

Project acronym: SAVES 2
Project title: Students Achieving Valuable Energy Savings 2
Contract number: 754203
Project duration: 42 months

Deliverable reference number and title:

D5.2 Quantifying the behavioural change and energy saving attributable to the Student Switch Off campaign in academic year #1

July 2018

Authors:

Ioannis Kousis	National and Kapodistrian University of Athens (NKUA)
Marina Laskari	National and Kapodistrian University of Athens (NKUA)
Margarita-Niki Assimakopoulos	National and Kapodistrian University of Athens (NKUA)
Joanna Romanowicz	National Union of Students UK (NUS-UK)

Disclaimer: The sole responsibility for the content of this report lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither the EASME nor the European Commission are responsible for any use that may be made of the information contained therein.



Contents

Contents	2
Executive Summary	4
1 Introduction	7
1.1 The Student Switch Off campaign.....	7
1.2 Student engagement activities in academic year 2017-18.....	7
1.3 Overview of report.....	9
2 Methodology	10
2.1 Calculation of energy savings	10
2.2 Evaluation of behaviour and influencers of behaviour change	11
2.2.1 Data collection from questionnaire surveys.....	12
3 Energy data analysis and results.....	14
3.1 Europe wide savings	14
3.2 Country specific savings	14
3.3 University specific savings.....	15
4 Survey Results	18
4.1 Follow-up survey analysis	18
4.1.1 Level of information about saving energy in the hall.....	18
4.1.2 Feelings about Saving Energy.....	19
4.1.3 Energy saving in everyday life.....	19
4.1.4 Frequency of energy saving actions.....	20
4.1.5 Reasons for being more energy conscious	22
4.1.6 Reasons for being less energy conscious	22
4.1.7 Self-reported increase in energy awareness.....	25
4.1.8 Sources of energy saving related information.....	25
4.1.9 Familiarization with the SSO campaign	26
4.1.10 Influence of SSO.....	27
4.1.11 Familiarization with the SSO dashboard	28
4.1.12 Familiarization with the SSO energy dashboard.....	29
4.1.13 Frequency of visits to the SSO energy dashboard	29
4.1.14 Visiting the SSO energy dashboard throughout the academic year.....	30
4.1.15 Reasons for viewing the SSO energy dashboard	30
4.1.16 Behavioural antecedents on energy related topics	32
4.1.17 Energy saving efforts in future lifestyle.....	35
4.2 Matched respondents analysis	36
4.2.1 Respondent characteristics	36
4.2.2 Perceived level of information about saving energy in the hall.....	38
4.2.3 Behavioural antecedents on energy related topics.....	39
4.2.4 Energy saving in everyday life.....	45
4.2.5 Frequency of energy saving action	47

4.2.6 Reasons for being more energy conscious	50
4.2.7 Reasons for being less energy conscious	52
5 Summary of main findings.....	55
Annex I	59

Executive Summary

Student Switch Off (SSO) is an 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 change in their energy behaviour. The dormitory that saves the most energy on each campus 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 first 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 2017-2018.

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 incentivised questionnaire surveys completed by students at the beginning and at the end of the academic year, respectively. Apart from identical questions with the pre-competition questionnaire (baseline survey), the post-competition survey (follow-up survey) included SSO specific questions involving familiarization of the respondents with SSO engagement activities but also with the energy dashboard. A separate analysis was performed for the respondents of the follow-up survey and for the respondents that were matched with their responses to the baseline survey.

Energy savings

In 2017-18, 1.059 GWh of electricity were saved across all the participating countries compared to the baseline. This saving equates to over 530 tonnes of CO₂ emissions. Extrapolation for data from missing months for Student Switch Off campaigns lasting for less than nine months gives an additional saving of 323,734 kWh.

Percentage wise, most energy was saved in Cyprus (7.87%) and in Lithuania (7.64%). The United Kingdom had the highest absolute energy savings (772,661 MWh) and carbon dioxide savings (354 tCO₂). Ireland reported the lowest savings both in absolute terms (-212,386 kWh, -89 tCO₂) and in percentage terms (-12.45%).

At university level the biggest energy saving can be noted in University of York (UK), where 238 MWh were saved. The biggest percentage saving has been at Dublin City University (Ireland) where a 12.3% saving is noted. The most carbon dioxide was saved in University of York (UK) (172 tCO₂).

	Overall SSO savings (2017/18)
kWh saving	1,059,241
% saving	3,33%
CO ₂ saving (tonnes)	532

Ireland is the only country taking part in Student Switch Off where there was an increase in energy consumption (an increase of 212,386 kWh, and 89 tonnes of carbon). This is mainly attributed to the harsh winter and early spring 2018 as a result of which students spent more time in their accommodation, than they would otherwise (and therefore using extra energy). It was not possible to do degree day analysis on the National University of Ireland, Galway, due to granularity of the data (it was bi-monthly), and therefore the energy increase resultant of the extreme winter temperatures could not be accounted for in these dormitories.

Changes in behaviour and in influencers of behaviour

The findings of the questionnaire survey show positive signs of impact of the SSO campaign on students. Overall, in all countries the awareness of respondents of what to do to reduce the impact of their lifestyle and habits on energy consumption has increased. The biggest increase in energy awareness is reported in Romania and Bulgaria and the smallest in Lithuania. The SSO campaign is in the three most influential sources of information that helped respondents increase their energy awareness. In fact, more than 50% of respondents in Cyprus, Romania and the UK were significantly influenced by the Student Switch Off campaign this academic year.

The prevalent reasons for being more energy conscious at the end of the academic year are that it is a habit adopted from home and because it saves energy in all countries. On being less energy conscious, respondents in all countries except for Cyprus, think that it is because of lack of feedback on how much energy they consume. In Cyprus the biggest share of respondents think that nothing prevents them from being energy conscious. Other important reasons for being less energy conscious include: the fact that energy saving won't save them any money (Ireland, Lithuania and the UK), limitations of the building and its systems (Cyprus, Greece and Romania), don't know how (in Bulgaria), lack of inspiration from the hall management (in Greece and Lithuania) and having other things on their mind (UK).

The proportion of respondents that are less energy conscious due to lack of feedback on how much they consume decreased significantly (between -6% and -18%) in the UK, Cyprus, Romania and Ireland at the end of the academic year compared to the beginning. This is something that could be attributed to the SSO campaign and to the energy dashboard. Furthermore, at the end of the academic year a noticeable increase (+4%) is observed in the total number of respondents that think that nothing prevents them from being more energy conscious.

An increase in the frequency that the six targeted energy behaviours are performed is found at the end of the academic year in various countries: putting a lid on the pan when cooking (Greece, Ireland, Romania and the UK), putting extra layers on instead of the heating (Cyprus, Lithuania and Romania), boil the kettle only with the right amount of water (Cyprus, Romania and the UK), open windows to cool down instead of a cooling device/system (Ireland, Lithuania, Romania and the UK), avoid leaving electronic equipment on stand-by (Cyprus, Greece, Lithuania and Romania) and switch off lights in empty rooms (Romania).

Familiarisation with SSO

The majority of respondents had heard about the SSO campaign. However, in Greece and Lithuania only 21% and 24% respectively of those participating in the survey had heard about SSO suggesting that stronger presence in these countries needs to be established the next academic year.

The biggest influences that SSO has had on respondents of the survey are: it made them aware of the impact of their lifestyle and habits, it made them feel more confident that they could do things to reduce their environmental impact and it showed them practical examples on what other people do to save energy.

Use of the energy dashboard

There is room for improvement in the communication of the dashboard to students since in all countries most respondents have not visited the SSO energy dashboard this academic year. It is worth noting that for the next academic year all country partners are working on strengthening the integration of the energy dashboard in the SSO campaign as a way of increasing energy savings.

The media through which respondents first found out about the energy dashboard varied between countries; this included emails (Bulgaria, Ireland, Lithuania and the UK) and Facebook (Cyprus, Greece and Romania). The majority of respondents visited the dashboard on a monthly basis. The main reason for visiting the dashboard was to find out new ways of saving energy. Respondents also visited the dashboard to see how their own dormitory was performing alone and in relation to other dormitories at their university, and to use the information to encourage other students in their dormitory to save energy.

1 Introduction

1.1 The Student Switch Off campaign

The Student Switch Off (SSO) campaign is an 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 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 life to a more energy conscious one. 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 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 1). This is the first 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 1 Universities, dormitories, and students taking part in the SSO campaign

University	Country	No. of dormitories	No. of students in dormitories
University of Cambridge	UK	17	10,081
Kings College London	UK	12	4,999
London School of Economics	UK	4	1,286
University of York	UK	9	5,282
National and Kapodistrian University of Athens	EL	4	1,068
Technical University of Crete	EL	1	76
University of Cyprus	CY	1	208
Dublin City University	IE	1	1,400
National University of Ireland, Galway University	IE	4	1,100
National University of Ireland, Maynooth University	IE	4	986
University College Cork	IE	8	1,000
Vilnius Gediminas Technical University	LT	6	3,740
University of Bucharest	RO	16	4,288
University of Sofia	BG	17	6,300
Total		104	41,814

1.2 Student engagement activities in academic year 2017-18

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

- Regular photo competitions

- Termly climate quizzes
- Face-to-face visits on campus
- Communications training for student ambassadors

Table 2 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 2017-18 reports created for each of the seven countries. These are publicly available on the SAVES 2 website (www.saves-project.eu).

Table 2 Summary of engagement statistics for Student Switch Off for academic year 2017/18

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 (specify which one)
London School of Economics (LSE)	1,286	451	35%	10	359	3	538 Facebook
Kings College London (KCL)	4,999	1,292	26%	39	1,006	36	229 Facebook
University of Cambridge	10,081	2,692	27%	86	5,623	86	3,512 Facebook
University of York	5,282	646	12%	35	748	67	892 Facebook
University of Cyprus	208	208	100%	15	104	12	247 Facebook
Technical University of Crete	76	76	100%	3		8	223 Facebook
National and Kapodistrian University of Athens	1,068	81	8%	8	107	2	248 Facebook
The University of Sofia "St. Kliment Ohridski"	6,200	52	-	-	-	-	52 Facebook
University of Bucharest	4,822	659	15.37%	43	308	41	436 Facebook
Vilnius Gediminas Technical University	3,740	3,740	100	17	138	16	310 Facebook
Dublin City University	1,400	1,400	100	1	235	41	81 Facebook 125 Snapchat (est)
National University of Ireland, Galway	1,100	71	6.5	1	235	29	64 Facebook 125 Snapchat (est)
National University of Ireland, Maynooth	986	259	25	2	250	8	74 Facebook 125 Snapchat (est)
University College Cork	1,000	218	21.8	3	235	20	98 Facebook 125 Snapchat (est)

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 2017-2018.

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 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.

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 the UK, Cyprus, Greece and Lithuania), this was data from the 2013-14 (or earlier) academic year. For universities who were not involved in the SSO campaign (those in Ireland, Romania and Bulgaria), the data used was from the 2015-16 academic year (or earlier).
- Where feasible, smart meters feeding data from the participating dormitory buildings were connected to an online dashboard¹ developed by the project partner Ecovisum. Where automated data transmission was not possible (i.e. absence of smart meters), manual readings were taken and 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 years 2017-18 was compared against the baseline data from that dormitory – so it 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 into account variations in outside temperature.
- 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 only done for a small number of cases, and is indicated in the results section (section 3.3). As a minimum, electricity data was compared for six months of the year. Where more data was available, it was included (the most months compared was 9).
- 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 4 shows the conversion factors per country.

Table 3 Frequency and method of uploading data to the dashboard

University	Data received on the dashboard	Data strategy	Data resolution	Data files uploaded
University of Cambridge	Y	manual	daily	monthly
Kings College London	Y	auto push	daily	daily
London School of Economics	Y	auto pull (SFTP)	daily	TBC
University of York	N	TBC	TBC	TBC
National and Kapodistrian University of Athens	Y	auto push	15 mins	daily
Technical University of Crete	Y	manual	hourly	weekly

¹ <https://switchoff.nus.org.uk/>

University	Data received on the dashboard	Data strategy	Data resolution	Data files uploaded
University of Cyprus	Y	manual	hourly	weekly
Dublin City University	Y	manual	monthly	Weekly (variable)
National University of Ireland, Galway	Y	manual	60 days	2-weekly
National University of Ireland, Maynooth	Y	manual	monthly	monthly
University College Cork	Y	manual	monthly	monthly
Vilnius Gediminas Technical University	Y	auto pull	hourly	daily
University of Bucharest	Y	manual	monthly	monthly
The University of Sofia "St. Kliment Ohridski"	Y	manual	monthly	monthly

Table 4 Carbon conversion factors for SAVES 2 countries²

Country	carbon conversion factor - kgCO ₂ per kWh
Bulgaria	0.61086
Cyprus	0.72825
Greece	0.718211
Ireland	0.41925
Lithuania	0.27000
Romania	0.50845
UK	0.45850

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. All students in participating dormitories were encouraged to complete a baseline survey at the beginning of the academic year -and before their local energy-saving competitions got established- so we could identify existing energy-saving attitudes, behaviours and habits. All students that completed the baseline survey were encouraged to complete a follow-up survey at the end of the academic year. Pre- and post-competition surveys were then analysed to identify attitudinal, behavioural and habitual changes relating to energy conservation that could be attributable to the project.

Online versions of the questionnaire surveys were created on LimeSurvey³ in Bulgarian, Greek, Lithuanian, Romanian and English. Channels used to disseminate the questionnaire surveys were mainly university and students' unions mailing lists. Only students that answered the baseline questionnaire survey could be contacted for the follow-up survey through the email they provided in the baseline survey.

The target response rate for the baseline survey was 15% of students living in each country's dormitories at the beginning of the academic year and 15% of the baseline survey target for the follow-up survey. This corresponds to 5,705 respondents for the baseline and 855 for the follow-up (Table 5).

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

³ <https://www.limesurvey.org/>

Table 5 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	Baseline: 15% of students living in dorms	Follow-up: 15% of baseline target
Cyprus	208	31	5
Bulgaria	6,100	915	137
Greece	1,142	171	26
Romania	4,800	720	108
Ireland	4,486	673	101
Lithuania	4,000	600	90
UK	17,293	2,594	389
TOTAL	38,038	5,705	855

The baseline and the follow-up questionnaires were incentivized. In both cases two €25 and one €50 prize incentive were provided. Winners were chosen through a draw.

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. For this purpose, the respondents of the two questionnaires had to be matched. Matching was performed with the help of the respondents' email or name that they provided in both surveys. The findings from the matched respondent analysis are found in chapter 4.2 of this report.

There was also a number of questions asked at the end of the academic year that were SSO specific and therefore were not relevant for the baseline questionnaire. Those involved familiarization of the respondents with specific SSO engagement activities but also with the energy dashboard (<https://switchoff.nus.org.uk/>). The findings from the follow-up survey analysis are found in chapter 4.1 of this report.

Descriptive statistics were used to analyse the collected data. Mean values and percentages are presented in the results section. The actual number of responses to individual questions per country and for each analysis (matched respondent analysis and follow-up analysis) are tabulated in Annex I.

2.2.1 Data collection from questionnaire surveys

The total number of baseline survey entries was 3,344 (8.8% of students living in dormitories). Out of those respondents, 2,185 were valid entries, meaning that they met the criteria for inclusion in a possible baseline survey analysis, while 1,747 provided their email and could therefore be contacted for the follow-up survey (Table 6).

The number of entries that were considered valid for the follow-up analysis were 313, although 404 participated in total. Ninety-one entries were considered as invalid and therefore excluded from the analysis because they did not answer any questions with environmental content. The country with the highest number of valid follow-up entries was Ireland (127 respondents), while the country with the lowest number of valid entries was Cyprus with six respondents. Lithuania had 72 valid entries, followed by the UK (43), Romania (38), Greece (18) and Bulgaria (9). In effect, the follow-up target of 855 entries (Table 5) was not met. The countries that met their follow-up target were Cyprus and Ireland. For the next academic year all country partners will evaluate the strengths and weaknesses of their approach for meeting the target responses in order to ensure that the adequate number of students will participate in the survey.

The total matched entries were 287. Matching was achieved with the help of the email address or name that the respondents provided in the survey. The country with the highest number of matched participants was Ireland (123 matches), while the country with the lowest number of matched participants was Cyprus (six matches). Lithuania had 63 matched participants, followed by the UK, Romania and Greece with 41, 37, 17 matched participants respectively. In Bulgaria it was not possible to match any of the respondents.

Table 6: Survey response rate in follow-up survey

		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
Baseline	Valid entries	54	41	163	1,083	427	183	234	2,185
	Provided email	35	38	136	863	358	136	181	1,747
Follow-up	Total entries	11	6	26	170	92	49	50	404
	Valid entries	9	6	18	127	72	38	43	313
Matched	Valid entries	0	6	17	123	63	37	41	287

3 Energy data analysis and results

This chapter presents the energy data analysis and savings achieved over the academic year 2017/18 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.

3.1 Europe wide savings

In 2017-18, 1.059 GWh of electricity were saved across all the participating countries compared to the baseline. This saving equates to 532 tonnes of CO₂ emissions.

It is noted that in the Common Performance Indicators report for academic year 2017/18 extrapolated energy savings are also presented. The extrapolation is for data from missing months for Student Switch Off campaigns lasting shorter than nine months. The extrapolation gives an additional saving of 323,734 kWh to what is presented in Table 7. The additional saving accounts for just 23% of the data calculated in our overall savings, meaning that 77% is based on actual readings. The Common Performance Indicators report is accessible through the project website (www.saves-project.eu).

Table 7 Energy and carbon saving in the fourteen SAVES 2 universities

	Overall SSO savings (2017/18)
Baseline usage (kWh)	31,767,192
2017-18 usage (kWh)	30,707,951
kWh saving	1,059,241
% saving	3.33%
CO ₂ saving (tonnes)	532

3.2 Country specific savings

Table 8 shows per country savings. Carbon dioxide savings are based on carbon conversion factors in participating countries (Table 4) 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 as well.

Percentage wise, most energy was saved in Cyprus (7.87%) and in Lithuania (7.64%). The United Kingdom had the highest absolute energy savings (772,661 MWh) and carbon dioxide savings (354 tCO₂). Ireland reported the lowest savings both in absolute terms (-212,386 kWh, -89 tCO₂) and in percentage terms (-12.45%).

As per Table 8, it is noteworthy that data consumed by the Irish and UK universities accounts for 77% of all usage so the results from these countries have a significant impact on the overall savings of the project. Table 9 -Table 15 in section 3.3 detail university-specific savings (electricity and carbon) for each of the seven participating countries.

Table 8 Country specific MWh, percentage and carbon dioxide savings based on meter readings

	Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK
Baseline	2,213,796	253,790	1,517,117	1,705,252	1,183,584	2,376,160	22,517,493
Usage	2,070,995	233,817	1,443,301	1,917,638	1,093,178	2,204,190	21,744,832
kWh saving	142,801	19,974	73,817	-212,386	90,406	171,970	772,661
% saving	6.45	7.87	4.87	-12.45	7.64	7.24	3.43
CO₂ saving (tonnes)	87	15	53	-89	24	87	354

3.3 University specific savings

Detailed energy analysis was performed on energy data of each participating dormitory. The results are presented in Table 9-Table 15. It is important to note that each dormitory is a different size, therefore some had much bigger absolute energy savings than others. Furthermore, the number of months of data compared did vary across participating universities (and therefore countries), based on student occupancy/ data availability. Between 6-8 months of data was available. This is detailed in Table 9 -Table 15.

The biggest energy saving can be noted in University of York (UK), where 238 MWh were saved. The biggest percentage saving has been at Dublin City University (Ireland) where a 12.3% saving is noted. The most carbon dioxide was saved in University of York (UK) (172 tCO₂).

Ireland is the only country taking part in Student Switch Off where there was an oncrease in energy consumption (an increase of 212,386 kWh, and 89 tonnes of carbon) (Table 10). Although Dublin City University reported a saving of 12.3%, the National University of Ireland, Maynooth, and the National University of Ireland, Galway, reported an increase (17.85% and 21.93% respectively). There was an error in data for University College Cork, so for the purposes of this report it is not presented. It will be included in the report for 2018-19. There are many reasons why this increase may have occurred. One of them is that the winter and early spring of 2017-18 was the coldest since 2011 in Ireland, with extreme weather conditions resulting in a national Red Alert, a national shutdown and sustained sub-zero temperatures for more than three weeks. Both National University of Ireland, Galway, and National University of Ireland, Maynooth have electrically heated dormitories, therefore were particularly affected by the weather. Degree day analysis was performed at the National University of Ireland Maynooth, which helped stabilise the data; this however doesn't account for the fact that students were in their accommodation for longer periods of time/not attending lectures due to university shutdown, than they would otherwise (and therefore using extra energy). It was not possible to do degree day analysis on the National University of Ireland, Galway, due to granularity of the data (it was bi-monthly), therefore the energy increase resultant of the extreme winter temperatures could not be accounted for. More detail about this is found in the Common Performance Indicators report for academic year 2017/18 (www.saves-project.eu).

Table 9 Energy and carbon savings in UK SAVES 2 universities

	University of York	University of Cambridge	London School of Economics	Kings College London
Baseline usage (kWh)	2,829,496	11,886,131	1,955,614	4,211,024
2017-18 usage (kWh)	2,591,265	11,658,893	1,851,303	4,145,823
kWh saving	238,231	227,238	104,311	65,201
% saving	8.42%	1.91%	5.33%	1.55%
CO ₂ saving (tonnes)	172.36	104.19	47.82	29.90
Months used in analysis	Oct-March (6 months)	Oct-April (7 months)	Oct-May (8 months)	Oct-March (6 months)
Extrapolations/ additional analysis			Data was extrapolated for 773 students (kWh/student/day saved) where data wasn't available.	Data was extrapolated for 1,048 students (kWh/student/ day saved) where data wasn't available.

Table 10 Energy and carbon saving in Irish SAVES 2 universities

	Dublin City University	National University of Ireland, Maynooth	University College Cork	National University of Ireland, Galway
Baseline usage (kWh)	416,850	462,189		826,213
2017-18 usage (kWh)	365,575	544,687		1,007,376

	Dublin City University	National University of Ireland, Maynooth	University College Cork	National University of Ireland, Galway
kWh saving	51,275	-82,498		-181,163
% saving	12.30%	-17.85%		-21.93%
CO ₂ saving (tonnes)	21,497	-34,587		75,953
Months used in analysis	9	8		6
Extrapolations/ additional analysis		Degree day calculations performed	Error in data – will be supplied as soon as possible.	

Table 11 Energy and carbon saving in Greek SAVES 2 universities

	Technical University of Crete	National and Kapodistrian University of Athens
Baseline usage (kWh)	168,739	1,348,378
2017-18 usage (kWh)	155,052	1,288,249
kWh saving	13,688	60,129
% saving	8.11%	4.46%
CO ₂ saving (tonnes)	9.83	43.2
Months used in analysis	Oct-May (8 months)	Nov-May (7 months)
Extrapolations/ additional analysis		Degree day calculations performed

Table 12 Energy and carbon saving in Cypriot SAVES 2 universities

	University of Cyprus
Baseline usage (kWh)	253,790
2017-18 usage (kWh)	233,817
kWh saving	19,974
% saving	7.87%
CO ₂ saving (tonnes)	14.5
Months used in analysis	Oct-May (8 months)
Extrapolations/ additional analysis	Baseline adjusted for a/c that was installed summer 2017 (which has increased energy usage for 2017-18 academic year)

Table 13 Energy and carbon saving in SAVES 2 Romanian universities

	University of Bucharest
Baseline usage (kWh)	2,376,160
2017-18 usage (kWh)	2,204,190
kWh saving	171,970
% saving	7.24%
CO ₂ saving (tonnes)	87.44
Months used in analysis	September-May (9 months)
Extrapolations/ additional analysis	

Table 14 Energy saving and carbon in Bulgarian SAVES 2 universities

	The University of Sofia "St. Kliment Ohridski"
Baseline usage (kWh)	2,213,796
2017-18 usage (kWh)	2,070,995
kWh saving	142,081
% saving	6.45%
CO ₂ saving (tonnes)	87,231
Months used in analysis	Nov-April (6 months)
Extrapolations/ additional analysis	

Table 15 Energy and carbon saving in SAVES 2 Lithuanian universities

	Vilnius Gediminas Technical University
Baseline usage (kWh)	1,183,584
2017-18 usage (kWh)	1,093,178
kWh saving	90,406
% saving	7.64%
CO ₂ saving (tonnes)	24,410
Months used in analysis	Oct-April (7 months)
Extrapolations/ additional analysis	

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 completed by students at the beginning and at the end of the academic year, respectively. The analysis of these questionnaires helps identify attitudinal, behavioural and habitual changes relating to energy conservation that could be attributable to the 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. For this purpose, the respondents of the two questionnaires had to be matched. Matching was performed with the help of the respondents' email or name that they provided in both surveys. The findings from the matched respondent analysis are found in section 4.2 of this chapter. For Bulgaria it was not possible to match any of the respondents therefore it could not be considered for the matched respondent analysis.

There was also a number of questions asked at the end of the academic year that were SSO specific and therefore were not relevant for the baseline questionnaire. These involved familiarization of the respondents with specific SSO engagement activities, and with the energy dashboard. The findings from the follow-up analysis are found in section 4.1 of this chapter.

The actual number of responses to individual questions per country and for each analysis (matched respondent analysis and follow-up analysis) are tabulated in Annex I.

4.1 Follow-up survey analysis

4.1.1 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. Results are presented in Figure 1 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 a good perceived level of information while mean values below 2.5 indicate a low perceived level of information.

At the end of the academic year the respondents living in Cyprus (3.7 ± 0.9) felt the most informed, followed by those living in the UK (3.4 ± 1.0), Romania (3.4 ± 1.2) and Ireland (3.3 ± 1.1). Respondents from Bulgaria (2.8 ± 0.9) and Lithuania (2.6 ± 1.1) felt less informed, while respondents from Greece felt the least informed (2.2 ± 1.1). In Bulgaria, Lithuania and Greece feel between badly informed and neither well nor badly informed. In Cyprus, the UK, Romania and Ireland students feel between well informed and neither well not badly informed.

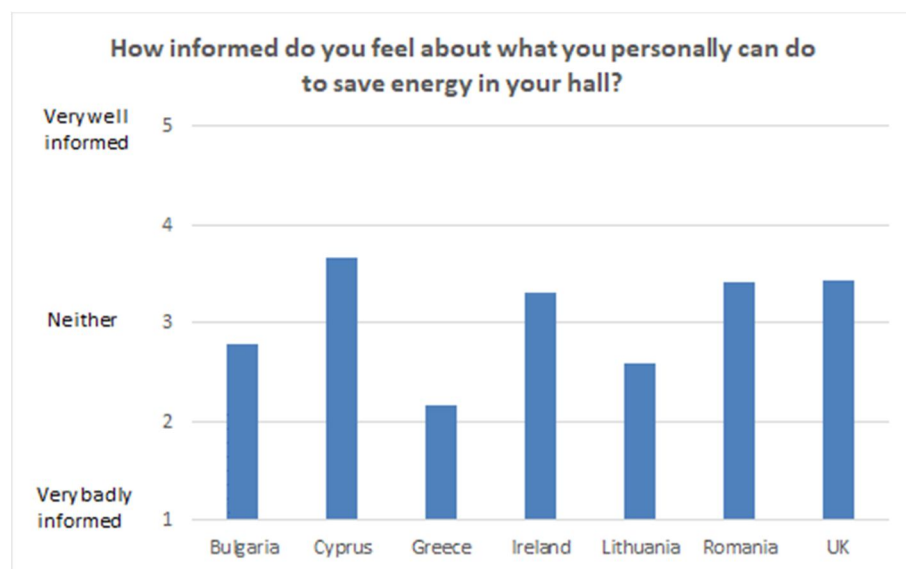


Figure 1 Level of information about what respondents can do to save energy in their hall

Table 16 Level of information about what respondents can do to save energy in their hall

How informed do you feel about what you personally can do to save energy in your hall?													
Bulgaria		Cyprus		Greece		Ireland		Lithuania		Romania		UK	
Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
2.8	0.9	3.7	0.9	2.2	1.1	3.3	1.1	2.6	1.1	3.4	1.2	3.4	1.0

4.1.2 Feelings about Saving Energy

Respondents were given seven options to describe how they feel about saving energy:

1. Frustrated
2. Anxious
3. Guilty
4. Optimistic
5. Proud
6. Content
7. Relaxed

In all countries, except for Greece, by far the greatest share of the respondents have mostly positive feelings about energy saving (Optimistic, Proud, Content and Relaxed). Optimism is the most prevailing feeling among respondents in Romania (42%), Lithuania (39%), Ireland (37%) and the UK (23%).

On the other hand, in Greece half of respondents (50%) reported feeling "Guilty". In addition, a notable proportion of respondents in Bulgaria (44%), Lithuania (20%), the UK (19%) and Romania (16%) had negative feelings about saving energy ("Frustrated" and "Anxious").

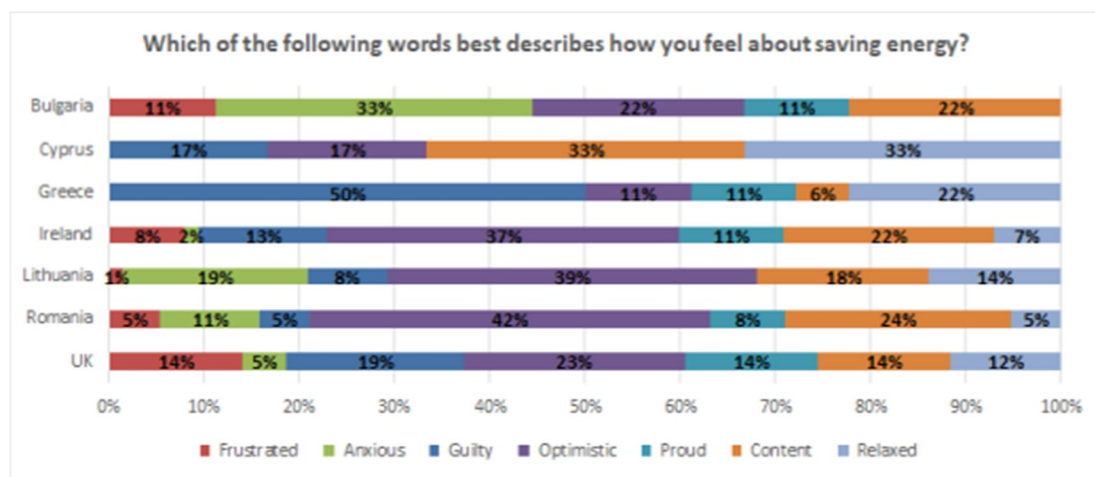


Figure 2 Feelings about Saving Energy

4.1.3 Energy saving in everyday life

Respondents were asked to choose the actions that they think can save energy from a list of predefined actions. Overall, in all countries the vast majority of respondents (>71%) believe that switching off lights in empty rooms, avoid living electronic equipment on standby.

Slightly lower are the proportions of respondents who reported "put a lid on pans when cooking"; the highest share is 74% in the UK and the lowest is 49% in Romania. Opening windows to cool down instead of using a cooling device system is also popular among respondents in all countries (>65%) except for Cyprus (33%). Similarly, boiling the kettle only with the right amount of water can help save energy is reported by most of respondents in all countries (>60%) except for Greece (47%). Putting a jumper or an extra blanket instead of

turning on the heating was selected by the majority of respondents in all countries (>54%), except for Romania (49%), Greece (41%) and Cyprus (33%).

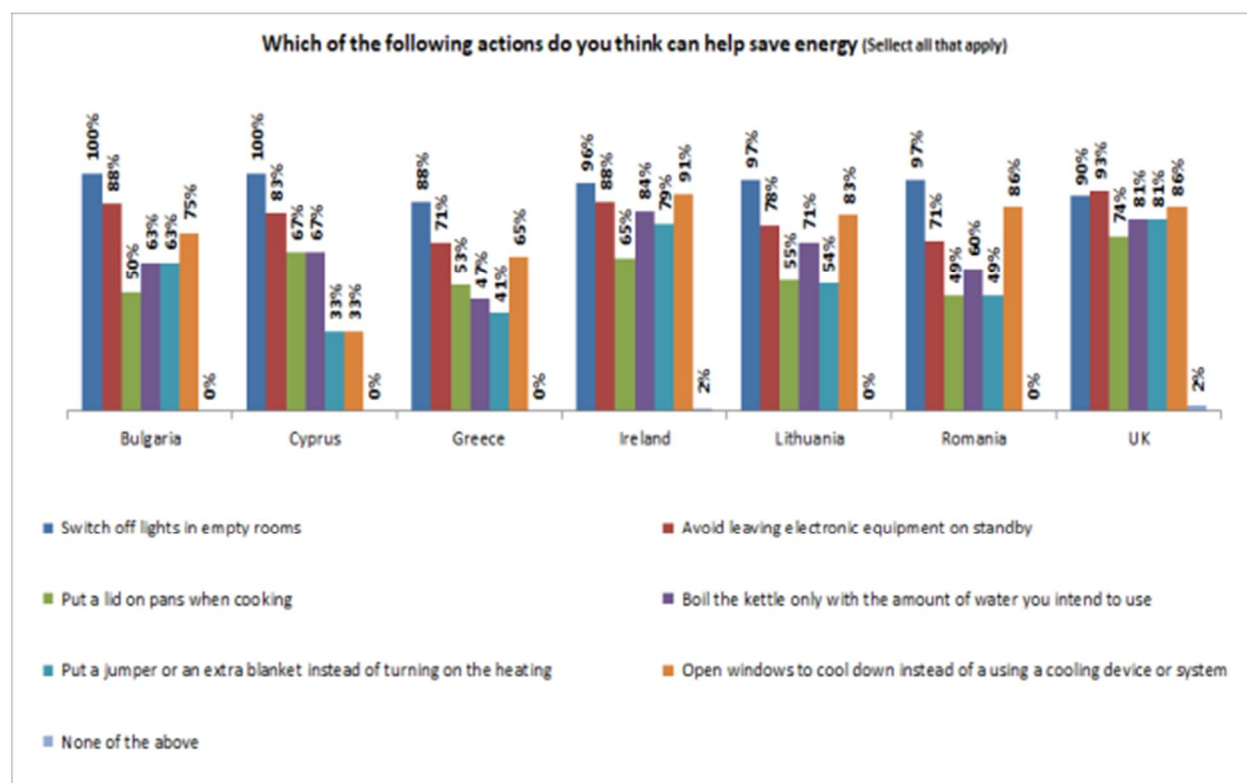


Figure 3 Energy saving in everyday life

4.1.4 Frequency of energy saving actions

Respondents were asked to rate the frequency in which they perform a number of energy saving actions on a 1 to 5 scale (1= Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5= Always). The higher the mean value, the higher the frequency in which the behaviour is performed.

Overall, in all countries, switching lights off in empty rooms is taken nearly always by respondents (i.e. 4.8 ± 0.7 in Bulgaria and 4.3 ± 0.6 in Greece). The same applies to opening windows to cool down instead of using a cooling device/system in Romania (4.9 ± 0.4), Ireland (4.8 ± 0.5), the UK (4.7 ± 0.7) and Lithuania (4.7 ± 0.7). In Greece (3.8 ± 0.9) and Cyprus (2.8 ± 0.9) however, it is an action taken less frequently probably due to the hotter outside air.

In Bulgaria (3.4 ± 1.6), Greece (3.4 ± 1.0), Ireland (3.5 ± 1.0), Lithuania (3.4 ± 1.0) and the UK (3.5 ± 1.2) avoiding leaving electronic equipment on stand is an action taken only sometimes to often by the respondents while in Cyprus (3.8 ± 0.9) and Romania (3.9 ± 1.0) is taken rather often. In all countries, except for Greece (3.4 ± 1.2) and Ireland (3.3 ± 1.2), respondents put a lid on the pan when cooking often as well. Similarly, in all countries, except for Greece (3.1 ± 1.5), respondents reported that they boil the kettle only with the amount of water they intend to use. Whilst the same applies in Bulgaria (3.8 ± 0.7) and Ireland (3.8 ± 1.1) for putting a jumper or an extra blanket instead of turning on the heating, in Cyprus (3.5 ± 0.8), Greece (3.5 ± 0.9), Lithuania (3.5 ± 1.2), Romania (3.5 ± 1.3) and the UK (3.5 ± 1.2) this is an action taken only sometimes.



Figure 4 Frequency of energy saving actions

Table 17 Frequency that energy saving actions are performed

	Bulgaria		Cyprus		Greece		Ireland		Lithuania		Romania		UK	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Switch off lights in empty rooms	4.8	0.7	4.5	0.5	4.3	0.6	4.6	0.6	4.4	0.8	4.6	0.5	4.4	0.9
Avoid leaving electronic equipment on stand-by	3.4	1.6	3.8	0.9	3.4	1.0	3.5	1.0	3.4	1.0	3.9	1.0	3.5	1.2
Put a lid on the pan when cooking	4.3	1.1	3.8	1.1	3.4	1.2	3.3	1.2	3.8	1.0	3.7	1.2	3.7	1.2
Boil the kettle only with the amount of water you intend to use	4.0	0.8	4.0	1.0	3.1	1.5	3.8	1.0	3.7	1.1	4.1	1.1	3.8	1.1
Put a jumper or an extra blanket instead of turning on the heating	3.8	0.7	3.5	0.8	3.5	0.9	3.8	1.1	3.5	1.2	3.5	1.3	3.5	1.2
Open windows to cool down instead of using a cooling device or system	4.1	0.9	2.8	0.9	3.8	0.9	4.8	0.5	4.7	0.7	4.9	0.4	4.7	0.7

4.1.5 Reasons for being more energy conscious

Respondents were asked to choose up to three important reasons for taking the abovementioned energy saving actions.

In all countries "It's a habit I adopted from home" (i.e. 88% in Bulgaria, 87% in Lithuania, 83% in Cyprus) and "It saves energy" (88% in Bulgaria, 83% in Cyprus, 72% in Ireland) are in the three prevailing reasons.

"It helps reduce global warming" is also reported by over half of respondents in Cyprus (83%), Romania (57%) and Ireland (54%) as a reason for being more energy conscious. A lower, yet notable, proportion of respondents also reported "It's the right thing to do" as an important reason, namely in the UK (57%), Ireland (50%), Bulgaria (50%) and Romania (37%). The same applies to "It makes me feel good about myself" in Lithuania (46%), Greece (41%), Romania (34%) and the UK (24%).

On the contrary, in all countries except for Bulgaria (13%) and the UK (5%), no respondent considers earning money or prizes as an important reason for saving energy.

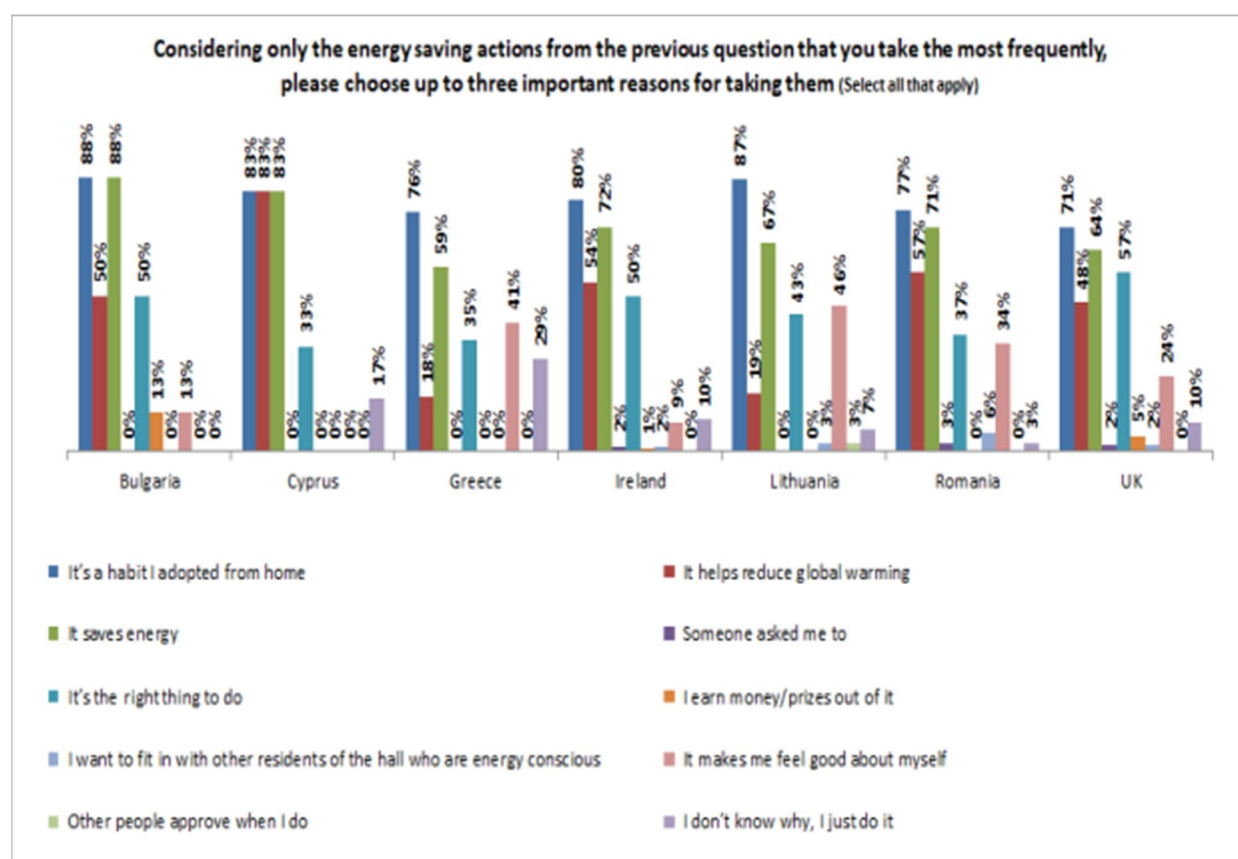


Figure 5 Reasons for being more energy conscious

4.1.6 Reasons for being less energy conscious

Respondents were asked to select the three most important reasons for being less energy conscious about their energy use from a list provided to them.

Overall the lack of feedback on how much energy students consume is pointed out as the main reason for being less energy conscious.

In Bulgaria, half of the respondents (50%) reported the "no cost savings" factor and lack of feedback on how much energy they consume as the two primary reasons for being less energy conscious. A share of 38% of respondents mentioned that their personal actions to save energy would have minimal impact on the energy consumption of the hall, while a quarter of them (25%) reported that either they have other things on their mind or that sustainable living is not for them.

In Cyprus, whilst half of the respondents (50%) stated that nothing prevents them from being energy conscious, a third (33%) said that the way the building and its systems are designed limit the things they can do to save energy. A smaller share (17%) believes that their personal actions to save energy would have minimal impact on the energy consumption of the hall. At the same time, an equal share (17%) reported that they have other things on their mind and that they do not have any feedback on how much energy they consume.

In Greece over half of the respondents (59%) reported not having any feedback on how much energy they consume as the main reason for being less energy conscious. Thirty-five percent said that the way the building and its systems are designed limit the things they can do to save energy, while 29% reported that the hall management does not inspire them to save energy. Lower proportions of respondents have reported "Nothing prevents me from being energy conscious" (24%) and "My university/college does not inspire me to act in this way" (18%).

In Ireland, the lack of feedback on how much energy they consume was reported by 48% of respondents. Over a quarter (27%) said that the energy they save in the hall won't save them any money, and approximately a quarter (24%) said that nothing prevents them from being energy conscious. Moreover 22% and 21% of respondents chose "The way the building and its systems are designed limit the things they can do to save energy" and "The other hall residents are not engaged in saving energy either" respectively.

In Lithuania 55% of respondents said that they do not have any feedback on how much energy they consume while 41% said that the hall management does not inspire them to act in an energy efficient way. Approximately a quarter (24%) of them reported that the way the building and its systems are designed limit the things they can do to save energy. On the other hand, 23% of the respondents think that nothing prevents them from being energy conscious.

Forty-one percent of the respondents living in Romania agreed that lack of feedback on how much energy they consume prevents them from being more conscious about their energy use. Simultaneously, 35% of them stated that the way the building and its systems are designed limit the things they can do to save energy and 24% think that their personal actions to save energy would have minimal impact on the energy consumption of the hall. On the contrary over a third of respondents (35%) reported that nothing prevents them from being energy conscious.

In the UK, the main reason that prevents respondents from being energy conscious is the lack of feedback on how much energy they consume (40%), followed by the fact that the energy they save in the hall won't save them any money (38%). A share of 26% said that they have other things on their mind. An almost equal share (24%) said that the way the building and its systems are designed limits the things they can do to save energy. Furthermore 21% reported "My personal actions to save energy would have minimal impact on the energy consumption of the hall" and "The other hall residents are not engaged in saving energy either", while a same share reported "Nothing prevents me from being energy conscious".

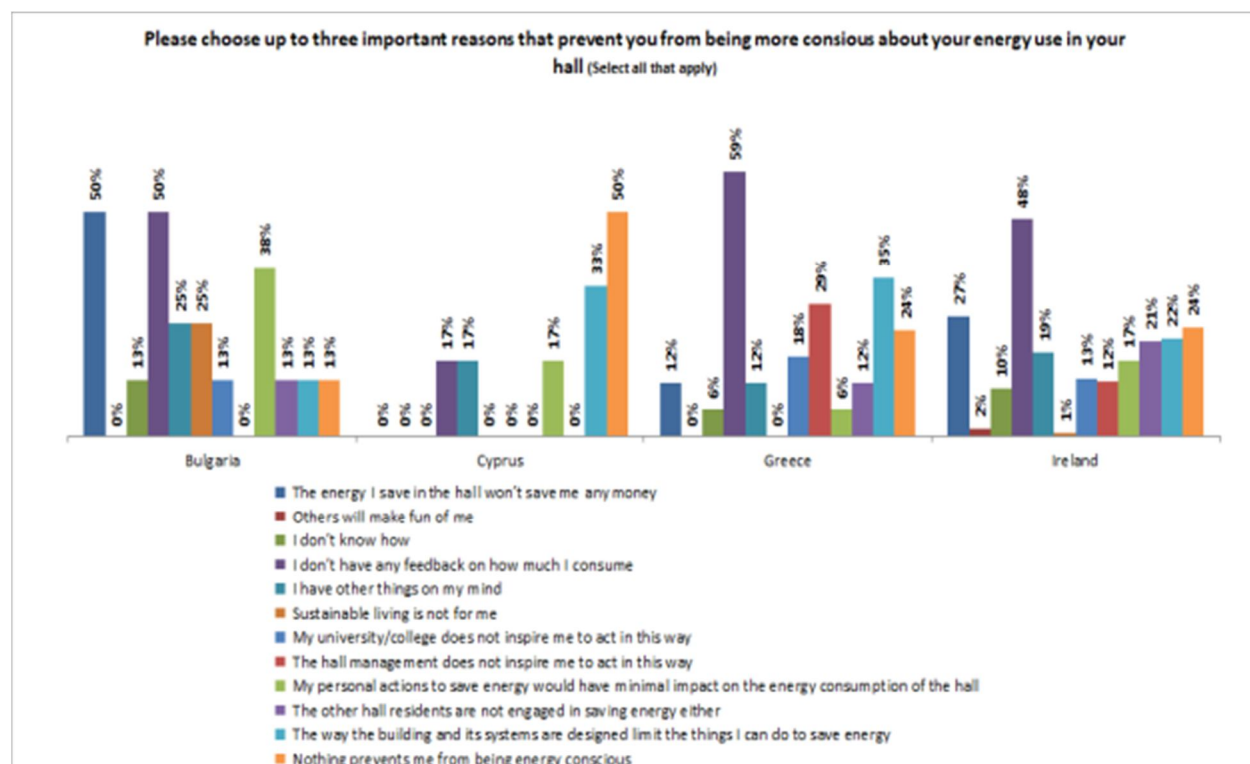


Figure 6 Reasons for being less energy conscious (Bulgaria, Cyprus, Greece, and Ireland)

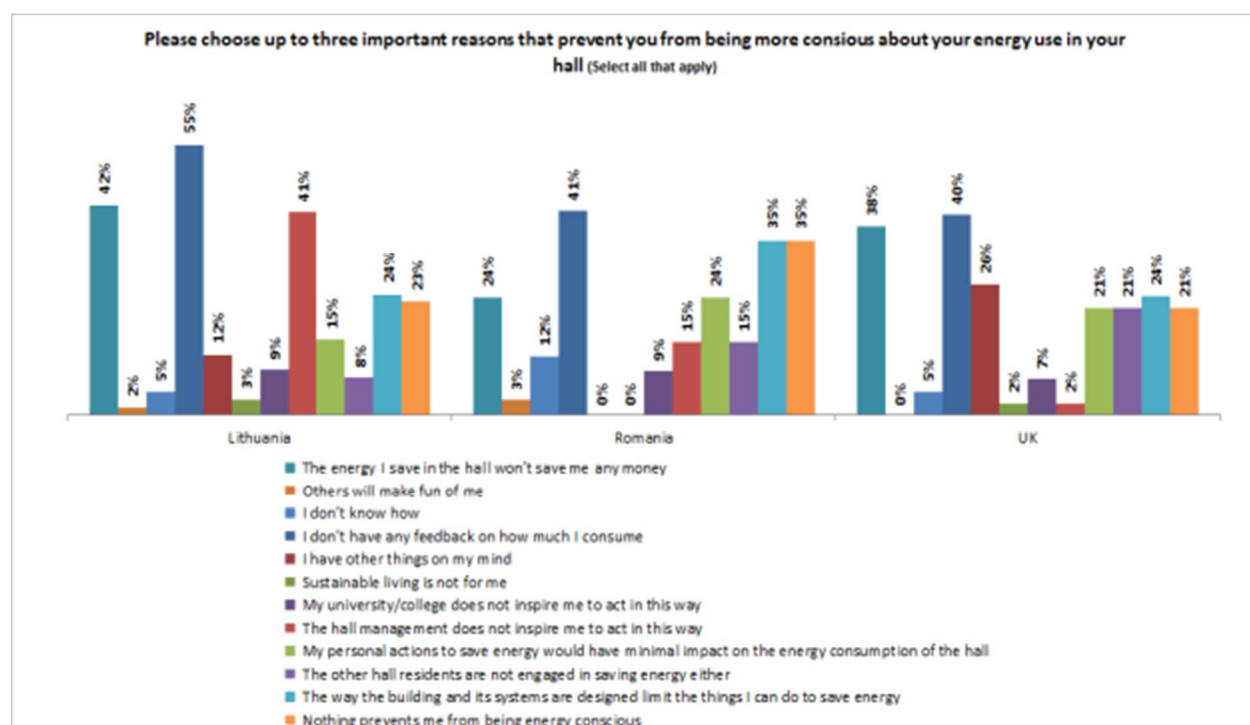


Figure 7 Reasons for being less energy conscious (Lithuania, Romania, UK)

4.1.7 Self-reported increase in energy awareness

Respondents were asked to rate how much their awareness on what they can do to reduce the impact of their lifestyle and habits on energy consumption has increased this academic year on a 1 to 5 scale (1= A great deal, 3= A little, 5 = Not at all). The higher the mean value the greater the increase in energy awareness.

The biggest increase in energy awareness during the academic year 2017/18 is reported in Romania (4.1 $\pm$ 0.9), followed by Bulgaria (4.0 $\pm$ 0.9). The lowest increase is reported in Lithuania (2.2 $\pm$ 1.1). At the same time, respondents living in Cyprus (3.3 $\pm$ 1.5), Greece (2.9 $\pm$ 1.2), Ireland (3.1 $\pm$ 1.1) and the UK (3.2 $\pm$ 1.0) pointed out a little increase.

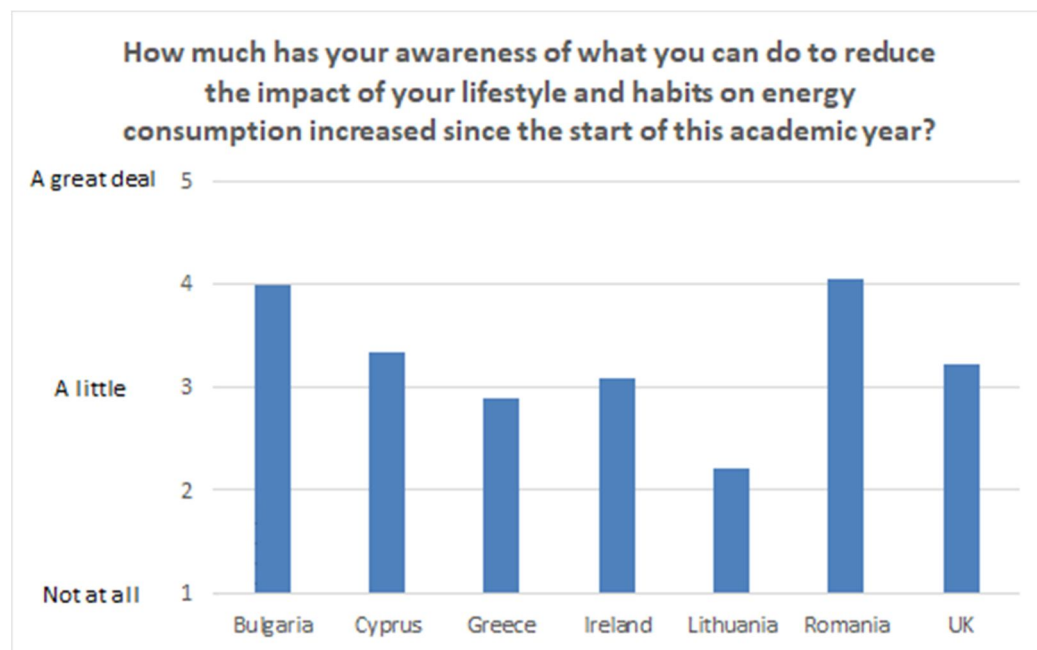


Figure 8 Self-reported increase in energy awareness

Table 18 Self-reported increase in energy awareness

How much has your awareness of what you can do to reduce the impact of your lifestyle and habits on energy consumption increased since the start of this academic year?													
Bulgaria		Cyprus		Greece		Ireland		Lithuania		Romania		UK	
Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
4.0	0.9	3.3	1.5	2.9	1.2	3.1	1.1	2.2	1.1	4.1	0.9	3.2	1.0

4.1.8 Sources of energy saving related information

Respondents who reported an increased awareness of what they can do to reduce the impact of their lifestyle and habits on energy consumption, were subsequently asked to select those sources that may have made them more aware of what they can do to reduce their energy consumption.

In Bulgaria 86% of respondents reported family as the main source of information that made them more energy aware, while 43% of them pointed out either the Student Switch Off campaign or an article they read or a documentary they watched. In Cyprus over two thirds (67%) reported the SSO campaign and half of them (50%) chose "Feedback and information about my hall's energy consumption" and/or "An article I read or a documentary I watched". In Lithuania, Greece and Ireland, respondents indicated either their family (56%, 50% and 47% respectively) or an article or a documentary they watched (41%, 50% and 42% respectively) as

the main sources of information. In Romania 55% of respondents chose "An article I read or a documentary I watched", while 52% pointed out the SSO campaign. In the UK 59% of respondents indicated the SSO campaign as their basic source of information, 41% of them reported "University-wide Campaigns" and a third (33%) reported as main sources their friends living in halls of residence at their university and/or their family.

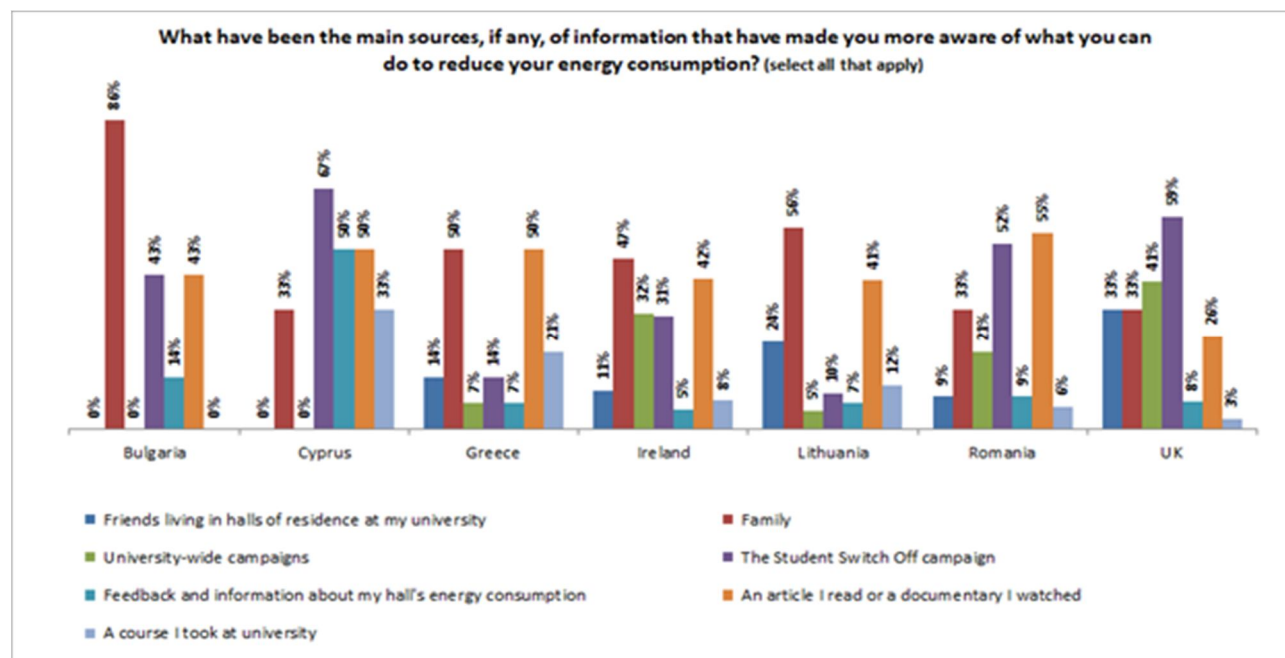


Figure 9 Sources of energy saving related information

4.1.9 Familiarization with the SSO campaign

Respondents were asked whether they had heard of the Students Switch Off (SSO) campaign.

In Cyprus all of respondents heard of the SSO. The majority of respondents living in the UK (90%), Romania (82%), Bulgaria (71%) and Ireland (57%) have heard of the SSO as well. On the contrary, in Greece and Lithuania only 24% and 21% of respondents, respectively, have heard of the SSO campaign.

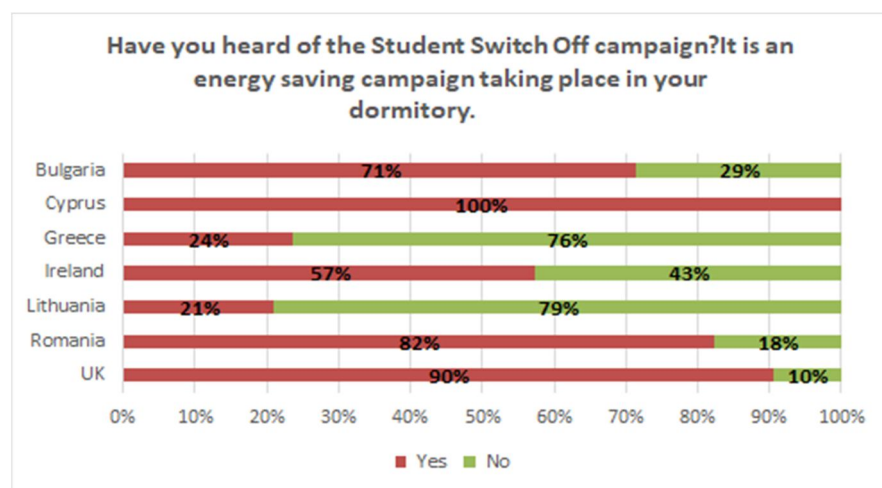


Figure 10 Familiarization with the SSO campaign

4.1.10 Influence of SSO

Respondents who answered that they have heard of SSO were subsequently asked about the ways in which it had influenced them.

In Bulgaria, all the respondents stated that SSO made them aware of the impact of their lifestyle and habits, while 80% said that through SSO they saw practical examples on what other people do to save energy. Moreover, a share of 40% of respondents said that through SSO they were given information on where to go for advice on energy saving actions they can take and that it made them confident that they could actually do things to reduce their environmental impact.

In Cyprus, approximately two thirds of respondents (67%) reported that SSO made them aware of the impact of their lifestyle and habits. Half of respondents (50%) reported that they saw practical examples on what other people do to save energy, while a third of them (33%) said that SSO either helped them meet other people who were also trying to do the same or gave them the opportunity to become a Student Switch Off ambassador. An equal proportion (33%) stated that SSO showed them that their university is taking action to reduce its environmental impact. A smaller share of respondents (17%) said that SSO has not influenced them.

Fifty percent of respondents living in Greece answered that SSO made them aware of the impact of their lifestyle and habits and that they saw practical examples on what other people do to save energy. Furthermore, a quarter of respondents (25%) said that through SSO they were given information on where to go for advice on energy saving actions they can take, and that it showed them that their university is taking action to reduce its environmental impact. On the other hand, a share of 50% of respondents said that SSO has not influenced them.

In Ireland, 43% of respondents said that SSO made them aware of the impact of their lifestyle and habits and at the same time a third of them (33%) said that it showed them that their university is taking action to reduce its environmental impact. Lower, yet significant, proportions of respondents reported that SSO made them confident that they could do things to reduce their environmental impact (29%) and that they saw practical examples on what other people do to save energy (26%). Twenty-eight percent of respondents however reported that SSO has not influenced them in any way.

In Lithuania the biggest share of respondent (46%) reported that SSO did not influence them. On the other hand, 38% of respondents reported that SSO made them confident that they could actually do things to reduce their environmental impact and 23% of them reported either that they were given information on where to go for advice on energy saving actions they can take or that they saw practical examples on what other people do to save energy. An equal share (23%) also said that SSO made it easier for them to reduce their environmental impact.

In Romania, more than half of respondents (54%) said that SSO made them aware of the impact of their lifestyle and habits. A share of 46% of respondents believe that SSO helped them meet other people who were also trying to do the same, while 43% stated that it showed them that their university is taking action to reduce its environmental impact and/or that it made them confident that they could actually do things to reduce their environmental impact. Moreover, more than a third of respondents (36%) said either that the SSO informed them on where to go for advice on energy saving actions they can take or that they saw practical examples on what other people do to save energy.

In the UK, 57% of respondents reported that SSO showed them that their university is taking action to reduce its environmental impact, over a third of respondents said either that it made them aware of the impact of their lifestyle and habits (38%) or that they saw practical examples on what other people do to save energy (35%). At the same time, almost a quarter of respondents said that SSO gave them information on where to go for advice on energy saving actions they can take (24%) or that it showed them that students at other universities are taking action to reduce their environmental impact as well (22%). A smaller share of respondents (14%) said that SSO has not influenced them.

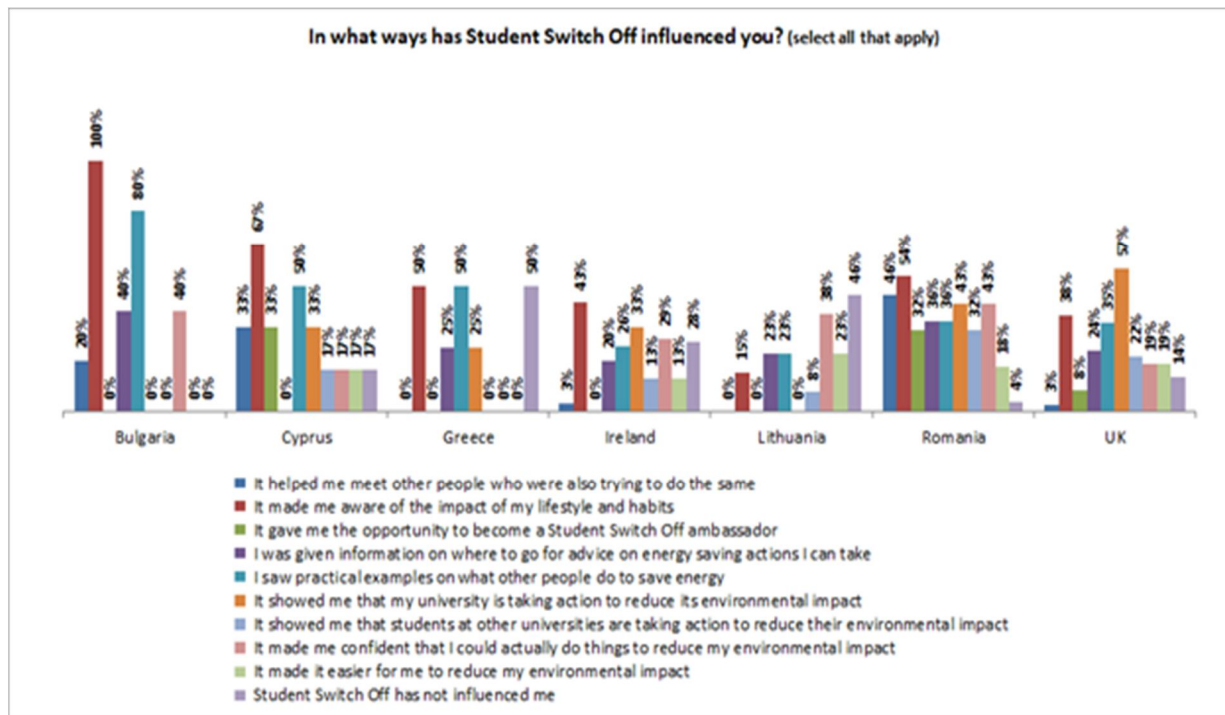


Figure 11 SSO influence

4.1.11 Familiarization with the SSO dashboard

Respondents were asked whether they have visited their university's SSO energy dashboard. Only respondents that had heard of SSO were directed to this question.

In all countries the majority of respondents didn't visit the dashboard. The biggest share of respondents that didn't visit the SSO dashboard is found in Lithuania (92%), followed by the UK and Ireland (86% and 85%, respectively), while the smallest share is found in Romania (57%).

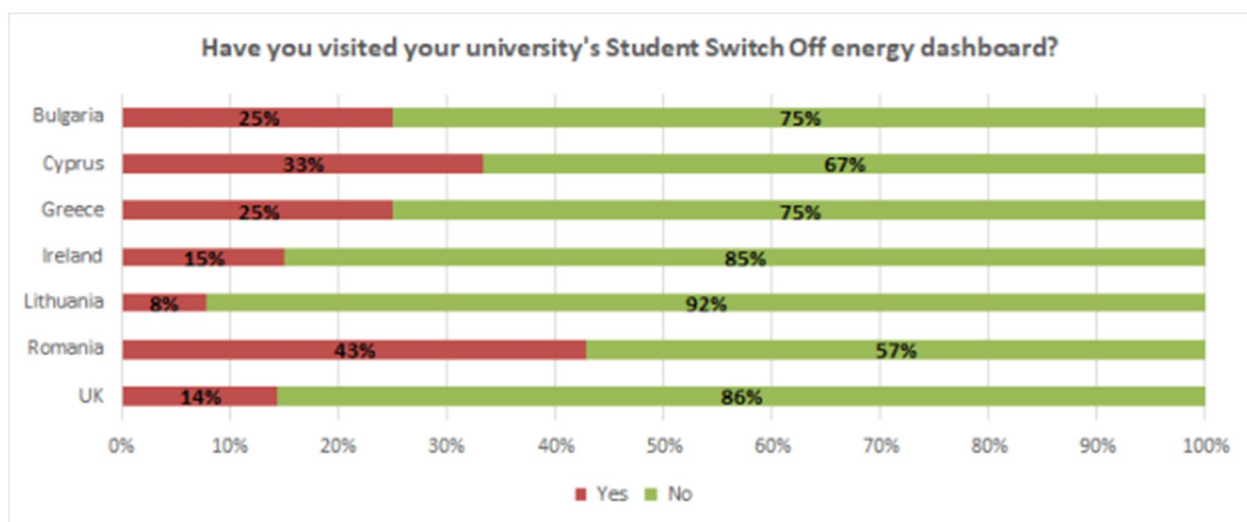


Figure 12 Familiarization with the SSO dashboard

4.1.12 Familiarization with the SSO energy dashboard

Respondents who have visited their university's SSO energy dashboard were later asked about how they first heard about it.

In Bulgaria, Lithuania and the UK all the respondents have been informed about SSO energy dashboard via emails. Moreover, in the UK 20% of respondents also mentioned that SSO energy dashboard came to their attention via Facebook. Whilst the same was reported by 25% of respondents in Ireland, over half of them (75%) first heard about the SSO dashboard through emails. One respondent from Cyprus had heard about the SSO dashboard via a display screen in the hall probably during an ambassador training session. In Greece all of the respondents first heard about the dashboard through Facebook. In Romania respondents first heard about the dashboard through a number of media; Facebook (42%), emails (25%) or a display screen at university or in their hall (17%).

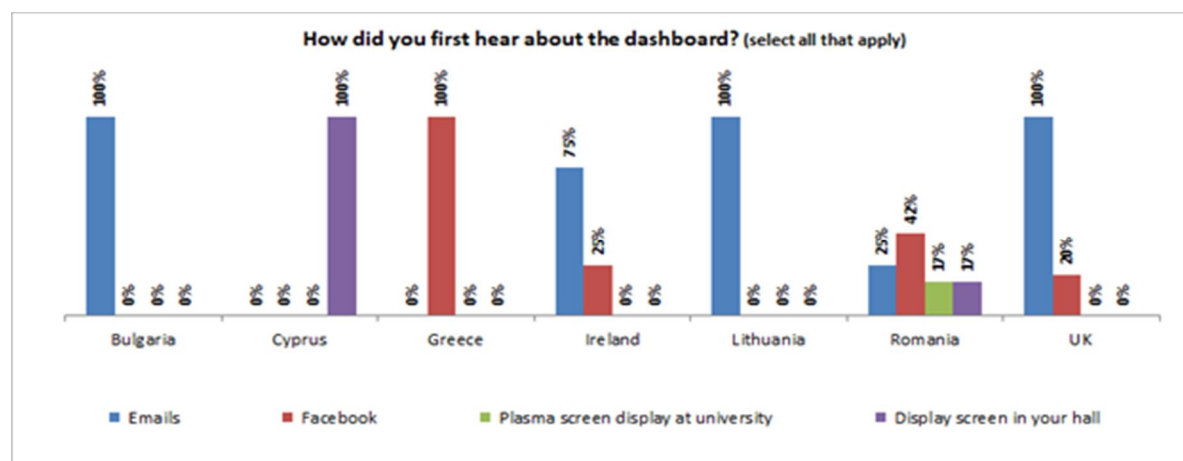


Figure 13 Familiarization with the SSO energy dashboard

4.1.13 Frequency of visits to the SSO energy dashboard

Respondents who have visited their university's SSO energy dashboard were also asked how often they used to do it this academic year.

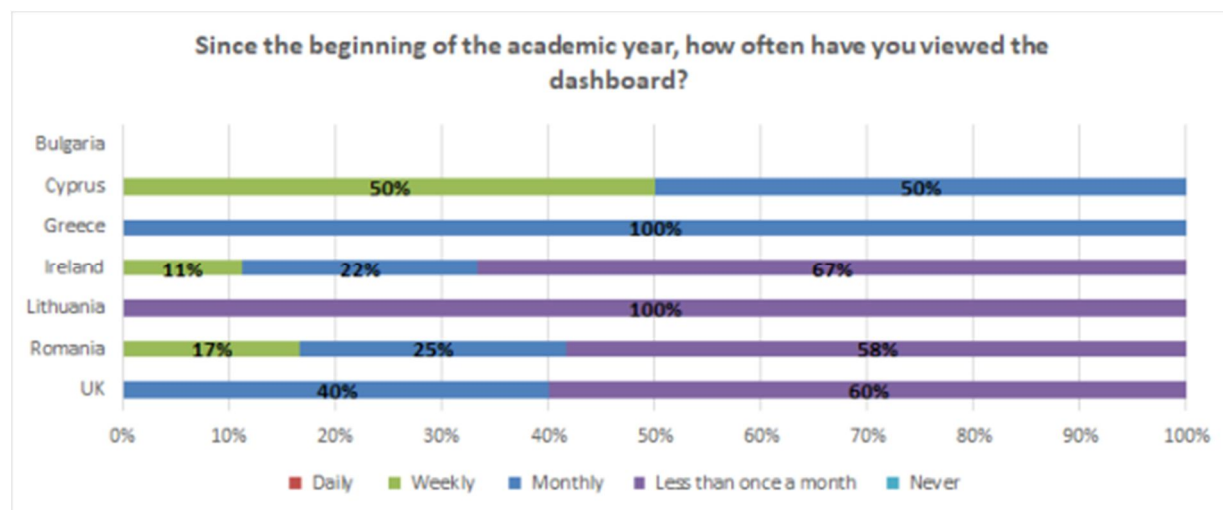


Figure 14 Frequency of visits to the SSO energy dashboard

In Cyprus half of respondents visited it on a weekly basis, while the other half visited it on a monthly basis. In Greece all the respondents visited it on a monthly basis. In Ireland, Romania and the UK the majority of respondents visited it less than once a month (67%, 58% and 60% respectively). In Lithuania all of the respondents visited the dashboard less than once a month.

4.1.14 Visiting the SSO energy dashboard throughout the academic year

Respondents who have visited their university's SSO energy dashboard were also asked whether their visits to the dashboard increased, decreased or stayed about the same, since the beginning of the academic year.

All the respondents living in Bulgaria reported a decrease in their visits. The same was reported by 60% of respondents in the UK, while a share of 20% reported either an increase or that their visits stayed about the same. In Cyprus half of respondents said that they increased their visits to the dashboard while the other half said that their visits stayed about the same. The latter was reported by all the respondents in Greece and Lithuania and by 60% in Ireland as well. In Romania, half of respondents said that they increased their visits to the SSO dashboard, while 30% said the opposite. For 20% of the respondents the visits stayed about the same.

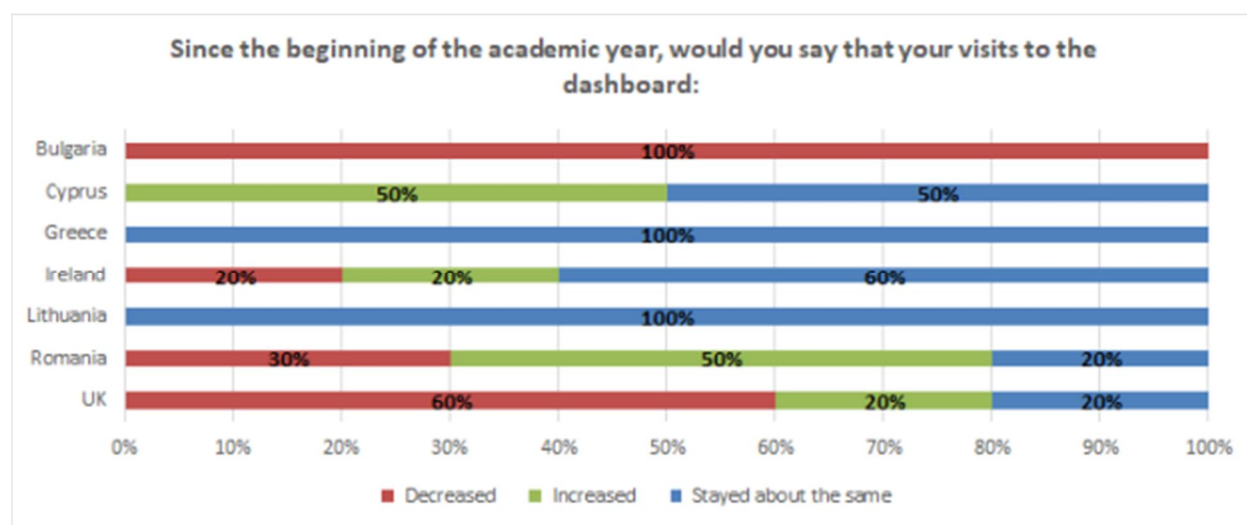


Figure 15 Visiting the SSO energy dashboard throughout the academic year

4.1.15 Reasons for viewing the SSO energy dashboard

Respondents who have 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 hall is performing
2. To see how my own hall is performing relative to other halls at my university
3. To learn new ways of saving energy
4. To use the information to encourage students in my hall to do better
5. Other

In Bulgaria, all respondents placed the same reasons in the top three positions. The main reason was "To use the information to encourage students in my hall to do better", followed by "To learn new ways of saving energy". Third in order of importance is placed "To see how my own hall is performing relative to other halls at my university" by all respondents as well.

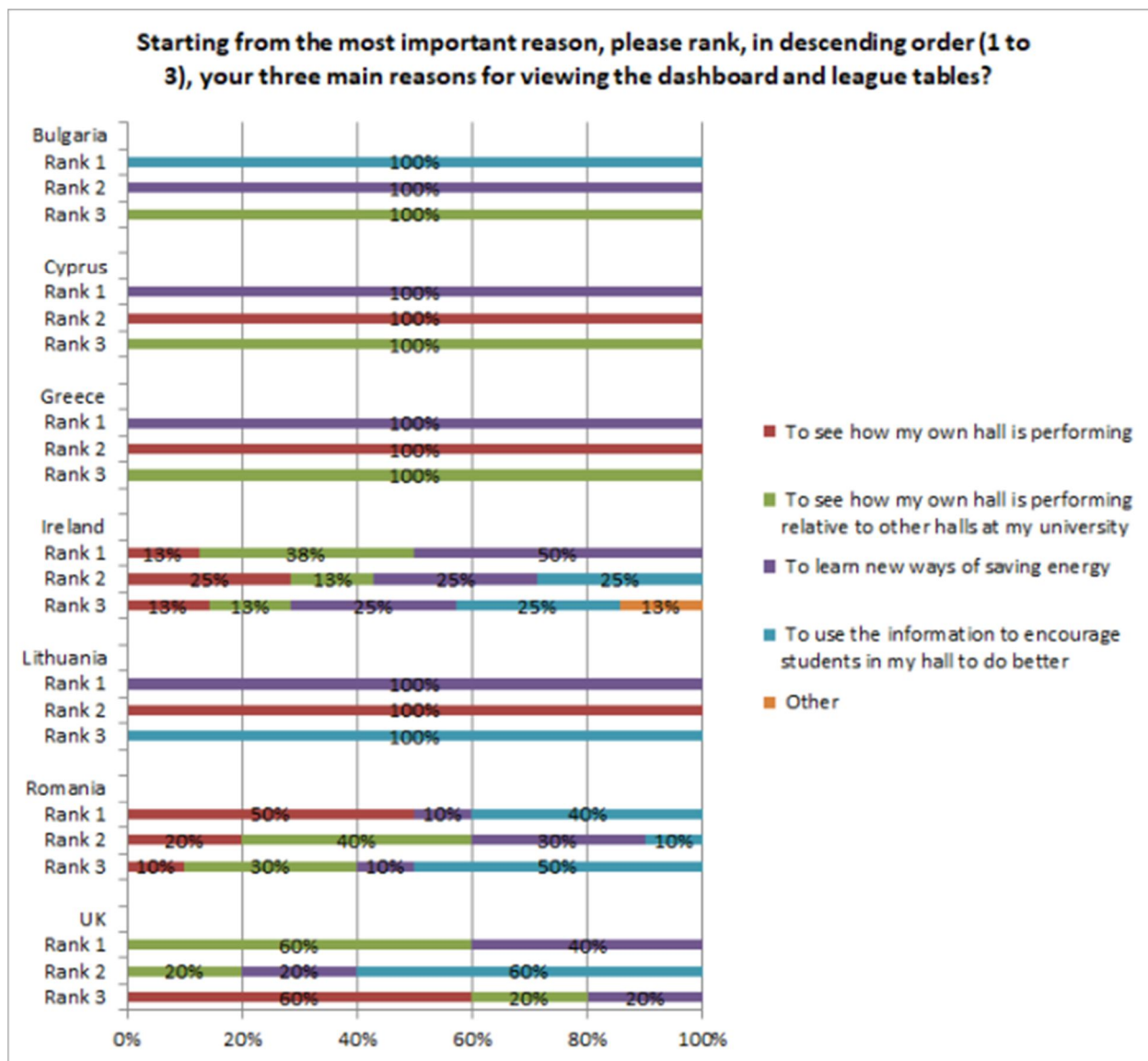


Figure 16 Reasons for viewing the SSO energy dashboard

All respondents living in Cyprus and Greece pointed out the same top-three reason for viewing the SSO energy dashboard. The prevalent one was "To learn new ways of saving energy" (100%). Second in order of importance was "To see how my own hall is performing" (100%), while "To use the information to encourage students in my hall to do better" (100%) is ranked third among the given reasons.

In Ireland, all 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 hall is performing relative to other halls at my university" and "To see how my own hall is performing" were also placed in the top-three positions by 64% and 51% of respondents. The same did 50% of respondents concerning "To use the information to encourage students in my hall to do better".

All respondents living in Lithuania agreed that learning new ways of saving energy was the main reason for viewing the dashboard and league tables. Both "To see how my own hall is performing" (second in the ranking order) and "To use the information to encourage students in my hall to do better" (third in the ranking order) were also placed in the top three positions by all the respondents.

In Romania, all respondents reported "To use the information to encourage students in my hall to do better" among the top reasons for visiting the dashboard. "To see how my own hall is performing" and "To see how my own hall is performing relative to other halls at my university" were also important reasons, placed in the first three ranking positions by 80% and 70% of the respondents respectively.

All the respondents living in the UK reported "To see how my own hall is performing relative to other halls at my university" in the top three positions of the ranking order. Eighty percent of them also pointed out "To learn new ways of saving energy" as an important reason, while a share of 60% of them did the same concerning "To use the information to encourage students in my hall to do better" and "To see how my own hall is performing".

Overall, "To see how my own hall is performing" was the top reason for viewing the dashboard and league tables. "To learn new ways of saving energy" however, was also important for respondents living in all countries except for Romania, while "To see how my own hall is performing relative to other halls at my university" was really important for all countries as well except for Bulgaria.

4.1.16 Behavioural antecedents on energy related topics

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

- Energy use
- Saving energy
- Climate Change

Results are presented in Figure 17 on a 1 to 5 scale (1 = Strongly disagree, 3=Neither agree nor disagree, 5 = Strongly agree). The higher the mean value the greater the agreement with the statement. Mean values over 3.5 indicate agreement with the statement.

In all countries, respondents agreed that global warming is a problem for society with the highest value found in Bulgaria (4.8 ± 0.4) and Greece (4.8 ± 0.4), and the lowest in Cyprus (4.5 ± 0.8) and Lithuania (4.5 ± 0.8).

Likewise, in all countries respondents agreed that energy conservation contributes to a reduction of climate change impacts. The highest mean value was reported in Greece (4.6 ± 0.5).

Respondents also agreed that everyone including themselves is responsible for the exhaustion of energy sources (highest value in Greece and Ireland with 4.5 ± 0.8 and 4.5 ± 0.7 respectively) and for climate change impacts (highest value in Romania with 4.4 ± 0.6).

Additionally, responses showed that respondents in all countries feel morally obliged to save energy, regardless of what others do, with the highest mean value found in Romania (4.1 ± 0.8), Greece (4.1 ± 1.0) and the lowest found in Lithuania (3.6 ± 1.0).

In Romania (4.0 ± 0.8), Cyprus (3.8 ± 0.9), Ireland (3.9 ± 0.8), and the UK (3.6 ± 0.9) respondents tend to agree that, in general, they can reduce their energy use quite easily. In Bulgaria (3.5 ± 0.8), Greece (3.5 ± 0.8) and Lithuania (3.5 ± 0.8) respondents have a slightly more neutral opinion.

Findings also showed that in Bulgaria (3.8 ± 0.4), Ireland (3.9 ± 0.9), Romania (3.9 ± 1.0) and the UK (3.7 ± 1.0) respondents feel guilty when they use a lot of energy, while in Cyprus (3.3 ± 0.7), Greece (3.5 ± 0.7) and Lithuania (3.3 ± 0.9), respondents had a more neutral reaction.

In all countries, except for Bulgaria (3.3 ± 0.5) and Lithuania (3.3 ± 0.8), respondents agreed that as residents of a hall of residence they should be more concerned about their energy use during their stay there with the highest mean value found in Romania (4.0 ± 0.7).

In all countries, except for Romania (3.9 ± 0.8), respondents feel rather neutral about the control they have in their energy usage with the highest value found in Bulgaria (3.5 ± 0.5) and Cyprus (3.5 ± 0.8) and the lowest in Greece (2.6 ± 0.8) and the UK (2.6 ± 1.0).

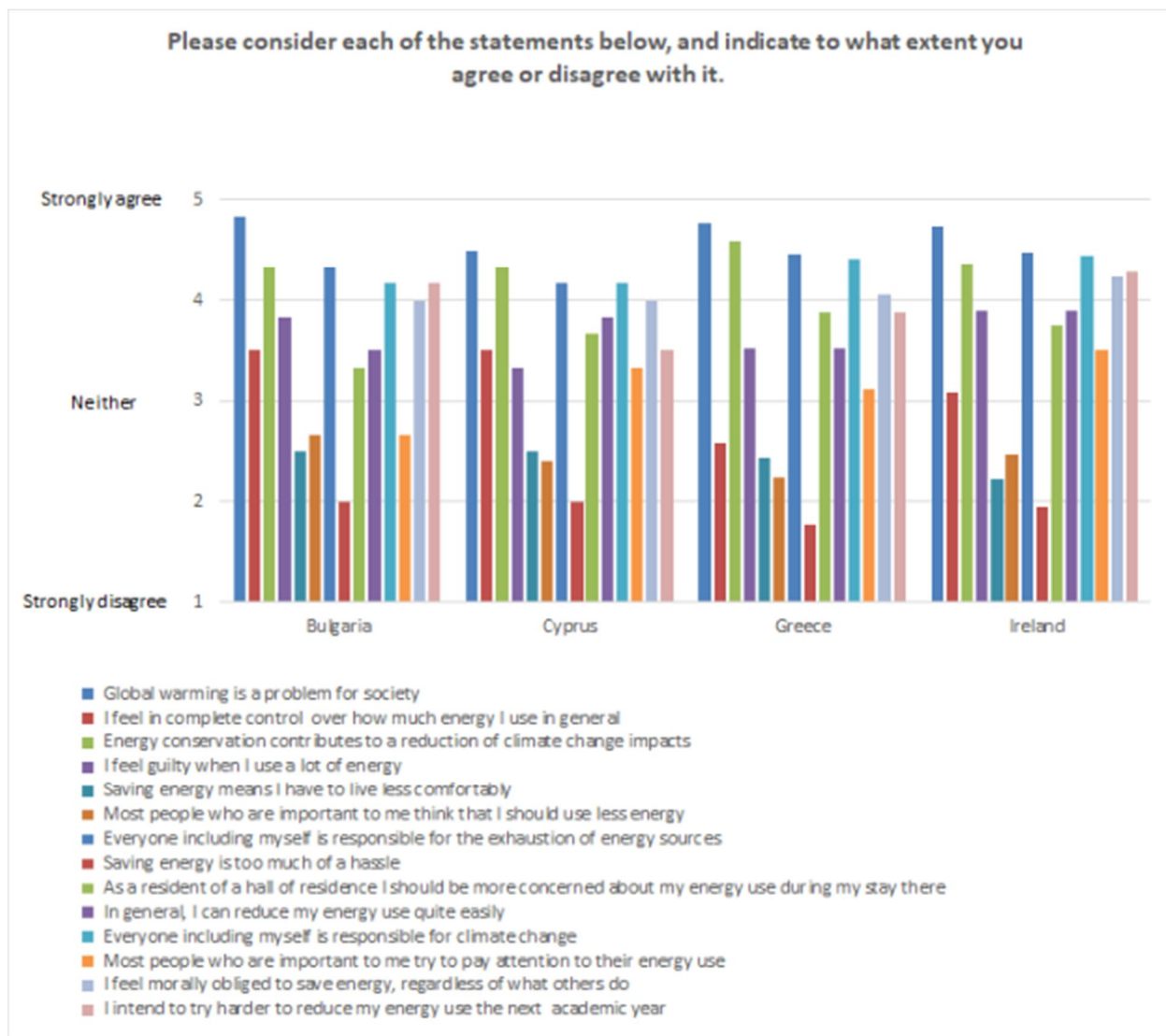


Figure 17 Behavioural antecedents on energy related topics (Bulgaria, Cyprus, Greece, Ireland)

Respondents in all countries were also neutral about the statement “Most people who are important to me try to pay attention to their energy use”. The highest mean value was found in Ireland (3.5 ± 1.0), and the lowest in Lithuania (2.6 ± 1.0).

When it comes to the impacts of saving energy in their daily routine, respondents in Bulgaria (2.5 ± 0.8), Cyprus (2.5 ± 0.8), Greece (2.4 ± 0.7) and Ireland (2.2 ± 0.8) don’t agree that saving energy goes with a less comfortable life. On the other hand, respondents living in Lithuania (2.8 ± 1.0), Romania (2.8 ± 1.1) and the UK (2.7 ± 0.9) have a rather neutral opinion.

At the same time, saving energy was not regarded by the respondents as a hassle, with mean values between 1.8 ± 0.5 (Greece) and 2.4 ± 1.0 (Lithuania).

Furthermore, in all countries except for Bulgaria (2.7 ± 0.7) and Romania (3.0 ± 1.2) respondents don’t agree that most people who are important to them think that they should use less energy with mean values between 2.0 ± 1.0 (Lithuania) and 2.5 ± 1.1 (UK).

Finally, in all countries, except for Cyprus (3.5 ± 1.1) and Lithuania (3.5 ± 0.9), respondents said that they intend to try harder to reduce their energy use the next academic year, with the highest mean value found in Ireland (4.3 ± 0.6) and the lowest in the UK (3.8 ± 0.7).

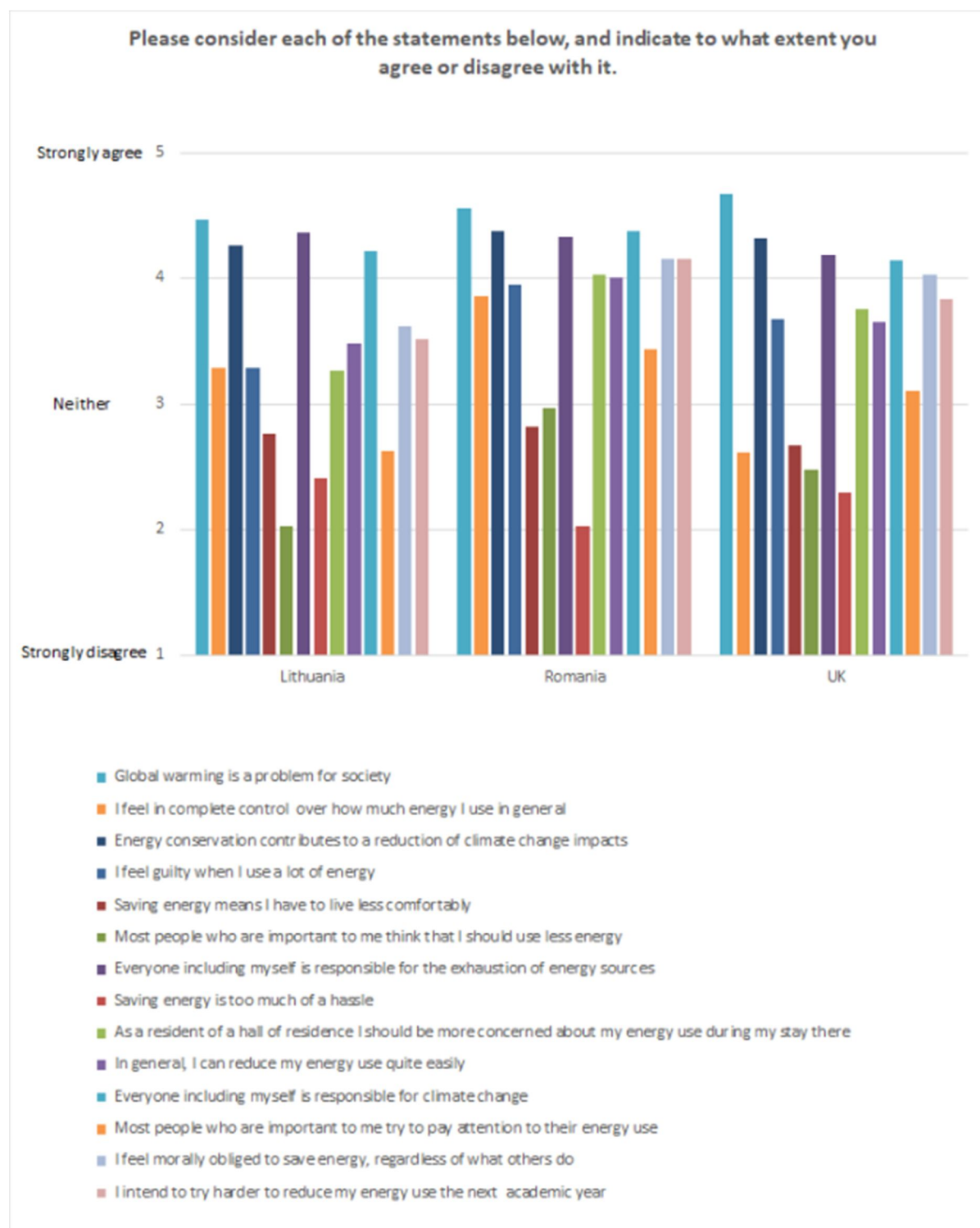


Figure 18 Behavioural antecedents on energy related topics (Lithuania, Romania, UK)

Table 19 Behavioural antecedents on energy related topics

	Bulgaria		Cyprus		Greece		Ireland		Lithuania		Romania		UK	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Global warming is a problem for society	4.8	0.4	4.5	0.8	4.8	0.4	4.7	0.7	4.5	0.8	4.6	0.9	4.7	0.9
I feel in complete control over how much energy I use in general	3.5	0.5	3.5	0.8	2.6	0.8	3.1	1.0	3.3	0.8	3.9	0.8	2.6	1.0
Energy conservation contributes to a reduction of climate change impacts	4.3	0.5	4.3	0.7	4.6	0.5	4.4	0.6	4.3	0.9	4.4	0.6	4.3	0.7
I feel guilty when I use a lot of energy	3.8	0.4	3.3	0.7	3.5	0.7	3.9	0.9	3.3	0.9	3.9	1.0	3.7	1.0
Saving energy means I have to live less comfortably	2.5	0.8	2.5	0.8	2.4	0.7	2.2	0.8	2.8	1.0	2.8	1.1	2.7	0.9
Most people who are important to me think that I should use less energy	2.7	0.7	2.4	1.2	2.2	0.9	2.5	0.9	2.0	1.0	3.0	1.2	2.5	1.1
Everyone including myself is responsible for the exhaustion of energy sources	4.3	0.5	4.2	0.7	4.5	0.8	4.5	0.7	4.4	0.6	4.3	0.7	4.2	0.9
Saving energy is too much of a hassle	2.0	0.0	2.0	0.6	1.8	0.5	1.9	0.8	2.4	1.0	2.0	1.0	2.3	0.9
As a resident of a hall of residence I should be more concerned about my energy use during my stay there	3.3	0.5	3.7	0.7	3.9	0.9	3.8	1.0	3.3	0.8	4.0	0.7	3.8	0.9
In general, I can reduce my energy use quite easily	3.5	0.8	3.8	0.9	3.5	0.8	3.9	0.8	3.5	0.8	4.0	0.8	3.6	0.9
Everyone including myself is responsible for climate change	4.2	0.4	4.2	0.7	4.4	0.8	4.4	0.9	4.2	0.9	4.4	0.6	4.1	0.9
Most people who are important to me try to pay attention to their energy use	2.7	0.7	3.3	0.9	3.1	0.8	3.5	1.0	2.6	1.0	3.4	1.1	3.1	1.1
I feel morally obliged to save energy, regardless of what others do	4.0	0.0	4.0	0.8	4.1	1.0	4.2	0.7	3.6	1.0	4.1	0.8	4.0	0.8
I intend to try harder to reduce my energy use the next academic year	4.2	0.4	3.5	1.1	3.9	0.8	4.3	0.6	3.5	0.9	4.1	0.7	3.8	0.7

4.1.17 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 halls of residence in relation to energy saving.

In Bulgaria most of respondents (60%) said that they will probably be doing about the same to save energy, while a proportion of 20% said that either they will be doing a lot more or a bit more.

In Cyprus whilst a third of respondents (33%) said that either they will be doing a lot more or a bit more in order to save energy, a share of 17% reported that they will probably be doing about the same. An equal share (17%) said that they don't know.

In Greece the biggest share of respondents (41%) said that they will be doing a lot more to save energy. Thirty-five percent of them said that they will probably be doing about the same and a proportion of 24% that they will be doing a bit more.

In Ireland 43% of respondents said that they will be doing a bit more in order to save energy while 30% of them that they will be doing a lot more. Another 26% said that they will probably be doing almost the same to save energy.

Responses from Lithuania follow a similar pattern; 43% of respondents said that they will be doing a bit more in order to save energy, 33% of them that they will be doing a lot more and 25% of respondents said that they will probably be doing almost the same to save energy.

In Romania, over two thirds of respondents (68%) said that they will be doing a lot more in order to save energy, while a proportion of 29% said that they will not do anything different.

In the UK answers were divided among those who stated that they will be doing a lot more in order to save energy (33%), those who stated that they will be doing a bit more (32%) and those who will probably be doing about the same to save energy (35%).

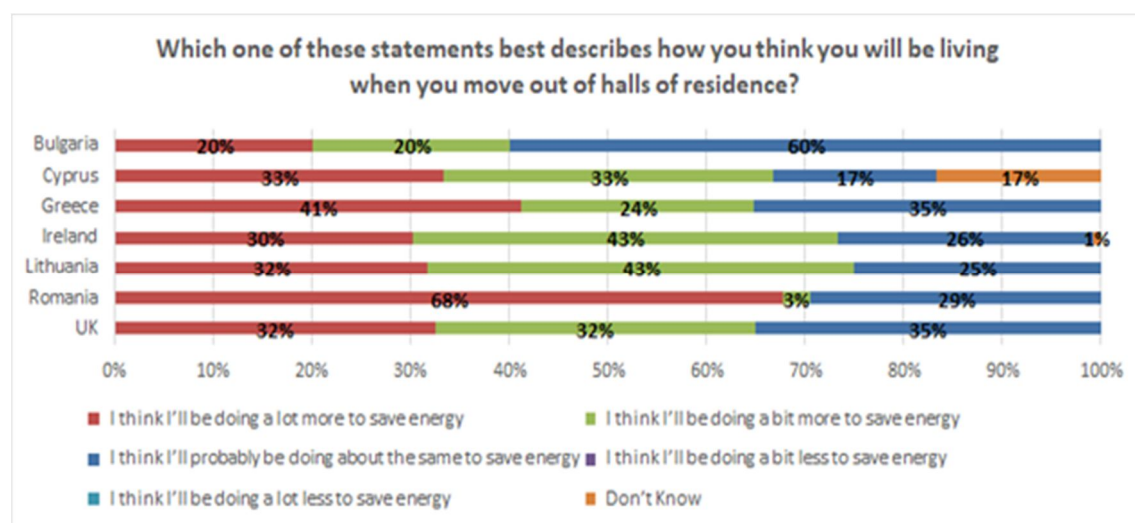


Figure 19 Energy saving efforts in future lifestyle

4.2 Matched respondents analysis

4.2.1 Respondent characteristics

The baseline questionnaire included four demographic questions so for the follow-up respondents that we were able to match with the baseline responses we also know the demographic characteristics.

Compared to male respondents, the number of female survey participants was higher in all countries. Seventy-four percent of the matched respondents are female and 26% are male. The biggest proportion of female respondents is found in the UK and in Greece (85% and 82%, respectively).

In total, the majority of respondents (64%) are between 18-20 years of age. However, in Cyprus and Greece the proportion of respondents that are between 21-24 years of age is higher than the proportion of respondents between 18-20. In Cyprus a few respondents are also between 25-29. Ireland, Romania and the UK have the youngest population of respondents with the majority being between 18-20 years of age.

Respondents study all main subjects of study. Overall, the biggest percentage of respondents (26% of total) study architecture or engineering or technology. In Lithuania, the proportion of respondents studying architecture or engineering or technology represents the vast majority of respondents (72%). In Cyprus no respondent is in that field of study, while in the remaining countries it varies between 5% (Romania) and 24% (Greece).

The second most represented subject of study (23%) is social sciences or medicine, followed by arts or humanities (22%).

The vast majority of respondents (91%) are undergraduates, while 9% are postgraduates. The proportion of first year respondents in the UK is 58% while in Greece no respondent is in the first year of his/her studies. However, Greece has by far the biggest percentage of under-graduate respondents over the second year of studies (71%). In Greece the biggest share of post-graduate respondents (24%) is also found.

Table 20 Demographics of respondents

	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
Gender							
Female	67%	82%	75%	63%	76%	85%	74%
Male	33%	18%	25%	37%	24%	15%	26%
In another way	0%	0%	0%	0%	0%	0%	0%
Age							
below 18	0%	0%	0%	0%	0%	0%	0%
18-20	33%	35%	69%	52%	62%	85%	64%
21-24	50%	59%	25%	45%	38%	12%	32%
25-29	17%	6%	6%	3%	0%	2%	4%
30+	0%	0%	0%	0%	0%	0%	0%
Field of study							
Architecture / Engineering / Technology	0%	24%	15%	72%	5%	10%	26%
Arts / Humanities	17%	35%	32%	3%	24%	17%	22%
Health Sciences / Medicine	17%	6%	20%	2%	16%	27%	16%
Mathematics / Physical Sciences	50%	6%	20%	6%	8%	10%	14%
Social Sciences	17%	29%	13%	17%	46%	37%	23%
What year of study are you currently in?							
Under Graduate - 1st Year University/College	20%	0%	46%	16%	16%	58%	33%
Under Graduate - 2nd Year University/College	20%	6%	26%	31%	41%	28%	29%
Under Graduate - >2nd Year University/College	40%	71%	22%	44%	27%	10%	29%
Post Graduate - Studying for Masters	20%	18%	4%	9%	16%	5%	8%
Post Graduate - Studying for Doctorate	0%	6%	2%	0%	0%	0%	1%
Other	0%	0%	0%	0%	0%	0%	0%

4.2.2 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. Results are presented in Figure 20 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.

Overall, the level of knowledge of what respondents personally can do to save energy in their halls, is at similar levels in both the baseline and follow up survey with a tendency towards "Neither well nor badly informed". A slight increase (+0.2 in the mean value) is found at the end of the academic year.

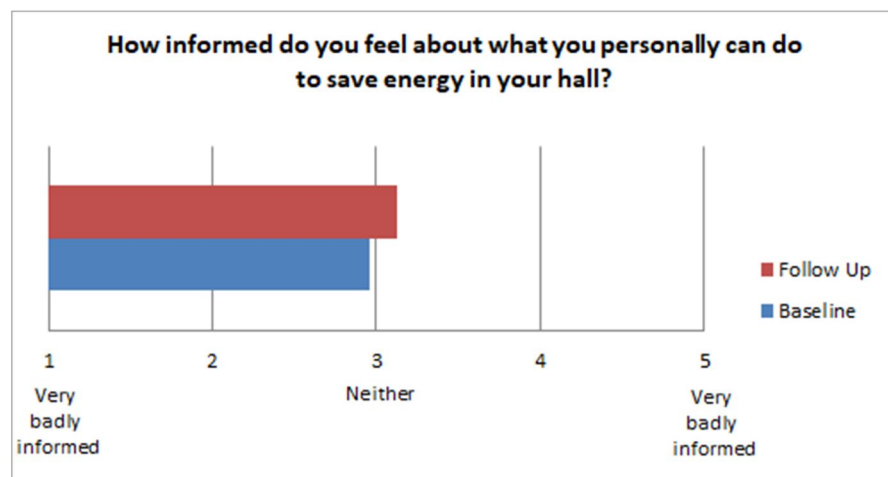


Figure 20 Level of information about what respondents can do to save energy in their hall (Total sample)

Table 21 Level of information about what respondents can do to save energy in their hall (Total sample)

Total sample	Baseline		Follow Up		Change in mean value
	M	SD	M	SD	
How informed do you feel about what you personally can do to save energy in your hall?	2.9	1.1	3.1	1.2	0.2

The biggest increase in mean value, indicating an increase in the perceived level of information on what to do to personally save energy in their halls, is observed in Cyprus (+0.7) followed by Ireland (+0.3) and the UK (+0.3). On the contrary a decrease, indicating a decrease in the perceived level of information, is found in Lithuania (-0.2). In Greece no change is recorded.

Table 22 Level of information about what respondents can do to save energy in their hall

How informed do you feel about what you personally can do to save energy in your hall?					
	Baseline		Follow Up		Change in mean value
	M	SD	M	SD	
Cyprus	3.0	0.8	3.7	0.9	0.7
Greece	2.2	1.2	2.2	1.1	0.0
Ireland	3.0	1.1	3.3	1.1	0.3
Lithuania	2.7	1.1	2.5	1.1	-0.2
Romania	3.4	1.1	3.5	1.2	0.1
UK	3.2	1.0	3.5	1.0	0.3

4.2.3 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

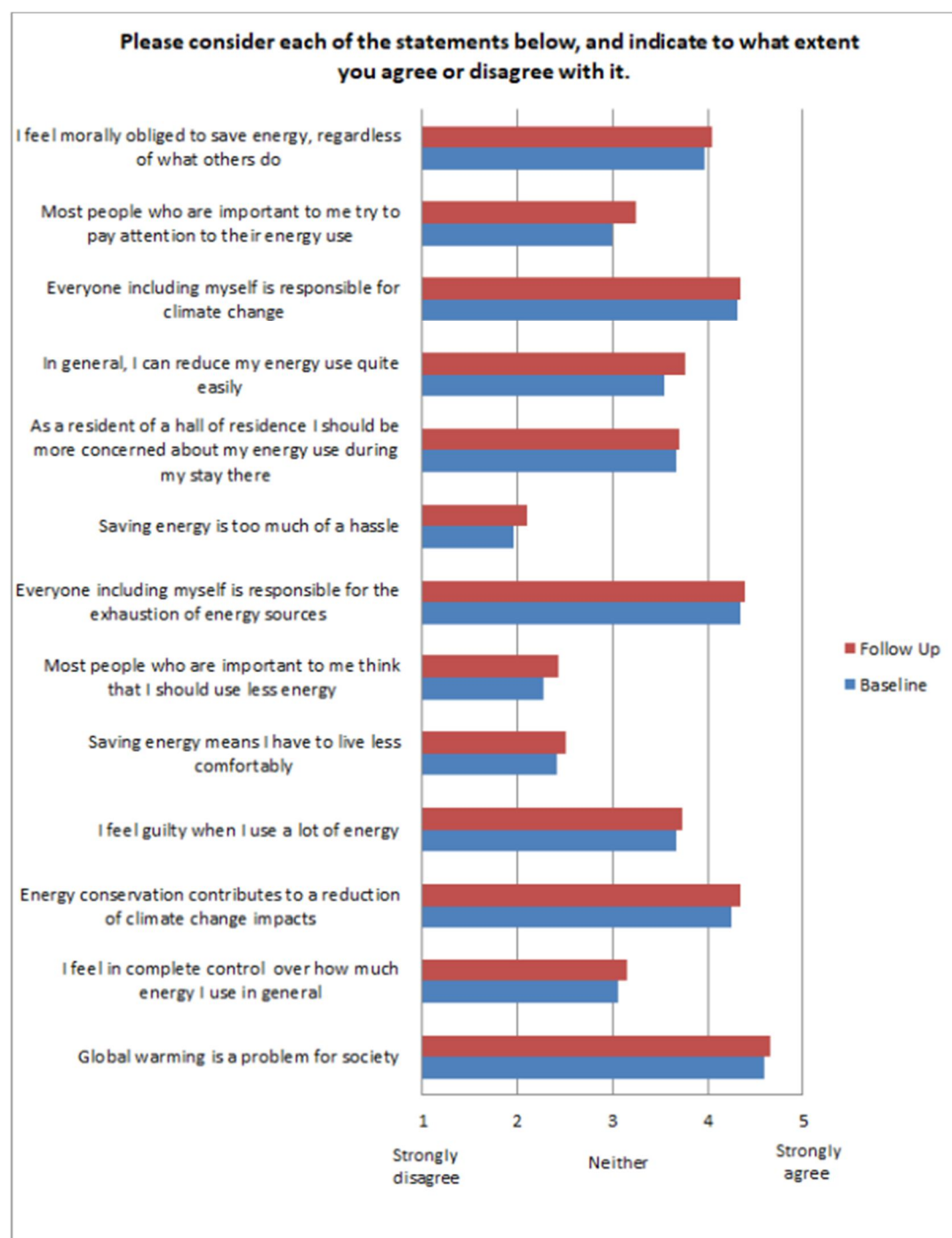


Figure 21 Behavioural antecedents on energy related topics (Total sample)

Results are presented in Figure on a 1 to 5 scale (1 = Strongly disagree, 3=Neither agree nor disagree, 5 = Strongly agree). The higher the mean value the greater the agreement with the statement. Mean values over 3.5 indicate agreement with the statement.

Overall, with regards to the total sample of respondents, observed differences between the baseline and follow up surveys range from 0.0 to 0.2 (Table 23). The biggest changes, indicating an increased agreement with corresponding statement, are reported for "In general, I can reduce my energy use quite easily" (+0.2), "Most people who are important to me try to pay attention to their energy use" (+0.2). On the contrary no change is reported concerning "As a resident of a hall of residence I should be more concerned about my energy use during my stay there" (0.0), "Energy conservation contributes to a reduction of climate change impacts" (0.0) and "I feel guilty when I use a lot of energy" (0.0).

Table 23 Behavioural antecedents on energy related topics (Total sample)

	Baseline		Follow Up		Change in mean value
	M	SD	M	SD	
Global warming is a problem for society	4.6	0.7	4.7	0.8	0.1
I feel in complete control over how much energy I use in general	3.0	0.9	3.1	1.0	0.1
Energy conservation contributes to a reduction of climate change impacts	4.3	0.7	4.3	0.7	0.0
I feel guilty when I use a lot of energy	3.7	0.9	3.7	0.9	0.0
Saving energy means I have to live less comfortably	2.4	0.9	2.5	1.0	0.1
Most people who are important to me think that I should use less energy	2.3	0.9	2.4	1.0	0.1
Everyone including myself is responsible for the exhaustion of energy sources	4.3	0.8	4.4	0.7	0.1
Saving energy is too much of a hassle	2.0	0.7	2.1	0.9	0.1
As a resident of a hall of residence I should be more concerned about my energy use during my stay there	3.7	0.8	3.7	0.9	0.0
In general, I can reduce my energy use quite easily	3.6	0.9	3.8	0.8	0.2
Everyone including myself is responsible for climate change	4.3	0.8	4.4	0.8	0.1
Most people who are important to me try to pay attention to their energy use	3.0	1.0	3.2	1.0	0.2
I feel morally obliged to save energy, regardless of what others do	4.0	0.8	4.1	0.8	0.1

For the item "I feel in complete control over how much I use" the biggest increase in mean value, indicating a bigger level of agreement, is observed in Romania (+0.6) while in Cyprus (-0.2) and Greece (-0.3) the corresponding mean value decreased (Table 24).

Table 24 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		
	M	SD	M	SD	Change in mean value
Cyprus	3.7	0.5	3.5	0.8	-0.2
Greece	2.8	0.8	2.5	0.8	-0.3
Ireland	3.1	0.9	3.1	1.0	0.0
Lithuania	3.2	0.8	3.3	0.8	0.1
Romania	3.3	1.0	3.9	0.8	0.6
UK	2.6	0.9	2.7	1.0	0.1

For the statement “Energy conservation contributes to a reduction of climate change impacts” a significant increase in the level of agreement is observed in Romania (+0.2), followed by Ireland, Lithuania the UK (+0.1 for the three of them). On the contrary a decrease in the level of agreement is observed in Greece (-0.1) (Table 25).

Table 25 Behavioural antecedents on energy related topics – Awareness of consequences

Energy conservation contributes to a reduction of climate change impacts					
	Baseline		Follow Up		
	M	SD	M	SD	Change in mean value
Cyprus	4.3	0.7	4.3	0.7	0.0
Greece	4.6	0.5	4.5	0.5	-0.1
Ireland	4.3	0.7	4.4	0.6	0.1
Lithuania	4.3	0.6	4.2	0.9	0.1
Romania	4.2	0.8	4.4	0.6	0.2
UK	4.2	0.8	4.3	0.7	0.1

For the statement “I feel guilty when I use a lot of energy” the biggest change is observed in Greece (+0.6) indicating increase in the feeling of guilt in the follow-up survey. A decrease in the corresponding mean value, and therefore in the feeling of guilt, is observed in UK (-0.2) (Table 26).

Table 26 Behavioural antecedents on energy related topics - Emotions

I feel guilty when I use a lot of energy					
	Baseline		Follow Up		
	M	SD	M	SD	Change in mean value
Cyprus	3.3	0.9	3.3	0.7	0.0
Greece	2.9	0.8	3.5	0.7	0.6
Ireland	3.9	0.9	3.9	0.9	0.0
Lithuania	3.3	0.8	3.4	0.9	0.1
Romania	4.0	0.9	4.0	1.0	0.0
UK	3.8	0.9	3.6	0.9	-0.2

An increase in the mean value, indicating an increased level of agreement, is observed in the UK (+0.3), Romania (+0.4), Ireland (+0.1) and Lithuania (+0.1) concerning the item “Saving energy means I have to live less comfortably” suggesting higher agreement with the statement. No change (0.0) is reported in Cyprus and Greece (Table 27).

Table 27 Behavioural antecedents on energy related topics - Attitudes

Saving energy means I have to live less comfortably					
	Baseline		Follow Up		
	M	SD	M	SD	Change in mean value
Cyprus	2.5	1.0	2.5	0.8	0.0
Greece	2.5	0.8	2.5	0.7	0.0
Ireland	2.2	0.8	2.3	0.9	0.1
Lithuania	2.7	0.9	2.8	1.0	0.1
Romania	2.4	1.1	2.8	1.1	0.4
UK	2.4	0.7	2.7	0.9	0.3

The biggest increase in the level of agreement towards the statement “Most people who are important to me think that I should use less energy” is observed in Ireland (+0.3) and the UK (+0.3), while a change towards the opposite direction is observed in Lithuania (-0.2) (Table 28).

Table 28 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		
	M	SD	M	SD	Change in mean value
Cyprus	2.4	1.0	2.4	1.2	0.0
Greece	2.2	0.7	2.3	0.9	0.1
Ireland	2.2	0.9	2.5	0.9	0.3
Lithuania	2.1	0.9	1.9	1.0	-0.2
Romania	3.0	1.1	3.0	1.1	0.0
UK	2.2	0.8	2.5	1.1	0.3

The biggest increase in the level of agreement with the statement “Everyone including myself is responsible for the exhaustion of energy sources” is observed in Greece (+0.2) and Ireland (+0.2). On the other hand, a decrease is observed in Lithuania (-0.1) and Romania (-0.1) (Table 29).

Table 29 Behavioural antecedents on energy related topics – Ascription of responsibility

Everyone including myself is responsible for the exhaustion of energy sources					
	Baseline		Follow Up		
	M	SD	M	SD	Change in mean value
Cyprus	4.2	0.7	4.2	0.7	0.0
Greece	4.2	1.1	4.4	0.9	0.2
Ireland	4.3	0.8	4.5	0.7	0.2
Lithuania	4.4	0.7	4.3	0.6	-0.1
Romania	4.5	0.5	4.4	0.6	-0.1
UK	4.1	0.9	4.2	0.9	0.1

Regarding the item “Saving energy is too much of a hassle” a positive change in mean value is observed in the UK (+0.1), Lithuania (+0.2) and Ireland (+0.2), indicating an increase level of agreement. A negative change,

indicating decreased awareness compared to the baseline survey, is observed in Greece (-0.1) and Cyprus (-0.2) (Table 30).

Table 30 Behavioural antecedents on energy related topics - Attitudes

Saving energy is too much of a hassle					
	Baseline		Follow Up		Change in mean value
	M	SD	M	SD	
Cyprus	2.2	0.7	2.0	0.6	-0.2
Greece	1.9	1.0	1.8	0.5	-0.1
Ireland	1.8	0.7	2.0	0.8	0.2
Lithuania	2.2	0.8	2.4	1.0	0.2
Romania	2.0	0.7	2.0	1.0	0.0
UK	2.2	0.7	2.3	0.9	0.1

For the item "Global warming is a problem for society", an increase in the level of agreement is observed in Greece (+0.3), Ireland (+0.1), Lithuania (+0.1) and the UK (+0.1), while no change is found in Cyprus and Romania (Table 31).

Table 31 Behavioural antecedents on energy related topics – Awareness of consequences

Global warming is a problem for society					
	Baseline		Follow Up		Change in mean value
	M	SD	M	SD	
Cyprus	4.5	0.8	4.5	0.8	0.0
Greece	4.5	0.5	4.8	0.4	0.3
Ireland	4.7	0.8	4.8	0.6	0.1
Lithuania	4.4	0.8	4.5	0.9	0.1
Romania	4.6	0.5	4.6	0.9	0.0
UK	4.6	0.7	4.7	0.9	0.1

With respect to the item "In general, I can reduce my energy use quite easily", whilst in Cyprus (+0.8), Lithuania (+0.2), Romania (+0.2) and Ireland (+0.3) a positive change in the mean value is observed, indicating an increase in the level of agreement with the statement. In Greece and the UK no change is found (Table 32).

Table 32 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
	M	SD	M	SD	
Cyprus	3.0	0.6	3.8	0.9	0.8
Greece	3.6	0.8	3.6	0.8	0.0
Ireland	3.6	0.9	3.9	0.8	0.3
Lithuania	3.3	0.8	3.5	0.8	0.2
Romania	3.8	0.7	4.0	0.8	0.2
UK	3.6	0.9	3.6	0.9	0.0

In all countries except for Romania (+0.2, indicating a raised agreement), Ireland (+0.1) and Lithuania (+0.1) no change in the mean level of agreement with the statement “Everyone including myself is responsible for climate change” is observed between the baseline and the follow-up survey (Table 33).

Table 33 Behavioural antecedents on energy related topics – Ascription of responsibility

Everyone including myself is responsible for climate change					
	Baseline		Follow Up		
	M	SD	M	SD	Change in mean value
Cyprus	4.2	0.9	4.2	0.7	0.0
Greece	4.4	0.8	4.4	0.8	0.0
Ireland	4.4	0.8	4.5	0.9	0.1
Lithuania	4.2	0.8	4.3	0.8	0.1
Romania	4.2	0.7	4.4	0.6	0.2
UK	4.1	1.0	4.1	0.9	0.0

For the item “Most people who are important to me try to pay attention to their energy use” either a positive or no change is observed. The biggest increase in the level of agreement with the statement is found in Romania (+0.4), followed by Ireland (+0.3), Cyprus (+0.1), Greece (+0.2), the UK (+0.1) and Lithuania (+0.2) (Table 34).

Table 34 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		
	M	SD	M	SD	Change in mean value
Cyprus	3.2	0.7	3.3	0.9	0.1
Greece	2.9	0.8	3.1	0.7	0.2
Ireland	3.2	1.0	3.5	1.0	0.3
Lithuania	2.4	0.9	2.6	1.0	0.2
Romania	3.1	1.1	3.5	1.0	0.4
UK	3.1	1.0	3.2	1.0	0.1

As far as the item “As a resident of a hall of residence I should be more concerned about my energy use during my stay there” is concerned, a decrease is observed in the level of agreement with the statement only in Cyprus (-0.3). On the contrary an increase by 0.1 is observed in Greece and by 0.2 in the UK (Table 35).

Table 35 Behavioural antecedents on energy related topics – Role beliefs

As a resident of a hall of residence I should be more concerned about my energy use during my stay there					
	Baseline		Follow Up		
	M	SD	M	SD	Change in mean value
Cyprus	4.0	0.8	3.7	0.7	-0.3
Greece	3.8	0.8	3.9	0.9	0.1
Ireland	3.8	0.9	3.8	1.0	0.0
Lithuania	3.2	0.9	3.2	0.8	0.0
Romania	4.0	0.5	4.0	0.7	0.0
UK	3.6	0.6	3.8	0.9	0.2

The biggest increase in the level of agreement with the statement “I feel morally obliged to save energy, regardless of what others do” is observed only in Romania (+0.4), while a decreased corresponding awareness is reported only in Greece (-0.3) (Table 36).

Table 36 Behavioural antecedents on energy related topics – Personal norms

I feel morally obliged to save energy, regardless of what others do					
	Baseline		Follow Up		
	M	SD	M	SD	Change in mean value
Cyprus	4.0	0.6	4.0	0.8	0.0
Greece	4.3	0.6	4.0	1.0	-0.3
Ireland	4.2	0.7	4.2	0.7	0.0
Lithuania	3.6	0.8	3.6	0.9	0.0
Romania	3.8	1.1	4.2	0.8	0.4
UK	4.0	0.7	4.0	0.8	0.0

4.2.4 Energy saving in everyday life

Respondents were asked to choose which of the six-targeted energy saving behaviours can help save energy. As observed from Figure 22 the action reported the most in both the baseline and the follow-up survey is that of switching off lights in empty rooms. It is followed by opening windows to cool down instead of using a cooling device or system and avoiding leaving electronic equipment on standby.

For all actions except for putting lids on pans when cooking (+7%) and boiling the kettle only with the amount of water respondents intend to use (+1%), a decrease in respondents’ awareness about which actions can help save energy them is found in the follow-up survey concerning the total sample of respondents. The biggest decrease is observed in “Put a jumper or an extra blanket instead of turning on the heating” (-4%), followed by “Open windows to cool down instead of using a cooling device or system” (-2%), “Switch off lights in empty rooms” (-1%) and “Avoid leaving electronic equipment on standby” (-1%).

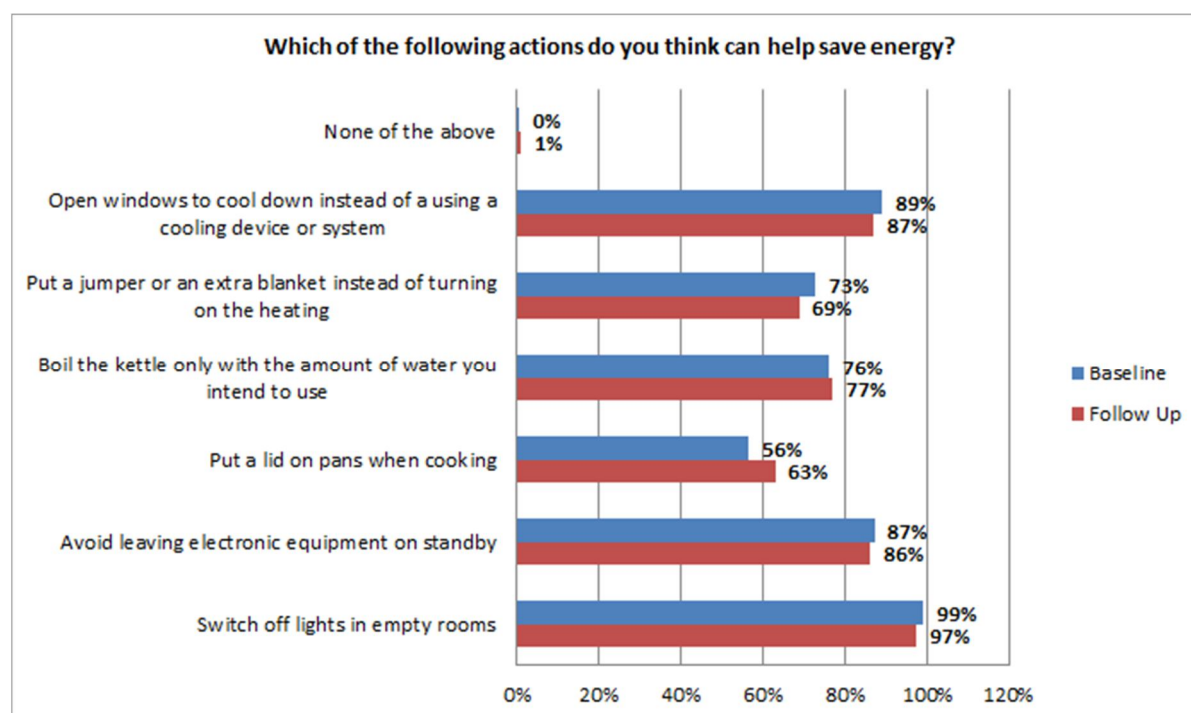


Figure 22 Energy saving in everyday life (Total sample)

In Cyprus significant differences are observed between baseline and follow-up survey, either positive (implying increased awareness that given actions can help save energy) or negative ones (implying decreased awareness that given actions can help save energy). The biggest positive differences are found for "Avoid leaving electronic equipment on standby" (+33%) and "Boil the kettle only with the amount of water you intend to use" (+33%). Conversely the biggest negative differences are found for "Open windows to cool down instead of using a cooling device or system" (-33%) and "Put a jumper or an extra blanket instead of turning on the heating" (-17%).

In Greece, a positive difference, indicating an increased awareness of +44% is observed concerning "Put a lid on pans when cooking" and +31% for "Boil the kettle only with the amount of water you intend to use". The share of respondents reported "Avoid leaving electronic equipment on standby" is also increased by 13% compared to the corresponding share of baseline survey. A negative difference, indicating a decreased awareness is nonetheless observed for "Switch off lights in empty rooms" (-6%) and "None of the above" (-6%).

In Ireland apart from "Put a lid on pans when cooking" (+9%) and "None of the above" (+2%) all targeted energy saving behaviours were reported by a smaller share of respondents of the follow-up survey in comparison with the baseline one; i.e. -12% for "Put a jumper or an extra blanket instead of turning on the heating", -1% for both "Switch off lights in empty rooms" and "Open windows to cool down instead of using a cooling device or system".

In Lithuania, opening windows to cool down instead of using a cooling device or system was reported by fewer respondents (-7% difference) in the follow-up survey compared to the baseline one. The same applies for "Avoid leaving electronic equipment on standby" (-3%) and "Put a lid on pans when cooking" (-2%). A positive difference, indicating an increased awareness towards the corresponding action, is observed only for "Put a jumper or an extra blanket instead of turning on the heating" (+7%) and "Boil the kettle only with the amount of water you intend to use" (+2%).

In Romania, an increased awareness towards the items "Put a lid on pans when cooking" (+3%), "Put a jumper or an extra blanket instead of turning on the heating" (+3%) and "Open windows to cool down instead of using a cooling device or system" (+6%), is observed. On the other hand, a decrease is observed for "Avoid leaving electronic equipment on standby" (-6%), "Boil the kettle only with the amount of water you intend to use" (-6%) and "Switch off lights in empty rooms" (-3%).

In the UK, as depicted in Table 37 no increased awareness towards the six-targeted energy saving actions is observed, except for "Avoid leaving electronic equipment on standby" (+5%), with comparison to the baseline survey. Instead except for "None of the above" in which no change is observed, all energy saving actions were reported by a smaller share of respondents in the follow-up survey than in the baseline one; -10% for "Boil the kettle only with the amount of water you intend to use", -5% for "Open windows to cool down instead of using a cooling device or system", -3% for "Switch off lights in empty rooms", "Put a lid on pans when cooking" and "Put a jumper or an extra blanket instead of turning on the heating".

Table 37 Energy saving in everyday life

Which of the following actions do you think can help save energy?		Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
Switch off lights in empty rooms	Follow Up	100%	94%	98%	98%	97%	95%	97%
	Difference from Baseline	0%	-6%	-1%	0%	-3%	-3%	-1%
Avoid leaving electronic equipment on standby	Follow Up	83%	75%	90%	81%	74%	97%	86%
	Difference from Baseline	33%	13%	-4%	-3%	-6%	5%	-1%
Put a lid on pans	Follow Up	67%	56%	66%	56%	50%	77%	63%

Which of the following actions do you think can help save energy?		Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
when cooking	Difference from Baseline	17%	44%	9%	-2%	3%	-3%	7%
Boil the kettle only with the amount of water you intend to use	Follow Up	67%	50%	86%	73%	59%	85%	77%
	Difference from Baseline	33%	31%	0%	2%	-6%	-10%	1%
Put a jumper or an extra blanket instead of turning on the heating	Follow Up	33%	44%	81%	56%	50%	85%	69%
	Difference from Baseline	-17%	0%	-12%	7%	3%	-3%	-4%
Open windows to cool down instead of using a cooling device or system	Follow Up	33%	69%	93%	83%	85%	90%	87%
	Difference from Baseline	-33%	6%	-1%	-7%	6%	-5%	-2%
None of the above	Follow Up	0%	0%	2%	0%	0%	0%	1%
	Difference from Baseline	0%	-6%	2%	0%	0%	0%	0%

4.2.5 Frequency of energy saving action

Respondents were asked to rate the frequency in which they perform a number of energy saving actions on a 1 to 5 scale (1= Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5= Always). The higher the mean value, the higher the frequency at which the behaviour is performed.

For the total sample, observed differences in the mean value between baseline and follow-up survey range from -0.2 to +0.1. A change of +0.1 in the mean value, indicating an increase in the frequency that respondents boil the kettle only with the amount of water they intend to use and open windows to cool down instead of using a cooling device or system is observed, while a change of -0.2 (indicating a decrease in the frequency of the corresponding action) is observed for "Avoid leaving electronic equipment on stand-by" and -0.1 for "Put a jumper or an extra blanket instead of turning on the heating" and "Switch off lights in empty rooms".

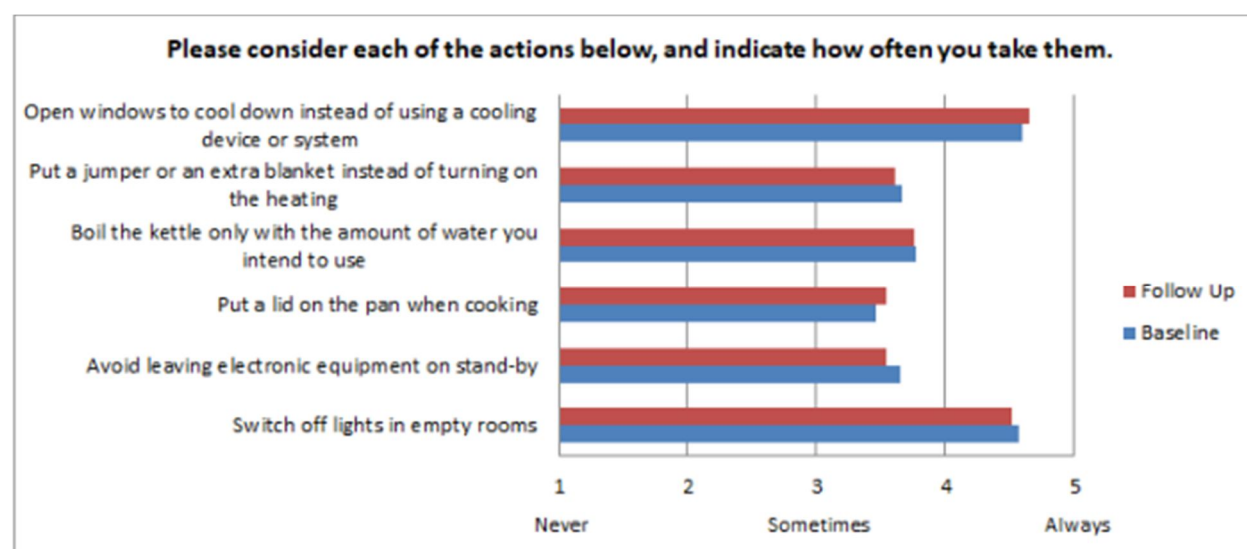


Figure 23 Frequency of energy saving actions (Total sample)

Table 38 Frequency of energy saving actions (Total sample)

	Baseline		Follow Up		Change in mean value
	M	SD	M	SD	
Switch off lights in empty rooms	4.6	0.6	4.5	0.7	-0.1
Avoid leaving electronic equipment on stand-by	3.7	1.0	3.5	1.0	-0.2
Put a lid on the pan when cooking	3.5	1.2	3.5	1.2	0.0
Boil the kettle only with the amount of water you intend to use	3.8	1.1	3.9	1.1	0.1
Put a jumper or an extra blanket instead of turning on the heating	3.7	1.1	3.6	1.1	-0.1
Open windows to cool down instead of using a cooling device or system	4.6	0.8	4.7	0.7	0.1

For the item "Open windows to cool down instead of using a cooling device or system" no change is observed in the mean value for Cyprus. At the same time whilst an increase in the frequency that respondents took that action is observed in Romania (+0.3), Lithuania (+0.1), Ireland (+0.1) and the UK (+0.1) a decrease is found in Greece (-0.1).

Table 39 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
	M	SD	M	SD	
Cyprus	2.8	0.7	2.8	0.9	0.0
Greece	3.9	1.2	3.8	0.8	-0.1
Ireland	4.7	0.7	4.8	0.5	0.1
Lithuania	4.6	0.6	4.7	0.7	0.1
Romania	4.6	0.6	4.9	0.4	0.3
UK	4.7	0.7	4.7	0.6	0.1

An increase in the frequency that respondents that put a jumper or an extra blanket instead of turning on the heating is found in Romania (+0.4), Cyprus (+0.3) and Lithuania (+0.2). On the contrary a decrease is found in the UK (-0.5) and Ireland (-0.3) and Greece (-0.1).

Table 40 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
	M	SD	M	SD	
Cyprus	3.2	0.9	3.5	0.8	0.3
Greece	3.5	1.2	3.4	0.9	-0.1
Ireland	4.0	1.1	3.7	1.1	-0.3
Lithuania	3.3	1.1	3.5	1.2	0.2
Romania	3.1	1.1	3.5	1.3	0.4
UK	4.0	1.0	3.5	1.2	-0.5

For the item “Boil the kettle only with the amount of water you intend to use” the largest increase in the frequency that respondents took that action compared to the baseline survey is observed in Cyprus (+0.3). A decrease in the mean value, indicating a less frequent action, is observed only in Greece (-0.1) and Ireland (-0.1).

Table 41 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		
	M	SD	M	SD	Change in mean value
Cyprus	3.7	1.4	4.0	1.0	0.3
Greece	3.0	1.5	2.9	1.4	-0.1
Ireland	3.9	1.0	3.8	1.0	-0.1
Lithuania	3.7	1.1	3.7	1.1	0.0
Romania	4.1	1.0	4.1	1.1	0.1
UK	3.7	1.0	3.9	1.1	0.2

For the item “Put a lid on the pan when cooking” the biggest positive change, indicating an increase in the frequency that respondents took it, is found in Romania (+0.4) followed by Greece, Ireland and the UK (+0.1 in all three countries). On the contrary a decrease in the corresponding frequency is found in Cyprus (-0.5) and Lithuania (-0.3).

Table 42 Frequency of energy saving action – Put a lid on the pan when cooking

Put a lid on the pan when cooking					
	Baseline		Follow Up		
	M	SD	M	SD	Change in mean value
Cyprus	4.3	0.7	3.8	1.1	-0.5
Greece	3.3	1.2	3.4	1.3	0.1
Ireland	3.2	1.3	3.3	1.2	0.1
Lithuania	4.0	0.9	3.7	1.0	-0.3
Romania	3.4	1.1	3.8	1.2	0.4
UK	3.6	1.1	3.7	1.2	0.1

An increase in the frequency that respondents avoid leaving electronic equipment on stand-by, is observed in Cyprus (+0.1), Greece (+0.1), Lithuania (+0.1) and Romania (+0.1). Conversely, in Ireland and the UK a decrease of 0.2 and 0.3 is found, respectively.

Table 43 Frequency of energy saving action – Avoid leaving electronic equipment on stand-by

Avoid leaving electronic equipment on stand-by					
	Baseline		Follow Up		
	M	SD	M	SD	Change in mean value
Cyprus	3.7	1.1	3.8	0.9	0.1
Greece	3.3	0.9	3.4	1.0	0.1
Ireland	3.7	1.0	3.5	1.0	-0.2
Lithuania	3.4	1.1	3.5	1.1	0.1
Romania	3.8	1.1	3.9	1.0	0.1
UK	3.8	0.9	3.5	1.2	-0.3

In all countries except for Romania (+0.1) a decrease in mean value, indicating a lower frequency for the corresponding action compared to the baseline survey, or no change is observed regarding the item "Switch off lights in empty rooms; -0.3 in Greece, -0.2 in Cyprus, -0.1 in the UK.

Table 44 Frequency of energy saving action – Switch off lights in empty rooms

Switch off lights in empty rooms					
	Baseline		Follow Up		
	M	SD	M	SD	Change in mean value
Cyprus	4.7	0.7	4.5	0.5	-0.2
Greece	4.6	0.6	4.3	0.6	-0.3
Ireland	4.6	0.6	4.6	0.7	0.0
Lithuania	4.4	0.7	4.4	0.8	0.0
Romania	4.5	0.5	4.6	0.5	0.1
UK	4.6	0.7	4.5	0.8	-0.1

4.2.6 Reasons for being more energy conscious

Respondents were asked to choose up to three important reasons for taking the abovementioned energy saving actions.

As is shown in Figure 24 the top three drivers for being more energy conscious in both the follow-up and the baseline survey, are the fact that it is an adopted habit from home, it saves energy and it is the right thing to do. However, in the follow-up survey all the provided options except for "I don't know why, I just do it" and "It helps reduce global warming", were reported by either a smaller or the same share of respondents compared to the baseline one.

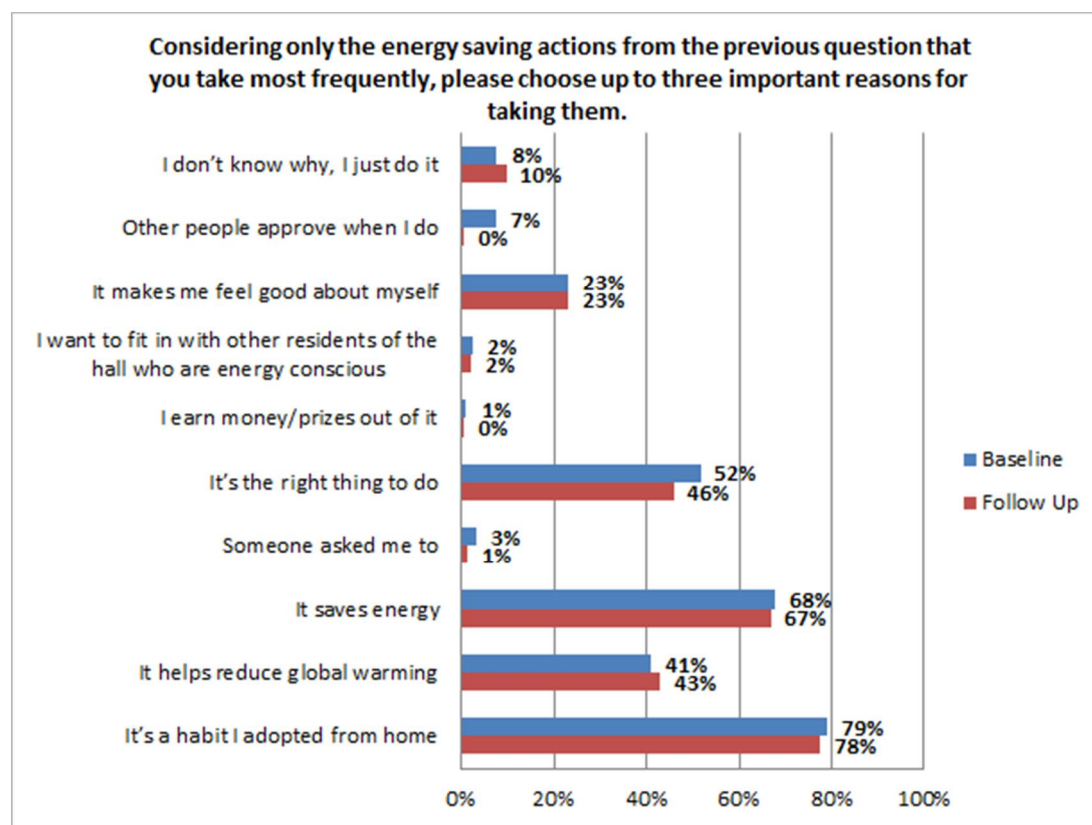


Figure 24 Reasons for being more energy conscious (Total sample)

In Cyprus, a bigger share of respondents reported "It's a habit I adopted from home" (+33%) in the follow-up survey than in the baseline. A smaller, yet significant, increase in the number of respondents that selected the item "It helps reduce global warming" (+17%) in the follow-up survey is observed.

In Greece, the biggest increase, indicating a bigger share of respondents that reported the corresponding statement, is found for "I don't know why, I just do it" (25%) followed by "It makes me feel good about myself" (+19%). On the other hand a rather significant the decrease is observed for "It helps reduce global warming" (-19%) and "I earn money/prizes out of it" (-13%).

In Ireland, positive differences, indicating more respondents that reported the corresponding items in the follow-up survey than in the baseline, are found for "It's a habit I adopted from home" (+2%), "It helps reduce global warming" (+2%) and "I don't know why, I just do it" (+2%). All other items except for "I earn money/prizes out of it" and "I want to fit in with other residents of the hall who are energy conscious" a decrease in the number of respondents that selected in the end of the academic year is found. The biggest change is found in "It's the right thing to do" (-12%).

In Lithuania a positive change, indicating a bigger proportion of respondents that reported the corresponding statement in the follow-up survey, is observed only for "It saves energy" (+3%) and "I don't know why, I just do it" (+6%), while a negative change, indicating a smaller proportion is observed for "Other people approve when I do" (-25%), "It's the right thing to do" (-8%) and "It's a habit I adopted from home" (-3%).

In Romania, "It helps reduce global warming" (+3%), "It saves energy" (+3%) and "It's the right thing to do" (+3%) were reported by a bigger share of respondents in the follow-up survey compared to the baseline. No change is observed for "Someone asked me to" and "I earn money/prizes out of it". All remaining items are reported by fewer respondents in the follow-up survey; i.e. -14% for "It's a habit I adopted from home", -11% for "I don't know why, I just do it", -3% for "It makes me feel good about myself" and "I want to fit in with other residents of the hall who are energy conscious".

In the UK the biggest positive change indicating a larger proportion of respondents that reported the corresponding statement in the follow-up survey is observed for "It helps reduce global warming" (12%) followed by "It's the right thing to do" (5%) and "It makes me feel good about myself" (5%). Towards the opposite direction (statements reported by smaller shares of respondents) is the change for items "It saves energy" (-10%), "It's a habit I adopted from home" (-5%) and "Someone asked me to" (-5%).

Table 45 Reasons for being more energy conscious

		Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
It's a habit I adopted from home	Follow Up	83%	75%	80%	81%	70%	71%	78%
	Difference from Baseline	33%	0%	2%	-3%	-14%	-5%	-1%
It helps reduce global warming	Follow Up	83%	19%	53%	19%	54%	44%	43%
	Difference from Baseline	17%	-19%	2%	0%	3%	12%	2%
It saves energy	Follow Up	83%	56%	70%	65%	68%	61%	67%
	Difference from Baseline	0%	0%	-2%	3%	3%	-10%	-1%
Someone asked me to	Follow Up	0%	0%	2%	0%	3%	2%	1%
	Difference from Baseline	0%	0%	-2%	0%	0%	-5%	-2%
It's the right thing to do	Follow Up	33%	31%	49%	44%	32%	59%	46%
	Difference from Baseline	0%	0%	-12%	-8%	3%	5%	-6%
I earn money/prizes out of it	Follow Up	0%	0%	0%	0%	0%	2%	0%
	Difference from Baseline	0%	-13%	0%	0%	0%	0%	-1%

		Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
I want to fit in with other residents of the hall who are energy conscious	Follow Up	0%	0%	1%	3%	5%	2%	2%
	Difference from Baseline	0%	0%	0%	0%	-3%	0%	0%
It makes me feel good about myself	Follow Up	0%	44%	10%	41%	30%	24%	23%
	Difference from Baseline	-50%	19%	-1%	0%	-3%	5%	0%
Other people approve when I do	Follow Up	0%	0%	0%	2%	0%	0%	0%
	Difference from Baseline	0%	0%	-2%	-25%	-3%	-2%	-7%
I don't know why, I just do it	Follow Up	17%	31%	11%	6%	3%	10%	10%
	Difference from Baseline	17%	25%	2%	6%	-11%	-2%	2%

4.2.7 Reasons for being less energy conscious

Respondents were asked to select the three most important reasons for being less energy conscious about their energy use from a list provided to them.

Overall the three prevailing reasons for being less energy conscious are: lack of feedback concerning how much energy they consume, not saving money by saving energy and limitations of the buildings or its systems.

At the end of the academic year only the item "Nothing prevents me from being energy conscious" was selected by a larger number of respondents indicating a change with a positive meaning. All other items either show a decrease in the total number of respondents that selected them, suggesting a removal of barriers towards energy saving, or no change (Figure 25).

In Cyprus the percentage of respondents that reported "Others will make fun of me" and "I don't have any feedback on how much energy I consume" is decreased by -17% in the follow-up survey in both cases (Table 46). On the contrary, at the end of the academic year the share of respondents that reported "I have other things on my mind" increased by +17% compared to the baseline survey. The number of respondents that selected the rest of the statements remains unchanged.

In Greece a decrease is found in the number of respondents that selected the following items at the end of the academic year: "My university/college does not inspire me to act in this way" (-13%), "The energy I save in the hall won't save me any money" (-6%) and "The way the building and its systems are designed limit the thing I can do to save energy" (-6%). On the other hand, an increase is observed in the number of respondents that selected: "lack of feedback on how much I consume" (+6%), "I have other things on my mind" (+6%), "The hall management does not inspire me to act in this way" (+13%), "The other hall residents are not engaged in saving energy either" (+6%), "Nothing prevents me from being energy conscious" (+6%). Nevertheless, the items "Others will make fun of me", "I don't know how", "Sustainable living is not for me" and "My personal actions to save energy would have minimal impact on the energy consumption of the hall" were reported by the same share of respondents in both the baseline and the follow-up survey.

In Ireland, all given reasons except for "The energy I save in the hall won't save me any money" (+3%), "I have other things on my mind" (+1) and "My university/college does not inspire me to act in this way" (+1%), have been reported either by fewer or by the same share of respondents in the follow-up survey compared to the baseline; i.e. -8% for "I don't have any feedback on how much I consume", -3% for "The hall management does not inspire me to act in this way", -4% for "The other hall residents are not engaged in saving energy either", -2% for "I don't know how", -2% for "Sustainable living is not for me", -2% for "Nothing prevents me from being energy conscious", no change for "My personal actions to save energy would have minimal impact on the energy consumption of the hall" and "The way the building and its systems are designed limit the things I can do to save energy".

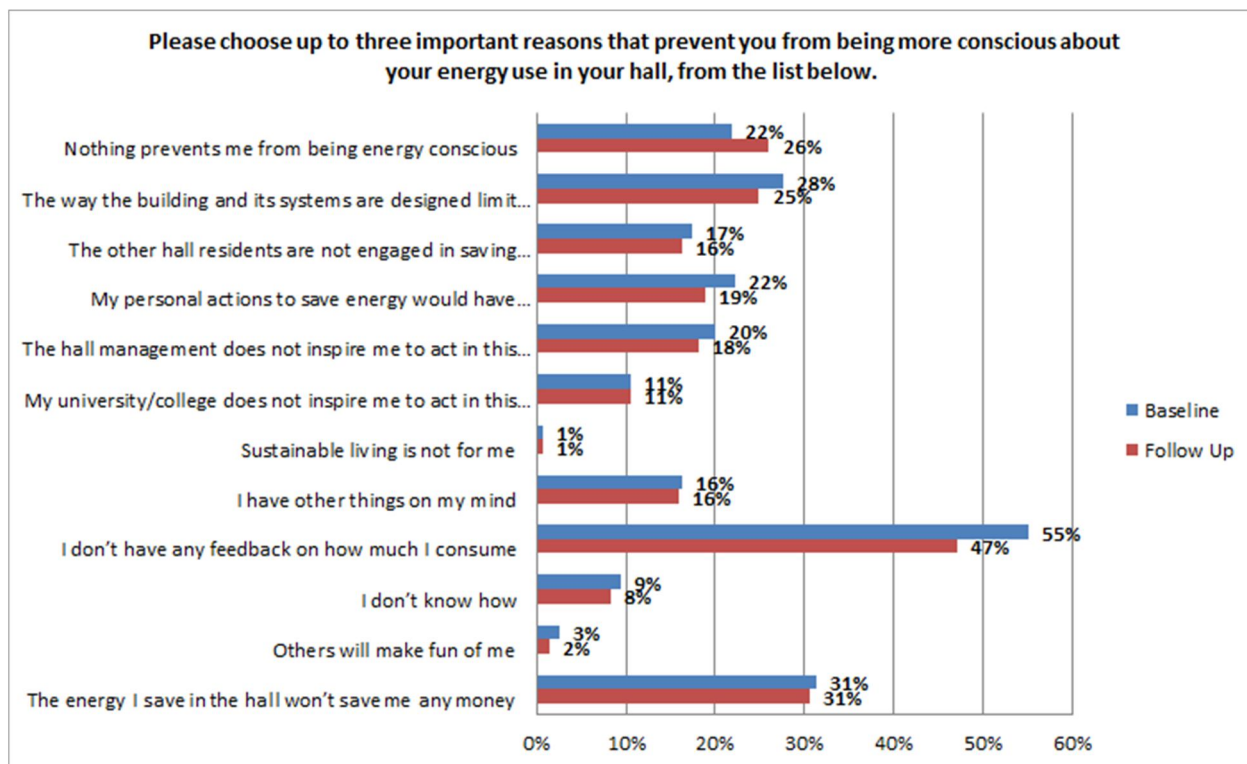


Figure 25 Reasons for being less energy conscious (Total sample)

In Lithuania a decrease in the number of students that selected it is observed for "The way the building and its systems are designed limit the thing I can do to save energy" (-9%), "The energy I save in the hall won't save me any money" (-7%) and "I don't have any feedback on how much I consume" (-5%). On the contrary for items "My university/college does not inspire me to act in this way" (+4%), "I don't know how" (+5%), "Sustainable living is not for me" (+4%), "The hall management does not inspire me to act in this way" (+2%) and "Nothing prevents me from being energy conscious" (+2%) an increase is observed in the number of respondents that selected them in the follow-up survey compared to the baseline. No change between the baseline and the follow-up survey is observed for the proportion of respondents that reported "Others will make fun of me", "I have other things on my mind" and "My personal actions to save energy would have minimal impact on the energy consumption of the hall" as reasons for being less energy conscious.

In Romania, a change with a positive meaning is observed in "My personal actions to save energy would have minimal impact on the energy consumption of the hall" (-24%), "I don't have any feedback on how much I consume" (-6%), "I don't know how" (-6%), "The hall management does not inspire me to act in this way" (-3%) and "I have other things on my mind" (-9%) is observed. On the other hand, changes with a negative meaning have been observed in; +3% for "My university/college does not inspire me to act in this way", +6% for "The way the building and its systems are designed limit the things I can do to save energy". A change with a positive meaning has been observed for "Nothing prevents me from being energy conscious" (+24%). "The energy I save in the hall won't save me any money", "Others will make fun of me" and "Sustainable living is not for me" were reported by an equal share of respondents in both surveys.

In the UK an increase in the number of respondents that selected the following items is observed for the end of the academic year; +8% for "Nothing prevents me from being energy conscious", +3% for "The other hall residents are not engaged in saving energy either". On all other occasions the number of respondents either decreased or remained unchanged: "I don't have any feedback on how much I consume" (-18%), "The way the building and its systems are designed limit the things I can do to save energy" (-8%), "The hall management does not inspire me to act in this way" (-8%), "Others will make fun of me" (-5%), "I don't know how" (-5%), "My university/college does not inspire me to act in this way" (-5%), "I have other things on my mind" (-3%) and "My personal actions to save energy would have minimal impact on the energy consumption of the hall" (-

3%). The number of respondents that selected the options "The energy I save in the hall won't save me any money" and "Sustainable living is not for me" remained unchanged.

Table 46 Reasons for being less energy conscious

		Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
The energy I save in the hall won't save me any money	Follow Up	0%	6%	27%	46%	21%	41%	31%
	Difference from Baseline	0%	-6%	3%	-7%	0%	0%	-1%
Others will make fun of me	Follow Up	0%	0%	2%	2%	3%	0%	2%
	Difference from Baseline	-17%	0%	0%	0%	0%	-5%	-1%
I don't know how	Follow Up	0%	6%	11%	5%	12%	3%	8%
	Difference from Baseline	0%	0%	-2%	5%	-6%	-5%	-1%
I don't have any feedback on how much I consume	Follow Up	17%	56%	48%	55%	39%	41%	47%
	Difference from Baseline	-17%	6%	-8%	-5%	-6%	-18%	-8%
I have other things on my mind	Follow Up	17%	13%	20%	9%	0%	28%	16%
	Difference from Baseline	17%	6%	1%	0%	-9%	-3%	0%
Sustainable living is not for me	Follow Up	0%	0%	0%	4%	0%	0%	1%
	Difference from Baseline	0%	0%	-2%	4%	0%	0%	0%
My university/college does not inspire me to act in this way	Follow Up	0%	19%	13%	9%	9%	5%	11%
	Difference from Baseline	0%	-13%	1%	4%	3%	-5%	0%
The hall management does not inspire me to act in this way	Follow Up	0%	25%	11%	45%	15%	3%	18%
	Difference from Baseline	0%	13%	-3%	2%	-3%	-8%	-2%
My personal actions to save energy would have minimal impact on the energy consumption of the hall	Follow Up	17%	6%	18%	18%	24%	23%	19%
	Difference from Baseline	0%	0%	0%	0%	-24%	-3%	-3%
The other hall residents are not engaged in saving energy either	Follow Up	0%	13%	21%	7%	12%	23%	16%
	Difference from Baseline	0%	6%	-4%	2%	-3%	3%	-1%
The way the building and its systems are designed limit the things I can do to save energy	Follow Up	33%	38%	22%	21%	36%	23%	25%
	Difference from Baseline	0%	-6%	0%	-9%	6%	-8%	-3%
Nothing prevents me from being energy conscious	Follow Up	50%	25%	24%	23%	36%	23%	26%
	Difference from Baseline	0%	6%	-2%	2%	24%	8%	4%

5 Summary of main findings

Energy savings

- In 2017-18, 1.059 GWh of electricity were saved across all the participating countries compared to the baseline. This saving equates to over 530 tonnes of CO₂ emissions. Extrapolation for data from missing months for Student Switch Off campaigns lasting for less than nine months gives an additional saving of 323,734 kWh.
- Percentage wise, most energy was saved in Cyprus (7.87%) and in Lithuania (7.64%). The United Kingdom had the highest absolute energy savings (772,661 MWh) and carbon dioxide savings (354 tCO₂). Ireland reported the lowest savings both in absolute terms (-212,386 kWh, -89 tCO₂) and in percentage terms (-12.45%).
- At university level the biggest energy saving can be noted in University of York (UK), where 238 MWh were saved. The biggest percentage saving has been at Dublin City University (Ireland) where a 12.3% saving is noted. The most carbon dioxide was saved in University of York (UK) (172 tCO₂).
- Ireland is the only country taking part in Student Switch Off where there was an overall increase in energy consumption (an increase of 212,386 kWh, and 89 tonnes of carbon). This is mainly attributed to the harsh winter and early spring 2018 as a result of which students spent more time in their accommodation, than they would otherwise (and therefore using extra energy). It was not possible to do degree day analysis on the National University of Ireland, Galway, due to granularity of the data (it was bi-monthly), and therefore the energy increase resultant of the extreme winter temperatures could not be accounted for in these dormitories.

Level of Information

How to save energy in halls

- At the end of the academic year only respondents living in Cyprus feel adequately informed about what they personally can do to save energy in their hall. Respondents in Ireland, Romania and the UK reported a moderate level of information followed by those living in Bulgaria and Lithuania. On the other hand, most of respondents living in Greece characterized themselves as inadequately informed.
- In comparison with the baseline survey an increase in the level of information on how to save energy in halls is observed in Greece, Ireland, Romania and the UK while the opposite is observed in Lithuania. No change is observed in Cyprus.

Actions that can help save energy

- At the end of the academic year in all countries the majority of respondents agreed that switching off lights in empty rooms, avoid leaving electronic equipment on standby and boiling the kettle only with the amount of water they intend to use are actions that can help save energy. Opening windows to cool down instead of using a cooling device/system is not a so popular action in Cyprus, probably due to the country's hot Mediterranean climate. The same applies to putting a jumper or an extra blanket instead of turning on the heating which was also the least reported action in Greece.
- In comparison to the baseline survey the biggest increases in the perceived level of knowledge, are observed in Greece (+44% respondents "Put a lid on pans when cooking") Cyprus (+33% respondents for both "Boil the kettle only with the amount of water you intend to use" and "Avoid leaving electronic equipment on standby"). Simultaneously significant differences towards the opposite direction are observed in Cyprus (-33% respondents "Open windows to cool down instead of using a cooling device or system", -17% respondents "Put a jumper or an extra blanket instead of turning on the heating") and Ireland (-12% respondents "Put a jumper or an extra blanket instead of turning on the heating").

Energy Awareness

Increase in energy awareness

- Overall in all countries the awareness of respondents of what to do to reduce the impact of their lifestyle and habits on energy consumption has increased.
- The biggest increase in energy awareness is reported in Romania and Bulgaria and the smallest in Lithuania.

Influential sources of information

- The three sources of information that helped the most in increasing the energy awareness of the respondents are: family; an article they have read or a documentary they watched; and the Student Switch Off campaign.
- The least influential sources of information are: feedback and information on their dormitory's energy consumption; University-wide Campaigns; and a course they took at university.
- More than 50% of respondents in Cyprus, Romania and the UK were significantly influenced by the Student Switch Off campaign this academic year.

Student Switch Off campaign

Familiarization with SSO

- In all countries except for Greece and Lithuania, the majority of respondents had heard about the SSO campaign.
- In Greece and Lithuania only 21% and 24% of those participating in the survey had heard about the SSO campaign.

SSO impacts

- Respondents living in Bulgaria, Cyprus, Greece, Ireland, Romania and the UK reported that the SSO campaign made them aware of the impact of their lifestyle and habits.
- In Bulgaria, Ireland, Romania and the UK, the SSO campaign also showed the respondents that their university is taking action to reduce its environmental impact.
- In Bulgaria, Ireland and Lithuania significant shares of respondents felt confident that they could do things to reduce their environmental impact.
- In Bulgaria, Cyprus and Greece respondents said that through the SSO campaign they saw practical examples on what other people do to save energy.
- A large share of respondents in Lithuania and Greece said that the SSO campaign did not influence them.

SSO Energy Dashboard

Familiarization with the dashboard

- In all countries the majority of respondents did not visit the SSO energy dashboard
- The largest proportion of respondents that visited the energy dashboard is found in Romania (43%) and the smallest in Lithuania (8%).

Sources of information

- Respondents in Bulgaria, Ireland, Lithuania and the UK first heard about the dashboard mainly through email they received.
- In Greece and Romania respondents got informed for the energy dashboard through their university SSO Facebook page, while in Cyprus through a display screen in their hall probably during an ambassador training session.

Frequency of visits

- In Ireland, Romania and the UK the majority of respondents visited the energy dashboard less than once a month. In Lithuania all of the respondents visited the energy dashboard less than once a month.
- In Greece all respondents visited the energy dashboard on a monthly basis.
- In Cyprus half of the respondents visited the dashboard on a monthly basis while the other half visited the dashboard on a weekly basis.
- In Bulgaria all of the respondents decreased their visits to the dashboard since the beginning of the academic year. The same did the majority of respondents in the UK.
- In Romania the biggest share of respondents increased their visits over the past six months. The same is reported by half of respondents in Cyprus.
- All respondents in Greece and Lithuania reported that their visits to the dashboard stayed about the same throughout the academic year.

Reason for visiting energy dashboard

- Learning new ways of saving energy was a significant reason for respondents to visit the energy dashboard in all countries except for Romania.
- Seeing how their own hall is performing relative to other halls at their university is placed in the top three reasons for visiting the dashboard in all countries except for Lithuania.
- In Lithuania, Romania, Greece, Ireland and Cyprus "To see how my own hall is performing" was also an important reason for visiting the energy dashboard.
- In Bulgaria, Lithuania and the UK 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.

Feelings about saving energy

- In all countries except for Greece most of the respondents have positive feelings (optimistic, proud, content and relaxed) about energy saving. In Greece however, half of the respondents reported feeling guilty about energy saving.

Frequency of energy saving actions

- At the end of the academic year, in all countries the action of switching lights off in empty rooms was taken almost always by respondents. The same applies to opening windows to cool down instead of using a cooling device or system except for Cyprus and Greece. A "sometimes" to "often" tendency is reported for the energy saving actions of avoiding leaving electronic equipment on stand-by, putting a lid on the pan when cooking and boiling the kettle only with the amount of water they intend to use.
- At the end of the academic year the total sample of respondents performing the action of boiling the kettle only with the amount of water they intend to use and opening windows to cool down instead of using a cooling device or system more frequently than they did in the beginning of the academic year. Conversely, a decrease is observed in the frequency that they avoid leaving electronic equipment on stand-by, put a jumper or an extra blanket instead of turning on the heating and switch off lights in empty rooms.
- At country level, the largest increase in frequency is found in Romania for the actions of putting a lid on the pan when cooking and putting a jumper or an extra blanket instead of turning on the heating. It is followed by Cyprus with regards to "Put a jumper or an extra blanket instead of turning on the heating" and "Boil the kettle only with the amount of water you intend to use" as well. The most significant decrease in frequency that an action is performed is observed in Cyprus and the UK for putting a lid on the pan when cooking and putting a jumper or an extra blanket instead of turning on the heating respectively.

Determinants of energy saving

Drivers

- At the end of the academic year, respondents in all countries reported "it's a habit they adopted from home" as the prevalent reason for being more energy conscious.
- The fact that "It saves energy" was the second most important reason for being more energy conscious in all countries as well.
- The third most important reason varies among countries. In Bulgaria, Cyprus, Ireland and Romania it is "It helps reduce global warming", in Lithuania and Greece it is "It makes me feel good about myself" while in the UK it's "It's the right thing to do".
- In Cyprus a bigger share of respondents reported "It's a habit I adopted from home" in the follow-up survey than in the baseline. In Greece fewer respondents reported the item "It helps reduce global warming" in the follow-up survey compared to the baseline. The same occurred in Lithuania, Romania and the UK concerning "Other people approve when I do", "It's a habit they adopted from home" and "It saves energy" correspondingly.

Barriers

- At the end of the academic year, respondents in all countries except for Cyprus pointed out the lack of feedback on how much energy they consume as the main reason for being less conscious when it comes to saving energy in their hall. In Cyprus the biggest share of respondents said that nothing prevents them from being energy conscious.

- 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 Bulgaria, Ireland, Lithuania and the UK. The same applies to "The way the building and its systems are designed limit the things they can do to save energy" in Cyprus, Greece and Romania and for "Nothing prevents me from being energy conscious" in Ireland and Romania. Other reasons placed in the top three reasons for less energy conscious are "I don't know how" (in Bulgaria), "The hall management does not inspire me to act in this way" (in Greece and Lithuania) and "I have other things in my mind" (in the UK).
- At country level the biggest changes at the end of the academic year are towards a decrease in the number of respondents that selected them. The proportion of respondents that selected "I don't have any feedback on how much I consume" decreased by 18% in the UK, by 17% in Cyprus, by 6% in Romania and by 8% in Ireland. In Greece a decrease of 13% is observed in "My university/college does not inspire me to act in this way". Furthermore, among others, significant decreases are observed in "The way the building and its systems are designed limit the thing I can do to save energy" in Lithuania and the UK (-9% and -8% correspondingly) and in "My personal actions to save energy would have minimal impact on the energy consumption of the hall" in Romania (-24%).

Behavioural antecedents

- At the end of the academic year, respondents from all countries agreed not only that global warming is a problem for society but also that energy conservation contributes to a reduction of climate change impacts. They also agreed that everyone including themselves is responsible for the exhaustion of energy sources and for climate change. Moreover, they feel morally obliged to save energy, regardless of what others do.
On the other hand, they don't agree that saving energy is too much of a hassle. A tendency towards "Disagree" is also reported in Bulgaria, Cyprus, Greece and Ireland concerning the statement "Saving energy means I have to live less comfortably".
In all countries except for Bulgaria a rather neutral reaction is reported concerning the item "I feel in complete control over how much energy I use in general". The same applies in all countries regarding "Most people who are important to me try to pay attention to their energy use".
- An increase in mean values in the follow-up survey compared to the baseline survey, indicates a higher level of agreement. Such increases are observed in Cyprus, Lithuania and Romania for the statement "In general, I can reduce my energy use quite easily". In Romania and Greece increased mean values are observed for "I feel in complete control over how much energy I use in general" and "I feel guilty when I use a lot of energy" correspondingly. Similarly increased mean values are found in Romania for "I feel morally obliged to save energy, regardless of what others do" in the UK for "Saving energy means I have to live less comfortably" and in Ireland for "Most people who are important to me think that I should use less energy".

Energy saving efforts in future lifestyle

- In all countries except for Bulgaria and the UK the largest proportion of respondents will be doing either a lot or a bit more to save energy when they move out of halls of residence. In Bulgaria and the UK the biggest proportion of respondents will be doing about the same (60% and 35% correspondingly). No respondent reported that they would be doing a bit less or a lot less to save energy. However, 17% of respondents in Cyprus said that they don't know how they will be living when they move out of halls of residence.

Annex I

Questions	Bulgaria		Cyprus		Greece		Ireland		Lithuania		Romania		UK	
	B	F	B	F	B	F	B	F	B	F	B	F	B	F
How informed do you feel about what you personally can do to save energy in your hall?	0	9	6	6	17	18	120	126	63	72	36	38	41	43
Which of the following words best describes how you feel about saving energy?	0	9	0	6	0	18	0	127	0	72	0	38	0	43
Which of the following actions do you think can help save energy?	0	8	6	6	16	17	118	127	59	69	34	35	30	42
Please consider each of the actions below, and indicate how often you take them.	0	8	6	6	16	17	118	124	60	68	33	34	39	41
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.	0	8	6	6	16	17	123	127	63	69	37	35	41	42
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.	0	8	6	6	16	17	115	124	56	66	33	34	39	42
How much has your awareness of what you can do to reduce the impact of your lifestyle and habits on energy consumption increased since the start of this academic year?	0	8	0	6	0	17	0	124	0	65	0	34	0	42
What have been the main sources, if any, of information that have made you more aware of what you can do to reduce your energy consumption?	0	7	0	6	0	14	0	112	0	41	0	33	0	39
Have you heard of the Student Switch Off campaign? It is an energy saving campaign taking place in your dormitory.	0	0	0	6	0	17	0	122	0	62	0	34	0	42
In what ways has Student Switch Off influenced you?	0	5	0	6	0	4	0	69	0	13	0	28	0	37
Have you visited your university's Student Switch Off energy dashboard?	0	4	0	6	0	4	0	67	0	13	0	28	0	35
How did you first hear about the dashboard?	0	1	0	1	0	1	0	10	0	1	0	12	0	5
Since the beginning of the academic year, how often have you viewed the dashboard?	0	0	0	2	0	1	0	9	0	1	0	12	0	5
Since the beginning of the academic year, would you say that your visits to the dashboard:	0	1	0	2	0	1	0	10	0	1	0	10	0	5
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?	0	1	0	2	0	1	0	8	0	1	0	10	0	5
Please consider each of the statements below, and indicate to what extent you agree or disagree with it.	0	6	6	6	16	17	112	117	52	60	33	34	36	37
Which one of these statements best describes how you think you will be living when you move out of halls of residence?	0	5	0	6	0	17	0	116	0	60	0	34	0	37