



Survey methodology

Deliverable D7.1

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Erik Knol (Qeam) and Denise Fletcher (University of Sheffield)

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1. INTRODUCTION

1.1. Focus of this document

This document describes the survey methodology for an impact assessment of the IEE2008-project Energy2B. The document is only for the consortium partners.

1.2. Focus of project Energy2B

Project Energy2B is an innovation stimulating initiative that targets university students and encourages them to transform energy innovation ideas into new business start-ups. The project's infrastructure will be facilitated by a web platform, which will enable idea competitions at national and European level. Ten local competitions for energy innovation ideas are offered on the platform (in five European countries UK, PT, PL, SI and BG). The best energy innovations are selected for boot camps and follow up services given by experts. In parallel, two European competitions are organized, leading to the creation of high-level energy innovations that have the potential to be funded for start-up. Ten of the best energy innovations will be showcased at local and European exhibitions and efforts made to facilitate the transformation of student ideas into "eco energy" innovations and related start-ups. The duration of the project is 36 months in order to maximize the rollout and the usage of the project's infrastructure. The project strives for longer-term effects in the field of energy awareness, energy education and energy innovations. The table below gives the strategic objectives of Energy2B project.

1. Expand European rollout to reach larger numbers of education institutes, students, experts and other relevant stakeholders.	6. Served education institutions keep using and keep promoting the use of the project's infrastructure beyond the project's lifetime.
2. Expand portfolio of project Energ2b towards services to transform ideas into actual "eco energy" innovations and related start-ups.	7. Education institutions embed "entrepreneurship & energy innovations" as theme in the institutes' policy and programmes.
3. Expand and transform funding of the project (sponsors and structural funding via public & private actors).	8. Stimulate the development, diffusion and implementation of energy innovations.
4. Enhancement of mindset and skills of involved and served students (and other target groups) with respect to entrepreneurship and energy innovations.	9. Stimulate the number of "eco energy" entrepreneurs and intrapreneurs.
5. Interests among involved and served students (and other target groups) to operate as change leader regarding energy innovations (be an entrepreneur).	10. Stimulate the number of "eco energy" start-ups.

2. IMPACT ASSESSMENT OF ENERGY 2B PROJECT

This work package concerns an impact assessment of the project's infrastructure on students involved in the competition process. The impact assessment involves the administration and analysis of a closed-question survey that measures shifts in the entrepreneurial and environmental mindset of the students. In this document the design rationale and methodology of the survey is explained.

2.1 Survey Method

The objective of the survey design is to measure the impact of the project infrastructure on the entrepreneurial/environmental mindset of students involved in the competition process. The research question for this objective is, "How does the project impact on changes in the student's awareness of, and engagement with, environmental and entrepreneurial issues, and their willingness and ability to be involved in environmentally innovative business ventures (EIBVs)?" The survey design addresses the research question by making impact measurements at different stages in the competition process in order to calculate relative impact changes. The need for an efficient measurement of student involvement through the web-platform necessitates the adoption of a closed-question survey that measures student self-perception. The questions are themed to measure the student's self-perception of different aspects of environmental/entrepreneurial "orientation" (awareness and engagement with environmental/entrepreneurial issues) and "capability" (willingness and ability to be involved in EIBVs).¹ The questionnaire design is discussed in detail in section 2.4.

2.2 Measurement Points and Sampling Issues

The sampling frame for the project is the total student traffic that passes through different stages in the competition process (estimated at approx. 200 in each country, 1000 in total). The competition process involves five stages: Registration, Round 1, Round 2, Bootcamp Round, and European Round. Measurements will be made at Registration, Round 2 and Bootcamp (see Figure 1). The sample population will be the percentage of students that volunteer to complete the survey at registration and the whole population at later stages when completion of the survey will be compulsory.

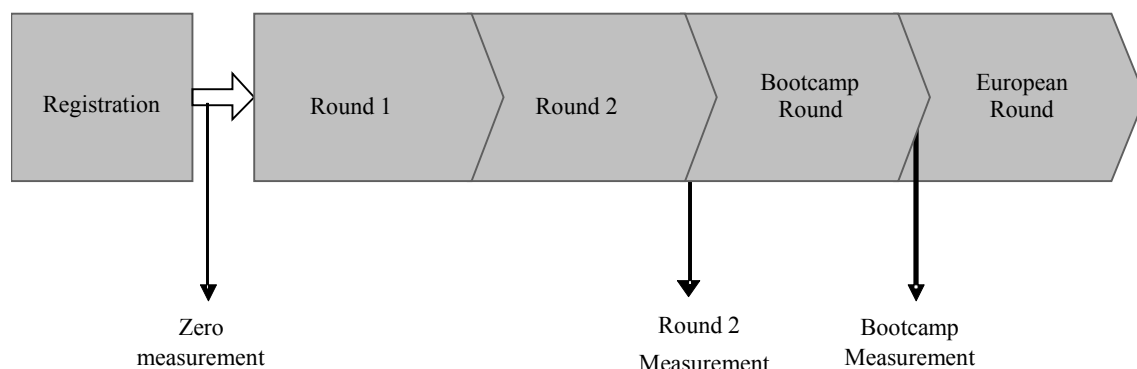


Figure 1: measurement points for administering the survey

¹ See also: Fletcher, Knol & Janicki (2010), *The Energy2B project: stimulating environmental entrepreneurship and building an energy infrastructure through institutional entrepreneurship*, Proceedings: Sustainable Innovation 2010 Creating Breakthroughs: Green growth, Eco-innovation, Entrepreneurship & Jobs.

The zero measurement survey will be administered just after a student has filled out the Energy2B registration form in order to become a student member. At this point, the student will not have been involved with any Energy2B services and so this will be a pre-project measurement. Just after the registration, the student will be confronted with an online message to fill out an online questionnaire including a link to the inline survey. Figure 2 below shows the screen to be used for this message.

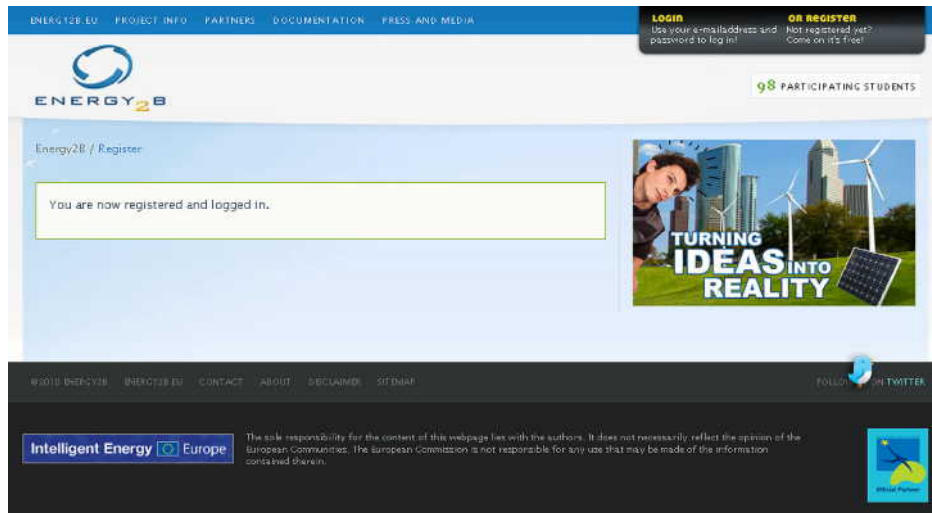


Figure 2: website screen to be used to post the message about the online survey (zero measurement)

In addition, the student will receive an automatic email message related to successful registration, which will include a hyperlink to the online survey. The consortium will encourage participation by offering incentives to students who fill out the questionnaire correctly at least twice. For example, qualifying students could be entered into a lottery for an MP3 player. The consortium will look for sponsors for these kinds of rewards. It is expected that the response rate at zero measurement will be at least 10%. With a sampling frame of approximately 1000 (200 in each of the five involved countries), this response rate will produce approximately 100 completed questionnaires.

At Round 1, student members (or multiple students in a team formation) upload one or more energy innovation concepts in the prescribed format. It is expected that submitted ideas will total around 200 for each European web-platform, reflecting the number of registrations. When Round 1 closes, the submitted ideas will be evaluated by a minimum of three experts and feedback will be posted on the web-platform. Successful students will then pass on to Round 2. There will be no measurement at this stage because the project infrastructure will have had a limited impact on the learning opportunities of participating students.

At Round 2, approximately 50 ideas from each country will be allowed to progress for further expert evaluation. Successful students will be required to extend, refine and deepen their energy innovation idea. "Local follow-up services" will be sign-posted in order to help them develop a more detailed proposal that will again be submitted via the web-platform and evaluated by three experts. The second measurement will be administered at the end of Round 2 by which time students will have had time to benefit from the project infrastructure. All participants at this stage will be required to complete a questionnaire in order to maintain the number of respondents (50 in each country making a total of 250).

The best twenty-five "high-potential" business ideas from each country will then pass on to local "Boot Camp Services", which involves an intensive entrepreneurship and commercialisation coaching

programme based on active learning. This learning experience is supplemented by a web-platform resource centre, which provides tools and information. At the end of bootcamp, a final measurement will take place with all participants required to complete the questionnaire.

2.4 Questionnaire Design

The questionnaire will be offered via the professional online survey tool Survey Monkey² in the respective languages of the five participating countries. At each of the three measurement points the same measurable statements will be employed. This will ensure that each measurement of entrepreneurial/environmental orientation and capability is comparable, and percentage shifts in average self-perception can be calculated in relation to the same questions. A control group will also be surveyed in order to take account of the possibility that respondents will feel predisposed with repeat questions to register a higher response, irrespective of their learning experiences. In order to control for this potential bias, the questionnaire will be administered to a different student population (of comparable size and demographic profile) on two occasions separated by a reasonable time period. The control group will be non-management students in order to guard against the expectation of higher responses due to ongoing education in the management field. This decision is made on the assumption that only a proportion of students involved the project will be studying management. Any statistically significant disposition in the control group to register increased learning will then be taken into account in calculating and analysing the survey results.

The questions are designed to measure the student's self-perception of different aspects of environmental/entrepreneurial "orientation" (awareness and engagement with environmental/entrepreneurial issues) and "capability" (willingness and ability to be involved in EIBVs). The questions are, therefore, themed according to different aspects of environmental/entrepreneurial "orientation" and "capability". The questionnaire will therefore contain measurable statements within the following survey structure:

Section 1: Environmental / Entrepreneurial Orientation

- a. **Awareness** = knowledge of environmental issues and business practices.
- b. **Action** = existing patterns of environmental and entrepreneurial behaviours such as looking for business opportunities and solving environmental problems.
- c. **Motivation** = intention to increase environmental/entrepreneurial awareness and to be involved in environmental/entrepreneurial practices.

Section 2: Environmental / Entrepreneurial Capability

- d. **Confidence** = the confidence to be involved in EIBVs.
- e. **Risk-Orientation** = willingness to risk being involved in EIBVs.
- f. **General skills** = self-perception of general capability to be involved in setting up and running an EIBV.
- g. **Specific skills** = individual skills involved in setting up and running an EIBV.

² <http://www.SurveyMonkey.com>

Below, the questionnaire statements are listed as they will appear on the online survey. Responses to statements will be rated on a 1-10 scale. The respondent will be clearly instructed at the beginning of the questionnaire to score each statement between 1 and 10, where a score of 10 equals strong agreement with the statement and a score of 1 indicates little or no agreement. The advantage of using a 1-10 scale, as opposed to a 1-7 or 1-5 scale, is that smaller increments of change can be detected in the average self-perception rating of each statement. In addition, we suggest that the 1-10 scale is more intuitively understandable as a conventional gauge of individual opinion compared with a 1-7 or 1-5 scale. For example, it is easier for the respondent to identify 4-6 as a mid-range response on a 1-10 scale.

2.4 Survey Questionnaire

Environmental/Entrepreneurial Orientation

a. Awareness

1. I consider myself to be aware of environmental issues.
2. I consider myself to be aware of business practices.

b. Action

3. I am on the look out for business opportunities or ideas that have potential commercial value.
4. I am on the look out for environmentally innovative ways to improve business practice.
5. I am creatively successful in identifying business opportunities.
6. I am creatively successful in identifying environmentally innovative opportunities.
7. I am regularly extending my network of contacts in order to increase my knowledge/awareness of environmental issues.
8. I am regularly extending my network of contacts in order increase my knowledge/awareness of business opportunities.

c. Motivation

9. I want to develop my knowledge and awareness of energy innovation issues.
10. I want to develop my knowledge and awareness of business practices.
11. I want to develop environmentally innovative business ideas in the future.
12. I want to develop non-environmental innovative business ideas in the future.
13. I want to be involved in setting up and running an environmentally innovative business start-up.
14. I want to be involved in setting up and running an innovative business start-up.

Environmental/Entrepreneurial Capability

a. Confidence

15. I have the confidence to be involved in the setting up and running of an environmentally innovative business venture.

b. Risk-Orientation

16. I am prepared to take the risk to be involved in setting up and running an environmentally innovative business venture.

c. General Skills

17. I have the skills to be involved in setting up and running an environmentally innovative business venture.

d. Specific Skills

18. I have the ability to evaluate and develop environmentally innovative products and services.

19. I have the ability to provide environmentally innovative products and services.

20. I have the ability to acquire capital investment for an energy innovation business start-up.

21. I have the ability to develop a marketing strategy for an environmentally innovative product or service.

22. I have the ability to manage the finances of an environmentally innovative business start-up.

23. I have the ability to manage, negotiate and delegate within a business team/partnership.

24. I have the ability to network in order to identify opportunities and provide resources for an energy innovation business start-up.

3. SURVEY ANALYSIS

The average score for each statement will be calculated at each measurement point. Relative change in different aspects of entrepreneurial/environmental orientation and capability can then be calculated over the course of the competition process. This will facilitate an assessment of the impact of the project infrastructure in terms of shifts of entrepreneurial/environmental orientation and capability. The inclusion of separate entrepreneurial and environmental variants for section 1 statements makes it possible to distinguish the impact of the project in terms of the entrepreneurial and environmental dimensions of student mindset. Moreover, the statistical values of groups of statements can be used to index types of dispositions, inclination and skills at different stages in the competition process. For example, measures of motivation, confidence and risk-orientation can be combined to assess the impact of the project on the likely intention of participants to become involved in EIBVs. Similarly, the measures of individual skills can be combined to create a skills index. In general, the differentiation of entrepreneurial/environmental orientation and capability into constituent

dispositions, inclinations, and skills will make it possible to evaluate the strengths and weakness of the project infrastructure for future project design and policy development.

4. CASE STUDIES OF BEST PRACTICE

In addition to the survey, written case studies will be undertaken of each of the five best ideas at local level (total 25). These case studies will examine the emergence and development of an energy-innovation over the duration of the project. In addition, the case studies will examine how the idea has developed in relation to the input of experts, the project team and other energy stakeholders. The case studies incorporate material on the genesis and development of the energy-idea from inception through to final show case event. The background of the individual student (and/or team) developing the idea will also be examined in terms of their energy awareness and development of entrepreneurial skills.

APPENDIX: FRONT PAGE OF ONLINE QUESTIONNAIRE (ENGLISH VERSION)

Below the front page of the English version of the online questionnaire. This version can be found here: <http://www.surveymonkey.com/s/S8Y536Z>



Figure 3: front page of online questionnaire (English version)