

SMecoMP

WP3 Eco-Entrepreneurial Surveys and Network Development

Del.3.2.4 Identification of Ecopreneurs Training Needs & Existing Educational Initiatives May 2019

FEDERATION OF INDUSTRIES OF GREECE

<i>Deliverable Number</i>	3.2.4
<i>Project Title</i>	<i>A knowledge Alliance in Eco-Innovation Entrepreneurship to Boost SMEs Competitiveness</i>
<i>Project Acronym</i>	<i>SMecoMP</i>
<i>Project Duration</i>	01.12.2017 – 30.11.2019
<i>Project Partners</i>	LB (PB1) <i>University of Macedonia – Department of Economics (GR)</i> PB2 <i>Federation of Industries of Northern Greece (GR)</i> PB3 <i>Bulgarian Industrial Association – Union of the Bulgarian Business (BG)</i> PB4 <i>Trakia University (BG)</i> PB5 <i>"St. Kliment Ohridski University" Bitola, Faculty of Economics-Prilep (FYROM)</i> PB6 <i>Agency for promotion of entrepreneurship of the Republic of Macedonia (FYROM)</i> PB7 <i>Cyprus University of Technology (CY)</i> PB8 <i>Cypriot Enterprise Link (CY)</i> PB9 <i>Youth Entrepreneurship – NE (GR)</i> PB10 <i>Chamber of Commerce and Industry of Ioannina (GR)</i>

Project co-funded by the European Union and National Funds of the participating countries

SMecoMP

WP3 Eco-Entrepreneurial Surveys and Network Development

Del.3.2.4 Identification of Ecopreneurs Training Needs & Existing Educational Initiatives May 2019

FEDERATION OF INDUSTRIES OF GREECE

Contractor:



Project co-funded by the European Union and National Funds of the participating countries

Contents

1. SECTION A – ENTERPRISE INFORMATION.....	- 5 -
1.1 Size of enterprises	- 5 -
1.2 Main economic activity of participating enterprises.....	- 5 -
2. SECTION B – ECO- INNOVATION TRAINING NEEDS	- 7 -
2.1 Existing training activities on eco-innovation.....	- 7 -
2.2 Eco-innovation and entrepreneurial training needs	- 13 -
3. SECTION C: PERSONAL INFORMATION.....	- 22 -
APPENDIX I: LIST OF COMPANIES PARTICIPATED IN THE SURVEY	- 25 -
APPENDIX II: LIST OF COMPANIES PARTICIPATED IN THE INTERVIEW SESSION	- 26 -
APPENDIX III: PROTOCOL FORMS OF THE INTERVIEW SESSION	- 27 -

Tables

Table 1: Number of participating enterprises according to their size.....	- 5 -
Table 2: Economic activity of participating enterprises	- 6 -
Table 3: Participants familiar with Eco-innovation according to company’s size	- 7 -
Table 4: participants familiar with the Eco-innovation according to economic activity sector .	- 9 -
Table 5: Degree of participation on Environmental Technologies and Systems.....	- 10 -
Table 6: Degree of participation on Organizational Innovation for the Environment	- 11 -
Table 7: Degree of participation on product and Service Innovation	- 13 -
Table 8: Environmental technologies and systems	- 14 -
Table 9: Organizational Innovation for the Environment	- 15 -
Table 10: Product and service innovation offering environmental benefits	- 16 -
Table 11: Sufficient number of offered trainings	- 17 -
Table 12: Access to high-quality and affordable training seminars on eco-innovation in Greece	- 18 -
Table 13: Importance of employees’ competences	- 19 -

Figures

Figure 1: Company size according to the number of employees	- 5 -
Figure 2: Economic activity of participating enterprises	- 6 -
Figure 3: Number of enterprises that are familiar with the concept of Eco-innovation	- 8 -
Figure 4: Enterprises attended Training Seminars	- 9 -
Figure 5: Training Seminars organized by	- 10 -
Figure 6: Environmental Technologies and Systems	- 11 -
Figure 7: Organizational innovation for the environment	- 12 -
Figure 8: Product and service innovation offering environmental benefits	- 13 -
Figure 9: Environmental technologies and systems.....	- 14 -
Figure 10: Organizational innovation for the environment	- 15 -
Figure 11: Product and service innovation offering environmental benefits	- 17 -
Figure 12: Awareness regarding offered training seminars	- 18 -
Figure 13: Importance of employees’ competences.....	- 19 -
Figure 14: Do you believe that your company and its employees have such competences?....	- 20 -
Figure 15: Would you encourage your employees to participate in eco-innovation trainings? -	- 20 -

Figure 16: Preferred methods for training activities	- 21 -
Figure 17: Do you consider it important to keep your business informed on eco-green innovation practices in your industry field?	- 21 -
Figure 18: Gender	- 22 -
Figure 19: Age.....	- 22 -
Figure 20: Educational background	- 23 -
Figure 21: Years of experience	- 24 -
Figure 22: Interest in future activities	- 24 -

1. SECTION A – ENTERPRISE INFORMATION

1.1 Size of enterprises

The survey on Eco-innovation and entrepreneurial Training Needs and Existing Educational Initiatives was answered by a total number of 180 enterprises. The majority of the participating companies, 139 in number (77%) employ up to 50 people, whereas 31 employ 50 to 250 people (17%) and 10 employ than 250 people (6%) (figure 1).

Enterprise Size	Number of participated enterprises
<50	139
50-250	31
>= 250	10
Total	180

Table 1: Number of participating enterprises according to their size

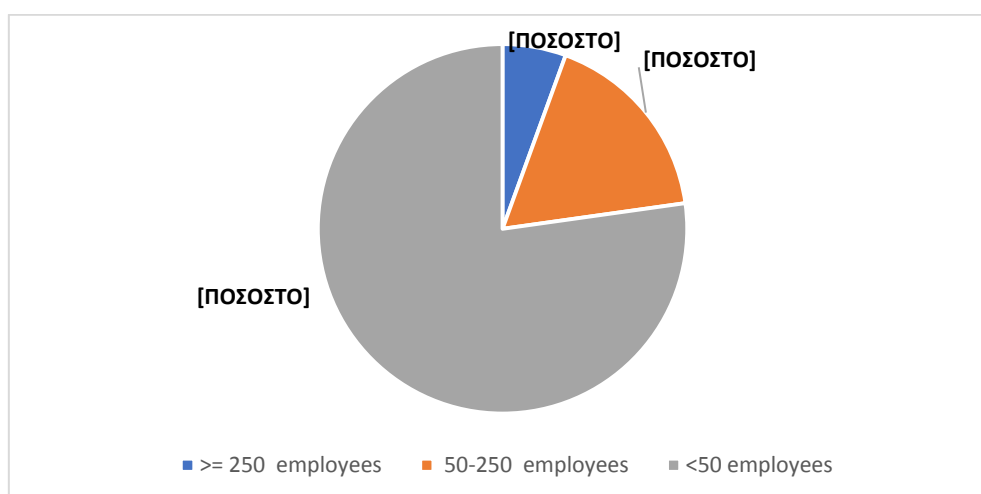


Figure 1: Company size according to the number of employees

1.2 Main economic activity of participating enterprises

The majority of the enterprises that participated in the survey come from the “Other services activities” economic activity sector (42 enterprises), followed by “Manufacturing” and “Wholesale and retail trade; repair of motor vehicles and motorcycles” sectors almost with the same number of enterprises (29 and 28 accordingly) and the sector of “Professional, scientific and technical activities” with 24 enterprises (figure 2).

The Table 2 below summarizes the sections of economic activities of the respondent enterprises.

Economic Activity	Number
C -Manufacturing	29
N - Administrative and support service activities	2
G - Wholesale and retail trade; repair of motor vehicles and motorcycles	28
P - Education	4
S - Other services activities	42
M - Professional, scientific and technical activities	24
F- Construction	8
Q - Human health and social work activities	6
H - Transportation and storage	10
E - Water supply; sewerage, waste management and remediation activities	9
D - Electricity, gas, steam and air conditioning supply	4
I - Accommodation and food service activities	3
O - Public administration and defence; compulsory social security	1
A - Agriculture, forestry and fishing	5
K - Financial and insurance activities	1
T- Household activities as employers, non-differentiated	1
n/a	3
Total	180

Table 2: Economic activity of participating enterprises

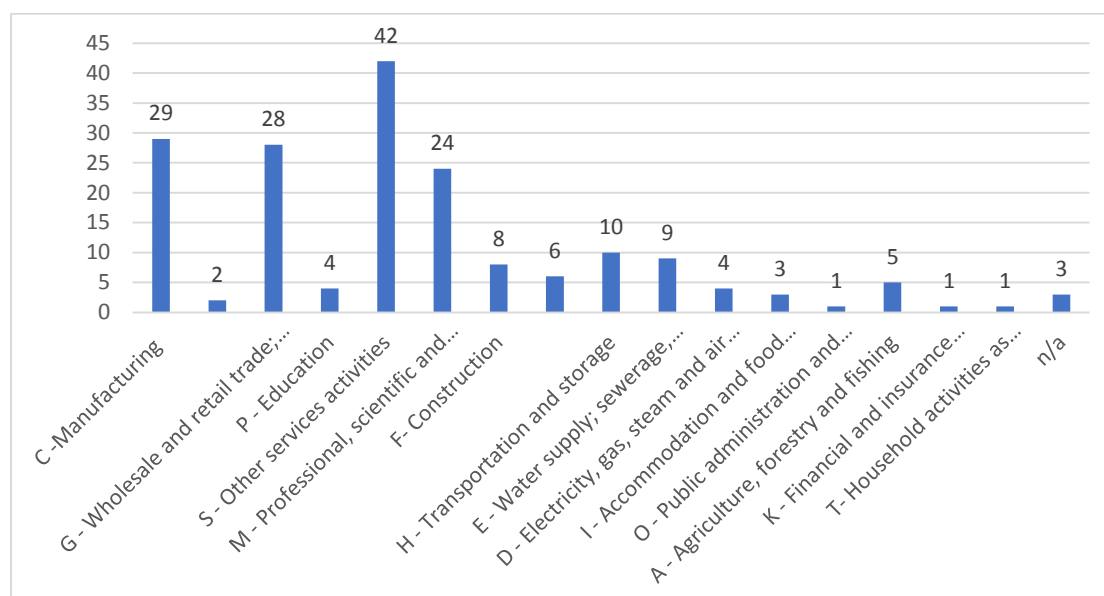


Figure 2: Economic activity of participating enterprises

2. SECTION B – ECO- INNOVATION TRAINING NEEDS

2.1 Existing training activities on eco-innovation

As shown in Figure 3, 139 of the respondents answered that they are familiar with the concept of eco-innovation (77%), 27 answered that they are not familiar (16%) and 13 answered that they are not sure what eco-innovation is (7%).

The Table 3 shows participants familiar with the Eco-innovation according to the size of the enterprise:

	Number	%
Yes	139	77%
1 - up to 50	103	57%
2 - 50-250	27	15%
3 - over 250	9	5%
No	28	16%
1 - up to 50	26	15%
2 - 50-250	2	1%
3 - over 250	0	0%
Not Sure	13	7%
1 - up to 50	10	5%
2 - 50-250	2	1%
3 - over 250	1	1%
Total	180	100,00%

Table 3: Participants familiar with Eco-innovation according to company's size

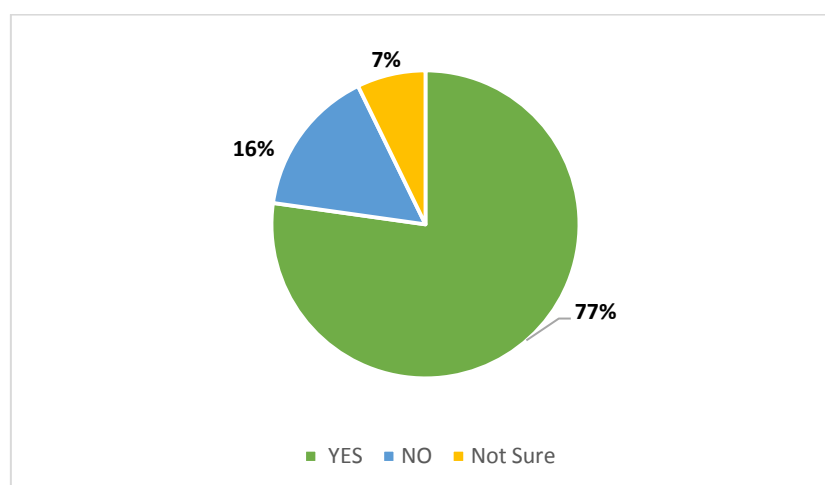


Figure 3: Number of enterprises that are familiar with the concept of Eco-innovation

Additionally, Table 4 shows participants familiar with Eco-innovation according to the economic activity sector of their enterprise.

Economic Activity	Number
Yes	139
C -Manufacturing	21
N - Administrative and support service activities	2
G - Wholesale and retail trade; repair of motor vehicles and motorcycles	22
P - Education	3
S - Other services activities	35
M - Professional, scientific and technical activities	16
F- Construction	7
Q - Human health and social work activities	5
H - Transportation and storage	7
E - Water supply; sewerage, waste management and remediation activities	8
D - Electricity, gas, steam and air conditioning supply	4
I - Accommodation and food service activities	3
A - Agriculture, forestry and fishing	3
K - Financial and insurance activities	1
N/A	2
No	28
C -Manufacturing	6
G - Wholesale and retail trade; repair of motor vehicles and motorcycles	6
S - Other services activities	5
M - Professional, scientific and technical activities	5
Q - Human health and social work activities	1
H - Transportation and storage	2
A - Agriculture, forestry and fishing	1
T- Household activities as employers, non-differentiated	1
N/A	1
I'm not sure	13
C -Manufacturing	2
P - Education	1
S - Other services activities	2
M - Professional, scientific and technical activities	3
F- Construction	1
H - Transportation and storage	1

Economic Activity	Number
E - Water supply; sewerage, waste management and remediation activities	1
O - Public administration and defence; compulsory social security	1
A - Agriculture, forestry and fishing	1
Total	180

Table 4: participants familiar with the Eco-innovation according to economic activity sector

As shown in Figure 4, only the 24% of participants (43 enterprises) answered that they have attended training seminar/activities on eco-innovation, in contrast with a percentage of 76% (136 enterprises) who declare that they have not attended such trainings.

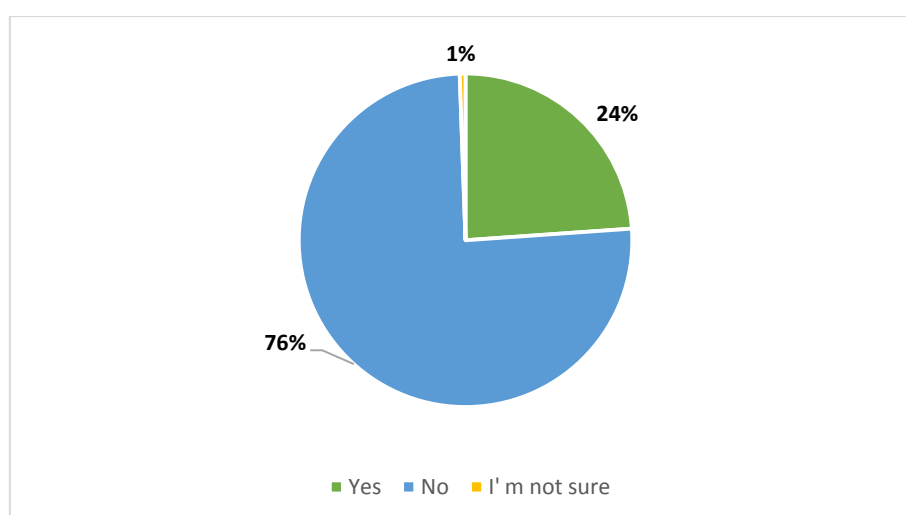


Figure 4: Enterprises attended Training Seminars

These training seminars/activities were organized by a third party and addressed to employees of various companies (32 answers out of 43 respondents who have attended seminars; 74%) and 3 training activities were in-house activities, organized by the company and addressed only to staff members (7%), while the 19% stated both forms of organization (Figure 5).

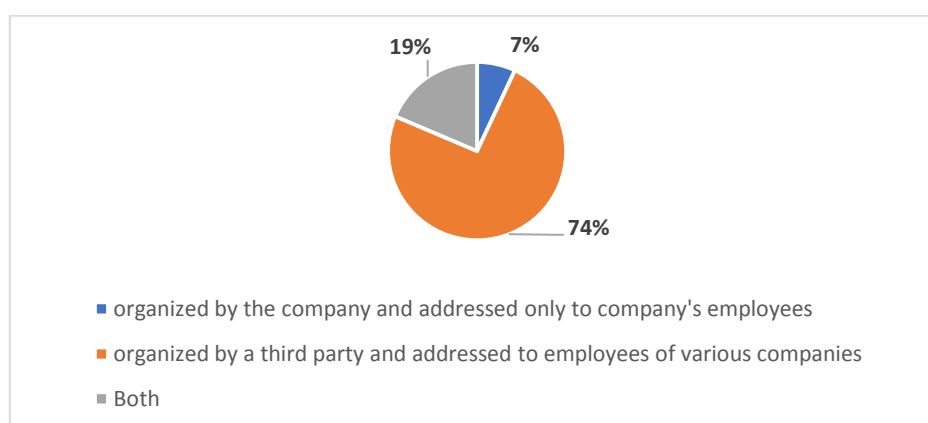


Figure 5: Training Seminars organized by

The training seminars/activities were attended mostly by representatives of companies with up to 50 employees.

The training seminars/activities on eco-innovation that the participating companies attended were addressed to the following specific fields:

Environmental technologies and systems

Most of the companies participated on “Green Energy technologies” (20%), and on “Pollution prevention and control technologies” and “Waste management equipment” with 15% (Figure 6).

Fields	Degree of participation
Alternative systems of production and consumption; cleaner process technologies; green logistics; new manufacturing processes that are less polluting and/or more resource efficient than relevant alternatives (eg biological agriculture, renewables-based energy system)	9%
Cleaning (clean-up) technologies that treat pollution released into the environment	13%
Environmental monitoring and instrumentation	14%
Green energy technologies	20%
Pollution prevention and control technologies	15%
Waste management equipment	15%
Water supply	9%
N/A	5%

Table 5: Degree of participation on Environmental Technologies and Systems

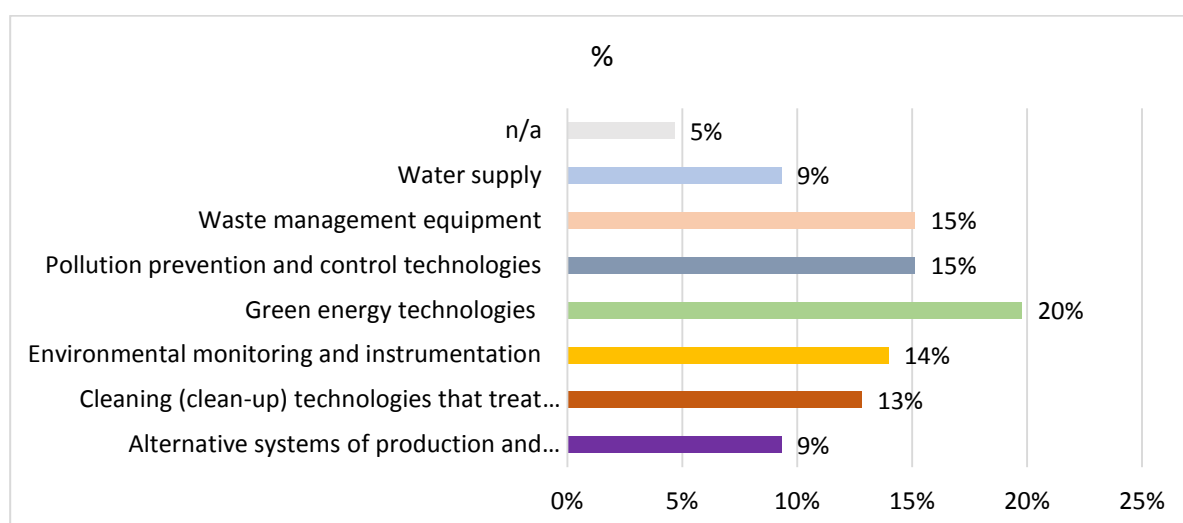


Figure 6: Environmental Technologies and Systems

Organizational innovation for the environment

On this training field, the majority of the respondents who participated in training seminars on eco-innovation did not provide an answer (60%), meaning that the “organizational innovation for the environment” training category wasn’t in respondents’ training preferences, in contrast with the sub-fields of “Environmental technologies and systems” training category where respondents showed bigger interest and only a 5% of them did not participate.

Having a 60% of participants with no-answer, the degree of participation on the training seminars of this category is inferred only from the 40% of respondents.

Therefore, those who provided an answer showed a preference on the fields of “Environmental management and Auditing Schemes” (23%), and afterwards on “Chain management” (10%) and “Pollution prevention schemes” (7%) (Figure 7).

Fields	Degree of participation
Pollution prevention schemes	7%
Environmental management and auditing schemes: formal systems of environmental management involving measurement, reporting and responsibilities for dealing with issues of material use, energy, water and waste (eg EMAS, ISO 14001)	23%
Chain management: cooperation between companies so as to close material loops and to avoid environmental damage across the value chain (from cradle to grave); participation in circular economy initiatives	10%
N/A	60%

Table 6: Degree of participation on Organizational Innovation for the Environment

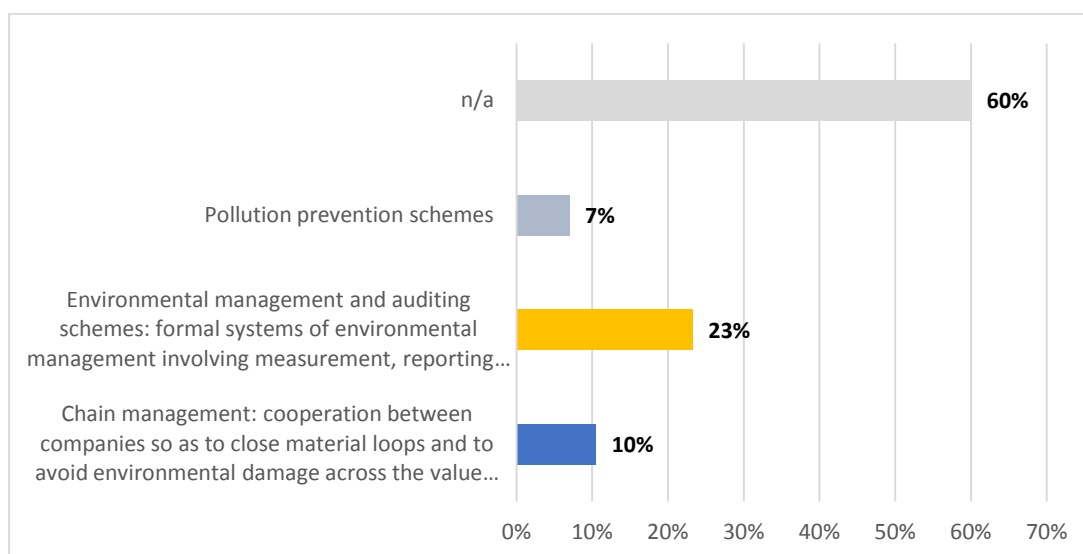


Figure 7: Organizational innovation for the environment

Product and service innovation offering environmental benefits

In this training category, we experience the same issue with the “Organizational innovation for the environment” category. The majority of the respondents did not provide an answer (62%) and thus show that were not interested in participating in the training seminars of this category and its sub-fields. Taking in account the answers of the 3 training categories - Environmental technologies and systems, Organizational innovation for the environment, Product and service innovation offering environmental benefits – respondents showed bigger interest of participation in the sub-fields of environmental technologies, having a total degree of participation of 95% (with only 5% of no-answers), in contrast with organizational innovation and product and service innovation which had a degree of participation of 40% and 38% accordingly.

According to the answers, the companies mostly participated on “Environmental services” having a percentage of 16%. The field of “New or environmentally improved products (goods) including eco-houses and buildings” had a percentage of attendance 8% while the fields of “Services that are less pollution and resource intensive (e.g. car sharing)” and “Green financial products” had 7% attendance (Figure 8).

Fields	Degree of participation
Environmental services: solid and hazardous waste management, environmental consulting, testing and engineering, other testing and analytical services	16%
Green financial products (such as eco-lease or climate mortgages green certificates, allowance trading)	7%
New or environmentally improved products (goods) including eco-houses and buildings	8%
Services that are less pollution and resource intensive (eg car sharing)	7%
N/A	62%

Table 7: Degree of participation on product and Service Innovation

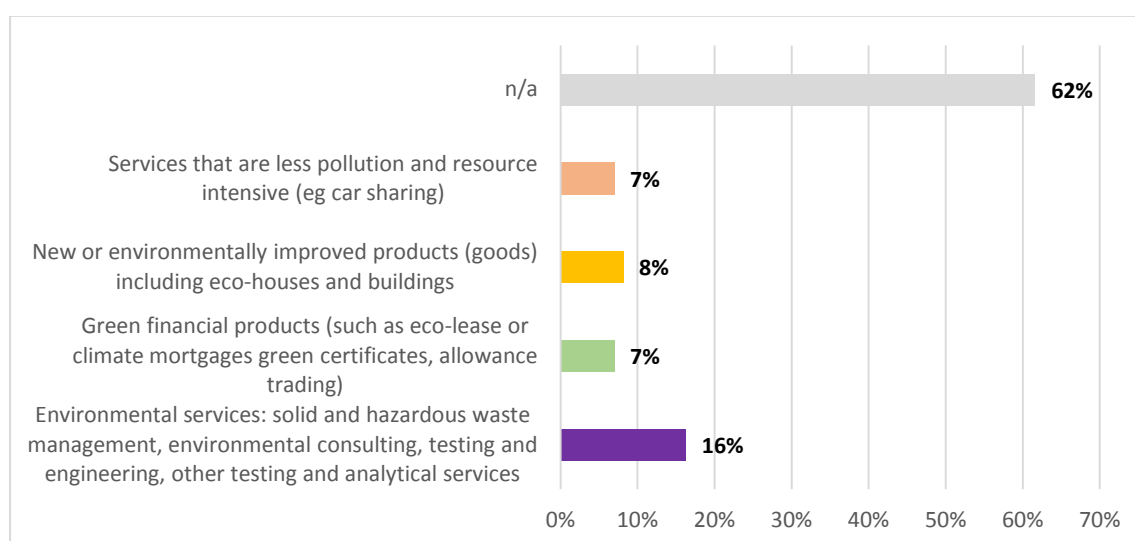


Figure 8: Product and service innovation offering environmental benefits

2.2 Eco-innovation and entrepreneurial training needs

Respondents were asked their level of interest in participating in training activities / seminars on Environmental technologies and systems, Organizational innovation for the environment and Product and service innovation offering environmental benefits. Their interest according to the sub-subjects of each category are presented on the following tables and figures.

Environmental technologies and systems

The majority of the respondents show strong interest on the fields of “Cleaning (clean-up) technologies that treat pollution released into the environment” (61

preferences), on “Green energy technologies (57 preferences), and on “Pollution prevention and control technologies” and “Environmental monitoring and instrumentation” with almost the same level of interest (56 and 55 preferences accordingly).

	I’m not interested	I’m slightly interested	Neutral	I’m interested	I’m strongly interested	n/a
Pollution prevention and control technologies	17	40	24	43	56	
Cleaning (clean-up) technologies that treat pollution released into the environment	18	33	24	44	61	
Alternative systems of production and consumption; cleaner process technologies; green logistics; new manufacturing processes that are less polluting and/or more resource efficient than relevant alternatives (eg biological agriculture, renewables-based energy system)	28	36	28	43	45	
Waste management equipment	20	31	22	63	43	1
Environmental monitoring and instrumentation	19	38	25	41	55	2
Green energy technologies	7	27	19	69	57	1
Water supply	18	35	33	52	42	

Table 8: Environmental technologies and systems

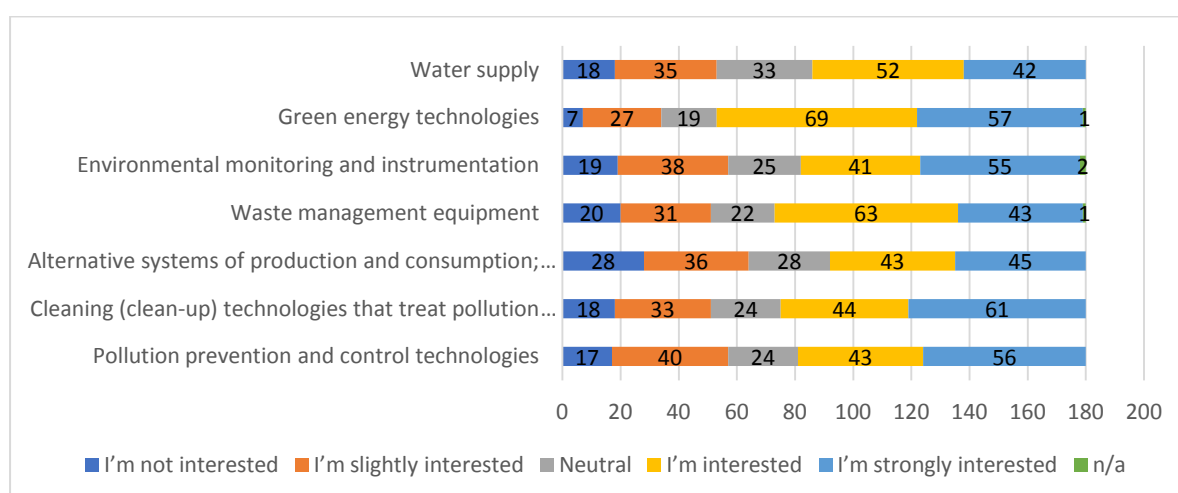


Figure 9: Environmental technologies and systems

Organizational innovation for the environment

In this category, the participants show strong interest on having training seminars/ activities on the field of “Pollution prevention schemes” with 57 preferences, as well as interest on the field of “Environmental management and auditing” with 51 preferences.

	I’m not interested	I’m slightly interested	Neutral	I’m interested	I’m strongly interested	n/a
Pollution prevention schemes	19	31	22	51	57	
Environmental management and auditing schemes: formal systems of environmental management involving measurement, reporting and responsibilities for dealing with issues of material use, energy, water and waste (eg EMAS, ISO 14001)	12	31	26	60	51	
Chain management: cooperation between companies so as to close material loops and to avoid environmental damage across the value chain (from cradle to grave); participation in circular economy initiatives	19	37	24	55	44	1

Table 9: Organizational Innovation for the Environment

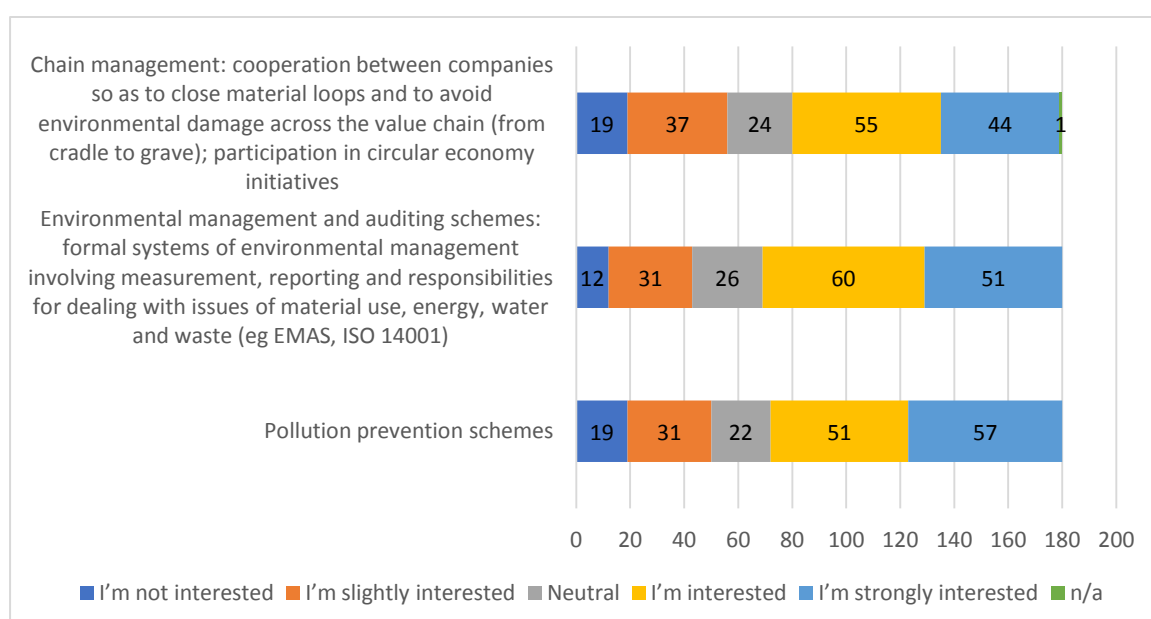


Figure 10: Organizational innovation for the environment

Product and service innovation offering environmental benefits

On this subject category of training seminars, respondents have strong interest on all sub-fields which shows that most of the companies are orientated on innovative products and services friendly to the environment. In particular, participating companies show strong interest on services that are less pollution and resource intensive (58 companies, 32%), on new or environmentally improved products (56 companies, 31%) and on environmental services (53 companies, 29%). It is good to point out though, that the same time with the 56 companies which expressed strong interest on services that are less pollution and resource intensive, 45 (25%) companies declared a slight interest on the field.

	I'm not interested	I'm slightly interested	Neutral	I'm interested	I'm strongly interested	n/a
New or environmentally improved products (goods) including eco-houses and buildings	13	32	24	55	56	0
Green financial products (such as eco-lease or climate mortgages green certificates, allowance trading)	22	38	31	37	49	3
Environmental services: solid and hazardous waste management, environmental consulting, testing and engineering, other testing and analytical services	16	29	29	52	53	1
Services that are less pollution and resource intensive (eg car sharing)	17	45	23	37	58	

Table 10: Product and service innovation offering environmental benefits

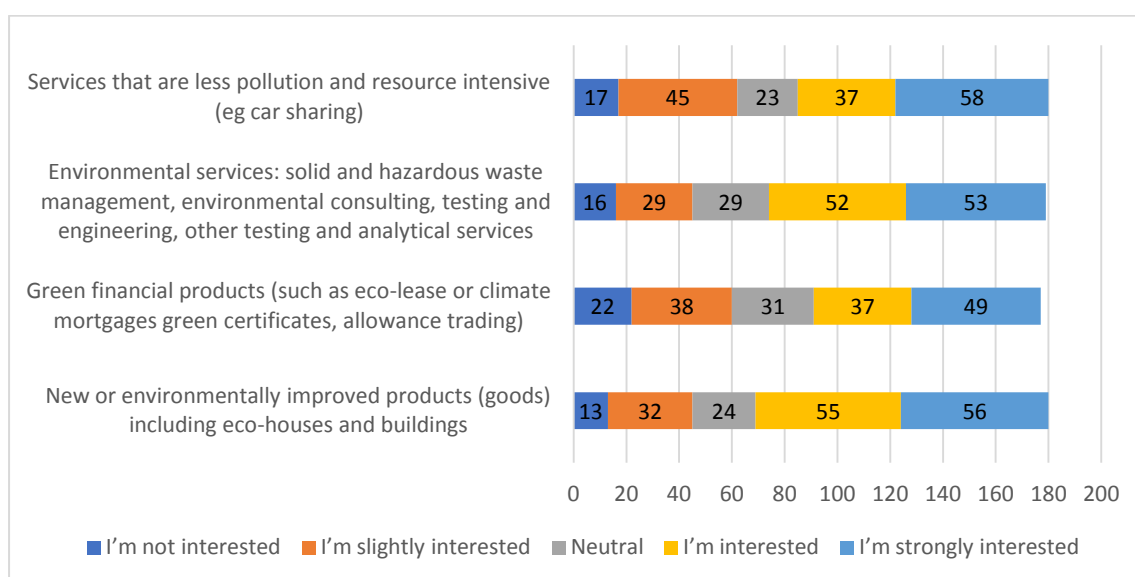


Figure 11: Product and service innovation offering environmental benefits

Participants were asked if the number of training seminars/ activities that are offered in Greece on eco-innovation is satisfactory. Only 10 respondents out of 180 consider the number of offered trainings sufficient (6%), in contrast with the majority of them who believe the number of trainings is insufficient (109, 61%) while 61 respondents have answered that they are not aware/ not sure about such trainings (33%).

The following table and figure show the exact answers.

	Number of Enterprises	%
Yes	10	6%
No	109	61%
I don't know/ not sure	61	33%
Total	180	100%

Table 11: Sufficient number of offered trainings

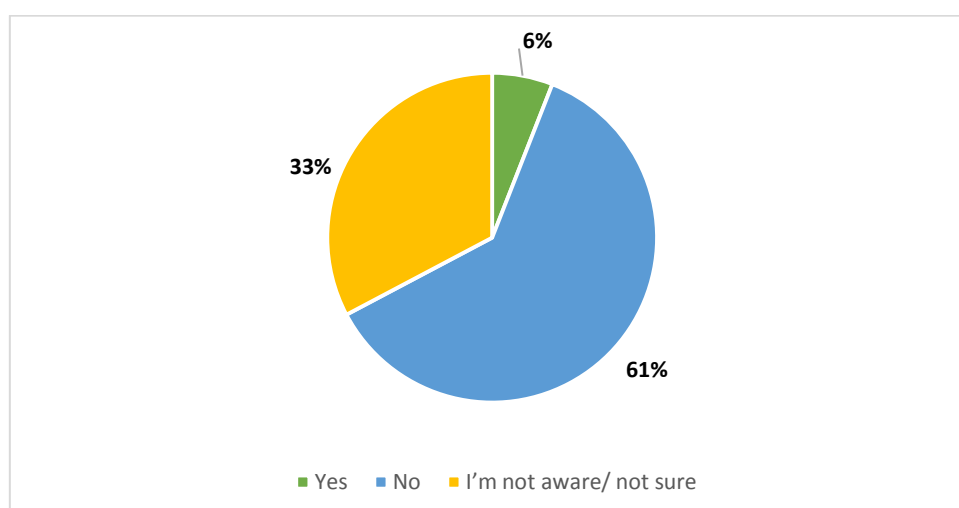


Figure 12: Awareness regarding offered training seminars

In the question, if participants believe that have access to high-quality and affordable training seminars on eco-innovation in Greece, as shown in the following table, the majority of them answered that they don't have access (129) in contrast with 15 respondents who believe they have.

	Number of Respondents
Yes	15
No	129
I don't know/ not sure	36
Total	180

Table 12: Access to high-quality and affordable training seminars on eco-innovation in Greece

The participants in the survey have evaluated the importance of certain competences that a company's employees must have in order to succeed in pursuing eco-innovation.

According to respondents, the marketing and design skills of new products and services, are considered the most important qualifications for an employee (61 and 59 answers as extremely important accordingly), followed by the soft skills (55 answers) and the "Knowledge of creative thinking tools" along with "Innovation management skills" and "Knowledge about product life cycles" at the same degree of importance (45 answers). The following table and figure show in detail the degree of importance of each competence.

	Not Important	Somewhat Important	Important	Very Important	Extremely Important	n/a
Development of new sustainable/circular business models	11	13	63	53	37	3
In-depth knowledge of economic sectors	7	14	54	68	31	6
Knowledge about product life cycles	9	14	49	61	45	2
Design skills of new products or/and services	9	7	44	60	59	1
Knowledge of creative thinking tools	10	8	64	52	45	1
Innovation management skills	7	5	50	71	45	2
Marketing skills	5	12	48	54	61	0
Soft skills (e.g. problem-solving skills, collaboration, communication)	8	15	41	59	55	2

Table 13: Importance of employees' competences

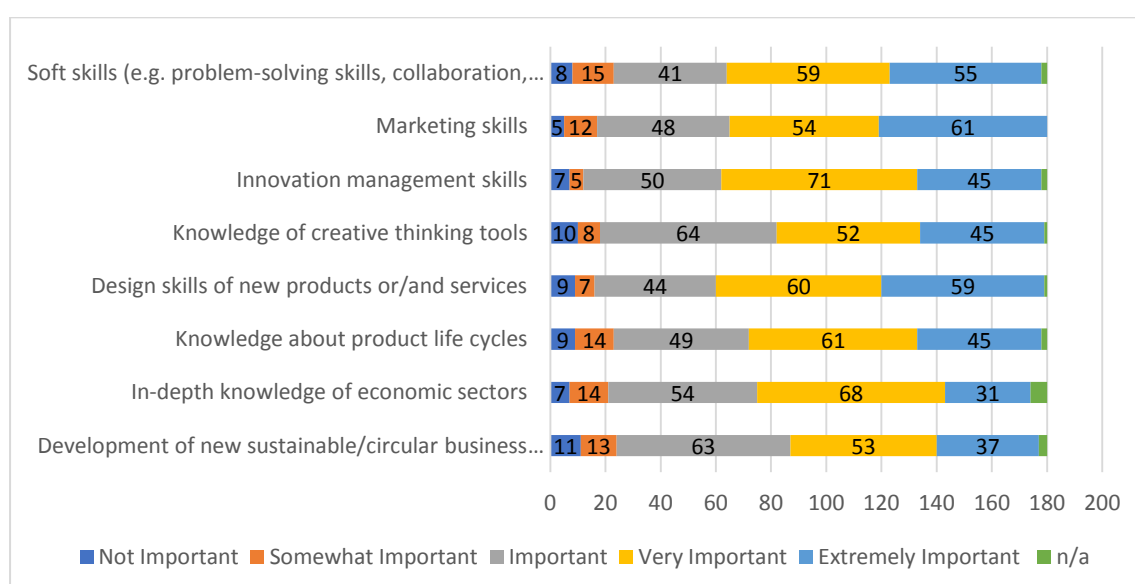


Figure 13: Importance of employees' competences

The majority of the respondents (51%) stated that their company and employees do not possess these competences, in contrast with a percentage of 40% respondents who answered they possess such competences and a 9% who do not know (Error! Reference source not found.).

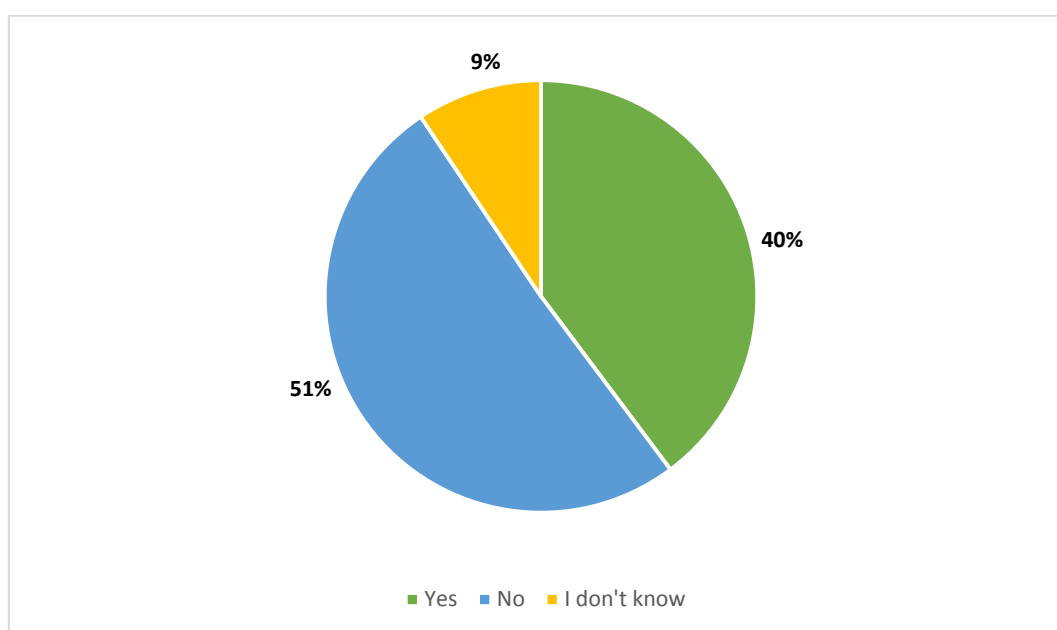


Figure 14: Do you believe that your company and its employees have such competences?

The majority of the respondents (89%) would encourage their employees to participate in eco-innovation training initiatives, in contrast with a 7% who would not encourage such activities (Figure 15).

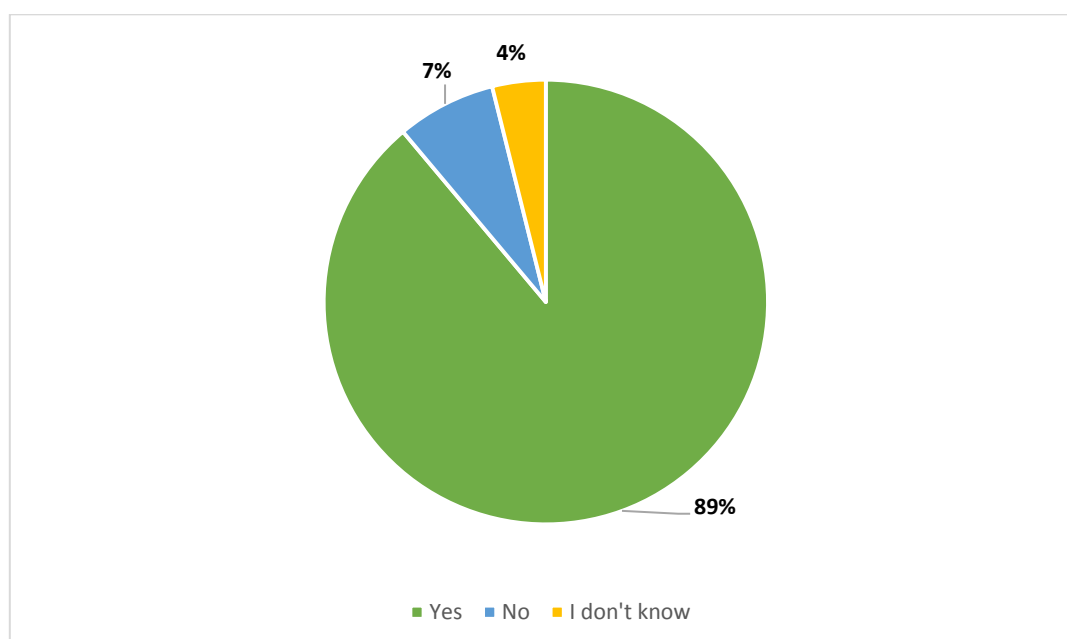


Figure 15: Would you encourage your employees to participate in eco-innovation trainings?

Those who would encourage training activities/ seminars on eco-innovation would prefer such activities to take place in blended learning environment

(63%), 25% of the respondents would prefer a classroom learning environment and 11% of the respondents would prefer an online learning environment (Figure 16).

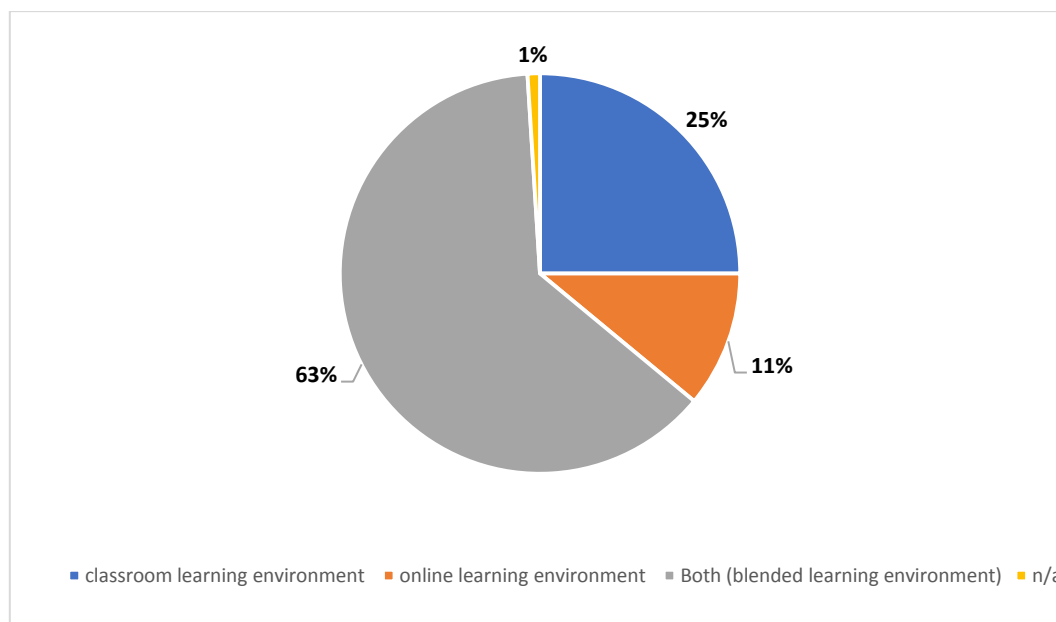


Figure 16: Preferred methods for training activities

To an answer whether they would consider important for their business to be informed on eco-innovation practices in their industry field, 85% of the respondents answered positively, 11% they wouldn't and 4% they don't know (Figure 17).

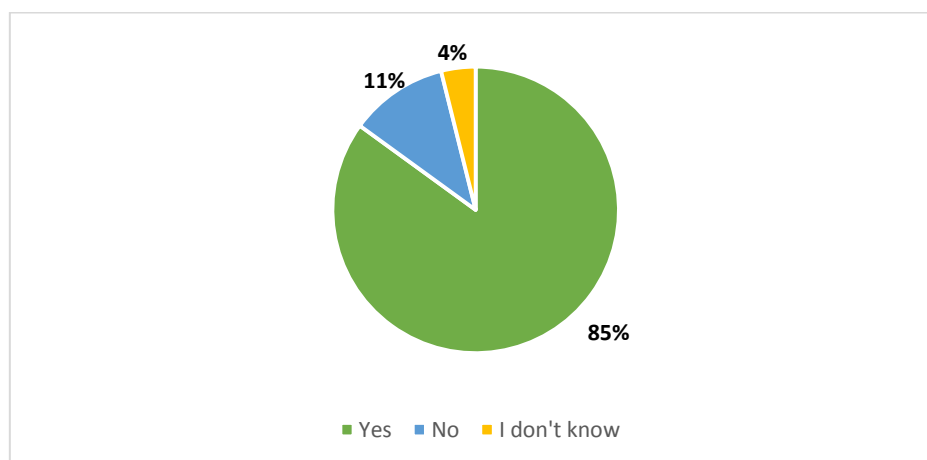


Figure 17: Do you consider it important to keep your business informed on eco-green innovation practices in your industry field?

3. SECTION C: PERSONAL INFORMATION

One-hundred twenty-six (70%) of the respondents were men and 54 (30%) were women.

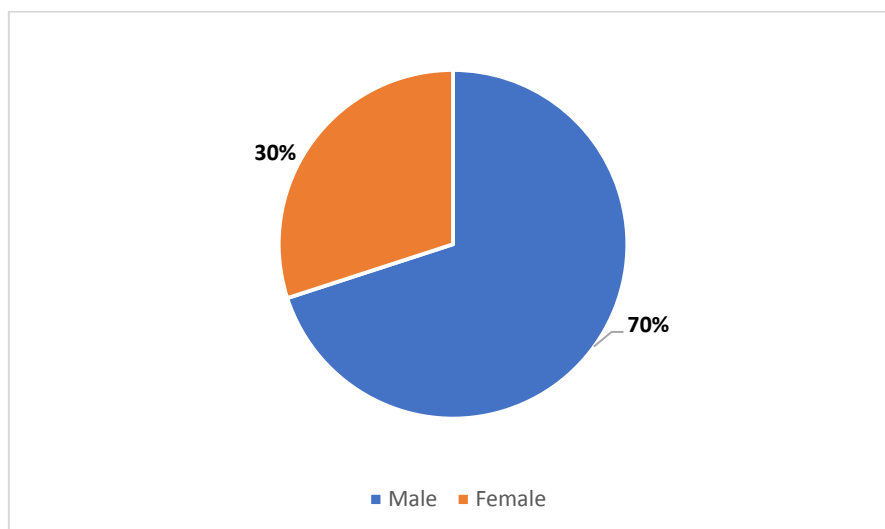


Figure 18: Gender

Most of the respondents were between the age of 36-50 (94 respondents, 52%) and the age of 50 and above (45 respondents, 25%) (figure 19).

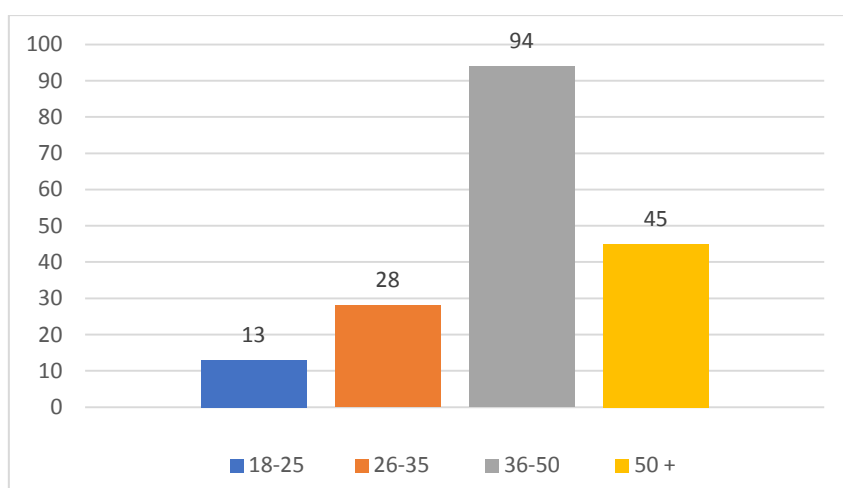


Figure 19: Age

In regards to their educational background, most of them, a sum of 94 respondents, are holders of university degrees - 9 doctoral, 43 bachelor and 42 master degrees. A respective number of respondents (64) have degrees from technological institutions, while only 22 respondents have secondary education (figure 20).

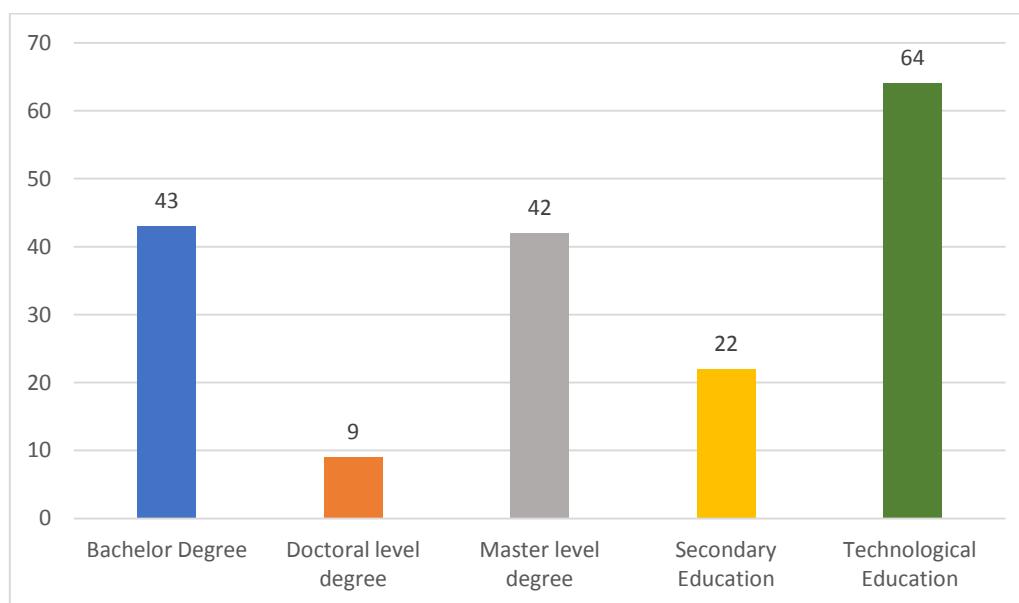


Figure 20: Educational background

The years of experience that the respondents have in environmental sector and/or eco-innovation field are presented in figure 21. Ninety-nine of the respondents have 0-5 years of experience, 28 have 6-10 years, 19 have 11-15 years and 12 have 16-20 years, 13 have more than 20 years of experience while 9 respondents do not have any experience on the aforementioned sector.

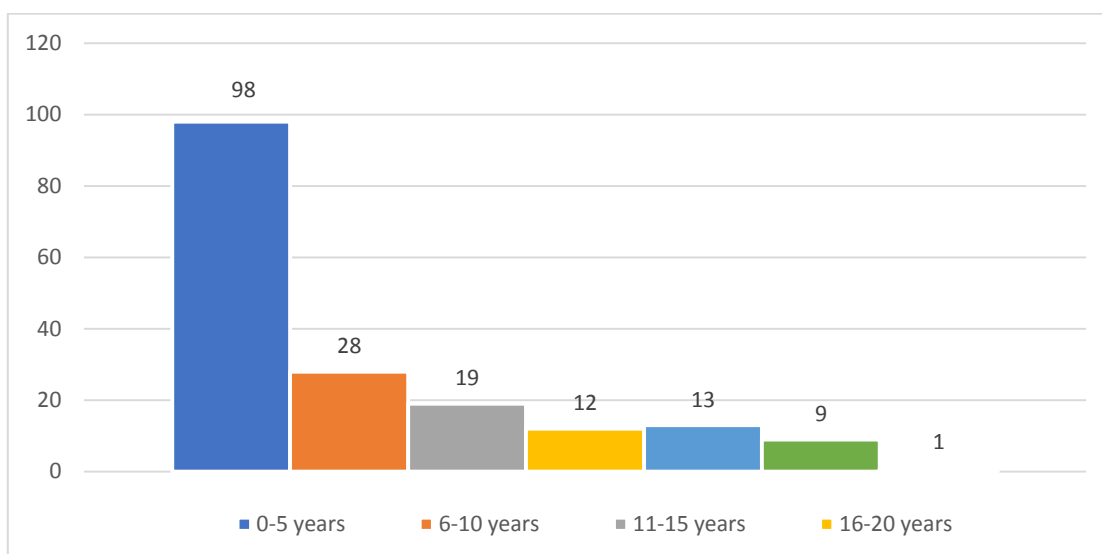


Figure 21: Years of experience

Finally, respondents were asked if they would be interested in participating in future activities of the project. Most of them did not provide an answer (100 out of 180 participants) and 14 respondents are not interested in participating in future activities. Only, 66 respondents out of 180 participants, stated that would be interested in.

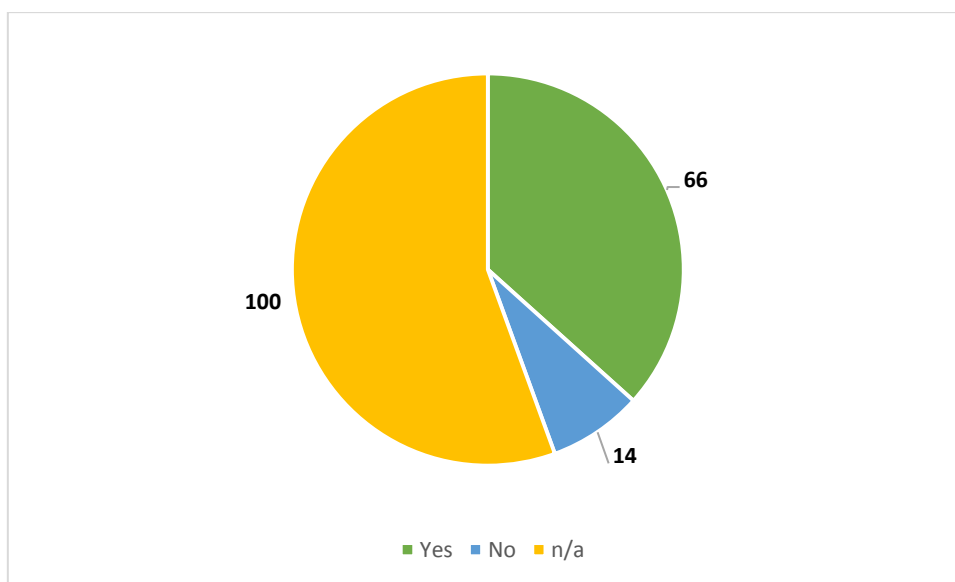


Figure 22: Interest in future activities

APPENDIX I: LIST OF COMPANIES PARTICIPATED IN THE SURVEY

APPENDIX II: LIST OF COMPANIES PARTICIPATED IN THE INTERVIEW SESSION

1. BARESQUARE
2. BASF HELLAS S.A.
3. BIOSOLIDS
4. BUTTERFLY ADVERTISING
5. IDS EPE
6. II PANINO
7. KIOURTSIDIS SIOIS P.C. - ENVICHEM
8. KOLINDROU WINERY
9. MALE AFFAIR
10. MARE
11. NENYLAND
12. VIOLOGIKO PANTOPOLEIO EVOSMOU
13. XRISI ZIMI
14. ZEOLOGIC S.A.

APPENDIX III: PROTOCOL FORMS OF THE INTERVIEW SESSION