



# Energy Efficiency in SMEs: Success Factors and Obstacles



# CHANGE – Chambers Promoting Intelligent Energy for SMEs

The present survey was carried out in the framework of CHANGE.

The CHANGE project helps SMEs optimise their energy use by developing a European network of intelligent energy advisors at Chambers of Commerce and Industry (Chambers) and by kick-starting/enhancing concrete assistance to SMEs. The project builds on the traditional role of Chambers as “first port of call” for SMEs.

About 60 staff members from local and regional Chambers in 12 European countries have undertaken training and exchanges of experience to obtain basic knowledge about energy efficiency and cost-efficient applications of renewable energy sources. These Chambers act as first ports of call for SMEs in energy efficiency matters, facilitating their access to information, organising workshops and information events and encouraging SMEs to take energy efficiency pre-checks. Thus, they bridge the gap between SMEs and more specialised consultancy and technologies available on the market.

Under the coordination of EUROCHAMBRES, the European Association of Chambers of Commerce and Industry, the project has a 24 month duration, from September 2008 to August 2010. CHANGE is supported by the EU’s Intelligent Energy Europe (IEE) programme.



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March 2010

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# 1 Executive summary

To reach the EU's ambitious "20-20-20" goal (reduce greenhouse gases by 20%, reduce energy consumption by 20% and increase the share of renewable energies in energy consumption by 20%) by 2020, the active engagement of companies of all sizes is essential. Businesses recognise the importance of fighting climate change and the opportunities deriving from energy efficiency. At the same time, the economic and financial crisis, lack of awareness and information or lack of time result in many opportunities to save energy being under exploited.

Businesses in 12 European countries were surveyed to assess and improve information and services provided to companies.



## **Main survey findings and recommendations:**

### **Energy expertise: lacking in smaller companies**

While companies of all sizes and sectors are aware of the importance and benefits of energy efficiency, small companies in particular often do not have the capacity to allocate the responsibility of energy issues to one member of staff. Thus, more information has to be targeted at SMEs and sector specific information has to be easily available.

### **Cost savings: main incentive for energy efficiency**

Companies across all sectors are taking energy efficiency measures, mainly related to staff and non-technology specific, and not requiring large up-front investment. The cost reduction potential was rated as the most important reason for energy efficiency. The financial benefits of this relatively accessible and inexpensive measure must be conveyed more effectively to businesses.

### **Financial factors: main obstacles to investments in energy efficiency**

Own resources and traditional forms of funding, such as bank loans, are the most common sources. Besides the effects of the economic climate, lack of knowledge or awareness seem to constrain the use of other forms of funding, such as energy contracting. More information on these options and their benefits must be provided. Though companies are implementing soft measures and investing in infrastructure or processes to become more energy efficient, further measures are needed if the EU is to reach its 2020 goal to increase energy efficiency by 20%.

### **Energy audits: less frequent in small companies**

While 93% of companies perceive energy audits as useful, only 25% of them indicated that they have undertaken one. The percentage is higher with larger companies and in those countries where funding is available for such checks. Energy audits have to be made more easily accessible for SMEs, e.g. through public funding.

### **Energy control: still not widely used**

The large majority of companies perceive energy measures to be beneficial, but only one third actually monitor their impact. More than 50% of the interviewed companies registered savings of over 10%, indicating the large potential. Energy controlling or energy management systems are still not widely used, even though these help to measure and consequently better control and optimise energy use. The use of SME friendly systems has to be further encouraged and the benefits highlighted.

### **The role of Chambers: provide information and services**

Information and services on energy topics are provided by a large variety of organisations. Chambers are already being widely consulted, but companies indicated the need for more activities and services. Chambers should consider ways to develop further the energy information and services they offer to SMEs, tailoring them to specific national or regional needs.

### **Energy contracts: hidden possibilities to save costs**

Negotiating a better energy contract or changing electricity/gas supplier can further help to reduce energy costs. This is already being done by a number of companies, but there is still room for improvement. Contracts and information have to be transparent and the liberalisation of the electricity and gas market completed and effectively communicated.

### **Renewable energies: under exploited by companies**

The low percentage of companies using renewable energy sources can be linked to the additional measures needed to increase investments in this area, such as promotion of energy consultancy to help SMEs identify whether and how renewable energies can be harnessed in an economically beneficial way at a certain business location, and in some cases less complicated permit procedures.

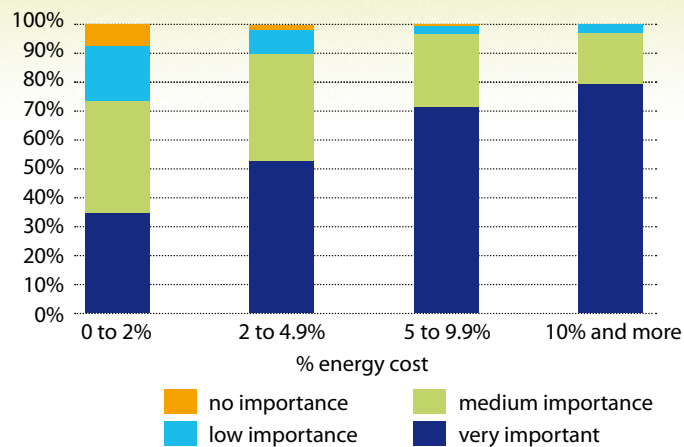
## 2 Attitudes and approaches to energy efficiency

### 2.1 Majority of companies identify energy as an important issue

Companies were questioned on how importantly they rate energy.

The importance of energy costs is greater, the higher the share of energy in a company's total costs. Companies with energy costs representing 10% or more of their total costs, rated energy as an important topic. There is little correlation between turnover and the importance attached to energy.

#### Importance of energy topic in relation to share of energy costs



### 2.2 Responsibility for energy issues rises with size of company and energy costs

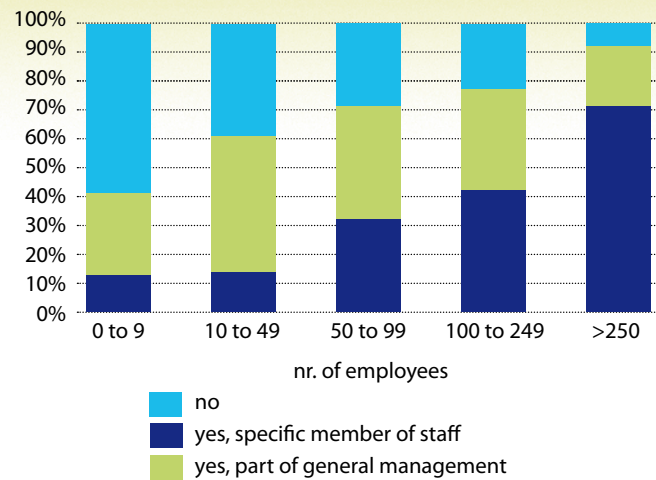
Companies were questioned on whether a specific member of staff is entrusted with energy-related issues. While the majority of companies perceive energy to be an important topic, 41% stated that responsibility for energy issues is not linked to a specific person. 22% have a member of staff responsible, while in 37% of companies, the responsibility lies with the general management.



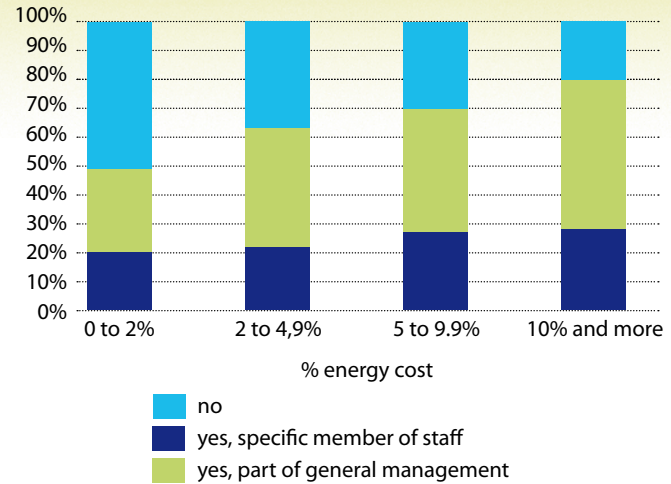
There is a clear correlation between the size of the company and its attention to energy consumption. The higher the number of employees, the higher the chance that energy responsibilities lie with one identified employee. Smaller companies are less likely to have a member of staff responsible for energy issues and are more likely to need external assistance and input for energy-related issues.

Similarly, the more energy intensive a company is, the more likely it is that a member of staff is devoted to energy topics. Despite the high importance of energy costs to SMEs, they generally do not have time or resources to devote to this area.

#### Person responsible for energy issues in relation to size of company



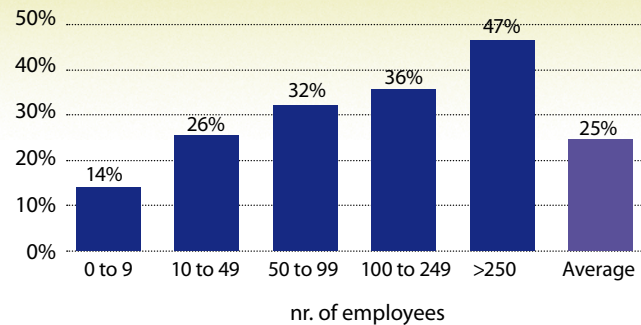
#### Person responsible for energy issues in relation to % of energy to total company costs



### 2.3 A quarter of companies have taken an energy audit

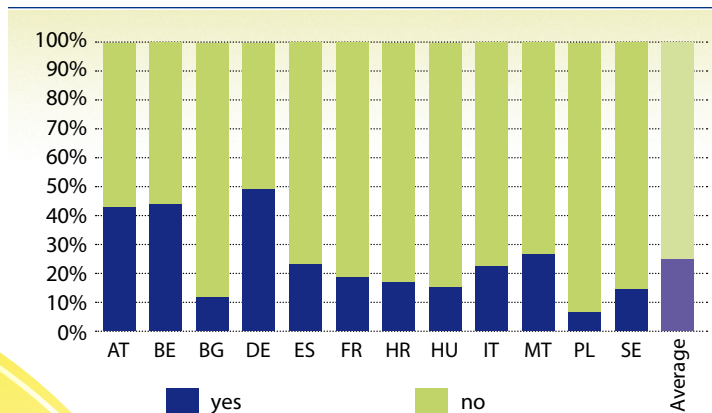
A quarter of companies have undertaken an energy audit or used an energy consultant within the last three years. The percentage of energy audits undertaken increases with company size and energy consumption.

#### Energy audit undertaken by size of company



In countries such as Austria, Belgium or Germany, where companies receive public funding for energy audits or make use of energy consultants, the percentage of those having taken such a service is considerably higher than in those countries where such schemes are not offered.

#### Energy audit taken by country



#### 2.4 Staff information on energy saving measures most common

Businesses were questioned on the types of energy efficiency measures which they have already implemented or which they are planning.

Measures informing and motivating staff to apply energy saving behaviour have been implemented by half of the companies, with an additional 12% planning such measures. When investing in new equipment, 45% of companies take energy consumption into consideration.

Three most implemented measures:

- Lighting (use of efficient light bulbs, installation of timers etc.): 48%
- Heating / cooling / air-conditioning / ventilation of building: 43%
- More efficient office equipment (computers, printers, copiers etc): 39%

The top three implemented measures are applicable across all sectors and are not linked to certain technologies. Measures such as the introduction of combined heat and power systems (co-generation) or improvement of compressed air systems (detection of leakages, optimisation of pressure etc.) usually require consultation by experts and/or larger financial investments.



# 3 Reasons for energy efficiency

Companies were asked what motivates them to take energy efficiency measures. The most common reason is to reduce energy bills.

Reasons for taking actions to increase energy efficiency:

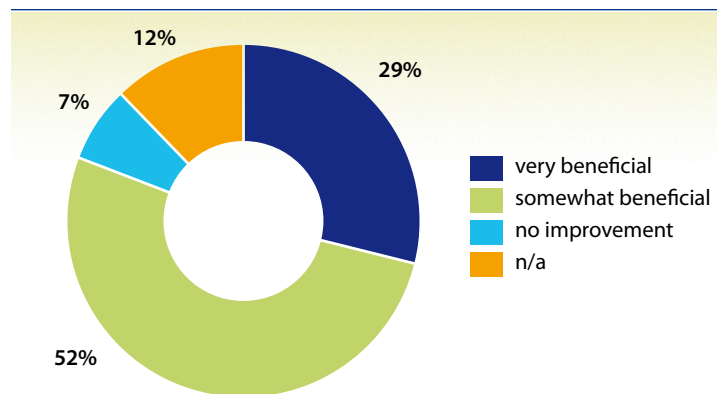
- Reduction of energy bill (90%)
- Prepare for future increases in energy prices (83%)
- Contribute to fight against climate change / protection of environment (75%)
- Improve image (65%)
- Increase safety of operations (55%)
- Increase value of building through efficient facilities (45%)
- Improve product quality (43%)

Together with financial reasons linked to energy consumption, reasons such as protection of the environment and image are also considered important. While reducing the company's energy bill is a 'quick-win', investing in the image has positive long term effects and can bring strategic advantages.

## 3.1 Energy saving measures perceived as beneficial

81% of businesses perceived savings as a result of energy efficiency measures.

### How energy efficiency measures are perceived

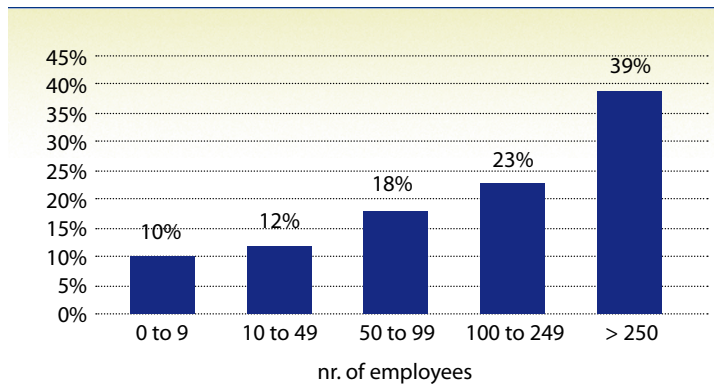


### 3.2 Energy Controlling: what can be measured can be improved

While the majority of companies perceive energy efficiency measures to be (somewhat) beneficial, only a small proportion actually indicate that they measure their impact. This indicates that energy use is not widely measured and controlled among enterprises. Systems which measure, and partly manage energy use, are available for companies of all sizes and energy consumption level. The idea behind such systems is, the better the management is informed about the energy use, the better one can evaluate the potential for savings and in turn measure them.

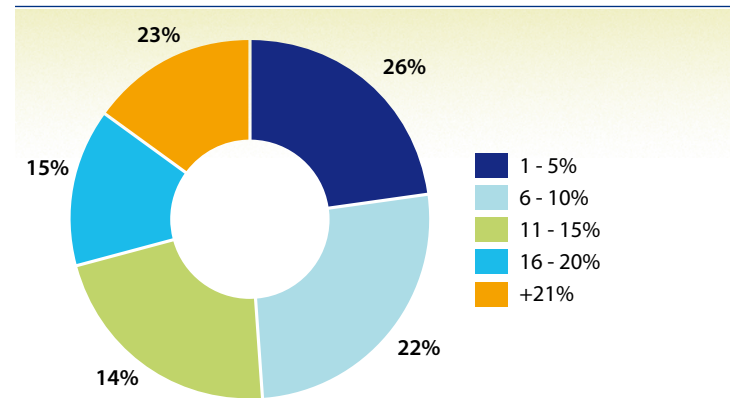
Energy management systems have been implemented by 16% of the questioned companies and are being planned by a further 13%. One out of five companies consider such systems relevant, but are currently not planning to implement them, while one third has not considered such systems. The percentage of energy management systems in place increases with the size of company.

#### Energy management system in relation to size of company



33% of the interviewed companies measure and quantify the effects of energy efficiency measures. 45% of the companies measuring their energy savings (16% of the total companies interviewed) disclosed their energy savings in the survey. These savings range from 1% to 80%. More than half of the companies indicated savings exceeding 10% of their total energy costs.

#### Energy savings measured in % of costs



## 4 Financing energy efficiency

### 4.1 Companies turn to traditional sources for funding

Companies were asked to indicate their two main sources of funding when investing in energy efficiency measures. The main source listed was own resources (76%), followed by loans (6%), while 15% of the interviewed companies stated that the implementation of energy efficiency measures did not involve any major investments. Neither company size, nor turnover, has an impact on the type of funding used.

When the most frequent investments currently undertaken are considered, i.e. staff information and lighting, it is notable that both are usually less cost-intensive. This underlines the preference for investments in low-cost areas, which require less funding. Considering the financial background at the time of the survey (financial and economic crisis), it is not surprising that few high investments have been made recently in energy efficiency. Taking up loans for investments into energy efficiency measures leaves less scope for investments in other, maybe strategically important, areas. Reflecting this, about 30% of the respondents to a separate EUROCHAM-BRES survey on the effects of the crisis, conducted among 200 European businesses in November 2009, said that they will generally reduce their investment activities over the next six months. According to a recent study (Prognos 2010), two-thirds of German SMEs have postponed planned energy efficiency measures or only partially implemented them due to the economic crisis.<sup>1</sup>

A possible reason for the low percentage of companies making use of energy contracting<sup>2</sup> might be a lack of knowledge or awareness of this financing opportunity.

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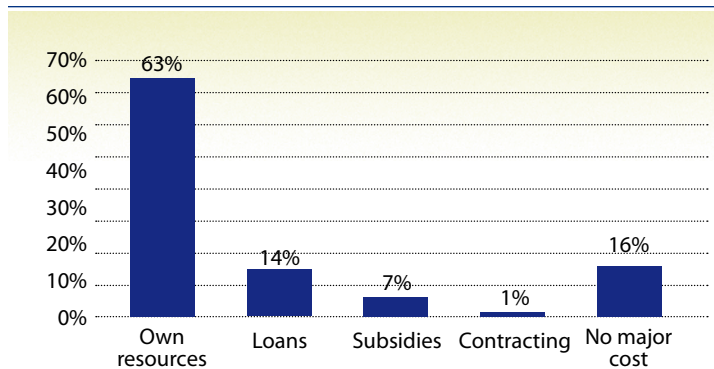
1 „Rolle und Bedeutung von Energieeffizienz und Energiedienstleistungen in KMU“ (Berlin, 05.02.2010) KfW Bankengruppe/Prognos AG

2 **Energy Contracting** means that an external company (e.g. an energy service company) pays for the investment in energy efficiency measures and is reimbursed by receiving monthly payments, which the company is better able to afford due to its lower energy bills.



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#### Funding sources for energy efficiency measures



#### 4.2 Obstacles to investments in energy efficiency

Companies were asked to indicate the main obstacles for taking (further) energy efficiency measures. "Financial issues" are the main obstacle to investments. This is also reflected by the fact that most already implemented investments are not capital-intensive.

The following reasons were most frequently mentioned as barriers:

- Pay-back period of investments is too long (69%)
- Available funds must be used for more important investments (67%)
- Lack of funding for investments (65%)
- Lack of time / too much other work (57%)

Looking at the four highest rated answers, one clearly sees the link to the acute overall economic situation for the past two years. It suggests the need for alternative funding sources to traditional loans and clear information on investment pay-back periods. Information on low-investment energy saving measures also has to be conveyed to businesses more effectively.

The majority of respondents do **not** regard the following aspects as hindering energy investments. This indicates a general interest and motivation among businesses to become more energy efficient:

- Staff not motivated (75%)
- No possibility / willingness to invest in a rented building (73%)
- Concerns about interfering with production processes (71%)
- Responsibility for energy issues not clearly defined (64%)

## 5 Facilitation and support of businesses

### 5.1 Financial and informative measures are needed to increase energy efficiency

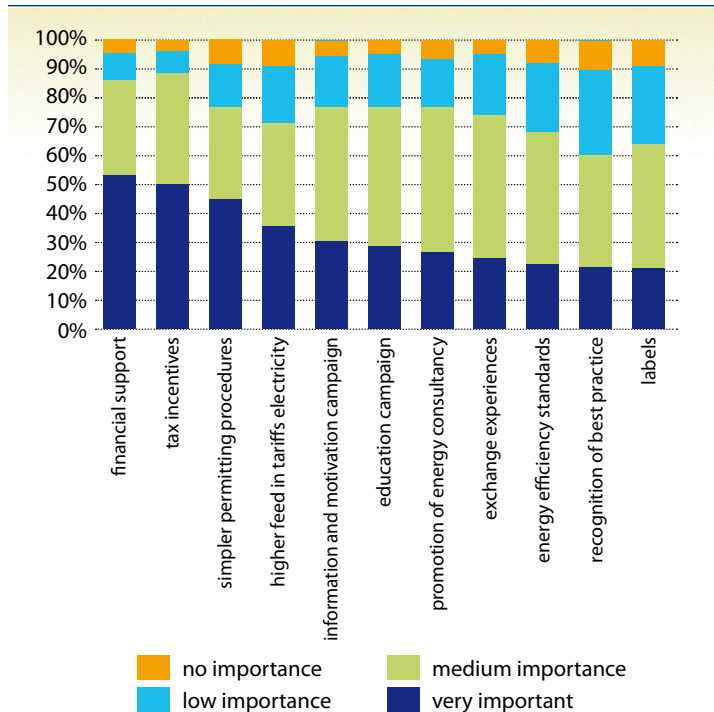
Companies were asked which instruments they consider most important for exploiting the potential for energy efficiency and renewable energies in businesses.

Improving access to finance and tax incentives are seen as the most important points. As mentioned before, the economic crisis has had a strong impact on the financial situation of businesses, and the response to this question may partly be influenced by the timing. Different energy efficiency measures need different types and levels of financial investments. While some measures, such as soft measures, need little or no investment, higher financial input is required if a company wants to exploit other possibilities.

While finance related measures were rated highest, soft measures such as information and motivation campaigns, educational campaigns, promotion of energy consultancy and the exchange of best practice examples were also identified as important.



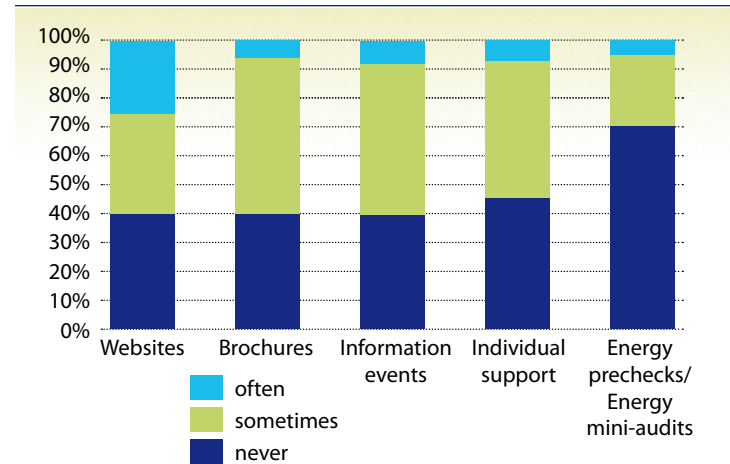
### Rating of instruments to exploit potential for energy efficiency and renewable energy



### 5.2 Chambers the most popular provider of information and support

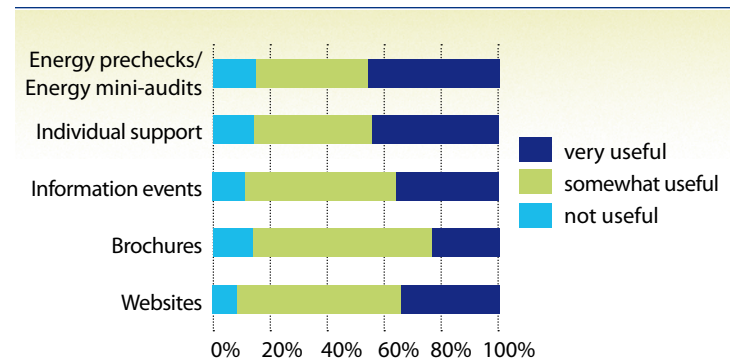
Companies were asked to indicate and assess the forms and sources of support used. An additional focus was attached to Chamber activities, to enable the Chamber network to evaluate and improve its services. Whilst information and support are provided through different sources, these are exploited to varying degrees. Websites and brochures are the most frequently used sources of support and information on energy topics. The larger a company is, the more likely it is to attend events on energy topics. Interestingly, energy pre-checks or energy mini-audits are the least used forms of support.

### Forms of support used by companies



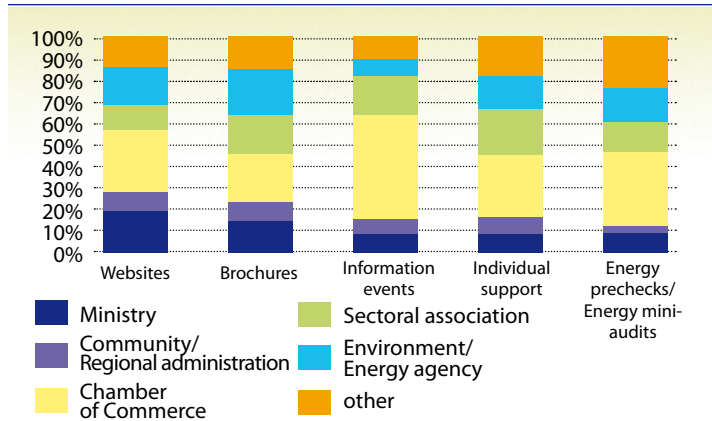
Websites and individual support are rated as the most useful sources of information for companies. Even though only 25% of the companies questioned indicated having taken an energy audit, 93% perceive this to be a 'very' or 'somewhat useful' tool, showing the potential for such measures.

### Rating of sources of support



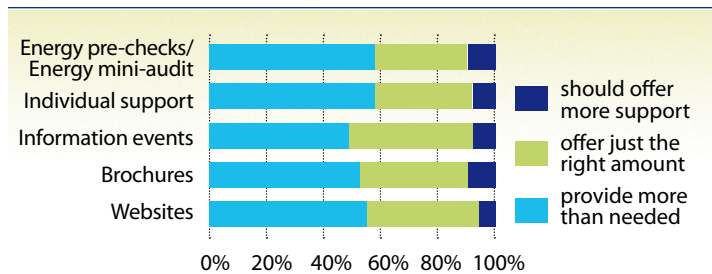
Different service providers and public institutions are used as sources of information and services, with Chambers being the most popular choice.

## Organisations which provide sources of support and information



While services provided by Chambers are already being widely used, there is room for improvement. 33% of companies feel that more support should be offered by Chambers and 24% state that Chambers offer the right amount of services and information regarding energy issues. Only 3% stated that Chambers offer more services than are actually needed.

## Evaluation of Chamber support services

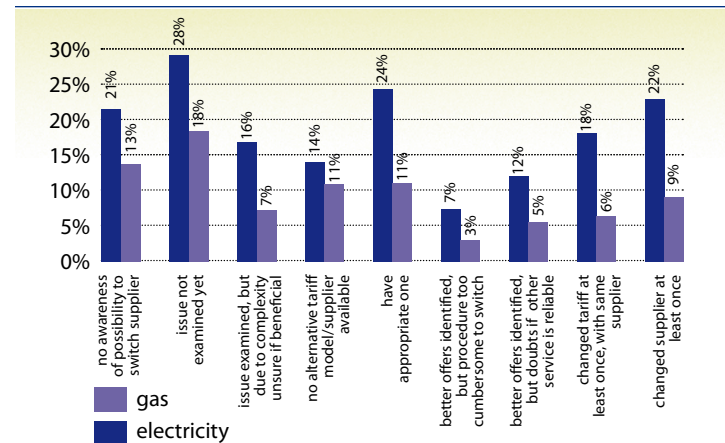


## 5.3 Changing energy supplier can bring additional cost savings

The possibility for companies to change their energy supplier or to renegotiate their tariffs presents a further possibility for companies to reduce their energy costs. Companies were asked if they had examined whether their electricity/gas purchasing contracts could be improved and/or whether they should choose a different supplier to the current one. While a quar-

ter already believe they have the best energy supplier, only 11% state the same with regard to their gas supplier. While the legal framework for the liberalisation of the electricity and gas markets is already established, in practice, changing ones gas supplier remains extremely difficult.

## Electricity / gas purchasing contracts



Main obstacles to changing energy supplier:

Electricity:

- The issue has not yet been examined (28%)
- No awareness of the possibility to switch to a different supplier (21%)
- Issue has been examined, but due to the complexity of offers, it could not be ascertained whether a switch would be beneficial (16%)

Gas:

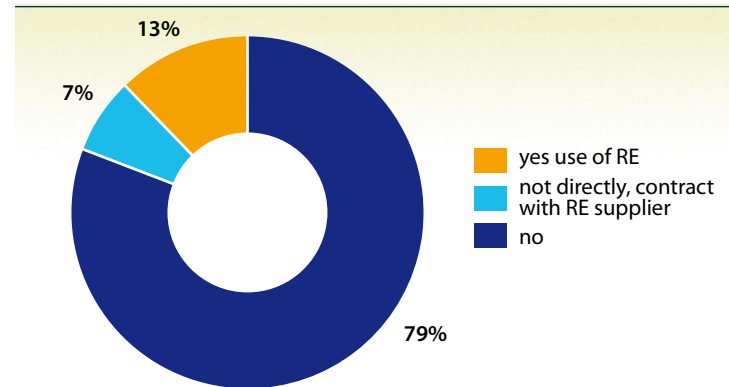
- The issue has not yet been examined (18%)
- No awareness of the possibility to switch to a different supplier (13%)
- There is no alternative tariff model/supplier available (11%)

These figures suggest considerable scope for changing supplier, but also a need for clear, simple information. This also applies to the level of potential savings in relation to other measures; while up to 5% of costs can be saved through changing supplier, the potential cost reduction through low-investment energy efficiency measures are higher and the pay-back even greater if energy prices increase.

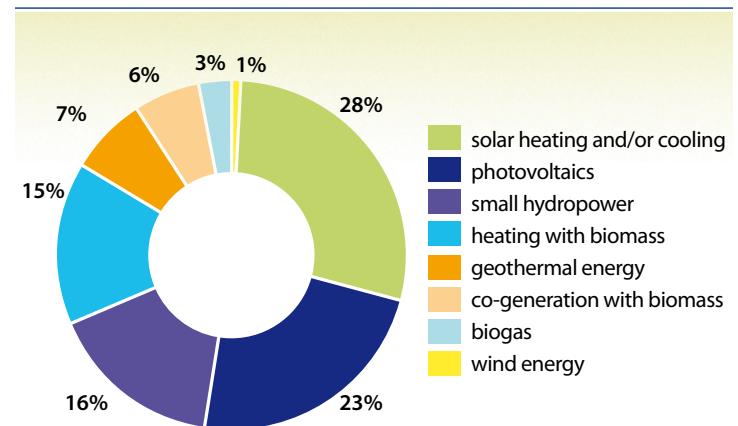
## 6 SMEs and renewables

Companies were asked if they use renewable energies and, if so, which sources. The vast majority of the interviewed companies do not use any form of renewable energy, whilst 7% have a contract with a renewable energy supplier. Amongst the 13% indicating the use of renewable energy sources, the use of solar energy dominates, with 51%.

### Use of renewable energy (RE)



### Types of renewable energy used





# 7 Methodology / Structural analysis

## 7.1 Aim of the survey

The survey focused on the one hand on success factors and barriers for the uptake of intelligent energy activities in SMEs, and on the other hand on the Chambers' role as facilitators.

The survey's two main aims were to:

- Shed light on the factors which influence the uptake of energy efficiency measures or renewable energy sources positively or negatively and therefore provide valuable input for policy makers at national level (who have to draw up, implement and regularly update national energy efficiency action plans), as well as regional and EU levels.
- Provide feedback to Chambers on their activities to enable them to understand better the needs of businesses, especially SMEs, and the priorities their advisors should be setting when continuing their activities during and after the CHANGE project.

The survey was conducted between May and December 2009. The responses of 2154 companies from the following 12 European countries were evaluated.

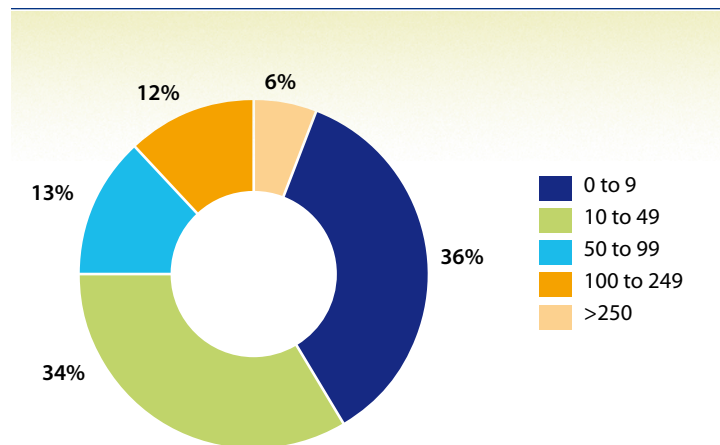
- Austria
- Belgium
- Bulgaria
- Croatia
- France
- Germany
- Hungary
- Italy
- Malta
- Poland
- Spain
- Sweden

## 7.2 Structure of the companies which participated in the survey

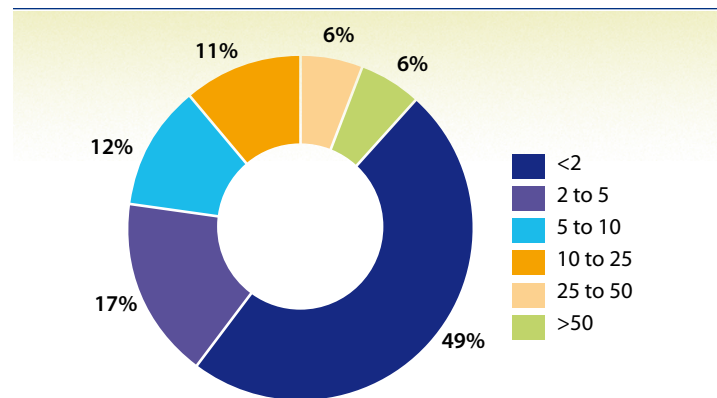
Companies of all sizes and from all sectors participated in this survey. The vast majority of companies interviewed were small and medium enterprises (SMEs), which reflects the European business structure and corresponds with the aim of the study.

A large variety of methods to approach companies were used. Interviews were conducted by phone, or personally at events or company visits. Additionally, the questionnaire was posted on CHANGE project partners' websites to be completed online, or sent out by e-mail. The questionnaire was translated into the national languages of the participating countries. Country specific questions were not evaluated in this report, but at national level.

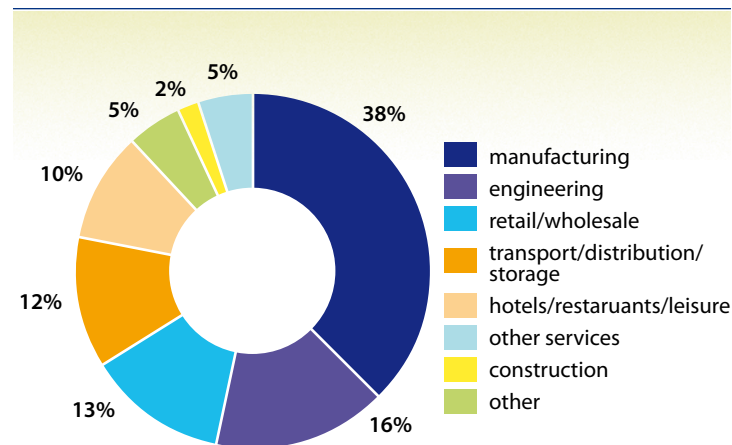
### Respondents – by number of employees



### Respondents – by annual turnover (Mio. EUR)



### Respondents – by sector



## 8 Project partners

### **Coordinator:**

EUROCHAMBRES

The European Association of Chambers of Commerce and Industry

### **Partners:**

- Austria: Austrian Federal Economic Chamber
- Belgium: Federation of Chambers of Commerce and Industry of Belgium
- Bulgaria: Bulgarian Chamber of Commerce and Industry
- Croatia: Croatian Chamber of Economy
- France: Chamber of Commerce and Industry of Marseille-Provence
- Germany: DIHK (Association of German Chambers of Industry and Commerce) Service GmbH
- Hungary: Hungarian Chamber of Commerce and Industry
- Italy: Unioncamere, the Italian Association of the Chambers of Commerce, Industry, Handcraft and Agriculture
- Malta: Malta Chamber of Commerce, Enterprise and Industry
- Poland: Polish Chamber of Commerce
- Spain: High Council of Official Chambers of Commerce, Industry and Navigation of Spain
- Sweden: Chamber of Commerce Mälardalen Service AB



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