

MOTIVA

expert in
efficient utilisation
of energy and materials

**annual
review
2007**

Motiva in brief

RELIABLE AND IMPARTIAL PARTNER

Motiva is an expert company promoting efficient and sustainable use of energy and materials.

Its services are utilised by the public administration, businesses, communities, and consumers.

Services

- Marketing of Energy Efficiency Agreements, support and monitoring of implementation
- Development of Energy Audit and Analysis activity
- Increasing the use of renewable energy
- Promotion of material efficiency
- Influencing attitudes and consumer habits
- Publicising energy and material efficiency
- Monitoring and impacts assessment

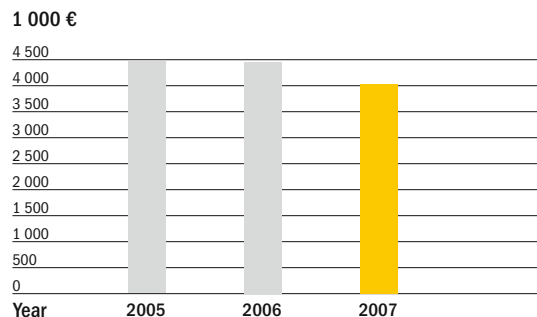
Strategy 2008–2010: Principal objectives

- The Motiva brand is strong
- Activity is effective
- Public administration makes use of its affiliate unit
- The personnel is highly competent and well-motivated
- The company value is maintained

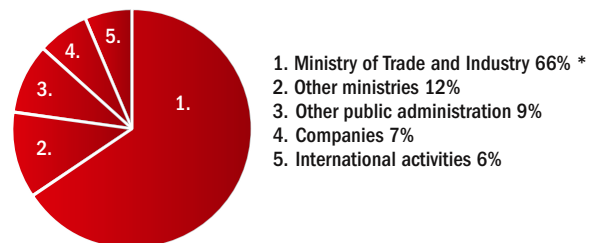
Motiva Oy in a nutshell

- Operation began in 1993 as the Energy Information Centre
- Incorporated 1 November 2000
- Owned by Finnish state (100%)
- Turnover 4 million euros (2007)
- Personnel 30 (31.12.2007)

TURNOVER 2005–2007



INVOICING BY CUSTOMER GROUP 2007



*currently Ministry of Employment and the Economy

Managing Director's Review

EXPERTISE IN DEMAND TO PREVENT CLIMATE CHANGE

Through 2007, awareness of the climate change and its effects were constant topics of debate in Finland. Climate change mitigation, energy efficiency, increasing the use of renewable energy sources and greater self-sufficiency were also pivotal themes in the EU.

In addition, experts discussed the importance of material efficiency in ensuring sufficiency of natural resources and their sustainable use. Added impetus came from the increasing demand for raw materials and the rising prices in the global markets.

In Finland, Energy Efficiency Agreements were drafted to follow on from the Energy Conservation Agreements, found to be successful. The EU Energy Services Directive has also brought challenging savings targets. With the IPPC report which attracted a great deal of publicity, people all over the world became aware of the ever greater need to reduce greenhouse gas emissions.

Signing the Energy Efficiency Agreements, launching the Material Efficiency project, and the input of both the company and its experts in general debate characterised Motiva's operation in 2007. We achieved the set targets, although we fell short of the targeted turnover.

The drafting and signing of the Energy Efficiency Agreements came off well, despite the tight schedule. The material efficiency business got off to a good start. Much was also achieved, considering Motiva's modest resources, in the face of increased demand for information, thanks to our competent and professional staff.

In January 2008, the EU Commission published its challenging Energy and Climate package. In it, Finland was set the target of a 16 percent reduction from the 2005 levels in greenhouse gas emissions, and a 9.5 percent increase in renewable energy use. These much tougher targets will dominate the energy debate in 2008. The need for transport and the residential sector to reduce emissions will be prominent in the discussion.

At Motiva, the order book for the new year was improved more than expected before the end of last year. Our most important goals are related to translating the signed Energy



Photo: Pepe Mäkeläinen, Temäfoto

Efficiency Agreements into comprehensive practice. Our tough challenge is to respond to the increasing demand for information and expertise. We also want to support the various ministries in responding to the challenging international climate targets.

A word of thanks is due to our committed and capable personnel and our wonderfully active clients and representatives of our interest groups, both in Finland and elsewhere.

March 2008

Jouko Kinnunen

New agreements
include the industry and
commerce sectors extensively

WORLD'S MOST EXTENSIVE ENERGY EFFICIENCY AGREEMENT SCHEME



Photo: Delany Brendan, Comma

As the result of favourable experiences gained from previous Energy Conservation Agreements and diligent preparatory work, the new Energy Efficiency Agreements, under the auspices of the Ministry of Employment and the Economy MEE (formerly Ministry of Trade and Industry MTI), were signed on 4 December 2007. The agreements play a central role in the implementation and monitoring over the years 2008-2016 of the directive 9 percent energy-saving target issued by the EU to all member states.

The aim is to improve the efficiency of the energy usage of companies and communities, to promote use of renewable energy, and to encourage adoption of new technology and innovations.

In 2007, Motiva was actively involved in drafting the agreements in collaboration with MTI, the Confederation of Finnish Industries EK, industry organisations and local authorities. The work will now focus on marketing the agreements and supporting the implementation of the related action programme, its monitoring, reporting, and production of tools and information and training materials.

Energy efficiency as part of business competitiveness

Continuing improvement of energy efficiency is the fundamental premise of new agreements. In order to translate the idea into practice, we set up the Continuous Improvements Working Group which prepared a model of the Energy Efficiency Scheme, through which management of energy usage is integrated in the corporate management system.

When drawing up new agreements, particular attention was paid to promoting innovations and removing obstacles from adoption of progressive technology. The Working Group, established in 2006, sketched out activities of the Innovations Forum in promoting innovative activity and linking it to become part of the Energy Efficiency Agreements.

Sector-specific action programmes

In addition to energy-intensive industry and energy production, the industrial and commercial sector agreements cover eight sectors representing medium-sized industry and the service sector, with their own dedicated action programmes.

In the autumn, a seminar on the new agreement was organised for the companies, as well as a marketing campaign conducted jointly with the industry organisations promoting joining the agreement scheme.

2008

- Marketing of agreements to companies and support for implementation
- Energy efficiency advisory services for companies
- Development of a steam/condensing analysis
- Finalising the farm energy programme
- IEE/Energy+ Pumps – procurement competition of water circulation pumps

The medium-sized chemical industry energy efficiency project, begun in 2006, was completed. A survey targeted at medium-sized companies charted their needs and wishes regarding energy efficiency advisory services. The results will be applied in the pilot project on energy efficiency advisory services in 2008.

Energy-efficient cooling

For industrial processes and commercial cooling systems, we developed the Efficient Cooling Analysis. It helps in producing a thorough assessment of cooling needs and the main factors affecting the energy consumption of equipment, with the aim of identifying potential areas of saving electricity and thermal energy, and the recommended efficiency measures for energy use, complete with costs.

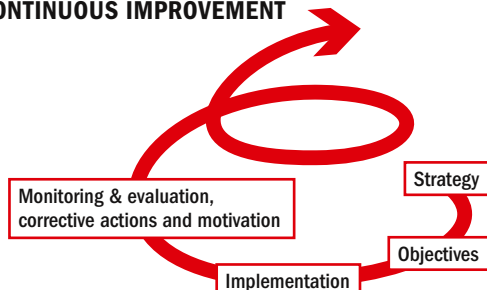
The Efficient Cooling Analysis is an extension of the Motiva commodity programme and the Compressed Air Efficiently Model developed earlier.

Targeting at savings in transport

The target of the new goods transport and logistics Energy Efficiency Agreement (2008–2016) was also set at 9 percent savings by the year 2016. The agreement covers truck and van transport companies, which previously had their own Energy Conservation Programme, as well as rail transport as a new participant. In order to reach the targets of this agreement, it is imperative that industry, commerce and local authorities using transport services also become involved in the activity. The agreement was signed in January 2008.

The Energy Audit model for the industrial transport chain, developed at Motiva since 2005, was awarded a prize in the Cleantech Finland environmental competition organised by Sitra, Finnish Innovation Fund. A corresponding model for local authorities and commerce is under development.

CONTINUOUS IMPROVEMENT



Successful energy efficiency activity requires continuous improvement.



ENERGY EFFICIENCY
agreements

INDUSTRY AND COMMERCE ENERGY EFFICIENCY AGREEMENT 2008–2016

Confederation of Finnish Industries, Ministry of Employment and the Economy and industry organisations:

- Energy-intensive industry
- Energy generation
- Food industry
- Chemical industry
- Plastics industry
- Technology industry
- Timber products industry
- Retail sector
- Tourism and restaurant services
- Energy services

ENERGY-EFFICIENT FUN AT AN ADVENTURE PARK



Photo: Tero Pajukallio, Diaidea

The more than 30 funfair rides, air conditioning, heating and lighting of the buildings, and the water treatment of the aquaria and dolphinarium at the Särkänniemi Adventure Park in Tampere require a lot of energy. Consumption is systematically monitored, and the park has a certified environment management system. The tourism and restaurant services action programme included in the Energy Efficiency Agreement will help the continuing search for potential targets for savings. As well as energy-efficient technology, training of the staff using the equipment is a target for investments.

Motiva participates
in national implementation of
Energy Services Directive

EFFECTIVE MONITORING PRECONDITION OF ASSESSMENT OF RESULTS



Photo: Tero Pajukallio, Diaidea

The EU Directive on energy end-use efficiency and energy services, the Energy Services Directive, requires monitoring of realisation of the energy-saving effect of energy efficiency measures and development of improved methods of verification. Motiva's role in preparing for implementation of the directive is particularly in the area of development of standardised computing methods and associated collaboration at EU level.

Motiva also took an active part in the preparation of the first national Energy Efficiency Action Plan and assessments of the impacts of its conservation measures, as stipulated by the Directive. Finland was the first country to submit her National Energy Efficiency Action Plan (NEEAP) to the EU Commission.

Saving estimate of agreement scheme exceeded

The Energy Conservation Agreement scheme, which has produced good results all round, was launched in 1997. At the time, it was estimated that the total savings potential across the various agreement sectors by the end of 2005 would be around 11 TWh, of which half would be realised by the year 2010.

At the end of 2006, the reported actual annual savings impact, 7.7 TWh/a, is 40% more than originally estimated. The share of electricity of the achieved savings is a good fifth, 1.7 TWh/a.

This total is equivalent to the annual electricity and thermal energy consumption of more than 380,000 average detached houses.

The share of industry of the savings was 81% , and that of power plants 15%. The remainder of the savings was

2008

- Participation in preparations for implementing the Energy Services Directive (ESD)
- Reform of monitoring systems of Energy Efficiency Agreements and Energy Audit activity
- IEE/EMEEES – development of monitoring, computation and verification methods for Energy Services Directive
- IEE/ODYSSEE-MURE – national data into the international databases

obtained in district heating, the municipal sector, power transmission and distribution, and the property and building sector.

The coverage of the Energy Conservation Agreements ended at the close of 2007 was approx. 60% of Finland's total energy consumption, to our knowledge higher than anywhere else. Good coverage is our aim also with the new Energy Efficiency Agreements.

Carbon emissions lower

The energy efficiency measures reported in the Energy Conservation Agreements in the industrial, energy and service sectors have also had a significant effect on reduction of greenhouse gases.

They have reduced emissions annually by about 2.5 million CO₂ tons. This is more than two thirds of the reduction target of 3–4 million CO₂ tons set in Finland's Climate Strategy and the associated Energy Conservation Programme (2003–2006).

Similarly, the boiler replacements under the oil sector programme of oil-heated properties has had a significant impact. At the end of 2006, replacements of oil boilers and burners have achieved annual savings of about 1.1 TWh or almost 110 million litres in light fuel oil consumption, equivalent to about 0.3 million CO₂ tons.

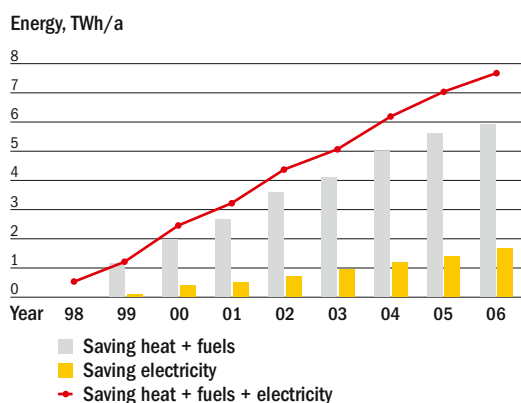
Computation and monitoring methods under development

Extensive collaboration is under way at EU level to develop and standardise monitoring and computation methods required by the Energy Services Directive. Motiva has taken an active part in the operation of projects and working groups, as well as in international conferences and expert seminars organised on the Energy Services Directive and its monitoring.

In Finland, a significant part of the results of monitoring energy-saving measures is obtained from information pertaining to each measure reported annually by companies and communities.

The monitoring systems of the Energy Efficiency Agreement scheme and the Energy Audit scheme will hold an important position in the future, also with regard to monitoring of the Energy Services Directive. Development of a new Energy Efficiency Agreement monitoring system as an Internet-based tool has been initiated. At the same time, the monitoring system of the Energy Audit scheme will also be reformed.

CUMULATIVE IMPACT OF CONSERVATION MEASURES



Cumulative impact of conservation measures in industry, energy sector, municipal and property and building sectors energy efficiency agreements reported in 1998–2006.

LARGE SAVINGS AT THE POST HOUSE



Photo: Futureimagebank

The energy audit carried out at Helsinki Post House resulted in thirty suggestions for improvements, of which 27 have been implemented or decisions of their implementation made, with only three remaining under consideration. The pay-back period of the proposed measures is less than 5 months. The savings potential of heating energy is reported at 19%, electricity 5%, and water costs 2%.

The Helsinki Post House is owned by Ilmarinen Mutual Pension Insurance Company.

Source: Motiva, energy audit monitoring system

Bioenergy has main role

INFORMATION DISSEMINATION AND TRAINING IN USE OF RENEWABLES

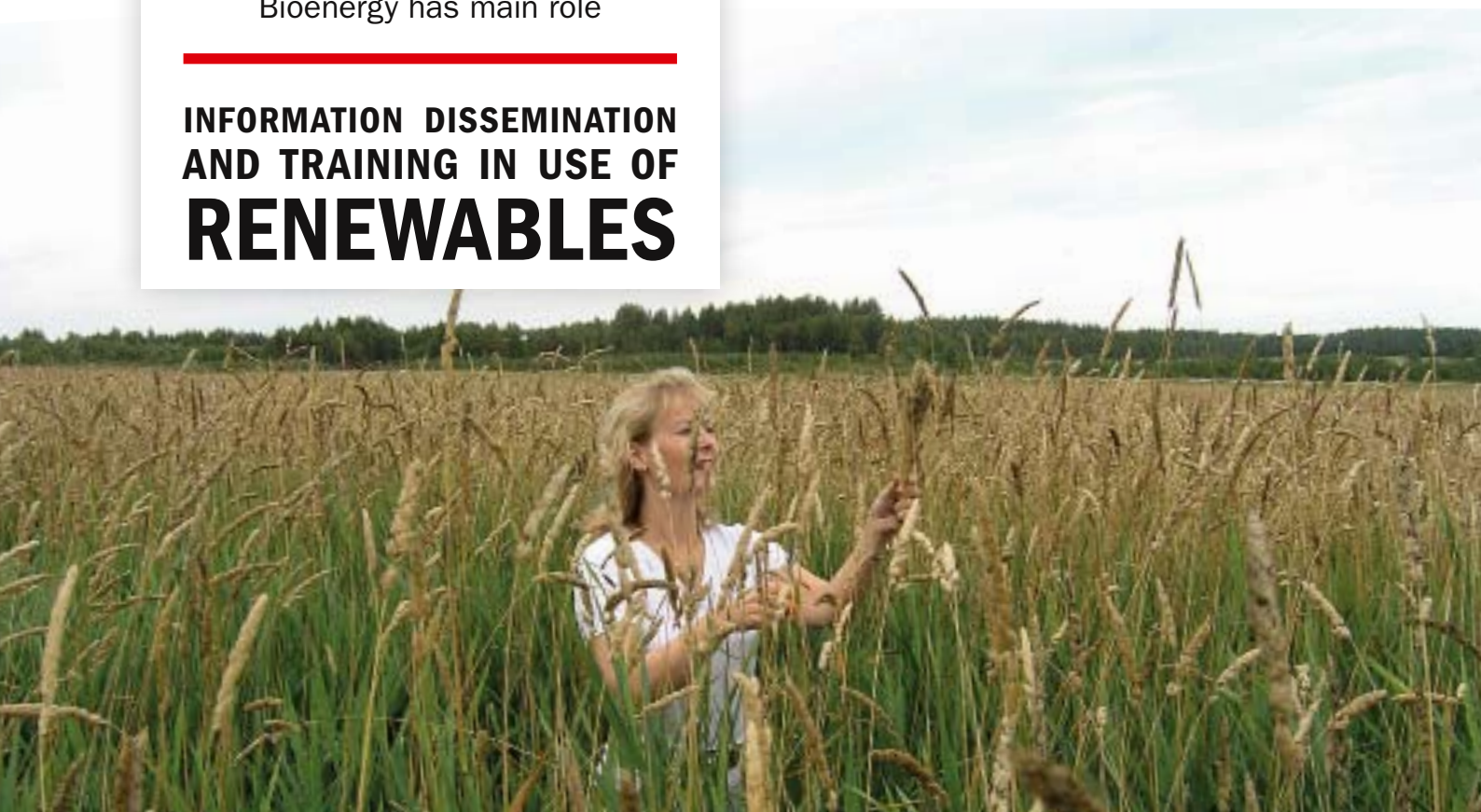


Photo: Juhani Rahkonen

Motiva's activities were mainly focused on promoting pellet heating in small properties and operation of heating entrepreneurs. Our experts were involved in a number of projects aiming to increase the use of renewable natural resources, such as bioenergy, solar and wind energy and small-scale hydropower.

Popularity of pellet heating on the increase

The choice of pellets as the heating solution for small properties was furthered on several fronts. The activities included production of guidelines and other informative materials and training of installation fitters.

Maintenance of the pellet advisory telephone helpline was extended and it was publicised through marketing. Instructions were commissioned for building a silo for pellet storage.

Negotiations were conducted with prefabricated house manufacturers with the aim of obtaining visibility for heating alternatives based on renewable energy. A seminar and info evenings were organised and informative material was produced with implemented solutions introduced using examples.

Use of forest chips promoted by encouraging new entrepreneurs

New businesses based on forest chip heating are becoming more popular. At the end of 2007, 191 businesses were registered, running more than 330 heating plants in various parts of Finland. Alongside traditional, mainly local authority -owned premises, this form of heating is increasingly used also in businesses and the process industry.

In addition to the Heating Entrepreneur Day, other events were organised around the country, some in cooperation with the Association of Finnish Local and Regional Authorities.

A survey conducted among entrepreneurs found that the greatest problems were perceived to be contract issues, handling of raw materials, finance and obtaining information. Motiva published a heating centre simulator on its website, freely available for training purposes for heating entrepreneurs, people studying to this end, and other interested parties.

A diversity of energy from nature

Alongside wood, geothermal heat, the sun, wind and arable crops offer possibilities for more extensive utilisation of renewable energy. Increasingly more attention is paid to improving energy usage on farms, with their own targets set in the EU Energy Services Directive. Motiva was involved in drafting the farm energy programme in cooperation with the ministries.

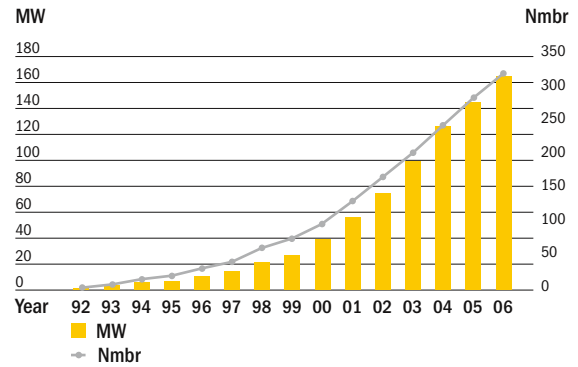
An area for further development is extending the advisory activities from utilisation of biomass also to other sources of bioenergy. A training and negotiation event was organised together with the agricultural advisory organisation ProAgria.

Motiva also produced leaflet material on growing reed canary grass and its use as an energy source. According to investigations, extended growing of the plant could produce 0.6 percent of Finland's current energy consumption.

Other development projects of renewable energy in which Motiva participated in 2007 included initiating preparations for a wind atlas, a project on exporting bioenergy sector know-how, and promotion of peat production. A report was published on use of solar energy in Finland, showing that it has risen in the country, although the volumes are still small compared to other countries.

A plan was prepared for the Ministry of Agriculture and Forestry for coordinating bioenergy projects. Motiva's expertise was also applied to promote small-scale usage of biomass fuels. A comprehensive overview of small-scale use of wood fuels was published as a book in collaboration with VTT and Motiva, funded by Tekes, the Finnish Funding Agency for Technology and Innovation.

PLANTS RUN BY HEATING ENTERPRISES AND TOTAL OUTPUTS



In 2006 more than 300 heating plants with total capacity of 165 MW were managed by heating entrepreneurs.

Source: Tekes publication "Puupolttoaineiden pienkäyttö" (Small-scale use of wood fuels), Tekes, 2007

2008

- Furthering bioenergy use in rural areas
- Furthering use of pellets
- Wind power tour
- Wind atlas
- European EIP -project KIS-Pims – business development of renewable energy service companies

FLIGHT TERMINAL HEATED WITH PELLETS

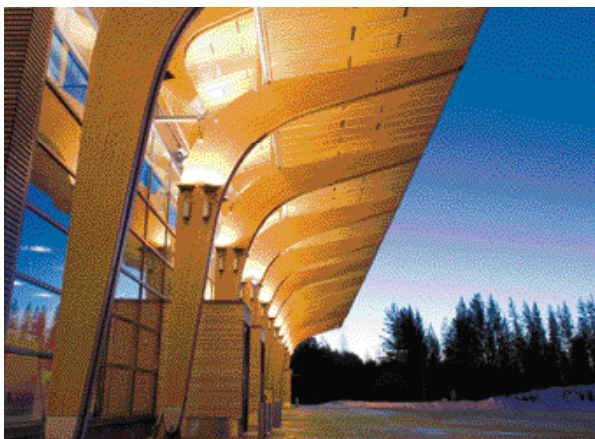


Photo: Motiva

Finavia (Finnish Civil Aviation enterprise) has changed the heating of its six flight terminals over to pellets. Home-grown bioenergy will replace total annual oil requirements of 1.4 million litres. Finavia adopted an environmentally friendly alternative for heating these flight terminals with pellets.

Motiva's expertise was utilised in drawing up Finavia's energy and environmental programme.

Source: Motiva Xpress Journal

Energy consumption growing
in households and service sector

PUBLIC SECTOR LEADING THE WAY



Photo: Tero Sivula, Alumi

When the municipal Energy and Climate Agreement was renewed, the needs of local authorities of different sizes were taken into consideration. An Energy Efficiency Agreement was drawn up for large municipalities and municipal federations, while small ones were offered an energy programme.

During the year, implementation of the municipal climate and energy agreement activity was monitored and reported. At the end of 2007, the number of municipalities included was 59 and that of municipal federations 15. Of their property stock, more than half or 66 million building cubic metres was covered by the agreement scheme.

At the end of 2006, more than 3,000 measures improving energy efficiency had been reported. Their annual savings impact was 70 GWh in heating and 13 GWh in electricity. This is equivalent to the annual energy consumption of about 4,100 average detached houses.

The regional projects in the municipal sector continued. The city of Kuopio in Eastern Finland showed in a project that obstacles to improving energy efficiency include attitudes and the personnel's lack of time and information. The 3-year Vanamo Project in Southern Finland has created advisory service models for sensible use of energy and water, waste management and material efficiency.

Property and building sector Energy Efficiency Agreements

The property and building sector Energy Efficiency Agreement ended at the close of 2007. By the end of 2007, 22 companies had signed up to the agreement, six of them government property units. The agreement covered approx. 23% of private and public property stock.

In 2006, about 1,050 measures were reported, with an annual savings impact of 38 GWh in heating and 17 GWh

in electricity, corresponding in total to the consumption of almost 2,700 average detached houses.

Negotiations are currently under way on a new energy efficiency agreement model for property managers and investors.

The residential property sector Energy Efficiency Agreement under the Ministry of the Environment is in force until the end of 2012. Monitoring of the consumption of the associations included in the agreement is comprehensive, but the interim target set for 2006 on the extent of energy audits has not been reached.

Oil sector agreement to expand

The targets of the oil sector (Höylä) programme, which aims at savings in fuel oils, were exceeded. By the close of 2006, savings of almost 1.6 TWh, approx. 160 million litres of heating oil, were achieved by measures such as renovating ageing properties with oil-fired heating.

This previous conservation programme was extended into the new oil sector Energy Efficiency Agreement, which was signed in December 2007. It now covers also distribution of both heating and transport fuels, with the aim of improving energy efficiency and increasing use of biofuel. Although the most important target group consists of end-users, the agreement also obliges companies supplying fuels to improve their own energy usage.

Transport more energy-efficient

The same objective of reducing the energy consumption of transport is also set for the Ministry of Transport and Communications enquiry into establishing a mobility manage-

ment service centre in Finland. Motiva's experience and working models are raised as a good example in the report.

Drafting of a new Energy Efficiency Agreement for public transport was under way under the Ministry's auspices. The agreement will be signed in 2008.

TOOLS TO SUPPORT PURCHASES

The Finnish TopTen online service has been produced as a part of the European IEE TopTen project. The service contains a collection of the most energy-efficient equipment and products for comparison.

In addition, Motiva in cooperation with FCG Efeko Ltd has produced purchasing guidelines and computing tools for different equipment and appliances under the IEE GreenLabels Purchase project.



ESCO TO SERVE MUNICIPALITIES



Photo: Mika Okko, Stillkuvastudio

The ESCO (Energy Service Company) scheme, implemented with positive results in industry, was marketed also to local authorities by producing the ESCO Guide.

Motiva also participated in the European EuroContract project which develops public sector ESCO agreements. According to the survey we carried out, SME industry also needs information on ESCO.

Energy-efficient public procurements

Public procurements in Finland amount to about 22 billion euros a year, or approx. 15% of gross national product. During the year, we completed a report on the impact of public procurements on energy consumption and resultant greenhouse gas emissions.

The bulk of public sector energy consumption takes place in buildings when they are in use. Consequently, decisions made at the design stage, as well as usage habits, have a great impact on energy consumption.

Next to procurements related to construction, by far the greatest opportunities of influencing energy consumption are related to purchase of office equipment. Replacing PCs with laptop computers and purchasing printers and photocopiers complying with the Energy Star 2007 standards would reduce energy consumption.

Motiva was also involved in the Ministry of the Environment working group set up to prepare a proposal for an action programme entitled 'Sustainable procurements'. The programme was submitted to the Ministry of the Environment and the Ministry of Employment and the Economy in February 2008.

Environmental actions at home save living costs

The Energy-Efficient Home campaign, coordinated by Motiva, continues until the end of 2008. The large group of campaign participants comprises ministries, associations and individual enterprises.

Heating and other energy usage account for a significant proportion of living costs, but also of environmental loading. The aim of the campaign has been to encourage the single-family house builders to make energy-efficient decisions, with the help of information, guidance and examples, and to increase the market share of these houses to 20 percent within the next few years. The online service constructed in conjunction with the campaign plays a major role.

ENERGY CERTIFICATE

The Energy Certificate shows the energy efficiency of a building compared to other similar buildings.

An energy certificate is required for all new buildings, including family houses.

From the beginning of 2009, an energy certificate will also be required for existing properties, when the property or parts of it are sold or let.

www.motiva.fi/energiatodistus
(in Finnish and Swedish)



2008

- Marketing and implementation of Energy Efficiency Agreements
- IEE/Interaction – greater efficiency of transport and logistics in companies
- Public procurements – updating the recommendations
- IEE/GreenLabel Purchase – tools for procurements
- IEE/Top Ten – the most energy-efficient products in equipment groups
- Improved efficiency of household electricity usage

AN ENERGY-EFFICIENT HOME



Photo: Motiva

During 2008, an energy-efficient home for a family of four will be completed in Tuusula in Southern Finland. It will blend in the setting which is rich in cultural history, and it has achieved high quality through good design and a moderate budget. The chosen equipment and solutions, such as selecting ground-source heat pump for the heating system, help save energy and reduce living costs.

www.energiatehokaskoti.fi
(in Finnish)

Motiva activity extended to
material efficiency

MORE FROM LESS ALSO IN MATERIAL USAGE



Photo: Tero Sivula, Albumi

Material efficiency is producing competitive products and services with decreasing material inputs in such a way that harmful impacts are reduced during the life cycle. Material and energy efficiency complement each other well.

More effective use of materials in consumption and production saves natural resources and also increases energy efficiency. In conjunction with reductions in environmental loading, the competitive edge of Finnish industry is improved, and demand created for new innovations.

Good experiences and know-how into productive use

The new Motiva unit operates as an impartial national mediator of information and services. Its target groups are companies, public administration and also households.

The new area of operation is a natural addition to Motiva's activities. The company's experience of drafting, monitoring and publicising of energy efficiency agreements and sector-specific programmes constitute a good model for more widespread applications. The working models created, such as energy audits, are also applicable to improving material efficiency.

Aiming at reduction of harmful effects on the environment

The aim of the activity is to impact pre-emptively on planning and procurements. A second important premise is identification of factors impairing material efficiency. The aim is to utilise materials in such a way that as little as possible is wasted. In addition to savings in costs, the benefit is reduction of harmful environmental impacts.

Our partners in cooperation are research institutes, companies, communities, public administration, business organisations and NGOs.

2008

- Material efficiency communications
- Advisory service for public environmental technology procurements
- Development of material audits

Impartial expert engenders trust

INCREASED NEED FOR INFORMATION ON ENERGY SAVING AND RENEWABLES



Photo: Futureimagebank

Motiva encourages energy saving and use of renewable energy in many ways and is involved in a number of projects. The widespread publicity obtained by energy issues and the climate change, rising energy prices and weather fluctuations have definitely increased demand for information.

This was clearly evident at Motiva in the form of considerably increased contacts, telephone and email enquiries, and requests for giving presentations. The need for information was also shown by the visitor numbers to our website, which rose by 35% from the previous year and amounted to almost 870,000 in 2007.

Motiva is seen as an impartial and reliable energy expert. This was confirmed by the Mediabarometer survey conducted by a leading communication training company, Infor Oy, in 2007, as well as by the company survey linked to preparations for Motiva's communications strategy. According to the market research house Taloustutkimus' survey entitled Environmental and social responsibility of compa-

nies 2007, Motiva's press communications were the most reliable and informative. Its website was also deemed to be the most informative.

Key activator of energy efficiency

Motiva produces a substantial quantity of informative material annually, both for printed and electronic media. There is a constant demand for various teaching materials, guides and publications about best practices.

The Motiva publications backlist contains about 200 different info products that may be ordered online and are distributed at e.g. fairs and events. They include 31 new publications produced in 2007.

The Motiva Xpress magazine, which was published four times in 2007, contained a wealth of news and articles associated with such topics as house building, the climate change, EU Energy Services Directive and new Energy Efficiency Agreements.

The media's energy expert

Motiva played a proactive role in supplying topical information to the media, issuing 29 press releases of its own during 2007. In addition, eight shared releases, prepared together with various parties, and 56 releases related to other energy issues, were published on the website.

The number of media contacts and interview requests increased significantly. Interesting topics included low-energy building and household electricity consumption, especially that of digital receivers and home entertainment electronics.

On/off relationship publicised

For the 11th time, Motiva organised the national Energy Awareness Week, with a record number of participants: 273 companies and communities. The autumn 2007 theme, 'Start an On/Off! relationship', focused particularly on turning off unnecessary lights and equipment. The week was launched with a spectacular Turning Off the Lights event in central Helsinki.

In 2007, Motiva took part in five exhibition events with its own stand, and three events with its partners. In addition, a total of 25 seminars, training and information events were organised.

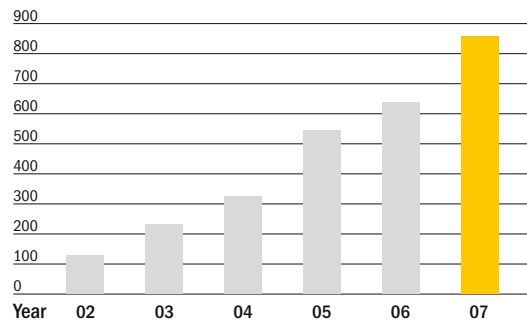
Ecodriving the European way

Motiva ran the pan-European EcoDriven project in Finland. The aim of the campaign, especially targeted at businesses and persons using company cars, was to promote driving practices that save the environment and energy, reduce emissions and increase safety in traffic.

The campaign opened with the theme 'Easy, Rider!' on the Day of the Car on 15 September 2007. The website, media communications, training and informative and campaign materials all emphasised the importance of economical driving.

WWW.MOTIVA.FI-VISITORS TO THE WEBSITE

Visitors, x 1000



The online service has become a popular source of information among the media, professionals, teachers, builders and consumers. In 2007 over 870,000 visits to Motiva's website were recorded.



Photo: Seppo Samuli, Lehtikuva

The lights were turned off in Helsinki during the Energy Awareness Week in 2007. The Energy Awareness Week will be held again on 6.-12.10.2008.

ECODRIVING



Photo: Motiva

The motor vehicle sector group of experts assembled by Motiva selects the Eco-Car of the Year annually from among low-emission and low-consumption models. The Toyota Prius was selected as Eco-Car in February 2008. The hybrid did well in fuel consumption tests, but its special trump card was low emissions of both carbon dioxide and other emissions.

Influence through communications

The impact of attitude and behaviour changes towards energy consumption is studied in pan-European BEHAVE project. The project produces guidelines for planning and implementation of energy related communications and campaigns.

Attitudes to climate change altered

Motiva was responsible for the practical implementation of the five-year Climate Change Communications Programme. The programme culminated in an EU-wide campaign in the years 2006–07. The 'Make a Change' theme activated Finns into taking action to curb the climate change.

In Finland, the national campaign included a dedicated website, various events and occasions, media advertising, and training journalists and teachers to discuss the subject, among other things. More than 70 envoys and partners were recruited for the campaign.

The ideas of Finns have changed during the programme, according to research. While terrorism was the greatest cause for concern in 2004, in 2007 the climate change was considered the most important issue affecting life. People are also increasingly more prepared to act in order to further the matter.

Energy issues prominent on TV

Increased interest is also shown by the popularity of television programmes dealing with ecological issues and responsible consumption. Motiva experts were employed in

the planning and execution of a television series Muutosta ilmaassa, broadcast in the autumn 2007.

The 8-part Woimaxi series of broadcasts also allowed schoolchildren and their parents to familiarise themselves with different energy sources and the choices through which energy and nature can be conserved.

Kids and youngsters as essential target groups

Tools for improving schools' own energy usage were produced and tested as part of the European Active Learning project. In eleven schools all around Finland, the pupils examine the energy usage in their schools, possible shortcomings, and make suggestions for improvements. The regular monitoring of energy consumption and the varied assignments have encouraged the pupils to take the energy lessons home, too.

2008

- Energy-efficient home – information campaign
- IEE Ecodriven and Easy, Rider! – campaign for economic driving
- IEE/Kids4Future – examples of sustainable development for children through story-telling
- IEE/Active Learning – teaching materials and monitoring of energy consumption for schools
- IEE/Behave – evaluation of programmes affecting consumer behaviour
- Information on energy certificates for buildings

SCHOOLS ACTIVELY INVOLVED



Photo: Motiva

The Second-years' Energy Awareness Week organised by Motiva proved its continuing function as an encouraging model among children. About half of the age group participated in the event, organised in autumn 2007. The activities were supported by almost 80 energy companies. The ideas competition with prizes, a new energy book for children and material packs were the main elements of the activity.

Motiva operates
in cooperation networks

EFFECTIVE APPLICATION OF EXPERTISE

The turnover of Motiva Oy in 2007 was 4 million euros. At the end of the year 2007, the company had 30 employees. Most of the personnel were energy and environmental sector experts.

Based on the annually conducted job satisfaction questionnaire, staff perceive their work at Motiva as meaningful, and people are mostly happy. The growing need for information and enquiries increase the work load for some of the staff.

In 2007, the Motiva Communications Strategy was drawn up to support implementation of the company strategy, and the work of redesigning the Motiva website was initiated.

Several parliamentary Committees have heard Motiva as an expert in climate and energy issues.

Coverage through networks

Motiva is involved in almost twenty international projects annually, as well as making an active contribution to the European Energy Network (EⁿR), which consists of energy authorities and responsible organisations of EU member countries. Motiva operates as the national contact point of the EU Commission IEE Programme.

The international Energy Audit 06 Conference, held in Finland, increased the demand for Motiva's energy audit expertise in other countries. In 2007, we provided audit training in e.g. Russia, Vietnam, Taiwan and Croatia.

Motiva operates as coordinator of the Finnish Energy Agencies network. There were eight regional and local Energy Agencies operating in Finland in 2007. New agencies are planned for various parts of Finland.

ENERGY MOTIVATORS



Ulla Suomi, Head of Unit at Motiva, was awarded the Ministry of Trade and Industry Energy Motivator (EnergiaTsemppari) certificate of honour on 20 December 2007. She received it as acknowledgement for her excellent work in promoting energy efficiency. The certificate was also awarded on the same occasion to Mr. Jouni Punnonen of Teollisuuden Voima Oyj. The unit headed by Ms. Suomi is responsible for the monitoring systems of energy audits and energy efficiency agreements at Motiva.



Photo: Motiva

MOTIVA'S PUBLICATIONS AND PARTICIPATION IN THE IEE-PROJECTS IN 2007

Publications available in English

- Energy Efficiency in Finland – a Competitive Approach
- Finland and Climate Issues
- Energy Efficiency Agreements in Finland 1997–2005
Results of an Expert Evaluation
- Energy Conservation Agreements 2005
- Energy Awareness Week in Finland
- Energy Agencies, Controlled and proficient energy
production and use
- Hey, everything's working! -children's energy book
- The Climate Change Communications Programme:
- Awareness, attitudes and actions
- Windmiller-CD
- The Guided Tour on Windpower (www.windpower.org)

Intelligent Energy - Europe (IEE) Programme

MOTIVA'S PARTICIPATION IN IEE-PROJECTS

- Energy+ Pumps - Technology Procurement
for Factor 4 pumps
www.energypluspumps.eu
- ACTIVE LEARNING – Integration of Active Learning
and Energy Monitoring with School Curriculum
www.consortium4al.eu
- BEHAVE – Evaluation of Energy Behavioural
Change Programmes
www.energy-behave.net
- BESS – Benchmarking and Energy management
Schemes in SMEs
www.bess-project.info
- BIOMASS PARTNERSHIPS – Establishment of
regional biomass markets through plant partnerships
www.biomasspartner.info
- DEXA-MCP Dissemination, Extension and Application
of the Motor Challenge Programme
www.re.jrc.ec.europa.eu/energyefficiency/motorchallenge
- ECODRIVEN – European Campaign on improving
Driving behaviour, energy-efficiency and traffic safety
www.ecodrive.org

- EP LABEL – A programme to deliver energy certificates
for display in Public buildings across Europe within a
harmonising framework
www.eplabel.org
- ESEEF – European Sustainable Energy Education
Forum
www.schools4energy.net
- EUROCONTRACT – European Platform For
The Promotion of Energy Performance Contracting
www.eurocontract.net
- EURO TOPTEN – Reducing energy consumption:
making efficient products the normal and best choice for
consumers, retailers and manufacturers
www.topten.info
- GREENBUILDING – Leveraging the new GreenBuild-
ing Programme (GBP) to promote energy efficiency and
renewables in non-residential buildings
www.eu-greenbuilding.org
- GREEN LABELS PURCHASE – Making a green
procurement with energy labels
www.greenlabelspurchase.net
- INTERACTION – Energy efficiency equals cost
efficiency: engaging sectoral organization as champions
and messengers to reduce energy use in freight transport
www.eu-interaction.net
- KIDS4FUTURE – Creating Actions among Energy
Conscious Children by Combining Education,
Communication and Energy Knowledge in an
Integrated Approach for a Sustainable Future
www.rainmakers-eu.eu
- STABLE – Securing The Take-off of Building Energy
Certification: Improving Market Attractiveness through
Building Owner Involvement
<http://stable.motiva.fi>
- TREATISE – Training programme for local
Energy Agencies and actors in Transport and
Sustainable Energy actions
www.treatise.eu.com
- ODYSSEE-MURE – Monitoring of energy
efficiency in Europe
www.odyssee-indicators.org
- EMEES - Evaluation and Monitoring of the
EU Directive on energy end-use Efficiency and
energy Services
www.evaluate-energy-savings.eu
- EU LTA Uptake - European uptake of successful
implementations of industrial LTA's as part of
voluntary agreements on energy savings
www.ltauptake.eu

www.motiva.fi/en

FACTS ABOUT FINLAND

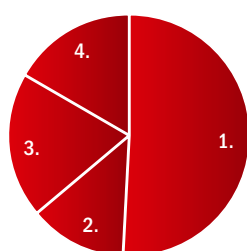
- Capital Helsinki
- Area 338,000 square kilometres.
- Population 5,3 million, 16 inhabitants per one square kilometre. In other European countries population density is six times higher on average.
- Mean temperature in February is -5 °C in Helsinki and -14 °C in Lapland.
- The energy need for space heating is 20–25 per cent higher in Lapland than in Southern Finland.
- One the darkest days of the year, the sun rises in Helsinki at 9.30 and sets at 15.15. In Northern Lapland, the sun does not rise at all for 50 days between November and January.



TOTAL ENERGY CONSUMPTION IN FINLAND IN 2006

- Total energy consumption 1,492 petajoule (PJ) or 414 terawatt hours (TWh)
 - Electricity consumption 90 terawatt hours (TWh)
 - Total energy consumption has doubled and electricity consumption has quadrupled since 1970.
 - 1 TWh = 1,000,000,000 kWh
- The energy consumption of a medium-sized single-family house is about 20,000 kilowatt hours (kWh) a year. One terawatt hour is enough to provide energy for 50,000 single-family houses for one year.

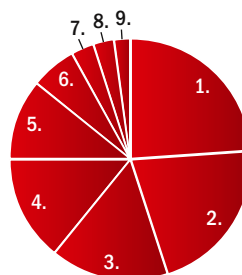
END USE OF ENERGY BY CONSUMPTION SECTOR



1. Industry 52%
2. Transport 13%
3. Space heating 19%
4. Other 16% *

* Other = Use of electricity and fuels by households, the public and private service sector, agriculture and forestry, and construction.

ENERGY CONSUMPTION BY ENERGY SOURCE



1. Oil 24%
2. Wood fuels 21%
3. Nuclear energy 16%
4. Coal 14%
5. Natural Gas 11%
6. Peat 6%
7. Hydro Power 3%
8. Net imports of electricity 3%
9. Other 2%

Source: Statistics Finland, Preliminary Energy Statistics 2007

www.motiva.fi/en

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