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**BESS**

**(Benchmarking and Energy management Schemes in SMEs)**



**Public Progress Report 2005**

**Deliverable 6.8**

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Project coordinator organization name:

SenterNovem

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## **1. Introduction**

The European BESS project started in January 2005 and will last for 28 months. The project focuses on small and medium sized industrial enterprises and its goal is to increase the quality of energy management and to (further) improve the energy efficiency and reduce energy costs of participating companies.

The BESS-project covers three aspects: Energy Management, Monitoring and Benchmarking. Practical experience shows that the combination of energy management and benchmarking is an approach that appeals to many companies that care for energy cost and relates closely to quality systems like ISO9000, ISO 14000 and HACCP (food safety).

Energy management is a structural and economical way of applying organizational, technical and behavioral measures to minimize energy cost and to sustain the achieved improvements. Benchmarking is a completely anonymous way to compare the energy efficiency of your company with that of others from the same sector.

The participating countries are Austria, Bulgaria, Finland, Greece, Ireland, Lithuania, Netherlands, Norway, Slovenia, Spain and Sweden. Sectors that participate are chosen from the food & drink industry and are for example meat processing, bakeries and dairy.

## **2. Project objectives**

The Bess project has the following objectives.

- The primary project objective is to further develop and promote the widespread application of benchmarking and energy management in order to improve energy efficiency in industrial SMEs, with particular focus on the food and drink industry. Participants from 11 countries including member countries, 2 accession countries, Bulgaria and Norway insure a broad base for the project and insure access to specific knowledge of energy management issues.
- A further objective is the development of a sustainable approach to application of innovative solutions, thereby insuring the continued relevance of energy efficiency and energy management to SMEs. This, with a view to the improved competitiveness of European industry on the world market, by way of reduced production costs, reduced energy intensity and a measurable contribution to Kyoto commitments.

A list of deliverables with an updated planning can be found in Annex 1

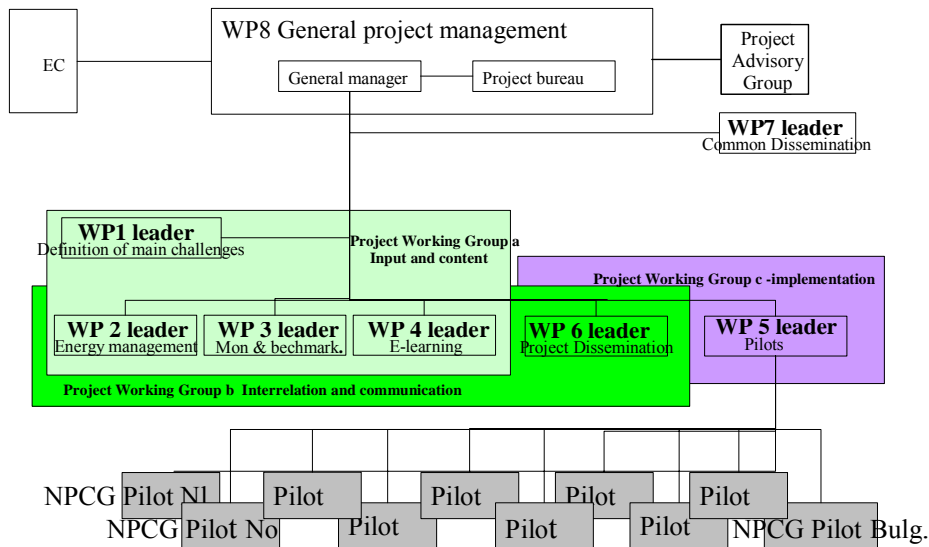
## **3. Achievements of the consortium in 2005**

### **Consortium in place and fully equipped**

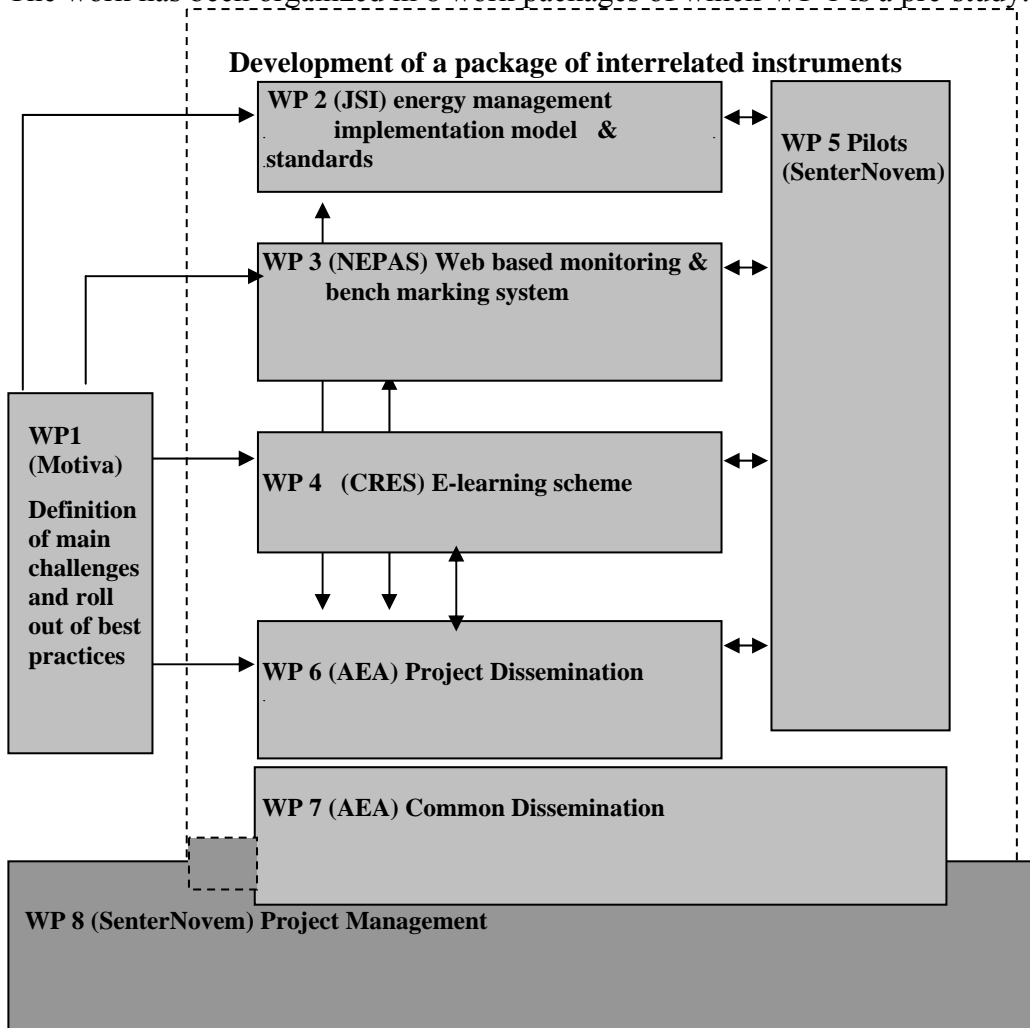
One of the first activities within the project has been to get the consortium in place and fully equipped. A kick-off meeting was held on 7 & 8 February in Utrecht (the Netherlands). All responsibilities of the different project partners were determined in more detail and a planning of the activities for the project duration has been made and documented. A "Project Advisory Group" and a so-called "National Pilot Co-ordination Groups" (NPCG) were defined, as well as three Project Working Groups. Finally a consortium agreement was agreed which amongst others deals with the intellectual property rights and a procedure to settle future management provisions for the e-learning & benchmarking schemes to be developed by the BESS consortium.

To facilitate the consortium members and stakeholders a password protected consortium area on the project website has been developed.

In the schemes below the organization of the consortium and the different work packages and the work package leaders are shown. In annex 2 an overview is presented of the contact persons of the consortium members and the Project Advisory Group per 31 December.



The work has been organized in 8 work packages of which WP 1 is a pre-study.



**The consortium consists of:** SenterNovem/Co-ordinator (the Netherlands), New Energy Performance AS (NEPAS, Norway), Austrian Energy Agency Austrian (AEA, Austria), Center for Renewable energy Sources (CRES, Greece), Motiva (Finland), Josef Stefan Institute (JSI, Slovenia), Lithuanian Energy Institute (LEI, Lithuania), Sustainable Energy Ireland (SEI, Ireland), The Swedish Energy Agency (STEM, Sweden), The Institute for Energy Diversification and Saving (IDAE, Spain), Sofia Energy Agency (SOFENA, Bulgaria) and BEKK AS (BEKK, Norway).

### **Definition and roll out of best practices report**

The objective of the Work Package 1 (WP 1) was to choose the best practices in energy management and benchmarking for further analysis and application in the piloting phase of the BESS Project. Another objective was to streamline the project and prepare guidelines for the implementation of the other work packages.

In pre-study, lead by Motiva as work package leader, relevant results of previous studies, projects and other publications were scanned and summarized (e.g. via interviews and questionnaires). Also the barriers and success factors (“drivers”) were scanned including relevant EU directives and national (legal) frameworks and programmes like subsidy schemes and LTAs. The project partners were consulted to gather experiences from their countries and organizations. Additionally market actors and important stakeholders like the CIAA (European confederation of food and drink industry) were interviewed and the BESS project advisory group was consulted.

According to the outcome of the pre-study a model of needs and success factors was developed. Best practices were chosen in according certain criteria “ranking-workshop” held in Helsinki 18 & 19 April. At this meeting also representatives of the Finnish Ministry of Trade & industry and of the Confederation of Finnish Industries were present. The final report was composed to document the work, conclusions and to give guidelines to other WP’s. A summary of the report can be downloaded from the project website. The report (70 pages) and its 13 annexes (120 pages) which is the basis of the actual development of the tools therefore can count on broad support. With these tools the SMEs in view are expected to work to implement energy management and benchmarking in their companies.



### **Preparation of an interactive package of instruments**

Actual preparations for developing the tools started in April by the leaders of work packages 2, 3, and 6 for further investigations and to elaborate reports regarding their part of the package.

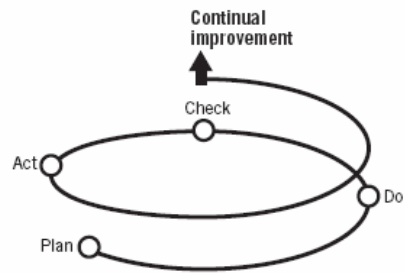
Special meetings were organized for experts from the consortium to agree on some strategic decisions to be made like:

- in June 2005 in Mandelieu on the organization of the website and the E-learning scheme
- in June 2005 in Oslo on the assessment of compatibility between existing national benchmarking schemes and the international routines to cope with those differences.
- in September 2005 in Ljubljana on the energy management implementation model and standards to be used in BESS and to get a total picture of the interrelated package of tools and the prioritization in the process of development.

The first results of the investigations and the development activities were discussed in meetings in Brussels in July and August 2005 with other SME oriented consortia supported by the Intelligent Energy Europe programme and with the BESS Project Advisory Group.

The main conclusions of the studies and consultations were:

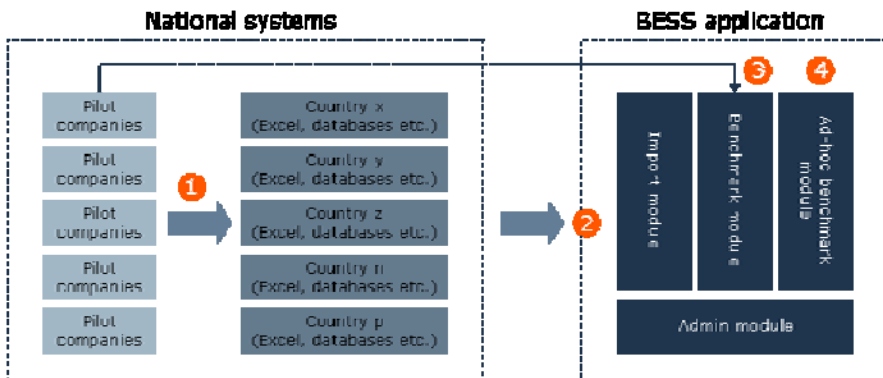
- To adopt the Plan Do Check Act (PDCA) for the **BESS energy management implementation model (EMIM)**: an approach which ensures continual improvement. The basis for the BESS model and the BESS energy management specification has to be built on the ISO14001 (international environmental management system) approach which is widely accepted even by medium sized enterprises and most of the national energy management standards are also based on this standard. With the EMS-Textile consortium it was agreed that the Dutch LTA energy management reference would be taken as the starting point for a common or similar standard/specification without bothering the SMEs with a compulsory certification procedure. Depending on the size of the company and its initial ambitions a priorities could be set of which requirements should be met first. The EMIM with its supporting tools initiated and partly developed by the consortium within work package 2 can be used by the companies for implementation of energy management and an excel based checklist can be used to assess the actual level of implementation.



|  | PLAN  | PLAN   | DO   | DO   | CHECK  | ACT                       |
|--|---|--|--|--|--|---------------------------|
| <b>A. START</b>  | <b>B. UNDERSTAND</b>  | <b>C. PLAN</b>   | <b>D. COMMIT</b>   | <b>E. IMPLEMENT</b>  | <b>F. EVALUATE</b>   | <b>G. REVIEW</b>          |
| 1. BUSINESS CASE<br>- Initial data<br>- Energy profile<br>- Cost influence                     | 1. ENERGY AUDIT<br>- Different types<br>- Energy audit description<br>- Data collection<br>- Energy consumption and trends<br>- Investigate large users<br>- To asking energy use, costs, emissions<br>- Investigate benchmarks | 1. ACTION PLAN<br>- Energy saving activities: separate low cost, low cost and high cost activities | 1. ENERGY POLICY<br>- Commitment                               | 1. IMPLEMENT ACTION PLAN<br>- Energy Savings Register<br>- Awareness<br>- Communication<br>- Training, Education, standards<br>- In people<br>- Qualifications<br>- Learning tools | 1. ENERGY MANAGEMENT CHECKLIST   | 1. REVISION<br>2. IMPROVE |
| 2. FIRST SELF-ASSESSMENT<br>- Key questions<br>- Decision on energy management<br>- Commitment | 2. TOOLS<br>- Energy bookkeeping software<br>- Historical of emissions list<br>- Sector of interest list<br>- Links to existing national interest list  | 2. ROLES AND RESPONSIBILITIES<br>- People<br>- Resources<br>- Timescale                            | 2. ENERGY COORDINATOR<br>- Job description<br>- Qualifications | 2. OPERATION AND MAINTENANCE<br>- Historical energy consumption and procedures<br>- Good bookkeeping   | 2. INDICATORS<br>- Company level<br>- Energy area level<br>- Company area time |                           |
| 3. DEFINITIONS<br>- Dictionary   | 3. LEGISLATIVE & REGULATIVE FRAMEWORK<br>- Regulations<br>- Other influence<br>a) Green procurement<br>b) Voluntary programmes<br>c) Outsourcing<br>d) Etc.   |  | 3. ENERGY TEAM<br>- Job description<br>- Qualifications        |  | 3. BENCHMARKING<br>- Company against others                                    |                           |
| 4. SPECIFICATION<br>- Requirements<br>- Linking lists  |   |  |  |  | 4. MONITORING AND TARGETING<br>- Analysis of the indicators                    |                           |

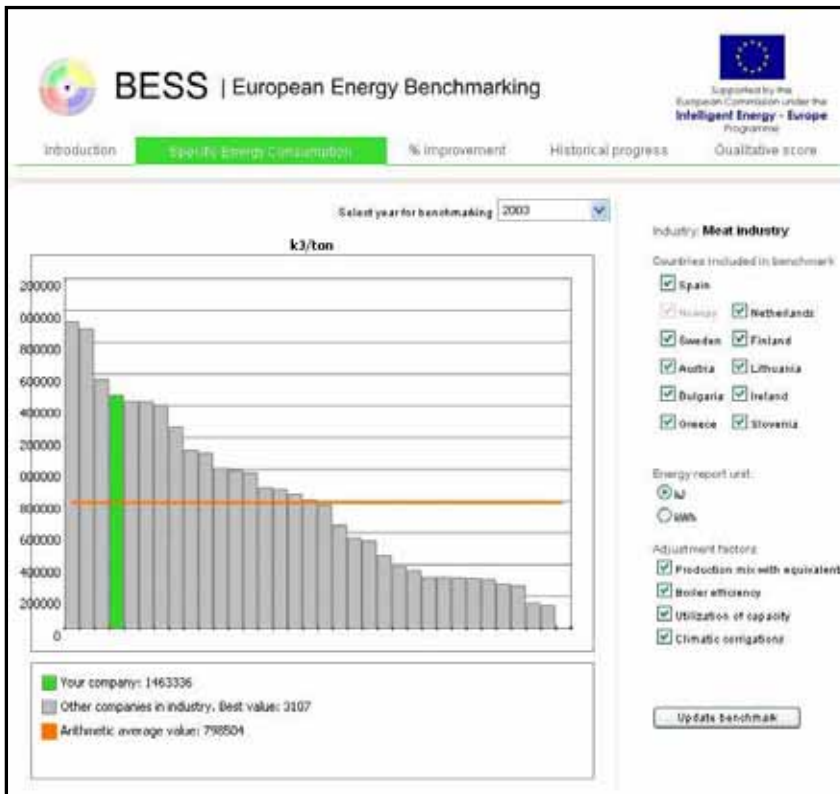
On the BESS project website a downloadable summary the has been put of the work package Report”The results of the inventory of existing European energy management systems, standards, requirements for SMEs, the chosen implementation model of energy management and proposed elements for energy standards in EU for SMEs, including a draft interactive checklist tool for inclusion in the web based e-learning pilot package”

- Contrary to energy management systems there is only a limited compatibility between existing national **benchmarking schemes** and therefore the existing Norwegian web based system has to be used as bases for developing international routines for data compatibility. Within the work package 3 the consortium has developed the web-based benchmark application as a tool including those routines to be tested by the pilot companies within the BESS-project. The web-application is designed to enable yearly benchmarking of energy data in Europe based



on national data gathered by national systems. The application is flexible regard establishment of new benchmark-classes and new indicators. In addition to the benchmarking of energy efficiency parameters the system also facilitates the benchmarking of the level

of implementation of the energy management system in the company (derived from the checklist tool). Special attention has paid to secure the confidentiality of individual company information.

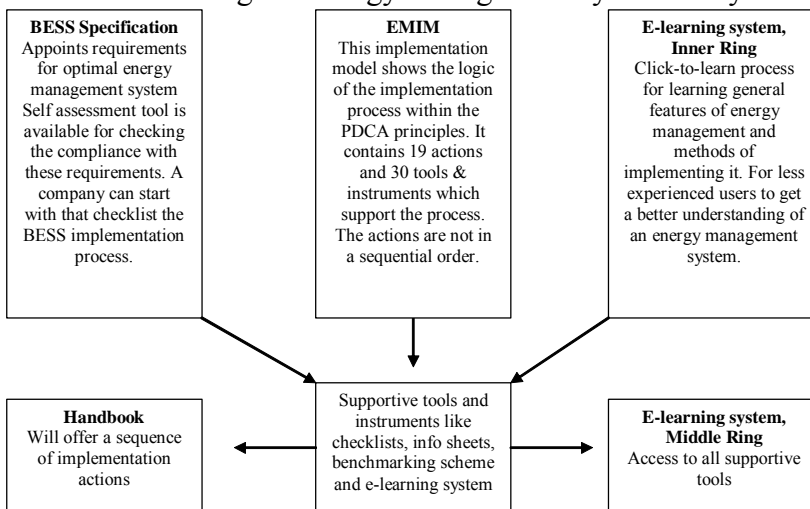


The application has options for adjustment regarding external differences like climate (heating and cooling), capacity utilization, production mix and boiler efficiency. After the project meeting in Ljubljana adjustment-factors have been worked out. The findings of the compatibility study and solution with routines for data compatibility, filters for adjustment, input and output module etc. is described in the work package 3 report.

A downloadable summary of that report has been put on BESS project website.

- The **interrelated package of instruments** is to support the SMEs in implementing energy management and benchmarking. Basically, the BESS package contains all necessary tools for improving energy efficiency of an industrial company. To facilitate the process for SMEs which usually do not have enough personnel resources for energy matters, an easy-to-follow learning process on energy management has to be offered within a PDCA-part of the e-learning scheme. The user is able to start at the beginning of the scheme and follow a click-to-learn process in order to better understand the general principles of energy management (EM). A second tool for facilitating the implementation process will be the EM handbook.

SMEs must get different opportunities to use the package. The less experienced companies with little knowledge of energy management systems may first enter the e-learning system to follow



the click-to-learn process in order to better understand the general principles of energy management.

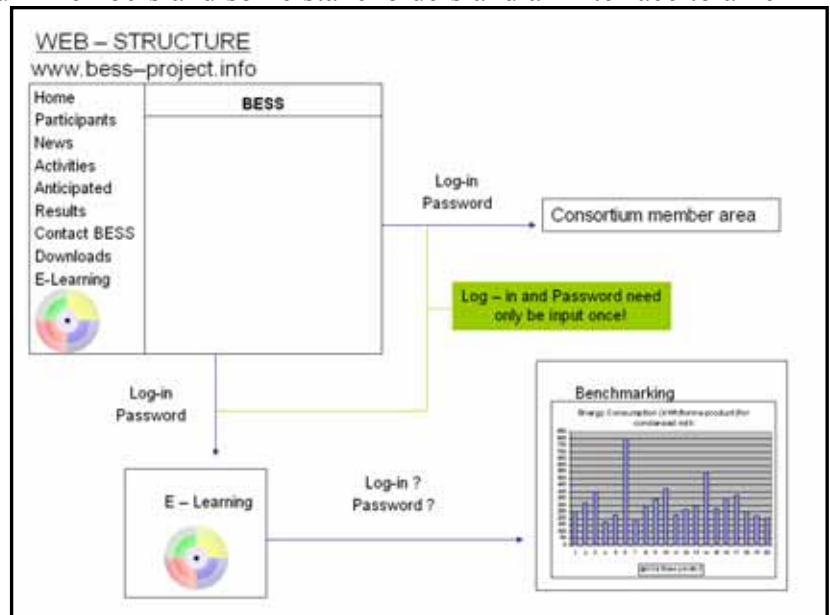
Companies which have already gained knowledge on energy management and intend to implement energy management system will access directly the interactive tools and other informative text within the e-learning system. The elements of the interrelated package are described in the WP 6 report.

A summary of the report can be downloaded from the BESS project website. For the list and phasing of the tools see Annex 4. Most phase 1 tools are ready including a rough draft of the handbook.

## The Project web and the E-learning scheme

In April, a first version of the project website has been launched on [www.bess-project.info](http://www.bess-project.info). It contains general information about the project. From May, different pages and texts have been added on a regular basis, such as web pages in the languages of other project participants, a consortium area accessible to consortium members and some stakeholders and an interface to an e-learning scheme from which all tools will be available to the pilot SMEs participating in the project. This interface which has been developed within work package 4 is chosen to look like a dashboard (based on the SenterNovem interactive e-learning system for implementation of energy management for LTA companies).

In the dashboard structure the BESS E-Learning scheme contains the following features which are accessible via a multi-language navigation structure:



- A flash animation as an explanatory introduction to the e-learning/dartboard concept.
- Informative text (“bull’s eye”) – a section containing general and some detailed information on energy management and its implementation.
- An easy-to-follow, step-by-step approach for learning about the general features of energy management and methods of implementing it (PLAN DO CHECK ACT buttons of the inner ring). The features and information contained in the informative text section will also be available within this section. This section should be targeted towards the less experienced Internet user and on users that have little knowledge of energy management systems. It will be structured along the lines of the EMIM.
- Tools and other information (outer rings) – this section should contain interactive tools and other informative text for those users that have decided on implementing energy management systems and need additional tools and information (i.e. measure lists, information of energy audit procedures, case studies of successful schemes, checklists, best practices, energy management model tailored for SMEs, links to benchmarking schemes)
- Links to sites for additional information (outer rings) – this section should contain links to other web sites that may contain additional information that may prove to be useful (i.e. EU directives, International, EU and national laws, International, EU and national financial support programmes).



A summary of the “e-learning” work package 4 can be downloaded from the BESS project website. The interactive tools are expected to be available in February 2006.

### **Participation of SMEs in the pilot phase**

The most crucial phase of the project is the actual participation of a limited number of SMEs in each of the 11 countries of the consortium members to test and benefit from the tools to be developed in the project in a pilot situation. A further objective of the national pilots is to prepare national dissemination activities.

In order to be able to compare later on relevant benchmarking figures a first selection has been made of a limited number of sub sectors within the food and drink industries. The sub sectors chosen are: bakeries, meat processing companies and dairies. Recruitment activities towards sector associations and potential participating SMEs within the different countries have taken place via the contact persons of the consortium. This resulted in the second half of 2005 in the final establishment of so called "National Pilot Coordination Groups". Three succeeding communication papers from the consortium have been submitted to the contact persons of the NPCGs.

In November 2005 a homologation workshop was organized for each of the countries pilot co-ordinators of the consortium. This was to ensure that all participants have the same information concerning the approach of the pilots, and gave the members the opportunity to study the results of the work that had been committed during the Ljubljana workshop in September.

The minimum number of required SMEs of 55 to participate however has been achieved ample i.e. Austria (14 dairy sites), Bulgaria ( $\approx$  6 sites), Finland (5 meat processing sites), Greece (4 dairy companies), Ireland (30 meat processing sites + some dairies), Lithuania (7 bakeries), Netherlands (> 3 dairy companies), Norway (5 dairy companies), Slovenia (meat processing companies), Spain (7 dairies), Sweden (5 bakeries and 5 dairy companies). National (pre)kick-off meetings of the NPCGs have already been held in Austria, Bulgaria, and Spain. For January and February 2006 another 4 countries (Finland, Norway, Lithuania and Ireland) have scheduled kick-off meetings. Some countries will have no pre-scheduled kick-off meetings because of national circumstances: In Greece for geographical reasons the dairy association will not play a central role and the start up will take place via telephone contacts with well-known energy managers (within CRES). In the Netherlands some dozens of companies (dairy, meat processing and fruit & vegetables) are currently exercising an energy management implementation "upgrade course" with the help of the Dutch LTA interactive e-learning scheme. The experience with the e-learning scheme will be used within BESS. Some dairies have been recruited to take part in the BESS benchmarking scheme.

The activities planned within the pilot can be found in an indicative planning scheme in annex 5

### **Dissemination activities and specific events and meetings**

Dissemination activities are planned on different levels with different target groups. The most important target group within the project is the pilot SMEs and their national industrial associations. As has been explained in the previous paragraphs the communication from and to the consortium and the NPCGs takes place in national workshops, the project website and via the e-learning scheme. Feed back from the SMEs and the associations is crucial for the success of the project. National dissemination to third parties like policy makers and intermediates has only been exercised to a limited extent on national level yet. The BESS project information has e.g. been put on national websites of the consortium members and some affiliated organizations. A plan with detailed activities for national dissemination will be made in the beginning of 2006. On the international level BESS was promoted and discussed at the ECEEE June summer study in Mandelieu (France), the CIAA environmental committee meeting in Brussels (October), The Intelligent Energy Europe Info day in Brussels (October) and at the energy management conference in Milan (Italy).

A joint meeting of EIE EMS TEXTILE, E CHECK in CRAFT SME and OPTIPOLYGEN and the EC took place in Brussels in July. Possible co-operations have been discussed and are followed by exchange of information and adjustments of tools have been made by e-mail and telephone calls. Another important meeting took place in August when a BESS Project Advisory meeting was held.

## Annex 1 Overview on the current status of deliverables based on the List of Deliverables

(per 31 December 2005)

| <b>Del. no.</b> | <b>Deliverable name</b>  | <b>WP no.</b> | <b>Actual/Forecast delivery date</b>                   |
|-----------------|--|---------------|--|
| D1              | Report on best practices, main challenges for implementation of energy management, monitoring and benchmarking in SMEs, needs & success factors  | WP1           | month 6  |
| D2.1            | Report on the results of the inventory of existing European energy management systems and energy management standards, requirements for energy management standards for SMEs, the chosen implementation model of energy management and proposed elements for energy standards in EU for SMEs, including a draft interactive checklist tool for inclusion in the web based e-learning pilot package | WP2           | month 9  |
| D2.2            | Final interactive checklist tool for inclusion in the web based e-learning final package   | WP2           | Month 23   |
| D3.1            | Report on compatibility between existing benchmarking schemes and routines for data compatibility between national schemes and first version of the web application for monitoring and benchmarking to be included in the web based e-learning pilot package   | WP3           | month 9  |
| D3.2            | Web application for monitoring and benchmarking, final version to be included in the web based e-learning final package  | WP3           | Month 23   |
| D3.3            | Quantitative baseline and target setting scheme  | WP3           | month 28   |
| D4.1            | Report on assessment of existing e-learning concepts, an outline for an SME e-learning concept, specification of e-learning modules and first version of online e-learning pilot package   | WP4           | month 9  |
| D4.2            | Final version of on-line e-learning package  | WP4           | month 23   |
| D5.1            | Short memo about the set-up of each country co-ordinating group and the companies participating in the pilots.   | WP5           | draft month 9<br>final month 12                        |
| D5.2            | Evaluation reports for each of the pilots and for the pilots project as a whole, including a calculation of the (potential) energy savings in the pilots   | WP5           | month 23   |
| D6.1            | Report on the survey of suitable tools and instruments for inclusion in online e-learning pilot package  | WP6           | draft month 11;<br>final month 14                      |
| D6.2            | Update of suitable tools and instruments for inclusion in on-line e-learning package   | WP6           | month 23   |
| D6.3            | Handbook for SMEs (draft and final)  | WP6           | month 14, 23   |
| D6.4            | Guidelines and recommendations for policy makers   | WP6           | Month 23   |
| D6.5            | EU workshop  | WP6           | month 22 or 26   |
| D6.6            | Project website  | WP6           | month 4 - cont,<br>till 2 years etc                    |
| D6.7            | Contributions to national workshops to disseminate the experience with the package   | WP6           | At appropriate occasions<br>between month 7 and 23     |
| D6.8            | Six-monthly reports on progress and performance to be published on the <i>BESS</i> home page   | WP6           | Months 14,<br>14, 20, 26, (+30)                        |
| D7.1            | Abstracts including regular updates  | WP7           | At appr. occas.<br>(see progr. rep.)                   |
| D7.2            | Project presentations including slide packages, presentations, written abstracts, posters, dissemination material etc.   | WP7           | At appr. occas.  |
| D7.3            | Presentation material including abstracts, visuals including photographic material interviews  | WP7           | At appr. occas.<br>slides 4-4-2005<br>+ progr. reports |
| 8.1             | Progress reports   | WP8           | will be Months<br>7, 13 etc.                           |
| 8.2             | Interim report   | WP8           | month 16   |
| 8.3             | Final report   | WP8           | month 29 or 30   |

**Annex 2 an overview of the contact persons of the consortium members and the Project Advisory Group per 31 December.** (per 31 December 2005)

| person                                     | Organisation (acronym)               | Project team | WPnr leader | PWG member   | NPCG member | PAG member |
|--|--------------------------------------|--------------|-------------|--------------|-------------|------------|
| Boudewijn Huenges Wajer (general manager)  | SenterNovem (coordinator)            | x            | 8           |              |             |            |
| Roelie Lambrichs-Rozendal (project bureau) | SenterNovem (coordinator)            |              |             |              |             |            |
| Teun Bolder                                | SenterNovem                          |              | 5           | leader c     | interim     |            |
| Joop van Meel                              | SenterNovem (dir. internat. affairs) |              |             |              |             | chair      |
| Hans Even Helgerud                         | NEPAS                                | x            | 3           | b            | x           |            |
| Hans Jacob Mydske                          | NEPAS                                |              |             | b + leader a |             |            |
| Petra Lackner                              | AEA (former EVA)                     | x            | 6 & 7       | c + leader b | x           |            |
| Aristotelis Botzios-Valaskakis             | CRES                                 | x            | 4           | a + b        |             |            |
| Haris Andreosatos                          | CRES                                 |              |             |              | x           |            |
| Timo Husu                                  | Motiva                               | x            | 1           | a            | x           |            |
| Tomaz Fatur                                | JSI                                  | x            | 2           | a + b        | x           |            |
| Romualdus Skema                            | LEI                                  | x            |             |              | (x)         |            |
| Declan Meally                              | SEI                                  | x            |             |              |             |            |
| Patrick Liddy                              | SEI                                  | (x)          |             |              | x           |            |
| Kalle Hashmi                               | STEM                                 | x            |             |              | (x)         |            |
| Carlos Garcia Barquero                     | IDAE                                 | x            |             |              |             |            |
| Pilar de Ariba Segurado                    | IDAE                                 |              |             |              | x           |            |
| Ivan Shiskov                               | SOFENA                               | x            |             |              |             |            |
| Zdravko Georgiev                           | SOFENA                               | (x)          |             |              | x           |            |
| Fritjof Frederiksen                        | BEKK                                 | x            |             |              | n.a         |            |
| Jacob Nordan                               | BEKK                                 | (x)          |             |              | n.a         |            |
| Christoph Tamandl                          | CIAA                                 |              |             |              |             | x          |
| Randall Bowie                              | EC                                   |              |             |              |             | x          |
| Paul Waide                                 | IEA                                  |              |             |              |             | x          |
| Otto Starzer                               | FFG                                  |              |             |              |             | x          |

WP 1 Definition of main challenges and roll out of best practices;

WP 2 Energy management implementation model & standards

WP3: Web based monitoring & benchmarking scheme;

WP 4 E-learning scheme for involved SMEs;

WP 5 Pilots;

WP 6: Project Dissemination;

WP 7: Common Dissemination;

WP 8 Management

PWG a: input & content;

PWG b: interrelation & communication;

PWG c: implementation

## Annex 3 Table of contents WP 1 report

### “Definition of the Main Challenges and Roll Out of Best Practices”, June 2005

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| Annex 5                    | Ranking Workshop   |
| Annex 6                    | Inventory of Existing Energy Management Systems and Energy Management Standards (by ISI)                 |
| Annex 7                    | E-learning Schemes (by CRES)   |
| Annex 8                    | The New Dutch E-learning Scheme (by CentraNovem)   |
| Annex 9                    | Benchmarking of Sub-Processes (by Jofina)  |
| Annex 10                   | Energy Monitoring and Reporting in the Netherlands (by CentraNovem)                                      |
| Annex 11                   | Environmental Permits  |
| Annex 12                   | Long-Term Agreements   |
| Annex 13                   | Contact Information of the Project Partners  |

**Annex 4 Pilot Package 1st phase tools (Nov 05–Feb 06) and 2nd phase tools (starting March 06)**

| <b>Tool</b>   | <b>nr</b> | <b>EMIM nr</b> | <b>Phase 1</b> | <b>Phase 2</b> |
|---|-----------|----------------|----------------|----------------|
| Business Case (including sector fact sheets) – meat processing, bakeries, dairies | 1         | <b>A1</b>      | <b>X</b>       |                |
| Self assessment checklist (part of nr 17)   | 2         | <b>A2</b>      | <b>X</b>       |                |
| Commitment – example of declaration of management                                 | 3         | <b>A2</b>      | <b>X</b>       |                |
| Energy audit sample + description procedures                                      | 4         | <b>B1</b>      | <b>X</b>       |                |
| Energy audit data collection sheet  | 5         | <b>B2</b>      | <b>X</b>       |                |
| Horizontal measure list   | 6         | <b>B2</b>      |                | <b>X</b>       |
| Sector specific measure lists   | 7         | <b>B2</b>      |                | <b>X</b>       |
| Links to existing national measure lists  | 8         | <b>B2</b>      |                | <b>X</b>       |
| Information sheet legislative & regulative framework                              | 9         | <b>B3</b>      | <b>X</b>       |                |
| Template for elaborating action plan (AP) including energy saving register        | 10        | <b>C1</b>      | <b>X</b>       |                |
| TRA matrix: roles, responsibilities, authority                                    | 11        | <b>C2</b>      |                | <b>X</b>       |
| Template for organising energy management team (incl. energy coordinator)         | 12        | <b>D3</b>      | <b>X</b>       |                |
| Examples of energy policies   | 13        | <b>D1</b>      | <b>X</b>       |                |
| Information sheet on awareness raising and training                               | 14        | <b>E1</b>      |                | <b>X</b>       |
| Description of good housekeeping measures   | 15        | <b>E2</b>      | <b>X</b>       |                |
| Internal energy organization and procedures                                       | 16        | <b>E2</b>      | <b>X</b>       |                |
| Energy management checklist   | 17        | <b>F1</b>      |                | <b>X</b>       |
| Set of indicators with Monitoring & Targeting (explanation)                       | 18        | <b>F2</b>      | <b>X</b>       |                |
| Benchmarking scheme – preliminary version: data collection template               | 19        | <b>F3</b>      | <b>X</b>       |                |
| Benchmarking scheme - final version   | 20        | <b>F3</b>      |                | <b>X</b>       |
| Sector specific measures lists for new sectors                                    | 21        | <b>B2</b>      |                | <b>X</b>       |
| E-learning system phase 1 (bulls eye + part middle ring)                          | 22        |                | <b>X</b>       |                |
| E-learning system phase 2 (inner ring)  | 23        |                | <b>X</b>       |                |
| E-learning system phase 3 (middle ring + outer ring)                              | 24        |                |                | <b>X</b>       |
| Energy management handbook draft  | 25        |                | <b>X</b>       |                |
| Energy management handbook final  | 26        |                |                | <b>X</b>       |
| National programmes & international projects                                      | 27        | <b>B2</b>      | <b>X</b>       |                |
| Ready to hand guidelines for policy makers  | 28        |                |                | <b>X</b>       |
| Set of definitions  | 29        | <b>A3</b>      | <b>X</b>       |                |
| Specification (requirements + part definitions + linking lists)                   | 30        | <b>A4</b>      | <b>X</b>       |                |

## Annex 5 Indicative Planning of the pilots

| Action or Result   | Description   | Time Frame             |
|--|---|------------------------|
| Pilot Package Presentation, Workshop   | The pilot package, a master plan and the approach for the execution of the pilots is explained to all national pilot coordinators.  | Nov. 2005              |
| National Kick Offs, Recruitment finished   | In each country, the NPCG organizes a national kick off workshop. This workshop will position BESS and will provide the companies with background information, a general roadmap and homework.  | Oct. 2005 ÷ Feb. 2006  |
| Business case, Self Assessment<br>Commitment declaration of the company management     | The companies provide initial basic data and indicators. Key questions related to the existing level of energy management in the company are answered and the commitment about the implementation of Energy Management is defined.  | Dec.2005 ÷ Feb. 2006   |
| Energy Policy, People  | A first preliminary energy policy is drawn up. It contains objectives and responsibilities.<br>Energy Coordinator and Energy Team are put into place.   | Dec.2005 ÷ Feb. 2006   |
| Energy Audit – Data collection, Energy Consumption                                     | The companies start with an energy audit. The level of auditing is chosen by the company, assisted by advice from the NPCD and the E-learning system.   | Dec.2005 ÷ Feb. 2006   |
| Energy Audit – Saving Opportunities, Energy Conservation Plan                          | The most important energy users are investigated. Either by a walk through audit, supported by measure lists, or by more extensive audits. Measures and the decisions for implementation are laid down in an ECP. No cost, low cost and high cost measures get prioritisation.  | Jan. ÷ May 2006        |
| Benchmarking   | First data input to the benchmark system.   | Jan. ÷ March 2006      |
| Legislative and Regulative Framework   | At this stage, the relevant legislation is studied.   | Feb. ÷ March 2006      |
| Roles and Responsibilities; Internal Energy Organization                               | The key areas of energy efficiency improvement are known. Roles of people in the company structure are defined; resources allocated. Basic data are checked.  | Feb. ÷ March 2006      |
| Implement Energy Conservation Plan (ECP), User Groups (BESS option to be investigated) | Good housekeeping measures (no cost) are implemented first to generate financial savings. An energy savings register is set up. People are trained.<br>(User Groups are common interest groups of people from various companies. They work together in order to solve technical or organizational problems. Typically User Groups focus on energy for utilities and buildings.) | from Feb. 2006 onwards |
| Monitoring and Targeting, Indicators   | Monitoring and Targeting is an ongoing process that starts with some simple measurements of energy and production data. Energy performance indicators are defined. In the course of years, the monitoring and targeting systems are refined. Results of actions become visible.   | from Feb. 2006 onwards |
| Energy Management Checklist  | The questions allow companies to assess the level of Energy Management that has been achieved so far.   | Jun. ÷ Aug. 2006       |
| Benchmarking   | Second data input to the benchmark system and analysis of the specific energy consumption relative to other companies.  | Jul. ÷ Aug. 2006       |
| Revision and Improvement   | After the implementation process and the Checklist the process is reviewed. Procedures, Policy, Execution, and Targets are improved, and the cycle is started again.  | Aug. ÷ Oct. 2006       |
| Survey and Evaluation  | The survey (WP6.1) will also serve the NPCGs to evaluate the direct applicability of the pilot package. The evaluation (D5.2) will be used to optimize the Implementation Model.  | Oct. ÷ Dec. 2006       |