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## **ExBESS**

# **Expanding Benchmarking and Energy management Schemes in SMEs to more Member States and Candidate Countries**

**Intelligent Energy – Europe (EIE)**

**EIE/07/103/SI2.466702**

## **Pilot evaluation report**

*Deliverable 6.2*

*Cover report, including appendices 1-5  
(final version)*

This report is composed within Work Package 6 Pilots (leader SenterNovem)

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# 1. Outline of the ExBESS pilot projects (WP6)

## 1.1 Introduction

Between May 2008 and May 2009 SME's participating in pilot projects in 8 European member states have been working with a European energy management e-learning system (including benchmarking) called the BESS toolkit. This (public) report describes the (aggregated) experiences and results during the pilot projects. Specific national information concerning pilot SME's is not included in this report, and is only available to the participants (separate appendix 6).

For an over all report including the development of the BESS toolkit and the impact of the pilot results for SME's, stakeholders and policymakers we refer to our publishable final report downloadable on [www.bess-project.info](http://www.bess-project.info).

The BESS toolkit has been developed in two subsequent projects. (Ex)BESS (2007-2009) is the follow up on BESS (2005-2007), both projects within the Intelligent Energy Europe Programme (IEE), and as such co funded by the EU.

Where BESS stands for "Benchmarking and energy management for SME's", the "Ex" prefix is added to the name of the recent project to express the "expansion" of the BESS toolkit and e-learning system to new member states and new SME sectors. This way also the distinction between the two IEE projects is made.

In the following we propose to the e-learning system and corresponding tools as the BESS toolkit, and to the web site as the BESS website.

## 1.3 Objectives

The objective of the ExBESS pilot projects was to:

"Extend the use of the European BESS energy management e-learning system for SME's (the BESS toolkit), including international benchmarking scheme, as initiated in the preceding BESS project, to more member states and SME sectors."

The BESS toolkit was to be used and tested in pilot SMEs in each of the 8 new participating member states in ExBESS (pilot countries). The goal was to have a minimum of 10 SME's involved per country within one or more of the ExBESS SME sectors. Indicating the performance of the pilot projects the SME's were to:

- Be conscious of the benefits of energy management for their company
- Implement or improve energy management
- Benchmark their energy efficiency
- Validate the BESS toolkit as support to implement benchmarking and energy management

In addition, the pilot projects were to provide a basis for replication and outreach activities in the pilot countries to implement or improve energy management in all SMEs.

## 1.4 Member states and SME sectors involved

The table below shows all participating member states in the ExBESS and BESS projects. Member states (also) involved in BESS conducted pilot projects at the time. In ExBESS the 8 new participants conducted pilot projects. Hence, the BESS toolkit has been used and tested by SME's in 19 member states.

| <b>Participant name</b> | <b>Country</b> | <b>Role in (Ex)BESS</b>                      | <b>Role in BESS</b>             |
|-------------------------|----------------|--|---------------------------------|
| SenterNovem             | Netherlands    | General coordinator                          | Also National pilot coordinator |
| Nepas                   | Norway         | Benchmark development                        | Also National pilot coordinator |
| CRES                    | Greece         | Website hosting and development              | Also National pilot coordinator |
| Centexbel               | Belgium        | National Pilot Coordinator                   |                                 |
| Citeve                  | Portugal       | National Pilot Coordinator                   |                                 |
| Enviros                 | Czech Republic | National Pilot Coordinator, tool development |                                 |
| CNA                     | Italy          | National Pilot Coordinator, promotion        |                                 |
| KAPE                    | Poland         | National Pilot Coordinator                   |                                 |
| ARCE                    | Romantica      | National Pilot Coordinator                   |                                 |
| ECB                     | Slovakia       | National Pilot Coordinator                   |                                 |
| EKODOMA                 | Latvia         | National Pilot Coordinator                   |                                 |
| AEA                     | Austria        |  | National Pilot Coordinator      |
| STEM                    | Sweden         |  | National Pilot Coordinator      |
| SOFENA                  | Bulgaria       |  | National Pilot Coordinator      |
| MOTIVA                  | Finland        |  | National Pilot Coordinator      |
| IDAE                    | Spain          |  | National pilot coordinator      |
| SEI                     | Ireland        |  | National pilot coordinator      |
| JSI                     | Slovenia       |  | National pilot coordinator      |

## **1.5 Tasks in the pilot projects**

Before starting the pilots the BESS toolkit as it was delivered by the BESS project was updated and translated to the national languages of the new member states. The toolkit was actually updated twice. Once before the pilots and once during the pilots, following comments from SME's. These comments mainly concerned the complexity of the toolkit; therefore the toolkit was adjusted accordingly by the introduction of a separate light version of the tools, and by adding several search options. For more information on the development of the toolkit and the e-learning system we refer to the reports in the download section of [www.bess-project.info](http://www.bess-project.info) (Deliverables 3, 4 and 5).

The tasks for preparation and execution of the pilots are described below, following the general procedure in the pilot countries. As a guide for the pilot countries a general pilot plan was developed (see appendix 4). In some cases procedures have been adjusted according to the situation at hand ( see national pilot descriptions in chapter 3).

### **1.5.1 Task 1 Installation national pilot coordination group**

The following parties would be involved in a national pilot co-ordinating group (NPCG):

- the national energy agency
- the industrial sector association,
- individual SMEs (if possible)
- national ESCOs (if available)

Chairman of the NPCG was the National Pilot Coordinator (NPC), that is, the participant in the ExBESS project. The NPCG organised, coordinated and steered the national pilot projects.

### **1.5.2 Task 2 Recruitment of SME's**

The SME's targeted in the ExBESS pilot projects were in the same sectors as in BESS, and extended with SME's in three new sectors. It was contractually agreed that 2 of the new sectors would be non food. The selection of the sectors was based on possible energy saving potentials and on accessibility of the sectors in the newly participating member states in ExBESS. The sectors selected by the ExBESS consortium were:

- Textile (drying and dyeing)
- Dairies
- Bakeries
- Meat processing
- Breweries
- Laundries

Pilot countries chose individually from the sectors above, but in addition to the aim of minimum 10 SME's per country, a minimum of 3 SME's per sector per country was agreed, to ensure the best possible cross-country benefits in particular to get optimal benchmarking results.

Potential SME's were contacted through mailings, phone calls and sometimes through (branch meetings). A fact sheet describing the pilot and its benefits for SME's and branch association was distributed (appendix 5).

Interested SME's were asked to express their commitment to the pilot by a signed letter. Not all of them did, and those who did, were not always participating. There were also SME's who did send a signed letter, but participated non the less.

### 1.5.3 Task 3 Execution of the pilots

After recruitment the pilot projects started with a kick off meeting.

During the kick off meeting the pilot project was explained including the BESS toolkit. Special attention was given to the "Big 5" tools and the benchmark application. The consortium selected the "Big 5" tools considered essential for a basic form of energy management, and pilot SME's were asked to work minimally with these:

1. **Self-assessment checklist** - gives the actual level of energy management just by answering 7 questions
2. **Energy bookkeeping** – this is a system to record, analyse and report energy consumption and costs on a regular basis, one of the first steps towards reducing energy costs.
3. **Monitoring and Targeting (M&T)** – shows how to monitor energy consumption on a detailed (process) level and evaluate the companies energy consumption
4. **Measure list** – overview of energy efficiency measures to be taken, separated into horizontal measure lists and industry-specific measure lists
5. **Energy action plan** – a proposal of how to develop such an action plan with objectives and actions to be taken in a certain period of time

The NPC eventually assisted by a consultant or an Esco coached and supported the companies during the pilot project, including, where needed, follow up workshops, meetings or company visits. All NPC's collected the best practices (if available) from their pilots. These are added to the existing best practices from the BESS project ([www.bess-project.info](http://www.bess-project.info), dashboards).

### 1.5.4 Task 4 Evaluation of the pilot and validation of the BESS toolkit

The results of the pilots were evaluated within each pilot country by the individual SME's and by the NPC. Later the results were evaluated on European level and described in this evaluation report. The validation, or rather endorsement of the BESS toolkit by SME's, branch associations and others in the pilot countries consisted of their expression of acceptance and further use and promotion of the BESS toolkit. The evaluation of the pilots and the endorsement of the BESS toolkit have been integrated. By completing a questionnaire parties involved reported their experiences and findings, and expressed their intention to further use and promotion of the BESS toolkit. Two separate questionnaires have been used: one for individual SME's participating in the pilot projects, and one for the NPC and/or other national parties involved (appendices 1, 2, 3).

The results were incorporated in the (add on to) the BESS user guide and in the (add on to) the BESS guidelines for policy makers (ExBESS Deliverables 7.1 and 7.2, download section [www.bess-project.info](http://www.bess-project.info)).

Results from the pilots were disseminated through meetings and publications in the pilot countries and in a European workshop (list of national and European dissemination activities (deliverables 7.3 and 7.5) download section [www.bess-project.info](http://www.bess-project.info)).

## 1.6 Organisation

The pilot projects were organized on three levels: general coordinator and partners supporting NPC's, national pilot coordinators (NPC) assisted by national pilot coordination groups (NPCG), and the pilot target group, the SME's.

An overview of roles and contributions of the ExBESS consortium within the pilot projects are shown in the table below.

| <b>Participant</b> | <b>Role &amp; Contribution</b>   |
|--------------------|--|
| SenterNovem        | General coordination pilot projects  |
| NEPAS              | Support to users benchmark application<br>Processing collected benchmark data      |
| CRES               | Support to users website, tools<br>Adjustments website, tools                      |
| ENVIROS            | National pilot Coordinator Czech Republic  |
| KAPE               | National pilot Coordinator Poland  |
| EKODOMA            | National pilot Coordinator Latvia  |
| ECB                | National pilot Coordinator Slovakia  |
| ARCE               | National pilot Coordinator Romania   |
| CENTEXBEL          | National pilot Coordinator Belgium (Flemish)                                       |
| CITEVE             | National pilot Coordinator Portugal  |
| CNA                | National pilot Coordinator Italy<br>Support to national and European dissemination |

To prepare the national pilot projects NPC's were provided with a general pilot project plan (appendix 4) developed by SenterNovem and CNA in accordance with the consortium, to be adapted to national circumstances and to be used as guide for the pilot projects.

SenterNovem developed a pilot status report in excel for NPC's to keep track of the progress of the pilot projects, such as the parties involved in the NPCG, the recruitment of SME's and scheduled meetings, workshops and other contact moments with the SME's. Pilot status reports were submitted by the NPC's at the start of the pilot projects, half way and by the end. By the end of the pilot projects national evaluation of the pilots and endorsement of the toolkit were combined, and executed by completion of (separate) questionnaires targeting the participating SME's and the NPC's.

European endorsement of the toolkit has been realized by a formal signing session during EUSEW 2009 by representatives of UEAPME, IEA, EnR Network and CCMI.

## 1.7 Planning

Originally the pilot projects were planned for the period between January and December 2008. Since the first update and translation of the BESS toolkit took more time than foreseen, and some pilot countries had problems recruiting SME's pilots started only in May 2009 or even later. Hence the duration of the pilots was extended to the end of the ExBESS project in May 2009. The table below shows the actual planning of the pilot projects.

| Action  | Planning                        |
|---|---------------------------------|
| Selection Pilot sectors by consortium                               | December 2007                   |
| Translation website + tools   | March, April 2008               |
| Installation National Pilot Coordination Groups (NPCG)              | February 2008                   |
| National pilot and  | February/March 2008             |
| Material pilot participation available in national language         | March 2008                      |
| NPC's presents national pilot plans and actual status to consortium | March 2008                      |
| NPC's practice with toolkit and benchmark                           | March 2008                      |
| Recruitment SMEs  | March 2008                      |
| First Pilot Status report   | May 2008                        |
| ExBESS national/European promotion                                  | Between April 2008 and May 2009 |
| National pilot kick-off meetings                                    | May 2008                        |
| Execution pilots  | May 2008-<br>May 2009           |
| Second pilot status report  | Sept-Dec 2008                   |
| Collection benchmark data over '06,'07,'08                          | October 2008 -May 2009          |
| National evaluation/validation                                      | Feb-May 2009                    |
| European validation   | February 2009                   |
| Overall evaluation report   | May 2009                        |
| Third pilot status report   | April-May 2009                  |
| Set-up for outreach   | May 2009                        |

## 2. General results

### 2.1 The involvement of SME's

The ExBess project aimed at participation of at least 80 SME's in pilot projects spread over the 8 new countries involved in (Ex)BESS. The SME's were meant to actively work with the updated BESS toolkit. The SME's were to be recruited from the 6 sectors selected in (Ex) BESS. SenterNovem provided all NPC's with an update of the BESS pilot programme, including national dissemination activities, done in cooperation with CNA and AEA. Hand outs with background information on the project and arguments why enter the pilots were also provided (appendix 5). Initial recruitment resulted in 122 SME's expected to participate, of which 81 actually completed the pilots. About 50 % of the participating SME's had between 50 and 250 employees. The other half of the participants had less than 50 employees. The contacts at the SME's were on middle management and/or director level.

The figure below shows the breakdown of participating SME's to sectors. The prominence of the textile sector is due to the fact that that two of the NPC's were specialised institutions for the textile sector in their country.

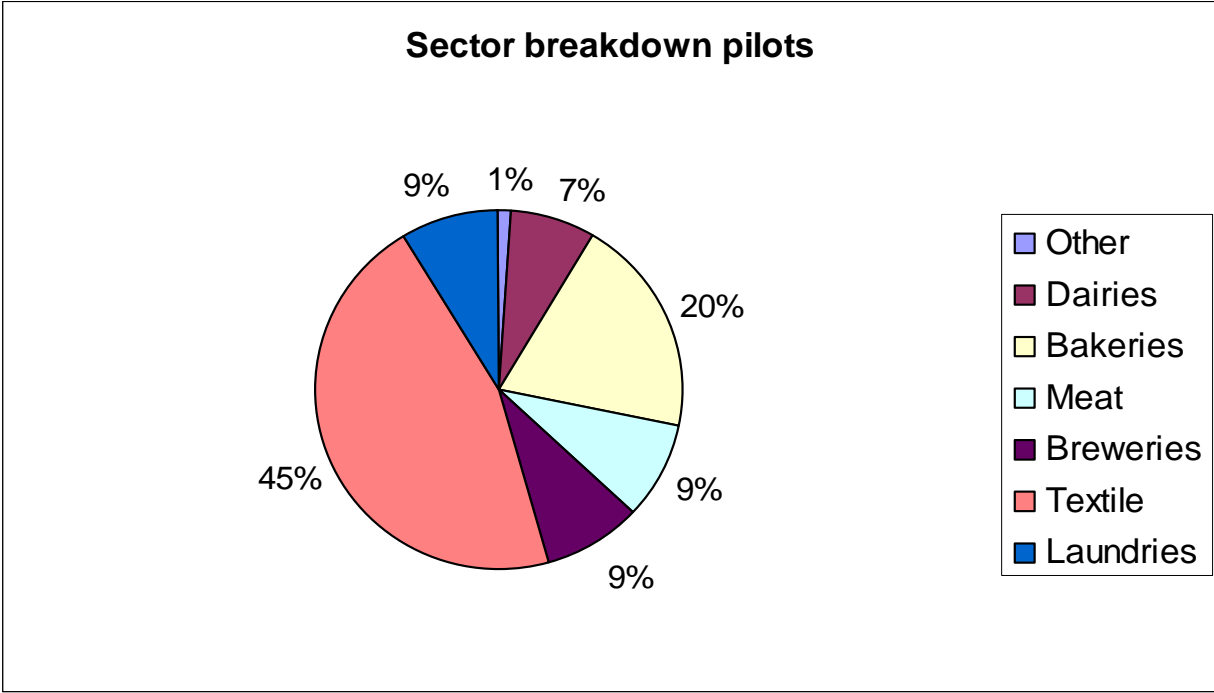
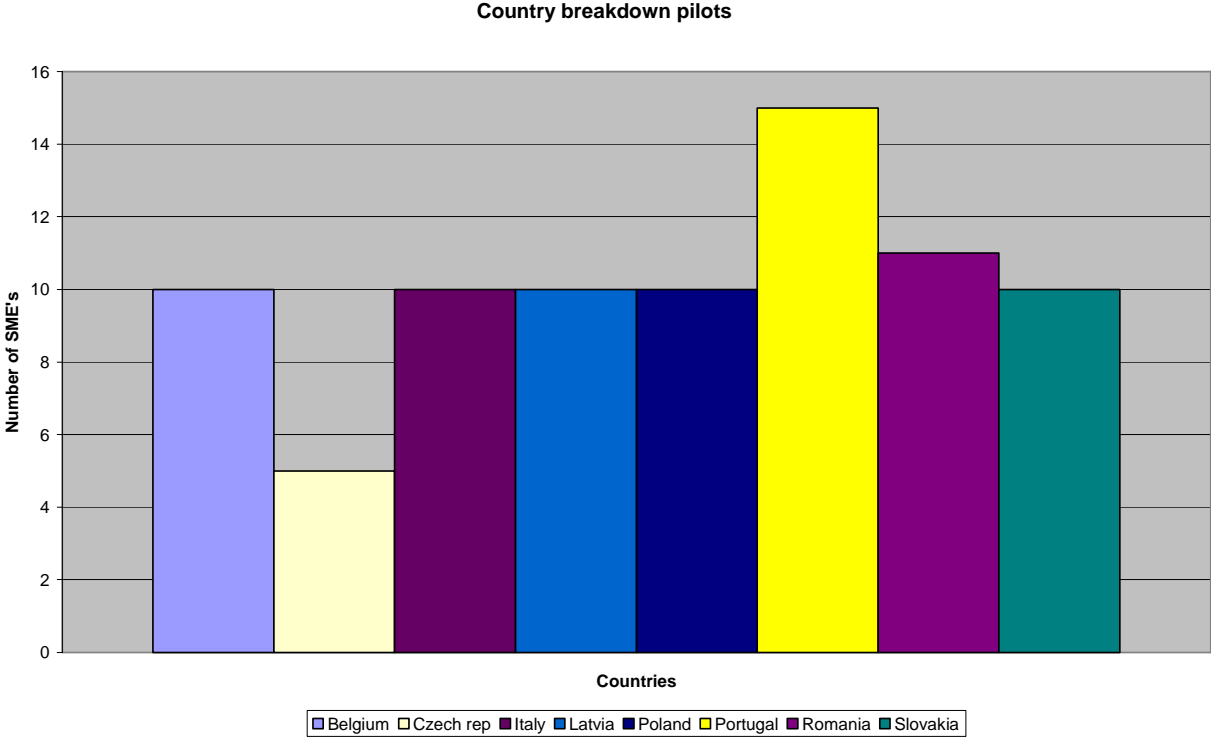


Figure: Sector breakdown of pilot SME's

The main triggers for SME's to participate in the national pilots and use the BESS tools have been "interest in energy efficiency and energy management", "cost reduction" and also "EU Benchmarking".

The recruitment process proved to be difficult and longer than originally planned. Pilot coordinators with strong contacts to sector associations had fewer problems with the recruiting process. Others needed more time to convince companies to participate. In all cases regular individual contact, meetings and stamina of the pilot coordinators were crucial to convince companies to participate. SME's that declined participation mostly referred to lack of time and capacity and to the threat of or even actual closing of the company as a result of

the economical situation. The figure below shows the breakdown of participating SME's per pilot country.



**2.2 Evaluation of the BESS toolkit by SME's**

The participating SME's were each invited to evaluate the BESS toolkit by completing a questionnaire (appendix 2), and 71 % of the SME's did so. The results of the evaluation are shown in the figure below.

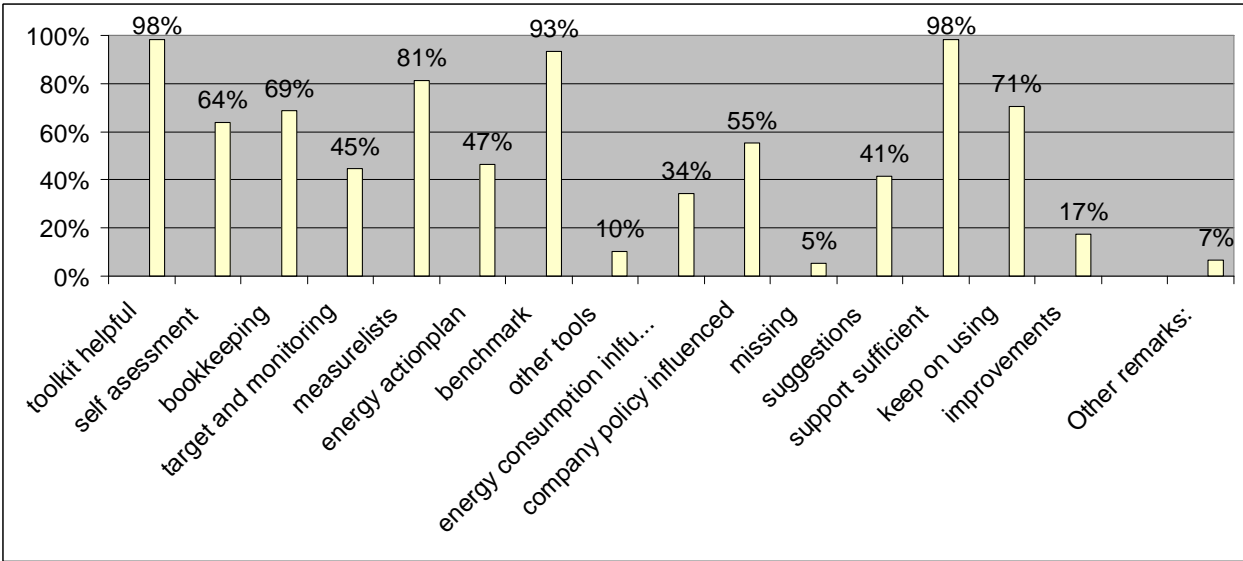


Figure: results toolkit evaluation by SME's

According to the majority of the participating SME's the BESS toolkit is helpful (98 %). The most popular tools are:

- benchmark application (used by 93 %)
- measure lists (used by 81 %)
- bookkeeping tool (used by 69%)
- self assessment tool (used by 64 %)

The fact that the target and monitoring tool (used by 45 %) and the action plan tool (used by 47 %) are less used, might indicate that SME's tend to cut right through to action instead of doing an assessment and targeting exercise first. The tool to make an energy action plan tool proved to be more demanding as far accessibility of data, capacity, and company management are concerned. SME's who actually developed an energy action plan were able meet these requirements. The same can be said about the use of tools other than 'the big 5'.

The benchmark application is widely used, and proved to be one of the triggers to participate in the pilot. More importantly, benchmarking provided SME's with an alternative to the self assessment and enhanced awareness of energy consumption being an accepted element of business management.

Most SME's mentioned that the very fact of participation in the pilot and the confrontation with the BESS toolkit resulted in growing awareness of their energy consumption and influenced their company policy, now favouring energy efficiency. The support to SME's provided by the national pilot coordinators, in particular individual visits and consultations was experienced as very positive and in many cases crucial. Many SME's (55 %) report that their company policy has been influenced by the use of the BESS toolkit. Of all participants 35 % expects or realised concrete reductions in their energy consumption as a result of the measures taken. Those able to quantify this, reported energy consumption reductions between 2 and 10 %. Exceptions to 16 and 48 % were also reported.

Each pilot country added best practices from their SME's to the BESS toolkit (dartboard, plan section, 'best practices').

As a result of the positive experience with the BESS toolkit and the expected benefits 71 % of the SME's declared their intention to keep on using the toolkit in the future. It should be added, that possible threats are expressed, such as changing company management or ownership, and future budget and personnel cuts, or even closure resulting from the economical crisis.

Suggestions for improvements concentrate on user convenience, most frequent suggestions were to have the tools accessible directly from the homepage, and to introduce a quick guide what steps to take in addition to the e-learning scheme presented by the standard dartboard. Both suggestions have been acknowledged and the toolkit has been adjusted accordingly. The content of tools and additional information in the toolkit is generally considered to be complete.

## 2.3 Results of the benchmark scheme

The BESS benchmark-application is flexible regarding expansion to new countries, new companies, new benchmark-classes and new indicators. So far the database contains input from the BESS and (Ex) BESS projects. Actual data in the database come from in total 213 companies, spread over 19 countries and seven different benchmark-classes, that is, SME sectors.

53 of the 213 companies in the database are from the new countries and sectors within (Ex) BESS.

The Dutch input is recently updated with data from 33 new SME's.

The table below shows the breakdown of SME's participating now in the benchmark scheme per sector and per country. Data reported cover the period 2004-2008. Not all companies have provided data for all years, so the number of companies to benchmark can be less for some of the years. The "BESS Benchmark-classes" mainly contain data from the reporting years 2004-2006 and the "(Ex) BESS Benchmark-classes" from the years 2006-2008.

| Project | Country        | Organisation | Dairy         | Meat          | Bakery        | Brewery       | Laundry       | Textile dyeing | Textile drying | Total |
|---------|----------------|--------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|-------|
|         |                |              | (15.51.00.00) | (15.10.00.00) | (15.81.00.00) | (11.05.00.00) | (96.01.00.00) | (13.30.13.00)  | (13.30.19.00)  |       |
| BESS    | Austria        | EVA          | 8             |               |               |               |               |                |                | 8     |
| BESS    | Bulgaria       | SOFENA       | 2             |               |               |               |               |                |                | 2     |
| BESS    | Finland        | MOTIVA       |               | 4             |               |               |               |                |                | 4     |
| BESS    | Greece         | CRES         | 2             |               |               |               |               |                |                | 2     |
| BESS    | Ireland        | SEI          |               | 3             |               |               |               |                |                | 3     |
| BESS    | Lithuania      | LEI          |               |               | 5             |               |               |                |                | 5     |
| BESS    | Netherlands    | SenterNovem  | 15            | 21            |               |               |               |                |                | 36    |
| BESS    | Norway         | NEPAS        | 45            | 31            | 6             | 5             | 6             |                |                | 93    |
| BESS    | Slovenia       | JSI          | 2             |               |               |               |               |                |                | 2     |
| BESS    | Spain          | IDAE         | 7             |               |               |               |               |                |                | 7     |
| BESS    | Sweden         | STEM         | 5             |               | 4             |               |               |                |                | 9     |
| ExBESS  | Romania        | Arce         | 1             | 1             | 1             |               |               | 5              |                | 8     |
| ExBESS  | Portugal       | Citeve       |               |               |               |               |               | 2              | 3              | 5     |
| ExBESS  | Italia         | CNA          |               |               |               |               |               |                |                | 0     |
| ExBESS  | Czech Republic | Enviros      |               |               |               | 3             |               |                |                | 3     |
| ExBESS  | Slovakia       | ECB          |               | 2             | 4             |               | 2             |                |                | 8     |
| ExBESS  | Latvia         | Ekodoma      | 2             |               |               | 1             |               |                | 1              | 4     |
| ExBESS  | Poland         | Kape         | 1             | 3             | 1             |               |               |                |                | 5     |
| ExBESS  | Belgium        | Centexbel    |               |               |               |               |               |                | 9              | 9     |
|         |                |              | 90            | 65            | 21            | 9             | 8             | 7              | 13             | 213   |

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Table: Breakdown of SME's per sector and per country participating in the BESS benchmark scheme

In the BESS benchmark scheme specific energy consumptions (energy consumption in MJ per sector specific equivalent of product) within a benchmark class, in this case SME sectors, are compared. Most of the companies have reported data that make it possible to do adjustments related to product mix and boiler efficiency, but very few have reported data that makes it possible to do adjustments related to climate correction and utilization of capacity.

The benchmark database is anonymous and does not contain any company name. Individual companies participating in the benchmark scheme can easily and directly access their own benchmark results by a unique hyperlink.

Table 2 shows an overview of the benchmark results based on 213 companies within seven SME sectors.

| Benchmark-class          | Denomination   | Arithmetic average value |          |          |          |          | Average (2004-2008) |
|--------------------------|----------------|--------------------------|----------|----------|----------|----------|---------------------|
|                          |                | 2004                     | 2005     | 2006     | 2007     | 2008     |                     |
| Dairy                    | MJ/equivalents | 3,767                    | 3,995    | 4,428    | 4,451    | 1,614    | 3,651               |
| Meat processing industry | MJ/equivalents | 2642,000                 | 2381,000 | 1100,000 | 1108,000 | 1108,000 | 1667,800            |
| Bakery                   | MJ/equivalents | 10689,000                | 4062,000 | 3141,000 | 4386,000 | 4382,000 | 5332,000            |
| Small breweries          | MJ/equivalents | 104,203                  | 78,753   | 99,541   | 94,086   | 86,844   | 92,685              |
| Laundry                  | MJ/equivalents | 4889,000                 | 6771,000 | 6463,000 | 6664,000 | 6658,000 | 6289,000            |
| Textile – dyeing         | MJ/equivalents | NA                       | NA       | 31,725   | 32,886   | 34,397   | 33,003              |
| Textile – drying         | MJ/equivalents | NA                       | NA       | 12,353   | 12,663   | 11,984   | 12,333              |

Table: Overview BESS benchmark results 2004-2008

The average values are based on all reporting companies, but results per country are available through the filter option in the web-application. However the arithmetic average value for each year is not necessarily based on the same assortment since not all companies have reported data for all years. The average value of e.g. three last years, can be used as a benchmark for baseline or target setting for an individual company (e.g. in an energy action plan) or a sector (e.g. within a Long Term Agreement (LTA) programme.

However lowest specific energy consumption as an example of Best Practice cannot be used, because the benchmark-classes are not yet homogeneous with similar size, processes and products. With more companies participating in the benchmark in the future this will not be a problem any more.

## 2.4 Conclusions

- The main triggers for SME have to participate in the national pilots of the (Ex) BESS project have been “energy efficiency”, “cost reduction” and “EU Benchmarking”.
- The updated BESS toolkit is evaluated positively by SME’s.
- Its value for SME’s in general is in the tools directly aiming at actions to reduce energy consumption (measure lists, bookkeeping tool, benchmark application, self assessment tool). Tools concerning the organisation and implementation of energy management on a structural basis are interesting for those SME’s that have more possibilities, such as know how, personnel and financial resources.
- Using the BESS toolkit savings between 2% and 10 % on energy consumption have been realised by SME’s.
- The success of the BESS toolkit is closely related to the additional individual support offered to SME’s. Since SME’s mostly lack the capacity to focus intensively and over a longer period on an issue not directly considered to be linked to the core business, a form of regular individual coaching and consulting is needed to keep SME’s focussing on energy.
- In addition, meetings and workshops on the subject with other SME’s, and confrontations with testimonials from colleagues, enhances awareness and triggers a me too effect.
- According to the SME’s the toolkit is complete. Maintenance and future updates should mainly concentrate on user convenience.

## **3. National pilot results**

### **3.1 Belgium (NPC Centexbel)**

#### **Organisation**

Due to the fact that Centexbel is the Belgian scientific and technical centre for textiles and the fact that the possibilities of the benchmarking tool of Bess had to be investigated for the textile sector, the pilots in Belgium were limited to the textile sector.

The following parties were involved in the national pilot co-ordinating group: the industrial sector association Fedustria, several involved SMEs. Apart of this co-ordinating group there were contacts with the Flemish audit covenant and the Flemish Energy Agency.

All the required information about the project was translated into Dutch and adapted to the Flemish situation. No translation was made in French because 85% of the companies of the selected sector (textiles) are situated in Flanders.

#### **Recruitment and support**

For the recruitment of companies and communication about the project, use was made of individual mailings, the Centexbel website and publication in the “Milieufax”. For Belgium the pilot project was limited to the textile sector, although there were some contacts with Fevia (food sector) and an interested consultant (E-ster).

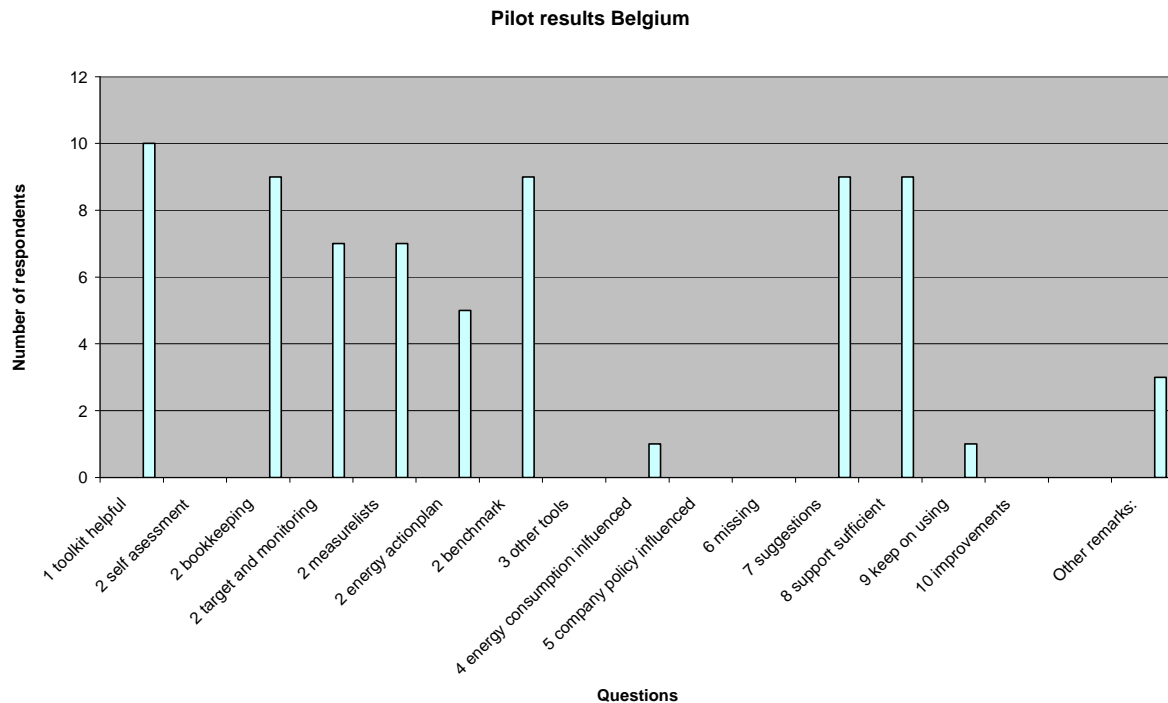
Centexbel obtained an enthusiastic support from Fedustria, the Belgian sector organisation for textiles and wood.

The kick off meeting took place on June 4<sup>th</sup> 2008 in Centexbel Gent. 10 textile companies, Fedustria and E-ster were present and presentations were given about the project tools, with special attention for energy management (EN 16001), energy monitoring and targeting.

After the kick off meeting, the companies that expressed interest to participate in the project obtained individual help and training during the rest of the project. 10 companies participated to the project, but not all of them for all items. The companies selected have a primary energy consumption between 0.01 and 0.2 PJ/year so that the potential of energy savings is big enough (in € and GJ).

## Evaluation and validation by SME's

All 10 participating SME's completed the evaluations forms. The results are shown below.



The toolkit is generally considered to be helpful, and most SME's will keep on using it. Most popular tools are the bookkeeping tool, the targeting and monitoring tool and the measure lists. Due to the fact that some interested companies participate in the audit covenant, the ExBESS-tools were compared with the mandatory tools used in the audit covenant (see <http://www.auditcovenant.be>) and the “Belgian ExBESS-tools” combined the best of these two approaches. The “business case (tool 1) and the “Energy\_Audit\_Data\_Collectionsheet (tool 5) were integrated in one tool, the [Energy Audit Data Collection Flemish version.xls](#) In Belgium data were gathered for 9 installations and the data were imported in the benchmarking scheme. Centexbel made a thorough check of the quality of the data, which was necessary.

Most of the participating companies were not able to quantify if any energy was saved thanks to the project, mainly due to a lack of reliable data. Only for some companies supported by individual (paid) consultants beside the project could obtain reliable data for the energy savings. It is however certain that if the important BESS tools are put into practice savings of up to 10% are realistic.

## Evaluation and validation on national level

It was interesting to observe that The Flemish Energy Agency (VEA) developed also a web tool to stimulate the SME's to minimize their energy consumption during 2008 (see <http://www.energiesparen.be/KMOzelfscan>). An evaluation showed that there were big similarities between the ExBess instruments and the tools developed by VEA. Both start with a short inquiry about energy management, advocate the importance of monitoring and

targeting, suggest the possibility of benchmarking and have measure lists. This shows that these tools are essential for the management of energy in SMEs.

### **Lessons learnt**

- Strong and existing contacts with SME's on national sectoral level help recruitment.
- Existence of national policies and tools targeting energy management in SME's are beneficiary for the awareness of SME's and for improvement of tools.
- Complex tools are only used when sufficient individual support is provided.
- For quantification of energy savings after implementation reliable energy data are a necessity.

### **Follow up activities**

Centexbel promotes the BESS tools and the experiences from this project to the Textiles sector and by further linking with the existing national energy management policies targeting SME's and its corresponding network of stakeholders and policymakers.

Furthermore, in collaboration with the partners in the other member states involved in ExBESS, Centexbel will continue promotion and maintenance of the BESS toolkit at least until May 2011.

## 3.2 Czech Republic (NPC Enviros)

### Organisation

The Czech NPCG consisted of representatives from:

- Pivovar Cerna Hora (small breweries association)
- ATOK (textile association)
- Hospodarska komora (Chamber of Commerce)
- Svaz prumyslu (Industry Confederation)

The reason to select small breweries, textile and dairies as pilot sectors was that the contacts with these sectors through the branch associations were best accessible.

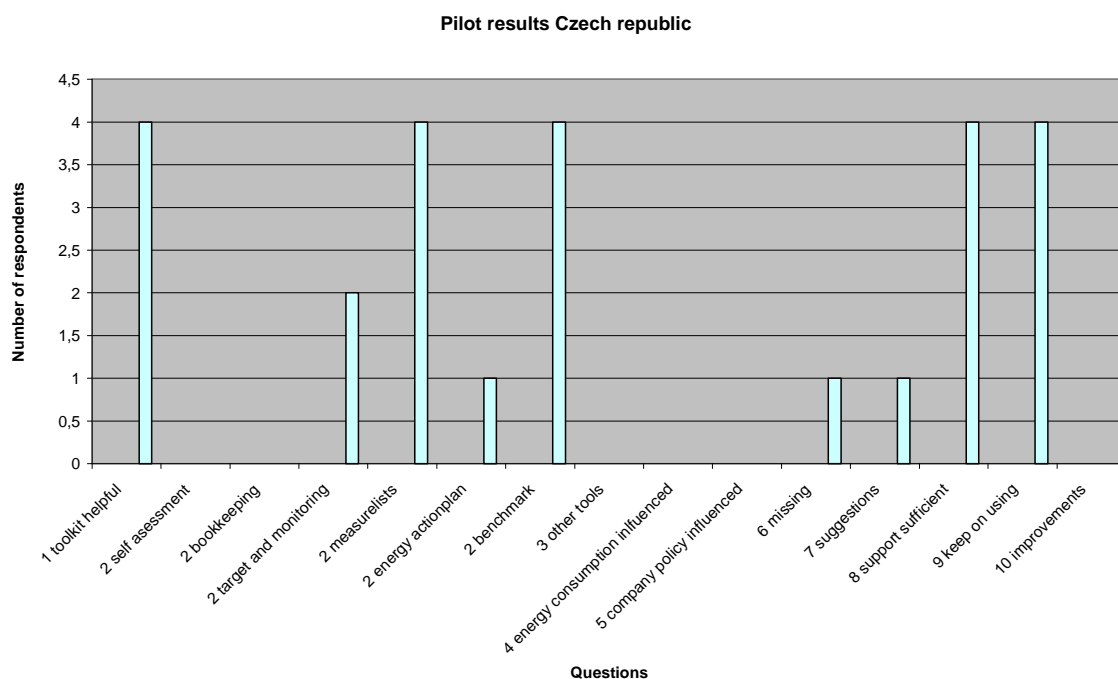
Members of the NPCG were positive, but due to lack of time not much could be expected from them. It took Enviros considerable time and effort to identify SME's willing to participate.

Those interested at the start seemed positive, but when it became clear that an effort had to be made to study and use the BESS toolkit, their cooperation became more reluctant. Starting out with 8 SME's expected to participate; only 5 actually participated in the pilot project. Of these 4 were small breweries and 1 was a bakery. Main trigger for participation was subject of energy management itself and possibility to benchmark.

The SME's were supported during the pilot project by Enviros through regular contacts (visits, phone calls). In addition to translated tools on the BESS website Enviros created and distributed a CD containing only the tools in Czech language. The tools on the CD were explained individually to the SME's at their offices.

### Evaluation and validation by SME's

The evaluation form has been completed by 4 of the 5 participating SME's. The results are shown below.



The toolkit is considered to be helpful, and SME's are intending to keep them using, but depending on time and other priorities. The measure lists and the benchmark application were most popular in this pilot project. Data from 3 Czech SME's were imported in the benchmark application.

Through their comments SME's indicated that they consider the web based toolkit to be complex and not easily accessible, e.g. the routing to the national pages.

### **Evaluation and validation on national level**

The web-based BESS toolkit is relatively complex and it requires some explanation. The Czech experience is that showing the translated tools on CD personally on PC to the person in charge at the SME lowers the barrier to start using it.

### **Lessons learnt**

- Strong contacts on national sectoral level initially help recruitment, but are no guarantee for commitment to actually spend time on energy management. A check on where exactly the priorities are should clarify this.
- Tools should be more directly available in national language without interfaces.
- Individual coaching and support in the first stages is important to get SME's working with the BESS toolkit.

### **Follow up activities**

In view of the difficulties to have SME's participating in the pilot projects the interest now for energy management in the Czech Republic is uncertain. As a consequence, follow up activities have to be carefully considered.

Enviros will further participate in promotion and maintenance of BESS toolkit on European level in collaboration with the ExBESS partners from the other member states until at least 2011.

## **3.3 Italy (NPC CNA)**

### **Organisation**

The Italian NPCG consisted of representatives from several national SME federations collaborating within CNA:

- CNA Working Group on Energy
- CNA Federmoda (Fashion Federation)
- CNA Alimentare (Food Federation)
- CNA Servizi alla Comunità (Community Services Federation)

The sectors textile, bakeries and laundries were selected for the pilot project because these were best represented within CNA and because the interest in energy efficiency in these sectors seems to increase. SME's were recruited through the local/regional offices of the CNA sector federations.

From the originally expected 22 SME's, 10 participated in the pilot projects:

Textile: 4  
Bakeries: 4  
Laundries: 2

Although the interest in the subject is high, SME's expressed difficulty in disposing of enough time and skills for using the tools.

The main support structure for the pilot project was the CNA Working Group on Energy collaborating with the sectoral federations and their local/regional offices.

Information and explanation about the BESS toolkit was provided individually or during meetings to the persons responsible for energy and environmental matters in the local/regional office of CNA, and they had the contact with the SME's. In some cases direct contacts existed with SME's.

In addition CNA took the opportunity to have the BESS toolkit investigated and tested within the framework of an existing collaboration with the University of Rome (Universita Sapienza di Roma), the Energy Efficiency Laboratory for SME's (Laboratorio efficienza energetica Piccole e Medie Imprese). The results have been published in a graduation report.

## **Evaluation and validation on national level**

The Italian pilot project revealed the big interest of SMEs and of Branch Associations on the issue of energy management, but in the meantime encountered difficulties implementing the BESS tools in the Italian context, that is in very small enterprises (a lot of SMEs have less than 5 employees and sometimes are "mono-employee").

Many CNA regional/local offices tested the tools themselves because they found difficulties in involving very small SMEs in using it directly, specially in this period of economic crisis in which SMEs are less interested to invest (time, capacity, budget).

In this case the evaluation forms were to be completed through the local/ regional offices of CNA involved in the pilot. Unfortunately evaluation form has been completed by only one of these. Despite continuous efforts and reminders by the central CNA office and the Working Group on Energy no more response was obtained at the time of evaluation. The evaluation of the pilot projects coincided with the Italian government formulating new laws against the economical crisis, which have very negative effects on SME's. Both SME's and SME representatives have to focus their attention to this situation. Efforts for energy efficiency in terms of investments and time in this period are not likely.

However the CNA working group on Energy Efficiency, the evaluation obtained from the Bologna office, and the study performed by the University of Rome indicate that the toolkit is considered to be helpful, and should be promoted to support SME's in better times. From the BESS tools those are considered most useful which are easily applicable by very small companies, specifically the self assessment tool, the measure lists and the benchmark application. For these small companies,(the majority of Italian enterprises) the support of the SME associations is fundamental for using the toolkit.

## **Lessons learnt**

- Communication indirectly with SME's (in this case through regional offices) is a risk to get SME's involved and to support them with the right information. In addition, the explanation of the BESS toolkit and how to work with it is more time consuming.
- The interest on energy management is very high, but SMEs need more support to implement it.

- SMEs always have a short term view; it's important to aware them on the importance also of long term objectives.
- The existing BESS tools represent a good starting point for support SMEs EM policies. However, BESS tools easily applicable for small and inexperienced SME' should be more directly available accessible. Energy management tools need to be very simple and "user friendly" (e.g. specific guide on how to use, step by step, the toolkit).
- A political effort in supporting energy management policies could be very important.
- It could be useful to train a network of experts on BESS toolkit;
- Benchmark is a very important tool, but it's very difficult for the Italian setting (always and for long times the consumers dispose only of estimated and not effective consumptions data;

### **Follow up activities**

The existence of national and regional offices responsible for energy and environment matters within the framework CNA makes sure that energy efficiency will be on the agenda as much as possible. The comments during final ExBESS workshop, held in Rome with representatives from Italian SME's, government and energy agencies showed the interest in energy efficiency and the intention to continue promotion and support to SME's, depending on right timing.

CNA will further participate in promotion and maintenance of the BESS toolkit on European level in collaboration with the ExBESS partners from the other member states until at least May 2011.

### **3.4 Poland (NPC Kape)**

#### **Organisation**

In Poland, Kape collaborated on a structural basis with the Polish Chamber of Commerce to organise the pilot projects. During the pilot project additional collaboration was established with 3 industrial organisations:

- KIG (Krajowa Izba Gospodarcza)
- „Teraz Polska” Foundation
- Centre of Clustering and Innovation

It took quite some time to identify SME's interested to participate. From originally 33 SME's expected to participate, 10 actually did:

Meat processing: 4

Bakeries: 3

Dairies: 1

Other food sectors (sugar): 1

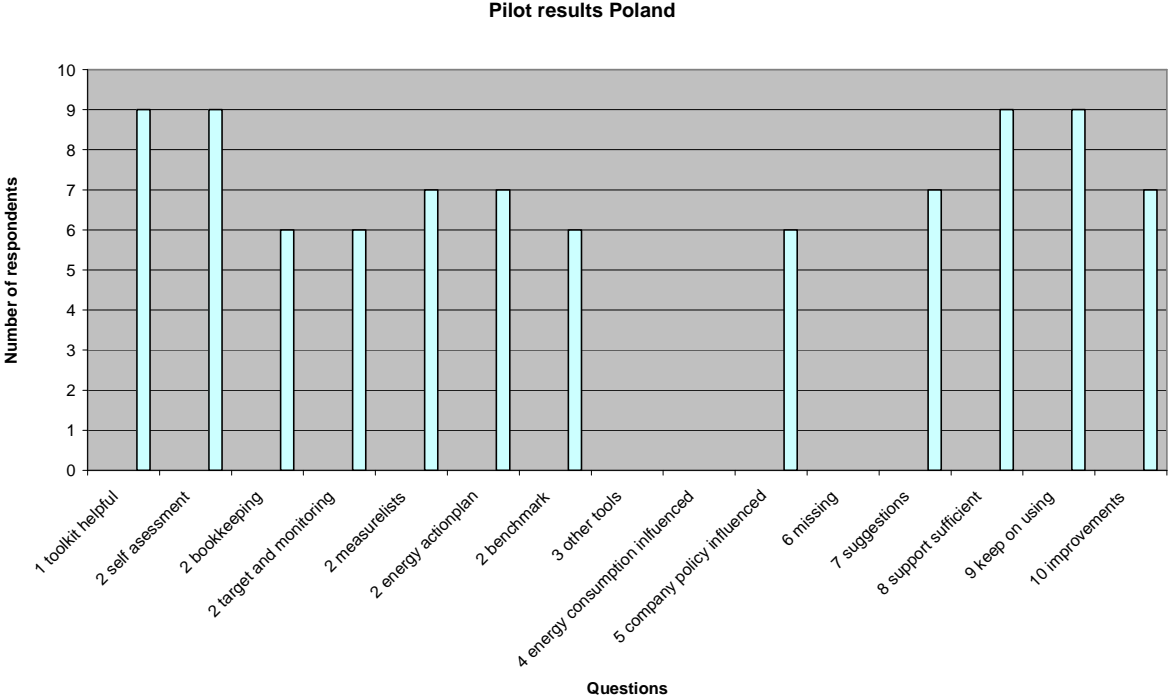
Sport centre laundry: 1

SME's were recruited partly through recommendation, and partly because of interest shown. SME's were invited to participate and informed through the website and network of the Polish Chamber of Commerce and its regional offices, and through SME's national portals.

Support was provided to the SME's through workshops organised by Kape and by the Polish Chamber of Commerce. Individual support was provided by Kape through company visits and regular contacts by e-mail and phone.

**Evaluation and validation by SME's**

The evaluation forms have been completed by all 10 participating companies. The results are shown below.



Most SME's thought the BESS toolkit helpful and intend to continue using it. Working with the BESS toolkit led to awareness of companies' energy consumptions. Company policies have been influenced positively regarding energy efficiency. Most popular tools are the self assessment tool, the measure lists and the energy action plan. Data for the benchmark application were submitted by 5 of the participating companies. Suggestions for improvement by SME's for the BESS toolkit indicated a need for more clarification on the website and directly available tools (in national language) from the homepage.

**Evaluation and validation on national level**

On national level the pilot project has been evaluated by Kape. Although interest of SME's for energy efficiency was high, it was difficult for them to act due to a lack of resources (time, expertise). The company visits and support provided by Kape were highly determining the willingness to work with the tools and the success of the pilot project. Where needed, Kape provided SME's directly with the (translated) tools, in stead of having them work through the website. A useful addition to the information on the website would concern national and European possibilities for financial support to SME's. At the time no governmental (financial) support was available in Poland and the degree of participation in European programmes was low.

On national level the BESS toolkit has been validated by ARP, the Polish Industrial Development Agency, indicating that BESS toolkit is very helpful for differentiated user levels, and leading users to growing awareness and providing them with the right tools to implement energy management.

## Lessons learnt

- Company visits to coach and consult are very important; at least two: before and after implementation
- Energy management for SME's should be a part of branch as well as national energy policies, including coordination of intentions between ministry, chambers and enterprises.
- Establishment of the energy efficiency leader/team at smaller enterprises proved to be very difficult.
- The absence of a Polish Act of Law for Energy Efficiency makes it difficult to promote energy efficiency in SME's.

## Follow up activities

The Polish pilot project will be extended and continued structurally by Kape on national level. The prospect of a National Energy Efficiency Act (foreseen in 2010) and a National Energy Policy (foreseen in 2030) is expected to have strong positive effect on these activities and on SME's to implement energy efficiency.

The Polish Industrial Development Agency will actively promote the BESS toolkit among its related companies.

In collaboration with the partners in the other member states involved in ExBESS, Kape will continue promotion and maintenance of the BESS toolkit at least until May 2011.

## 3.5 Latvia (NPC Ekodoma)

### Organisation

In Latvia no specific NPCG was installed, because Ekodoma has the network to address SME's and the means to support them. During the pilot project Ekodoma collaborated with the Ministry of Economic Affairs and with several SME branch associations. In total 10 SME's participated in the pilot project:

Dairies: 3

Small breweries: 3

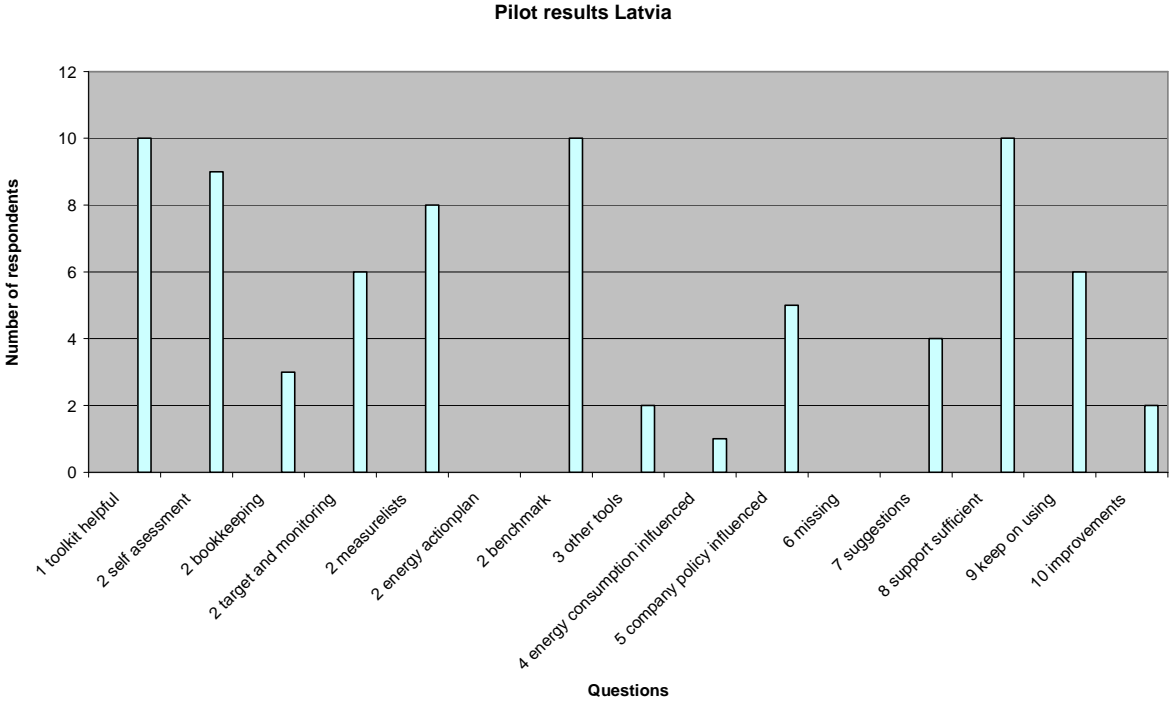
Textile: 4

Dairies and breweries were chosen due to the rather high number of these industries in Latvia and the high impact of energy expenses on production costs. The textile sector has been chosen because here no energy management project has been implemented yet.

Recruitment initially was done through Ekodoma's own network, later extended through collaboration with the Ministry of Economic Affairs and branch associations. SME's were triggered to participate by their interest in energy management and the possibility to benchmark. In general however recruiting of SME's for the project was hard as interest of most SME's was low (due to different reasons like lack of motivation, knowledge etc.). SME's were invited by e-mail to participate using the pilot fact sheet, followed by contact by phone to establish participation. Further information and support was given by means of a kick off meeting followed by a more technical workshops, company visits and contact by e-mail and phone. In some cases SME's paid for additional energy audits by Ekodoma. The BESS toolkit was additionally promoted through publications by Ekodoma.

### Evaluation and validation by SME's

The 10 participating SME's all completed the evaluation forms. The results are shown below.



The BESS toolkit was generally considered as useful. About half of the participating SME's intend to continue using it. Most popular were the tools for self assessment, targeting and monitoring and the measure lists and the benchmark application. Of all participants 4 SME's submitted data for the benchmark application.

### Evaluation and validation on national level

Although the BESS toolkit is received rather well by participating SME's, the difficulties to recruit them, even with the help of branch associations, makes the success of further activities targeting SME's questionable. In general Latvian SME's lack interest and motivation to discuss and search solutions to reduce energy consumption. Furthermore energy efficiency in industries is not on the agenda on governmental level in Latvia. Officials at the ministries believe that Latvian industry is very energy efficient, even though many projects implemented in Latvia has proven opposite. The toolkit developed during the BESS and ExBESS project is a very good and useful instrument for both governments and intermediates to SME's. However a strong signal is needed to convince SME's (policy, and instruments as the Dutch Voluntary Agreements).

## **Lessons learnt**

Direct contacts with SME's and promotion of energy management needs do not help convincing SME's if motivation is absent.

Company visits and individual support highly determines cooperation by SME's.

Absence of energy efficiency on national agenda influences interest of SME's negatively.

## **Follow up activities**

In view of the present situation in Latvia as described above, follow up activities are uncertain. In collaboration with the partners in the other member states involved in ExBESS, Ekodoma will continue promotion and maintenance of the BESS toolkit at least until May 2011.

## **3.6 Portugal (NPC Citeve)**

### **Organisation**

In Portugal Citeve collaborated with ATP, the Portuguese Textile Association, situated in the same building, to organise the pilot projects. Since Citeve is the Portuguese Technological Centre for the Textile Industries the pilot project focussed on SME's in the textile sector, to which Citeve and ATP have direct contacts. SME's were recruited by e-mail and through the Citeve news letter, targeting a group of 2000-3000 companies. In addition SME's (in other countries) participating earlier in the EMS Textile Project were also addressed, but this did not result in participation. From the Portuguese target group about 18 companies were expected to participate, and 15 of them actually did:

Textile dyeing, finishing and printing: 8

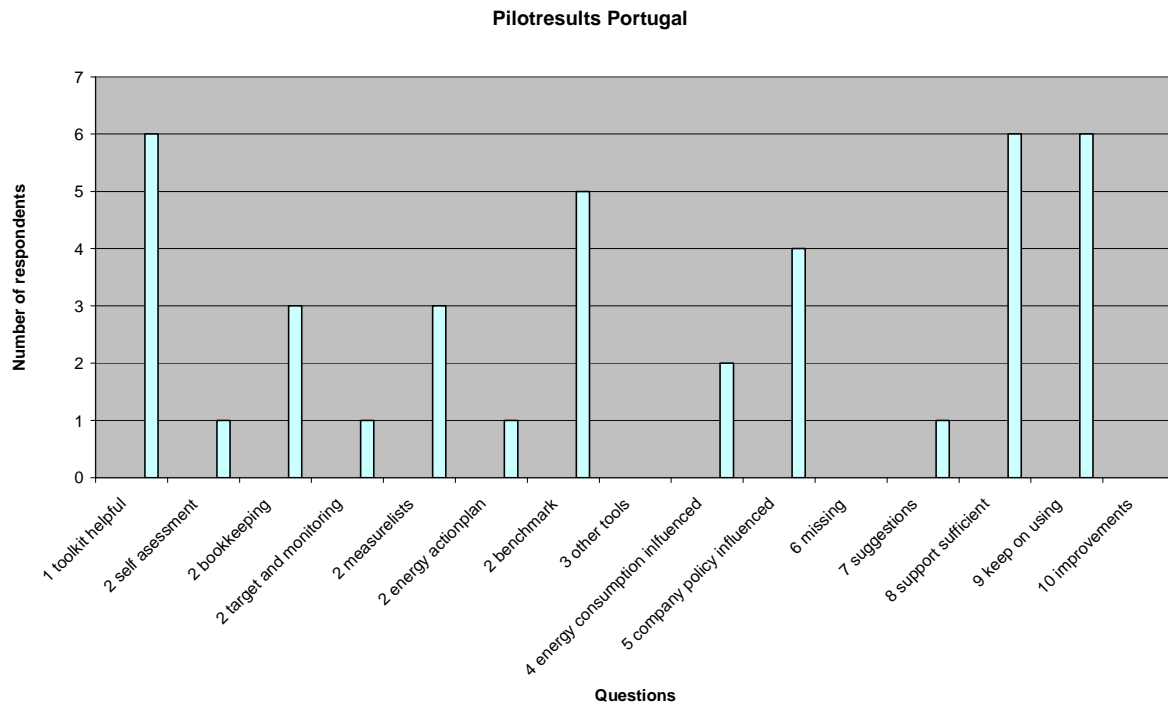
Textile knitting, weaving and spinning: 7

Main trigger for SME's to participate was cost reduction and the benchmark application. Citeve supported the pilots mainly as a consultant on the BESS toolkit, leaving all aspects of implementation to the companies. Because the existing national legislation (since 1982), already obliges intensive energy users to have records, perform audits and implement energy management plans, most of the pilots were engaged in optimizing the already existing internal system. As a consequence the toolkit was used by SME's to compare with and improve what already existed. Support for the SME's consisted of:

- E-mail support: basically all contacts regarding benchmark and data collection was made this way, including approximated calculations on energy consumptions for companies with no meters.
- Support by phone: mainly for explanations on the tools, methodologies and questions regarding the web-site.
- If necessary companies were visited. Several meetings took place in case of SME's regarding more technical options.

## Evaluation and validation by SME's

Of the 15 participating SME's 6 completed the evaluation forms. The results are shown below.



The BESS toolkit generally was considered to be useful, and all respondents intend to keep on using it. Of the tools the benchmark application was most popular, since this was an addition to the already existing systems and tools used by the SME's as result of the Portuguese legislation regarding energy efficiency. The bookkeeping tool and the measure lists were other tools used by the SME's. Benchmark data of 5 SME's were submitted to the benchmark application.

SME's reported positive effects on company policy and energy savings by working with the BESS toolkit. Savings were reported on energy consumption of 5 % and an exceptional 48 %. SME's updated and optimized their existing tools using the BESS toolkit (i.e. energy bookkeeping, energy action plan). Good housekeeping and measure lists were analysed to establish good practices. Of the measures mainly low cost solutions, were implemented.

## Evaluation and validation on national level

Because of direct contacts with the textile industry it was easy to recruit companies. The biggest obstacle was to recruit companies that would do both benchmarking and energy management implementation, because most companies interested in benchmarking already had some form of energy management implemented as a result of the national legislation. The BESS toolkit was positively evaluated by ATP, the Portuguese Textile Association as useful and practical for the sector. Suggestions were made to make the website and access to tools visually more appealing.

## Lessons learnt

- Instability of energy prices and supply is becoming increasingly a matter of competition.
- Smallest companies need most support and coaching.
- Responsibility for energy matters in SME's usually is one of the concerns of the maintenance/production manager or the manager in charge of environment, health, safety and/or quality assurance. Within all these responsibilities energy usually comes second in importance.
- Lack of knowledge and experience concerning energy efficiency can be limiting the person in charge of it. In most cases managers in charge of maintenance are best equipped.
- Legal requirements regarding environment and health and safety are much more demanding in time and resources than energy efficiency. SMEs usually hire a specialist for support in these areas rather than hire support with energy management.
- Investment returns in relation to energy efficiency measures depends directly on production rates (i.e. thermal energy recuperation). Because production is dropping in most cases, "expensive" measures are less and less viable and interesting.
- Financial facilitation for energy measures is still regarded by banks as regular financing to companies. Availability of financial facilities specifically for energy efficiency measures, e.g. against lower rates, would be mean a strong incentive for SME's.
- Because every kWh counts, worker awareness is increasingly important. People that work directly with a machine or process are in a position to identify problems and suggest improvements.
- All SMEs are limited by time, knowledge, resources and manpower and are reluctant to implement a full energy management system without support and coaching.

## Follow up activities

ATP will continue promoting the BESS toolkit to their SME's.

In collaboration with the partners in the other member states involved in ExBESS, Citeve will continue promotion and maintenance of the BESS toolkit at least until May 2011.

## 3.7 Romania (NPC ARCE)

### Organisation

In Romania the NPCG consisted of:

- Tricontex (subcontractor)
- Fepaius (SME)
- Energo Eco (Esco)

SME sectors were selected for the pilot either on their request (textile) or because of their limited experience with energy management (other sectors).

Recruitment of SME's was done through:

- ARCE's database
- subcontractor (Tricontex)
- e-mail
- letters

SME's were triggered most by possible cost reduction, and (to lesser extent) by interest in energy management. Although Romania has legislation targeting energy efficiency, this is aiming at companies with energy consumption more than 200 toe. Energy consumption by SME's, in most cases, is less than 200 toe, so legislation for them was no trigger.

During recruitment several obstacles were encountered:

- lack of awareness in energy efficiency
- the energy costs are not considered significant in many companies
- less financial resources
- less metering equipments
- lack of specialized personnel
- less time for energy issues

Originally 17 SME's were expected to participate in the Romanian pilot, 12 of them actually did:

Textile: 6

Dairies: 2

Bakeries: 2

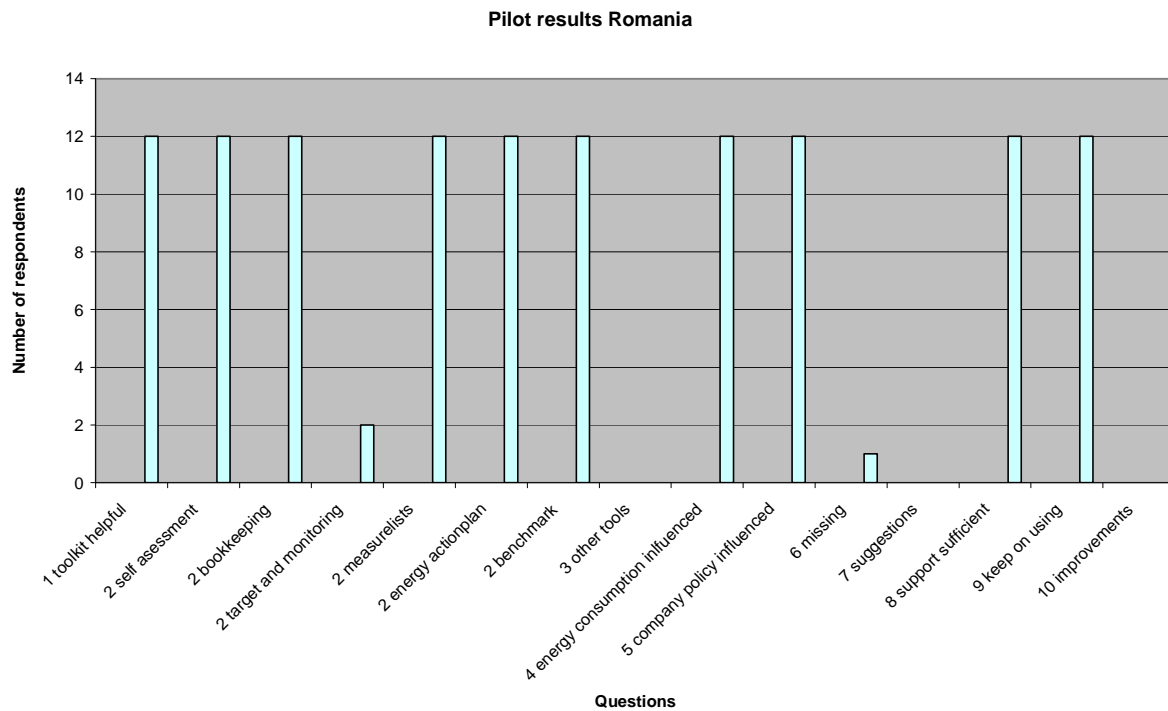
Meat processing: 2

Participating SME's were supported by Arce and Energo Eco regarding implementation of the tools, e-learning and collection of benchmark data. Workshops, meetings and individual support by phone and company visits were used.

In addition to recruitment, Tricontex organised the kick off meeting and provided several dissemination activities ((internet sites, seminars, other meetings).

## Evaluation and validation by SME's

All 12 participating SME's completed the evaluation forms. The results are shown below.



The BESS toolkit generally was considered to be useful, and all respondents intend to keep on using it. All tools were equally used, except the monitoring and targeting tool. SME's consider these tools interesting, but difficult when experience is still limited. All companies started and some even finished developing an energy action plan. Various measures are being implemented, especially in the textile sector. Positive effects of working with the BESS toolkit were reported on company awareness, -policy and energy savings. Savings were reported on energy consumption in a range of 2-10 %. Benchmark data were submitted by 8 companies.

## Evaluation and validation on national level

The BESS toolkit has been validated on national level by ARCE.

Taking in consideration the low level of activity regarding energy efficiency and energy management by Romanian SME's, the BESS toolkit is considered to be a very important support for SME's, even if it is always not easy for energy managers at SME's to use the toolkit without help. SME's in general think that the BESS toolkit is very useful to raise employees' awareness, still a big problem in SMEs. The e-learning concept is also considered to be very useful in their activity regarding the improving of energy efficiency.

In fact the BESS toolkit is not only considered to be useful to SME's but all parties involved or interested in energy efficiency in companies.

## **Lessons learnt**

- (Presumed) low energy consumption by SME's is an obstacle when raising awareness towards energy management.
- Time, expertise and financial resources are limiting the possibilities of implementation.
- Lack of measuring equipment and use (out) dated production technology is an obstacle to require reliable energy consumption data.
- Working with BESS toolkit raises awareness in SME's: regarding energy consumption and management systems.
- Using the BESS toolkit as a basis SME staff can be coached and trained on the subject.
- Behavior and mentality are an obstacle in many cases (ability to process information, trust, take initiative, get through bureaucratic routines). To be over won only by continuous coaching.
- The ExBESS project made Arce aware of the specific requirements of SMEs regarding energy efficiency, and to promote the Policy Guidelines to policy makers and SME stakeholders. Following the Romanian legislation on energy efficiency Arce until now supported the larger companies with energy consumption from 200 toe and up.

## **Follow up activities**

ARCE will promote the use of the BESS toolkit in Romania not only to SMEs, but on a wider scale. Integration of the BESS toolkit in national legislation could be the most important result of the ExBESS project for Romania. In addition, financial support schemes should be established of implementation of energy management in SMEs.

In collaboration with the partners in the other member states involved in ExBESS, Arce will continue European promotion and maintenance of the BESS toolkit at least until May 2011.

## **3.8 Slovakia (NPC ECB)**

### **Organisation**

In Slovakia the NPCG consisted of:

- Association of industrial energy consumers (ZPOE)
- Ministry of Economy
- Slovak Innovation and Energy Agency
- H+W Service (independent consultant)
- EETEK (ESCO)
- National Agency for Development of SME's

SME sectors for the pilot in Slovakia were established after reviewing industrial contacts of ECB and members of the NPCG in relation to the SME sectors of ExBESS. Potentially interested SMEs were identified partly by the NPCG and partly by branch associations in the involved sectors:

- Guild of bakers and confectioners for Western Slovakia region,
- Slovak association of meat-processors,
- Corporation of laundries, dry-cleaners and dyers in Slovakia.

Potential SME's were first contacted phone, followed by one (or more) individual meetings. Aim of this meeting was to present the conditions and benefits of involvement in the pilot, presentation of the BESS tools and last but not least have company express commitment to the pilot.

Participation in the pilot was initially promoted also during different (branch) events and through publications in branch newsletters but without success.

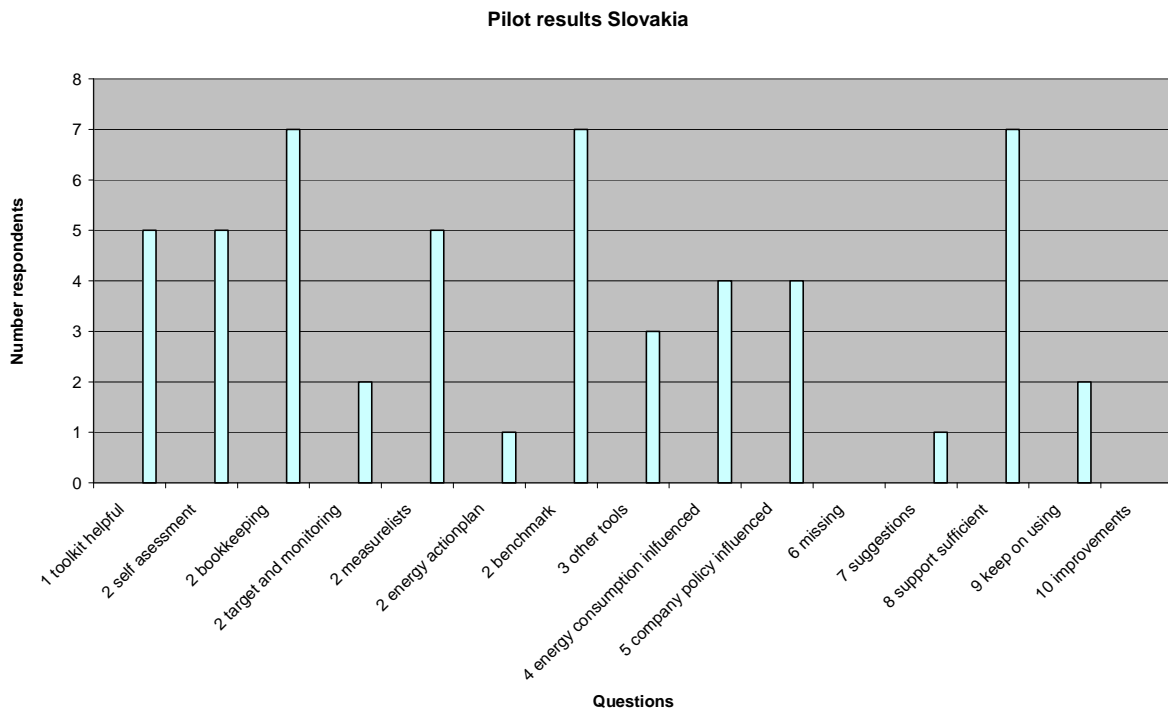
When interested most important triggers were interest in energy management and possible cost reduction. However quite an effort had to be made first to lead the SME's to this insight. At the start 14 SME's were committed to participate in the pilot. However during the pilot 5 companies closed down and 2 stopped communication. The pilot in the end was completed by:

Bakeries: 4  
 Meat-processing: 2  
 Industrial laundries: 2

First contact and regular communication and consulting to SME's were done by ECB staff. An independent consultant provided useful contacts and helped SMEs with identification of potentially energy efficiency measures and performed an energy audit.

### Evaluation and validation by SME's

Of the 8 participating SME's 7 completed the evaluation forms. The results are shown below.



Most participants thought the BESS toolkit useful, but few expressed their intention to continue using it without reserves. The others were hesitant because lack of time and capacity.

Generally SMEs were interested in energy savings, energy efficient measures and energy management. Several of the pilot SMEs implemented energy saving measures and some of them had also an energy audit of their operations.

Most popular tools were the book keeping tool, the measure lists and the benchmark application. Data of all 8 SME's have been submitted for benchmarking. Most SME's indicated that working with the BESS toolkit raised their awareness for energy consumption and –efficiency. SME's reported reductions of energy consumption of 4, 5 % and 16 %.

## **Evaluation and validation on national level**

The BESS toolkit has been validated on national level by members of the NPCG (EETEK, ZPOE, H+S Service). All expressed their intention to promote the BESS toolkit.

The BESS toolkit is thought to be useful and complete. For many SME's with limited resources the toolkit is quite complex to get acquainted with. Interactivity and user friendliness of the toolkit can be improved.

The BESS toolkit is considered a useful tool for intermediates supporting SME's, like consultants and Esco's.

## **Lessons learnt**

- Direct (individual) contact showed to be much more successful and efficient method for recruitment than promotion through general branch oriented media.
- As the pilots in Slovakia had no previous experiences in energy management, set of information and tools provided by project website was bigger than could be swallowed at the very beginning.
- Slovak policymakers (especially Ministry of Economy) were highly interested in benchmark results.
- Because of the economical crisis many SME's encountered significant problems and some had to close their operation. Therefore the outputs of the pilot-projects are not as successful as expected initially.
- Quite low interest of SMEs in benchmarking.
- Very often, although SMEs are willing to improve their energy consumption they are facing a lack of personal capacity.

## **Follow up activities**



Outputs of ExBESS and information about e-learning scheme and tools will be published in newspaper dealing with energy in municipalities called SVETLONOS. Newspaper is distributed for free to all Slovak municipalities and to registered purchasers.

Project outputs will be presented on Conference of industrial energy managers in Považská Bystrica. The Conference is going to take place on October 27th – 28th, 2009

In collaboration with the partners in the other member states involved in ExBESS, ECB will continue European promotion and maintenance of the BESS toolkit at least until May 2011.

**APPENDICES**

## Appendix 1 Pilot evaluation questionnaire for SME's

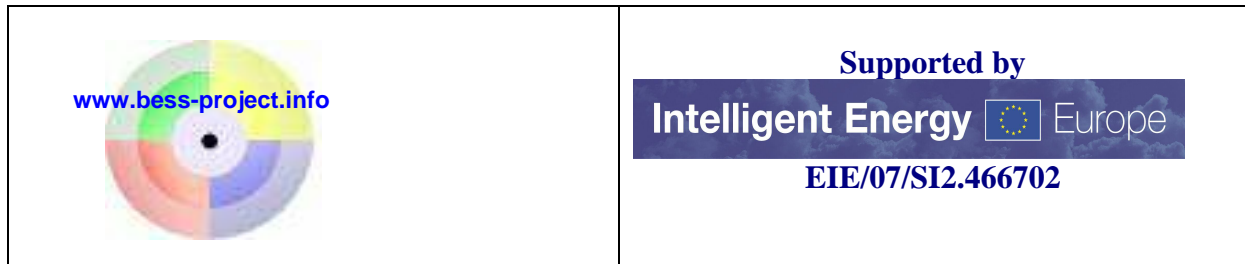
|  |  |
|--|--|
|  <p>www.bess-project.info</p> | <p>Supported by</p> <p><b>Intelligent Energy</b>  <b>Europe</b></p> <p><b>EIE/07/SI2.466702</b></p> |
|--|--|

### Evaluation of the national ExBESS pilot projects Questionnaire for SME's

|   |   |       |      |  |  |
|---|---|-------|------|--|--|
|   | <b>Country:</b><br><b>Name company:</b><br><b>Function:</b><br><b>Name contact person:</b><br><b>Phone:</b><br><b>E-mail:</b> |       |      |  |  |
|   | <b>Questions</b>  |       |      |  | <b>Explanations</b>  |
| 1 | Is the toolkit useful for your company?   | 0 Yes | 0 No |  | Please indicate the items that are of particular interest to your company!   |
| 2 | The following tools are very important for energy efficiency -management. Indicate which you used                             |       |      |  | <input type="checkbox"/> Self assessment list<br><input type="checkbox"/> Bookkeeping<br><input type="checkbox"/> Targeting & monitoring<br><input type="checkbox"/> Measure lists<br>Number of measures implemented:<br><input type="checkbox"/> Energy action plan<br>Date of issue by management: MM-YY<br><input type="checkbox"/> Benchmark |
| 3 | What other tools did you use?   |       |      |  |  |

|    |   |                           |                          |   |
|----|---|---------------------------|--------------------------|---|
| 4  | Did the use of the toolkit influence the energy consumption of your company?  | <input type="radio"/> Yes | <input type="radio"/> No | Please explain your answer! Include:<br>energy consumption reduced by xx %, or energy consumption remained the same, or energy consumption increased by xx %. |
| 5  | Did the use of the toolkit influence your company policy or -management regarding energy consumption?   | <input type="radio"/> Yes | <input type="radio"/> No | Please explain your answer!   |
| 6  | Are you missing something in the toolkit?   | <input type="radio"/> Yes | <input type="radio"/> No | Please indicate items you are missing!  |
| 7  | Do you have any suggestions for the accessibility of tools at the website?  | <input type="radio"/> Yes | <input type="radio"/> No | Please explain your answer!   |
| 8  | Was sufficient support/assistance offered to you during the pilot project?  | <input type="radio"/> Yes | <input type="radio"/> No | Please explain your answer!   |
| 9  | Will your company keep on using the ExBESS toolkit in the future?   | <input type="radio"/> Yes | <input type="radio"/> No | Please explain your answer!   |
| 10 | Please indicate here any improvements you recommend. Your suggestions will be very helpful for all SME's in Europe to improve the toolkit and support/assistance offered. |                           |                          |   |
|    | Other remarks:  |                           |                          |   |

## Appendix 2 Pilot evaluation questionnaire for NPC's

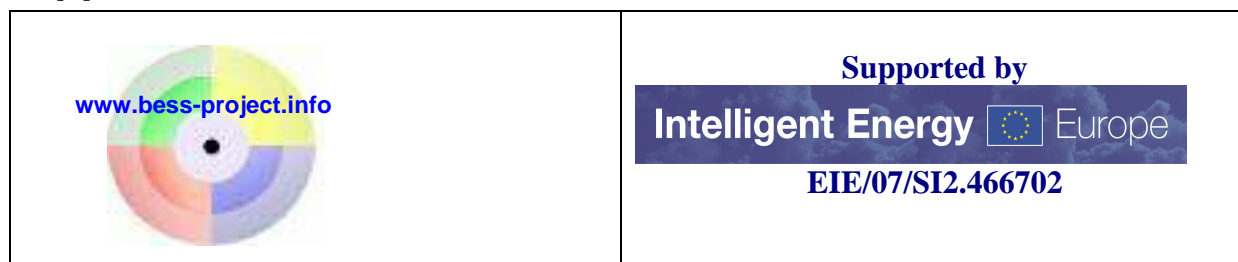


### Evaluation of the national ExBESS pilot projects Questionnaire for National Pilot Coordinators

|   |   |   |            |   |
|---|---|---|------------|---|
|   | <b>Country:</b><br><b>Name contact person:</b><br><b>Phone:</b><br><b>E-mail:</b> |   |            |   |
|   | <b>Questions</b>  |   |            | <b>Explanations</b>   |
| 1 | What was your experience when organising your National Pilot Coordination Group?  | 0 positive  | 0 negative | Please explain your answer. What were success factors, what were obstacles? |
| 2 | What was your experience when recruiting SME's for your pilot projects?           | 0 positive  | 0 negative | Please explain your answer. What were success factors, what were obstacles? |
| 3 | What was the main trigger for SME's to join as pilot company?                     | 0 interest in energy efficiency/ -management<br>0 cost reduction<br>0 EU benchmark<br>0 legislation/ regulation<br>0 other: |            |   |

|  |  |  |  |
|--|--|--|--|
| 4a   | How did you organise support and assistance to your pilot companies?   | Please indicate below and add explanation.<br><br><input type="checkbox"/> did it yourself<br><br><input type="checkbox"/> used ESCO<br><br><input type="checkbox"/> used consultant<br><br><input type="checkbox"/> other |  |
| 4b   | Did you have enough supportive material (information, toolkit etc.) to support your pilot companies?   | <input type="checkbox"/> Yes   | <input type="checkbox"/> No<br><br>Please explain. What material do you use?<br>What is missing? |
| 5  | Did you get enough information from WP leader pilots (SenterNovem) and other relevant partners (Nepas for benchmark, and Enviros for energy management/tools) to execute your pilot projects well? | <input type="checkbox"/> Yes   | <input type="checkbox"/> No<br><br>Please explain your answer!                                   |
| Please indicate here any improvements you recommend. Your suggestions will be very helpful for all governments, intermediates and SME's in Europe to improve the toolkit and support/assistance offered. |  |  |  |
| Other remarks:   |  |  |  |

## Appendix 3 Questionnaire for validation of the toolkit



### Questionnaire for validation of the ExBESS toolkit

The (Ex) Bess toolkit is the updated version of the earlier BESS toolkit for benchmarking and energy management SME's.

New languages and new SME sectors are added. Also a light version is introduced for less experienced SME's and some new tools.

Much of the comprehensibility and usefulness of the toolkit depends in the end on your feed-back. Please be so kind to examine the website and give your feed-back by completing the questionnaire below. Your input will serve as validation of the tools.

The tools are accessible at [www.bess-project.info](http://www.bess-project.info), and available in various languages by choosing the banners on the homepage (upper right corner). If translations are not available the English version will pop up automatically.

| <b>Name organisation:</b><br><b>Country:</b><br><b>Participant ExBESS National pilot coordination group:</b> 0<br><b>Participant ExBESS Project advisory group:</b> 0<br><b>Other interested party:</b> 0 |  |              |         |              |  |
|---|--|--------------|---------|--------------|--|
| <b>Name contact person:</b><br><b>Phone:</b><br><b>E-mail:</b>  |  |              |         |              |  |
|   | Questions  | Insufficient | Average | Very Helpful | Explanations   |
| 1   | What is your general impression of the ExBESS toolkit?                   |              |         |              | Please explain your answer!  |
| 2   | Is the toolkit useful for the target group you are representing?         | 0 Yes        | 0 No    |              | Please indicate your target group and the items that are of particular interest to them! |
| 3   | Are you missing something in the toolkit?                                | 0 Yes        | 0 No    |              | Please indicate items you are missing!   |
| 4   | Do you have any suggestion to the accessibility of tools at the website? | 0 Yes        | 0 No    |              | Please explain your answer!  |

|                |  |                   |         |                             |
|----------------|--|-------------------|---------|-----------------------------|
| 5              | <p>Your feed-back will help to improve the website <a href="http://www.bess-project.info">www.bess-project.info</a> in the next months.<br/>How do you appreciate the website up to now?</p> | Please elaborate! |         |                             |
| 6              | <p>Will your organisation promote the use of the ExBESS toolkit by SME's?</p>  | 0<br>Yes          | 0<br>No | Please explain your answer! |
| Other remarks: |  |                   |         |                             |



## Appendix 4 Pilot plan

### ExBESS General Pilot Plan

| Preparation |  |                 |                                  |  |
|-------------|--|-----------------|----------------------------------|--|
|             | Action   | Who             | When ready                       | Remarks  |
|             | Selection Pilot sectors  | Consortium      | December 2007                    | For ExBESS 6 sectors are selected: meat, dairy, bakery (BESS), small brewery, textile dying, industrial laundry  |
|             | Translations website part I + II                                 | ExBESS Partner  | February 2008                    | Roughly 30 p.; use upload facility   |
|             | Installation National Pilot Coordination Group (NPCG)            | ExBESS Partner  | February 2008                    | Organisations to involve: <ul style="list-style-type: none"> <li>• national energy agency</li> <li>• (Pilot) branch associations (also active involvement during pilot!)</li> <li>• ExBESS partner</li> <li>• eventually esco</li> </ul>   |
|             | Set up national pilot plan<br>Set up national communication plan | NPCG            | February/March 2008              | <ul style="list-style-type: none"> <li>• Use this general pilot plan</li> <li>• Guidelines for communication provided by SenterNovem</li> <li>• Offer end product to work on after project</li> <li>• Include support structure (training, consulting, audits etc.)!</li> </ul>  |
|             | Have information material available in national language         | ExBESS Partner  | March 2008                       | <ul style="list-style-type: none"> <li>• The material should not be too long. It must raise the interest of SMEs: E.g. best practices and concrete savings of BESS-pilots. SenterNovem will give you input.</li> <li>• Mention already to SMEs the date of your national pilot kick-off meeting.</li> <li>• Let them know, that after the pilot kick-off meeting they have to decide to participate as pilot SME or not</li> </ul> |
|             | Present your national pilot plan and actual status of activities | ExBESS partner  | Consortium meeting<br>Oslo March | •  |
|             | Translation website part III                                     | ExBESS Partners | April 2008                       | <ul style="list-style-type: none"> <li>• Pilot package complete (input from WP 3,4,5; benchmark pilot version ready in March)</li> </ul>   |

|                         |   |                                |                                 |  |
|-------------------------|---|--------------------------------|---------------------------------|--|
|                         | Get acquainted with the benchmarking system of your chosen sectors.   |                                |                                 | <ul style="list-style-type: none"> <li>Understand the correction factors etc. SMEs are highly interested in benchmarking and a lot of questions will be asked. Think also of the “system boundaries” of the data for benchmarking.</li> </ul>  |
| <b>Recruitment</b>      |   |                                |                                 |  |
|                         | <b>Action</b>   | <b>Who</b>                     | <b>When ready</b>               | <b>Remarks</b>   |
|                         | Make a long list of all potential SMEs<br>Contact SMEs through your own networks, and national branch associations, etc.<br>Informative e material should be conducted for the recruitment... | NPCG                           | March 2008                      | <ul style="list-style-type: none"> <li>Make your national selection out of the ExBESS SME sectors (max. 2/3 sectors). Make sure that per sector you end up with at least 3 SMEs</li> <li>Look for commitment by total 15-20 SMEs aiming at actual min. 10 SMEs participating per pilot country.</li> <li>Citeve: recruit extra SMEs from EMS Textile</li> <li>Seek interested SMEs for Commenting on draft EU standard e-management</li> <li>Use existing contacts SMEs, branch associations (national and European).</li> <li>Document recruitment process</li> </ul> |
|                         | Promote ExBESS through your national/European networks (dissemination)  | ExBESS partner                 | Between April 2008 and May 2009 | <ul style="list-style-type: none"> <li>Format for a national dissemination plan will be provided by SenterNovem (hours in WP 7)</li> </ul>   |
| <b>Execution pilots</b> |   |                                |                                 |  |
|                         | <b>Action</b>   | <b>Who</b>                     | <b>When ready</b>               | <b>Remarks</b>   |
|                         | National pilot kick-off meeting   | NPCG, hosted by ExBESS partner | April 2008                      | <ul style="list-style-type: none"> <li>This is meeting is crucial to get the final commitment of SMEs to be a pilot.</li> <li>All interested SMEs present</li> <li>Present meeting as first of 3 or 4 sessions during Pilot.</li> <li>Show “appealing common presentation” to show the advantages for the pilot SMEs (to be prepared by the consortium)</li> </ul>   |
|                         | Execution pilots  | SMEs supported by ExBESS       | May 2008- January 2009          | <ul style="list-style-type: none"> <li>Be aware that during summer not much will happen. Your effective pilot period is 7</li> </ul>   |

|                          |  |                                |  |  |
|--------------------------|--|--------------------------------|--|--|
|                          |  | partner, NPCG                  |  | <p>instead of 9 months!</p> <ul style="list-style-type: none"> <li>Plan regular contact moments with your SMEs during the pilot (visit, phone call, workshop)</li> <li>You get assistance with tools etc. by NEPAS, CRES, Enviros</li> <li>Evaluation of the pilots will start in December 2008</li> </ul> |
|                          | Collection benchmark data  | ExBESS partners and pilot SMEs | May 2008 collection of data over 3 previous years.<br>October 2008 start collection data over 2008 |  |
| <b>Evaluation pilots</b> |  |                                |  |  |
|                          | <b>Action</b>  | <b>Who</b>                     | <b>When</b>  | <b>Remarks</b>   |
|                          | National evaluation reports  | ExBESS Partners                | Jan 2009   | <ul style="list-style-type: none"> <li>Evaluation format provided by SenterNovem</li> <li>Concrete reduction of specific energy consumption (from benchmark data) one of the evaluation points.</li> </ul>   |
|                          | Overall evaluation report  | SenterNovem                    | Feb 2009   |  |
| <b>Validation tools</b>  |  |                                |  |  |
|                          | <b>Action</b>  | <b>Who</b>                     | <b>When</b>  | <b>Remarks</b>   |
|                          | Set up validation scheme   | SenterNovem                    | March 2008   | Eventually involving certification scheme EUREMnet   |
|                          | Validation by SMEs, branch ass., Esco's                                    | ExBESS partners                | According to scheme;<br>Final validation in Dec. 2008  | <ul style="list-style-type: none"> <li>Regular validation during pilot</li> <li>Final validation document to be signed by involved parties</li> </ul>  |
|                          | Set-up basis for replication/outreach e-management (general dissemination) | ExBESS partners                | Dec 2008   | Hours WP 8   |

**Appendix 5 Pilot fact sheet**



# Expanding BESS

## Pilot Fact Sheet **Country**

April 2008

### *Expanding Benchmarking and Energy management Schemes in SMEs (ExBESS)*

|                                    |   |
|------------------------------------|---|
| <i>Objective pilot:</i>            | <i>SMEs use a web based toolkit to implement energy management and to participate in international benchmarking, and provide feedback to further improve the toolkit.</i> |
| <i>Background:</i>                 | <i>ExBESS is the expansion of its predecessor, BESS (2005-2007)</i>   |
| <i>SME sectors involved:</i>       | <i>Dairies, bakeries, meat processing industries, small breweries, textile industries and industrial laundry industries.</i>  |
| <i>Pilot period:</i>               | <i>May – December 2008</i>  |
| <i>National pilot coordinator:</i> | <i>Name organisation<br/>Name Contact person<br/>Address<br/>Phone/Fax/e-mail</i>   |
| <i>Website pilot:</i>              | <i><a href="http://www.bess-project.info">http://www.bess-project.info</a></i>  |

#### Benefits for SMEs

- *Possible savings on energy expenses (4-10% in BESS)*
- *Use of web based tools in E-learning system*
- *Participation in European benchmarking*
- *Support and instructions from pilot coordinator*
- *Tailor made, do-it yourself energy management plan*
- *All services free during pilot*
- *Compliance with EU/ national regulations*

#### Main steps to be taken by SMEs

1. *Contact pilot coordinator to participate*
2. *Declare commitment*
3. *Work with tools*
4. *Prepare energy data for benchmark (2006, 2007, 2008)*
5. *Have regular contacts with pilot coordinator*
6. *Provide input for pilot evaluation*

#### Benefits for branch associations

*Branch associations are invited to promote pilot participation by their member SMEs.  
Benefits are:*

- *Support member SMEs with energy efficiency*
- *Validation and adoption of tools*
- *Input generation for EU / national policies*