

D2.2 Report on the optimisation of mentoring and training





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1. Introduction

This report describes input for the optimisation of mentoring and training activities on energy efficiency in startups and young SMEs. The findings are based on insights from a literature review, results from the baseline survey that specifically focused on the design of the mentoring and training activities, and an expert session.

The literature review focused on effective interventions regarding energy efficiency that have been studied in previous literature. Practical tips are provided for designing the mentoring and training activities. A more extensive literature review on the barriers, attitudes, motivations and perceptions regarding energy efficiency can be found in report D2.1, the baseline assessment report.

One of the goals of the baseline survey was to provide input into the design of the mentoring and training activities. The recommendations for training and mentoring activities based on the survey outcomes will be discussed in chapter 3. A more extensive overview and background of the entire survey can be found in report D2.1.

The expert session was prepared with input from consumer psychology and consumer behaviour theory as well as input from the consortium partners. Part of the preparation of the expert session included verification with startups and SMEs regarding the central discussion themes and the typical priorities and activities of startups and SMEs. While designing the expert sessions it became apparent that it would be more useful to invite both academics and practitioners to the same session. In this way useful insights from consumer psychology and consumer behaviour were derived to develop effective mentoring and training programmes. And, at the same time, potential barriers to the implementation and the effectiveness in the mentioned solutions were shared by incubators and experts in entrepreneurship. Practitioners could then immediately intervene if ideas shared by the academic experts turned out to be too far removed from the startup/SME context. The outcomes of the expert session were then discussed again with startups and SMEs that provided feedback on the implementation of the outcomes. In this way, both the academic perspective and the practical issues were taken into account.

Chapter 2 provides insights and recommendations based on the literature review. Chapter 3 provides insights and recommendations from the baseline survey. Chapter 4 provides background information on the expert session and Chapter 5 the outcomes of the expert session. In Chapter 6 conclusions are drawn from the results of the literature review, the baseline survey and the expert session.

2. Literature review: Effective behavioural interventions

In this chapter insights from the literature on behavioural interventions regarding energy efficiency are discussed. Behavioural change towards energy efficiency can be implemented in several ways and can be divided into the following strategies:

- information provision and education;
- rewards;
- goal setting,
- social norms; and
- feedback.

Each strategy and its effectiveness is discussed in more detail below.

2.1 Information provision and education

One of the most important reasons why people are not taking action on energy efficiency is because they do not know what to do, or how to do it.¹ The same applies for startups and young SMEs that might also lack information on energy efficiency and energy efficient investments.

The most widely used strategy for encouraging energy efficiency is to provide information. Information regarding energy efficiency serves several functions:²

- it increases awareness;
- it enhances interest in energy-related problems; and
- it provides consumers with knowledge.

The effectiveness of information thus depends on how specific and relevant the information is for the context.³ The way people encounter information has a substantial impact on the way this information is evaluated and integrated. Ensuring that information is relevant gives it higher value and makes it increasingly usable over time.⁴ Specifically, interactive communication that gives people control over the content is helpful. For instance, information for startups and young SMEs is more relevant if they can rely

¹ Schultz, P. W., Nolan, J. M., Cialdini, R. B., Goldstein, N. J., & Griskevicius, V. (2007). The constructive, destructive, and reconstructive power of social norms. *Psychological science*, 18(5), 429-434.

² Tiedemann, K. H., & Hydro, B. C. (2010). Behavioral change strategies that work: a review and analysis of field experiments targeting residential energy use behavior. *People-Centered Initiatives for Increasing Energy Savings*, 299.

³ Abrahamse, W., Steg, L., Vlek, C., & Rothengatter, T. (2007). The effect of tailored information, goal setting, and tailored feedback on household energy use, energy-related behaviors, and behavioral antecedents. *Journal of environmental psychology*, 27(4), 265-276.

⁴ Ariely, D. (2000). Controlling the information flow: Effects on consumers' decision making and preferences. *Journal of consumer research*, 27(2), 233-248.

on specialist publications or on direct contact with suppliers via an online tool. Competition in the sector might also be an incentive for firms to obtain strategic information on energy efficiency.⁵

Previous research showed that some educational campaigns resulted in energy reduction.⁶ For instance, putting explanatory signs near light switches ensures a 60% reduction of unnecessary lighting.⁷ In general, information by itself is not sufficient as it only has a temporary effect in reducing electricity consumption. Moreover, although providing information leads to higher knowledge levels, it does not necessarily result in change. Providing information to employees who are already motivated can be enabling.⁸ For less motivated employees combinations with other approaches seem to be more effective and will be discussed below.

2.2 Rewards

One simple and popular intervention that can be used in combination with educational campaigns is to use monetary rewards. Large rewards lead to higher levels of energy savings. One problematic aspect of monetary rewards is that they seem only effective in the short run. Once people have adapted to behaving correctly they need a new reinforcement in order to continue the desired behaviour.⁹ Another problematic aspect with monetary rewards is that these replace other motivations such as ethical or moral goals.¹⁰ Monetary rewards might turn a request into an economic trade-off (i.e. it is only a small monetary gain) instead of a moral issue (i.e. acting for the greater good).¹¹

Instead of monetary rewards it is therefore recommended to use social rewards, such as public praise. Also, goal setting, social norms and feedback seem promising. These are simple and low-cost activities that might effect pro-environmental behaviour change and encourage long-term maintenance of change.

2.3 Goal setting, social norms, and feedback

Energy efficiency is often a very distant goal. Goal setting in relation to energy efficiency involves determining how much energy someone has to save over a specific time period, for instance to save 5% or 15% of energy. It is important that goals are realistic and achievable. Goals can be made challenging, but still need to be perceived as achievable.¹² It helps when people are committed to the goal, for example in the form of a pledge, as this might activate a personal norm (moral obligation).¹³

⁵ De Groot, H. L., Verhoef, E. T., & Nijkamp, P. (2001). Energy saving by firms: decision-making, barriers and policies. *Energy Economics*, 23(6), 717-740.

⁶ Schultz, P. W. (2010). Making energy conservation the norm. People-centered initiatives for increasing energy savings, 251-262.

⁷ Dennis, M. L., Soderstrom, E. J., Koncinski, W. S., & Cavanaugh, B. (1990). Effective dissemination of energy-related information: Applying social psychology and evaluation research. *American Psychologist*, 45(10), 1109.

⁸ Wood, G., & Newborough, M. (2003). Dynamic energy-consumption indicators for domestic appliances: environment, behaviour and design. *Energy and buildings*, 35(8), 821-841.

⁹ Beresteanu, A., Li, S.J., 2011. Gasoline prices, government support, and the demand for hybrid vehicles in the United States. *International Economic Review* 52, 161–182.

¹⁰ Deci, E.L., Koestner, R., Ryan, R.M., 1999. A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin* 125, 627–668.

¹¹ Handgraaf, M. J., de Jeude, M. A. V. L., & Appelt, K. C. (2013). Public praise vs. private pay: Effects of rewards on energy conservation in the workplace. *Ecological Economics*, 86, 86-92.

¹² Loock, C. M., Staake, T., & Thiesse, F. (2013). Motivating Energy-Efficient Behavior with Green IS: An Investigation of Goal Setting and the Role of Defaults. *Mis Quarterly*, 37(4), 1313-1332.

¹³ Abrahamse, W., Steg, L., Vlek, C., & Rothengatter, T. (2005). A review of intervention studies aimed at household energy conservation. *Journal of environmental psychology*, 25(3), 273-291.

Goal setting is often combined with other interventions such as feedback or social norms. Especially if goals to reduce energy consumption are challenging and slightly difficult to achieve, it is important that people learn how well they are doing in respect to the goal, in the form of feedback. If feedback on progress is not communicated well, it can lead to less energy savings compared to a situation where people do know how they perform.¹⁴

Feedback in relation to energy efficiency holds that people are provided with information on their energy usage. The frequency of feedback positively influences energy savings. Feedback serves three main functions:¹⁵

- 1) A learning function: people learn about the amount of energy they use.
- 2) Habit formation: people can immediately put the newly acquired information into practice to develop new habits.
- 3) Internalisation: after a while people will change their attitudes in line with the new behaviour.

Feedback seems to be effective because it makes the relationship between one's actions and a given outcome salient, therefore creating the belief that one's behaviour will lead to a desired outcome.¹⁶ It is important to provide a frame of reference: people need to learn how well they are doing in respect to the goal. Most energy consumers are blind to their own level of energy consumption. They are also unaware of the energy consumed by others. This makes it difficult for them to determine whether their energy consumption is excessive or moderate.¹⁷ Previous research showed that providing feedback leads to a decline in energy usage: employees who received monthly emails that summarised their building's energy consumption and how well they were doing effectively reduced their energy consumption.¹⁸ Performance feedback is most effective when this is acknowledged by others and praised.¹⁹ This is a form of social reward, which can motivate consumers to reduce energy consumption by signalling that reduced consumption is socially desirable.²⁰ Also, providing energy consumption feedback in a social competition-like situation seems a promising approach.^{21,22}

Goal setting is also often combined with the activation of (social) norms. Social norms on energy efficiency signal that others are actively engaged in energy efficiency. Peers may be communicating the injunctive norm that "other people in our group approve of this" as well as the descriptive norm that "other people in

¹⁴ Becker, L. J. (1978). Joint effect of feedback and goal setting on performance: A field study of residential energy conservation. *Journal of applied psychology*, 63(4), 428.

¹⁵ Van Houwelingen, J. H., & Van Raaij, W. F. (1989). The effect of goal-setting and daily electronic feedback on in-home energy use. *Journal of consumer research*, 16(1), 98-105.

¹⁶ Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological review*, 84(2), 191.

¹⁷ Ehrhardt-Martinez, K. (2011). Changing habits, lifestyles and choices: The behaviours that drive feedback-induced energy savings. *Proceedings of the 2011 ECEEE Summer Study on Energy Efficiency in Buildings*, Toulon, France, 2011, 6-11.

¹⁸ Carrico, A. R., & Riemer, M. (2011). Motivating energy conservation in the workplace: An evaluation of the use of group-level feedback and peer education. *Journal of environmental psychology*, 31(1), 1-13.

¹⁹ Handgraaf, M. J., de Jeude, M. A. V. L., & Appelt, K. C. (2013). Public praise vs. private pay: Effects of rewards on energy conservation in the workplace. *Ecological Economics*, 86, 86-92.

²⁰ Tiedemann, K. H., & Hydro, B. C. (2010). Behavioral change strategies that work: a review and analysis of field experiments targeting residential energy use behavior. *People-Centered Initiatives for Increasing Energy Savings*, 299.

²¹ Burger, P., Bezençon, V., Bornemann, B., Brosch, T., Carabias-Hütter, V., Farsi, M., ... & Sander, D. (2015). advances in understanding energy consumption behavior and the governance of its change—outline of an integrated framework. *Frontiers in Energy Research*, 3, 29.

²² Siero, F. W., Bakker, A. B., Dekker, G. B., & Van Den Burg, M. T. (1996). Changing organizational energy consumption behaviour through comparative feedback. *Journal of environmental psychology*, 16(3), 235-246.

the group are doing this”, both of which can be effective.²³ Providing descriptive normative information may decrease an undesirable behaviour (e.g. high energy consumption) among individuals who perform that behaviour at a rate above the norm). Low energy users (who perform well-above the norm) should however be prevented from increasing their usage.²⁴ Employees who perceive strong signals of organisational and supervisory encouragement are more likely to create environmental initiatives and to carry out new norms.²⁵ This also illustrates that good – leading – examples tend to be followed.

Based on the literature review, box 1 provides tips on successful interventions for startups and SMEs.

Box 1 Tips on successful interventions for startups and SMEs

- Use educational campaigns to raise awareness and to increase knowledge.
- Make educational campaigns relevant to the company.
- Use educational campaigns in combination with other interventions: only educating startups and SMEs might not be sufficient as providing information usually only has a temporary effect.
- Do not use monetary rewards as this will not be efficient in the long run.
- Provide achievable, but challenging, goals on energy saving to startups and SMEs.
- Provide feedback on how well SMEs and startups are doing in terms of energy savings.
- A combination of goal setting, social norms and tailored feedback might be the most effective strategy to increase energy efficiency.

²³ Carrico, A. R., & Riemer, M. (2011). Motivating energy conservation in the workplace: An evaluation of the use of group-level feedback and peer education. *Journal of environmental psychology*, 31(1), 1-13.

²⁴ Schultz, P. W., Nolan, J. M., Cialdini, R. B., Goldstein, N. J., & Griskevicius, V. (2007). The constructive, destructive, and reconstructive power of social norms. *Psychological science*, 18(5), 429-434.

²⁵ Ramus, C. A., & Steger, U. (2000). The Roles of Supervisory Support Behaviors and Environmental Policy in Employee “Ecoinitiatives” at Leading-Edge European Companies. *Academy of Management journal*, 43(4), 605-626.

3. Insights on effective mentoring and training from the baseline survey

In the baseline survey respondents were asked to indicate their preferences towards certain interventions or aspects of interventions that will be further developed in WP3, WP4, and WP5. In this section we zoom in on the preferences for effective mentoring for startups and effective training for SMEs.

3.1 Effective mentoring for startups

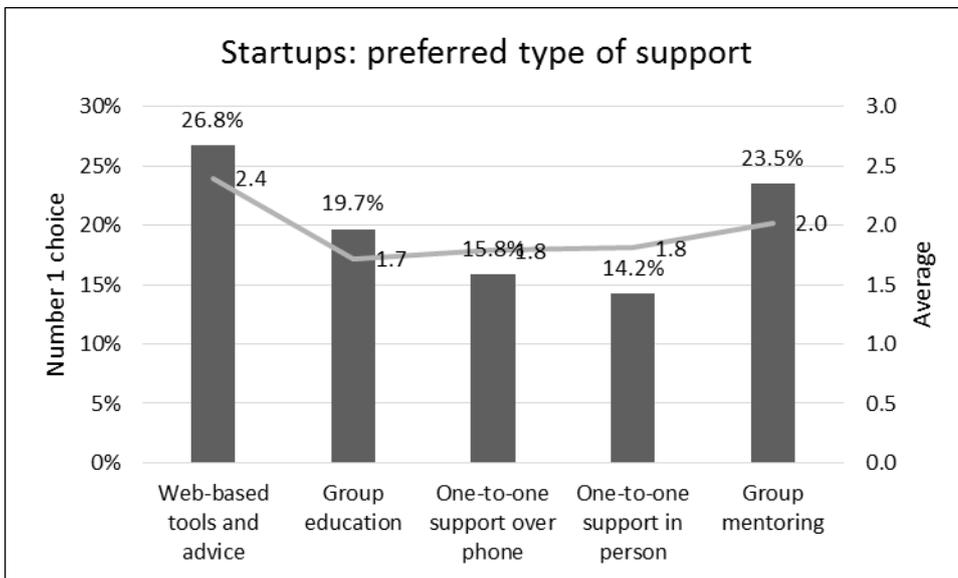
Startups were asked which type of support they would like to receive in the mentoring sessions (e.g. web-based tools and advice, group education, one-to-one support over the phone or in person, group mentoring sessions). Startups were also asked which sectors they would be interested in to obtain skills to make better decisions on energy efficiency (e.g. business planning, product design, human resources, procurement of equipment). In addition, they were asked to indicate their biggest energy consumption cost (e.g. lighting, heating, office equipment, kitchen appliances, or other). Lastly, they were asked if they would be interested in introducing energy monitoring systems in their company.

Respondents were asked which type of support they prefer the most. Figure 3.1. (and all other figures similar to this figure) shows on the left y-axis the percentage of respondents that chose that type of support as number one – thus the most important type of support for them. For instance, 26.8% of respondents indicated that web-based tools and advice are their number one type of support. The other y-axis shows the average: the amount of people that ranked the type of support weighted by whether it was ranked as top 1, 2, or 3. In this case web-based tools and advice also has the highest average. Each time a top three is presented, we take the averages as most important indicator, followed by the percentages. Sometimes the percentages and the averages do not exactly correspond. This for instance occurs when more people rank a certain driver as number 3 than number 1 (for instance, in this case based on the percentages group education is number three in the top three, but based on the averages one-to-one support in person was number three in the top three).

The top three preferred types of support for startups are (see figure 3.1):

- 1) web-based tools and advice;
- 2) group mentoring; and
- 3) one-to-one support over phone.

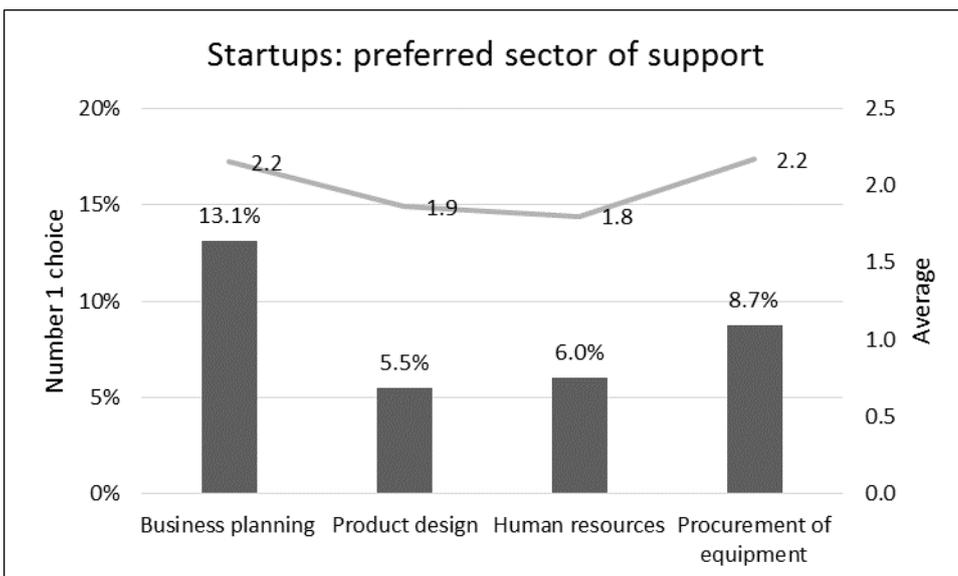
Figure 3.1 Type of support that startups prefer



The top three preferred sectors of support for startups are (see figure 3.2):

- 1) business planning;
- 2) procurement of equipment; and
- 3) product design.

Figure 3.2 Sectors in which startups prefer support



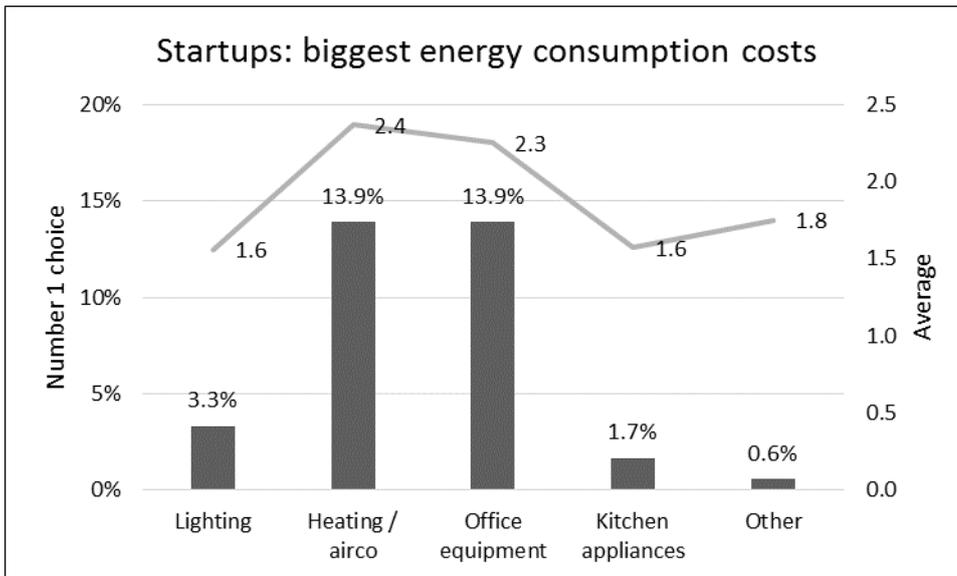
The top three biggest energy consumption costs for startups are (see figure 3.3):

- 1) heating / air-conditioning;

- 2) office equipment; and
- 3) lighting.

Other consumption costs that were indicated are: laboratories, servers, machines and equipment.

Figure 3.3 Biggest energy consumption cost



Startups were also asked if they would be interested in introducing energy monitoring systems in their company. 38 respondents indicated that they would be willing to introduce energy monitoring systems in their company. 23 wanted to team-up with other startups in order to accomplish this, whereas 15 respondents indicated that they wanted to figure out how to do this by themselves. 22 respondents indicated that they do not see the benefit of installing energy monitoring systems in their company.

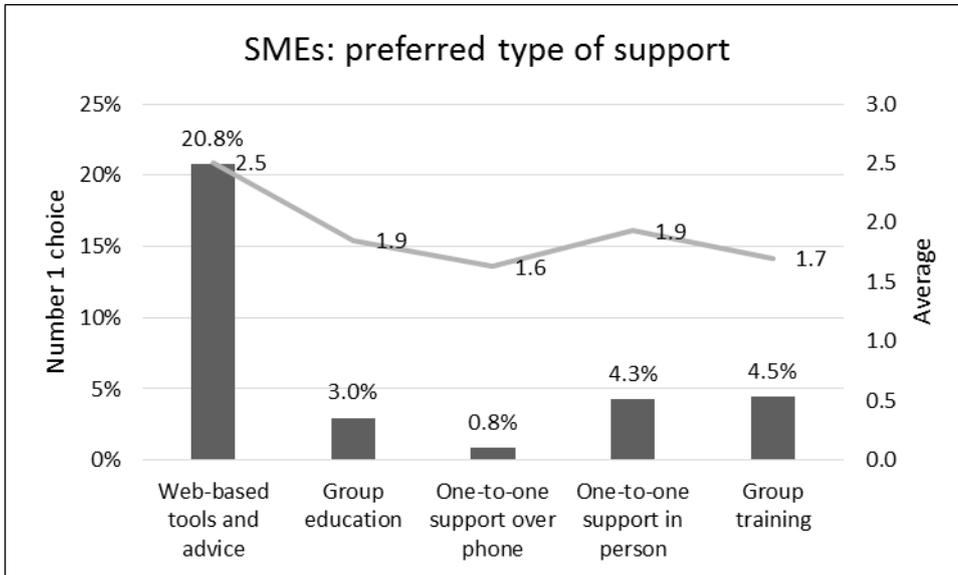
3.2 Effective training for SMEs

SMEs were also asked which type of support they would like to receive in the training sessions. Furthermore, SMEs were asked which type of advice/training would be most beneficial to them (behaviour change, metering and monitoring, green procurement, energy efficient equipment, green marketing). Finally, they were asked which type of breakfast workshop they would like to attend (e.g. 1 hour basic introduction, 2-3 hours in-depth, not interested).

The top three preferred types of support for SMEs are (see figure 3.4):

- 1) web-based tools and advice;
- 2) one-to-one support in person; and
- 3) group education.

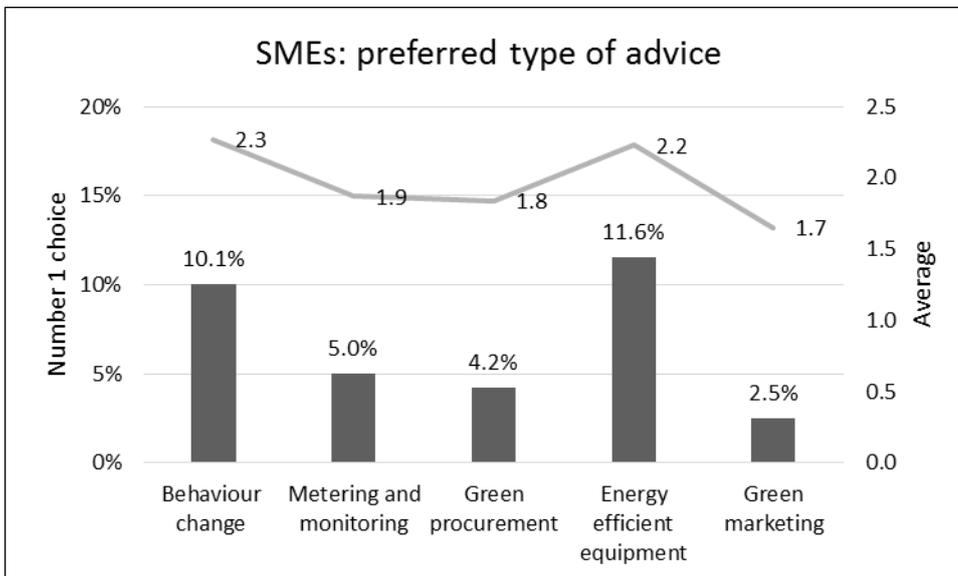
Figure 3.4 Type of support that SMEs prefer



The top three preferred types of advice for SMEs are (see figure 3.5):

- 1) behaviour change;
- 2) energy efficient equipment; and
- 3) metering and monitoring.

Figure 3.5 Type of advice that SMEs prefer



Furthermore, SMEs were asked which type of breakfast workshop they would prefer to attend. A small majority of 79 respondents would prefer a breakfast workshop that lasts 2-3 hours with an in-depth review of energy efficiency opportunities. 59 respondents preferred a workshop that lasts 1 hour with a basic

introduction to energy saving. And, 61 respondents indicated that they would not be interested in attending a breakfast workshop.

Based on the outcomes of the baseline survey box 2 provides tips on effective mentoring and training sessions.

Box 2 Tips on effective mentoring session for startups and training sessions for SMEs (based on the survey)

- Use web-based tools and advice to mentor startups and train SMEs.
- Focus the mentoring sessions for startups on business planning and procurement of equipment.
- Provide tips on how to reduce energy consumption and costs regarding office equipment and heating / air-conditioning.
- Team-up startups who are willing to introduce energy monitoring systems in their company.
- Focus the training sessions for SMEs on behaviour change and energy efficient equipment.
- An in-depth breakfast workshop on energy efficiency opportunities that does not last too long would be most beneficial.

4. Expert session

The expert session was designed in close cooperation with START2ACT project partners the Carbon Trust, Startups.be and Geonardo. First, the topics that needed to be covered in the expert session were defined. Next, case studies were developed to foster discussion amongst experts. These cases and discussion questions were verified with startups and SMEs within CentERdata's network. This verification process was done so that the cases describe actual situations of SMEs and startups and to make sure that the outcomes of the discussion would be relevant to startups and SMEs.

4.1 Aim of the expert session

The aim of the expert session was to get experts' advice on how to design effective training and mentoring programmes for startups and SMEs, from both an academic and a more practical perspective.

The expert session was focused around three key themes:

- Theme 1: **Short versus long term focus:** energy efficiency is not a short-term priority for many startups. Moreover, the benefits of most energy saving measures will only be noticed in the long run (e.g. purchase of energy efficient equipment). How can we ensure that individuals take the long-term aspects into account in their short-term decisions?
- Theme 2: **Individual versus collective efforts:** many startups rent office space in large office buildings or from incubators or accelerators. Often startups and young SMEs pay a fixed amount for their energy consumption. How can we ensure that startups and SMEs become motivated to save energy? How can we use peer pressure to stimulate energy efficient behaviour?
- Theme 3: **Awareness of the importance of energy efficiency, how and when?:** How and when can we create awareness regarding energy consumption and energy efficiency amongst startups and SMEs that have other priorities?

4.2 Background

In discussing the central themes we always kept startups and SMEs, the two target groups, in mind. The target groups were defined as follows:

- A startup is an independent, unlisted, innovative, tech enabled, scalable enterprise designed by intent from day one to become a large company —by either disrupting an existing market and taking customers from existing companies or creating a new market - aiming to provide significant returns to their founders and investors using all available outside resources.²⁶
- Young SMEs: an SME is a small or medium sized business. The young SMEs that are approached in the START2ACT project have a maximum of 50 employees and have been operating for no longer than 3-5 years.

²⁶ Startup definition provided by the partner startups.be specifically for the START2ACT project.

To give the experts a better idea of the different types of businesses, their priorities and activities we outlined a number of cases. These cases were meant as examples to help the experts think of suitable interventions for the target groups. Some interventions might be better suited for one type of business and other interventions for other types of businesses. Moreover, the way in which information provision on energy saving has to take place might differ between the target groups.

In general, the companies differed on the following aspects (for an overview see table 4.1):

- The companies are in different operating phases: Some companies just started their business and mainly try to survive (e.g. Company A & B), whereas other companies have already partly acquired their right to exist and are growing (e.g. Company C, D, E).
- The companies differ in the importance they attach to energy efficiency and there are differences in the intrinsic motivation of a company to implement energy savings. Some companies are already working on energy savings (e.g. Company C), other companies are doing little (e.g. Company D), and some companies are unaware of the importance of energy savings or are not doing anything at all (e.g. Company A, B, E).
- Some companies' energy savings are directly reflected as a cost saving (e.g. Company D, E), and for others this is not the case (e.g. Company A, B, C).

Table 4.1 Company differences

Company	Startup or SME	Energy efficiency	Direct cost saving possible?
Company A	Startup	Unaware / not doing anything	No
Company B	Startup	Unaware / not doing anything	No
Company C	SME	Implemented energy saving measures	No
Company D	SME	Does little on energy saving	Yes
Company E	SME	Unaware / not doing anything / not willing	Yes

The following cases were provided as reference to the experts:

Examples of startups

Company A is a Startup with 4 employees, founded in 2015, operating in the AdTech sector. In 2015 the company was elected as “Starter of the year”, which generated much publicity for the company. This year the company received a grant for 6 months with which they want to expand their services abroad (Belgium, Germany, UK). The company works in a co-working space.

Company B is a Startup with 2 employees, operating in the Internet of Things sector. The company was founded in June 2015. The company started with working out their idea and the design of concepts of their product. In early 2016 the company started a crowd-funding campaign and in July 2016 the company

reached the targeted monetary amount to startup their business. The company works in an incubator office space (shared office space). Both employees own a Macbook. The company's first goal is to start producing their product, test this, and distribute it to the crowd-funders who supported them.

Examples of SMEs

Company C is an SME with 8 employees, operating in the engineering design sector. The energy costs are €9,000/year, split between electricity (20%) and gas (80%). Both staff and management are engaged in energy efficiency, and a number of simple energy efficiency measures have already been implemented. The company needs to demonstrate environmental credentials to business customers to give them a competitive advantage. The company rents an office on a shared floor of a new build multi-storey office building. It pays a fixed service fee including energy, so does not directly receive payback on energy saved through energy efficiency measures.

Company D is an SME with 50 employees, operating in the IT sector. The energy costs are €70,000/year, 90% of which is electricity. The company owns its own office space and is particularly interested in installing solar PV panels on its roof, having heard case studies of other local businesses saving money with solar PV. Management is primarily motivated by saving money, as its energy is metered. Staff members are not engaged in saving money or energy for the company. The company is not considering other energy saving measures, despite having a large IT server room which comprises over 40% of its energy use (including air conditioning).

Company E is an SME with 20 employees, operating in the education and training sector. The site was built in 1900 as a school, has an aging heating system and is poorly insulated. The energy costs are €20,000/year, split between electricity (30%) and gas (70%). The company has taken no action in the past to implement energy efficiency measures and the staff are motivated by social sustainability rather than environmental sustainability. The company's management is not strongly engaged in energy efficiency as energy bills are simply paid by the admin team, and treated as a fixed cost.

4.3 Programme

Experts were invited to come to Tilburg University (where CentERdata is located) on 29 September 2016. The session started with a short introduction to START2ACT and the aims of the expert session. Then, each theme was introduced to the experts and discussion topics were explained (see table 4.2).

Table 4.2 Expert session programme

Time	Topic
09.15-9.45h	Introduction to S2A & expert session
09.45-10.30h	Theme 1: long vs. short term focus
10.30-11.15h	Theme 2: individual vs. collective efforts
11.15-11.30h	Short break
11.30-12.15h	Theme 3: awareness
12.15-12.30h	Wrap-up
12.30-13.30h	Lunch (optional)

For each theme experts were asked to share their ideas on:

- Success stories that come to mind: examples they know of companies who successfully implement energy savings.
- Pitfalls: what NOT to do, or what drawbacks to keep in mind.
- Interventions: checklists, useful tools, useful behavioural interventions, etc.
- Company differences: how to take the company differences that were sketched in paragraph 4.2 into account?

Moreover, for the third theme we asked experts to think about the timing of information provision. The START2ACT project includes three visits to SMEs. It was discussed how to optimise information provision across the three visits. In this way the content of each visit can be optimised.

4.4 Participants

CentERdata invited (Dutch) academics from the following research areas: behavioural interventions, environmental psychology, entrepreneurship, sustainability, smart energy, nudging. In addition, experts from incubators/accelerators were invited to bring practical hands-on advice into the discussion. The START2ACT project partners Carbon Trust and Startups.be also participated in the session.

Table 4.3 provides an overview of the experts that participated in the expert session and their expertise areas (see also figure 4.1).

Figure 4.1 Participants in the expert session

Table 4.3 Participants and their backgrounds

Name	Affiliation	Expertise
Dr. Roxanne van Giesen	CentERdata	Discussion leader / WP2 leader
Dr. Maartje Elshout	CentERdata	Note taker / WP2 project member
Diana Pati, MA	Startups.be	WP5 leader
Chantalle Thomson, BSc	Carbon Trust	WP4 project member
Dr. Niels van de Ven	Tilburg University	Behavioural interventions
Dr. Martijn Willemsen	Technical University Eindhoven	Psychology, technology, energy
Dr. Martijn Driessen	Entrepreneur consultancy	Entrepreneur and expert in entrepreneurship
Dr. Karin Bongers	Inspire to act	Behavioural interventions
Dr. Jan Jurriëns	Avans	Sustainable strategy & innovation
Ruud Schuurs, MSc / MBA	Adviseur in beweging	Sustainable entrepreneurship
Martijn Leinweber, BSc	Esa-bic	Incubator
Dr. Henk Staats	Universiteit Leiden	Behavioural interventions energy domain
Dr. Jorna Leenheer	Avans	Behavioural interventions in practice
Dr. Ron Broeders	Starting an own company: previously Technical University Eindhoven	Behavioural interventions in energy domain
Dr. Michel Handgraaf	Wageningen University	Behavioural interventions in energy domain

4.5 Expert session impression

Figure 4.2 provides some impressions of the expert session.

Figure 4.2 Expert session impression



5. Outcomes of the expert session

In this chapter we will first outline the challenging context as sketched by the experts in which the training and mentoring programs will take place. During the expert session it became clear that in order to engage startups and young SMEs, the training and mentoring sessions need to be **relevant** and measures to reduce energy consumption should be **easy to implement**. The outcomes of the expert session will thus be further structured around these two key points. Furthermore, we discuss how to **engage** startups and young SMEs in energy efficiency and how to **raise awareness**. In this chapter we also provide practical hands-on advice which helps to engage startups and SMEs in the training and mentoring activities.

5.1 Context

The situation of startups and young SMEs is already a “barrier”. The experience of the experts is that young SMEs, but especially startups, are struggling to survive. They have many priorities of which energy saving is not a top priority.²⁷ Startups do not have the money and necessary resources to invest in energy savings (such as solar panels). Moreover, they do not have time. Also, some experts mention that startups are tired of all kinds of sustainability pressures and meddling of others in a more general sense.

Thus, the barriers in the specific context of young SMEs and startups can be summarised as:

- limited resources (money and timewise);
- other priorities than energy saving; and
- being tired of all kinds of sustainability pressures.

It is important to acknowledge these barriers and take them into account when approaching startups and SMEs to get them involved in the training and mentoring programmes. The experts emphasise that most results can be obtained by addressing these barriers in smart ways. Key aspects hereby are to make the training and mentoring programmes relevant to the context of startups and SMEs, and by making things easy to implement, particularly ‘time savers’ are welcomed. These key aspects will be the core of this chapter. Furthermore, we discuss how to engage startups and young SMEs in energy efficiency and how to raise awareness.

One of the pitfalls is that companies are more difficult to convince to start saving energy than consumers are. Thus behavioural interventions on energy saving seem easier to apply to consumers. This is because consumers can calculate how much they can earn by saving energy and within a company it is much harder to calculate the impact of a specific employee on energy consumption. More important, startups do not know if they will exist 10 years from now (over 70% of startups fail). Thus, they do not know whether investing in energy efficient equipment now will pay off.

Two key aspects to engage startups and young SMEs in energy efficiency are (1) to make the training and mentoring programmes relevant to their situation, and (2) to make the measures easy to implement.

²⁷ Unless the business model is evolved around this.

5.2 Making training and mentoring on energy efficiency relevant

It is important to tailor the mentoring and training programmes to the needs and interests of the startup or SME. It is essential to connect to the company and to empathise with their situation. Therefore, it is important to learn about the company motivations and personal motivations. The effectiveness of the training and mentoring sessions can be increased if the personal and company motivations can be brought in line. Companies have different drivers to engage in energy efficiency:

- monetary drivers (saving money);
- reputational drivers (having a good company image);
- technological drivers (using the latest technology);
- moral drivers (feeling responsible for the environment); and
- networking drivers (getting in touch with others).

A pitfall is to take a one size fits all strategy in the training and mentoring sessions. The training or mentoring should be tailored to the company and personal motivations in order to be effective. Depending on the motivations a different strategy can be used. For instance, if a company is not morally engaged in energy efficiency it will be more effective to find another personal or company driver to engage the company, such as reputational benefits or cost benefits.

There are also companies that are not at all interested in or aware of the topic of energy efficiency. In order to reach such companies it might be helpful to create networking events with other purposes and introduce energy efficiency in this context as a 'hidden' agenda point.

Box 3 provides practical advice on designing the mentoring and training programmes.

Box 3 Tips to increase relevance of the mentoring and training programs

- Interactive workshops: no lengthy one-sided presentations but discuss issues that the company currently struggles with.
- Use modules in the training and mentoring sessions to tailor the programme to the company and to personal motivations: depending on the personal or business motivations different modules can be used.
- Organise business pitches for startups: this is a great way for startups to team up and to bring attention to their product.
- Disinterested companies can be reached via events that are not related to energy: use energy saving as a 'hidden' agenda point. For instance, by making it part of a startup bootcamp.

5.3 Making training and mentoring of energy efficiency easy to implement

As many startups and SMEs struggle to survive, they will only take energy efficiency into account when this does not require additional effort. Sustainability is a very abstract theme for many people. The experts are convinced that startups and young SMEs can be helped by providing the information in a simple, easy, and concrete way.

Easy implementation is the case when:

- no company effort is needed; and
- measures are used that save time for companies.

The experts indicate that one way to decrease company effort on energy efficiency is by helping companies to team up. Teaming up individuals might lead to a collective impact (theme 2). At SMEs there is often one energy manager in charge of the energy policy of the company. Often this is one of the additional administrative tasks an employee receives on top of the many other tasks. A pitfall is that energy measures are then not easily implemented. A solution for this might be to bring the energy managers of several SMEs into contact with one another, so that their role will become more important and visible. By teaming up they can become energy efficient together and learn from each other. They can make decisions together and then implement these decisions in their companies. Moreover, if one company does not have a technology, such as solar panels, or the resources to invest in such a technology, there might be SMEs that have the technology or the resources available. These companies can then jointly invest in one location.

Box 4 provides tips for implementing energy efficiency measures.

Box 4 Tips for implementing measures on energy efficiency

- Introduce recommended systems to the startups and SMEs: where to buy the most energy efficient light bulb, etc.
- Introduce apps to the startups and SMEs that do a large part of the work for the company. There are apps available that tell the company what to change and what is the most efficient light bulb and can immediately order these, after a person has filled out information about the office equipment.
- Provide free consultancy time for energy efficiency in the form of vouchers, made available to SMEs when they submit energy efficiency plans. This will also save them time as the consultant does the work for the company.
- Introduce checklists to startups and SMEs.
- Help companies to team-up: bring companies together who can jointly invest in a new technology such as solar panels. Or, link companies to a company who already is tech-oriented.
- Introduce smart technology to startups and SMEs: for some small behavioural change aspects it might be better to use technology than to try to change the behaviour. Make companies aware of technological aids such as lights that turn off automatically, computers that are switched off at 20h in the evening and start-up automatically before work starts.

5.4 Engaging startups and SMEs in energy efficiency

Some experts argue that taking the first step in energy efficiency encourages the company to continue with many more small steps. Other experts argue that some companies think that a small step suffices and they stop taking additional steps. There seem to be two strategies: either companies need to be constantly challenged to further engage in energy efficiency, or energy efficiency needs to become part of the companies' core identity from the start (theme 1). When startups and young SMEs start to build their company vision, "their DNA and identity", energy efficiency can be introduced as well. If it is a core value companies continue to act like this in the future. This is because people like to behave in a consistent way. So, if they considered energy efficiency to be important in the past (when they created their vision) it is likely that they will behave like this in the future as well.

Core values are best created when the company is in a transition phase. The experts distinguish three important transition phases:

- The phase right before a company starts (e.g. during business school): it is important to integrate energy efficiency in the curriculum of students. Or – at least – make students aware of the importance of this.

- During the company startup phase: when the company needs to think about identity and vision. This is a crucial phase as it is when core values are developed. Once energy efficiency becomes a core value, companies will act in an energy efficient manner in the future as well.
- Company growth: when the company starts to grow and invests in equipment and office space. To make an impact here the company already needs to be energy conscious.

Transitions to the next phase can be recognised by strong investments (building-up, growth). It would therefore be advisable to check the business phase during the training and mentoring programmes. Particularly when the company is creating its vision, it will be helpful for trainers and coaches to assist the company in developing an energy conscious mindset and a vision on sustainability. Thus, by already incorporating these long term goals and aspirations into the current company vision and DNA the company starts to fulfil this.

Box 5 provides examples on how to engage startups and SMEs in energy efficiency.

Box 5 Examples on how to engage startups and SMEs in energy efficiency

- Trainers and coaches can assist new companies to develop an energy conscious mindset.
- Have information available for companies in a transition phase, for instance on energy efficient office spaces and equipment.
- Openly publish the company's environmental credentials (e.g. on the START2ACT website), so that companies can compare how well they are doing with others.
- Find successful startups who can spread the word of the importance of energy efficiency and share how they have incorporated this in their company DNA. In this way they can inspire others to follow suit. This could for instance be done in 5 minute talks as part of other conferences and workshops.
- Help startups to ensure that greenness is part of their product chain in creative ways. For instance, a startup can run a quick start campaign: If there are 100 orders placed, the product will only be slightly eco-friendly, if there are 200 orders placed the product will be more eco-friendly, and so on. If customers value eco-friendly products they can help the company to get the necessary money to further develop the eco-friendliness of the product.

5.5 Raising awareness

The experts indicated that many people are not aware of their current carbon footprint and the impact of their behaviour on this (theme 3). Consequently they do not know if they are behaving in the right way and how 'green' they actually are. They also do not know which behaviours are harmful to the environment and how harmful this is to the environment, and thus, how they can improve. For instance, a business flight from Europe to Australia can double someone's carbon footprint. Many people do not know this (even researchers on energy efficiency).

The same applies to companies. Many companies are not aware of what they can do in order to conserve energy. Other companies claim to be 'green' and actually are not sustainable leaving much room for improvement. Some companies are not aware that they are very 'green'. Finally, there are companies that are aware of their green image but do not want to advertise this, because they think this might backfire. For instance, they fear that when environmental groups may start to check whether the company is green on all aspects.

When focussing on the companies that are not aware of their environmental impact it might be beneficial to target the director of a company. It is important to engage the director of an SME as the director can lead by example and create new (energy) norms for the company.

Next to employees and the director there are other parties that can be involved, though this is out of the scope of the START2ACT project focus. Landlords or facility managers can be made aware of energy efficiency. Landlords and facility managers can then be engaged in helping startups and SMEs to save energy. For example, by using part of the money saved by energy efficiency for common rooms in buildings (e.g. ping pong table). In addition to landlords, financiers of startups can be made aware that a green company image is important nowadays. They can then spread this word further to startups or even make this a prerequisite before financing the startup.

Box 6 provides tips for raising awareness.

Box 6 Tips for raising awareness on energy efficiency amongst startups and SMEs:

- At the beginning of a training or mentoring session, ask what type of energy conserving behaviour employees already do, and make them aware of what they can do in addition.
- Point to the simple things that employees can do, such as switching off light bulbs or monitors when they leave a room.
- Lead by example: engage directors and use examples of successful startups.

6. Conclusions

In this chapter we draw conclusions based on the insights that were derived from the literature review, the part of the baseline survey that focussed on the design of the mentoring and training activities, discussion with partners, and the expert session.

As was outlined in the expert session it is essential to incorporate long term goals and aspirations regarding energy efficiency into the current company vision and DNA so that the company already starts to consciously take this into account and fulfil this. As soon as the company starts to grow, this core identity will help in making the right – energy conscious – decisions in the future.

Based on the expert session it is also recommended to introduce easy to implement measures to startups and young SMEs, as this will save time for a small business and does not require additional monetary

investment. There are several ways to assist startups and SMEs with this. For instance, by helping them to team up, by introducing recommended systems, apps or checklists on energy savings that help them to save time and money. It can also be helpful to introduce smart technology, such as light bulbs with controlled sensors. The results of the survey also underline that energy efficiency measures should be easy to implement. Namely, startups and SMEs indicated that “easy-to-use” web-based tools and advice are an important way to receive support on energy efficiency. Along the same lines, it is important to provide practical tips and advice on how to reduce energy consumption and costs in terms of office equipment and heating / air-conditioning. In addition, startups that are willing to introduce energy monitoring systems in their company can be teamed up.

From the literature review and the expert session it became clear that it is also of key importance that the training and mentoring sessions need to be relevant to a startup or young SME and should address their personal and company motivations. It is helpful to figure out their core motivations prior to the start of a training or mentoring session because this helps in determining which modules would be most interesting for the company.

As many individuals are not aware of their current footprint it would be helpful to create awareness regarding their current behaviour and how green one actually is and on which aspects one can improve. Educational campaigns can be helpful to increase knowledge of employees. However, only educational campaigns might not be sufficient to change behaviour. It is therefore recommended to not only make employees aware of their current footprint but also combine this with other interventions such as providing feedback at different time points. In this way SMEs and startups know and learn how well they are doing now and in the past in terms of energy savings.

Companies that are difficult to reach, because they are not aware of the importance of energy efficiency, might be reached via other events, in which another theme is central and energy efficiency can be introduced on the side.