

SPEEDIER

SME Program for Energy Efficiency through Delivery and Implementation of Energy Audits

D2.4 – REPORT SUMMARISING FINDINGS FROM STAKEHOLDER FOCUS GROUPS

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This document is the report associated with Deliverable 2.4 'Report summarising findings from stakeholder focus groups'. It contains a summary of findings from the focus group discussion organised for SMEs and key actors in SPEEDIER Service value chain. It provides a short and comprehensive description about the drivers and challenges for the business to implement the Energy Efficiency Measures, as perceived by SMEs and energy experts and associated learnings for SPEEDIER to be implemented during delivery of SPEEDIER Services at pilot countries. Additional advice and support can be sought from the coordinator.

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Abbreviations

ECM	Energy Conservation Measure
EHS	Environment, Health and Safety
ESCO	Energy Services Company
EU	European Union
ISO	International Standards Organisation
SME	Small or Medium Sized Enterprise

Executive Summary

To supplement the results of online surveys organised for SMEs and Stakeholders, a focus group was organised in each SPEEDIER pilot country (Ireland, Italy, Spain and Romania). The focus group helped the SPEEDIER team to gauge the attitudes and opinions of SMEs and energy experts on energy auditing in SMEs, and understand the key barriers and real or perceived risks that are preventing action on energy efficiency within the SME market. The focus group discussion encouraged the participating SMEs and energy experts to share their experience in more detail than they could have given through participation in the on-line survey.

The project team designed a questionnaire template that the moderator of each focus group could use as a guide to facilitate the discussions. This ensured that there was enough flexibility to ensure good flow of conversation in the group, but allows comparisons to be made between pilot regions through ensuring the same topics are covered. In Ireland, Italy and Romania, SMEs and energy experts participated in the same focus group whereas in Spain SMEs and energy experts attended separate focus groups. The focus group discussions in Ireland and Spain were audio recorded, anonymised and transcribed, whilst in Italy and Romania, focus group moderators took detailed notes during the discussions. These approaches allowed the team to make a more detailed analysis of the discussion after the events.

The insights provided by the focus group participants are intended to be used to refine the SPEEDIER Service offering in each country to ensure that it is (a) needed; (b) useful; and (c) tailored to the conditions in each market. This will maximise the chances of implementing a successful project with high impact. Several key concepts were repeated by the focus group participants across the pilot regions, showing that there are a number of similarities between SMEs and energy experts in these different countries.

One of the key findings from the focus group discussions is that lack of finance to conduct energy audits and to implement the subsequent energy saving recommendations is a major barrier being faced by SMEs. The problem is not only that some energy saving measures require a large initial capital investment, but also that SMEs struggle to justify the cost of having an energy audit in the first place. Paying a consultant up to €2,000 to carry out the audit is considered too risky because at the point of commissioning the audit, the SME is unsure if they will recover this investment from the ECMs that the audit may (or may not) identify. The perception that investing in an audit is a high risk strategy is not shared by energy experts, most of whom are extremely confident that they would easily identify savings that would cover the cost of the audit and more. This difference in the perceived risk associated with paying for an energy audit could explain why (according to the survey carried out in D2.3) so few SMEs have had an energy audit in the last 5 years. Overcoming this barrier is critical if SPEEDIER is to be successful.

Participants of all the focus groups agreed that SMEs generally pay little attention to their energy cash outflow, as their focus is on ensuring that they have a profitable business that meets their customers' needs. SMEs lack the in-house expertise for energy management as this role is often combined with another (usually health and safety) and gaining senior management buy-in through raising awareness of the size of the organisation's energy bills is a tough task for junior employees. Despite this, most SMEs agreed that implementing the recommended energy saving measures and improving energy efficiency will enhance their

corporate image in the market and could help them to attract new customers or win new business.

There were few differences between SMEs and energy experts in terms of the perception of barriers to implementing ECMs. Several energy experts commented that selling energy audit to SMEs is difficult because SMEs consider energy audit and energy efficiency as an opportunity, rather than a need. Most of the SMEs stated that the low priority of energy savings is the main barrier for them, whereas energy experts agreed that lack of finance to invest in ECM implementation is the main barrier to the energy efficiency uptake for SMEs.

Despite above differences, SMEs and energy experts agreed that lack of finance to invest, lack of time and lack of in-house expertise for implementing the recommended ECMs are all major challenges being faced by SMEs that prevent the uptake of energy saving recommendations. Other barriers stated by SMEs and energy experts across all four focus groups includes the lack of awareness of the importance of energy efficiency among SME staff members, the long pay-back time associated with investments in some ECMs, and lack of government regulations on mandatory energy audits for SMEs.

SMEs from all the pilot countries stated the need for an external energy consultant to propose and implement the ECMs within their organisation as they don't have sufficient knowledge in-house. They also agreed that having an external energy manager to create awareness on energy efficiency would be effective in enhancing energy culture among employees. This shows that there is a great need across the pilot regions for a service like SPEEDIER that can assist and guide SMEs through the capacity building of employees and implementation of complex ECMs, (i.e. more than just upgrading lighting systems), for example, those relating to optimisation of heating and cooling equipment, variable speed drives, upgrades to more efficient technologies and building fabric upgrades.

The focus groups discussed a number of additional ideas that could help to enhance the SPEEDIER Service and these should be considered for inclusion by the SPEEDIER team. This included: employee reward schemes for energy efficiency improvements; proposing short pay-back ECMs first to build trust between SPEEDIER Expert and the client; more government regulations on mandatory energy audit for SMEs; offering energy audits free of charge or on a 'no savings, no fee' basis to encourage uptake; accreditation of companies carrying out energy audits to encourage trust; and providing an energy saving certificate to participating SMEs to enhance demonstrate achievements to customers and enhance their market image. These ideas could enhance the SPEEDIER Service and encourage greater participation across the pilot regions and so should be considered further during the SPEEDIER Service definition in Task 4.1.

SMEs are not well aware of all the government's support scheme, grants and incentives, they agreed that these supports are not publicised and promoted enough, hence they lack knowledge on these supports. Participants in the focus group held differing opinions on the benefits of government backed incentive schemes. Some SMEs indicated that they are aware of incentive schemes relating to energy auditing or energy efficiency but that they have not taken advantage of the schemes due to not meeting the eligibility criteria or being put off by the level of bureaucracy involved in the application process. Among energy experts, there is some mistrust of the value grant schemes as support mechanisms as there is a perception that this can simply drive up the price for the end user. It will be important for SPEEDIER



Experts to advise on, and assist with, accessing local/national government's grant schemes, tax incentives and low interest loans that may be available to SMEs in each country.

In terms of the proposed SPEEDIER business model of ring-fencing and reinvesting savings, this was generally supported in principle by SMEs and energy experts; however, there was some scepticism on whether it would work in practice due to perceptions of risk from both SMEs and energy experts. This shows that some modifications to the proposed SPEEDIER Service may be necessary to account for these differing perceptions of risk. The SPEEDIER team should consider using different business models as appropriate for the market and particular requirements of the SME and experts in question. This may involve for example: 1) taking an ESCO style approach where the energy audit is offered free of charge and the payment comes from the savings once ECMs have been implemented; 2) ring-fenced savings being used to pay the fee of the experts first, up to the agreed amount; 3) recording monthly rather than annual savings; 4) taking a staged approach to implementation and payment in order to build trust between SPEEDIER Expert and client; 5) a combination of payment methods as appropriate.

In summary, the focus groups have highlighted a number of issues that need to be considered further by the SPEEDIER consortium to ensure that the service meets the needs of the stakeholders with which it is trying to engage. These will be considered in detail in Deliverable 2.5 Recommendations for the SPEEDIER Service and Task 4.1 SPEEDIER Service Definitions.

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1 Introduction

1.1 Background Information

SPEEDIER is a highly innovative *one-stop-shop solution* that applies an integrated approach to energy management, providing information, advice, capacity building, energy auditing, financing, as well as implementation of energy efficiency solutions and monitoring of impacts.

A key innovation upon which the SPEEDIER Service is founded, is the self-financing mechanism. This novel funding mechanism works by implementing simple no-cost actions first (e.g. raising energy awareness of staff or switching to a cheaper energy supplier), ring fencing the savings from these actions and using them to pay for low, medium or high cost energy efficiency measures and the continued services of the SPEEDIER Expert. The iterative cycle of implementing energy conservation measures, determining the savings against an agreed baseline, ring fencing those savings and reinvesting them into additional measures is the core innovative principle of the SPEEDIER Service that can be applied to both SMEs and large enterprises. Thus, a revolving energy efficiency fund is created for each participating business, removing any barriers relating to lack of capital or lack of access to finance and allowing deep energy efficiency upgrades to be funded.

SPEEDIER will target groups of SMEs in 4 EU pilot regions:

- 1) In **Spain**, we will test a location based approach, engage with SMEs based at a single business park to demonstrate that advantages of clustering SMEs give them better access to the economies of large scale projects;
- 2) In **Ireland** and **Romania**, SMEs in the manufacturing and hospitality sectors respectively will be approached to test a sector based approach to service delivery;
- 3) In **Italy**, a more general approach of accessing SMEs from any sector via ESCOs will be tested.

These pilots will be used to test the developed SPEEDIER Service through a number of iterative steps in the quest to create a fully functioning and self-sustaining service that can be rolled out across the EU.

1.2 Objective of the study

The objectives of the focus group study are: -

- To supplement the results of online surveys that were undertaken with SMEs and Stakeholders in each pilot country with more detail (See Deliverable 2.3 Report on Findings from Surveys of businesses participating in SPEEDIER).
- To analyse and understand the various barriers and challenges that prevent the uptake of energy efficiency measures by SMEs, comparing the perspective of the businesses themselves and the energy experts who provide advice.
- To understand the attitudes and opinions of energy experts on delivering energy auditing for SMEs, understand the key barriers and real or perceived risks that are preventing them from engaging with the SME market.



To achieve these objectives, we ran a focus group meeting with SMEs and stakeholders across the energy value chain in each pilot country. More details on methodology are provided in Section 3 of this report.

2 Methodology

To achieve the objectives stated above in Section 2.2, a focus group was organised in each pilot country consisting of SMEs and energy experts.

2.1 Engagement Activities

The SPEEDIER team made use of their own networks and existing links with local organisations to invite SMEs and energy experts to be part of the focus group discussion. SMEs and experts, who expressed interest in joining the focus group were later informed of the date, time and venue of the meeting.

2.2 Ethics Compliance

In terms of ethics compliance, names and contact details of focus group participants will neither be shared publically nor be used for any purpose other than informing participants of the meeting details. Participants in the focus group were given an information sheet (included in Annex 1 and Annex 2) before the focus group began, informing them of the nature and purpose of the study, that participation is voluntary, that they can refuse to answer specific questions or leave the focus group at any time, and that they can withdraw their details up to 2 weeks after the focus group has concluded. This study received Ethics Approval from the Social Research Ethics Committee at University College Cork.

2.3 Preparation

The online survey described in D2.3 recorded the opinions of SMEs and energy experts on energy auditing and implementation of energy efficiency measures, however, it does not show anything about why they hold those opinions. The focus group aimed to encourage the participants to share in more detail the reasons behind their opinions. To do this, the project team designed a questionnaire template that the moderator of each focus group could use as a guide to facilitate the discussions. This ensured that there was enough flexibility to ensure good flow of conversation in the group, but allows comparisons to be made between pilot regions through ensuring the same topics are covered.

The focus group template questionnaire covered the following topics:

- Experiences of energy auditing in SMEs and large enterprises.
- Awareness of the importance of energy audits.
- Challenges and barriers preventing uptake of energy audit and ECM implementation.
- Drivers for the uptake of energy audit and ECM implementation.
- Awareness of governmental support for energy efficiency actions.

The focus group information sheet and template questionnaire for SMEs and energy experts have been included in Annex 1 Focus Group Survey Questions for SMEsand **Error! Reference source not found.**Annex 2 Focus Group Survey Questions for Stakeholdersrespectively of this report.

2.4 Running the focus groups

Focus groups were carried out in each of the SPEEDIER pilot regions (Ireland, Italy, Spain and Romania), facilitated by the pilot site leader for each region. In Ireland, Italy and Romania SMEs and Energy Experts participated in the same focus group whilst in Spain, separate focus group events were run, one for SMEs and a second for energy experts. During all focus groups the following activities were undertaken:

- On arrival at the event, each participant was asked to sign the event registration form to show that they had attended. Each participant was also asked to read the information sheet and sign the consent form allowing the discussions to be recorded and their comments to be used in the research.
- The participants were welcomed to the focus group by the moderator and the audio recording was started.
- Each participant introduced themselves and their organisation to the group.
- The focus group moderator led the participants through a discussion that was based around the template of questions shown in Annex 1 and Annex 2.
- After the focus groups, the audio recording was transcribed and anonymised so that the participants could not be identified.
- Once fully transcribed, the audio recording was deleted, and the transcription was shared with the SPEEDIER consortium for analysis.

2.5 Technical Difficulties

Technical difficulties were experienced during the Italian and Romanian focus group discussions that prevented an audio recording from being taken. Instead, the moderators of these events took detailed notes, which were later used when writing up the findings of these focus groups in this report.

2.6 Limitations of the study

Focus groups are useful in assessing the opinions and attitude of the participating group, but they have a number of limitations which should be kept in mind when assessing the results.

- Participation in the focus group was voluntary, and as such, those that participate may already have an interest or strong point of view about the topic of discussion. As they are self-selecting, the participants may not accurately represent the views of all members of the wider population.
- The number of participants in each focus group was small (fewer than 5 SMEs and fewer than 5 energy experts participated in each pilot region). The small sample size means the group might not accurately represent the larger population's opinions.
- Group discussions can be difficult to steer and control, particularly if the individuals present hold strong opinions on a related topic, which may distract from the main topic of research.
- Respondents can feel peer pressure to give similar answers to other, more confident members of the group, or give the answers that they feel the moderator wants to hear rather than their true opinion.

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- The moderator's skill in phrasing questions can affect responses and skew results, for example, the moderator must be careful not to ask leading questions.
 - Some voices in the group might be louder and more influencing than others.

3 Findings from Focus Groups

3.1 Ireland

In Ireland, the focus group was organised by LIT and the meeting took place at the Hartnett Building, Moylish, Limerick on 5th December 2019. It was attended by five energy experts and three SMEs. Key findings from the focus group are detailed below.

3.1.1 SMEs vs large enterprises

The energy experts in the focus group were asked to comment on the differences between engaging with large organisations that may have a global energy strategy and engaging with SMEs, in terms of take up of energy audits and subsequent implementation of energy efficiency recommendations. The key findings from the discussion are as follows:

- The main difference between large enterprises and SMEs is the level of senior management buy-in to the process of managing energy.
- Large enterprises with ISO systems in place (e.g. an ISO 14001 certified Environmental Management System or an ISO 50001 Energy Management System) pay close attention to their energy bills and have a culture of managing energy that starts at management level. The energy experts largely attribute the success of the energy audit and energy management process to having high levels of senior management buy-in.
- In contrast, SMEs lack senior management buy-in because *“the owner is generally caught-up in the day to day activities [of running the business] and doesn’t have time to think about this”*.
- An additional observation from one energy expert is that staff working for SMEs lack the time to gather the information required for the energy audit and lack the knowledge of *“what is going on in the business regarding energy use.”*

Key learning points for SPEEDIER: Gaining senior management buy-in is key but getting it from SME business owners could be difficult because they are busy running their business. SPEEDIER Experts needs to offer them a hassle-free way to manage energy that does not impact on business operation. They also need to show how SPEEDIER offers value to the business to make it attractive to business owners.

3.1.2 Awareness of the benefits of energy auditing

The energy experts and SME participants were asked to comment on the level of awareness among SMEs of the value of energy auditing. Two SMEs responded to this question in detail and the key findings from the discussion are as follows:

- Both SMEs referred to their environmental management system (ISO14001) in their answers and indicated that they are under pressure from their customers to show that they are managing their environmental impact.
- Both SMEs agreed that the main requirements for their customers are that they are considering, and taking steps to minimise, their environmental impact. However, there is no requirement from customers to specifically look at or manage energy consumption. Instead, the main focus is on improving “sustainability” or tackling “waste issues”.

- One of the SMEs that responded had not undertaken an energy audit and had not specifically investigated how to improve energy efficiency but described an energy audit as being “on the radar” as part of their ISO 14001 Environmental Management System. Lack of knowledge of the benefits and impact of simple energy efficiency measures, and a concern over the financial benefits of investing in energy efficiency appear to be the main concerns preventing further action as shown by the following quote:

“It’s bit of a chicken and egg scenario – you have to try to put a business case together to justify spending money on the audit but you don’t know what potential savings are at that stage.”

- The second SME involved in this discussion had undertaken an energy audit and saw the benefits of actively managing energy, particularly when they moved premises as they were able to use the old factory as a baseline against which to compare the new factory.

Key Learning Points for SPEEDIER: SMEs will make changes in order to win new business if their customers demand it. Positioning SPEEDIER as a way to help SMEs meet the needs of their customers could help to drive uptake of the service. This could be done in the Irish manufacturing sector by showing how managing energy consumption is part of managing environmental impact and could set the SME apart from their competitors in the eyes of their customers.

3.1.3 Challenges and barriers to uptake of energy audits and implementation of ECMs

The focus group participants were asked to discuss the challenges and barriers that prevent them from undertaking energy audits or implementing ECMs. The discussion identified a wide range of barriers, many of which relate to each other, and highlights the difference in perception between SMEs and energy experts.

- **Lack of finance** to conduct energy audits and to implement the subsequent energy saving recommendations is a major barrier being faced by SMEs. The problem is not only that some energy saving measures require a large initial capital investment, but also that SMEs struggle to justify the cost of having an energy audit in the first place. Paying a consultant up to €2,000 to carry out the audit is considered too risky because at the point of commissioning the audit, the SME is unsure if they will recover this investment from the ECMs that the audit may (or may not) identify. The problem is summarised by this quote *“...you’re having to take a punt on the cost of the audit...”*
- On hearing this opinion, the energy experts in the room were quick to point out that in most cases they can easily identify savings that will recover the cost of the audit immediately through switching to better tariffs or behavioural change actions that cost nothing. One expert said: *“...when I do an audit, just by looking at the bills, checking the charges and settings, walking through the place, looking at what’s on and what time it’s on, I can save the cost of the audit straight away without even looking at investment.”*

- **Lack of regulation** that requires SMEs to undertake an energy audit was cited as a reason for not taking action on energy efficiency by two of the SME participants. In general, this relates to the SMEs having **other business priorities** that consume their time and attention making it unlikely that they will make an investment in energy management. One SME stated: *“If you’re not forced to do it, why are you going to spend money on something?”*
- SMEs agreed that there is a **lack of in-house expertise** on energy management since this typically falls under the remit of the Environment, Health and Safety (EHS) role. These individuals tend to be experts on health and safety, but lack knowledge of energy or environmental management. This reinforces the low priority nature of energy and leads to individuals being unable to take action on reducing energy consumption due to lack of knowledge of what to do. One participant commented: *“My qualification is in health & safety so my knowledge on energy is limited. I know about turning off lights etc. but after that, I don’t know.”*
- **Lack of time** was cited by SMEs as a barrier to energy auditing both in terms of gathering the data required by an auditor and coordinating the demands of a role that often include health and safety management.
- One of the SME participants also stated that they are not being contacted by energy experts offering energy auditing or energy management services: *“to be honest, nobody is knocking on our door, which in my opinion is a barrier in itself”*. As a result, they are unaware of the benefits and are unable to communicate their importance to senior management to make a case for investment. The lack of ongoing sales conversations leads to decision makers lacking the knowledge and information they need to make key decisions around energy management.
- A further barrier identified by the group is that the word ‘audit’ has negative connotations could put off some SMEs from engaging with the service: *“Maybe the word “audit” is a problem! It might be off-putting”*. It was suggested that the term ‘energy assessment’ is used in place of the term ‘energy audit’.

Key Learning Points for SPEEDIER: This discussion shows that there is a mismatch between SMEs and experts in terms of how much risk is attached to the initial investment in an energy audit. SMEs see paying for an audit as a risky investment because they are unaware of the level of savings that can be achieved through no and low cost actions. In contrast, the energy experts are confident that they can make savings that easily recover the cost of the audit and more, without the need for capital investment in equipment upgrades. This could be one of the key marketing messages for SPEEDIER that helps to persuade SMEs that having an energy audit is low risk.

3.1.4 Drivers and incentives encouraging the uptake of energy audit and ECM implementation

Two of the energy experts involved in the discussion explained how the ability to show “green credentials” through some kind of certification scheme can be valuable when bidding for public sector clients. Tenderers that are able to demonstrate their commitment to sustainability score more highly, or have their quoted price discounted during the scoring process. This verifies the earlier statement from SME participants that have implemented ISO14001 due to customer requirements. However, for some SMEs the cost of certification is prohibitively expensive, particularly if further investment in ECMs or other actions is required in addition.

Key learning points for SPEEDIER: The SPEEDIER Service can be marketed as a no-cost way for SMEs to demonstrate green credentials. The SPEEDIER team should consider developing some kind of certification that shows the progress that SMEs are making on energy management by participating in SPEEDIER.

3.1.5 Awareness of governmental support for the uptake of energy efficiency

During the discussion, some SMEs indicated that they are aware of some incentive schemes relating to energy auditing or energy efficiency but that they have not taken advantage of the schemes due to not meeting the eligibility criteria or being put off by the level of bureaucracy involved in the application process: *“I’m aware of an IDA grant which covers a consultant to come in for a couple of days...but in order to access this, you had to be going for ISO50001”. “There is a lot of paperwork and sometimes the time restrictions put in place by [funding body] do not fit in with the reality on the ground”.*

Among energy experts, there is some mistrust of the value grant schemes as support mechanisms as there is a perception that this can simply drive up the price for the end user.

3.1.6 Other Learning Points

Other funding sources: The energy experts that participated in the discussion were aware that funding is available from banks and other lenders at favourable interest rates and therefore feel there is no requirement for further incentives specifically for ECMs and energy audits.

Independence of the energy auditor: One of the key points on which all focus group participants agreed is that **the energy auditor must be independent** with no link to particular equipment manufacturers, brands or installation contractors. This separation between auditor and installer gives peace of mind to the SME that the auditor is acting in their best interests and not receiving commission for making particular equipment recommendations. It also provides some protection for the SPEEDIER Expert as it removes the liability from them in the case of installations that do not achieve the expected savings, or cause other unforeseen problems at the SME. Instead, the group participants agreed that the SPEEDIER Expert should make recommendations and then allow the SME to obtain their own quotes from potential suppliers. If required, the SPEEDIER Expert can review the quotes and check that they are reasonable and will achieve the expected energy savings. This is a change to the proposed approach which initially had the SPEEDIER Expert Managing the installation process.

Staged approach to energy management: The focus group discussed the merits of a staged approach to energy auditing and energy management. In the first stage, the auditor would generate a register of opportunities through a brief (perhaps 1 day) analysis of available data and walk around survey. If this highlighted a significant number of opportunities then the SME would progress to a second stage where the auditor carries out a more detailed day energy audit with a report, or assessment of particular ECMs (perhaps up to 5 days of work). Further work such as reviewing quotes received by suppliers to verify that this would achieve the projected savings could be called off as required. The SME participants saw great benefit to this approach as it would help them to justify the costs of the full energy audit at senior level: *“I would find this approach much easier to sell to my boss as opposed to them looking at a figure of 2-3k without even an initial assessment of cost savings. This would be so much easier”*. The experts also saw benefit in this approach as they are confident that they could easily cover the cost of their time through savings achieved from no and low cost measures: *“I have never seen an occasion where the measures that I proposed didn’t save enough money to cover my costs”*.

Staff training: The energy experts participating in the discussion agreed that engagement of staff at all levels of the organisation is critical for identifying and achieving energy savings: *“...hierarchical organisations are on the way out, so you need to engage with staff right across the organisation”*.

Not only are staff on the ground best placed to identify potential energy saving initiatives, but they also know how best to include these actions into the work flow so that actions become a habit rather than a chore. Further, participants were of the opinion that staff need to be rewarded for taking actions. The SMEs that participated in the discussion noted the particular challenges of mobilising the work force to take action, in particular, encouraging senior management to lead by example, and explaining to staff why energy considerations should be part of their job: *“With the wider workforce, it’s a case of ‘what’s in it for me?’ They know they’ll get paid at the end of the week, so why, why, why should we do it?”*

Opinions on the one-stop-shop approach: In general, feedback on the one-stop-shop approach of SPEEDIER was positive. The one exception was the concept of the SPEEDIER Expert managing the implementation process. Both SMEs and energy experts agreed that in order to maintain trust, the SPEEDIER expert must remain neutral and not recommend particular products or companies. This also removes the liability from SPEEDIER Expert in the case that the implemented measure does not achieve the predicted savings. Instead, once a register of opportunities had been identified, the SME should be responsible for obtaining quotes and choosing their supplier, and engage the services of the SPEEDIER Expert to verify that the equipment specification is correct and will achieve the required level of savings. A further alternative is to bring in an external project management company at this stage to manage the installation.

Sales approaches: The experts in the room explained that they sometimes tailor their sales approach so that it matches the main focus of the SME. For example, in the manufacturing sector, focussing on reducing production wastage can lead to energy savings and proved an easier topic with which to engage the SME: *“If we target waste reduction, we get an associated energy reduction as well as a production improvement –they’re all interlinked”*.

Since energy is often a low priority for SMEs it is difficult to 'sell' them an energy management project. However, focussing on a topic that is of high importance to them, such as reducing wastage or improving production efficiency, can increase the chance of successful engagement and result in energy savings.

3.2 Spain

In Spain, separate focus groups events were held for SMEs and energy experts. Key findings from both the focus group discussion have been listed below.

3.2.1 SME Focus Group Survey Findings

SME focus group discussion was held on 5th December 2019 at Marie Curie Tecnoincubator by partners, CTA and PCT. The event was attended by 4 SMEs. Key discussion points and findings are listed below.

3.2.1.1 Awareness of energy auditing

All the participating SMEs were aware of energy auditing and some of the benefits of auditing, although none of them had undertaken one in their current organisation. One participant was from an SME that undertakes energy audits for their clients as part of the maintenance contracts that they offer, and is going through a process of certifying each of their sites to ISO 50001 as an example to their clients.

3.2.1.2 Challenges and barriers for the uptake of energy audit and ECM implementation

- **Financial barriers:** Several of the participating SMEs identified the cost of implementing energy efficiency measures and the return on investment as one of the main barriers to undertaking audits and implementing the recommended measures. Furthermore, one of the key considerations relates to whether the savings from the proposed ECMs can be measured and verified. This shows that some SMEs see investments in energy efficiency as potentially high risk investments, unless it can be clearly proven that the energy savings are a direct result of implementing the ECMs: *"How long will it take me to recover the investment? Are the measures that are proposed to me enforceable and measurable?"*
- **Low priority of energy efficiency:** In general, the participants in the focus group were from very small SMEs and felt that environmental impact is not one of their main considerations. *"We are a very small company and we don't stop to think about the environmental impact that we can cause..."* One of the participants also indicated that most SMEs do not have a dedicated energy manager which makes it difficult to find the time and resource to actively manage their own energy consumption. *"In microenterprises there is more than one role per person, always!"*
- **Staff Training and Awareness:** A further barrier to implementation of energy efficiency measures that was identified during the discussion was the lack of awareness of energy issues among staff members. One participant observed that there is a cultural barrier that prevents individuals from taking energy saving actions at

work that they would do routinely in their own homes. *“It seems to be a matter of culture, because in our private homes if we can take more care of energy consumption, we do, because we know what it costs us.”* This highlights the need for a training programme to help staff to understand what actions they can take to manage energy consumption and why it is important to do so. It also shows the need for a cultural shift within organisations so that staff feel that it is their responsibility to take action on energy efficiency where they are able to do so. This change in culture is more difficult to achieve and will require buy-in and action at senior management level.

- **Lack of control of building:** One SME commented that as they rent the building they occupy all the energy management activities are the responsibility of the landlord and there is little they can do to impact energy consumption.
- **Lack of resources:** Several of the participants commented on the lack of resources, (mainly staff time), available to SMEs to consider energy in their day-to-day operations. Despite an awareness that improving energy efficiency can positively impact on company image, the participants acknowledged that they simply do not have the resources or time available to consider actively managing their energy consumption: *“In the case of large companies there can be, for example, an individual within the company who is the Energy Manager, but in the case of SMEs and especially for SMEs, it is impossible to think about this individual, or at least with activity exclusivity.”*

Learning points for SPEEDIER: The discussion was dominated by the importance of improving staff awareness of the impact that their actions have on energy consumption at work and changing the culture within organisations so that energy management is part of each staff member’s role. This could be reflective of the particular nature of the Spanish pilot region where most SMEs that have been targeted to date are renting part of a building within a business park and therefore, have little control over the energy consuming equipment at their site. For these organisations, energy saving becomes more closely linked to the actions of individuals in the workplace to use equipment correctly rather than upgrading the efficiency of the equipment itself. SPEEDIER Experts in Spain may need to focus more on the behavioural aspects of energy management rather than equipment upgrades.

3.2.1.3 Drivers for the uptake of energy audit and ECM implementation

- One of the participants stated their awareness of the benefits of implementing energy efficiency measures on the world as a whole and considers this to be one of the drivers for action. However, this is a secondary consideration compared to the cost of implementation: *“...the argument of the planet and the benefit to the world is there, and we all begin to be aware of this issue, but at the moment of truth, the cost of the proceedings continues to weigh”.*
- One of the SME participants commented that their company has found that having some kind of environmental certification helps them to score more highly when tendering for work with the public sector. This could be a key driver to persuade SMEs to undertake energy audits and implement ECMs as a way of demonstrating their sustainability credentials to potential new clients.

Key Learning Points for SPEEDIER: Offering some kind of certificate to SMEs that have participated in the SPEEDIER Service to show that they have taken some action to improve

their energy efficiency could provide a means for SMEs to boost their scores when tendering for public sector work. This could be used to help persuade SMEs to participate in the Service.

3.2.1.4 Awareness of governmental support for the uptake of energy efficiency

- One of the SMEs that participated in the discussion also carried out energy audits for their clients. They were the only participant that was fully aware of any support programmes offered by the Spanish government including those offered by the Institute for Diversification and Energy Saving (IDEA).
- The views on the rest of the group on the availability and usefulness of public grants or incentives is not particularly positive. The experience of the SMEs in the room was that accessing any grants or incentives that have been available in the past is bureaucratic and time consuming which prevents participation. A further concern is that grants and incentives do not result in long lasting change because as soon as the support ends, the SME returns to their previous activities. This highlights the need to ensure that the SME senior management truly buys-in to the support on offer and that the support is tailored to their needs to ensure that the impact continues beyond the life of the project.
- Participants also expressed concern that government energy policies are likely to change regularly due to the instability of the government, which creates a risk that support schemes could be withdrawn or changed at short notice. This indicates that there is a lack of trust in government initiatives.

Learning points for SPEEDIER: There appears to be a general mistrust of government support schemes which are perceived as bureaucratic, difficult to access and potentially limited in their usefulness and longevity. SPEEDIER may be able to take advantage of this view in Spain, by demonstrating that the SPEEDIER Service can stand alone through being able to pay the SPEEDIER Expert from the savings achieved. SPEEDIER could also be presented with more of a focus on encouraging a long term relationship with the SPEEDIER Expert in order to support a cultural change within the organisations.

3.2.1.5 Other Learning points

Shared savings model: One of the SME participants commented that they are aware of the services offered by ESCOs and the business model of paying for services from the savings made on energy bills. However, their opinion was that this is not a viable option for SMEs because the amount of savings that can be achieved from implementing ECMs is too small.

Rewards: Several of the SME participants agreed that staff awareness and encouraging SMEs to take ownership of energy consumption in their work place through a change of culture is vitally important in achieving energy savings. One idea suggested was to introduce productivity bonuses linked to energy saving to increase awareness among staff of the cost of energy and reward them for taking positive action: *“In the end until this is included as productivity bonuses, it would be difficult to get real awareness of the consumption habits of each of them”*.

Learning points for SPEEDIER: The SPEEDIER Expert may face a significant challenge in persuading SMEs in Spain that their services can be paid for from the savings achieved. The

business model in the case of landlords with rented buildings may need to be changed to allow for the fact that SMEs in rented buildings often have little control over a large proportion of their energy bill and therefore the level of savings that can be achieved is smaller than for an SME that owns and occupies their own building. A further consideration is that reward schemes could be a useful method for encouraging behaviour change within SMEs. Although the rewards discussed during the focus group centred on financial rewards, other incentives such as feedback on performance, recognition of positive actions or gamification could also be considered.

3.2.2 Stakeholder Focus Group Survey Findings

The focus group discussion for energy experts was held on 5th December 2019 by partners, CTA and PCT at Marie Curie Tecnoincubator. The event was attended by 12 stakeholders. Key discussion points and findings are listed below.

3.2.2.1 Energy Audit in SMEs and large enterprises

- All participants agreed that selling an energy audit to SMEs is very difficult as it is necessary to have certain amount of time and data to perform an audit. One participant stated that *“In order to sell an audit, it has to go through several steps: by the chief financial officer, the maintenance manager, management and in the end some of those ends up throwing it back.”*
- All participants agreed that SMEs lack the level of qualification and awareness towards energy efficiency and do not have the time or resources to devote to gathering the data required to carry out an effective energy audit. In contrast, in large companies there is often already a structure that supports the management to take strategic decisions and staff dedicated to energy management who have the knowledge and skills to work with energy experts on implementing suitable solutions.

3.2.2.2 Awareness of benefits of energy auditing

- Most of the SMEs are not focused on their electricity bills; instead, they are focused on how to produce their service or products. If the SME has a very large added value in its product or service, energy consumption does not interest them.
- Most SMEs are not able to understand or internalise the final profitability of energy audits. The knowledge and time dedication of the energy auditor is not sufficiently appreciated.
- The smaller the size of the SMEs, the lower the level of awareness regarding energy audits. Small businesses are more dedicated to the day-to-day execution of the business, and do not have enough time to invest in reducing their energy consumption.

3.2.2.3 Challenges and barriers for the uptake of energy audits and ECM implementation

- **Financial barriers:** The participants agreed that one of the difficulties is in persuading SMEs to pay for the energy audit in the first place because the audit itself does not save any energy, (and hence, any money), unless the ECMs are implemented. Therefore, SMEs consider that paying for an energy audit is risky because they are unsure of whether they will see a return on that investment. *“Nobody is going to invest if they don't know how much it costs and how much they save.”*

- **Competition from energy brokers:** One participant commented that energy auditors are often competing with energy brokers for business. Energy brokers save businesses money on their energy bills by switching their clients to a new energy tariff and reducing the maximum capacity that the site pays for. As they offer this service for free, and the action of switching energy tariff can result in large annual savings with no disruption, clients expect energy auditors to also offer their services for free and generate similar levels of saving. It is impossible for energy auditors to compete with this approach. Even though the services offered are very different, this is often beyond the comprehension of many SMEs, who do not understand the difference between the services offered by an energy auditor compared to an energy broker.
- **Low priority nature of energy:** The participants recognised that most SMEs are focused on running their business and don't consider their energy consumption at all. Taking action on energy to save 5-10% on their energy bill is not an attractive proposition, especially considering that similar savings can be achieved by energy brokers simply through switching tariffs.
- **Terminology:** Several of the energy experts agreed that many services that are presented as an energy audit are not really full and comprehensive energy audits. This causes confusion for SMEs. One expert suggested using the term 'energy diagnosis' to cover any activity that is not a full energy audit.

3.2.2.4 Other Learning Points

- **Staged sales approach:** One of the participants explained that they take a modular approach to energy auditing, particularly with industrial clients. Instead of carrying out a full energy audit, they focus on one part of the building or process where it is clear that there will be 'quick wins' in terms of energy and cost savings, that will pay for themselves very quickly. This gives confidence to the client and builds trust between client and energy expert before moving on to the more complex projects. This mirrors the approach that SPEEDIER proposes to take through implementing no or low cost measures first and using them to fund medium and high cost measures.
- **Free energy audits:** Several of the energy experts commented that SMEs do not want to pay for energy audits and expect them to be carried out for free. The participants agreed that carrying out a free audit is a high risk strategy from their point of view because there is no guarantee that the client will go on to implement any of the ECMs or use their services to do so. *"The problem with audits today is that nobody wants to pay them". "Our experience is that we have stopped doing energy audits in SMEs and are only done in industrial companies where investments in studies can be allowed."*
- **New ways of engaging with SMEs:** Several participants commented that there needs to be a better way to sell the energy audit process. SPEEDIER could help to meet this need through providing an alternative sales and funding methodology that energy experts could use to boost sales.
- **Incentives:** Grants and subsidies are seen as time consuming and bureaucratic, but rewarding SMEs through tax incentives was considered more positively by one energy expert. *"I think it is very positive if there is some kind of reduction via tax (tax incentive). That would be much better than a subsidy..."*

- **Gaining the trust of the client:** Several participants agreed that gaining the trust of clients is important and that a lot of work comes from previous clients or referrals from previous clients. *“Commercial work is important because you have to gain the trust of the client”*. This is important for SPEEDIER as it shows that sales successful case studies and referrals between companies will be a key method of growing the SPEEDIER Service.
- **Contractual elements:** One of the concerns raised by participants about the SPEEDIER business model is the long term nature of the relationship and the dependency of their fee on achieving savings year on year. Once a measure is implemented, and the client has seen that they are making savings on their energy bill in the first year, it is difficult to persuade the client to keep paying the energy expert year on year, because they do not see any further activity. This is an important learning point for SPEEDIER as the business model may need to be adjusted to account for this, perhaps by ensuring that once savings are proven, the SPEEDIER Expert is paid first.
- **SPEEDIER business model:** One of the participants commented that the SPEEDIER self-financing model does seem to make sense in theory, but the energy audit must be offered free of charge. *“Well, that theory is perfect, but the reality is first that the SME [receives] the energy audit free [of charge] or does not [participate].* This participant commented that his company is already using such a business model, where the audit is offered free of charge and paid based on the actual savings achieved, measured on a monthly basis. This particular participant was also sceptical that any SME would actually ring fence the savings achieved and that in practice any savings would be absorbed into the business. *“You tell them to put that savings in a fund, so that when it is a little fatter, put other actions. Come on, the first thing they tell you is: get out of here running.”* Another participant stated that they are already using an ESCO business model where they guarantee a certain level of savings, are paid from the savings on a monthly basis and ties the SME into a contract lasting several years to ensure they recover their costs. The advantage of this approach is it builds trust with the client as it ensures that the energy expert always acts in the best interests of their client.

Furthermore, there was some scepticism about the SPEEDIER business model as a whole among participants. One suggested that the energy agency should pay for the audit on behalf of the SME. Another suggested that more value would be obtained from a simple tool that is certified by an energy agency and used by SMEs to highlight energy saving opportunities and signpost them to local energy experts that can help them to deliver those savings.

- **Importance of Measurement and Verification (M&V):** One of the participants commented that savings achieved through implementation of ECMs should be shown monthly rather than annually because SMEs need to see an immediate benefit from the services offered.
- **Energy Auditing Tool:** During the focus group there was a lot of discussion around the purpose and value of the tool for SPEEDIER Experts. Given the general feeling that an energy audit should be offered to SMEs free of charge, the energy experts in the room went on to link this to the SPEEDIER tool under development. They

suggested if that the tool was simple enough for a non-expert to use, enough data could be gathered to show the SME the potential for improvement through suggesting basic ECMs. It could then display a list of local SPEEDIER Experts who would be able to advise on how to implement those ECMs and measure the savings. In this way, the tool becomes a simple way of quickly identifying clients that have potential for implementing energy projects of value, where the energy expert's fee could be paid from the savings.

3.3 Italy

The Italian focus group was carried out as an open discussion hosted at the Polimi campus in Milan, within the Smart Building conference which was attended by 25 delegates. During the focus group, the SPEEDIER "Focus Groups Discussion Question" template was distributed to the 5 SMEs and 3 experts that attended and participated. Participants were asked to discuss the topics covered by the questions under the guidance of members of the SPEEDIER team, who acted as discussion moderators. SMEs and Experts highlighted the barriers and challenges, which prevented the implementation of energy efficiency measures, the drivers as well as the benefits that could push SMEs to undertake energy audits and to implement energy efficiency measures. A summary of the findings is given below.

3.3.1 Survey Findings

- **Low priority of energy efficiency:** SMEs that are not working in an energy intensive field view energy efficiency activities as a **low priority** for them because energy makes up such a small percentage of their annual expenditure *"...we do not consider energy efficiency as a key success factor that could support the development of our business, as we are a non-energy intensive company and energy costs account for a very low share of the total costs of our company"*.

Investment risk: Some of the SME participants stated that they are uncertain of the level of savings or return on investment that is likely to be achieved from energy saving measures. This indicates that SMEs see investing in undertaking an audit or in implementing energy efficiency measures as a high risk, and this is preventing investment.

- **Wider benefits of energy efficiency:** Several of the SME participants consider energy efficiency as an opportunity, but not a necessity due to the relatively small cost of energy to their business. The experts that participated in the discussion recognized this and pointed out the need to provide energy management as part of an integrated range of services (rather than a stand-alone activity) in order to achieve the wider benefits of energy management such as improvements to thermal comfort or reduction in environmental impact.
- **Financial barriers:** Several of the SMEs in the focus group identified finance as one of the main barriers. Although there was no indication of lack of money available to invest in energy efficiency measures, it is clear from the discussions recorded that SMEs perceive investing in an energy audit or in energy efficiency measures is risky as they are not convinced of the returns that can be achieved. This leads to a lack of action and reluctance to invest. A further problem is that the participants expect a

payback period of less than 3 years, not just for ECMs but for any investment, and believe that most ECMs have a much longer payback period. The benefits of simple no or low cost ECMs were not mentioned by either experts or SMEs during the discussion, with the exception of an acknowledgement that switching utility suppliers can result in lower bills.

- **Awareness and cultural barriers:** The energy experts that participated in the focus group seem to agree that there is a general lack of awareness of the importance of managing energy and the wider benefits that it can bring to the business. *“Indeed, the cultural barrier to energy efficiency is very diffused [wide spread]...among SMEs managers there is low awareness on energy efficiency and on its benefits, both in terms of economics and in terms of comfort and well-being of the SMEs’ employees”*. This opinion is supported by a comment from one of the SME participants that indicates that there is a belief that energy management will not significantly impact the business in a positive way. *“Our managers do not consider energy efficiency as a key success factor that could positively impact the development of our business”*.
- **Incentive schemes:** Participants in the focus group held differing opinions on the benefits of incentives. Two of the SMEs agreed that some form of financial incentive, such as free energy audits, would encourage SMEs to undertake an audit. This would give more certainty on the level of savings that could be achieved from implementing ECMs in turn this could lead to greater implementation of ECMs. *“[If there was] an incentive scheme so that the SME does not bear any cost in order to undertake it, then many SMEs would undertake an energy audit. In this way, the economic barrier of sustaining a certain cost, i.e. energy audit cost, to have uncertain savings on energy cost, consequent to the energy efficiency measures identified with the energy audit, will be lower.”* In contrast, another SME participant felt that there is no need for incentives as if an investment makes sound financial sense then the business will commit to it anyway: *“...if an investment is convenient for your company then you do it anyway, even without incentives...”*.
- **Regulation:** During the discussion, the SMEs recognized that there are no regulations that require them to undertake an energy audit and this, combined with the low priority of energy management to their business, drives their decision to decline energy audits when offered by ESCOs. *“Several ESCOs offered to our company to carry out energy audits. However, we are not required by law to implement an energy audit, so we have always declined to carry out the energy audit”*. This shows that strengthening the regulations around energy auditing so that they put obligations on a wider range of businesses could drive the uptake of energy audits.
- **Sharing savings:** The discussion highlighted that some SMEs do not have a full understanding of the shared savings model and that some ESCOs have not been able to explain it to their potential clients clearly during sales meetings clearly. This can lead to SMEs mistrusting ESCOs which results in lack of action. Despite this there does seem to be some appetite among SMEs for considering such a model as it can reduce the financial risk whilst providing additional benefits: *“...the ESCOs were not clear in explaining to us the concept of sharing saving, however we are quite ready to reconsider the opportunity...”*

3.3.2 Learning Points for SPEEDIER

- SPEEDIER must be presented as a low risk way of investing in energy efficiency. The self-financing mechanism is one way to do this. A free energy assessment, or showing how the SPEEDIER Expert can be paid from the savings identified can further reduce the risk from the point of view of the SMEs.
- There is a misconception among SMEs that all ECMs have a payback period of more than 3 years and that the risk to their investment is high. This combined with the low priority nature of energy leads to inaction.
- The SPEEDIER self-financing mechanism could be a key motivating factor that and demonstrating that SPEEDIER Experts are paid from the savings identified by the energy audit could persuade SMEs to participate in the SPEEDIER Service as it removes financial risk.
- As there are no regulations that require SMEs to undertake energy audits, the SPEEDIER Expert will need to find other ways to persuade SMEs of the benefits of managing energy.
- The SPEEDIER Expert should present SPEEDIER to the SME in a way that meets their needs, perhaps first stressing the wider benefits of energy efficiency in meeting business targets rather than the economic benefits or return on investment.
- The service needs to be sold to SMEs on the wider benefits of energy efficiency in order to engage them before challenging these widely held beliefs. A discussion about reducing waste, improving comfort or setting themselves apart from their competitors could be a more successful way of engaging with SMEs. This approach may help to persuade SMEs to act on the opportunities identified.

3.4 Romania

Partner, AEEPM, organized a focus group on December 9th, 2019, in Bucharest, with 8 participants including SMEs, experts and stakeholders in the SPEEDIER Service value chain. Due to technical difficulties with the audio recording, a full transcript of the discussion is not available for analysis. However, the key learning points recorded by the focus group moderator are detailed below:

- When working with large organisations, energy auditors need to involve more people from within the organisation to collect all the data required for the energy audit, which can be a limitation. When working with SMEs, there is more flexibility because the energy auditor needs to engage with fewer individuals to gather the data they need. This makes the data gathering exercise easier.
- Most of SMEs are aware that energy has a significant impact on the operating cost of their business. Energy should be more closely linked to the real and urgent needs of the business in terms of management of resources, including energy as a resource.
- Participants agreed that when an energy audit is performed correctly, the results generate the necessary measures for improvements in energy efficiency.

- In general, the participants agreed that energy auditing is mandatory to improve the knowledge of the baseline energy consumption and to enable better implementation of suitable measures and solutions.

Taking this point further, it was generally agreed that energy auditing is necessary, but it is not enough on its own. More assistance is needed to drive the implementation of ECMs that will generate savings for the business. The approach will change depending on the activity.

- The participants agreed that lack of finance is the main barrier to implementation of the energy audit findings and that financial incentives from National Funding Authorities are needed to speed up the implementation of ECMs.
- Energy auditors commented that they are not directly involved in any government supported schemes. In order to persuade SMEs to implement the energy saving measures, they believe that financial support schemes will be necessary.
- One expert stated that *“As an expert, I try to have very close communication with SMEs owners after each step of audit, so they can adopt a change on attitude on the way of doing business and to avoid unusual or unjustified energy costs.”*
- One expert commented that energy auditors must keep up to date with local and national sustainable development programs and finance schemes for projects related to energy sources in order to be able to inform their SMEs customers.
- Implementation of energy efficiency measures and integrated energy management can have a positive effect when they are well understood, professionally implemented and when there is a good relationship between expert/manager and client/beneficiary.

4 Conclusion

The focus groups carried out in each of the pilot regions provide deeper insights into the attitudes and opinions of SMEs and energy experts on energy auditing and the challenges to implementing ECMs at SMEs. These insights will be used to enhance the SPEEDIER Service and ensure that it is tailored to the needs of the stakeholders involved. Several key concepts were repeated by focus group participants across the pilot regions, showing that there are a number of similarities between SMEs and energy experts in the different participating countries. The key learning points for SPEEDIER are summarised in Table 1.

Table 1: Key learning points for SPEEDIER

Finding from focus group	What does this mean for SPEEDIER?
SMEs are more likely to take action on issues that: are important to their existing customers; enable them to attract new customers or; enable them to score more highly on public sector tenders.	SPEEDIER experts will need to communicate the advantages of the SPEEDIER Service in the manner most likely to encourage action. This may mean talking less about energy efficiency or costs and more about demonstrating their commitment to minimising their environmental impact to improve brand reputation / corporate image.
SMEs would like to receive some form of certification to allow them to demonstrate the positive actions they have taken on minimising energy consumption to their client.	The SPEEDIER team could consider issuing a certificate to SMEs that take part in the Service that confirms that they have participated and the amount of energy savings they have achieved.
The term 'Energy Audit' has negative connotations for SMEs.	SPEEDIER experts will use term 'Energy Assessment' or 'Energy Diagnosis' instead of 'Energy Audit', during the delivery of SPEEDIER Services.
SMEs consider investing in an energy audit to be risky because they must pay for the audit without knowing whether the identified ECMs will result in savings that justify the cost of the audit.	The SPEEDIER team could consider a staged approach to energy auditing: In stage 1, a simple one day opportunities assessment identifies how much potential there could be for energy and cost savings; in stage 2, a more detailed energy assessment looks in more detail at the most suitable ECMs and quantifies the likely cost, savings and payback period. With this approach, the SME only needs to commit to paying for 1 day of the SPEEDIER Expert's time to assess the size of the opportunity and is under no obligation to commit to paying for a more detailed analysis. This removes the perceived risk that the audit may not identify savings that will cover the SPEEDIER Expert's costs.
Senior management buy-in is essential to having an energy audit and implementing any ECMs. However senior managers lack the time and knowledge of energy to give it any attention, making energy a low priority for most SMEs.	The SPEEDIER Expert will need to engage with senior management at an early stage, identify their key priorities and present SPEEDIER as a tool that can help to meet those key priorities. E.g. if a major concern is winning new customers, present SPEEDIER as a way to create a unique selling point; if staff retention / motivation is critical, present SPEEDIER as an opportunity to improve staff comfort and productivity at work.
Both SMEs and energy experts place high value on the independence of the energy	The SPEEDIER Team originally intended that the SPEEDIER Expert would provide project management

<p>expert with whom they engage. For the SME, this gives peace of mind that the expert is acting in their best interests. For the energy expert, this removes any liability should any installed equipment not perform as expected.</p>	<p>support through the implementation of ECMs. If this proves unacceptable to either SMEs or SPEEDIER Experts, the Experts could instead review the independent quotes received to verify that the predicted savings from each ECM will be achieved in practice. This introduces some additional risk that the SME will not take action due to lack of time or lack of knowledge, which is what SPEEDIER intended to avoid.</p>
<p>SMEs and experts agree that engaging with staff at all levels is important for achieving energy efficiency savings. This includes raising awareness among staff of actions they can take to reduce energy consumption, and persuading them to take action.</p>	<p>The SPEEDIER capacity building events should not only include information about how to save energy but also include why it is important for staff to take action. The SPEEDIER Expert will provide training and capacity building to staff at all levels in each business supported. Staff will also have access to a wide range of training materials including a mobile app to help improve knowledge and understanding of energy related issues. This should focus on the non-energy benefits such as comfort, sustainability, customer requirements. Staff should be encouraged to identify energy saving measures themselves to allow them to take ownership of the ECM and to ensure that it is implemented in a way that complements the work flow, rather than requiring extra effort. The SPEEDIER team could also consider including some kind of reward scheme as an incentive for staff to take action e.g. a financial reward from savings, recognition in the form of a certificate, instant feedback on performance in a gamification style or other privileges that amount to a reward.</p>
<p>It is difficult to persuade staff to take action on energy efficiency because they have other priorities and there is no incentive to do so.</p>	<p>SPEEDIER will develop an interactive mobile application to be used as an awareness and capacity building tool for staff at SMEs. The SPEEDIER team should consider how to ensure that staff download the app and continue to use it in the longer term. Some options for consideration could include using the app to record energy saving ideas from staff, using gamification techniques to encourage people to engage with the app, reward employees by giving public recognition of their achievements, using quizzes, surveys and notifications as tools to inform staff and check knowledge and understanding.</p>
<p>In general, SMEs identify lack of finance or poor return on investment as one of the key barriers to implementing energy efficiency measures.</p>	<p>The SPEEDIER self-financing mechanism ensures that SMEs do not need any up front capital to begin making savings as long as the SME is prepared to ring-fence and re-invest the savings so SPEEDIER Experts should use as part of their value proposition. In addition to this, SPEEDIER Experts will be able to advise on grant schemes, tax incentives and low interest loans that are available to SMEs in each country. These can add to the revolving energy efficiency fund. Furthermore, the SPEEDIER Expert should focus on the non-energy benefits of energy efficiency in terms of improved brand reputation, increased building value, better staff comfort leading to healthier staff and higher productivity, reduced maintenance, ability to score highly on public</p>

	sector tenders, competitive advantage etc. as equally valuable but less tangible benefits of energy management.
Energy efficiency is a low priority for SMEs compared to other business needs and activities.	It is critically important for the success of SPEEDIER that the Service is promoted to SMEs on the basis of the wider benefits of energy efficiency, as these are more likely to persuade the SME to take action. This is one of the critical aspects that should be included in the training for SPEEDIER Experts and SPEEDIER Trainers. The engagement should focus on identifying the problems of the SME, then describing how SPEEDIER will help to solve that problem e.g. a unique selling point that sets them apart from competitors, increased staff satisfaction and therefore greater productivity, reducing waste etc. The SPEEDIER value proposition needs to be developed with this in mind.
There is some scepticism from SMEs and energy experts on the effectiveness of the shared savings model and the ring fencing mechanism.	The SPEEDIER team should consider using different business models as appropriate for the market and particular requirements of the SME and experts in question. This may involve for example: 1) taking an ESCO style approach where the energy audit is offered free of charge and the payment comes from the savings once ECMs have been implemented; 2) ring-fenced savings being used to pay the fee of the experts first, up to the agreed amount; 3) recording monthly rather than annual savings; 4) taking a staged approach to implementation and payment in order to build trust between SPEEDIER Expert and client; 5) a combination of payment methods as appropriate.
SMEs are generally not aware of local/national support schemes for energy efficiency measures. In cases where they are aware of support schemes, most SMEs are sceptical of their usefulness as they are seen as overly complex and bureaucratic.	SPEEDIER Experts will be able to advise on local/national government's financing instruments like grant schemes, tax incentives and low interest loans that are available to SMEs in each country. They should also handle the applications for such incentives where possible and appropriate to remove the hassle for SMEs.

Even allowing for the limitations of the undertaking, the focus groups have shown that there are several similarities between SMEs in the different pilot regions. The same topics of discussion have come up in each region concerning the financing of energy audits and ECMs, the perceived risk of committing to pay for an audit without being certain that energy savings can be achieved, the lack of staff awareness and cultural barriers preventing action, the low priority nature of energy for SMEs, the lack of trust of government incentives and support schemes and uncertainty around the shared savings approach and the business model of ring-fencing and reinvesting savings. These are all topics that the SPEEDIER team must now consider and address as they define the SPEEDIER Service going forward. A set of recommendations for the SPEEDIER Service will be defined in Deliverable 2.5 and the final SPEEDIER Service will be defined in work package 4, Deliverable 4.1.

5 Annex 1 Focus Group Survey Questions for SMEs

SPEEDIER Focus Group with SMEs on experiences of energy auditing and implementing energy efficiency measures in their business

Information Sheet

Thank you for considering participating in this research project. The purpose of this document is to explain to you what the work is about and what your participation would involve, so as to enable you to make an informed choice.

The purpose of this study is to gain an understanding of the market for energy auditing, including the drivers and barriers that could impact on the level of uptake of energy audits and subsequent implementation of energy efficiency measures. Should you choose to participate, you will be asked to take part, along with other participants from different organisations, in a focus group which will be facilitated by a member of the SPEEDIER research team. This focus group will be audio-recorded, and is expected to take 30-45 minutes to complete.

Participation in this study is completely voluntary. There is no obligation to participate, and should you choose to do so you can refuse to answer specific questions, or decide to withdraw from the focus group. Once the focus group has been concluded, you can choose to withdraw your details at any time in the subsequent two weeks.

Once the focus group is completed, the recording will immediately be transferred to an encrypted laptop and wiped from the recording device. The data will then be transcribed by the researcher, and all identifying information will be removed. Once this is done, the audio-recording will also be deleted and only the anonymized transcript will remain. This will be stored on the IERCs Projects Drive on the servers of the Tyndall National Institute which is part of University College Cork. The data will be stored for 10 years. The information you provide may contribute to research reports, research publications and/or conference presentations.

All of the information you provide during the focus group will be kept confidential and anonymous by the researcher running the session, who will make it available only to members of the SPEEDIER Project Consortium. The only exception is where information is disclosed which indicates that there is a serious risk to you or to others. Please be aware, however, that while we can guarantee that we will maintain confidentiality, we cannot guarantee that other

participants in the focus group will do the same. Therefore, we would advise you not to share any commercially sensitive information during the discussion.

This study has obtained ethical approval from the UCC Social Research Ethics Committee.

If you have any queries about this research, you can contact the SPEEDIER Project Coordinator at jo.southernwood@ierc.ie.

If you agree to take part in this study, please sign the consent form overleaf.

Consent Form

I.....agree to participate in the SPEEDIER Project's research study.

The purpose and nature of the study has been explained to me in writing.

I am participating voluntarily.

I give permission for my focus group with the SPEEDIER Project Team to be audio-recorded.

I understand that I can withdraw from the study, without repercussions, at any time, whether before it starts or while I am participating.

I understand that I can withdraw permission to use the data within two weeks of the focus group, in which case the material will be deleted.

I understand that anonymity will be ensured in the write-up by disguising my identity. I also undertake to maintain the confidentiality of the group.

I understand that disguised extracts from the focus group may be quoted in the research reports and any subsequent publications if I give permission below:
(Please tick one box:)

I agree to quotation/publication of extracts from the focus group

I do not agree to quotation/publication of extracts from the focus group

Do you consent to take your pictures and videos and use them in SPEEDIER publications/newsletters?

Yes

No

Signed :

Date:

PRINT NAME:.....

Focus Group Discussion Question

- 1) How familiar are you with the energy auditing process?
- 2) Are you aware of any existing supports schemes provided by the local or national government the government that are aimed at increasing uptake of energy audits and implementation of energy efficiency measures in the non-domestic sector?
- 3) If you've used any of these local or national government support services, tell us about your experience e.g. what were your favourite and least favourite aspects of these services?
- 4) What influences your decision on whether to undertake an energy audits and/or implement energy conservation measures?
- 5) What benefits do you anticipate that having an energy audit and implementing energy efficiency measures would bring to your business?
- 6) What barriers or challenges would prevent you from undertaking an energy audit or implementing energy efficiency measures in your business?
- 7) What drivers or incentives would make you consider undertaking an energy audit or implementing energy efficiency measures in your business?
- 8) If a service were to be offered to you where energy management of your business could be outsourced to a certified specialist energy advisor who would build a long term relationship with your business, undertake an energy audit, recommend the most suitable energy efficiency measures to implement, project manage their implementation, assist in accessing finance to pay for the installation of energy efficiency measures, provide training on energy related issues to your staff and take a payment based on the level of savings achieved (i.e. performance related payment), would you consider using this service and why?
- 9) Is there anything else you would like to share with us relating to your experience of undertaking an energy audit or implementing energy efficiency measures in your business?

6 Annex 2 Focus Group Survey Questions for Stakeholders

SPEEDIER Focus Group with Stakeholders in the Energy Efficiency Value Chain on their experiences of working with SMEs

Information Sheet

Thank you for considering participating in this research project. The purpose of this document is to explain to you what the work is about and what your participation would involve, so as to enable you to make an informed choice.

The purpose of this study is to gain an understanding of the market for energy auditing, including the drivers and barriers that could impact on the level of uptake of energy audits and subsequent implementation of energy efficiency measures. Should you choose to participate, you will be asked to take part, along with other participants from different organisations, in a focus group which will be facilitated by a member of the SPEEDIER research team. This focus group will be audio-recorded, and is expected to take 30-45 minutes to complete.

Participation in this study is completely voluntary. There is no obligation to participate, and should you choose to do so you can refuse to answer specific questions, or decide to withdraw from the focus group. Once the focus group has been concluded, you can choose to withdraw your details at any time in the subsequent two weeks.

Once the focus group is completed, the recording will immediately be transferred to an encrypted laptop and wiped from the recording device. The data will then be transcribed by the researcher, and all identifying information will be removed. Once this is done, the audio-recording will also be deleted and only the anonymized transcript will remain. This will be stored on the IERCs Projects Drive on the servers of the Tyndall National Institute which is part of University College Cork. The data will be stored for 10 years. The information you provide may contribute to research reports, research publications and/or conference presentations.

All of the information you provide during the focus group will be kept confidential and anonymous by the researcher running the session, who will make it available only to members of the SPEEDIER Project Consortium. The only exception is where information is disclosed which indicates that there is a serious risk to you or to others. Please be aware, however, that while we can guarantee that we will maintain confidentiality, we cannot guarantee that other

participants in the focus group will do the same. Therefore, we would advise you not to share any commercially sensitive information during the discussion.

This study has obtained ethical approval from the UCC Social Research Ethics Committee.

If you have any queries about this research, you can contact the SPEEDIER Project Coordinator at jo.southernwood@ierc.ie.

If you agree to take part in this study, please sign the consent form overleaf.

Consent Form

I.....agree to participate in the SPEEDIER Project's research study.

The purpose and nature of the study has been explained to me in writing.

I am participating voluntarily.

I give permission for my focus group with the SPEEDIER Project Team to be audio-recorded.

I understand that I can withdraw from the study, without repercussions, at any time, whether before it starts or while I am participating.

I understand that I can withdraw permission to use the data within two weeks of the focus group, in which case the material will be deleted.

I understand that anonymity will be ensured in the write-up by disguising my identity. I also undertake to maintain the confidentiality of the group.

I understand that disguised extracts from the focus group may be quoted in the research reports and any subsequent publications if I give permission below:

(Please tick one box:)

I agree to quotation/publication of extracts from the focus group

I do not agree to quotation/publication of extracts from the focus group

Do you consent to take your pictures and videos and use them in SPEEDIER publications/newsletters?

Yes

No

Signed:.....

Date:

PRINT NAME:.....

Focus Group Discussion Questions

- 1) Tell us about the differences you have experienced between working with a large enterprise and working with an SME on an energy auditing project.
- 2) When you are dealing with SMEs what is the level of awareness among the business owners on the importance of managing energy in their business?
- 3) When working with SMEs what are the main challenges and barriers that you face when persuading them to undertake an energy audit or implement energy efficiency measures?
- 4) In your experience what are the main drivers or incentives that persuade SMEs to undertake an energy audit or implement energy efficiency measures?
- 5) In your experience what influences or motivates decision makers at SMEs to undertake an energy audit or implement energy efficiency measures?
- 6) Are you aware of any existing supports schemes provided by the local or national government the government that are aimed at increasing uptake of energy audits and implementation of energy efficiency measures in the non-domestic sector?
- 7) If you've supported any SMEs in accessing any of these local or national government support services, tell us about your experience e.g. what were your favourite and least favourite aspects of these services?
- 8) In your opinion, what further initiatives do you think the local or national government should implement (if any) to encourage SMEs to undertake energy audits and then go on to implement the recommended energy conservation measures?
- 9) Would you consider offering a package of energy management services to SMEs, including an energy audit, advice on the most appropriate energy saving measures to implement, staff training, assistance to access finance, and management of the implementation of energy efficiency measures, using a share of savings model? i.e. you are paid a percentage of the value of the savings on the SME's energy bills that you achieve. Why would you consider or not consider this approach?
- 10) Is there anything else you would like to share with us relating to your experience of undertaking energy audits for SMEs or assisting them to implement energy efficiency measures?