

APPENDIX C:

STANDARD REPORTING FORMAT

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PROCESS DESCRIPTION

In the following a short summary of the work on the standard reporting format is given. It is followed by four examples of formats.

THE INITIAL INTENTION

The initial intention was to prepare a standard reporting format linked to the developed ex-post evaluation methodology, which could facilitate and support comparison of different DSM and EE service programmes and evaluation efforts in a consistent and logical manner (at intra-company, regional, national, and international level).

The format was therefore intended to encompass questions regarding the context in which a programme was born and implemented. The registration of external characteristics, which naturally influence the success of a programme, were to function as information to support strategies for replication of programmes and transfer of programmes to other countries and energy systems.

The standard reporting format was thus to include information on the person/organisation completing the form; programme context; programme overview; programme details; evaluation status; chosen evaluation framework; evaluation details; evaluation results; lessons learned; and application/dissemination strategy.

Other sophisticated databases on DSM and EE service programmes exist both in Europe and elsewhere. An example of an international database is the INDEEP database developed under the IEA DSM Programme (see Exhibit C-1). Also, some nations already collect programme information in a national database. The new standard reporting format would therefore have had to be clearly distinguishable from these and provide new insights for it to be of use. It was anticipated that the standard reporting format would contain information concerning programme context and evaluation approach and experiences in addition to some basic information concerning the programmes to give meaning to the other information.

DILEMMA

The dilemma of the project team was how much information to collect and for what purpose:

- If the objective is to enable comparison and replication of programmes and services, then quite detailed information is required. In this case the programme and evaluation reports might be better suited.
- If the objective is to provide an overview of what has been done where, then a very short format is necessary. Such a format was already developed under the SAVE project “Public Policy Base DSM in the Nordic Power Sector” (see Exhibit C-2).
- If the objective is to function as a kind of checklist, then it is better as a natural part of the methodology presented in the guidebook. Two types of checklists are given in Chapter 3 on planning the evaluation effort.

Important in this discussion is also to identify the users of the information collected in such a standard reporting format.

Alternatives to producing a new standard reporting format were:

- To use the existing databases;
- To expand one or more of the existing databases to include context and evaluation elements;
- To postpone the development of a new standard reporting format until a definite need arises.

FINDINGS

The project team tried out two types of formats. The first was a continuation of the draft standard reporting format developed in Phase I of the project (Exhibit C-3). It was found inadequate to provide new insights. A second format resembling a checklist was also tried out on all project evaluation cases and it appeared to be more user-friendly (Exhibit C-4). However, again the relevance of the format kept coming up in project meeting discussions.

It was therefore decided by the project team to abandon the standard reporting format. Within the scope of this project it was judged impossible to make a useful tool. Also, it did not make sense to create a database for which no user has yet been identified.

RECOMMENDATIONS

In the light of EU's Kyoto commitment and intention to implement an internal CO₂ emission trading scheme in the EU, there is a need for reliable standard formats for documenting that emission reductions have been reached. Furthermore, the Commission is currently exploring ways on how to promote energy services in the EU internal energy markets. A co-ordinated promotion initiative for energy services requires a co-ordinated European standard reporting format for DSM and EE services results and evaluations.

To ensure a valuable and useful reporting format, the effort must be tightly co-ordinated with the activities to establish rules for emission trade and an internal market for energy services. In other words, a tool for the implementation of the Kyoto Protocol is needed.

A Kyoto Protocol tool is most likely best based on an existing database such as INDEEP. The tasks, related to creating a Kyoto Protocol tool, would as minimum include the following:

- Identification of the future **controlling entity** of the database;
- Identification of **who should provide data** for the database;
- Identification of the future **users of the database output**;
- Identification of **relevant output** and **design of output**;
- Identification of **relevant indicators** and **calculation methods**;
- Establishment of a **reporting procedure** (who, when, how).

The present SAVE project has created both methods and a network of evaluators, which would be very valuable in the development of such a tool.

The following exhibits C-2, C-3, and C-4 contain illustrative programme information while Exhibit C-1 is "blank".

EXHIBIT C-1: INDEEP DATA COLLECTION INSTRUMENT

DCI-1

DCI Number		Country	
Name of INDEEP Expert			
First Data Submittal []		Date of Submittal	
Data update []		Date of Update	

Primary Programme Implementing Agent Electric or Gas Utility [] Central Government [] Regional Government [] Local Government [] Local Organisation [] ESCo (Energy Service Company) [] Other [] <i>Other (specify)</i>	Contact Information	
	Name	
	Programme Implementing Agent	
	Address	
	City/Town	
	Zip Code	
	Phone	
	Fax	
	Email	

Programme Name	
Project ID	Programme Implementing Agent
Programme Summary	

DCI-2

Programme Start Date _____	Ongoing <input type="checkbox"/>
End Date _____	Terminated <input type="checkbox"/>

Programme Status Pilot (Demonstration) <input type="checkbox"/> Full Scale at National Level <input type="checkbox"/> Full Scale at Regional Level <input type="checkbox"/> Phase out <input type="checkbox"/>	Evaluation Status Completed <input type="checkbox"/> In-progress <input type="checkbox"/> Planned Start Date <input type="checkbox"/> Start Date _____
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Energy Objectives Energy Efficiency <input type="checkbox"/> Load Optimisation <input type="checkbox"/> Fuel Switching <input type="checkbox"/>	Programme Goals Number of participants _____ Energy savings _____ Demand savings _____ Fuel savings _____ Appliance #1 sales _____ Appliance #2 sales _____ Other (specify) _____
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Reasons for Selecting this DSM Activity (Choose 1 - 5 reasons) Regulatory Incentive <input type="checkbox"/> Legislated / Mandated <input type="checkbox"/> Political Pressure <input type="checkbox"/> Public Image <input type="checkbox"/> Result of Screening Process <input type="checkbox"/> Result of Other Competitive Analysis <input type="checkbox"/> Economic Development <input type="checkbox"/> Business Opportunity <input type="checkbox"/> Long-term Resource Option <input type="checkbox"/> Market Penetration <input type="checkbox"/> Quality of Service <input type="checkbox"/> Customer Retention <input type="checkbox"/> Cost of Services <input type="checkbox"/> Reduction of Global Warming <input type="checkbox"/> Reduction of Local Emissions <input type="checkbox"/> Market Transformation <input type="checkbox"/> Other (specify) _____	Eligible Markets New Construction <input type="checkbox"/> Replacement/Retrofit <input type="checkbox"/> Energy Source Affected Electricity <input type="checkbox"/> Gas <input type="checkbox"/> Fuel Oil <input type="checkbox"/> District Heating <input type="checkbox"/>
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Programme Type General Information (Brochures, etc.) <input type="checkbox"/> Site-Specific Information (Audits, etc.) <input type="checkbox"/> Installation of Conservation Measures <input type="checkbox"/> Operations and Maintenance <input type="checkbox"/> Load Control <input type="checkbox"/> Hook-up Fees <input type="checkbox"/> Education/Training <input type="checkbox"/> Research and Development <input type="checkbox"/> Building Standards and Labels <input type="checkbox"/> Appliance Standards and Labels <input type="checkbox"/> Market Transformation <input type="checkbox"/> Other (specify) _____	Alternative rates Time-of-Use <input type="checkbox"/> Interruptible/Curtailable <input type="checkbox"/> Other <input type="checkbox"/> Other (specify) _____
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DCI-3

Customers Targeted by Programme Residential		Non-customers Targeted by Programme	
All [] 1-2 Family Houses With Electric Space Heating [] 1-2 Family Houses Non Electric Space Heating [] Multifamily Houses/Apartments Central Heating [] Multifamily Houses/Apartments Indiv. Elec. Space Heating [] Multifamily Houses/Apartments Indiv. Non-Electric Heating [] Multifamily Houses/Apartments District Heating [] Other (specify)		Building Owners [] Retailers [] Wholesalers [] Appliance manufacturers [] Builders [] Realtors and developers [] Architects and engineers [] Bldg. mgrs. and administrators [] Bldg. and equipment operators [] Energy service companies [] Leasores & Rentors [] Other (specify)	
Commercial []	All Others (specify 6-digit NACE code(s))		
Industry []	All Others (specify 6-digit NACE code(s))		
Agricultural []	All Others (specify 6-digit NACE code(s))		

Technologies	
Technology Code (see DCI Instructions)	Payback time in years

Marketing instruments	Marketing methods	
Rebates and Cash Awards [] Financing, Loans, and Leasing [] Direct Installation [] Tarif reduction [] Bulk Purchasing [] Gifts and Merchandise [] Other (specify)	Direct mail [] Advertising [] Energy Audits [] Personal Contact []	Other (specify)

Participation Summary					
	Most recent year	Cumulative			Units
			to		
Participants					
Eligible Customers					
Participation Rate		%		%	

DCI-4

Programme costs, Energy Savings, and Appliance Sales			
		Most Recent Year	Cumulative
Costs in Euro	Total Utility/Organiser Costs		
Specify years	Total Non-Utility/Organiser Costs		
	Total Programme Costs		
	Incentive Costs (%)		
	Non-Incentive Costs (%)		
Energy Savings	Electricity savings (MWh)		
	System peak demand savings		
	Fuel savings (TeraJoule)		
Appliance Sales (# units)	#1 Specify units		
	#2 Specify units		

Data used to calculate savings	Life-Cycle Programme Costs
Engineering data []	Average measure lifetime []
Utility billing data []	Real societal discount rate []
Spot metering []	Real utility discount rate []
Whole-buildings load data []	
End Use load data []	
Equipment specifications []	
Site-specific data []	
Appliance sales data []	
Other (specify)	

Lessons Learned

INSTRUCTIONS FOR COMPLETING THE INDEEP DATA COLLECTION INSTRUMENT

This data collection instrument (DCI) is designed to facilitate the collection of information on utility and government DSM programmes. These instructions provide guidelines for completion of the DCI. The person(s) completing the DCI should regard the instructions as a reference that should only be consulted when there is a question regarding the completion of a particular data request.

Four fields have to be filled in by the country experts. These fields are:

- DCI reference number;
- INDEEP expert and country;
- Date submitted;
- Data collection phase.

Two fields will get special attention by the country expert and will be improved, if necessary:

- 6-digit NACE codes for sectors targeted by programmes;
- Cost information, the conversion to Euro;

DCI - 1

Primary Program Implementing Agent

This is the organisation performing the actual program implementation/delivery - e.g., utility company, government agency (central, regional or local), local community organisation, or an energy service company. A municipal government should be coded as "local government." There may be a combined effort in program implementation. **Check all applicable implementing agents.**

Energy Service Company (ESCO)

An Energy Service Company is a firm that specialises in providing DSM conservation services. Typically, this firm enters into contractual agreements with utility companies to assist in planning, implementation/delivery, and monitoring and evaluating DSM programmes.

Other

Please provide a brief explanation.

Contact Information

Enter the name for the person to be contacted for additional information, the organisation that is the programme implementing Agent, address, telephone number, fax number, and electronic mail (email) address

Programme Name

Enter the full name of the DSM programme (in English).

Project ID Number

If you have given the programme an internal code, please complete, so that it is easier to communicate and avoid misunderstanding.

Implementing Agent Name

Enter the full name of the primary programme implementing agent (in English).

Programme Summary

Describe the programme in a few sentences, using the section headings of the DCI. Provide programme highlights that capture the essence of the programme: e.g., its market delivery system, programme impacts, uniqueness of programme, expectations versus results, etc.

DCI - 2**Programme Start and End Dates**

Enter the month and year for start and end dates of the **overall programme**. For ongoing programmes, check **ongoing**; for programmes that have ended, check **terminated** and specify the programme end date.

Programme Status

"Programme status" refers to the life-cycle stage of the programme. Programmes may be in one of three stages in their life cycle. These stages are defined below. **Check one only.**

Pilot

Pilot Programmes are designed to test or build the capability to deliver full-scale programmes.

Full-Scale

Full-Scale Programmes are available to all customers in an eligible market at the **national** level or for a particular **region**.

Phase Out

A Phase Out Programme is in its last year of operation; the evaluation of the programme may continue after a programme has ended.

Evaluation Status**Check one only.****Completed**

A programme evaluation has ended and that at least one evaluation report is available.

In-progress

A programme evaluation has started and is ongoing.

Planned

A programme evaluation is being planned and is likely to be implemented. Specify the approximate date when the evaluation will start.

Energy Objectives

Check one or more of the three objectives that apply to the DSM programme.

Energy Efficiency

Programmes promoting more efficient use of energy.

Load Optimisation

Load optimisation programmes include *load shifting* (promoting the movement of electricity use from one time period to another, usually from the on-peak to the off- peak period for a single day), *valley filling* (promoting increased off-peak electricity consumption, without necessarily reducing on-peak demands), *peak clipping* (promoting reduced electricity demand (kW) at times of peak daily demand (typically, at system peak)), and *load building* (promoting increased electricity consumption, generally without regard to the timing of this usage).

Fuel Switching

Programmes promoting the conversion (switching) of one source of energy (e.g., gas) to another source of energy (e.g., electricity).

Programme Goals

Most programmes have goals that shape the programme. Where appropriate, describe the goals in terms of number of participants, energy savings, demand savings, fuel savings, appliance sales, or other category. Specify the units.

Reasons for Selecting this DSM Activity

Sixteen potential reasons for implementing this DSM activity are listed on the DCI. **Check at least one and no more than 5** key reasons that apply to the DSM activity.

Regulatory Incentive

A regulatory body (e.g., a public utilities commission) has offered incentives to the primary programme implementing agent (see pg. 1) for promoting DSM programmes. The incentives may be financial or non-financial, and the primary programme implementing agent has the option of taking advantage of these incentives.

Legislated/ Mandated

A regulatory/legislative body has required that the primary programme implementing agent implement DSM programmes.

Political Pressure

Pressure by the general public, interest groups, political parties, and others made it necessary for the primary programme implementing agent to implement this DSM activity.

Public Image

Implemented for enhancing the public image of the primary programme implementing agent (i.e., for good public relations).

Result of Screening Process

A formal screening process (e.g., using computer cost-effectiveness tests) was used to select the DSM activity - e.g., a programme may be selected because its benefit-cost ratio was greater than one

Result of Other Competitive Analysis

A bidding process or some other form of competitive analysis was used to select the DSM activity - e.g., a programme may be selected because the winner of a DSM bid included this programme in its menu of programme offerings.

Economic Development

Implemented for developing a stronger economy - e.g., creating more employment in the region.

Business Opportunity

Implemented for developing a new business for the primary programme implementing agent.

Long-term Resource Option

Implemented for providing a resource for the future.

Market Penetration

Implemented for increasing the penetration of one or more energy efficiency measures and practices in the marketplace.

Quality of Service

Implemented for increasing the quality of service offered to the utility's customers or the government's taxpayers.

Customer Retention

Implemented for retaining customers for the utility - e.g., offering low billing rates so customers will stay with the utility.

Cost of Service

Implemented for reducing the cost of service to the utility (e.g., less generating capacity needed to build).

Reduction of Global Warming

Implemented for improving the quality of the global environment as it relates to global warming (e.g., CO₂)

Reduction of Local Emissions

Implemented for improving the quality of the local environment (e.g., air quality and water quality).

Market Transformation

Implemented for influencing the attitudes and behaviour of individuals and organisations, so that investments in energy efficiency persist even after the programme is changed or eliminated.

Other

If another reason is important and is not listed, please specify.

Eligible Markets

The Eligible Market is any set of customers or participating units that qualify for a programme based on the programme's eligibility requirements. **Check all that apply.** Eligible Market definitions can be classified into two main categories:

New Construction

New Construction refers to buildings and facilities (or additions) constructed during the current year; it may also include major renovations of existing facilities and building envelope components (although there is no strict definition, "major renovations" occur when large amounts of floor area are affected).

Replacement/Retrofit

Replacement/retrofit buildings are structures that are in use as of the beginning of the current year. Replacement is the installation of new equipment or building envelope components for worn out equipment at the end of its useful life. Retrofit is the substitution of new equipment for existing equipment prior to its normal retirement age accompanied by the removal and disposal of the old equipment.

Energy Source Affected

Indicate type of energy source that the DSM programme affects: e.g., electricity, gas, fuel oil, and district heating.

Programme Types

Check all applicable types.

General Information

Programmes that inform customers about DSM options through advertising media such as brochures, bill stuffers, television, and radio ads.

Site-Specific Information

Programmes that provide guidance on energy efficiency and load management options tailored to a particular customer's facility. They often involve an on-site inspection of the facility to identify potential cost-effective DSM actions. An energy audit and design assistance are examples of site-specific information programmes.

Installation of Conservation Measures

Programmes where the utility, contractor, or customer installs energy efficiency DSM measures in the facilities of participating customers (with or without incentives).

Operations and Maintenance

Programmes that include regular maintenance of particular measure(s), along with training and education of O&M personnel, maintenance manuals, and periodic re- testing to measure actual performance.

Load Control

Programmes that promote shifts in electricity consumption from one time period to another (usually from on-peak periods to off-peak periods during a single day) or clipping peak usage.

Hook-Up Fees

Programmes that are usually performance-based with a sliding scale; the fees decline as the energy efficiency of the home increases, and increase as it decreases.

Education and Training

Programmes that attempt to educate and train the general population or key target groups (e.g., builders and architects) through workshops, seminars, and special courses.

Research and Development

Development of new technologies as well as the demonstration and technology transfer of these research projects.

Building Standards and Labels

Standards that typically require minimum energy efficiency levels for new construction and, sometimes, when making improvements to existing stocks. Typical actors involved in building standards are local, state, and federal government. In some cases, labels may be provided by utilities or government which show the energy efficiency of the building.

Appliance Standards and Labels

Standards that typically require minimum energy efficiency levels for new appliances. In some cases, labels may be provided by utilities or government, which show the energy efficiency of the appliance.

Market Transformation

Programmes that try to influence the attitudes and behavior of individuals and organisations, so that investments in energy efficiency persist even after the programme is changed or eliminated

Alternative Rates

Programmes that offer special rate designs or structures for customers in return for participation in programmes designed to change load shape, especially peak load.

Time-of-Use

Programmes that feature rates differentiated by time-of-the-day and/or season of the year.

Interruptible/Curtailable

Programmes that provide incentives in the form of bill credits or special (reduced) rate structures. In exchange for the incentive, the customer agrees to reduce electrical loads upon request from the utility. The utility's request is usually made during critical periods when the system demand approaches the utility's generating capacity. For interruptible programmes, the power company is able to remotely switch off the equipment. For curtailable programmes, the customer voluntarily reduces power consumption, as laid down in an agreement.

Other

Please provide a brief explanation.

DCI - 3**Customers Targeted By Programme**

Refers to groups (or subgroups) of customers with similar characteristics, such as income, building type, or economic activity which is the focus of the programme. Major sectors include Residential, Commercial, Industrial, and Agricultural. Each DSM programme will target at least one sectors. For commercial, industrial, and agricultural sectors, specify 6- digit NACE codes (consult with country experts on selection of codes). **Check all that apply.**

For the multi-family houses/apartments group, four options are possible: central heating, individuals electric space heating, individual non-electric space heating, and district heating.

Non-customers Targeted By Programme

Refers to key groups that participate in the programme as intermediaries for the customers targeted by the programme: e.g., building owners, retailers, wholesalers, appliance manufacturers, builders, realtors and developers, architects and engineers, building managers and administrators, building and equipment operators, and energy service companies. **Check all that apply.**

Technologies

Specify all Technologies that apply to the DSM programme and **use the codes that are listed at the end of the instructions**. Use the **Other** category only if necessary. For each technology, indicate an estimated simple payback time in years.

Payback Time

The period of time required for the energy savings to equal the cost of the conservation action; e.g., if a compact fluorescent exit light costs \$6 and saves \$3 per year, the payback is 2 years.

Marketing Instruments

Type of Incentives: Any award used to encourage customer participation in a DSM programme and adoption of recommended measures is an incentive. Below are definitions of incentive types:

Rebates and Cash Awards

Cash payments in the form of a check awarded for participation in a DSM programme.

Financing/Loans/Leasing

Utility DSM programme incentives where the financing cost associated with a financial instrument or loan is paid for, in part or in whole, by the utility. The utility may also provide favourable terms for leasing equipment.

Direct Installation

Programmes that offer equipment and installation at no cost to the customer (i.e., out-of-pocket investment on the part of the customer is not required).

Billing Rate Discounts

Reduced billing rates offered to a customer in order to encourage participation in a DSM programme.

Bulk Purchasing

Bulk Purchasing occurs when a utility purchases a large quantity of merchandise (e.g., refrigerators) and sells them at a wholesale cost plus a slight markup (usually lower than retail cost).

Gifts

Incentives in the form of merchandise are awarded to a customer, utility, or trade ally for participation in a DSM programme.

Other

Please provide a brief explanation.

Marketing Methods

The list identifies methods commonly used to contact, educate, or solicit customer participation in a DSM programme. **Check all applicable methods.**

Direct Mail

Direct Mail is used when the primary programme implementing agent sends mail (including brochures and bill inserts) directly to the target group.

Advertising

Includes radio, television, and newspaper advertising of the programme.

Energy Audits

An inspection of a house, building, or industrial process by an expert who makes recommendations for ways the customer can reduce energy use.

Personal Contact

Personal Contact is used when the primary programme implementing agent directly contacts individuals of a target group, face-to-face or by telephone.

Other

Please provide a brief explanation.

Participation Summary

Most Recent Year and Cumulative Participation

Enter the calendar year for which the most recent year costs apply and enter in the column header. Enter the start and end years in the **column** header for which the cumulative costs apply.

Number of Participants

Enter the number of participants that have participated in the programme, where participants may be customers, households, facilities, or firms. The units chosen should be the same unit type as those used to specify the number of expected participants (see page 2 of DCI) and eligible customers (see below).

Number of Eligible Customers

Enter the number of eligible customers, where eligibility refers to criteria that a customer must meet in order to participate in a DSM programme.

Participation Rate (% of Eligible Customers)

The Participation Rate is defined as the *ratio* (expressed as a percent) of the number of *participants* in a programme to the total number of *eligible customers* for the programme. The following equation specifies the participation rate: Participation Rate = (Participants/Eligible Customers*100)

DCI - 4**Programme Impacts****Cost Information**

Report all costs in Euro's and enter the calendar year for which the costs apply (if national currency is calculated to Euro).

Most Recent Year and Cumulative Programme Costs, Savings, and Sales

Enter the calendar year for which the most recent year costs, savings, and sales apply and enter in the column header. Enter the start and end years in the column header for which the cumulative costs, savings, and sales apply.

Total Utility/Organiser Costs

All utility/organiser expenses associated with a DSM programme: e.g., rebates, labour costs (such as the time of utility staff, field representatives, and contractors) as well as programme support costs which are directly associated with individual customers participating in the programme; such costs include advertising and programme promotion.

Total Non-Utility/Organiser Costs

All programme expenses paid by customers, trade allies, and other organisations that are not reimbursed by the utility/organiser.

Total Programme Costs

The sum of the utility/organiser costs and non-utility/organiser costs associated with a DSM programme.

Incentive Costs (%)

Indicate the percentage of total programme costs that are monetary inducements in the form of a rebate or payment. Incentives costs could include reimbursement of installation and/or equipment costs as well as other costs such as cash rebates to customers and incentives to trade allies. Incentive cost % plus non-incentive cost % should equal 100%.

Non-Incentive Costs (%)

Indicate the percentage of total programme costs that are non-incentive (administrative) costs. These include labour costs (such as the time of utility staff, field representatives, and contractors) as well as programme support costs which are directly associated with individual customers participating in the programme. Such costs include advertising and programme promotion. Incentive cost % plus non-incentive cost % should equal 100%.

Electricity Savings

Electricity Savings should be entered in megawatt-hours. A megawatt-hour is equal to 1,000 kilowatt-hours or 1,000,000 watt-hours and is abbreviated MWh.

System Peak Demand Savings

System Peak Demand Savings should be entered in megawatts. A megawatt is equal to 1000 kilowatts or 1,000,000 watts and is abbreviated MW. The changes in the demand for electricity resulting from the programme occur at the same time the utility experiences its system peak demand (often referred to as diversified coincident peak demand).

Fuel Savings

Fuel Savings should be entered in TeraJoules (TJ). A TeraJoule is equal to 10^{12} joules.

Appliance Sales

Appliance Sales should be entered in number of units sold. Specify the appliance in the second column using the codes on page 3 of the DCI.

Data Used to Calculate Savings

This section requests information regarding the types of energy data used for the 12 calculations of energy and load impacts. **Check all that apply.**

Engineering Data

Estimates using engineering principles with assumptions about equipment and system performance characteristics and operation profiles of measures installed through the programmes.

Utility Bills

Ideally, utility bills are obtained for a year before and a year after participation. Annual electricity and gas use is typically adjusted for weather and other relevant factors, and the differences between pre- and post-participation use in kWh/year or therms/year are computed.

Spot Metering

Generally, electricity and gas use is monitored before and after participation for short times (e.g., a few days). Other relevant factors (e.g., operating hours for equipment and heating degree days) are measured for a longer time (e.g., up to a year).

Whole-building Load Data

Electrical use of a facility is monitored to record kW demands and kWh before and after participation.

End-Use Load data

Specific circuits or equipment affected by new systems are monitored to record kW demand and kWh before and after participation.

Equipment Specifications

Performance of new equipment is calculated based on information obtained directly from the manufacturer. (In those cases where there is a handbook of equipment specs in the hands of engineers, 'engineering data' should be checked instead.)

Site Specific Data

Energy and load effects are calculated based on information obtained by a programme representative during an audit of, or other type of visit to, the facility.

Appliance Sales Data

Data on appliance sales generally come from manufacturers or retailers. Sometimes special surveys are conducted to obtain more precise data.

Other

Indicate other data sources used for estimating or measuring the energy impacts of DSM programmes.

Life-Cycle Programme Costs

Average Measure Lifetime

This is the average lifetime of all of the measures installed in the programme. Where possible, the average should be weighted by energy savings (weighted average).

Discount Rate

The real societal and utility discount rates should be reported; these rates exclude the rate of inflation.

Lessons Learned

Enter any lessons learned in this section. Lessons learned may pertain to the current programme year or to the entire life of the programme. Where available, discuss difficulties encountered in programme design, financing, implementation, and evaluation; recommendations for programme improvement; and key elements for programme success.

EXPERT INSTRUCTIONS FOR COMPLETING

These instructions provide guidelines for country experts for the completion of the DCI.

Also it is explained how "Levelised Total Resource Cost" and "Levelised Utility Resource Cost" are calculated.

Four fields have to be filled in by the country experts. These fields are:

- DCI Reference Number;
- INDEEP Expert and Country;
- Date submitted or Date updated;
- Data Collection Phase.

Two fields will be checked by the country expert and improved, if necessary:

- 6-digit NACE codes for Sectors Targeted By Programmes;
- Cost information; the conversion to Euro;

DCI - 1

DCI Reference Number

The DCI reference numbers will consist of the acronym for the country, followed by a "--" and a two-digit number (-01, -02, -03, etc.). For example, NL-01 is the first DCI by The Netherlands. Other country codes: Austria = AUS; Commission of the European Union = CEU; Denmark = DK; Korea = K; Spain = ES; Sweden = S; United States = USA.

INDEEP Expert and Country

Enter the name of the INDEEP expert entering the data, and the name of the country for this DCI.

DCI Information**Date Submitted**

Enter the month, day, and year when the DCI was completed.

Data Collection Phase

If this is the first submission for the DSM programme, check first data submittal. Otherwise, check data update.

DCI - 3**Sectors Targeted By Programme**

For commercial, industrial, and agricultural sectors, INDEEP country experts may need to **work** with people completing the DCI for specifying the correct 6-digit NACE codes.

DCI - 4**Cost Information**

INDEEP country experts need to convert costs (if it is in their country's monetary units) to Euro's; specify which day the Euro was converted.

Life-Cycle Programme Costs**Levelised Total Resource Costs**

The levelised total resource cost is the uniform cost of a programme *over its lifetime*, or the cost of the programme's first year multiplied by the uniform capital recovery factor applied at the utility's discount rate divided by the average annual energy or demand changes (in kWh, kW, therms, or MBtus). The costs are the total programme costs listed in the table at the top of page 4 in the DCI. Indicate the average measure lifetime, discount rate, and the cost units used in determining the levelised total resource cost. The equation used in calculating the levelised total resource cost is:

$$\text{Levelized Total Resource Costs} = \frac{\text{Total Program Costs} \times \frac{d}{(1-(1+d)^{-n})}}{\text{Annual Energy Savings}}$$

Where: d = real societal discount rate

n = average measure lifetime

Total programme costs = utility costs plus participants costs

Levelised Utility Resource Cost

The levelised utility resource is calculated in the same way as the levelised total resource cost; the differences are: (1) the costs are utility-related costs (not total programme costs) listed in the table at the top of page 4 in the DCI; and (2) the real discount rate is the utility's discount rate.

EXHIBIT C-2: SUMMARY FORM – PUBLIC POLICY BASED DSM IN THE NORDIC POWER SECTOR

Name:	Energy labelling	30/11/98
Country:	Finland	Data sheet: SF2

Intervention type:	Information	Time period:	Nov 1995 - Jan 1997
Programme concept:	Pilot project on energy labelling of white goods combined with marketing of the labelling concept to consumers and training of sales personnel in use of EE as a marketing tool.		
Programme goals:	Reduction of residential consumption; market shift towards EE appliances; customer awareness of EE appliances; Train sales personnel in EE appliances and correct use and motivate them to use EE as sales argument.		
Targeted actors:	Residential customers, sales personnel		
Main barrier:	Lack of information	Technology stages:	Application/choice
Funding sources:	Actor	Name	Comment
	Equipment retailer association	Retailers Association	36%
	Government/national agency	Min. of Trade & Industry	29%
	EU-Save	-	15%
	Customers	National Consumer Adm.	14%
	Distribution companies	SLY (Ass. Electric Utilities)	6%
Implement. org.(s):	Government/national agency	MOTIVA	Co-ordinator
	Equipment retailer association	Retailers Association	Training
	Customers	National Consumer Adm.	Market research
	Distribution companies	SLY (Ass. Electric Utilities)	Information
Monitoring agents:	Government/national agency	MOTIVA	-
	Customers	National Consumer Adm.	-
Est. time of impact:	Short-term (1-2 years)		
Indicators of success:	EE of available appliances, EE products being sold, trained sales personnel, consumer awareness of the energy label, consumers considering energy when purchasing, visibility of energy labels and EE appliances in shops.		
Results/impact:	Class A-C refrigeration appliances increased from 52% to 61% while F-G reduced from 25% to 15%. Realised energy savings were not measured.		
Programme cost [MECU]:	840	Unit costs [ECU/act.]:	870,000
		Specific costs [ECU/kWh]:	?

EXHIBIT C-3: FIRST DRAFT STANDARD REPORTING FORMAT

Exhibit C-3

First Draft Standard Reporting Format

Person completing the form

Name: Ulla Vuorio

Company: Finnbarents, University of Lapland

Organisation type(s): (Select from guide) Regional government

If other: _____

Address: Urho Kekkkosen katu 4-6 A, 00100 Helsinki, Finland

Telephone: +358 9 56570510 Fax: +358 9 56570515 Email: ulla.vuorio@urova.fi

Programme context

General level of competition: (See guide) Monopoly

Main barrier: Investment costs

Comments: The programme concentrated on residential buildings: block of flats and terraced houses. The target was to balance room temperatures inside apartments and save energy by reducing heating costs.

Programme overview

Programme name: Improving the heating system balancing services of buildings

Programme type: Market transformation, Customer retention

Programme start (month and year): May 1993 Programme end (month and year): December 1996

Affected energy resource: District heating

Programme primary objective (e.g. avoid capacity expansion) and derived goals (e.g. number of kW peak load saved):

- | | |
|--|---|
| <input type="checkbox"/> Energy import reduction | <input checked="" type="checkbox"/> End-use energy efficiency _____ |
| <input type="checkbox"/> Emission reduction | <input checked="" type="checkbox"/> Peak load reduction _____ |
| <input type="checkbox"/> Diversification of supply | <input type="checkbox"/> Fuel switch _____ |
| <input type="checkbox"/> Increased/maintained profit | <input checked="" type="checkbox"/> Customer retention _____ |
| <input type="checkbox"/> Avoid capacity expansion | <input type="checkbox"/> Improved public relations _____ |
| <input checked="" type="checkbox"/> Energy price reduction | <input type="checkbox"/> New services _____ |
| <input type="checkbox"/> Increased employment | <input checked="" type="checkbox"/> Technological advance _____ |
| <input checked="" type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ |

Perceived market barriers which the programme intends to overcome:

Complete heating system balancing demands investments, which are about 0.4-1.4 EUR per cubic meter of building. The programme tried to overcome that cost barrier, and to promote energy savings gained after balancing the heating system.

Supporting regulatory and/or market mechanism:

It's possible have free of charge information about heating system balancing from Motiva. After the program was implemented, no governmental financial support for investments has been available.

Implementing organisation(s):

Lead organisation: Motiva, Information centre for EE
Other organisations: Oras Ltd
Ensel Engineering Ltd

Organisation type(s):

Central government
manufacturer
Energy service company

Programme costs and findings

Main funding source(s) for the programme:		Percentage:
Source 1	<u>Government funding</u>	<u>20</u>
Source 2	<u>Others</u>	<u>80</u>
Source 3	_____	_____

Total programme costs:	_____
Costs, participating customers	<u>2,080,000 EUR</u>
Subsidies from government	_____
Costs, third party	_____

Programme object details

End-use(s) affected by the program: Temperature, Energy consumption

Implemented measure (e.g. type of EE technology): Training; improved equipment design and QA system

Eligible market (number or Joule): 80,000 buildings **Target market (number or Joule):** 3,600 buildings

Perceived target market benefits (motivation for participation):

Improving the heating system balancing reduce heating costs. Saving in energy consumption is approximately 10%. Living conditions improve by adjusting room temperatures by balancing.

Evaluation stages

If your evaluation has consisted of several separate stages, please complete a copy of the following section for each evaluation stage and list the stages below.

Evaluation report title: Impact assessment report: Improving the heating balance in buildings"

Purpose of evaluation: Demand (kW or kWh) impact assessment
 Market transformation assessment
 Programme project process assessment
 Other: _____

Evaluation status

Present evaluation status: (See guide) Complete

Evaluation start (month and year): 01/09/00 Evaluation end (month and year): 31/01/01

Chosen evaluation framework

Organisation of the evaluation i.e., entities involved (indicate lead and organisation type):

Project Leader: Finnbarents Unit, University of Lapland; Suomen Talokeskus Ltd.; Espoo-Vantaa Institute of Technology; Oras Ltd

Cost of evaluation (e.g. absolute or relative to total programme costs including evaluation costs):

20,000 EURO

Evaluation details

Analysis of the following was carried out:

- Free-riders (Change in energy use which would have occurred without the programme)
Method used: _____
- Free-drivers (Change in energy use of programme non-participants caused by the programme)
Method used: _____
- Rebound effect (The achieved savings are used to consume more energy)
Method used: _____
- Drop-out (Removal or non-installation of energy efficiency measures after initial participation)
Method used: Questionnaire
- Persistence (Do customers pursue programme measures after termination of the programme)
Method used: Questionnaire to customers

Applied method for determining baseline values (no-program case) and used sources of data:

(no answer)

Process analysis

- Observations
- Surveys
- Indepth interviews
- Group interviews
- Other:

Market analysis

- Sales statistics
- Benchmark changes
- Focus groups
- Interviews
- Surveys
- Other:

Investigated indicators/parameters and the respective sources of data:

Annual district heating energy numbers (kWh/a) from local energy distributors; utility companies.

Lessons learned

Lessons learned concerning the programme:

Governmental financial support is promoting and useful in energy efficiency projects in the first phases. The balancing methodology used was considered a bit too heavy and could be simplified.

Lessons learned concerning the evaluation process:

Customers, house managers, were quite reluctant to contribute to follow-up and assessment studies (25 % replied to the questionnaire). Inquiries need to be repeated twice in order to gain the most numerous response and beneficial result. Direct contacts give results; parallel inquiries and studies were necessary (utilities).

What decisions will be based on the evaluation results:

Energy saving was not the most important aspect, also the improved living conditions were considered important. The ceased governmental support didn't cause any significant decrease in installations of heating system balancing.

Application strategy

How are the results of the evaluation going to be disseminated and to whom?:

The evaluation results will be disseminated to government, programme partners, house owners, HVAC companies. The impact assessment report and results will be presented to the public in the web page of MOTIVA.

Evaluation results**Environmental benefits (tonnes/year):***Applied conversion factor(s):*

CO2 reduction: 77,500 tn/y; balanced buildings (25% balanced, 75% unbalanced)
Potential CO2 reduction: 231,000 tn/y, if the rest of buildings were balanced.
 (Factors used: CHP 77%, 211 gCO2/kWh; Heat production 23%, 217 g/kWh)

Gross primary energy savings (TJ/year):*Applied conversion factor(s):*

Gross primary energy savings 22,400 TJ/y; balanced buildings.
Potential of gross primary energy savings 67200 TJ/y, if the rest of were balanced.
 (Factors used: DH/CHP 46,8 TWh/ year 2000; 53 % for buildings in question)

Utility capacity savings (kW):*Applied conversion factor(s):*

Energy saving: 42,200 kW; balanced buildings.
Saving potential: 126,000 kW; if the rest of buildings were balanced.
 (Factors: Consumption in residential buildings 14.6 TWh, year 2000; 25/75% balanced/unbalanced)

Utility energy cost savings (EURO/year):*Applied conversion factor(s):*

12,7 MEURO/y balanced buildings;
Saving potential: 37 MEURO/y; if the rest of buildings were balanced.
 (Factors: the average price of DH 20.4 p/kWh; 1FIM = 100 p; 1EURO = 6 FIM)

Market change (specify unit):

Adoption in the market has occurred: 100 % of answerers will continue in balancing the heating system.
 Other methods have been developed for balancing the heating system in buildings.

Monitoring & verification results (specify unit):*(Relevant to ESCO projects)*

Buildings included in the assessment have been in consumption follow up study of the utility company.

Other results (specify unit):*Applied conversion factor(s):*

The most of the answerers considered that the investment has been beneficial; information on the subject should be increased.

Registered positive/negative side-effects (e.g. extra heating requirement, less noise)?:

None significant side-effects; only slight noise effects possible.

What is the difference between expected and realised programme impacts and why?:

The programme intended to get residents' adoption of room temperature of 21 degrees, which seemed not realistic, since many residents prefer temperatures of 22-23 degrees.

Did the evaluation provide reliable and useful results?:

The results are reliable because they are based on the realistic consumed figures from utility companies.

Did the chosen indicators prove appropriate?:

(no answer)

Person completing the form

Other
Generator
Transmission company
Distribution company
Retail company (sales only)
Central government
Regional government
Local government
Energy service company
Manufacturer Consumer organisation
Environmental protection organisation
Non-governmental organisation

Programme context

Strongly competitive
Partial captive market (less competitive)
Monopoly

EXHIBIT C-4: SECOND DRAFT STANDARD REPORTING FORMAT (CHECKLIST FORMAT)

Your company name	Novem, the Netherlands
Project name	Energy Performance Standard in the Dutch Building Decree
Why did you want an evaluation?	Information to advocate that the legal maximum could be lowered, as energy savings are realised
What was the goal of the evaluation?	Indication of the energy use in houses with an EPC 1.2 or lower
Which questions should be answered by the evaluation?	Are the calculated ex ante savings realised in practice or not
Who was the buyer of the evaluation?	Ministry of Environment, Spatial Planning and the Environment
Who did perform the evaluation?	Novem
Who is going to use the results of the evaluation?	Ministry of Environment, Spatial Planning and the Environment
Did you have an evaluation plan from the start of the project?	No
Was the evaluation divided into part-studies?	Yes (four parts)
What were the key areas of uncertainty in the evaluation?	Influence of behaviour on the energy use in houses with more or less equal energy performance
Did you evaluate development and design of the project?	No
Did you evaluate economy/profitability?	No
Did you do Benefit/Cost analysis and for which perspectives?	No
Did you evaluate the technology?	No
Did you evaluate energy efficiency?	Yes
Did you evaluate implementation?	No
Did you evaluate co-operation?	No
Did you evaluate marketing processing?	No
Did you evaluate participant data collection?	No
Did the project include tracking/monitoring from the start?	No
Did the project include tracking/monitoring later?	Yes
Did the evaluation include non-participant survey/metering?	No
Did the evaluation include use of billing data?	Yes
Did the evaluation include end-use metered data?	No
Did the planning and evaluation use engineering methods?	No
Did the planning and evaluation use statistical methods?	Yes
Did you evaluate free-ridership?	No
Did you evaluate spill-over?	No
Did you evaluate rebound?	No
Did you evaluate the persistence of savings?	Partly
Did you evaluate estimation of market transformation impacts?	No
Did you do market indicator interviews with vendors etc.?	No
Did you evaluate the lifetime of the market transformation?	No
Did you do market studies by direct observation?	No
Did you do personal interviews?	No
Did you do telephone survey?	No
Did you do mail surveys?	Yes
Did you do in-depth and group interviews?	No
Were market studies conducted at the start, medio and/or end?	No