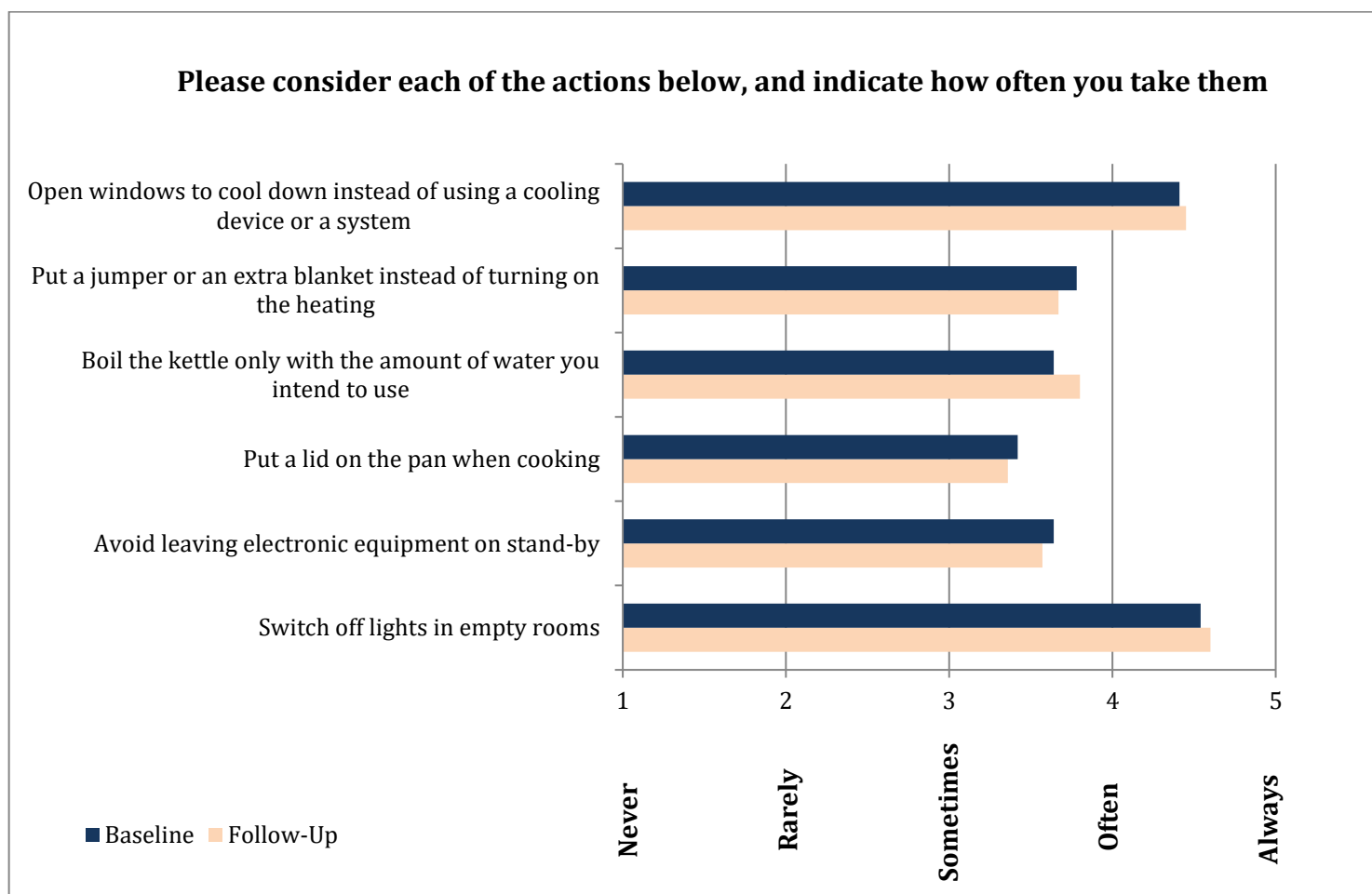


Figure 6 Frequency of energy saving actions –Total sample

In **Bulgaria**, respondents in the follow-up survey, replied that the actions often taken to save energy were "Switch off lights in empty rooms" ($M = 4.66, SD = 0.69$) and "Open windows to cool down instead of using a cooling device or system" ($M = 4.42, SD = 1.14$). On the other hand, the actions "Put on a jumper or an extra blanket instead of turning on the heating" ($M = 3.50, SD = 1.13$), and "Put a lid on the pan when cooking" ($M = 3.56, SD = 1.13$) were less frequently undertaken. Differences between the baseline and the follow-up survey were observed, however they were statistically insignificant.

In **Cyprus**, the actions mostly taken by the respondents of the follow-up survey were "Switch off lights in empty rooms" ($M = 4.69, SD = 0.47$), "Put a lid on the pan while cooking" ($M = 4.31, SD = 0.79$), "Boil the kettle only with the amount of water you intend to use" ($M = 4.28, SD = 1.03$) and "Open windows to cool down instead of using a cooling device or system" ($M = 4.11, SD = 1.06$). The actions "Avoid leaving electronic equipment on stand-by" ($M = 3.81, SD = 0.89$) was less frequently taken.

A statistically significant difference was observed for the action:

- "Open windows to cool down instead of using cooling device or system", +16% increase in mean value, ($t(81) = -2.17, p = 0.03$).

In **Greece**, "Switch off the lights in empty rooms" was the action that was most frequently taken by the respondents ($M = 4.66, SD = 0.50$) in the follow-up survey, followed by "Open windows to cool down instead of

using a cooling device or system" (M=3.80, SD=0.97). On the other hand, the actions, "Put a lid on the pan while cooking" (M=3.58, SD=0.97) and "Boil the kettle only with the amount of water you intend to use" (M=3.58, SD=1.18) were taken less frequently, 'Sometimes' to 'Often'.

Statistically significant differences were observed for the actions:

- "Put a jumper or an extra blanket instead of turning on the heating", +12% increase in mean value, (t(257) = -3.0, p<0.01).
- "Switch off lights in empty rooms", +7% increase in the mean value, (t(288) = -4.0, p<0.01).

In **Ireland** the actions that were taken almost always by the respondents of the follow-up survey were "Switch off lights in empty rooms" (M=4.60, SD=0.67) and "Open windows to cool down instead of using a cooling device or system" (M=4.78, SD=0.51). The less frequently undertaken actions were "Avoid leaving electronic equipment on stand-by" (M=3.57, SD=1.04) and "Put a lid on the pan when cooking" (M=3.60, SD=1.21). Those were undertaken 'Sometimes' to 'Often'.

Statistically significant differences were observed for the actions:

- "Open windows to cool down instead of using a cooling device or system", +5% increase in mean value, (t(100) = -2.65, p=0.01).
- "Put a lid on the pan when cooking", + 9% increase in the mean value, (t(366) = -2.12, p=0.03).

In **Lithuania**, respondents in the follow-up survey, almost always took the actions "Open windows to cool down instead of using a cooling device or system" (M=4.63, SD=0.73), as there aren't any sort of cooling devices installed in Lithuanian dormitories, and "Switch of lights in empty rooms" (M=4.57, SD=0.72). "Avoid leaving electronic equipment on stand-by" (M=3.69, SD=1.15) and "Boil the kettle with the amount of water you intend to use" (M=3.78, SD=1.05) were undertaken less frequently. Differences between the baseline and the follow-up survey were statistically insignificant.

In **Romania**, follow-up survey respondents replied that the actions they frequently took were "Switch off lights in empty rooms" (M=4.56, SD=0.73) and "Open windows to cool down instead of using a cooling device or system" (M=4.44, SD=0.81). On the other hand, the actions "Put a lid on the pan when cooking" (M=3.46, SD=1.13) and "Put on a jumper or an extra blanket instead of turning on the heating" (M=3.12, SD=1.01) were taken more 'Often' rather than 'Sometimes'.

Statistically significant differences were observed for the actions:

- "Open windows to cool down instead of using a cooling device or system", + 4% increase in mean value, (t(681)=-2.48, p=0.01).
- "Boil the kettle only with the amount of water you intend to use", +6% increase in the mean value, (t(688)=-2.6, p=0.01).
- "Switch off lights in empty rooms", +4% increase in the mean value, (t=-2.93, p<0.01).

In the **UK**, respondents at the end of the year, replied that the actions that they took almost always were "Open windows to cool down instead of using a cooling device or system" (M=4.54, SD=0.78) as almost no UK university accommodation has any sort of cooling device or system, and "Switch off lights in empty rooms" (M=4.59, SD=0.61). The actions "Avoid leaving electronic equipment on stand-by" (M=3.48, SD=1.08) and "Put a lid on the pan when cooking" (M=3.36, SD=1.13) were undertaken 'Sometimes' to 'Often'.

A statistically significant difference was observed for the action:

- "Boil the kettle only with the amount of water you intend to use", +5% increase in the mean value, (t(2245)=-3.31, p<0.01).

Table 37 Frequency of energy saving action – Open windows for cooling

Open windows to cool down instead of using a cooling device or system							
	Baseline		Follow-Up		Change in mean value	Change in mean value (%)	P Value
	M	SD	M	SD			
Bulgaria	4.30	0.99	4.42	1.01	0.11	3%	0.41
Cyprus	3.53	1.30	4.11	1.06	0.58	16%*	0.03
Greece	3.81	1.16	3.80	0.97	0.00	0%	0.71
Ireland	4.55	0.79	4.78	0.51	0.23	5%*	0.01
Lithuania	4.64	0.73	4.63	0.73	-0.01	0%	0.91
Romania	4.28	0.92	4.44	0.81	0.16	4%*	0.01
UK	4.48	0.80	4.54	0.78	0.06	1%	0.13



Open windows to cool down instead of using a cooling device or system							
	Baseline		Follow-Up		Change in mean value	Change in mean value (%)	P Value
	M	SD	M	SD			
Total	4.41	0.89	4.45	0.85	0.05	1%	0.09

*statistically significant difference

Table 38 Frequency of energy saving action – Put on extra layers

Put a jumper or an extra blanket instead of turning on the heating							
	Baseline		Follow-Up		Change in mean value	Change in mean value (%)	P Value
	M	SD	M	SD			
Bulgaria	3.34	1.18	3.50	1.13	0.16	5%	0.29
Cyprus	4.04	0.98	3.97	1.04	-0.07	-2%	0.75
Greece	3.23	1.22	3.61	0.92	0.38	12%*	0.00
Ireland	4.00	0.97	3.84	0.96	-0.16	-4%	0.29
Lithuania	3.59	1.26	3.79	1.16	0.20	6%	0.16
Romania	3.23	1.23	3.12	1.23	-0.11	-3%	0.24
UK	3.99	0.97	3.94	1.01	-0.06	-1%	0.24
Total	3.78	1.11	3.67	1.13	-0.11	-3%*	0.00

*statistically significant difference

Table 39 Frequency of energy saving action – Boil only the right amount of water

Boil the kettle only with the amount of water you intend to use							
	Baseline		Follow-Up		Change in mean value	Change in mean value (%)	P Value
	M	SD	M	SD			
Bulgaria	3.83	1.19	3.64	1.24	-0.18	-5%	0.26
Cyprus	4.21	1.02	4.28	1.03	0.07	2%	0.78
Greece	3.33	1.28	3.58	1.18	0.25	8%	0.10
Ireland	3.87	1.08	3.78	1.04	-0.09	-2%	0.58
Lithuania	3.62	1.18	3.78	1.05	0.16	4%	0.22
Romania	3.73	1.16	3.96	1.06	0.22	6%*	0.01
UK	3.58	1.15	3.77	1.11	0.18	5%*	0.00
Total	3.64	1.17	3.80	1.11	0.16	5%*	0.00

*statistically significant difference

Table 40 Frequency of energy saving action – Put a lid on the pan when cooking

Put a lid on the pan when cooking							
	Baseline		Follow-Up		Change in mean value	Change in mean value (%)	P Value
	M	SD	M	SD			
Bulgaria	3.68	1.10	3.56	1.13	-0.11	-3%	0.48
Cyprus	3.94	0.99	4.31	0.79	0.37	9%	0.07
Greece	3.35	1.20	3.58	0.97	0.23	7%	0.07
Ireland	3.30	1.22	3.60	1.21	0.30	9%*	0.03
Lithuania	3.96	1.09	4.00	1.01	0.04	1%	0.76
Romania	3.42	1.17	3.46	1.13	0.03	1%	0.73
UK	3.33	1.16	3.36	1.12	0.03	1%	0.56
Total	3.42	1.17	3.36	1.13	-0.06	-2%*	0.03



Table 41 Frequency of energy saving action – Avoid leaving electronic equipment on stand-by

Avoid leaving electronic equipment on stand-by							
	Baseline		Follow-Up		Change in mean value	Change in mean value (%)	P Value
	M	SD	M	SD			
Bulgaria	3.82	1.08	3.62	1.16	-0.20	-5%	0.19
Cyprus	3.85	0.98	3.81	0.89	-0.05	-1%	0.83
Greece	3.60	1.09	3.60	1.11	-0.01	0%	0.96
Ireland	3.83	1.06	3.57	1.04	-0.26	-7%	0.12
Lithuania	3.53	1.16	3.69	1.15	0.16	5%	0.23
Romania	3.71	0.94	3.66	1.06	-0.04	-1%	0.59
UK	3.59	1.08	3.48	1.08	-0.11	-3%	0.28
Total	3.64	1.07	3.57	1.08	-0.06	-2%	0.08

Table 42 Frequency of energy saving action – Switch off lights in empty rooms

Switch off lights in empty rooms							
	Baseline		Follow-Up		Change in mean value	Change in mean value (%)	P Value
	M	SD	M	SD			
Bulgaria	4.60	0.56	4.66	0.69	0.06	1%	0.47
Cyprus	4.81	0.45	4.69	0.47	-0.11	-2%	0.26
Greece	4.35	0.83	4.66	0.50	0.31	7%*	0.00
Ireland	4.61	0.65	4.60	0.67	-0.01	0%	0.95
Lithuania	4.50	0.73	4.57	0.72	0.06	1%	0.44
Romania	4.39	0.78	4.56	0.73	0.17	4%*	0.00
UK	4.58	0.65	4.59	0.61	0.01	0%	0.65
Total	4.54	0.69	4.60	0.65	0.06	1%*	0.01

*statistically significant difference

4.1.8 Reasons for being more energy conscious

Respondents were asked to choose up to three important reasons for taking the abovementioned energy saving actions. A two-proportion z-test was used to determine whether the differences between the baseline and follow-up survey proportions are statistically significant. The results for the total sample are illustrated in Figure 7 and total sample results and per country are presented in Table 43.

At the end of the academic year, the total sample of respondents recognized "It's a habit I adopted from home" (73%) and "It saves energy" (66%), as the main reasons for being more energy conscious. The reasons "It's the right thing to do" (50%) and "It helps reduce global warming" (47%), were also popular among respondents. The statement "It makes me feel good about myself" (24%) was picked approximately by one quarter of respondents while the reasons "I don't know why, I just do it" (12%), "Someone asked me to" (5%), "I want to fit in with other residents of the hall who are energy conscious" (2%) and "I earn money/prizes out of it" (2%) were chosen by fewer respondents. Responses in the baseline survey appeared to be similar to those in the follow-up survey.

A statistically significant difference between the two surveys was observed for the reason:

- "It saves energy", +3% increase, ($z=-2.17$, $p=0.016$).

In the follow-up survey, the largest majority of respondents in all countries except for the UK reported "It's a habit I adopted from home" as the main reason for being more energy conscious and "It saves energy" as the second most important reason for being more energy conscious. In the UK the most important reason was "It saves energy" whereas "It's a habit I adopted from home" was the second most important. The third most important reason varies among countries. In Bulgaria (44%), Romania (45%), Lithuania (51%) and the UK



(58%) the third most important reason is "It's the right thing to do". In Ireland (56%) it is "It helps reduce global warming". In Cyprus (58%) and Greece (45%) it is "It makes me feel good about myself".

The most popular responses given by respondents in each country are described in the following paragraphs.

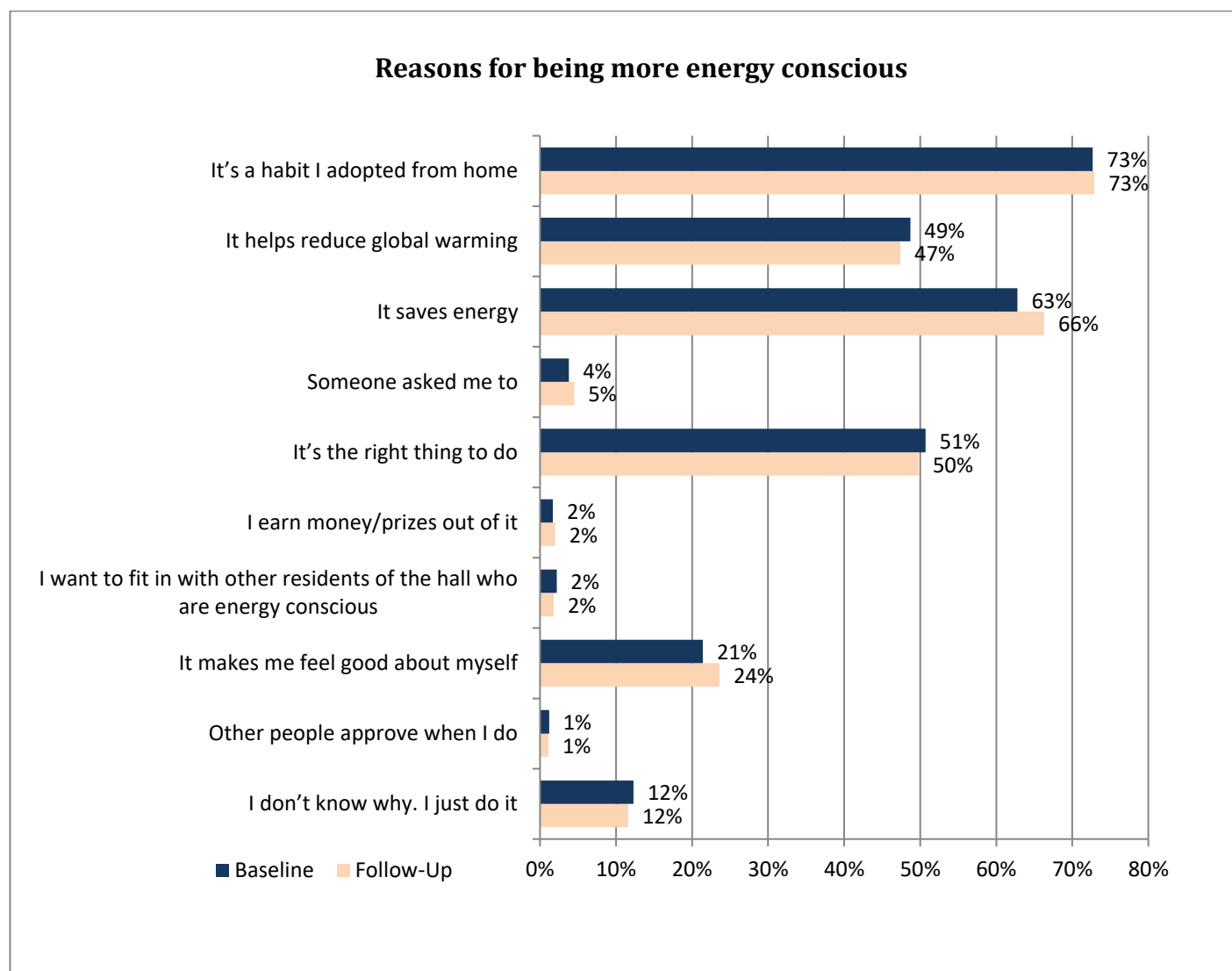


Figure 7 Reasons for being more energy conscious -Total sample

In **Bulgaria**, 73% of the respondents considered "It's a habit I adopted from home", 64% "It saves energy" and 44% "It's the right thing to do" as the main reasons for being more energy conscious. The same reasons appear to be of the same importance by those questioned in the baseline survey with the statement "It saves energy" being on the top of their preferences and "It's a habit I adopted from home" being their second most selected answer. Ten percent fewer respondents (-10%) than in the baseline selected the reason "It saves energy" for being more energy conscious in the follow-up survey, however, this is not a statistically significant difference.

In **Cyprus**, "It's a habit I adopted from home" (78%) and "It saves energy" (58%) were the main reasons that made the respondents more energy conscious. "It makes me feel good about myself" (58%) and "It helps reduce global warming" (44%) were also popular responses given by the follow-up survey participants. The same opinions were also dominant in the baseline survey. A difference between the baseline and the follow-up survey was observed for the actions "It helps reduce global warming", -15% decrease, and "It saves energy", -10% decrease, without being statistically significant though.

In **Greece**, 68% of the respondents chose "It's a habit I adopted from home" and 65% chose "It saves energy" as the most important reasons for being more energy conscious, while the reason "It makes me feel good about myself" was chosen by 45% of the respondents. In the baseline survey, respondents agreed with those in the follow-up survey regarding the main reasons. However, at the beginning of the academic year, the third most frequent response was "It's the right thing to do" (39%).

Statistically significant differences between the baseline and the follow-up survey were observed for the reasons:

- "Someone asked me to", +13% increase, ($z=-3.9$, $p<0.01$).
- "It's the right thing to do", -15% decrease, ($z=-2.65$, $p<0.01$).
- "It makes me feel good about myself", +17% increase, ($z=-2.95$, $p<0.01$).

In **Ireland**, 76% of the respondents picked "It's a habit I adopted from home" while another 70% picked "It saves energy" as the main reasons for being energy conscious. "It helps reduce global warming" (56%) and "It's the right thing to do" (54%) were also among the most popular responses. The same reasons appear to be equally important to those questioned in the baseline survey. No statistically significant differences were observed between the baseline and follow-up survey.

In **Lithuania**, the reasons "It's a habit I adopted from home" (82%), "It saves energy" (52%) and "It's the right thing to do" (51%) were the dominant reasons for being more energy conscious. "It makes me feel good about myself" (33%) and "It helps reduce global warming" (27%) were considered less important. The findings from the baseline survey were similar to those of the follow-up survey. No statistically significant differences were observed between the baseline and follow-up survey.

In **Romania**, 77% of the respondents replied that the main reason for being energy conscious was "It's a habit I adopted from home". Reasons like "It saves energy" (63%) and "It's the right thing to do" (45%) were also popular while "It makes me feel good about myself" (29%) was of less importance to the respondents.

Respondents in the baseline survey agreed with those in the follow-up regarding about the most important reasons for being energy conscious.

Statistically significant differences between the baseline and the follow-up survey were observed for the reasons:

- "It helps reduce global warming", +8% increase, ($z=-2.15$, $p=0.016$).
- "It saves energy", +7% increase, ($z=-1.98$, $p=0.025$).
- "I earn money/prizes out of it", +2% increase, ($z=-2.54$, $p=0.005$).
- "I don't know why, I just do it", -5% decrease, ($z=-2.24$, $p=0.013$).

In the **UK**, the reasons "It saves energy" and "It's a habit I adopted from home" were chosen by 71% and 69% of the follow-up respondents respectively as the most dominant reasons for being energy conscious, while 58% chose "It's the right thing to do". The same reasons were as popular in the baseline survey, with those that responded "It's a habit I adopted from home" and "It saves energy" being 71% and 64% of the respondents respectively.

Statistically significant differences between the baseline and the follow-up survey were observed for the reasons:

- "It saves energy", +7% increase, ($z=-3.1$, $p<0.01$).
- "It makes me feel good about myself", -4% decrease, ($z=-2.53$, $p=0.004$).

Table 43 Reasons for being more energy conscious – Total and per country

Reasons for being more energy conscious		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
It's a habit I adopted from home	Follow-up	73%	78%	68%	76%	82%	77%	69%	73%
	Difference from Baseline	7%	6%	-4%	3%	1%	4%	-2%	0%
It helps reduce global warming	Follow-up	35%	44%	37%	56%	27%	44%	56%	47%
	Difference from Baseline	5%	-15%	-1%	-3%	-8%	8%*	2%	-2%
It saves energy	Follow-up	64%	58%	65%	70%	52%	63%	71%	66%
	Difference from Baseline	-10%	-10%	3%	6%	-6%	7%*	7%*	3%*
	Follow-up	2%	3%	17%	8%	4%	2%	4%	5%



Reasons for being more energy conscious		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
Someone asked me to	Difference from Baseline	1%	1%	13%*	4%	3%	-1%	0%	1%
It's the right thing to do	Follow-up	44%	25%	24%	54%	51%	45%	58%	50%
	Difference from Baseline	-8%	4%	-15%*	1%	11%	1%	3%	-1%
I earn money/prizes out of it	Follow-up	3%	6%	5%	2%	3%	2%	1%	2%
	Difference from Baseline	1%	6%	-5%	0%	1%	2%*	0%	0%
I want to fit in with other residents of the hall who are energy conscious	Follow-up	0%	0%	0%	0%	2%	6%	1%	2%
	Difference from Baseline	0%	-2%	-1%	-2%	0%	-4%	0%	0%
It makes me feel good about myself	Follow-up	34%	58%	45%	18%	33%	29%	12%	24%
	Difference from Baseline	3%	3%	17%*	2%	4%	-1%	-4%*	3%
Other people approve when I do	Follow-up	1%	0%	1%	0%	3%	1%	1%	1%
	Difference from Baseline	0%	0%	1,0%	0%	1%	-1%	0%	0%
I don't know why. I just do it	Follow-up	15%	3%	22%	6%	21%	7%	11%	12%
	Difference from Baseline	4%	-4%	9%	-7%	0%	-5%*	0%	0%

*statistically significant difference

4.1.9 Reasons that prevent energy conscious behaviour

Respondents were asked to select the three most important reasons that prevent them from being more conscious about their energy use from a list provided to them. A two-proportion z-test was used to determine whether the differences between the baseline and follow-up survey proportions are statistically significant. The results for the total sample are illustrated in Figure 8 whereas total sample results and per country are presented in Table 44.

In total, 50% of the follow-up respondents replied that the main reason that prevented them from being more energy conscious was "I don't have any feedback on how much I consume", 34% stated that "The energy I save in the hall won't save me any money" and 29% reported that "The way the building and its systems are designed limit the things I can do to save energy". "My personal actions to save energy would have minimal impact on the energy consumption of the hall" (27%) and "I have other things on my mind" (22%) were also considered as important reasons that prevented them from being more energy conscious.

Statistically significant differences between the baseline and the follow-up survey, were observed for the reasons:

- "I don't have any feedback on how much I consume", +6% increase, ($z=-3.73$, $p<0.01$).
- "I have other things on my mind", -4% decrease, ($z=-2.86$, $p=0.003$).
- "Sustainable living is not for me", -1% decrease, ($z=-2.11$, $p=0.018$).
- "My university/ college does not inspire me to act this way", -3% decrease, ($z=-2.85$, $p=0.003$).
- "The way the building and its systems are designed limit the things I can do to save energy", -5% decrease, ($z=-3.7$, $p<0.01$).
- "Nothing prevents me from being energy conscious", -3% decrease ($z=-2.15$, $p=0.016$).

The most frequently recorded responses given by respondents in each country are described in the following paragraphs.



Please consider up to three important reasons that prevent you from being more conscious about your energy in your hall, from the list below.

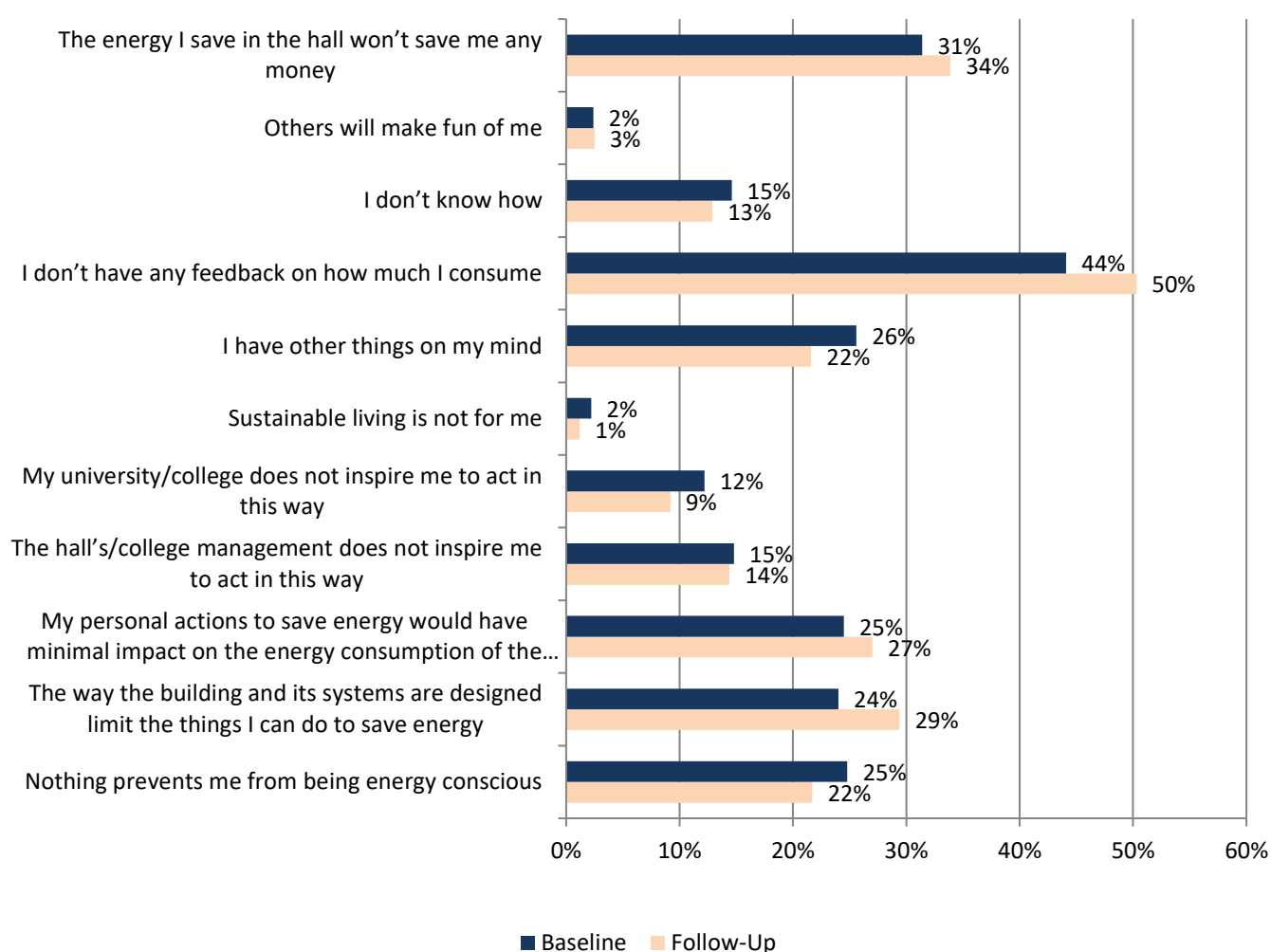


Figure 8 Reasons for being less energy conscious – Total sample

In **Bulgaria**, 35% of the follow-up survey respondents reported that “The energy I save in the hall won’t save me any money” and 32% stated “I don’t have any feedback on how much I consume” as the two primary reasons that prevented them from being more energy conscious. Furthermore, 30% of the follow-up participants reported that their hall’s management does not inspire them towards being more energy conscious about their energy use in their halls. On the other hand, approximately one quarter of them (23%) reported that nothing prevented them from being energy conscious.

The respondents in the baseline survey reported “I don’t have any feedback on how much I consume” (38%) and “The way the building and its systems are designed limit the things I can do to save energy” (32%) as the most important reasons for preventing them from being more energy conscious. However, the differences from the baseline are not statistically significant.

A statistically significant difference from the beginning of the year survey was observed for the reason:

- “The hall’s/college’s management does not inspire me to act in this way”, +15% increase, ($z=-2.64$, $p=0.004$).

In **Cyprus**, 25% of the follow-up respondents stated that “I don’t have any feedback on how much I consume” whereas having other things on their minds (19%) was an extra burden for them to become more energy conscious about their energy use in their halls. In addition, 11% of those surveyed stated that “My personal

actions to save energy would have minimal impact on the energy consumption of the hall". On the contrary, 61% of the respondents stated that "Nothing prevents me from being energy conscious".

In the baseline survey, those who stated "I don't have any feedback on how much I consume" were -2% less than in the follow-up survey whilst "I have other things on my mind" was chosen by -5% less. "Nothing prevents me from being energy conscious" was pointed out from 59% of those surveyed in the baseline survey. However, these differences are not statistically significant.

In **Greece**, 62% of the respondents replied in the follow-up survey that the lack of feedback on how much energy they consumed was the main reason that prevented them from being more energy conscious. "The energy I save in the hall won't save me any money" was pointed out by 40% of the follow-up participants as an important reason that prevented them from being more energy conscious. Twenty-nine percent (29%) stated that they didn't know how to become more energy conscious while 25% said that the way the building and its systems are designed limit the things they could do to save energy and a 24% reported that their personal actions to save energy would have minimal impact on the energy consumption of the hall. Fourteen percent (14%) stated that "Nothing prevents me from being energy conscious".

Statistically significant differences from the baseline survey were observed for the reasons:

- "The energy I save in the halls won't save me any money", +21% increase, ($z=-3.78$, $p<0.01$).
- "I don't know how", +15% increase, ($z=-3.19$, $p<0.01$).
- "I don't have any feedback on how much I consume", +12% increase, ($z=-1.96$, $p=0.025$).
- "Sustainable living is not for me", -6% decrease, ($z=-2.46$, $p=0.007$).

Considering the +21% increase with regard to "the energy I save in the hall won't save me any money" statement, perhaps at the start of the year there were residual energy-saving habits from home where the family encourage energy-saving to save money on bills. But over the year respondents become more aware of how there is no financial benefit to saving energy in their hall.

With regard to the observed +12% increase in the follow-up survey concerning the lack of feedback on respondents' energy consumption, in Greece energy is measured at the dormitory level and as a result, individuals do not get feedback about their personal energy consumption which in turns prevents them from being more energy conscious.

Considering the +15% increase with regard to the "I don't know how" statement, perhaps respondents didn't know what other actions they should have undertaken to effectively save energy apart from the simple actions (for example, switch off lights, put on a jumper instead turning on the heating) they reportedly already had taken.

In **Ireland**, in the end of the year survey, the lack of feedback on how much energy they consumed was reported by 54% of respondents as the main factor which prevented them from being more energy conscious. Over a quarter (28%) added that the energy they save in the hall won't save them any money and 26% of the participants chose "I have other things on my mind". On the other hand, approximately one fifth of them (22%) reported that nothing prevented them from being energy conscious.

Respondents in the baseline survey, agreed with those in the follow-up regarding the most important reasons that prevented them from being more energy conscious. No statistically significant differences were observed between the baseline and follow-up survey.

In **Lithuania**, 49% of those surveyed in the follow-up survey said they hadn't received any feedback on how much energy they consumed while 33% said that the hall's management did not inspire them to act in an energy efficient way. In addition, the way the building and its systems are designed limited the things 29% of the participants could do to save energy. On the other hand, 30% of the respondents stated that nothing prevented them from being energy conscious.

Participants in the beginning of the year survey, agreed with those in the follow-up survey regarding the first reason that prevented them from being more energy conscious. The second most frequent response was "The energy I save in the hall won't save me any money" (35%) followed by "The hall's/college management does not inspire me to act in this way" (34%). No statistically significant differences were observed between the baseline and follow-up survey.

Forty-five percent (45%) of the respondents in **Romania** agreed that lack of feedback on how much energy they consumed prevented them from being more conscious about their energy use in their halls of residence. In parallel, 32% stated that their personal actions to save energy would have had minimal impact on the energy consumption of the hall. In addition, "The energy I save in the hall won't save me any money" was pointed out by 25% of those surveyed as a reason for being less energy conscious. Lower proportions of the respondents stated that "The hall's/college management does not inspire me to act in this way" (23%) whereas 31% stated

that nothing prevented them from being energy conscious. The findings from the baseline survey were similar to those of the follow-up survey.

Statistically significant differences from the baseline survey were observed for the following statements:

- "Others will make fun of me", 1% increase, ($z=-3.18$, $p<0.01$).
- "I don't have any feedback on how much I consume", +8% increase, ($z=-2.22$, $p=0.013$).

Considering the observed +8% increase in the follow-up survey concerning the lack of feedback on respondents' energy consumption, in Romania energy is measured at the dormitory level, and as a result, individuals do not get personal feedback about their own energy consumption.

In the **UK**, the main reason that prevented respondents from being energy conscious was the lack of feedback on how much energy they consumed (56%), followed by the fact that "The energy I save in the hall won't save me any money" (40%). The way the building and its systems are designed limit the things that 36% of the follow-up participants can do to save energy. Twenty-nine percent (29%) of the respondents replied that their personal actions to save energy would have had minimal impact on the energy consumption of the hall and another 29% that they had other things on their mind.

Statistically significant differences were observed for the reasons:

- "The energy I save in the hall won't save me any money", +5% increase, ($z=-2.11$, $p=0.017$).
- "I don't know how ", -6% decrease, ($z=-3.1$, $p<0.01$).
- "I don't have any feedback on how much I consume", +10% increase, ($z=-4.02$, $p<0.01$).
- "My university/college does not inspire me to act this way", -5% decrease, ($z=-3.06$, $p<0.01$).
- "The way the building and its systems are designed limit the things I can do to save energy", +11% increase, ($z=-5.27$, $p<0.01$).
- "Nothing prevents me from being energy conscious", -5% decrease, ($z=-2.9$, $p<0.01$).

Considering the +5% increase regarding "the energy I save in the hall won't save me any money" statement, perhaps at the start of the year there were residual energy-saving habits from home where the family encourage energy-saving to save money on bills. But over the year respondents become more aware of how there is no direct financial benefit to them in saving energy in their hall.

With regard to the observed +10% increase in the follow-up survey concerning the lack of feedback on respondents' energy consumption, in the UK energy is measured at the dormitory level, often with more than 200 students. As a result, individuals do not get personalized feedback and it can be hard to see their own impact on consumption.

In UK halls, heating is often centrally controlled and, as a result, residents cannot adjust their heating. Similarly, lights are sometimes on automatic sensors and residents cannot switch off the lights themselves. These limitations might be the reason behind the +11% increase observed by the end of the year with regard to "the way the building and its systems are designed limit the things I can do to save energy" statement. The abovementioned challenges may be encountered as barriers that respondents were not aware of at the start of the year resulting in smaller shares of participants by the end of the year (-5% decrease) stating that "Nothing prevents me from being energy conscious"

Table 44 Reasons for being less energy conscious – per country and total sample

Reasons for being less energy conscious		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
The energy I save in the hall won't save me any money	Follow-Up	35%	8%	40%	28%	28%	25%	40%	34%
	Difference from Baseline	11%	4%	21%*	-1%	-7%	1%	5%*	3%
Others will make fun of me	Follow-Up	5%	3%	3%	4%	4%	2%	2%	3%
	Difference from Baseline	2%	1%	-1%	-1%	4%	1%*	0%	1%
I don't know how	Follow-Up	8%	3%	29%	8%	5%	14%	13%	13%
	Difference from Baseline	4%	1%	15%*	-5%	-1%	3%	-6%*	-2%
I don't have any feedback on how much I consume	Follow-Up	32%	25%	62%	54%	49%	45%	56%	50%
	Difference from Baseline	-6%	2%	12%*	8%	6%	8%*	10%*	6%*
I have other things on my mind	Follow-Up	10%	19%	23%	26%	15%	12%	29%	22%
	Difference from Baseline	-5%	5%	-5%	-1%	2%	-3%	-2%	-4%*
Sustainable living is not for me	Follow-Up	1%	0%	0%	2%	2%	2%	1%	1%
	Difference from Baseline	-1%	-4%	-6%*	0%	0%	-1%	-1%	-1%*
My university/college does not inspire me to act in this way	Follow-Up	17%	3%	13%	6%	14%	8%	8%	9%
	Difference from Baseline	-1%	-4%	-8%	-4%	2%	-1%	-5%*	-3%*
The hall's/college management does not inspire me to act in this way	Follow-Up	30%	6%	18%	8%	33%	12%	10%	14%
	Difference from Baseline	15%*	3%	-4%	-2%	-1%	-4%	-2%	-1%
My personal actions to save energy would have minimal impact on the energy consumption of the hall	Follow-Up	28%	11%	24%	8%	18%	32%	29%	27%
	Difference from Baseline	10%	3%	3%	-9%	-7%	3%	3%	2%
The way the building and its systems are designed limit the things I can do to save energy	Follow-Up	27%	8%	25%	20%	29%	23%	36%	29%
	Difference from Baseline	-5%	0%	0%	-1%	5%	1%	11%*	5%*
Nothing prevents me from being energy conscious	Follow-Up	23%	61%	14%	22%	30%	31%	14%	22%
	Difference from Baseline	-10%	2%	-8%	-7%	0%	-4%	-5%*	-3%*

*statistically significant difference

4.1.10 Familiarization with the SSO campaign

Respondents were asked whether they had heard of the Students Switch Off (SSO) campaign. A two-proportion z-test was used to determine whether the differences between the baseline and follow-up survey proportions are statistically significant. The results for each country and for the total sample are shown in Figure 9 and tabulated in Table 45.

At the end of the academic year a significantly higher share of respondents (+34%) had heard about the SSO campaign compared to the beginning of the academic year. This increase is statistically significant ($z=-20.84$, $p<.0001$). The share of respondents that had heard of the SSO campaign was 63% in the follow-up survey and 29% in the baseline.

In all seven countries, more respondents had heard about the SSO campaign at the end of the academic year compared to the beginning. The increase in the number of respondents that had heard of the SSO campaign at the end of the academic year compared to the beginning is statistically significant in Greece, Ireland, Romania and the UK.

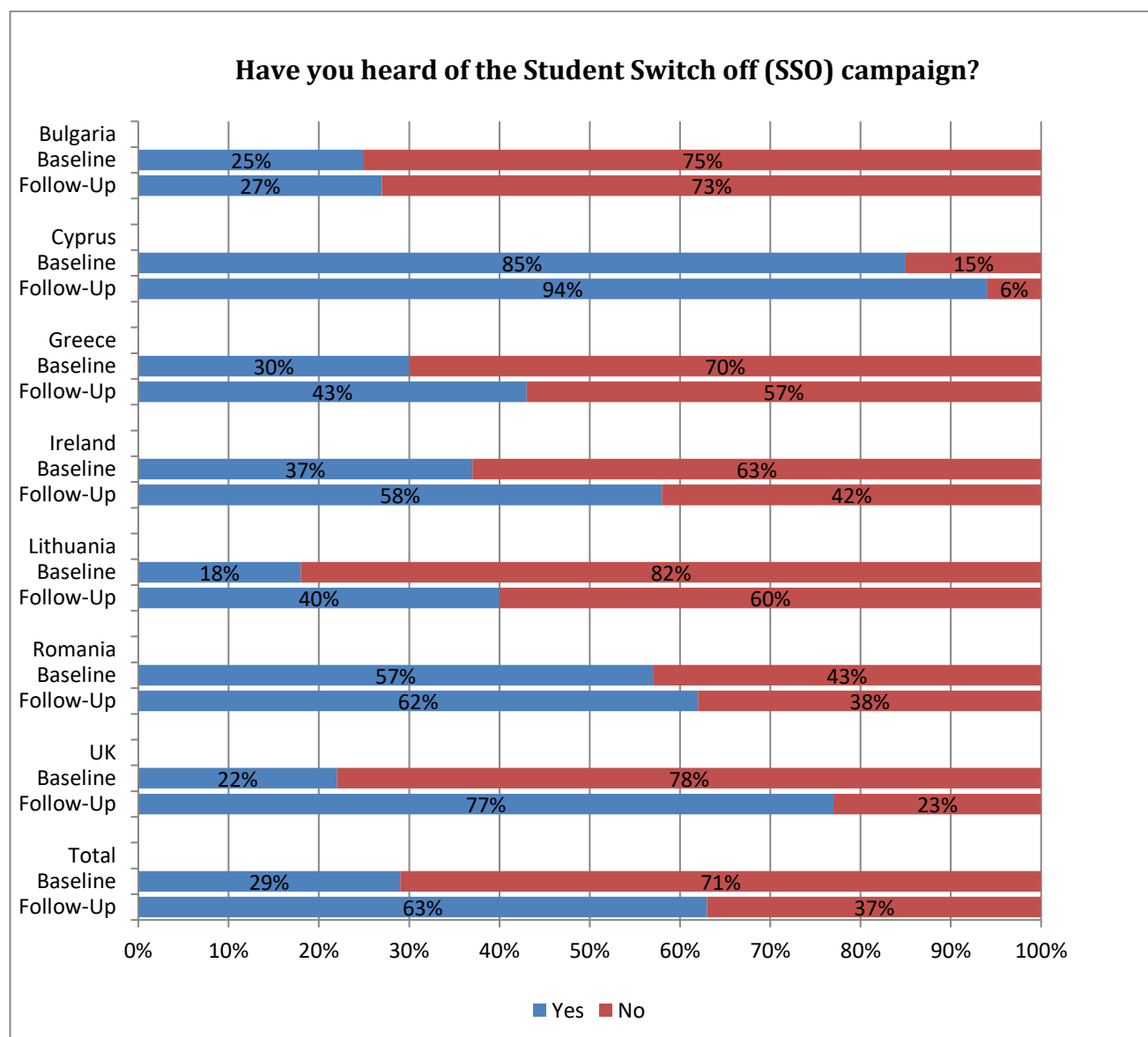


Figure 9 Familiarization with the SSO campaign – per country and total sample

In **Bulgaria**, at the beginning of the academic year 25% stated that they had heard of the SSO campaign before whereas this share was 27% at the end of the academic year (+2% increase). However, this increase was not statistically significant.

In **Cyprus**, 85% of the baseline respondents had heard of the SSO campaign before while this share increased in the follow-up survey by +9%. More than nine out of ten (94%) respondents in Cyprus had heard of the SSO campaign by the end of the academic year but this increase was not statistically significant.

In **Greece**, a statistically significant increase of +14% is recorded ($z=-2.34$, $p=0.01$). In the baseline survey 30% of those surveyed had heard of the SSO campaign before whereas that share by the end of the year increased to 43%.

In **Ireland**, a statistically significant increase of +21% is observed ($z=-2.76$, $p=0.003$). The share of respondents who had heard of the SSO campaign in the beginning of the academic year was 37% and reached 58% by the end of the academic year.

In **Lithuania**, a statistically significant increase of +22% is observed and 40% of the respondents stated they had heard of the SSO campaign by the end of the academic year ($z=-4.45$, $p<0.01$).

In **Romania**, at the beginning of the academic year 57% stated that they had heard of the SSO campaign before whereas this share was 62% by the end of the academic year (+5% increase). However, this increase was not statistically significant.

The highest statistically significant increase is observed in the **UK** (+55%) where 77% of the follow-up respondents had heard of the campaign by the end of the year ($z=-23.69$, $p<0.01$). In the UK this high share may be attributed to the fact that most students living in halls are first year undergraduates, and thus would not have been exposed to the campaign before. Whereas in other countries there may be more students who have previously lived in the halls and heard about the campaign in during the previous academic year.

Table 45 Familiarization with the SSO campaign - per country and total sample

Have you heard of the Student Switch Off (SSO) campaign?		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
Yes	Follow-up	27%	94%	43%	58%	40%	62%	77%	63%
	Baseline	25%	85%	30%	37%	18%	57%	22%	29%
	difference from baseline	2%	9%	14%*	21%*	22%*	5%	55%*	34%*
No	Follow-up	73%	6%	57%	42%	60%	38%	23%	37%
	Baseline	75%	15%	70%	63%	82%	43%	78%	71%
	difference from baseline	-2%	-9%	-13%	-21%	-22%	-5%	-55%	-34%

*statistically significant difference

4.1.11 Influence of SSO

Respondents who answered that they had heard of SSO were subsequently asked if SSO raised their awareness on what they can do to save energy in their everyday life. A two-proportion z-test was used to determine whether the differences between the baseline and follow-up survey proportions are statistically significant. The results are shown in Figure 10 and tabulated in Table 46.

In the baseline survey, 67% of the respondents agreed that SSO has made them more aware on what they can do to save energy in their everyday life. At the end of the academic year this share was increased by +2% (69% of follow-up respondents). This increase is statistically significant ($z=2.04$, $p=0.02$)



In all countries the vast majority of respondents agreed that SSO made them more aware on what they can do to save energy in their everyday life. None of the country specific differences, except for Greece, are statistically significant.

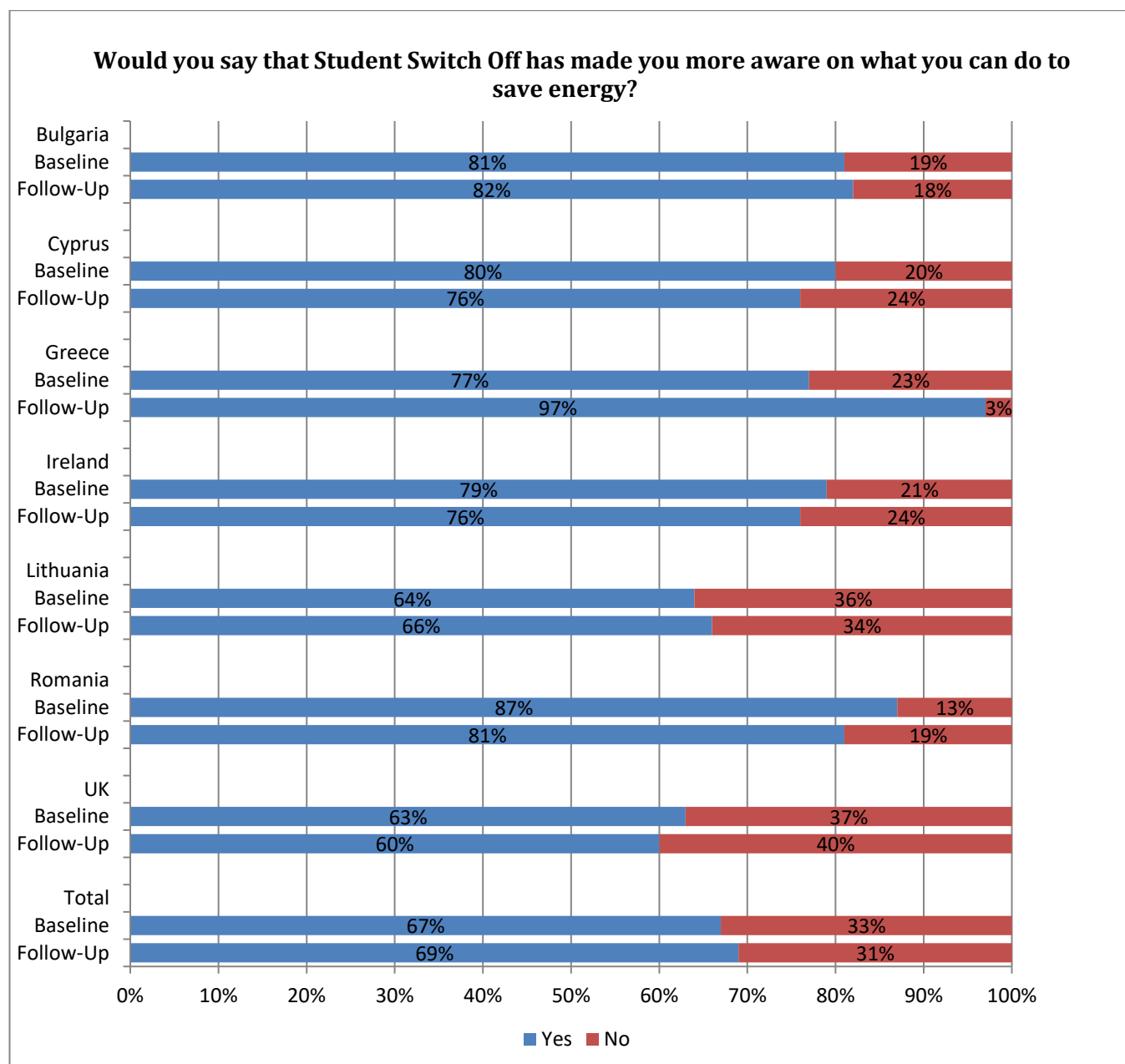


Figure 10 SSO influence per country and total sample

In **Bulgaria**, 82% of the follow-up survey participants said that SSO has made them more aware on what they can do to save energy in their everyday life. In the baseline this proportion was 81%.

In **Cyprus**, the share of respondents in the follow-up survey that SSO increased their awareness on what they can do to save energy in their everyday life was 76%, -4% decreased from the baseline survey.

In **Greece**, a statistically significant increase of +20% is observed ($z=-2.88$, $p=0.002$). In the baseline survey 77% of those surveyed said that SSO has made them more aware on what they can do to save energy in their everyday life whereas that share in the end of the year increased to 97%.



In **Ireland**, 76% of those questioned in the follow-up survey stated that SSO has made them more aware on what they can do to save energy in their everyday life. In the baseline this proportion was +3% higher (79%).

In **Lithuania**, the share of those that SSO raised their awareness on what they can do to save energy in their everyday life increased from 64% to 66% in the follow-up survey.

In **Romania**, at the end of the academic year, 81% of the respondents stated that SSO made them more aware on what they can do to save energy in their everyday life compared to 87% at the beginning.

In the **UK**, the share of respondents in the follow-up survey that SSO increased their awareness on what they can do to save energy in their everyday life was 60%, decreased by -3% from the baseline survey.

Table 46 Influence of SSO - per country and total sample

Would you say that Student Switch Off has made you more aware on what you can do to save energy in your everyday life?		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
Yes	Follow-up	82%	76%	97%	76%	66%	81%	60%	69%
	Baseline	81%	80%	77%	79%	64%	87%	63%	67%
	difference from baseline	1%	-4%	20%*	-3%	2%	-6%	-3%	2%*
No	Follow-up	18%	24%	3%	24%	34%	19%	40%	31%
	Baseline	19%	20%	23%	21%	36%	13%	37%	33%
	difference from baseline	-1%	4%	-20%	3%	-2%	6%	3%	-2%

*statistically significant difference

4.2 Energy dashboard

The energy dashboard (<https://switchoff.nus.org.uk/>), created and maintained by Ecovisum, is a supporting tool for the SSO campaign. It makes use of dormitory energy data letting students to know how much energy they are saving throughout the year in their dormitories.

4.2.1 Familiarization with the SSO dashboard

Respondents were asked whether they had visited their university's SSO energy dashboard. Only respondents that had heard of SSO were directed to this question. The results are illustrated in Figure 11.

In all countries, except for Cyprus, the majority of respondents had not visited the dashboard. The biggest share of respondents that had visited the SSO dashboard is found in Cyprus (56%). In Romania, Greece and Ireland this share is 32%, 27% and 20% respectively while in Bulgaria, the UK and Lithuania the share of those who have visited their university's dashboard is less than 20% (18%, 17% and 13% respectively). Overall, 22% of the total sample had visited the energy dashboard of their university whereas 78% had not.



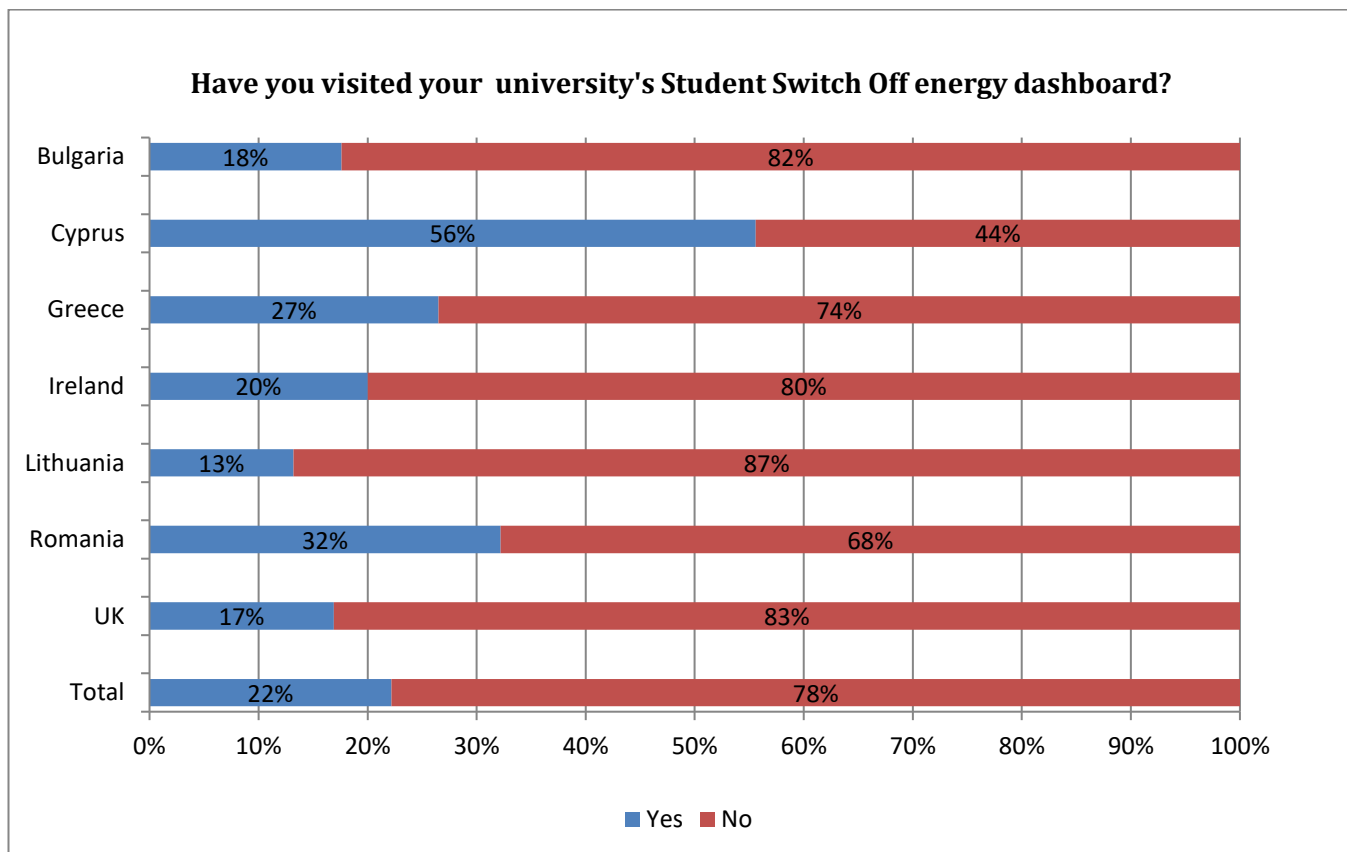


Figure 11 Familiarization with the SSO dashboard

4.2.2 First contact with the SSO energy dashboard

Respondents who had visited their university's SSO energy dashboard were later asked about how they first heard about it. The results are illustrated in Figure 12.

Thirty-four (34%) of the respondents across the seven countries stated that they first heard about the SSO energy dashboard from "Emails". "Social media" (27%) was the second most popular response given by those who participated in the follow-up survey, probably their country-specific SSO Facebook page, whereas 12% of the respondents first heard about the dashboard from a display screen at their university. Eleven percent (11%) of the participants first heard about the dashboard from a display screen in their halls of residence / college and another 11% from word of mouth/friends. Two percent (2%) first heard about the SSO energy dashboard from a search engine.

As it is depicted in Figure 12, "Emails" and "Social Media" were the most popular responses in Bulgaria, Greece, Ireland and the UK. In Cyprus and Lithuania, Emails and Display screen in their hall were the most frequent responses. In Romania respondents first heard about the dashboard mostly from social media and display screens at their university. Interestingly, none of the respondents in Bulgaria, Cyprus, Greece, and Ireland had first heard about the dashboard from a search engine. Moreover, none of those surveyed in Bulgaria, Greece, Ireland and Lithuania had first heard about the SSO energy dashboard from a display screen at university. In addition, none of the respondents in Bulgaria and Greece had first heard of the dashboard from a display screen in their halls of residence.

The highest share of those who first heard about the dashboard from emails was recorded in Lithuania (69%) and the lowest in Romania (5%). With regard to social media the highest share was observed in Romania (43%) whereas none of the respondents in Lithuania had first heard of the dashboard from social media. The option "Search engine" was chosen by respondents in Lithuania (8%), Romania (3%) and the UK (3%). The highest percentage of those who first heard about the SSO energy dashboard from word of mouth or friends

was observed in Greece (26%) and the lowest in Romania (7%). The option “Display screen at university” recorded its highest percentage in Romania (20%) and its lowest in Cyprus (5%). With regard to “display screen in your halls of residence / college” the highest share was observed in Cyprus (45%) and the lowest in the UK (8%). The most popular responses in each country are described in the following paragraphs.

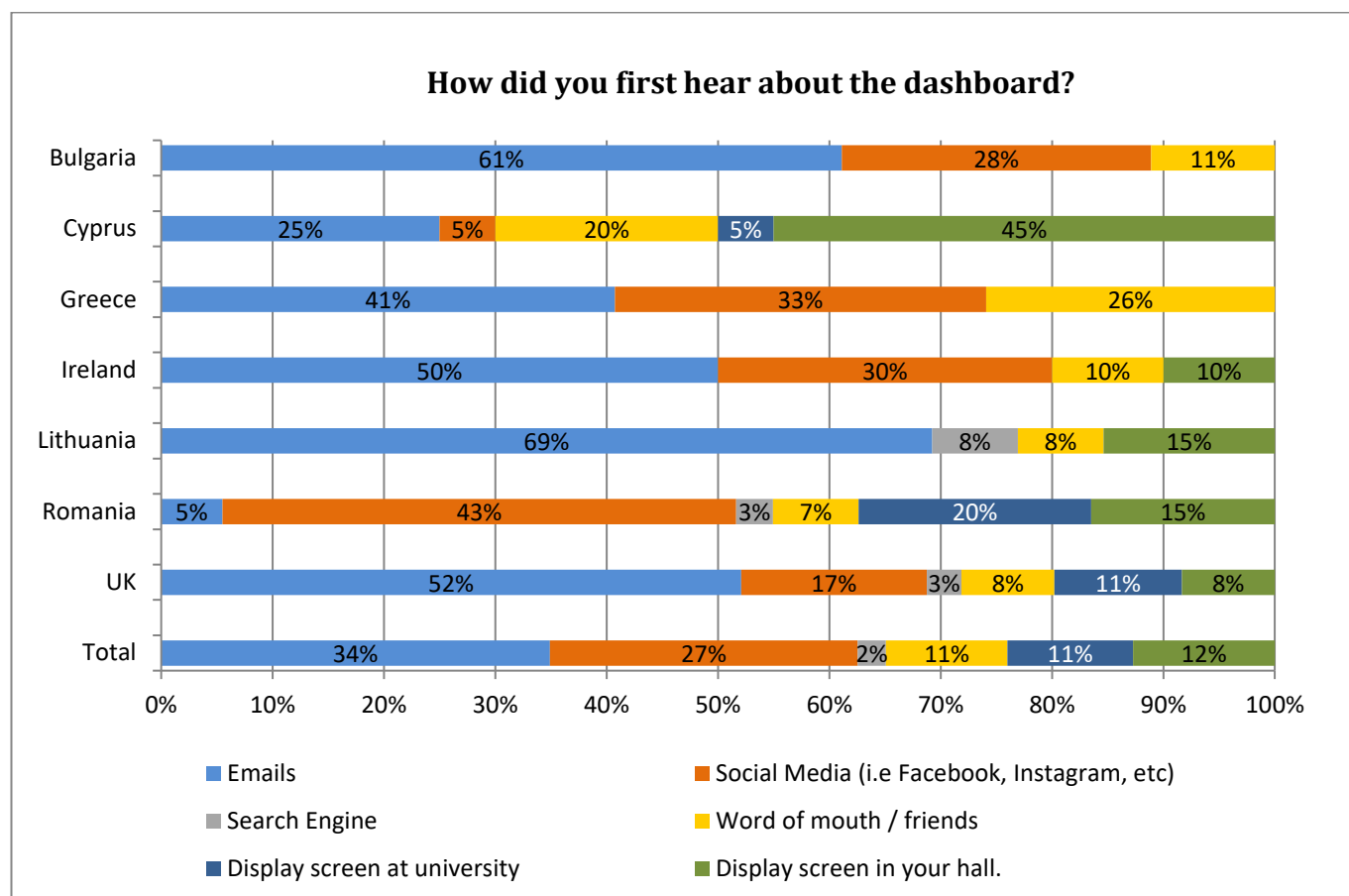


Figure 12 First contact with the SSO energy dashboard

In **Bulgaria** 61% of the respondents reported that they first heard about the SSO energy dashboard from emails and 28% from social media. “Word of mouth/friends” was selected by 11% of the respondents. “Search engine”, “Display screen in your hall” and “Display screen at university” were not selected.

In **Cyprus** 45% of those questioned reported that they first heard about the SSO energy dashboard from display screens in their halls of residence. Twenty-five percent (25%) of those surveyed stated they first heard about the dashboard from emails whereas 20% from word of mouth / friends. “Social media” and “Display screen at university” were each selected by 5% of the respondents.

In **Greece**, 41% of the respondents stated that they first heard about the SSO energy dashboard from emails. Social media (33%) was the second most popular response in Greece, whereas 26% of the respondents first heard about the dashboard from word of mouth / friends.

In **Ireland**, 50% of those surveyed reported that they first heard about the SSO energy dashboard from emails. In addition, 30% of the respondents stated that they first heard about the energy dashboard from social media. “Word of mouth/friends” and “Display screen in your hall” were each selected by 10% of the respondents.

In **Lithuania** 69% of the respondents were first informed about the SSO energy dashboard via emails. Furthermore, 15% of the participants were first informed about the energy dashboard from display screens in their halls of residence while “search engine” and “word of mouth” were each selected by 8% of those surveyed.

In **Romania** 43% of those questioned, first heard about the SSO energy dashboard from social media. Display screen at their university (20%) was the second most popular response whereas 15% of the respondents first heard about the dashboard from a display screen in their halls of residence.

In the **UK**, 52% of the respondents first heard about the SSO energy dashboard from emails. Twenty-seven percent (27%) of those questioned stated they first heard about the dashboard from social media whereas 12% of the respondents first heard about the SSO energy dashboard from display screens in their halls of residence/college. "Word of mouth/friends" and "display screen at university" were each selected by 11% of those surveyed.

4.2.3 Frequency of visits to the SSO energy dashboard

Respondents who had visited their university's SSO energy dashboard were also asked how often they had viewed the dashboard since the beginning of the academic year. The results are presented in Figure 13.

Overall, 49% of the respondents visited the SSO energy dashboard less than once a month. Thirty-one percent (31%) viewed the dashboard every month while 11% viewed the energy dashboard on a weekly basis. Two percent (2%) of those surveyed reported that they visited the dashboard daily whereas 7% never visited the SSO energy dashboard over the academic year.

In Ireland (80%), Bulgaria (67%), the UK (66%), and Romania (41%) most respondents had viewed the dashboard on a "less than once a month" basis whereas in Greece (56%), Cyprus (40%) and Lithuania (31%) on a "monthly" basis. Across the seven countries, the highest percentage of those who had viewed the dashboard "daily" was recorded in Lithuania (8%) followed by Bulgaria (6%) whereas the lowest was recorded in Greece (4%) and Romania (2%). Interestingly, in Ireland and the UK none of the respondents had viewed the dashboard daily. In Cyprus, Greece, Lithuania and Romania 15% of respondents in each country had viewed the dashboard weekly followed by Bulgaria (11%) and Ireland (10%) whilst the lowest share was observed in the UK (4%). Interestingly, in Lithuania (31%), Cyprus (10%), Bulgaria (6%), Romania (5%), and the UK (7%) a share of respondents stated they had "Never" viewed the dashboard.

The most popular responses given per country are described below.

In **Bulgaria**, 67% of the respondents stated that they used to view the dashboard less than once a month, 11% of those surveyed used to view the energy dashboard monthly and another 11% of the participants used to visit dashboard's platform weekly.

In **Cyprus**, 40% and 30% of the respondents replied that they used to view the energy dashboard on a monthly and a less than once a month basis, respectively, while 15% of those surveyed stated that they visited the dashboard weekly. A further 10% share of respondents stated they had "Never" viewed the dashboard since the beginning of the academic year. The latter may be attributed to the possibility that respondents might not have found the energy dashboard engaging enough.

In **Greece**, 56% of the respondents visited the SSO energy dashboard every month, with those that viewed it less than once a month being 26%. Fifteen percent (15%) of those questioned stated they viewed the dashboard weekly.

In **Ireland**, 80% of the respondents stated that they visited the energy dashboard's platform less than once a month whereas 10% of those surveyed viewed the dashboard every week and another 10% of the respondents reported that they visited the dashboard on a monthly basis.

In **Lithuania**, 31% of the respondents visited the dashboard every month while another 30% was equally split between those that visited the platform weekly (15%) and those that visited the dashboard less than once a month (15%). Thirty-one percent (31%) of those surveyed stated that they had never visited the dashboard since the beginning of the academic year. The latter may be attributed to the possibility that respondents might not have found the energy dashboard engaging enough.



In **Romania**, 41% of the participants replied that they used to view the SSO dashboard on a less than once a month basis and 38% stated that they used to view the dashboard monthly. In addition, 15% visited the energy dashboard weekly.

In the **UK**, a 66% majority of those surveyed visited the energy dashboard less than once a month. Twenty-three percent (23%) of the respondents made monthly visits whereas a 4% minority visited the dashboard on a weekly basis. Furthermore, 7% of those questioned reported that they had never visited the dashboard since the beginning of the academic year. A possible reason for this might be that none of the UK universities were able to get automatic data to the dashboard meaning the dashboard only got updated periodically. As a result, visiting the dashboard did not allow the respondents to see 'real-time' updates as with other countries and thus there was no need for them to regularly visit it during the academic year.

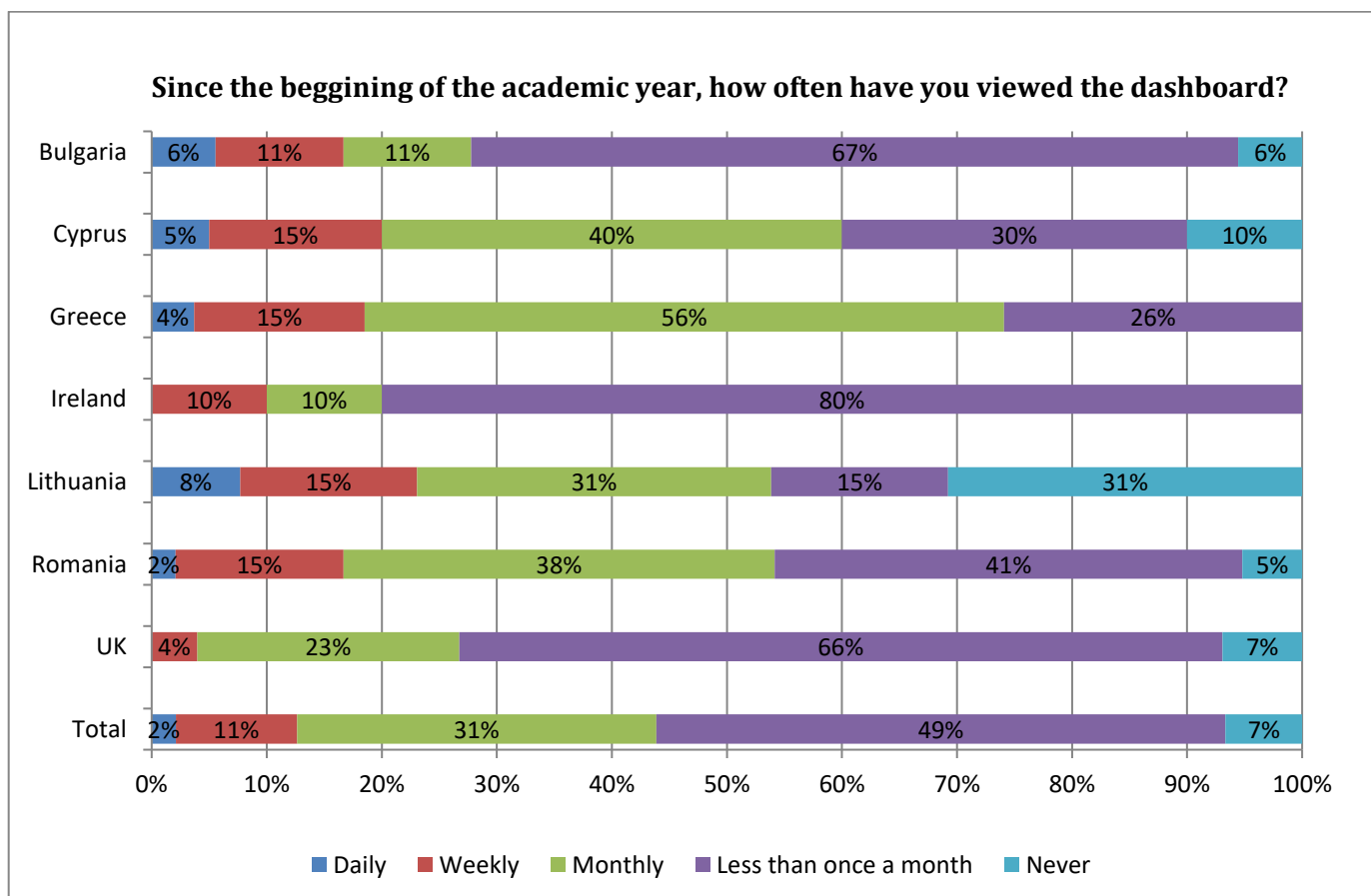


Figure 13 Frequency of visits to the SSO energy dashboard

4.2.4 Visiting the SSO energy dashboard throughout the academic year

Respondents who had visited their university's SSO energy dashboard were also asked whether their visits to the dashboard decreased, increased or stayed about the same since the beginning of the academic year. The results are presented in Figure 14.

Overall, 59% of the respondents reported that their visits to the SSO energy dashboard stayed about the same since the beginning of the academic year. Twenty-three percent (23%) of those surveyed stated that their visits had increased since the beginning of the academic year whereas 18% of those questioned reported a decrease. In all countries, except for Lithuania, the most frequent response was "Stayed about the same" whilst in Lithuania 46% of those surveyed selected "Increased" and another 46% reported that their visits to the energy dashboard stayed about the same. The highest percentage of those that stated "Decreased" was recorded in the UK (25%) and the lowest in Lithuania (8%). On the contrary, the highest share of those that

replied “Increased” was observed in Lithuania (46%) and the lowest in Ireland (10%). With regard to the “Stayed about the same” statement, the highest share was observed in Ireland (70%) and the lowest in Lithuania (46%).

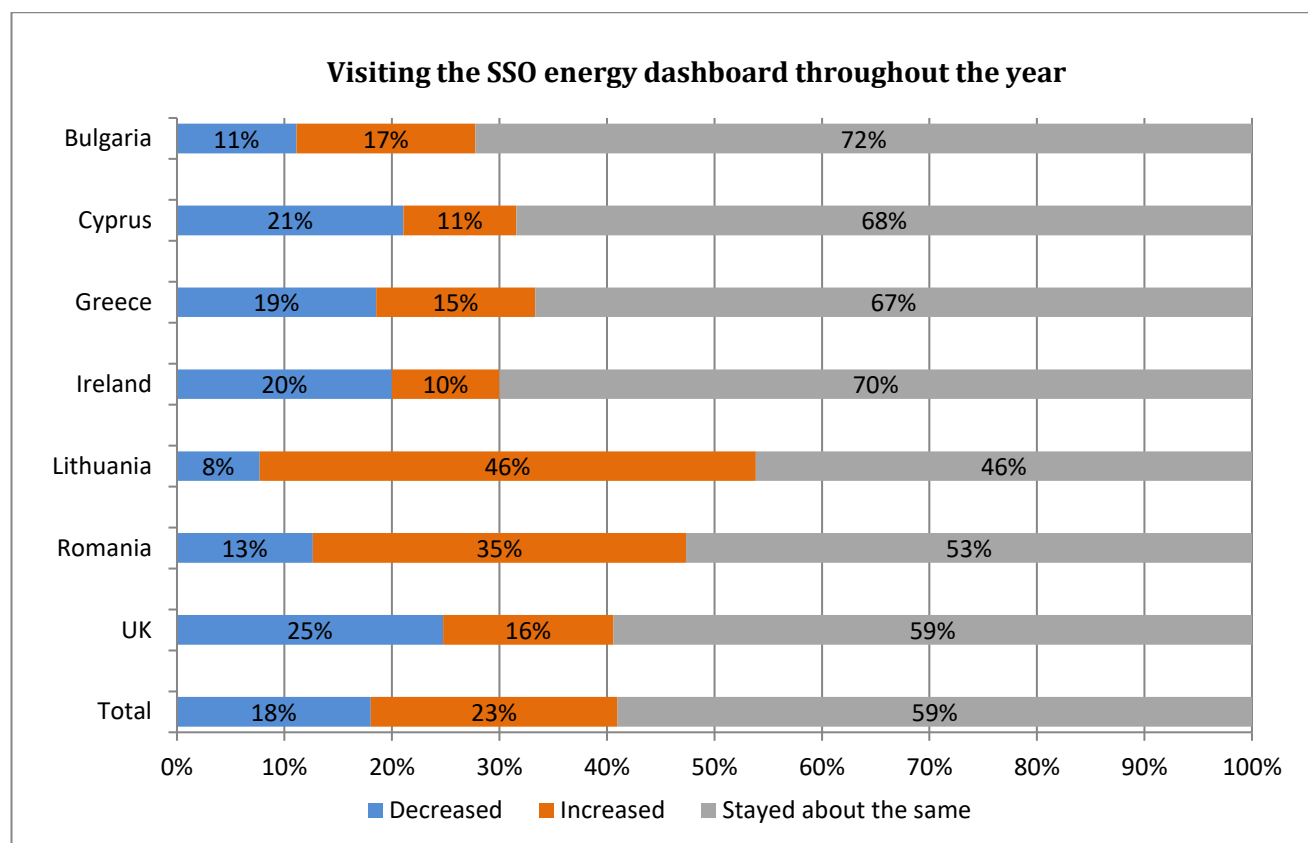


Figure 14 Visiting the SSO energy dashboard throughout the academic year

In **Bulgaria**, 72% of the respondents stated that their visits to the energy dashboard had stayed about the same since the beginning of the academic year whereas 17% of the respondents reported that their visits to the dashboard had increased. Eleven percent (11%) of those questioned stated that their visits to the dashboard had decreased since the beginning of the academic year.

In **Cyprus**, 72% of participants stated that their visits to the dashboard had stayed about the same since the beginning of the academic year, 21% replied that their visits had decreased while 11% reported an increase in their visits to the dashboard since the beginning of the academic year.

In **Greece**, the majority of the respondents (67%) stated that their visits to the energy dashboard stayed about the same since the beginning of the academic year. Nineteen percent (19%) of those surveyed reported a decrease and 11% stated that they increased their visits to the dashboard since the beginning of the academic year.

Seventy percent (70%) of the respondents in **Ireland** stated that their visit frequency stayed about the same since the beginning of the academic year, whilst 20% stated that they had decreased their visits to the dashboard's platform. Ten percent (10%) of the participants reported an increase in their visits to the dashboard since the beginning of the academic year.

In **Lithuania**, 46% of those surveyed responded that their visits to the dashboard stayed about the same and another 46% said that they had increased their visits since the beginning of the academic year. Eight (8%) of the participants reported a decrease in their visits to the dashboard since the beginning of the academic year.

In **Romania**, more than half of the respondents (53%) replied that their visit frequency had stayed about the same since the beginning of the academic year, while 35% of the respondents stated that their visits to the

dashboard increased during the academic year. Thirteen percent (13%) of those surveyed stated that their visits decreased.

In the **UK**, the majority of those questioned (59%) reported that their visits stayed about the same since the beginning of the academic year while 23% of the respondents reported that their visits to the dashboard had increased. Eighteen percent (18%) of those questioned stated that their visits to the dashboard had decreased since the beginning of the academic year.

4.2.5 Reasons for viewing the SSO energy dashboard

Respondents who had visited their university's SSO energy dashboard during the academic year were also asked to rank in order of importance the top-three reasons for viewing it. They were able to choose three out of four predefined options along with a fifth open ended option:

1. To see how my own halls of residence/college is performing
2. To see how my own halls of residence/college is performing relative to other halls of residence/colleges at my university
3. To learn new ways of saving energy
4. To use the information to encourage students in my halls of residence/college to do better
5. Other

The results are presented in Figure 15.

In total, 84% of the participants reported "To learn new ways of saving energy" as one of their top-three reasons for viewing the dashboard and league tables. "To see how my own halls of residence/college is performing" and "To see how my own halls of residence/college is performing relative to other halls of residence/colleges at my university" were also important reasons, placed in the first three ranking positions by 82% and 79% of the respondents, respectively.

In general, respondents from all countries visited the energy dashboard for all four aforementioned reasons however the ranking differs across the seven countries.

In **Bulgaria**, 99% of those surveyed mentioned "To see how my own halls of residence/college is performing relative to other halls of residence/colleges at my university" as one of their top-three reasons for viewing the dashboard and league tables. "To learn new ways of saving energy" and "To see how my own halls of residence/college is performing" were also placed in the top-three positions by 82% and 76% of respondents, respectively.

In **Cyprus**, 93% of the respondents pointed out "To see how my own halls of residence/college is performing" as one of their top-three reasons for viewing the dashboard. Seventy-three percent (73%) equally placed "To see how my own halls of residence/college is performing relative to other halls of residence/colleges at my university" and "To learn new ways of saving energy" among the three main reasons for viewing the dashboard and league tables.

In **Greece**, 100% of those questioned reported "To see how my own halls of residence/college is performing" as one of their top-three reasons for viewing the dashboard and league tables. "To learn new ways of saving energy" and "To see how my own halls of residence/college is performing relative to other halls of residence/colleges at my university" were also important reasons, placed in the first three ranking positions by 84% and 78% of the respondents, respectively.

In **Ireland**, 100% of the respondents pointed out "To learn new ways of saving energy" as one of their top-three reasons for viewing the dashboard and league tables. "To see how my own halls of residence/college is performing relative to other halls of residence/colleges at my university" and "To see how my own halls of residence/college is performing" were also placed in the top-three positions by 89% and 88% of respondents, respectively.

In **Lithuania**, 100% of those surveyed selected "To see how my own halls of residence/college is performing relative to other halls of residence/colleges at my university" and "To see how my own halls of residence/college is performing" as their two most important reasons for viewing the dashboard and league



tables. "To learn new ways of saving energy" was their third most popular response given by 58% of respondents.

In **Romania**, 90% of the participants reported "To learn new ways of saving energy" among the top three reasons for visiting the dashboard. "To use the information to encourage students in my halls of residence/college to do better" and "To see how my own halls of residence/college is performing relative to other halls of residence/colleges at my university" were also important reasons, placed in the first three ranking positions by 80% and 67% of the respondents, respectively.

In the **UK**, 85% of the respondents pointed out "To see how my own halls of residence/college is performing" whereas another 85% placed "To learn new ways of saving energy" among their top-three reasons for viewing the dashboard. "To see how my own halls of residence/college is performing relative to other halls of residence/colleges at my university" was selected by 79% of those surveyed as their third main reason for viewing the dashboard and league tables.

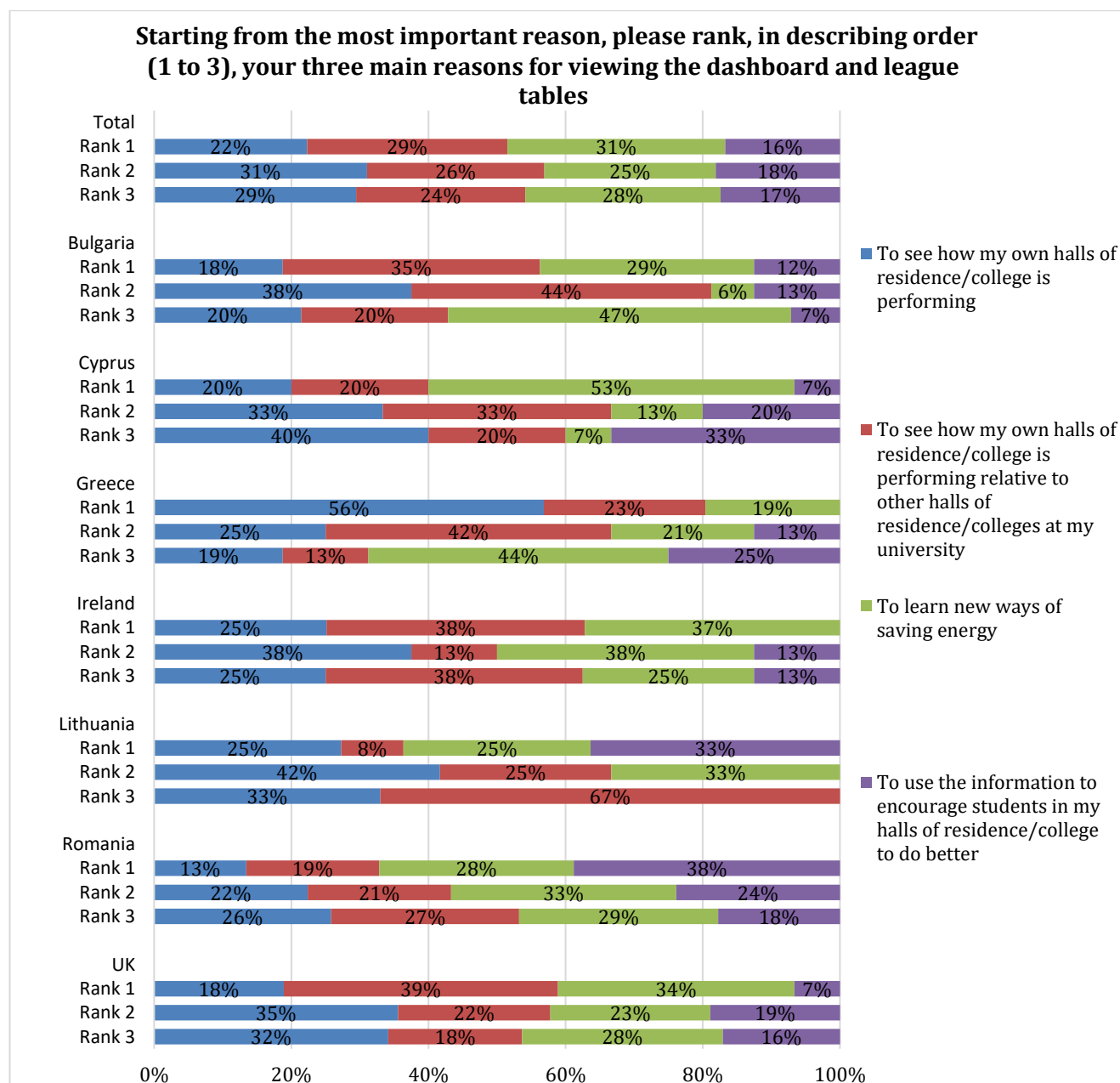


Figure 15 Reasons for viewing the SSO dashboard



4.2.6 Energy saving efforts in future lifestyle

Respondents were asked to select the statement that best describes the way they will be living when they move out of their halls of residence/college in relation to energy saving. The results are presented in Figure 16.

Overall, 34% of those surveyed stated that "I think I'll be doing a lot more to save energy" and another 34% "I think I'll be doing a bit more to save energy". A proportion of 27% reported that "I think I'll probably be doing about the same to save energy". Just 1% of those questioned reported that "I think I will be doing a bit less to save energy" and less than 0.5% "I think I will be doing a lot less to save energy". Three percent (3%) said that they "don't know" how they will be living when they move out of their hall of residence in relation to energy saving.

In all countries the three most popular responses are "I think I'll be doing a lot more to save energy", "I think I'll be doing a bit more to save energy" and "I think I'll probably be doing about the same to save energy". It is positive to see that most of those surveyed in each country stated that they would be doing more to save energy.

The highest percentage of those stated "I think I'll be doing a lot more to save energy" was recorded in Romania (57%) and the lowest in Bulgaria (23%). With regard to the statement "I think I'll be doing a bit more to save energy", the highest share of responses was observed in Greece (50%) and the lowest in Romania (16%). Concerning the statement "I think I'll probably be doing about the same to save energy", the highest percent was recorded in the UK (33%) and the lowest in Greece (14%). A description with the most popular responses per country is found below.

In **Bulgaria**, 41% of the respondents reported "I think I'll probably be doing about the same to save energy" while a proportion of 30% and 23% stated that "I think I'll be doing a bit more to save energy" and "I think I'll be doing a lot more to save to energy", respectively.

In **Cyprus**, 37% of the respondents said that they think they will be doing a lot more to save energy and a share of 31% reported that they think they will be doing a bit more to save energy. A share of 29% said that they think they will probably be doing about the same.

In **Greece**, the biggest share of respondents (50%) said that they will be doing a bit more to save energy while 30% of them that they think they will be doing a lot more. Another 14% said that they will probably be doing about the same to save energy.

In **Ireland**, 48% of the respondents stated that they think they will be doing a bit more to save energy. Thirty percent (30%) said that they think they will be doing a lot more and a proportion of 22% said they will probably be doing about the same to save energy.

In **Lithuania**, 44% of respondents said that they will be doing a lot more to save energy, 34% that they will be doing a bit more and 18% of respondents said that they will probably be doing about the same to save energy.

In **Romania**, over half of the respondents (57%) said that they will be doing a lot more to save energy, while a proportion of 21% stated that they will probably be doing about the same to save energy. In addition, 16% of those surveyed reported that they will be doing a bit more to save energy.

In the **UK**, 40% of the participants stated that "I think I'll be doing a bit more to save energy" while a proportion of 33% and 24% reported that "I think I'll probably be doing about the same to save energy" and "I think I'll be doing a lot more to save to energy", respectively.

Energy saving efforts in future lifestyle

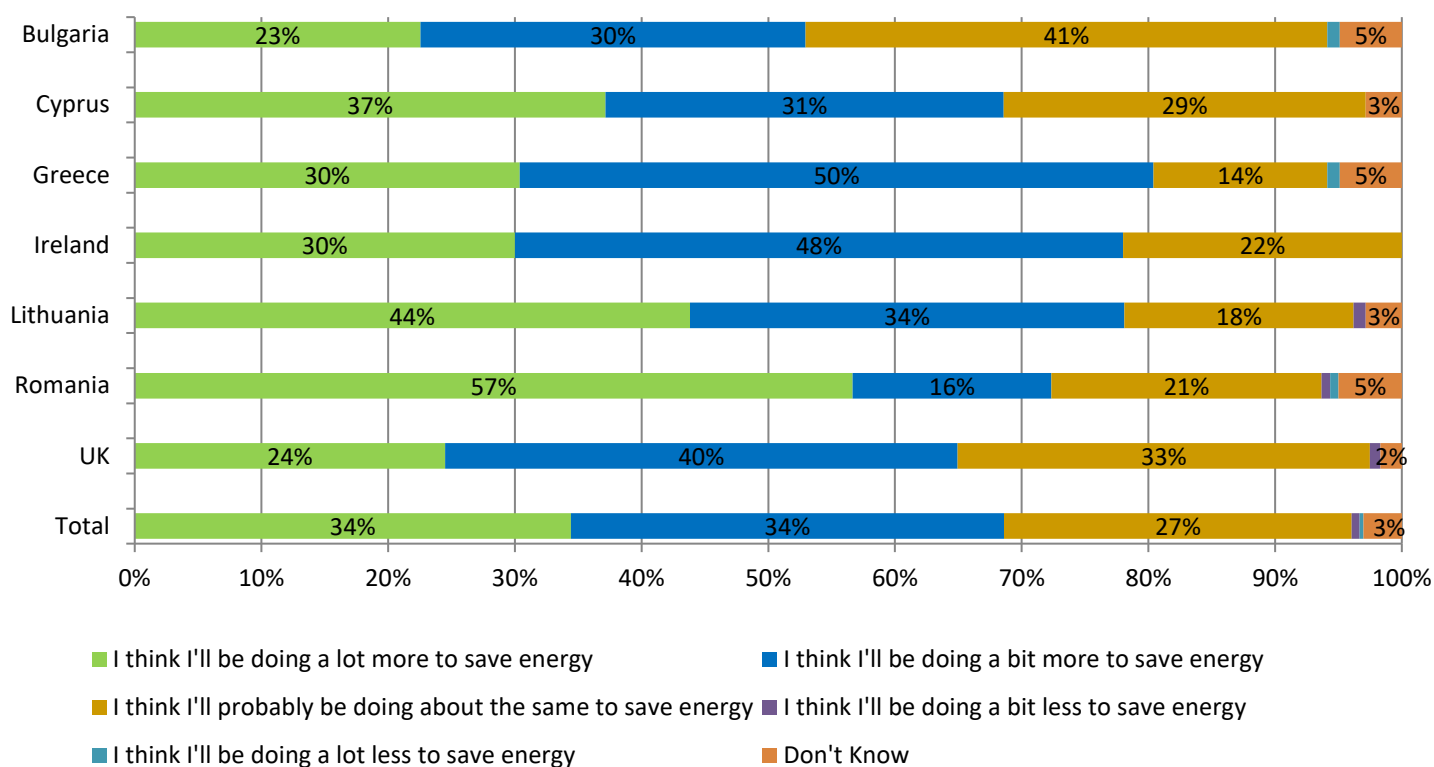


Figure 16 Energy saving efforts in future lifestyle

5 Summary of main findings

Level of information

Energy saving efforts

In total, 32% of the follow-up survey respondents stated that "I do quite a few things to save energy" followed by those who stated that "I do one or two things to save energy" (28%) and those that tried to save energy in most things they did (28%). According to the follow-up survey results, in Bulgaria (39%) and the UK (35%), the most popular response was "I do one or two things to save energy". In Cyprus (42%) and in Lithuania (44%) most of the respondents stated that "I try to save energy in most things I do". In Greece (37%), Ireland (40%) and Romania (36%), more than one third of those participated stated that "I do quite a few things to save energy".

In the end of year survey, higher proportions of respondents tried to save energy in everything they did (+1% increase) and in most things they did (+2% increase). In addition, a statistically significant higher share of respondents than in the baseline survey stated that "I do quite a few things to save energy" (+5%). A statistically significant smaller share of respondents stated that "I do one or two things to save energy" (-6%). Furthermore, a -2% statistically significant reduction is observed in those questioned in the follow-up survey who stated that they didn't really do anything to save energy.

How to save energy in halls of residence

At the end of the academic year only respondents living in Cyprus and Ireland felt well informed about what they personally can do to save energy in their hall whereas respondents in Bulgaria, Greece, Lithuania and the UK reported a moderate level of information. In comparison with the baseline survey respondents in all seven countries felt better informed about what they can personally do to save energy in their hall of residence or college compared to the beginning of the academic year.

Actions that can help save energy

In total, at the beginning of the year, 97% of the respondents selected "Switch of lights in empty rooms" as the action they think helps save energy. This share remained similar in the follow-up survey (96%). "Open windows to cool down instead of using a cooling device or system" (85% in both surveys) and "Avoid leaving electronic equipment on standby" (baseline 82%, follow-up 83%) were the second and third most popular selected actions in both surveys respectively, considered by respondents that help save energy.

Between the two surveys, the following statistically significant difference was observed for the total sample:

- "Put a lid on pans when cooking", +4% increase

Overall, in all countries, the vast majority of respondents in both surveys, think that switching off the lights in empty rooms, opening the windows to cool down instead of using a cooling device or system, and avoiding leaving electronic devices on standby mode helps save energy. Country-specific statistically significant differences in the perceived level of knowledge compared to the baseline survey are the following:

In **Bulgaria**

- "Switch off lights in empty rooms", -6% decrease

In **Cyprus**

- "Put a lid on pans when cooking", +28% increase

In **Greece**

- "Switch off lights in empty rooms", +9% increase
- "Put a lid on pans when cooking", +15% increase
- "Put on a jumper or an extra blanket instead of turning on the heating", +20% increase

In **Lithuania**

- "Avoid leaving electronic equipment on standby", + 11% increase



In **Romania**

- “Avoid leaving electronic equipment on standby”, +11% increase
- “Put a lid on pans when cooking”, +8% increase
- “Open windows to cool down instead of using a cooling device or system”, +9% increase,

In the **UK**

- “Put a lid on pans when cooking”, +8% increase,
- “Boil the kettle only with the amount of water you intend to use”, +5% increase,
- “Put on a jumper or an extra blanket instead of turning on the heating”, +4% increase,

Feelings about saving energy

In total, in both surveys, the highest share of respondents felt optimistic about energy saving (baseline 33%; follow-up 35%). The second most popular feeling in both surveys was the feeling of contentment (baseline 19%; follow-up 21%; +2% statistically significant increase). Overall, in the follow-up survey, 65% of the total sample selected words with positive meaning (baseline 61%) suggesting that, overall, students have positive feelings towards saving energy. Moreover, in the follow-up survey, fewer respondents (-2% statistically significant increase) felt indifferent about saving energy.

At the end of the academic year, 55% of those surveyed in Bulgaria (+11% increase from baseline), 86% of those surveyed in Cyprus (-2% decrease), 67% of those questioned in Greece (+15% increase), 67% of the Irish respondents (no change), 62% of the participants from Lithuania (+7% increase) as well as 82% and 57% of those questioned in Romania (+5% increase) and in the UK (-1% decrease), respectively, described their feelings about saving energy in a positive way [Optimistic, Proud, Content].

Furthermore, in Bulgaria (36%), Ireland (37%), Lithuania (43%) Romania (48%) and the UK (27%) the biggest share of follow-up respondents felt optimistic about saving energy. The most popular response describing respondents' feelings at the end of the academic year in Cyprus (47%) and Greece (29%) was contentment. On the other hand, none of the participants in Cyprus felt frustrated about saving energy. Moreover, the word “Frustrated” was the least selected in Bulgaria (5%), Greece (4%) and Lithuania (2%) while in Ireland (8%), Romania (1%) and the UK (5%) “Anxious” was the least selected option.

Frequency of energy saving actions

In the follow-up survey, an increase is observed in the frequency of the total sample of respondents who switch off lights in empty room (+1% statistically significant increase in mean value from baseline), boil the kettle only with the amount of water they intend to use (+5% statistically significant increase in mean value) and open windows to cool down instead of using a cooling device or a system (+1% increase in mean value). Conversely, a decrease is observed in the frequency that they put on a jumper or an extra blanket instead of turning on the heating (-3% decrease in mean value), put a lid on the pan when cooking (-2% decrease in mean value) and avoid leaving electronic equipment on stand-by (-2% decrease in mean value).

At country level, statistically significant differences between the baseline and the follow-up survey were observed:

- In **Cyprus** for opening windows to cool down instead of using a cooling device or system (+16% increase in mean value)
- In **Greece** for the actions of switching off lights in empty rooms, (+7% increase in mean value) and putting on a jumper or an extra blanket instead of turning on the heating (+12% increase in mean value)
- In **Ireland** for opening windows to cool down instead of using a cooling device or system (+5% increase in mean value) and putting a lid on the pan when cooking (+9% increase in mean value)
- In **Romania** for the actions of opening windows to cool down instead of using a cooling device or system (+4% increase in mean value), boiling the kettle only with the amount of water respondents intend to use (+6% increase in the mean value) and switching of lights in empty rooms (+4% decrease in mean value).
- In the **UK** for the action of boiling the kettle only with the amount respondents intended to use (+5% increase in mean value)

Finally, an increase in the frequency of the following six targeted energy saving actions, undertaken in various countries is observed at the end of the academic year: putting a lid on the pan when cooking (Cyprus, Greece, Ireland, Lithuania, Romania and the UK), putting extra layers on instead of the heating (Bulgaria, Greece, and



Lithuania), boiling the kettle only with the right amount of water (Cyprus, Greece, Lithuania, Romania and the UK), opening windows to cool down instead of a cooling device/system (Bulgaria, Cyprus, Ireland, Romania and the UK), avoiding leaving electronic equipment on stand-by (Lithuania) and switching off lights in empty rooms (Bulgaria, Greece, Lithuania, Romania).

Determinants of energy saving

Drivers

At the end of the academic year, the total sample of respondents recognized "It's a habit I adopted from home" (73%) and "It saves energy" (66%), as the main reasons for being more energy conscious. The reasons "It's the right thing to do" (50%) and "It helps reduce global warming" (47%), were also popular among respondents. The statement "It makes me feel good about myself" (24%) was picked by approximately one quarter of the respondents, while reasons "I don't know why, I just do it" (12%), "Someone asked me to" (5%), "I want to fit in with other residents of the hall who are energy conscious" (2%) and "I earn money/prizes out of it" (2%) were chosen by fewer respondents. Responses in the baseline survey appeared to be similar to those in the follow-up survey.

A statistically significant difference between the two surveys were observed for the reason:

- "It saves energy", +3% increase

In the follow-up survey, the vast majority of respondents in all countries except for the UK reported "It's a habit I adopted from home" as the main reason for being more energy conscious and "It saves energy" as the second most important reason for being more energy conscious. In the UK the most important reason was given as "It saves energy" whereas "It's a habit I adopted from home" was the second most important reason. The third most important reason varies among countries; in Bulgaria (44%), Romania (45%), Lithuania (51%) and the UK (58%) it is "It's the right thing to do". In Ireland (56%) it is "It helps reduce global warming". In Cyprus (58%) and Greece (45%) it is "It makes me feel good about myself".

At country level, statistically significant differences between the baseline and the follow-up survey were observed on the following drivers with regard to the share of respondents who selected them:

In **Greece**,

- "Someone asked me to", +13% increase
- "It's the right thing to do", -15% decrease
- "It makes me feel good about myself", +17% increase

In **Romania**

- "It helps reduce global warming", +8% increase
- "It saves energy", +7% increase
- "I earn money/prizes out of it", +2% increase
- "I don't know why, I just do it", -5% decrease

In the **UK**

- "It saves energy", +7% increase
- "It makes me feel good about myself", -4% decrease

Barriers

In total, 50% of the follow-up respondents replied that the main reason that prevented them from being more energy conscious was "I don't have any feedback on how much I consume". Thirty-four percent (34%) stated that "The energy I save in the hall won't save me any money" and 29% reported that "The way the building and its systems are designed limit the things I can do to save energy". "My personal actions to save energy would have minimal impact on the energy consumption of the hall" (27%), and "I have other things on my mind" (22%) were also considered as important reasons that prevented respondents from being more energy conscious.

Statistically significant differences between the baseline and the follow-up survey were observed for the reasons:

- "I don't have any feedback on how much I consume", +6% increase
- "I have other things on my mind", -4% decrease
- "Sustainable living is not for me", -1% decrease
- "My university/ college does not inspire me to act this way", -3% decrease



- “The way the building and its systems are designed limit the things I can do to save energy”, -5% decrease
- “Nothing prevents me from being energy conscious”, -3% decrease

At the end of the academic year, respondents in all countries except for Bulgaria pointed out the lack of feedback on how much energy they consumed as the main reason that prevented them from being more conscious when it comes to saving energy in their hall. In Bulgaria the biggest share (35%) of respondents said that “The energy I save in the hall won’t save me any money” whereas the lack of feedback on energy consumption was mentioned by 32% of those surveyed and was the second most important reason in Bulgaria.

The fact that the energy they save in the hall won’t save them any money is also reported in the top three reasons by respondents living in Greece (40%), Ireland (28%), Romania (25%), and the UK (40%). The same applies to “The way the building and its systems are designed limit the things they can do to save energy” in Lithuania (29%) and the UK (36%) and for “My personal actions to save energy would have minimal impact on the energy consumption of the hall” in Cyprus (11%) and Romania (32%). Other reasons placed in the top three reasons that prevented respondents from being more energy conscious are: “The hall management does not inspire me to act in this way” in Bulgaria (30%) and Lithuania (33%), “I have other things on my mind” in Ireland (26%) and Cyprus (19%) and “I don’t know how” in Greece (29%).

At country level, statistically significant differences between the baseline and the follow-up survey were observed on the following drivers with regard to the share of respondents who selected them:

In **Bulgaria**

- “The hall’s/college’s management does not inspire me to act in this way”, +15% increase

In **Greece**

- “The energy I save in the halls won’t save me any money”, +21% increase
- “I don’t know how”, +15% increase
- “I don’t have any feedback on how much I consume”, +12% increase
- “Sustainable living is not for me”, -6% decrease

In **Romania**

- “Others will make fun of me”, +1% increase,
- “I don’t have any feedback on how much I consume”, +8% increase

In the **UK**,

- “The energy I save in the hall won’t save me any money”, +5% increase
- “I don’t know how”, -6% decrease
- “I don’t have any feedback on how much I consume”, +10% increase
- “My university/college does not inspire me to act this way”, -5% decrease
- “The way the building and its systems are designed limit the things I can do to save energy”, +11% increase
- “Nothing prevents me from being energy conscious”, -5% decrease

Behavioural antecedents

Respondents from all countries, in both surveys, agreed that:

- a) Global warming is a problem for society,
- b) Energy conservation contributes to a reduction of climate change impacts,
- c) Everyone including their self is responsible for the exhaustion of energy sources,
- d) Everyone including their self is responsible for climate change,
- e) They feel morally obliged to save energy, regardless of what others do, and
- f) They intend to try harder to reduce their energy use this academic year

Furthermore, in both surveys, a “Disagree” to “Neither agree nor disagree” tendency is reported in all countries with regard to “Most people who are important to me think that I should use less energy” and “Saving energy means I have to live less comfortably”. In all countries, respondents mostly disagreed that “Saving energy is too much of a hassle”.



In both surveys, the total sample of respondents agreed the most with the statement "Global warming is a problem for society" whereas respondents disagreed the most with the statement "Saving energy is too much of a hassle".

Statistically significant differences between the baseline and the follow-up surveys were observed in the following statements:

- "I feel in complete control over how much energy I use in general", +2% increase in the mean value
- "Saving energy means I have to live less comfortably", +3% increase in the mean value
- "Most people who are important to me think that I should use less energy", -3% decrease in the mean value
- "Saving energy is too much of a hassle", -4% decrease in the mean value

An increase (or decrease) in mean values in the follow-up survey compared to the baseline survey, indicates a higher (or lower) level of agreement. Such country specific statistically significant differences are observed in the following statements:

In Bulgaria,

- "Most people who are important to me try to pay attention to their energy use", +13% increase

In Greece,

- "Most people who are important to me think that I should use less energy", +13% increase
- "Saving energy is too much of a hassle" -15% decrease
- "In general, I can reduce my energy use quite easily", -10% decrease
- "I intend to try harder to reduce my energy use this academic year", +5% increase

In Lithuania,

- "Saving energy means I have to live less comfortably", +2% increase

In Romania,

- "Most people who are important to me think that I should use less energy", -6% decrease
- "Everyone including myself is responsible for the exhaustion of energy sources", +4% increase
- "Saving energy is too much of a hassle", -14% decrease
- "Everyone including myself is responsible for climate change", +6% increase

In the UK,

- "Most people who are important to me think that I should use less energy", -7% decrease
- "As a student living on campus, I should be more concerned about my energy use during my stay there", -5% decrease
- "I feel morally obliged to save energy, regardless what others do", +3% increase

Student Switch Off campaign

Familiarization with SSO

At the end of the academic year a statistically significant higher share of respondents (+34%) had heard of the SSO campaign compared to the beginning of the academic year. The share of respondents that had heard of the SSO campaign was 63% in the follow-up survey and 29% in the baseline.

In all seven countries, more respondents had heard about the SSO campaign at the end of the academic year compared to the beginning. The increase in the number of respondents that had heard of the SSO campaign at the end of the academic year compared to the beginning is statistically significant in Greece (+14%), Ireland (+21%), Lithuania (+22%) and the UK (+55%).

The highest share of respondents who had heard of the SSO campaign by the end of the academic year is recorded in Cyprus (94%) and the lowest in Bulgaria (27%).



SSO influence on saving energy

In the baseline survey, 67% of the respondents agreed that SSO has made them more aware on what they can do to save energy in their everyday life. At the end of the academic year this share was statistically significant higher by +2% (69% of follow-up respondents).

In all countries the vast majority of respondents agreed that SSO made them more aware on what they can do to save energy in their everyday life. None of the country specific differences, except for Greece (+20% increase from baseline), are statistically significant. In Greece (97%), the highest share of respondents agreed that SSO has made them more aware on what they can do to save energy in their everyday life, whereas the lowest share is recorded in the UK (60%)

SSO Energy Dashboard

Familiarization with the dashboard

In all countries, except for Cyprus, the majority of respondents had not visited the dashboard. In Cyprus, 56% had visited the energy dashboard. In Romania, Greece and Ireland this share is 32%, 27% and 20% respectively while in Bulgaria, the UK and Lithuania the share of those who have visited their university's dashboard is 18%, 17% and 13% respectively.

Sources of information

Thirty-four (34%) of the respondents across the seven countries stated that they first heard about the SSO energy dashboard from "Emails". "Social media" (27%) was the second most popular response given by those participated in the follow-up survey, probably their country specific SSO Facebook page, whereas 12% of the respondents first heard about the dashboard from a display screen at their university.

- The largest proportion of respondents in Bulgaria (61%), Greece (41%), Ireland (50%), Lithuania (69%) and the UK (52%) first heard about the dashboard through emails they received.
- In Romania (43%), most respondents got informed about the energy dashboard through social media.
- In Cyprus (45%) most respondents first heard about the dashboard through a display screen in their hall.

Frequency of visits

Overall, 49% of the respondents used to visit the SSO energy dashboard less than once a month. Thirty-one percent (31%) used to view the dashboard every month while 11% viewed the energy dashboard on a weekly basis. Two percent (2%) of those surveyed reported that they visited the dashboard daily whereas 7% never visited the SSO energy dashboard over the academic year.

- In Ireland (80%), Bulgaria (67%), the UK (66%), and Romania (41%) the largest proportion of respondents visited the energy dashboard on a less than once a month basis.
- In Greece (56%) and Cyprus (40%) the largest proportion of those surveyed visited the dashboard on a monthly basis.
- In Lithuania 31% visited the dashboard on a monthly basis while another 31% never visited the dashboard.

Overall, 59% of the respondents reported that their visits to the SSO energy dashboard stayed about the same since the beginning of the academic year. Twenty-three percent (23%) of those surveyed stated that their visits had increased since the beginning of the academic year whereas 18% of those questioned reported a decrease.

- In Bulgaria (72%), Cyprus (68%), Greece (67%), Ireland (70%), Romania (53%), and the UK (59%) the biggest share of respondents reported that their visits to the dashboard stayed about the same throughout the academic year.
- In Lithuania, 46% of those questioned increased their visits to the dashboard since the beginning of the academic year and another 46% reported that their visits to the energy dashboard stayed about the same.

Reasons for visiting the energy dashboard

In total, 84% of the participants reported "To learn new ways of saving energy" as one of their top-three reasons for viewing the dashboard and league tables. "To see how my own halls of residence/college is performing" and "To see how my own halls of residence/college is performing relative to other halls of



residence/colleges at my university” were also important reasons, placed in the first three ranking positions by 82% and 79% of the respondents, respectively.

- Seeing how their own hall is performing was the top reason for visiting the dashboard in Cyprus (93%), Greece (100%) and the UK (85%).
- In Bulgaria (99%) and Lithuania (100%), “To see how my own halls of residence is performing relative to other halls of residence at my university” was the most important reason for visiting the dashboard.
- Learning new ways of saving energy was the top reason for respondents to visit the energy dashboard in Ireland (100%) and Romania (90%).
- In all countries, “To learn new ways of saving energy” was also an important reason for visiting the energy dashboard.
- In Romania respondents said that the use of the information to encourage students in their hall to do better was also a reason for visiting the dashboard.

Energy saving efforts in future lifestyle

Overall, 34% of those surveyed stated that “I think I’ll be doing a lot more to save energy” and another 34% “I think I’ll be doing a bit more to save energy” when they move out of halls of residence, followed by 27% of those who they will be doing about the same.

In Cyprus (37%), Lithuania (44%) and Romania (57%) the largest proportion of respondents will be doing a lot more to save energy when they move out of halls of residence. In Greece (50%), Ireland (48%) and the UK (40%) the biggest proportion of respondents will be doing a bit more to save energy. In Bulgaria, 41% of the respondents stated will be doing about the same to save energy. No respondent from Cyprus and Ireland reported that they would be doing a bit less or a lot less to save energy.

Annex I

Table 47 Number of responses per question in Baseline (B) and Follow-Up (F) surveys.

Questions	Bulgaria		Cyprus		Greece		Ireland		Lithuania		Romania		UK	
	B	F	B	F	B	F	B	F	B	F	B	F	B	F
Which one of these statements would you say best describes your current lifestyle?	139	127	50	38	195	102	297	55	288	116	430	359	1850	669
How informed do you feel about what you personally can do to save energy in your hall?	139	127	50	37	195	102	297	55	288	116	430	359	1850	669
Which of the following words best describes how you feel about saving energy?	125	109	48	36	192	101	282	51	273	109	396	315	1734	625
Please consider each of the statements below and indicate to what extent you agree or disagree with it	125	109	48	36	194	102	282	51	273	109	397	316	1735	620
Which of the following actions do you think can help save energy?	126	109	48	36	194	102	282	51	273	109	400	321	1737	627
Please consider each of the actions below and indicate how often you take them.	122	103	47	36	193	102	267	50	265	106	391	303	1652	604
Considering only the energy saving actions from the previous question that you take most frequently. please choose up to three important reasons for taking them.	123	103	47	36	193	102	268	50	265	106	392	307	1652	604
Please choose up to three important reasons that prevent you from being more conscious about your energy use in your hall from the list below.	123	103	47	36	193	102	268	50	265	106	392	307	1652	604
Have you heard of the Student Switch Off campaign? It is an energy saving campaign taking place in your dormitory.	122	102	47	36	193	102	267	50	265	106	386	301	1647	597
Would you say that Student Switch Off has made you more aware on what you can do to save energy in your everyday life?	31	28	40	34	56	41	99	29	47	41	220	184	361	456
Questions relevant to Follow-Up survey only														
Have you visited your university's Student Switch Off energy dashboard?	n/a	102	n/a	36	n/a	102	n/a	50	n/a	106	n/a	301	n/a	597
How did you first hear about the dashboard?	n/a	18	n/a	20	n/a	27	n/a	10	n/a	13	n/a	97	n/a	96
Since the beginning of the academic year how often have you viewed the dashboard?	n/a	18	n/a	20	n/a	27	n/a	10	n/a	13	n/a	96	n/a	101
Since the beginning of the academic year would you say that your visits to the dashboard:	n/a	18	n/a	19	n/a	27	n/a	10	n/a	13	n/a	95	n/a	101
Starting from the most important reason please rank in descending order (1 to 3) your three main reasons for viewing the dashboard and league tables?	n/a	15	n/a	15	n/a	16	n/a	8	n/a	10	n/a	62	n/a	87
Which one of these statements best describes how you think you will be living when you move out of halls of residence?	n/a	102	n/a	35	n/a	102	n/a	50	n/a	105	n/a	300	n/a	596