

Motiva

Annual Review 2008

construction biomass
cooperation material efficiency
energy efficiency
industry public sector
energy auditing

Know-how to promote well-being and prosperity

Motiva is a specialist company promoting efficient and sustainable use of energy and materials. Public administration, companies, communities, consumers and the media make use of Motiva's services and the top-level expertise of its personnel.

We create well-being and prosperity by promoting energy and materials usage that is as harmless to the environment and as productive as possible. Our vision is to be recognised as a social promoter of energy and materials efficiency. We aim to be an irreplaceable player to the government in the implementation of the National Climate and Energy Strategy. The know-how and well-being of our personnel, as well as the strong Motiva brand, are based on our values of expertise, reliability and impartiality.

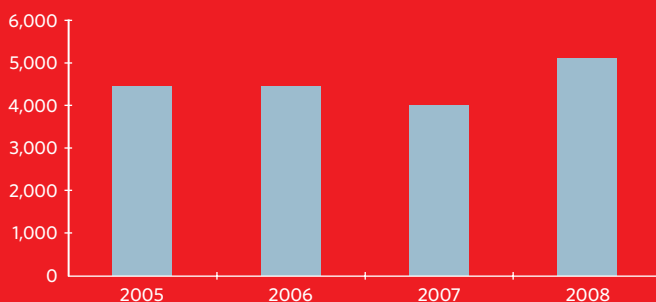
Motiva in brief

- Operation began in 1993 as the Energy Information Centre
- Limited company (Motiva Oy) from 1 November 2000
- Owned by Finnish state (100%)
- Turnover EUR 5.1 million (2008)
- Personnel 37 (31 December 2008)
- Subsidiary, Motiva Services Oy, established 12 December 2008

Services

- Marketing of the Energy Efficiency Agreements and supporting their implementation
- Developing energy audit and analysis activity
- Increasing the use of renewable energy
- Promotion of material efficiency
- Influencing attitudes and user habits
- Monitoring and impacts assessment
- Publicising energy and material efficiency

Turnover, 1,000 €



Long-term work for a better future

Exceptional weather phenomena and the climate change featured in the energy debate in 2008. Reducing energy dependency and the problems of security of supply, due to breaks in gas supplies, were at the forefront especially in the EU. In Finland, the debate also centred around energy-saving light bulbs, condensing of land usage, and the long-term Climate and Energy Strategy submitted to Parliament in November. The work on the Strategy is complemented by the currently working extensive Energy Efficiency Committee which is due to submit its proposals on measures this summer. Motiva is closely involved in this work. Preparation of the Government review of the future climate and energy policy is also under way.

Motiva continued its operation, as before, in close cooperation with a number of parties both in Finland and in the EU, and to a pleasing degree elsewhere, too. Our core functions included launching the new Energy Efficiency Agreement term, getting the operation of the Material Efficiency Unit well under way, and participation in the Energy Efficiency Committee as expert secretariat and specialist in the four sub-committees. In December 2008, Motiva Oy set up its subsidiary, Motiva Services Oy, which focuses particularly on services for businesses and municipal authorities.

Other important projects included designing a data collection system for monitoring the Energy Efficiency Agreements, the development work for a material efficiency audit procedure, and initiation of the Wind Atlas project. Motiva's work was in demand, which also gave us an opportunity to recruit new employees.

In 2009, Motiva's operation continues unchanged in terms of content, provided that budget cuts are not targeted at the operational appropriations of the central government customers served by Motiva. From 2010 on, if the policies set out in the Climate and Energy Strategy are realised, the Strategy will provide opportunities for more extensive activities in the consumer, small and medium-sized enterprises and transport sectors. The carbon dioxide emissions reduction requirement set for us demands the availability of impartial information on the means to this end that is accessible to ordinary people. One important group that needs information is formed by owners of housing properties and apartments. In 2009, we aim to launch an increasing number of public information projects linked to living and building.

I would like to extend my thanks and encouragement to our active clients, our knowledgeable and committed staff, and all Motiva's partners.

March 2009
Jouko Kinnunen



Pepe Makkonen

Results and effects of measures are carefully monitored

The EU Energy Services Directive is applicable to all energy end-use, with the exception of seafaring, air traffic and industry covered by the emissions trading scheme.

The aim of the Energy Services Directive (Directive on Energy End-use Efficiency and Energy Services) is a nine percent saving by 2016 on the average energy use outside the emissions trading scheme in 2001-2005. A further requirement is that the public sector should set an example, initiate measures to improve energy efficiency, and report on them and the savings achieved to the European Commission.

Motiva assists the Ministry of Employment and the Economy (MEE) in the national implementation of the directive. It is appointed as the agency, as indicated by the directive, responsible for the monitoring and reporting on energy efficiency measures and their results.

The company experts have participated in 'Energy Service Directive (ESD) Concerted Action' (CA ESD), the collaborative project of the EU member countries supporting the implementation of the directive, as well as in the work of developing methods for calculating energy savings.

Practical application of information exchange between member countries

The aim of the 3-year CA ESD project launched in 2008 is confidential information exchange between member countries related to implementation of the directive, and thus improved utilisation of resources. In the project, Motiva is in charge of leading one working group (Action Plan for Energy Efficiency).

Motiva is actively involved in the national implementation group of the Energy Services Directive. One of the tasks completed in 2008 was the preparation of a summary of public sector measures included in the energy efficiency plans of the various countries, contributing to the drafting of legislation on energy efficiency. In addition, a project was launched with the aim of producing guidelines allowing the calculation of the energy-saving effect of so-called customary measures in medium-sized industry and in the service sector, and providing general game rules for calculating savings.

Monitoring system reformed

The work of reforming the monitoring systems of energy efficiency agreements and audits, begun in 2007, progressed well, in spite of the challenging schedule, extensive content, and the need for changes that emerged during the work.

The reformed system, intended for annual reporting and now constructed to operate online, will be introduced in 2009. The energy efficiency agreement monitoring system is under further development, based on experiences emerged during the development work and gleaned from signatories through the first round of annual reporting.

Large committee to prepare an energy saving and energy efficiency action programme

The new long-term Government Climate and Energy Strategy was submitted to Parliament as a report in November 2008.

For the first time, a clear limit was set for energy use, standing in 2020 at a maximum of 310 TWh. The strategy demonstrates clearly that the targets for reducing emissions, increasing renewable energy, and more efficient energy use proposed for Finland by the European Commission will not be attained without significant new climate and energy policy measures.

During the drafting of the strategy, it became evident that it was necessary to set up a committee to propose measures in order to reach the set targets. The committee, appointed in spring 2008, and its four sub-committees (industrial and service sector, buildings, transport, and households) comprises more than 50 parties. Motiva is involved in the committee as expert secretariat and in the sub-committees as special advisor. The work of the committee will be completed in June 2009.

AIMS 2009

- *work of developing the new Energy Efficiency Agreements and energy audit monitoring system*
- *participation in national implementation of the Energy Services Directive*
- *participation in EU collaboration in support of implementing the Directive*

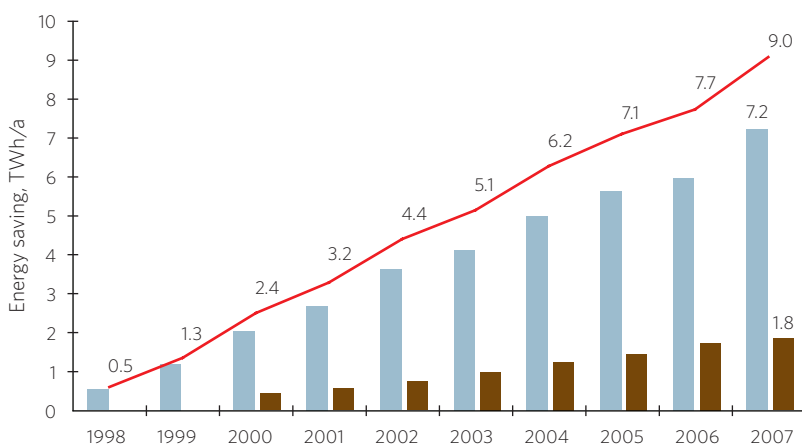


AIMING FOR ENERGY EFFICIENCY

The energy and water usage of Hotel Hiittenharju in Harjavalta and Hotel Aquarius in Uusikaupunki was reviewed with the help of energy audits. The saving measures identified by the audit and approved for implementation will reduce the hotels' annual energy costs by approximately EUR 27,000. The Ka-Bir Oy Hotels Aquarius and Hiittenharju have joined the Energy Efficiency Agreement scheme and aim for an 11 percent energy saving by the year 2016.



RESULTS OF ENERGY CONSERVATION AGREEMENTS 1998–2007



The total energy savings achieved (9 TWh/a) from measures reported as implemented under the Energy Conservation Agreement scheme (industry, energy sector, municipal sector, property and building sector) are equivalent to the annual electricity and thermal energy consumption of more than 450,000 average single family houses and to more than 2% of Finland's total energy consumption in 2007.

- Saving heating + fuels, cumulative
- Saving electricity, cumulative
- Saving heating + fuels + electricity, cumulative

Companies improve efficiency of their energy use

The industry and commerce Energy Efficiency Agreement and its sector-specific action programmes were signed in 2007. They follow on from the agreement system launched as early as the 1990s, based on voluntary participation and found to work well. In 2008, in cooperation with the industry associations and MEE, we focused on publicising the agreement scheme and supporting the associations in its implementation.

More newcomers to comprehensive scheme

The Energy Efficiency Agreements in force during the period 2008–2016 play a pivotal role in the implementation of the EU Energy Services Directive. The agreements concern industry and commerce, the municipal sector and the oil sector. Additional Energy Efficiency Agreements currently in force are those for goods transport and logistics, and public transport. The residential property sector also has a corresponding agreement.

As well as the energy generation, energy services and energy-intensive industrial sectors, the industrial and commercial sector agreement has been signed by the food, chemicals, plastics, technology and timber industries. In addition, the associations representing the retail sector and the tourism and restaurant services sector have signed the agreement. During the year, negotiations were also started with two new sectors – the building products industry and the automotive sector.

Reduced emissions also in transport

The goods transport and logistics sector Energy Efficiency Agreement was signed in early 2008. It follows on from the previous agreement, and the target now is a nine percent saving in road and rail transport by 2016.

The energy audit of transport chains improves energy use and reduces costs and carbon dioxide emissions. Comprehensive evaluation of goods transport chains is particularly beneficial for industry, commerce and municipalities that purchase transport services.

Proactive marketing and advisory services

In order to publicise the Energy Efficiency Agreements, Motiva prepared marketing materials, participated in various events, and organised dedicated energy efficiency seminars for SME industry and the tourism and restaurant service sectors, in cooperation with the relevant associations. In addition, the ESCO (Energy Service Company) scheme was explained during the year at a number of events for SME industry and local authority decision-makers.

A pilot project running during 2008 was an energy efficiency advisory service targeted at medium-sized industrial and service enterprises. The participants were 33 companies from six industry associations. The good results obtained from the trial encourage us to develop and continue the project in 2009.

Development work in support of implementation

Continuous improvement is the central theme of the Energy Efficiency Agreements. As a practical tool for implementation and energy management, the Energy Efficiency System was developed in cooperation with the businesses. During the review year, guidelines for implementing the were drawn up and training sessions were organised on the subject.

During 2008, previously launched industrial development projects were continued, with the aim of reducing the energy consumption required for compressed air and refrigeration technology.

In the energy generation and energy services sector, projects supporting the implementation of the agreement were initiated, one example being the guidelines for reporting measures to improve the efficiency of energy generation under the Energy Efficiency Agreement scheme.

Audits a tool for continuous improvement

The energy audits and analyses are central activities also in the new Energy Efficiency Agreement scheme.

The Finnish audit activity and know-how also arouse interest abroad. Through its projects, Motiva has supported initiation of audit activity in other countries, among them Vietnam and Russia.

International cooperation

The Finnish Energy Efficiency Agreement method arouses international interest. Motiva has taken an active part in the project under the Intelligent Energy Europe (IEE) programme aiming for more general uptake of agreement schemes in the EU countries.

In order to further improve the ESCO activity, we participate in international IEA cooperation and information exchange.

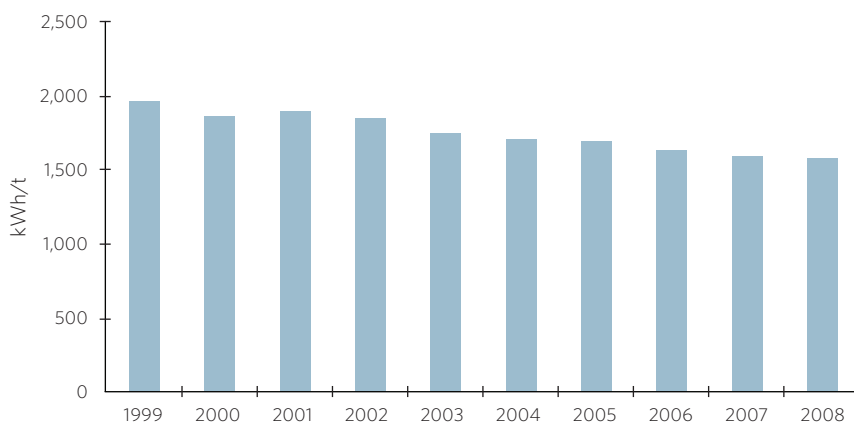
AIMS 2009

- *supporting implementation of the Energy Efficiency Agreement in cooperation with the industry associations*
- *developing new tools to improve energy efficiency in companies*
- *accelerating the introduction of the Energy Efficiency System and developing the energy efficiency advisory service*



Julia Rönkä

ENERGY CONSUMPTION PER PAPER TONNE AT UPM



ENERGY EFFICIENCY AGREEMENT SUPPORTS UPM'S CLIMATE TARGETS

The forest company UPM-Kymmene Corporation has joined the Energy Efficiency Agreement. UPM-Kymmene is investing in the continuous improvement of its energy efficiency, in order to minimise the effects of its operation on climate change. The agreement provides a target framework for the energy efficiency activity.

New winds for power generation and bioenergy for the heating boiler

Finland aims to increase its share of renewable energy to thirty-eight percent by the year 2020. To attain this, it is necessary to considerably increase the use of all renewable energy sources.

In 2008, Motiva concentrated on providing information on wind power and increasing the use of bioenergy, with the stress on pellet heating and heating entrepreneurship. The activity also covers biogas issues, solar energy and small-scale hydropower.

In all its activity related to renewable energy, Motiva works in cooperation with other players in the field, such as relevant organisations, companies and research institutes.

Wind Atlas work launched and wind tour to the provinces

An extensive project to map Finland's wind conditions was begun in May. The Wind Atlas work coordinated by Motiva will continue to the latter part of 2009, and it is carried out by the Finnish Meteorological Institute.

Once completed, the report will serve as a tool when looking for suitable sites for constructing wind farms. It is also a good base plan for municipal planners.

During 2008, an extensive wind tour was organised together with partners and businesses in the sector, comprising 14 events in 11 locations. The tour provided information on the energy targets of Finland and the EU and on wind power in general, the Wind Atlas project, and any wind projects in the area. The events attracted an audience of about 250, including decision-makers, companies and representatives of the media.

The presentations by Motiva and other companies, prepared for the tour, were published on the Motiva website, which provided access to information on wind issues to an audience larger than that of the tour locations. The wind tour continues in 2009.

Bioenergy furthers rural entrepreneurship

The work of promoting heating entrepreneurship and providing general bioenergy advisory services continued. In order to exchange knowledge and experiences, both bioenergy advisors and heating entrepreneurs were invited to a special discussion event.

The general guide for the renewable energy audit model for municipal authorities was prepared. The municipal audits are an essential part of the municipal Energy Efficiency Agreements, and they will become more widespread in the next few years.

Publicising pellet heating

The potential of pellet heating for small-scale housing and apartment blocks has not yet been very widely understood, which has hindered the growth of its use.

Together with the Finnish pellet energy association, we organised 12 events in all in various parts of Finland for the general public and the media. Almost 300 interested persons attended the events.

Instructions for building a pellet silo were published on the Motiva online service. The Pellet Guide designed for consumers was completed in early 2009.

AIMS 2009

- *the Wind Atlas is completed*
- *the wind tour continues in new locations*
- *development of energy advisory services*
- *preparation of certification for heat pump, pellet and solar system equipment installers*
- *Interreg/Bioenergy Promotion, Baltic area collaborative project launched*

BUSINESS FROM BIOGAS

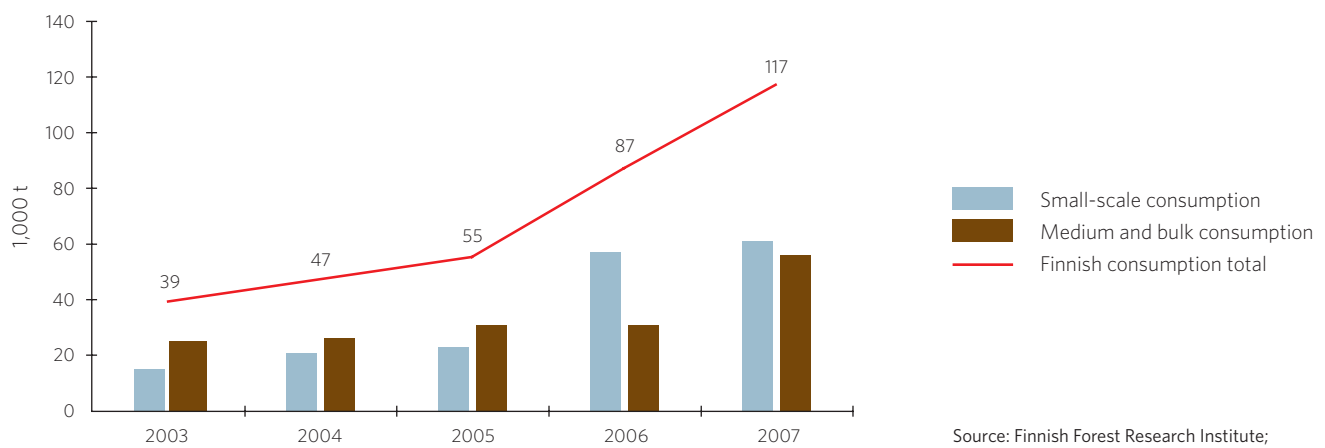
Biogas is an alternative worth considering in connection with processing farm manure and energy plants and energy production. Biodegradable masses created in municipal institutions, industrial waste and refinery sludge are also suitable for raw materials of biogas production, as part of environmentally friendly waste treatment and energy production.

The incentive and subsidy mechanisms for biogas production are still under consideration, and the field involves substantial regulation. The best technologies in the sector have also been examined in an extensive project led by the Finnish Environment Institute.

In order to thoroughly illuminate the issues related to biogas production, Motiva, in cooperation with Jyväskylä Innovation Oy and the Energy Technology Centre of Expertise Programme, organised the seminar 'Business from Biogas' in December. The seminar brought together parties that have a significant influence on the future and development of the sector, authorities and representatives from companies, research institutes and advisory organisations.



CONSUMPTION OF WOOD PELLETS IN FINLAND 2003-2007



Source: Finnish Forest Research Institute;
Statistics Finland

Competitive edge through more efficient materials usage

Motiva’s activities have expanded to cover the promotion of material efficiency. The idea of the need for such activity was mooted during the Finnish programme to promote sustainable consumption and production, which suggested setting up a national service centre. Material efficiency improves competitiveness by improving productivity and reducing production costs.

Synergy benefits

Material efficiency is a natural addition to Motiva’s operation, whereby the company’s expertise and experience in furthering energy efficiency may be utilised. The activity took off in the autumn 2008. The services are initially aimed at businesses and the public sector, for which we are developing material audits and guidance for cost-saving and environmentally friendly technology purchases.

Our future intention is to integrate material and energy efficiency, since improvements in the efficiency of one often also brings savings in the consumption of the other. Moreover, we also want to extend the services to the consumer sector in the future.

New competitiveness factor for companies

In some sectors, materials account for up to half the variable costs. Their efficient use brings financial benefits in production, both in purchasing raw materials and in dealing with waste. At the same time, energy is saved and the environmental impacts reduced.

Based on our experience of tools to improve energy efficiency, Motiva is developing a similar audit procedure for the assessment of material efficiency. The development work is carried out in collaboration with pilot companies interested in improving their material usage. We have found that a comprehensive assessment is required, as potential for improvements is also found in equipment, processes, skills, knowledge and jobs of the operatives, as well as more general practices in the sector.

Public sector as an example

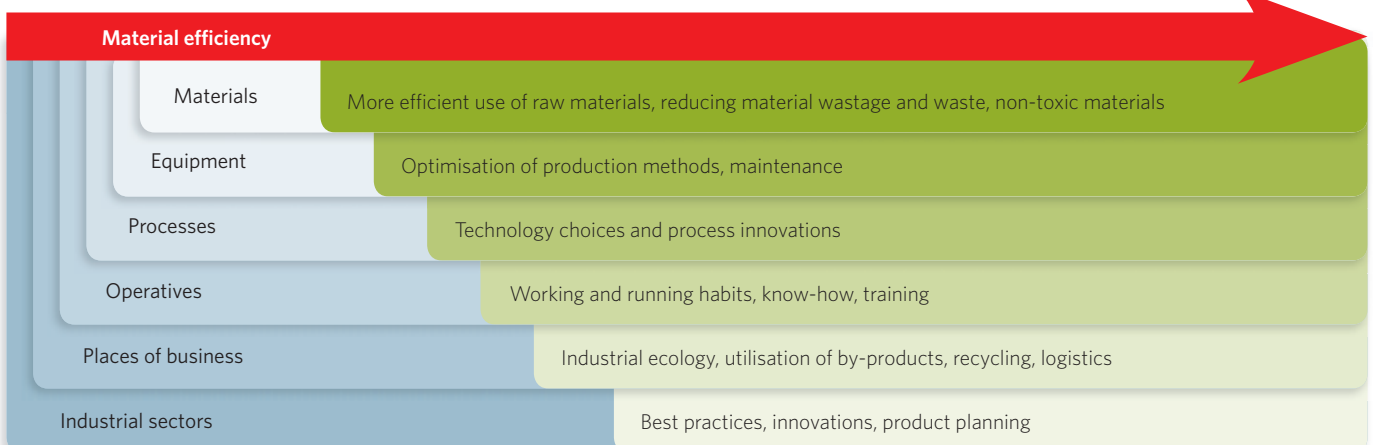
Another important target group for Motiva’s services consists of those responsible for public sector purchasing, who design and buy technology necessary for, for example, water and energy supplies. For them, Motiva offers environmental knowledge, helps in creating contacts, and assists in the development of a purchase strategy, if required.

The beneficiaries of our service are technology buyers, its suppliers, and society in the form of reduced emissions and consumption of natural resources and energy. The Ministry of Employment and the Economy, the Ministry of the Environment, and Sitra, one of the aims of which is to support the development and market access of new innovations, are all involved in financing the advisory service.

AIMS 2009

- *development of tools for material efficiency audits continues*
- *piloting of advisory service for public environmental technology procurements*
- *activity extended to product-led material efficiency and environmental management*
- *international cooperation continued and extended to European organisations promoting material efficiency*

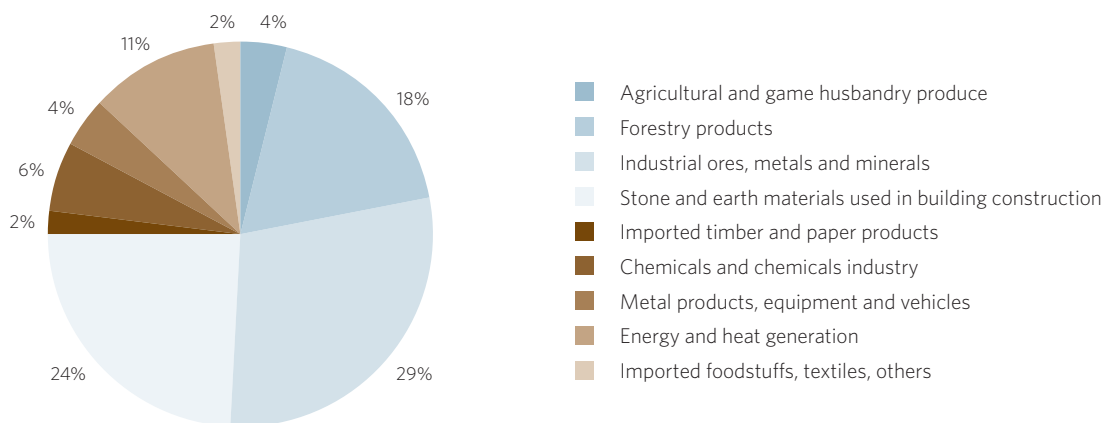
METHODS OF IMPROVING MATERIAL EFFICIENCY





David Trood/Gorilla

TOTAL MATERIAL REQUIREMENT OF NATURAL RESOURCES IN THE FINNISH ECONOMY IN 2005



Source: Ilmo Mäenpää, Thule Institute, 2008

Energy consumption of services and households significant

In addition to industry, the Energy Efficiency Agreement scheme steering clients to efficient energy use covers the municipal sector, housing, property and building sector, as well as public transport, goods transport and logistics.

The solutions adopted in new housing construction and in renovation, and the choices made by the public sector and households have a significant effect on the realisation of Finland's Climate and Energy Strategy. Motiva is active in all the above sectors, promoting and providing guidance in the efficient use of energy and materials.

Local authorities play major part in agreement activity

Motiva participated in the implementation, marketing and development projects of the reformed municipal sector Energy Efficiency Agreement and Energy Programme. By the end of the year, 25 towns and cities, three municipalities and nine joint municipal authorities had signed the agreement. In addition, there were 14 participants to the Energy Programme. All in all, about 44% of the municipalities' building volume was covered by the agreement scheme.

The final annual report on the implementation of the closed property and building sector Energy Conservation Agreement was completed. Implementation of the heating and transport fuel distribution Energy Efficiency Agreement continued, with one of the measures an investigation of the potential for utilising solar energy as a partial heating solution for buildings.

New agreement for public transport

A new public transport Energy Efficiency Agreement was drafted as a collaboration between the ministries, Motiva, the sector's associations, and VR Ltd (rail services). The agreement was extended to cover also rail, metro and tram transport. We aim to have 80% of the companies in the sector sign the agreement, and in terms of efficiency, a nine-percent improvement in the energy efficiency of public transport by 2016, compared to average consumption in 2001-2005.

Energy programme for farms

The previously launched development work for an energy programme for farms continued (MENO project). In this context, one of the tasks has been to design energy management models for both large and small farms. The Ministry of Agriculture and Forestry is preparing for the introduction of the programme.

AIMS 2009

- *marketing of service sector Energy Efficiency Agreements and supporting their implementation*
- *development projects linked to Energy Efficiency Agreements*
- *promotion of energy efficiency of buildings and households*
- *introduction of energy labelling for cars*

Energy efficiency in the home

The Energy-Efficient Home campaign, launched in 2004, continued under the coordination of Motiva. The participants of the project, designed for consumers and aiming at building low-energy housing, include a large number of companies and associations in the small-scale building sector, as well as the ministries.

Motiva published a great deal of informative and guidance material on reducing household energy consumption, for distribution both online and at fairs and events.

Together with Finnish Energy Industries and players in the sector. We launched Elvari, a three-year programme of making electric heating more efficient. Some of its focal areas are an audit method suitable for small-scale housing, an investigation into the use of air-source heat pumps, electricity consumption in ventilation, and the effect on energy use of disseminated consumer information.

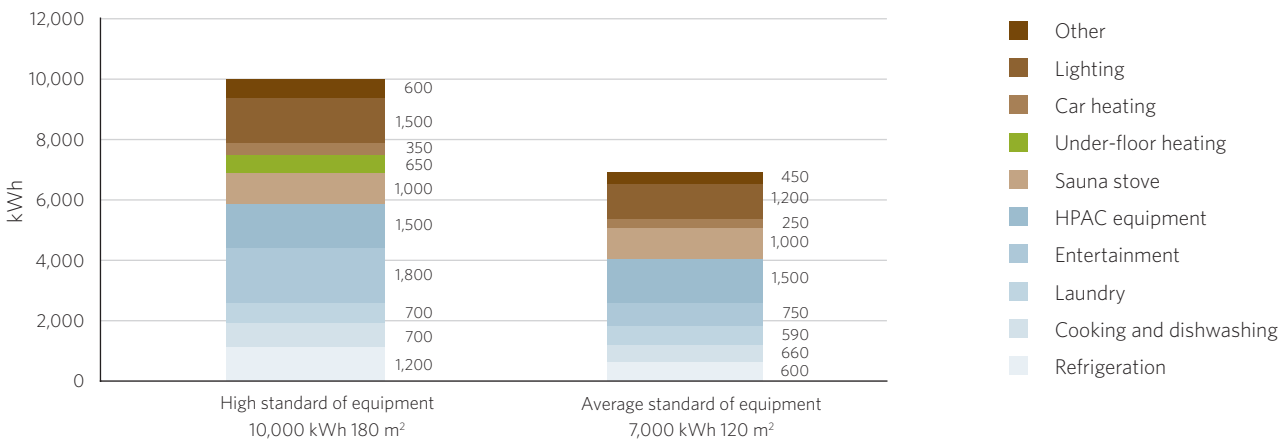
In autumn 2008, Adato Energia Oy, a service company owned by the Finnish Energy Industries, published the results of a wide-ranging research project covering more than 3,000 households and funded by the Ministry of Employment and the Economy. It examined domestic electricity usage by equipment group and assessed savings potentials by the years 2015 and 2020.

A previous, corresponding study was carried out in 1993, compared to which domestic electricity consumption has risen by 45%, while the number of households has only risen by 16% over the same period. The consumption of refrigeration has fallen, whereas in the area of household electronics - including television sets and computers - the consumption has reached significant levels. There is also growth in lighting, an area with the most efficiency potential with an increasing uptake of compact fluorescent light bulbs (e.g. energy-saving bulb) and LED lighting.



futureimagebank.com / Hannu Ala-Häkkinen

EQUIPPED TO AVERAGE OR HIGH STANDARD 2006
4 RESIDENTS IN SINGLE-FAMILY HOUSE, NO ELECTRIC HEATING



Source: Kotitalouksien sähkönkäyttö (Electricity usage in households) 2006 – Research report 2.10.2008, Adato Energia Oy

Energy performance certificate as yardstick for buildings

The energy performance certificate helps consumers make choices in the same way as the energy label on domestic appliances. It is required from almost all new buildings, including family housing. The certificate must be drawn up at the time of submitting the application for building permission, and it is supplied by the principal designer of the building. From the start of 2009, the certificate is also required for existing buildings when the property or its parts is sold or let. For existing small-scale housing and housing companies with a maximum of six apartments it is voluntary, but recommended.

In order to publicise the matter, Motiva and the Ministry of the Environment launched an information campaign in spring 2008, and opened the advisory service 'Ask about Energy Certificates', which operates both online and by telephone. The online service, functioning as the principal source of information, contains a wealth of information and practical examples for both consumers and those preparing the certificates.

In addition, Motiva has participated in the Concerted Action (CA) EPBD, an active forum of 29 national authorities, focusing on finding common approaches to the most effective implementation of this EU legislation.

Procurements and usage under scrutiny

The Ministry of Employment and the Economy guidelines on considering energy efficiency in public procurements was completed in November 2008. It identifies the main equipment groups on the purchasing of which those responsible for procurements should consider energy efficiency as one of the selection criteria, and include it in the procurement directions. The guidelines are aimed for government and local authority procurements, but it is recommended that in the private sector should also apply them. The work made use of the previously implemented project that examined the effect of public sector procurements on energy consumption and resulting greenhouse gas emissions.

The IEE GreenLabelsPurchase project, which aroused a great deal of interest, ended in June 2008. It defined requirements for various equipment groups, and produced tools for the assessment of energy efficiency and compliance with environmental criteria.

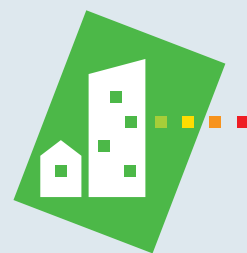
The IEE EuroTopTen project shared this goal, and Motiva has also been actively involved in it. The aim of this project, which ended in October 2008, was to increase the awareness of consumers, the retail trade and bulk buyers of the energy efficiency of various equipment alternatives, as well as spurring manufacturers to invest in product development. The online service Topten-suomi.fi contains information on makes and models of 12 product groups. The site has attracted about 80,000 visitors. In 2009, the TopTen service will be extended to include new product groups.



ENERGY EXPERTISE FOR EXPORT

A consortium formed by Motiva and three Turkish companies implemented a project in Turkey, funded by the EU EuropeAid scheme, with the main aim of capacity building of the personnel of the Turkish energy administration authority, EIE, in their work of promoting energy efficiency. To this end, training was provided for the personnel and information material on energy-saving was produced for several target groups. The most visible and extensive activity was targeted at schools, for which material was produced based on publications. Selected pilot schools started using the new material with good results.

Other target groups of the project were households and experts responsible for the use of buildings. Several events were organised for their representatives, suggesting opportunities for making energy use more efficient, and relevant material produced during the project was distributed.



energiatODISTUS

ASK ABOUT ENERGY CERTIFICATES

The online service opened in April attracted almost 40,000 visitors, and over 800 enquiries on the energy performance certificate were received by the end of the year. The telephone service also proved a necessary tool for providing advice.

Campaigns, education, events and bulletins for growing need for information

The general awareness of climate change, changing energy prices and the Climate and Energy Strategy published at the end of 2008 accelerated the growth of demand for information. Energy issues were also even more prominent in public debate than was previously the case.

Among the media, professionals in various sectors, and the public, Motiva has become known as an impartial and reliable expert. This fact, which pleases the company and its personnel, has increased the number of enquiries made and the effectiveness of our activities.

Those requiring information are increasingly directed to use the Motiva online service, the reform work of which proceeded as planned. The intention is to open the new website in the first half of 2009. At the same time, we maintained and updated the existing online service, with its annual visitor number of 800,000 a good indicator of the increased importance of electronic communications.

Campaigning for eco-motoring

The pan-European Ecodriven project, implemented in Finland by Motiva, continued with the EasyRider! theme to the end of 2008. The objective has been to promote among all motorists safe and economical driving, an environmentally friendly choice of car, sensible trip planning, correct cold-starting and energy-efficient use of the car. The take-up of companies of the training sessions on economical driving was good, thanks to the prize vouchers.

The annually chosen Eco-car was a hybrid vehicle for the first time. The selection was made by a group of experts from the automotive sector assembled by Motiva. The Toyota Prius did well in the fuel consumption test, and its particular merits were low carbon dioxide and other emissions that are harmful to health.

Energy-saving was the topic of the autumn

The traditional Energy Awareness Week, again celebrated as a national theme week in October 2008, attracted 277 businesses and communities to work for a more energy-efficient future. The participants organised dozens of events in various parts of Finland for customers, staff and residents of municipalities.

During the week, special emphasis was on reminding people about turning off unnecessary equipment and lights, and on offering good tips on how to easily achieve good energy-saving results. The week and the issues linked to sensible energy use also gained a lot of visibility in the media.

As usual, Motiva also took part in several events in the sector by providing advisory services, expert presentations and informative material. They included the Vaasa Housing Fair in the summer, the Local authority fair in September in Helsinki, and the Energy Fair in Tampere in October.

AIMS 2009

- new website launch
- developing the media service and activating factual programmes to address energy issues
- initiation of new consumer campaigns
- spreading the word for energy efficiency in building and residential use



WWW.MOTIVA.FI

The Motiva online service has been reformed and given a new fresh look. In order to provide a better service to our customers, the website has been made more user-friendly, the information more easily accessible, and the content more clearly organised.

One of Motiva's traditional communications tasks is maintaining close contacts with the media and the production of various printed publications and informative materials. The Motiva Xpress magazine was published in four thematic issues of 6,500 copies. In addition, we produced various themed publications, such as brochures, guide books and reports, 33 in total. We produced 35 press releases. Motiva was mentioned in almost 1,500 news items and articles.

Energy a matter for children and young people

To ensure that energy issues are included in education, we have targeted various types of schools and educational institutions, starting from the primary school. The traditional Energy Awareness Week for second-years was organised together with energy companies and local Energy Agencies. About 20,000 pupils took part in the week's activities.

Active Learning and Kids4Future are pan-European projects implemented in Finland by Motiva. In the Active Learning project which closed at the end of 2008, 11 pilot schools monitored and reported on the school's energy consumption and used the activity materials based on their observations as teaching aids.

Pupils at Lauttasaari primary school in Helsinki mapped the sources of energy wastage in the school together with a teacher and the school manager. Quite a list of problems was found, and immediate steps were taken to rectify them. The pupils continue to make sure that energy is not wasted in the school. The Kids4Future project develops tools and models for children and teenagers both for school and leisure activities.

There are 21 pilot schools all around Finland. The Rainmakers (Sateenkaarentekijät) series of books, games and an activity pack are published on the project website www.sateenkaarentekijat.fi.

Wide-ranging collaboration within EU and nationally

Implementation of the Climate and Energy Strategy demands extensive collaboration of many parties. One of Motiva's tasks is to disseminate information about the Intelligent Energy Europe (IEE) programme, its content and funding opportunities, and to pass on the experiences and results of Finnish projects to the other member countries.

At home, collaboration with the Energy Agencies of the various regions was continued and developed. Collaboration and information and experience exchange within the EⁿR (European Energy Network) and other international partners advance implementation of the work on national level. For example, Motiva is the chair of the EⁿR Behaviour Change working group and active as a member in five other working groups.

The pan-European project BEHAVE ends during spring 2009. BEHAVE has evaluated projects and programmes influencing consumers' and households' attitudes to energy. More than 40 projects disseminating the message of energy efficiency, renewable energy and climate change were analysed, and based on the result, a set of guidelines prepared on how to plan and implement energy campaigns. At the same time, tools were developed for quantifying and assessing the results. The analyses and guidelines are published on the BEHAVE website www.energy-behave.net.

GREEN FINGERPRINT AND ENERGY PLEDGE

The Green Fingerprint campaign during the national Energy Awareness Week in October challenged Finns to think about their own energy consumption habits, provided tips for sensible energy use, and illustrated how energy can be saved even through small everyday choices. People were also encouraged to make a personal energy pledge. Altogether 15100 pledges were made during the three-week campaign. The successful campaign was coordinated by Helsingin Energia in cooperation with Motiva and WWF Finland.



EASY, RIDER! PROMOTES SMART DRIVING

The Easy, Rider! campaign of economical and safe driving encouraged companies to train their staff in more environmentally friendly driving habits. The prize vouchers tempted a good hundred people to attend training in economical driving. In their training, the trainer organisations comply with the quality criteria of economical driving drawn up by Motiva.

The members of the parliamentary Transport and Communications Committee and Environment Committee were also challenged to a competition on economical driving. During the training, ten members of parliament achieved an average saving of 17% in fuel consumption.

The training in economical driving produces an 8-12% saving in fuel consumption and carbon dioxide emissions. About half of those who have undergone the training observe the economical driving habit permanently, achieving an average fuel saving of 5% without any additional equipment and monitoring to support the driving habits. The Easy, Rider! campaign was implemented as a part of the European Ecodriven project, funded in Finland by the Ministry of Employment and the Economy and the Ministry of Transport and Communications, as well as the Commission.



Green Adventure Woimaxi challenges children to compete in activities requiring knowledge on energy, deductive skills and strength. Schoolchildren's Woimaxi adventure programme attracted an enthusiastic group of participants and audience in its third production term.

woimaxi
VIHREA SEIKKAILU KUTSUU

ENERGY-SAVING TIPS

- **Reduce your room temperature.** Reducing the temperature by one degree reduces your heating costs by five percent.
- **Air your rooms efficiently** with a through draught for five minutes.
- **Change to an energy-saving light bulb.** An energy-saving bulb uses 75–80 percent less energy per light fitting.
- **Take a quicker shower.** If you spend two minutes in the shower instead of ten, you save the price of a cinema ticket in a week.
- **Turn out unnecessary lights.** Modern bulbs stand up well to being switched on and off.
- **Turn off equipment when it is not in use.** Leaving devices on stand-by uses power, too.
- **When buying new appliances or equipment, go for the best energy classification A** and compare the energy consumption of different models.
- **Don't leave a hot sauna waiting.** A heated sauna left empty for two hours a week costs tens of euros in a year.
- **Use public transport, walk and cycle, even just for your own fitness.** If you drive, buy a low-consumption car and drive economically.

Motiva's publications and participation in international projects in 2008

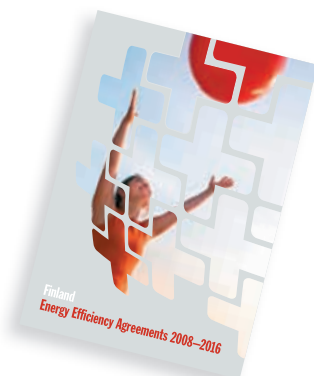
Publications available in English

- The Climate Change Communications Programme: Awareness, attitudes and actions
- Energy Agencies, Controlled and proficient energy production and use
- Energy Awareness Week in Finland
- Energy Efficiency Agreements 2008-2016
- Energy Efficiency Agreements in Finland 1997-2005 Results of an Expert Evaluation
- Energy Efficiency in Finland – a Competitive Approach
- Energy Conservation Agreements 2005
- Hey, everything's working! -children's energy book
- Motiva Annual Report 2007
- PATE Compressed air efficiently
- Promise - Environmental Classification for Buildings
- Windmiller-CD
- The Guided Tour on Windpower (www.windpower.org)

www.motiva.fi/en

Motiva's participation in international projects in 2008

- EuropeAid-project: Increasing Public Awareness on Energy efficiency in Buildings for the General Directorate of Electrical Power Resources Survey and Development Administration (EIE) in Ankara, Turkey, 2008-2009
- Finnish Developing Aid Program VIETAUDIT, promotion of Energy efficiency and use of renewable energy in industry, energy and building sectors by capacity building and technology transfer in Vietnam, 2008-2009
- Interreg IV B, Baltic Sea Region Programme: Bioenergy Promotion
- KIS-PIMS – European Innovation Platform for Knowledge Intensive Services in Planning, Installation, Maintenance and Scrap services (PIMS) for renewable energy production system



Intelligent Energy – Europe (IEE) Programme

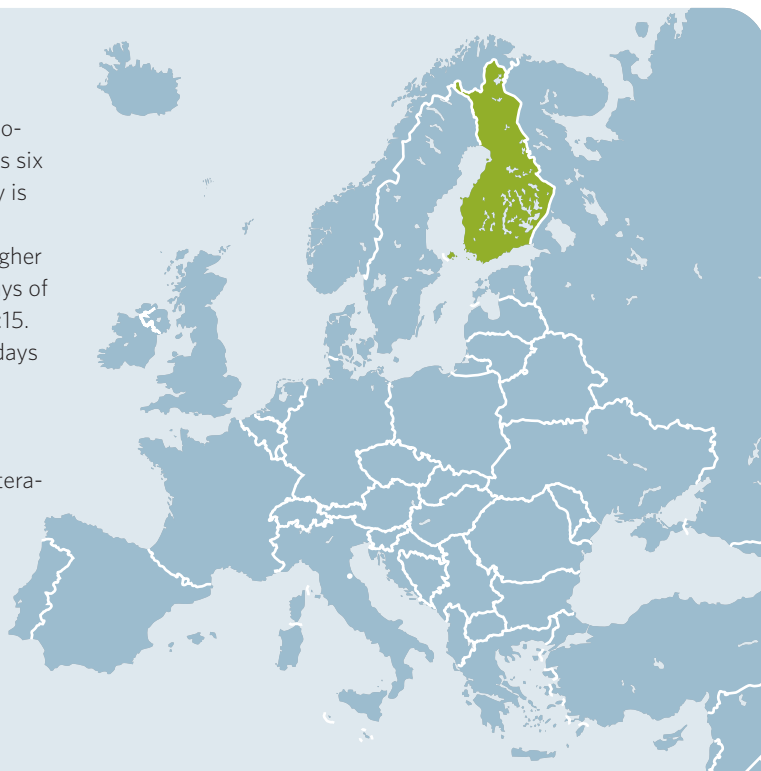
- Energy+ Pumps – Technology Procurement for very energy efficient circulation pumps
www.energypluspumps.eu
- Active Learning – Integration of Active Learning and Energy Monitoring with School Curriculum
www.consortium4al.eu, www.teachers4energy.eu
- BEHAVE – Evaluation of Energy Behavioural Change Programmes
www.energy-behave.net
- ECODRIVEN – European Campaign On improving DRIVING behaviour, ENergy-efficiency and traffic safety
www.ecodrive.org
- EMEEEES – Evaluation and Monitoring for the EU Directive on Energy End-use Efficiency and Energy Services
www.evaluate-energy-savings.eu
- EPOMM PLUS, EPOMM – Partners Learning Urban Sustainability
www.epomm.org
- EURO-TOPTEN – Reducing energy consumption: Making efficient products the normal and best choice for consumers, retailers and manufacturers
www.topten.info, www.topten-suomi.fi
- EU LTA UPTAKE - European uptake of successful implementations of industrial LTA's as part of voluntary agreements on energy savings
www.ltauptake.eu
- GreenLabelsPurchase – Making a greener procurement with energy labels
www.greenlabelspurchase.net
- INTERACTION – International Transport and Energy Reduction ACTION – 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
- momo car-sharing – More Options for Energy Efficient Mobility through Car-Sharing
www.momo-cs.eu
- ODYSSEE-MURE (EU - 27) – Monitoring of energy efficiency in the EU
www.odyssee-indicators.org

Facts about Finland

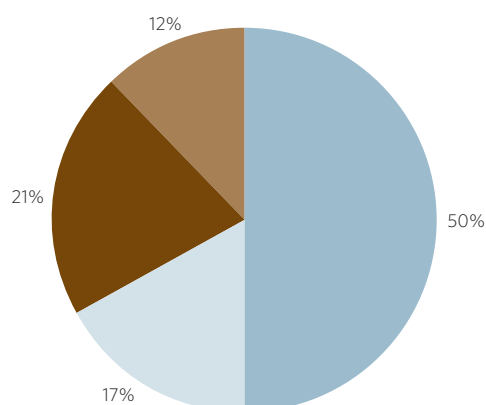
- Capital Helsinki
- Area 338,000 square kilometres.
- Population 5.3 million, 16 inhabitants per one square kilometre. In other European countries population density is six times higher on average. Mean temperature in February is $-0.2\text{ }^{\circ}\text{C}$ in Helsinki and $-9\text{ }^{\circ}\text{C}$ 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 2007

- Total energy consumption 1,469 petajoule (PJ) or 408 terawatt hours (TWh)
- Electricity consumption 90 terawatt hours (TWh)
- 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.



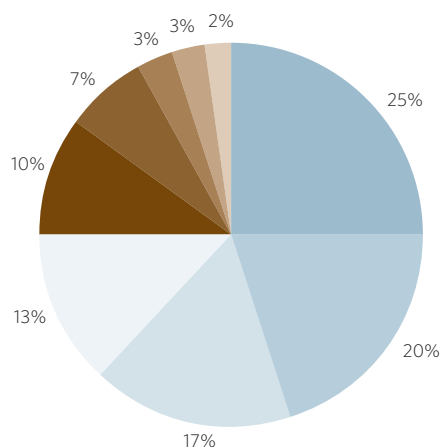
END USE OF ENERGY BY CONSUMPTION SECTOR



- Industry 50%
- Transport 17%
- Space heating 21%
- Other 12% *

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

ENERGY CONSUMPTION BY ENERGY SOURCE



- Oil 25%
- Wood fuels 20%
- Nuclear energy 17%
- Coal 13%
- Natural Gas 10%
- Peat 7%
- Hydro Power 3%
- Net imports of electricity 3%
- Other 2%

Source: Statistics Finland, Preliminary Energy Statistics 2008

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