Field benchmarking and Market development for Audit methods in Air Conditioning AUDITAC

DURATION **Jan. 2005 – Dec. 2006** PROJECT WEB SITE **www.energyagency.at/(en)/projekte/auditac.htm**

SUMMARY

In the coming years the stock of Air Conditioning (A/C) equipment in use in Europe will partly become obsolete. Most systems will be renovated for the first time and an opportunity exists to introduce higher efficiency systems. Out of the 2,200 Mm² of air conditioned building area in use in 2010 in Europe, 800 Mm² will date by more than 15 years and will need urgent renewal.

The AUDITAC project is designed to:

- Accelerate the adoption of Air Conditioning inspection as described in the Energy Performance of Buildings Directive,
- Generate a number and variety of field demonstrations and benchmarks of inspection and AUDITs in Air Conditioning (hence the name AUDITAC),
- Promote best practice examples and procedures in such audits and consequent retrofits,
- Help in providing the means to achieve high quality audits, including investment-grade audits and actual works on the existing Air Conditioning facilities in EUR-25.

OBJECTIVE

1. to increase the motivation of the actors involved with AC Inspection
2. to accelerate the adoption of Best Practice in inspection
3. to increase the percentage of AC inspections that are followed by investment grade audits
4. to provide the tools required to transform audits into actual works,

MAIN DELIVERABLES

WP 2	Teaching package on AC inspection, audit and renovation
WP 7	a set of trees, leading to each of the systems of air-conditioning of more than 12kW on the market, in relationship
WP 3	Overview about existing guideline on the inventory and inspection schemes in Europe
WP 6	Best practice examples
WP 9	A computer tool to compare the initial performance of the equipment being audited with its present performance and with potential replacement equipment.
WP 8	Methods based on real findings (measurement and calculation) on the renovation of the refrigerating and distributing equipment and on the way to improve them.
WP 11	Newsletter (6 issues)
WP 11	Slides

All this deliverable will be public.

EXPECTED RESULTS

In the short term the project will enable the benchmarking and marketing of AUDITing methods for the Air Conditioned areas under renovation. It will:

- Gather and harmonise information on potential savings and actual case studies in order to build a positive context around the introduction of compulsory inspection of air conditioning systems over 12 kW through the EPB Directive.
- Enable existing national systems to implement audits ranging from "walk through" inspections to "real inspections" with assessment, resizing and advice on improvements.
- Provide new services to auditors through databases and supporting tools.
- Enable building owners to have a simple way to enter into AC audits, understand the energy saving potentials and manage the complexity of Air Conditioning systems
- Enable experts in the field to more easily retrieve performance of past equipment that they are inspecting or auditing and estimate the potential for improvement
- Provide continuous liaison in a phase where MS need a growing adoption of the EPB measures.
- Assist in the structuring of the profession of auditor/inspector which is growing rapidly around the policy makers and national structures.
- Provide a better link of inspection with other EU actors and policy through common disseminations.

In the longer term, for instance in 2010, we shall see the full market effects of the efforts :

- The existing AC systems will benefit from a better inspec tion and auditing procedure, as they follow the path originating from inspection and leading to actual works and savings.
- AC system average consumption will decrease from 60 kWh/m² through the use of cost effective technologies down to 30 kWh/m².
- The continuous liaison generated by the project between the profession of auditor/inspector policy makers and national structures.
- Work with other EU actors will produce its full results at that time.

TIME TABLE

Project phase / Months after start	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
WP 1 Management	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
WP 2 Terminology and definitions	●	●	●	●	●	●																		
WP 3 Audit frames frequencies					●	●	●	●																
WP 4 Sound decisions of renovation									●	●	●	●	●	●										
WP 5 Training and licensing of inspectors and auditors in EU25	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
WP 6 Case studies for best practice					●	●	●	●	●	●	●	●	●	●										
WP 7 Structuring of "advising" methods							●	●	●	●	●	●	●	●	●	●	●	●						
WP 8 Benchmarking renovation equipment													●	●	●	●	●	●	●	●				
WP 9 Data bases on equipment in service and replacement													●	●	●	●	●	●	●	●	●	●		
WP 10 Use of a simple inventory tool													●	●	●	●	●	●	●	●	●	●		
WP 11 Continuous dissemination during the project	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
WP 12 Common dissemination	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Dissemination Workshops															●	●	●	●	●	●	●	●	●	●
Project meetings	●				●						●						●				●			

Supported by the European Commission under the Intelligent Energy - Europe Programme

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OVERVIEW

The work is organised into a number of Work Packages each coordinated by the best expert in the subject, having its own deadlines and specified inputs and outputs from/ to the other tasks:

WP 1 MANAGEMENT

WP 2 TERMINOLOGY AND DEFINITIONS Terminology and definitions edition to produce in the EU an indexing of the whole of the systems of air-conditioning - in correspondence with CEN standards, and in relationship with corresponding problems of operation on the field.

WP 3 EXISTING PRE-AUDIT FRAMES AND FREQUENCIES – SURVEY Bibliography of the existing pre-audit frames and frequencies through survey and links with CEN recommendations.

WP 4 EXISTING PROCEDURES ALLOWING SOUND DECISIONS (AFTER INSPECTION) Synthesis on the existing national or regional procedures and on their evolution towards decisions of renovation.

WP 5 STRUCTURES OF TRAINING AND LICENSING OF INSPECTORS AND AUDITORS Comparison of the structures of training and licensing of the inspectors and auditors all over Europe. The way of implementation of Article 9 will be monitored.

WP 6 CASE STUDIES FOR BEST PRACTICE IN ASSESSMENT AND RESIZING COMPLETED generate improve and run a Data Base of existing case studies.

WP 7 GENERATION AND STRUCTURATING OF "CUSTOMER ADVISING" METHODS Generation and comparison of "advising" methods to be used in AC energy audits

WP 8 BENCHMARKING FOR RENOVATION OF EQUIPMENT Benchmarking of suitable methods or methods under development for renovation of the cold generating equipment.

WP 9 DATA BASES ON EQUIPMENT IN SERVICE AND REPLACEMENT OPPORTUNITIES Generation of data bases on the equipment in service and replacement opportunities in a form easy to handle and use. This includes collection of data and structuring in a form suitable for use by AC auditors.

WP 10 USE OF A SIMPLE INVENTORY AS A BASIS FOR AUDIT AND INSPECTIONS A rating and continuous improvement system will be developed to simplify the inspections and increase the take off for audits, by motivating the plant owners to prepare documentation on their facilities and to make improvements or degradations.

WP 11 CONTINUOUS DISSEMINATION DURING THE PROJECT

WP 12 COMMON DISSEMINATION ACTIVITIES