# Lessons learned by the INDEEP database, a task of the IEA-DSM Agreement

A Report of Task 1 International Database on Energy Efficiency Programmes

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# **Summary**

Experts from different countries, cooperating on a Task for the IEA-DSM Implementing Agreement, have developed a framework to collect data on energy efficiency programmes. This framework and the relevance of the information was checked at two international workshops. Data for 162 Demand-Side Management programmes in the USA, Europe and Korea were collected and stored in a database (INternational Database on Energy Efficiency Programmes; INDEEP). The data contains information on programme results and experiences, as well as the lessons learned during the design, implementation and evaluation of these programmes.

Over a two-year period a Data Collection Instrument (DCI) was developed, tested and used. This DCI deals with qualitative and quantitative information on DSM programmes, and is available in English and four other languages. Approximately 60% of the programmes in the INDEEP database have been evaluated. The majority of the programmes (80%) were implemented by a utility. In 1997 in-depth analysis on the collected information started. Some results are: approximately 40% of the programmes use a mixture of energy-saving technologies; in contrast to most (70%) programmes only one marketing incentive is used; more than half the programmes (57%) offered rebates or a cash reward.

During the five-year work plan period (1994-1999) of this Task, products and software were continually improved, based (among others) on comments from (potential) users. The types of products are increasing and now ranges from a general brochure to a special analysis report and a sub-site on the IEA-DSM Internet site. The software is developing from spreadsheets to database. In 1998 the improved software (including an analysis tool) will be available, probably only for the participating countries.

At the moment the lessons learned are related to the project itself: the usefulness of the DCI, the importance of personal contacts to gather data, the feedback from users regarding information products and software improvements. The first analysis report (1997) might be a start for lessons that are more related to DSM or Energy Efficiency (Services) programmes.

#### 1. Introduction

Improving energy efficiency is a worldwide issue. Countries seek solutions to local and regional environmental problems, to reduce the prospect of global climate changes associated with the greenhouse effect. The most important opportunity for influencing energy use is to improve energy efficiency: to use less energy while maintaining the same degree of service. Another opportunity is to increase the use of renewable energy sources or to improve the energy conversion processes. Increased energy efficiency by end-users is an objective for many organisations, governments, energy agencies, utilities, consulting groups, etc. Activities in this field are often described as Demand-Side Management (DSM) programmes. Utilities are involved in DSM programmes for many reasons, one being environmental. Facing a more competitive market, often with restructuring (in organisation, ownership and regulation) of the power industry and the energy distribution companies, utilities in Europe and USA are questioning the value and role of DSM. Programme evaluations are already an important issue for improving cost efficiency and are expected to become even more important as the

performance and value of DSM programmes is closely scrutinised due to this competitive environment. In this increasingly competitive future, continuing programmes of this type are expected to be renamed as e.g. Energy Efficiency Services (EES).

The International Energy Agency (IEA) encourages countries to bring relevant information together and to share experiences. In December 1993 an "Implementing Agreement on Demand-Side Management Technologies and Programmes" was signed. Fifteen IEA member countries are working together to clarify and promote opportunities for DSM. By definition, DSM programmes include load management, strategic conservation and related activities. The European Commission and non-member countries (one via the World Bank) are participating, and each country participates in at least one of the working groups. Tasks under this Agreement deal with information/database, communications technologies, procurement of innovative technologies, integrating demand-side options into integrated resource planning (IRP), techniques for implementing DSM in the market and DSM in changing electricity business environments.

The working group described in Task 1 is charged with collecting, analysing, and disseminating information on DSM programmes. In order to facilitate this process and reduce the costs, the International Database on Energy Efficiency Programmes (INDEEP) was developed. Austria, USA, Denmark, Republic of Korea, Spain, Sweden, the Netherlands and the European Commission decided to participate in this working group from the beginning. At the moment Denmark, Spain, Sweden, the Netherlands and the European Commission are involved in the final phase of this task, which will last until mid-1999.

The development of an international database, as well as its analysis, is a time-consuming activity. In section two, we present important phases in this process during the five-year period (1993-1999), the selected variables that are essential for programme evaluations, and the way we incorporated these into the data collection instrument used to collect programme data. In section three a general overview of the content of the INDEEP database (April 1997) is presented: programmes by status, by country, by technology and by marketing incentives. The INDEEP database itself and the software developments are the topics of section four. We will describe the development of the database prototype and the ongoing activities to improve the software. In section five the dissemination of the information is discussed: the products produced by this working group are presented and special attention is given to the information on the Internet. In the last section of the paper we summarise the lessons learned up to now and list the planned activities for the remaining period 1997-1999.

# 2. The development of the INDEEP database

# 2.1. The work plan for the period 1993-1999

#### 2.1.1. General

The aim for Task 1 is to establish an international database on DSM, analyse the data collected and disseminate the results. Underlying this task is the assumption that if all of this information is in one place (in the INternational Database on Energy Efficiency Programmes; INDEEP), the cost of obtaining such information is considerably reduced and the potential for comparing programmes and synthesising programme experience is facilitated.

The INDEEP Database is unique because it focuses on programme evaluation. Most databases typically focus on technologies (rather than programmes), demonstration projects or renewable energy sources. The evaluation perspective is the key issue for data collection on targets as well as results.

# 2.1.2. The main activities during the five-year period

At the beginning op the project, six major sub-tasks were defined for the five-year period. In the first year programmes should be identified by the national experts, to specify the number of available programmes in a country and the common information that could be used in an international context. In the second year a data collection form was designed, tested and finalised (based on these surveys) and the data collection started. In the third year the data analysis was the major activity and, in the fourth year, the database is being updated. In the final year the database should be ready to be transferred to an organisation for continued update. During the five-year period the project and project results should be promoted as widely as possible. In Table 1 the sub-tasks, main activities and period are summarised. It should be kept in mind that the maintenance of the data collecting instrument, database software and quality control remain ongoing activities during the entire period, as well as collecting new data.

Table 1: Tasks covered by the INDEEP project

<b>Sub-tasks</b>	Main activities	Main period
1: Programme Identification	develop survey questionnaire	year 1
	implement survey questionnaire	
	identify programmes	
	workshop	
2: Design Planning	determinate data to be collected	year 1 and 2
	develop Data Collection Instrument and definitions	
	pre-test DCI	
	evaluate DCI	
3: Data Collection and Entry	data collection using the DCI	year 2 up to 5
	start software development	
	quality control on data	
	entering data	
4: Data Analysis and Report Preparation	analyse the first 100 entries	year 2 and 3
	prepare a report including lessons learned	
	dissemination of information	
5: Updates to Database	update existing data	year 3 up to 5
	adding new data	
	improving software	
6: Promotion and Marketing	prepare and distribute information material	ongoing
Ţ.	present INDEEP at conferences and workshops	- 2

#### 2.2. Development of the Data Collection Instrument (DCI)

#### 2.2.1. General

In the early 1990s a national database on energy efficiency programmes (DEEP) was set up in the USA, and a UNIPEDE working group compiled similar data from 12 countries in Europe. Two of the experts involved in developing the INDEEP database were also involved in these previous projects. The experts from the countries participating in the INDEEP Task developed a data collection instrument (DCI) that was tested in a pilot and discussed with potential users at several national and two international workshops (Vienna, 1995 and Madrid, 1996).

In the first year (May 1994-April 1995), a DCI was developed, the availability of data was checked and the analysis was discussed with potential users. In the second year, the DCI was shortened, data from about 100 programmes was collected and used to check the definitions. In the third year the DCI remained the same, with just a few definitions and the list of technologies being changed; the DCI was also translated into several languages. In the ongoing fourth year an electronic version is planned, which should be available on the IEA-DSM Internet site.

#### 2.2.2. Selecting variables

Using the experiences gained from the USA DEEP database project and the UNIPEDE working group, a large number of variables were selected (in the first year) by the experts to be important, especially when evaluating programmes. These included information on the setting up of a programme (general information on the organisation implementing the programme), the energy situation in the area in which the programme is implemented, information on the evaluation method used, cost calculations, marketing instruments and technologies, emissions etc. This resulted in a DCI with a 20-page long questionnaire on very detailed programme information. A field test of 14 programmes gathered from the participating countries demonstrated that it was not realistic to expect to receive such detailed information. This was discussed at an international workshop with potential users at the end of the first year, who recommended the development of a four-page DCI questionnaire that is now being used.

# 2.2.2. DCI items

The DCI currently in use includes three items: a paper and electronic questionnaire, a set of definitions and a list of technologies. The DCI deals with the following eight items:

#### a: General programme information

This includes the implementing organisation, contacts, and a short programme summary. The contact information includes a name, telephone, and fax number for additional information.

#### *b: Programme type and status*

This includes reasons for selecting the programme (e.g. business opportunity, costs of service or reduction of global warming) and the type of programme (e.g. audits, installation of conservation measures, alternative rate etc.) Furthermore, we asked when the programme started, if it was still ongoing or terminated, whether it had been (or would be) evaluated and the scale of the programme (pilot, national or regional level).

#### c: Objectives

The objectives could relate to energy efficiency, load or fuel savings, and/or appliance sales.

## d: Technologies

Technologies are organised into 10 groups, ranging from building envelope to electricity savings, each group containing more specific technologies, e.g. heat pumps, metering devices and efficient fluorescent lamps. For each technology, the payback period should also be reported.

#### e: Markets and marketing

The programme market is related to technologies (new construction and replacement/retrofit) and, through this, to a segment of customers (residential, commercial, industry and agricultural) as well as non-customers (e.g. builders, architects and retailers). Goals, as well as yearly and cumulative results, are collected for participant information.

Information on marketing methods (e.g. direct mailings, advertising, personal contact) and incentives (e.g. rebates, financing, gifts) is also collected.

# f: Costs

Both incentive and non-incentive costs are dealt with, as well as organiser and non-organiser costs. This data can be combined with participation rates and energy-saving data to give a measure of programme cost effectiveness.

#### g: Savings

The annual and cumulative electricity demand and/or fuel savings are given, which can then be compared to saving goals. If the programme is ongoing, it is our intention to update the data annually based on new results.

# h: Lessons learned

Programme managers are encouraged to describe their experiences over the past year of the programme. In particular, we were interested in successes and failures, as well as difficulties encountered in programme design, financing, implementation and evaluation.

The DCI paper form is normally presented in English. Questionnaires can also be supplied in Italian, German, Spanish and Dutch. It is expected that an electronic version will be available on the Internet site early in 1998, to be downloaded by people wishing to fill in the form.

#### 2.2.3. Definitions and technologies

It was more than a year before the experts could agree on definitions and explanations of the terms used in the DCI. For the target groups the experts decided to follow the international NACE coding, but for items such as technology, marketing instruments and programme types, there is no general coding system in use. These items were discussed several times before the text was finalised. The resulting technologies list also includes behavioural aspects such as managerial measures.

#### 2.3 Data collection

The data collection started in 1994 by compiling information on 14 programmes, also used for testing the DCI. In 1995, data was collected for about 100 programmes using the four-page DCI form. In 1996 data for about 80 programmes was collected by the experts, resulting in 184 programmes in the INDEEP database in May 1997.

From the beginning a quality check has formed part of the data collecting process. In the first two years the quality control was not in-depth. For the first 14 programmes the information was very detailed, so it was easy to check for mistakes and obtain improved data. Using the experience with the data collection for about 140 programmes the experts agreed on two levels of minimum data requirements, in addition to data consistency. Data consistency refers to the logical relation between values, as a participation ratio cannot exceed 100%. These two groups of minimum data, which should be available in the INDEEP database to include a programme for additional analysis are:

- Group 1: Data on Implementing Agent, Summary, Energy sources and Programme status must be filled in for all cases.
- Group 2: Data of Evaluation status, Reasons for selecting DSM programmes and technologies should be filled in.

In May 1997, 162 programmes met these additional minimum data requirements, and these programmes have been used for analysis.

To ease the data collection process, the DCI has been translated into several languages. This also gives national experts the possibility to exclude codes that are not relevant for a specific country or to include examples. But in the database the information is currently stored only in English. From 1998 data might also be stored in other languages.

#### 2.4. Lessons learned

One of the most important lessons learned for the DCI itself is that people that should fill in a questionnaire relating their cooperation to the expected results they can get from their activities. It should be kept in mind that programme managers were asked to fill in the forms and they are also the persons for whom the information on key values, marketing methods and results are interesting. These people are willing to invest some time in filling in a form, but this must be less than an hour.

Not only the quantitative information on programmes is interesting, but many people are also interested in qualitative information (e.g. lessons learned). Using these two types of information users expect to find interesting programmes for their specific field of interest and use, rather than just the information for the contact persons.

Definitions are a continuous point of attention for the data collection. Each country has for some part very specific interpretations of definitions that sometimes shows up when information for a new programme is collected. As the data collection is an ongoing process, the discussion on definitions and interpretation is never a lasting item in this international project.

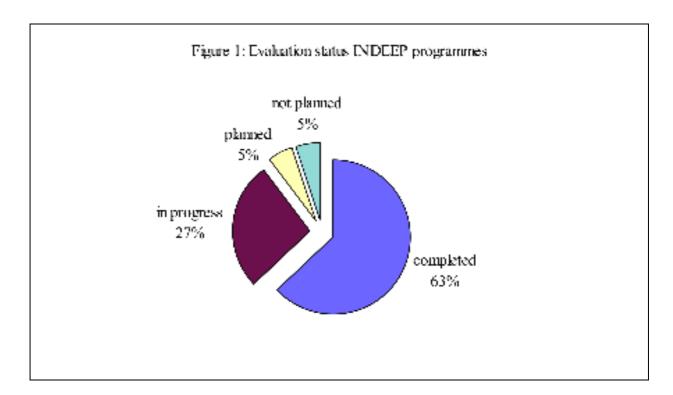
During the project it seems that the changing market situation for energy utilities in participating countries also has some impact on the availability of programme data to be used outside one's own company. It was not considered a severe problem yet, but for some programmes information is no longer available at the start of a programme, only later.

#### 3. Content of the database

The INDEEP database can be used as a tool for designing and planning new DSM or Energy Efficiency Services programmes as well as for evaluating existing programmes by comparing similar programmes in the database. The following analysis presents some of the available INDEEP data including evaluation status, technologies and market incentives and programmes used per country. More detailed information on programmes will be published in special INDEEP analysis reports.

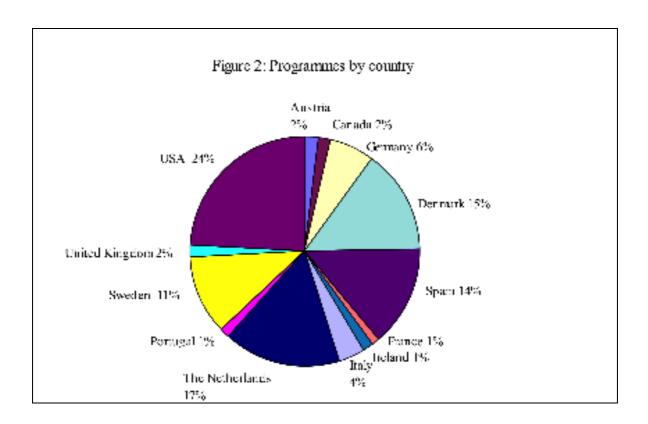
# 3.1. Programmes by evaluation status per country

For more than half (61%) of the 162 programmes in the INDEEP database an evaluation has been completed. For eight programmes no evaluation had been planned. For 34% of the programmes an evaluation is still ongoing or planned.



#### 3.2. Programmes by country

The INDEEP database consists of programmes implemented in 13 countries all over the world. As shown in Figure 2, about 80% of these programmes are supplied by five countries. The largest number of programmes (23%) come from the United States. The Netherlands, Denmark, Spain and Sweden submitted 11 to 17%.



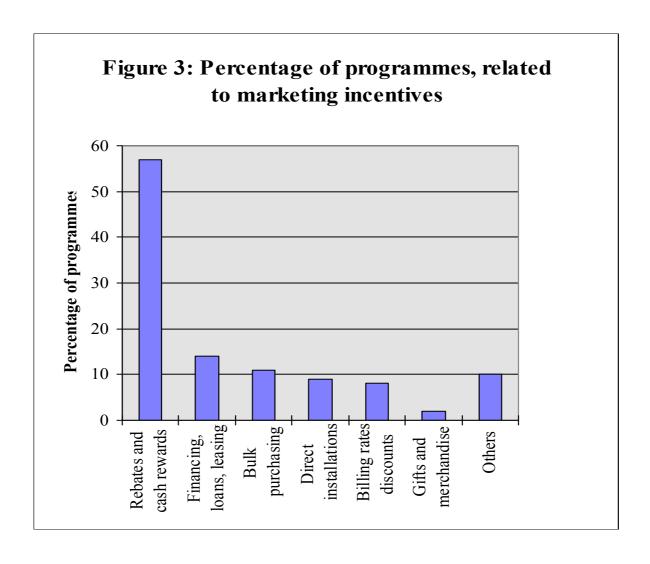
# 3.3. Programmes by technologies

Almost all (157) of the programmes included technology data. Table 2 shows that 40% of the programmes use a mixture of energy-saving technologies. Electricity savings is by far the largest technology category, affecting 58% of the programmes.

Table 2 : Technologies used in programmes				
Number of technologies	Number of programmes			
1	92			
2	21			
3	9			
4	10			
5	6			
6	7			
7	9			

# 3.4. Programmes by marketing incentives

In most (70%) of the programmes the management used only one marketing incentive. For six programmes, three different types of marketing incentives were used. Figure 6 shows the different marketing incentives, the most popular being rebates and cash rewards. Financing and bulk purchasing are used in about 10% of the programmes.



#### 3.5 Interesting aspects for future analysis

In the update of the data for programmes in the INDEEP database during the next year special attention will be given to the data on goals related to results. Information on participation goals and realised participation is available for 42 programmes. Analysis shows a very high relation between the target values and realisations. The number of programmes that achieved or exceeded their goals is over twice the number that failed to meet them, and only a few programmes realised less than 90% of the targeted participation. More in-depth analysis is necessary to explain this high level of success. It could be that programme managers did not use the original goals set at the beginning of a programme, but modified goals during implementation. Another explanation could be that we only collect very successful programmes with fewer normal or failed programmes. It is also possible that management only use good tools to determine their target values, which means that we need more detailed information on these tools.

An important aspect of the INDEEP database is the reliability of the energy savings data. About half the programmes are using engineering data for calculating the target values on energy savings as well as on realised energy savings. But for most of these programmes these engineering data are used in combination with at least one other evaluation method. For 36 programmes energy savings are based on utility billing data, and for 19 on spot metering. Analyses are planned to investigate the several data calculation methods especially for real measured savings versus calculated savings for different programme types.

# 4. Database software development

The data is collected by national experts, initially using the longer and later the shortened paper DCI form. During the first two years of this project the data was stored in spreadsheets. As planned from the third year the development of a tailor-made database was started. This should result in a user-friendly INDEEP database, including standard analysis, by the year 1998.

#### 4.1. From spreadsheet to prototype

During the testing of the DCI in the first year data was stored in spreadsheets. This had two main reasons. Firstly, there were only a small number of programmes (14) involved at that point and the framework from the American INDEEP database, that was in a spreadsheet, could be easily modified to the needs of the projects at that time. Secondly, all the experts were familiar with spreadsheet software and could also use the spreadsheet in the second year.

During the first year the experts in the participating countries filled in the paper form and the Task managers stored the data in the spreadsheet. In the second year the data for the four-page DCI form was collected by the experts and stored in a country spreadsheet. The Task manager merged these files into one master spreadsheet for quality control and analysis.

As the shortened DCI proved to be a useful instrument for data collection, the development of a database, using the database software ACCESS, was started by the end of the second year. First a prototype was developed, which was presented at the second international INDEEP workshop in Madrid. The comments of the participants at this workshop were used for improving this prototype.

### 4.2. From prototype to INDEEP database

The prototype was created in ACCESS, using the DCI paper form as a basis. The first aim was: it should be possible to complete the form directly in the computer and no longer use a spreadsheet with a large number of fields. As such it was also possible to print an empty (new) DCI form and to print the information for a programme stored in the INDEEP database, in the DCI form. To illustrate the information in the database a one-page summary was developed, presenting the key information of a programme on one A4 sheet. After the aforementioned workshop the experts changed the layout of this rapport using the comments of potential users. Appendix A shows the one-page summary for a Spanish programme.

In the prototype two examples for analysis were also demonstrated: a general overview of all the programmes and simple selections option from selecting programmes by country and/or by energy source. In the general overview information was presented in table forms, with graphics showing programmes by country. After selecting a country and/or energy sources for the relevant programmes, the information was presented in the one-page summary form.

In the third year the software development was targeted to upgrade this prototype to a tailor-made database, but only two major improvements were started, as it was unclear whether the Task would continue for the last two years. The first improvement was to incorporate the DCI instructions with definitions, explanations and coding into the database in such a way that it could also be used as an online help function. The second improvement was a language selection for the DCI to fill in the form: this is currently possible for Spanish, Dutch, German and Italian, as well as the original English version.

# 4.3. Software improvements including analysis tools

Software development is one of the major issues in the work plan for the last two years of this Task, the period 1997-1998. In the second half of 1997 the country experts must approve the "Definition of Requirements" for the INDEEP software. The following items will be included:

- 1. the database presentation should be menu-driven;
- 2. there are (at least) five main menus:
  - 1) DCI/data input form (a paper and an electronic version);
  - 2) search for individual programmes (resulting at least in information in DCI-form, one-page form and as export files);
  - 3) a query for a set of programmes (resulting in information in DCI-form, one-page form, in standard reports and export files);
  - 4) standard overviews on the databases as a whole (by country, technology, energy source, programme types), as well in tables as graphics;
  - 5) language selection: that information on programmes will be shown in the selected language and, if not available in that language, information will be displayed in English;
- 3. There is a separate menu for quality control, also related to updating (and importing) facilities

In the spring of 1998 the experts will test the software. It is hoped that the INDEEP database with the new software will be in operation around the summer time. At that point a user manual will also be available.

#### 5. Dissemination of INDEEP-information

There are several INDEEP-products available for everybody who is interested, as well as a number of products that are restricted to the participants in the Task.

General information on the IEA-DSM Agreement highlighting this particular Task, is presented in the annual report on the IEA-DSM Agreement, the Newsletter and the Internet site. Every year more specific information on the progress of the INDEEP project is presented in an annual report. The use of the DCI is free of charge; in the past two years organisations and programme managers have been encouraged to fill in the forms, even if their country is not participating in the project.

Since 1996 general information on the INDEEP database has been presented in a brochure. One-page summaries (an example is presented in Appendix A) are available from the project leader and will also be available soon on the IEA-DSM Internet site.

The detailed information in the INDEEP database is restricted to the participating countries.

For the period 1997-1999 three analysis reports are planned, the first to be published in 1997. Each report presents the most up-to-date situation regarding the INDEEP database, with an indepth analysis on a special item. In the first report this is 'cost effectiveness'. These reports are available free of charge in the participating countries, while other countries pay a small fee.

Since 1997 information has also been presented on the Internet site; its address is <a href="http://www.iea.org/dsm-enef">http://www.iea.org/dsm-enef</a>. The information on this site will be updated regularly. At the moment the DCI is available on this site, and the one-page summaries will be added soon. Summaries will be given of all publications in this Task, and sometimes the full text of papers and presentations will be available.

#### 6. Lessons learned and future activities

#### 6.1. Lessons learned up to now

Although the Task will continue up to 1999, some lessons have already been learned concerning the development of an international data collection tool, data collection on energy efficiency programmes and software development. From an evaluation point of view, it is too early to look at key elements in DSM programmes. Some of these lessons have already resulted in adjustments to the work plan.

The developed DCI has proved to be a good basis for international data collection, especially from an evaluation perspective. During the Task, a DCI with very detailed information on DSM programmes was modified after testing and comments from potential users (in an international workshop) to a four-page questionnaire, an instruction set and a technology list. During the two years of data collection this DCI proved to be a useful and practical instrument. This is confirmed by the fact that it will be used in the development of other national and international projects: in Brazil a university will use the DCI to develop a national evaluation programme; in Hungary next year's data collection will probably start with almost the same kind of questionnaire as used in the INDEEP project; and in a Dutch/German evaluation project on energy-efficient boilers (EU Save-project) the DCI and the software will be reused.

In the data collection process the experience of the experts showed that using personal contacts were important, sometimes even essential, to gather data. For a lot of programmes in the INDEEP database it was necessary to contact the programme managers personally to obtain the additional information to complete the DCI, to change existing data on a programme to comply with the definitions or to obtain comments on evaluated data. These contacts were also essential to keep the interest of national programme managers for this project, as it took almost two years before the DCI was finalised and fine-tuned.

One of the most important lessons learned during the development of the DCI is: remember that you are asking people to give their time, which is normally in short supply. For people filling in the DCI form it was very uncertain what they would get out of it. These people were willing to spend some time filling in a form, but not more than one hour. This was the main reason for changing/shortening the DCI as described earlier.

From the start of the Task special attention was paid to disseminating information on the INDEEP project. In the first two years, two special workshops were organised to obtain feedback from (potential) users. The project was presented in all participating countries and at two conferences. It was not easy to keep people involved, as it took a long time before analysis results (based on a larger number of programmes) were available. So, from the third year onwards additional communication tools were used: a general brochure and a growing Internet sub-site with the most up-to-date information.

It was a good decision to initially store data in a spreadsheet: low additional cost, experience with the software by the experts and time to decide on the main variables. But it took too long before database software was selected. People were expecting a database, and not a spreadsheet, when they were informed of the INDEEP database. The prototype had not enough standard analyses for people hoping to get information from the database. With the planned software improvement, the INDEEP database should be more user-friendly.

#### **6.2.** Activities planned 1997-1999

The four main items for the period 1997-1999 are:

- 1. data collection and quality improvement;
- 2. software development;
- 3. analysis;
- 4 ensure a future for the database.

For the data collection the target is to collect data from approximately 100 DSM programmes per annum; so at the end of the period the INDEEP database should include around 400 programmes. From 1997 the quality of existing data in the database should be improved and updated for ongoing programmes. The INDEEP database software will be improved using ACCESS, and will have several menus for data collection, data control, analysis and queries. In the summer of 1998 the improved software should be available for the participating countries.

Three analysis reports are planned – the first in 1997 and the last in 1999. In the third report the final status of the INDEEP database (version February 1999) will form the basis for analysis.

The project started with two countries outside Europe: USA and the Republic of Korea. Both are no longer participating in the final two-year period; only European countries (and the European Commission) continues.

Before discussing a future host organisation to maintain the database, we should discuss whether the database should be more European or globally oriented. However, this discussion has not yet started.

#### Acknowledgements

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# Appendix A: Example of an INDEEP one-page summary

Spain status: full-scale at national level

Programme: **Domoluz** implemented by UEF

Market sectors: residential

Technologies: compact fluorescent lamps

Energy sources: electricity

#### Programme summary

In 1995 the utility promoted the introduction of compact fluorescent lamps in the residential sector. All customers in Spain received a discount coupon, which was added to their electricity invoices. With this coupon, customers could purchase up to five compact fluorescent lamps in any shop at a reduced price. The price reduction was more than 50% (750 Pst) of the normal price.

Approx. 23,000 customers bought over 100,000 lamps; most of them purchasing the maximum five lamps. The calculated electricity saving is approx. 6,500 MWh with a reduction in the peak demand of 4.7 MW.

#### Lessons learned

Using a high discount rate, it was possible to almost achieve the target number of households involved in the campaign.

A specialised firm handled the refund to the shop owners on behalf of the utility. This was a good organisational decision because there were several peak periods for work during which the utility was not staffed.

#### **Key figures**

		Targets	most recent year 1995	cumulative 1995 to 1995
Energy saving				
Electricity	MWh	6,720	6,465	6,465
Peak Demand	MW	4.9	4.7	4.7
Fuel	TJ			
Appliance sales				
compact fluorescents		104,000	100,063	100,063
Participation				
Number of customers		26,000	23,379	23,379
% of eligible customers	%	1.0	0.92	0.92
Costs				
Total cost	ECU		1,708,136	1,708,136
of which organiser costs	ECU		1,708,136	1,708,136
incentive costs	%		34	34
Levelised resource cost				
total	ECU cents per MWh		2.6	
utility	ECU cents per MWh		2.6	