

CHANGEBEST NEWS FIELD TESTS

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Promoting the development of an energy efficiency service (EES) market – Good practice examples of changes in energy service business, strategies, and supportive policies and measures in the course of the implementation of Directive 2006/32/EC on Energy End-Use Efficiency and Energy Services

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Introduction to the field tests

The main objective of the ChangeBest project is to support the development of marketable and successful energy efficiency services (EES).

For this reason, the ChangeBest project team has developed a guideline to support strategic EES product development to be tested by the ChangeBest practice partners, including Energy Service Companies (ESCOs), energy companies, building technology companies and other firms.

Business cases with field testing are executed in order to find new or optimised EES that contribute to filling observed gaps on the EES markets and increase the total EES market.

“New” Energy Efficiency Service in ChangeBest is an EES energy saving activities new for the respective country or target group, an optimisation of an already existing EES (e.g., by using new technology), or a completely new product in the European market.

By February 2011, 42 partners from practice are participating with implementation of 49 field tests.

This 3rd issue of the ChangeBest newsletter contains information about the 49 field tests. More field tests might be added in the near future.



From EES Product ideas to Profitable Business Cases

Guideline for strategic product development



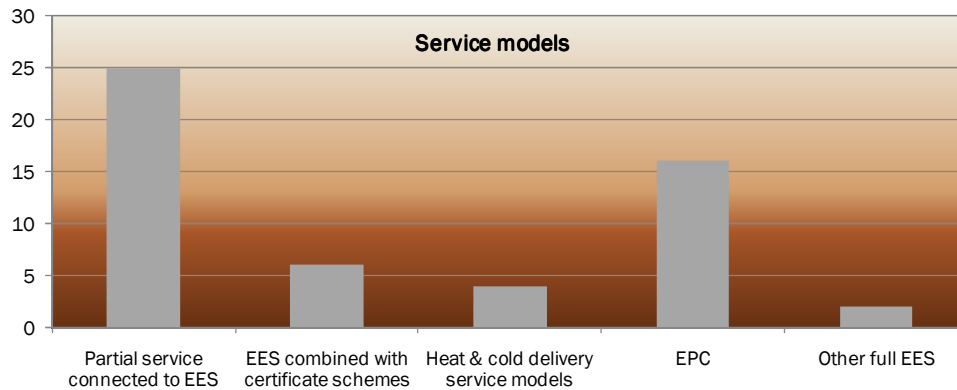
Developing “new” energy efficiency services (EES) and accelerating market growth



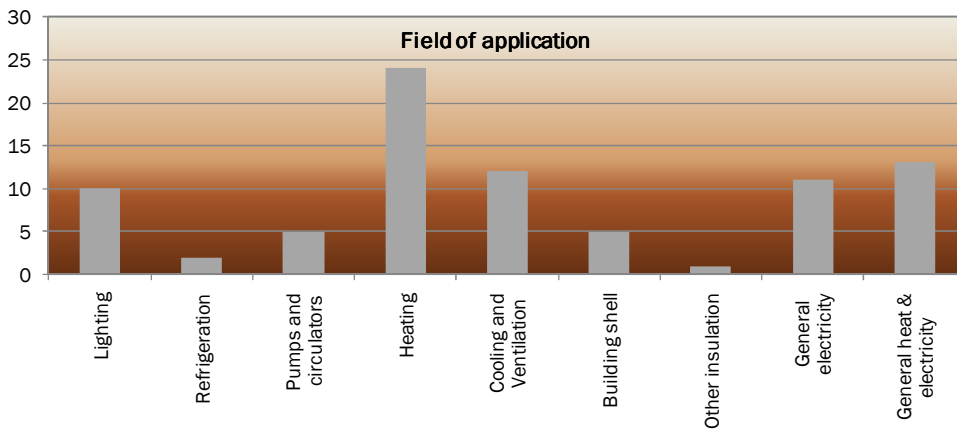
General overview

In the ChangeBest field testing participates five types of EES: partial service connected to EES; EES combined with certificate schemes; heat & cold delivery service models, Energy Performance Contract (EPC) and other full EES.

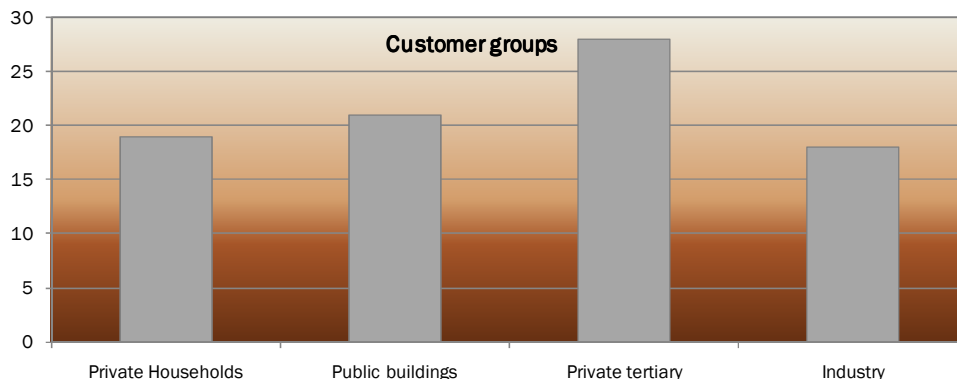
More than half of the field tests (25) are EES as a partial service, while 16 field tests follow the ESCO model for EPC. The remaining field tests are EES based on white certificate schemes or delivery of heating or cooling.



The different EES products and ideas belong to nine fields of application and technology. Most are related to heating and next comes cooling, lighting and building shell.



The ChangeBest field tests are spread nearly equally on four customer segments: private households, public buildings, private tertiary and industry.



SERVICE MODEL CATEGORIES

EES field tests in ChangeBest include five types of EES:

- partial services connected to EES;
- EES combined with certificate schemes;
- heat and cold delivery service;
- EPC; and
- other full EES.

Partial service connected to EES

Parts of the EES value chain are included (e.g. energy audits), designed to directly or indirectly energy efficiency improvement. In ChangeBest “Partial service connected to EES” is approved if it is innovative (“new”) and lead to energy saving.

EES combined with certificate schemes

EES with all kinds of white certificates is included although it might not include measurement and verification. Building certification based on the Energy performance of buildings directive is not included.

Heat & cold delivery service

This is full EES in case it includes an audit to identify energy efficient solutions for the customer, implementation of energy end-use efficiency improvement (EEI) actions and later evaluation/monitoring of the savings.

If some parts of the above activities are missing it might be a partial EES.

Pure selling of new technology without energy saving is neither an EES nor a partial EES.

Energy performance contracting

EPC is a full EES including audit, implementation and evaluation.

Other full EES

These are EES meeting all the criteria of EU regulation EN 15900:2010 although it is not an EPC.

Description of the field tests

Country	EES provider	EES name	Description of the EES
AT	Kelag	Energy efficiency consulting and implementation for industry - "EnergieMonitoring"	Optimization of energy use in industrial buildings and industrial processes based on monitoring data. The EES product encompasses all elements of the value chain (from consulting to implementation) depending on the customers needs.
AT	Wien Energie GmbH	Replacement of lighting systems in storage buildings and production halls	Replacement of lighting systems in storage buildings and production halls based on a highly standardized audit including planning, financing (and finance planning), implementation, maintenance and monitoring (or elements of these).
BG	Erato Holding	Fuel switching to biomass	For thermal generation of heating and hot water, the project provides shifting from light fuel and diesel oil to ecological, cheap and accessible biomass in the form of wood chips.
BG	Dalkia - Bulgaria	Comprehensive optimization of the heating system	Optimisation of the heating system for municipal and governmental buildings and blocks of flats with old heating systems not connected to the gas grid. The EES consider fuel switching, transition to renewable energy sources (RES), replacement of the heating system and improvement of the building shell. The EES includes monitoring. It is new to offer a complete solution with a wide variety of financing schemes.
CZ	ENESA a.s.	EPC in Schools	EES in school buildings including comprehensive measures within heating and general use of electricity and water. Individual improvement of building insulation will at least for one school building be supported by subsidy from an EU financial structural fund. The project includes sales of receivables.
CZ	SIEMENS	EPC for Heating	The project "Maximize Efficiency - EES" includes reconstruction of the central heating system in municipal residential buildings including 15 blocks of flats and two schools. Two central older boiler rooms will be substituted by individual boilers installed in each building. After renovation, the price for heating (per GJ) will not increase due to the EPC contract. The project includes sales of receivables.
CZ	Energ	EPC within Healthcare	EES in healthcare building including comprehensive technical measures within heating, air condition, electricity production by cogeneration (CHP), production of steam (used in sterilisation and the kitchen) and water consumption. The project includes sales of receivables.
CZ	Stredisko pro usporu energie s.r.o.	EPC in school building	Small scale EES for one school building (used as both municipality building and school) including comprehensive measures within heating plus general use of electricity and water.
DK	Enervision Denmark	Optimization of the lighting system	Optimization of Business to Business (B2B) lighting systems especially focusing on use of light-emitting diode (LED) lighting. The design will be dependent on the use of every room including comfort and security, position, type of armatures/luminaries, zone management, controls and possible savings in heating, ventilating, and air conditioning due to less need for cooling. Investigating possibilities for contract and financing in cooperation with manufactures, building owners and customers with risk sharing.
DK	Lokalenergi Denmark	Strategic energy efficiency dialogue	Strategic energy efficiency Business to Customers (B2C) dialogue including customer segment analysis of demography, attitude to environment and price and ways to communicate, strategy workshop on actions and prioritising, saving campaign with customer commitment, customer use of existing EES offers and considering offering ESCO renovation and new activities/campaigns to continue the dialogue with the customers.
DK	Schneider Electric Buildings	ESCO development to include more customers	Schneider Electric Buildings is the largest private ESCO in Denmark with large municipality projects. The ESCO activity will be developed to include other customers like hospitals and public housing in order to gradually offering ESCO for other customers than public buildings.
EE	Elysium	Ventilation based heat recovery system - "Heatcatcher"	Large block-buildings' natural ventilation control measures; ventilation occurring related restitution of departing heat to heat up central heating system including domestic hot water.
FR	Ergelis	EPC including quick audit plus operation support	The EES is compatible with EPC (Directive 2006/32). The savings are due to change in operating set points. A balance of the existing rules and the comfort demands is made at the beginning of the contract. Internally the «optimal control» automated software considers at any time all energy saving options and select the best. The exact value of the savings is known at the end of each contract year thanks to an International Performance Measurement & Verification Protocol (IPMVP) compatible method.

Country	EES provider	EES name	Description of the EES
FR	Exelcia	Known EE actions certified as White Certificates - Certeco service type 1	Identification of Energy Efficiency actions that can be certified as White Certificates in the portfolio of realised customer actions permitting an outside funding for future EE actions. Exelcia experience helps the customer to fit the project into White Certificates (WC) trading and reaching their obligation target or to be aware of prices and market rules. Selling the WC payment can be for a fixed amount when selling directly to a known obliged party or a percentage of the selling price when Exelcia are free to sell at the best conditions. In the frame of French White Certificates Law, energy savings are computed and declared explicitly.
FR	Exelcia	Planned EE actions certified as White Certificates - Certeco service type 2	Identification of Energy Efficiency actions that can be certified as White Certificates in the portfolio of actions determined by Exelcia in the customer premises, permitting an outside funding for those EE actions. Use of the Exelcia experience to fit the project into the conditions allowing certification. White certificates trading to realize the funding. In the frame of French White Certificates Law, energy savings are computed and declared explicitly.
FR	Exelcia	Identification and funding of energy efficiency actions through installers - Certeco service type 3	Identification of energy efficient products that can be offered by the field partners (installers, manufacturers, resellers) to their customers provided their own costs are limited. Use of the Exelcia experience to fit the projects into the conditions allowing generation of White certificates by grouping the projects under the umbrella of the obliged partner. Financial flux from the obliged party to the installer and potentially to the customer (over cost limitation). In the frame of French White Certificates Law, energy savings are computed and declared explicitly.
FR	Energinvest	Revolving fund for EPC for SMEs	Revolving fund for EPC for Small and Medium Size Enterprises (SMEs). An insurance company is taking care of guarantee return of funds.
FR	EDF	Electricity consumption feedback - Suivi Conso	The customer fill an enquiry about own dwelling, equipment and behaviour. An assessment of the electric consumption is provided expressed in kWh, € and CO ₂ . The overall assessed consumption is broken down by end-uses (space heating, domestic hot water, air cooling, lighting...). A comparison with reference consumption is provided depending on the customer type (old, new). Each month, the customer is supposed to read the meter and send it. A new analysis is then provided with dedicated advices. A check-up is made after one year.
FR	EDF	Energy Management Improvement	Together with a "traditional" technical energy audit of an industrial or tertiary site, delivering an evaluation and giving recommendations about energy management, based on European standard EN16001. The settlement of an energy management system is expected to foster the implementation of energy saving actions.
FR	CMI Greenline Europe	Expertise and Revamping of industrial furnaces	Technical audit with simulation, overhaul with up to date technology of burners and level two and three regulation system for heating, heat treatment furnaces, in metallurgy, glass-making, cement industries. Services delivered in accordance with European standard EN 15900.
DE	Stadtwerke Tübingen GmbH	Circulation pump exchange program	Exchange of inefficient circulation pumps in apartment buildings with financing by customer payment over the electricity bill.
DE	Stadtwerke Bretten GmbH	Time differentiated tariff and feedback - "Smartie"	Use of a smart meter in order to provide an innovative tariff with two time zones together with visualization of the energy consumption via internet.
DE	Stadtwerke Jena-Pößneck	Energy monitoring for SME	Most Small and Medium Size Enterprises (SME) have no much information on their energy consumption. Through monitoring, energy efficient measures will be located. The utility will support the SME realize the measures.
DE	Stadtwerke Speyer	Energy efficient heating service for domestic customers and SME	Energy efficient heating service in one- and multi-family houses and SME's up to a load of 60 kW.
GR	HELESCO S.A.	Third Party Financing of biogas plants	Third Party Financing (TPF) contracts for installation of biogas electricity generation plants primary based on animal and agricultural waste. The project is financed by the manufacturing company, which collects the profit from electricity sale. HELESCO S.A is responsible for drafting the TPF contract and for all the necessary technical studies.
GR	HELESCO S.A.	Third Party Financing of cogeneration plants	TPF contract for the installation of cogeneration plants in tertiary sector buildings. The client(s) providing thermal loads are e.g. hospital and hotels. The project is financed by the CHP manufacturing company, which sells heat to the client and electricity to the national grid. HELESCO S.A is responsible for drafting the contract and for all the necessary technical studies.
GR	HELESCO S.A.	EPC for low cost energy efficiency measures	Energy Performance contracting of low-cost energy efficiency measures offered to the tertiary and industrial sectors. HELESCO is paid by a percentage of the energy savings achieved during the contract period.

Country	EES provider	EES name	Description of the EES
GR	Alteren S.A	EPC for Hotels	The service includes energy audit, recommendation of a series of EEI measures, financing, implementation of the selected measures and verification of saved energy.
IT	ESCO Italia	Integrated EES based on a building management and automation software	The EES is based on preliminary installation of energy consumption monitoring equipment along with building automation software supporting identification of possible energy efficiency improvement (EEI) including both technology and behaviour in buildings of commerce, industry, service/public administration. The new EES includes auditing, identification of EEI actions, implementation of EEI plus monitoring of energy consumption and savings.
IT	Cremonesi Consulenze	Free of charge residential PV panels and heat pumps	The EES consists of a free of charge installation of residential photovoltaic (PV) panels combined with thermal comfort energy efficiency actions (e.g. installation of heat pumps for heating, DHW production and air condition). Heat pump installation is typically amortized by the client through annual payments until contract termination. The EES covers all the EES value chain stages with the EES provider in charge of auditing, project planning and implementation, equipment maintenance, energy saving measuring and verification and identification of possible financial backers.
IT	Energynet Srl	Certification due to EEI actions	The Energy efficiency improvement (EEI) actions are implemented, evaluated and a certificate attesting the amount of avoided greenhouse gas emissions is issued to the clients. The savings are calculated by use of simulation software, monitoring and verification of the energy savings. The clients use the certificate to prove their environmental friendly profile and their commitment in lowering the environmental impacts of their activities possibly accompanied by white certificates (primary energy saved). The EEI range from the improvement of the building shell for all kind of buildings to use of more efficient industrial motors and plants.
IT	ESCO Provinciale Toscana Spa	Efficient public lighting systems	Installation of high pressure sodium lamps along with light flux regulators, GPS systems for the detection of the status of public lighting plants. The EES includes energy audit, identification of saving measures, technical planning, implementation (operation, supervision), monitoring and verification of energy savings. EES financing is realized by transferring municipalities' utility contracts to the EES provider for a period varying between 10 and 15 years according to the public lighting plants considered. Contracts are stipulated based on the winning of public tenders by the EES provider.
IT	Habitech	EPC standard model for EES	Definition and application of an EPC standard model for the Province of Trento, which includes formats for audit, implementation and evaluation. Energy efficiency services are mainly related to heating & cooling and efficient lighting for hospitals and the tertiary sector in general.
LV	Sun Energy Baltic	Keep your house by saving energy!	This EES targets comprehensive refurbishment of multifamily residential buildings where the private households owns the flats. The field of application includes thermal insulation of the building envelope, renovation of the space heating system and reconstruction of the domestic hot water system.
LV	KER	Buy energy supply and savings from us.	Implementation of energy efficiency measures in industrial sites integrated with existing energy supply contracts. The fields of application are found by energy audits including both supply of heating and electricity.
PT	Arquiservices	Renting energy efficient Lighting in Shops	In cooperation with the sister company Arquiled (manufacturer of LED and installer), Arquiservices is offering EPC contracting with installation and renting of LED lighting, maintenance and monitoring for Shops. The customer has to provide a bank guarantee equivalent to the size of the investment. The first customer was a large casino. Now, Arquiservice market their service to chains of shops.
PT	Eneefficiency	Energy Efficiency for Refrigeration Systems	The energy service targets customers with refrigeration needs including food and beverage industries, restaurants, supermarkets, catering, food retail shops, etc. The service includes a refrigeration system energy audit one week before and another week after installation of a mimicking sensor device (the eCube).
PT	VivaPower	Customized ESCO solutions	Customized ESCO solutions including an energy audit, identify & recommend actions, carry out a road show for financing, design, implementation and operation & maintenance. VivaPower offers both a simple ESCO model and a ESCO model with SPV. It is the intention to implement models such as IEC and creation of an ESCO fund.
SK	ZSE EoN	Heat pump renovation	Implementation of heat pump, replacement of gas boilers and modernization of the heating system in buildings.
SK	ZSE EoN	E-stabil package + Energy certification	E-stabil energy service package offering customers better electricity prices with two years contract binding. Energy Certification evaluation of buildings according to law No:555/2005 including the heating system, water system, air condition and lighting system.

Country	EES provider	EES name	Description of the EES
SK	ZSE EoN	E- stabil + Thermography	E-stabil energy service package offering customers better electricity prices with two years contract binding. Offering thermal imaging service to investigate the largest energy leakages from the building, technologies or others. The measurements have to take place when the temperature differences 10 hours before action are minimum 15 °C with no sunshine.
SK	ZSE EoN	Change of circulation pumps	Old inefficient circulation pumps are replaced by new high efficient types of pumps.
SK	ZSE EoN	E-stabil + Energy audit	The E-stabil energy service package offering customers better electricity prices with two years contract binding. Energy audit and analysis of energy balance in building, saving energy options, application of RES and feasibility calculations related to the investments. The service is related to legislation requirements of Slovakia.
SI	El-tec Mulej, d. o. o.	Energy Performance Contracting (EPC)	In the preparatory phase this EES consists of an energy audit, a proposal for energy efficiency measures, the preparation of public tender documentation (in the public sector) and implementation and financing of energy efficiency measures. In the main phase the project consists of verification by on-line monitoring of energy consumption and thus ensuring the contractual guaranteed savings. This EES is therefore considered to be a full EES.
ES	CGC GESTION DE BIOMASA, S.L.-ENERPELLET	Heating and hot water ESCO business in hotels	Providing efficient heating service and hot water in hotels. The ESCO provides the boiler, heating and sanitary hot water systems, maintenance and fuel. The user pays a fee per month.
ES	CLECE	ESCO pilot in large office buildings	CLECE do an ESCO pilot project in a large office buildings complex including change from building energy label F to C, changes in fuel for heating, cogeneration, photovoltaic solar plant, better efficiency of HVAC, lighting control and improved maintenance function. The Spanish government has made a 2010 action plan including 330 similar ESCO projects in the other large Spanish government administration buildings with the objective of 20% energy saving and subsidizing 15% of the investment in public private ESCO projects.
ES	DALKIA ENERGIA Y SERVICIOS	EES development at Canary islands hotels	Sanitary production of hot water pool heating replacing propane. Improving the environmental image of the hotels and creating sustainability value for the customers.
ES	DALKIA ENERGIA Y SERVICIOS	Improved heating in primary schools	Introduction of biomass as fuel for heating service replacing diesel-fuel in primary schools. Improving the municipality sustainability performance and improving the environmental image of the citizens.
SE	Isoleringsfirmornas Förening (IF)	EEL through state-of-the-art technical insulation	The EES includes marketing strategies for better appraisal of the value of proper technical insulation.

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Project partners

Germany	Wuppertal Institute for Climate, Environment, Energy (coordinator)
Austria	e7 Energie Markt Analyse GmbH
Bulgaria	BSREC - Black Sea Regional Energy Centre
Czech Republic	SEVEN
Denmark	Energy Piano
Estonia	ESB - Energy Saving Bureau
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France	EDF - Electricity of France
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