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Energy advice services for customers – Energy savings calculations for Finnish Article 7 notification

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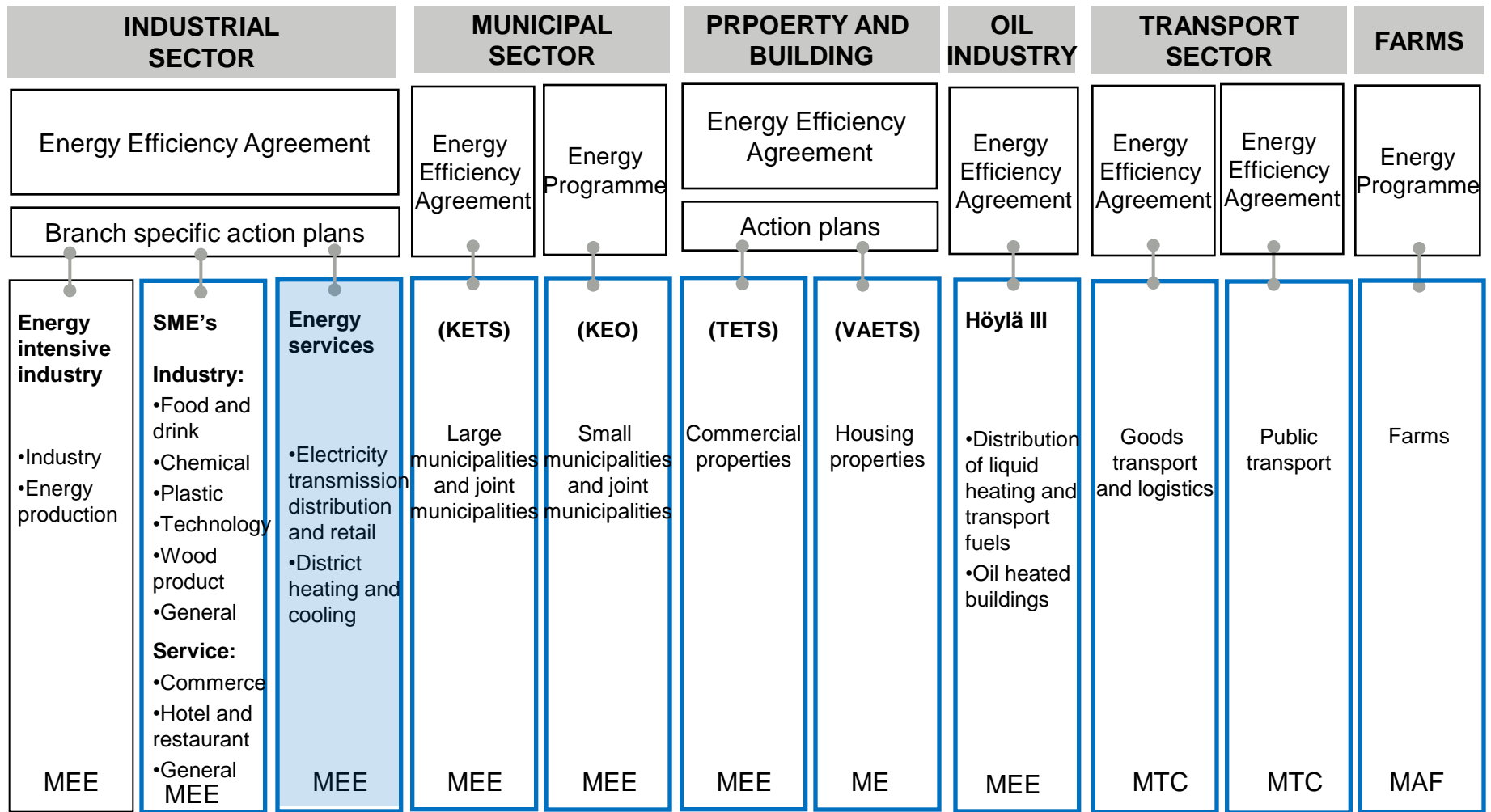
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Energy Efficiency Agreements

– important role in Finnish energy policy

- Broad voluntary Energy Efficiency Agreement scheme has been running since 1997
 - 6 agreement sectors (industries, municipalities, property and building sector, oil sector, transport, farms)
- Current period 2008–2016 was tailored for implementation of ESD
- Energy Efficiency Agreements are important also in EED Article 7 implementation
- Action Plan for Energy Services is one of the 13 Action plans in Energy Efficiency Agreement for Industries
 - Exceptionally action plan compared to the other action plans – in addition to improve energy efficiency in own energy use there are also targets to offer energy services for customers to improve their energy efficiency
- Annual reporting is an important obligation for companies to be able to monitor the results – applies also soft measures for customers

Energy Efficiency Agreements are covering energy use comprehensively in Finland



 Under the scope of Energy Services Directive

MEE = Ministry of Employment and the Economy

ME = Ministry of Environment

MTC = Ministry of Transport and Communications

MAF = Ministry of Agriculture and Forestry

Energy savings calculated in energy units for soft measures has been asked for a long time

- Energy advice and other behavioural “soft measures” to enhance energy efficiency were highlighted already in ESD and even more in EED
- While soft measures are seen important and required in the directives there is also a need to express their results in energy units to be able to claim the energy savings
- Lack of appropriate methods has been pointed out by MS during both CA ESD and CA EED
- Impacts in energy units has also been asked by the energy companies that have participated the Action Plan for Energy Services for long to show and quantify their extensive work in the field of energy advice for customers

A study – Measuring and evaluating the soft energy efficiency measures

- Study was one development project within Energy Efficiency Agreement for Industries – Action Plan for Energy Services in 2011–2012
 - Conducted by the branch association Finnish Energy Industries with Motiva
 - Financed by Ministry of Employment and the Economy and Finnish Energy Industries
 - Carried out by ÅF Industry (Sweden), ÅF Consultant Ltd, Adato Energia Ltd (Finland)
 - Measuring and evaluating the soft energy efficiency measures 6/2012
<http://energia.fi/julkaisut/pehmeiden-energiatehokkuustoimien-vaikutusten-mittaus-ja-arviointimeasuring-and-evaluating>
- Aim of the study was to find out energy savings related to soft measures by energy companies to enhance customer energy efficiency
 - To be able to quantify the outcome from soft measures in the Action Plan for Energy Services in future

The 'soft' measures that the Finnish utilities provide to their customers are in following areas:

Energy saving advice

- Call service by telephone
- Lending consumption meters
- Advice by email and online
- Advice on premises
- Events for customers and interest groups

Energy saving communication

- Article in a customer magazine
- Information on the internet
- Printed material for the customers
- Participation on the energy saving week
- Provision of energy saving material for schools

Consumption feedback

- Opportunity to monitor one's own consumption online
- Use remote readings
- Energy consumptions monitoring report to customers
- introducing hourly meters and the opportunity for customers to monitor their consumption online

The quantification on aggregated level – result of the survey

Savings in %

- Energy Savings up to 1–3% from the total energy demand for electricity and district heating among the residential customers can be achieved

Total savings
GWh

- In energy terms can be calculated from electricity and district heating use among the customers

An
alternative
method

- A bottom-up approach where the relevant individual soft measures were analysed separately verifies the results both in terms of energy and percentages

<http://energia.fi/julkaisut/pehmeiden-energiatohokkuustoimien-vaikutusten-mittaus-ja-arviointi>measuring-and-evaluating

Calculation premises, assumptions, source of information

1/2

- Saving impact – % based on the study
 - 2.5% for household energy consumption (electricity E and district heating DH) covered by the companies who has joined the Action Plan for Energy Services
 - 1.5% for small industry, services sector and agriculture and forestry energy consumption (E and DH)
- Total energy consumption in different consumer groups for electricity and district heating in Finland
 - Statistics Finland (Households, Industry, Private Services, Agriculture and Forestry)
- Coverage of the Action Plan for Energy Services of the total energy consumption which is not overlapping other agreements and/or action plans
 - Households 100% (E and DH)
 - Industry 10% (E and DH)
 - Private Services 33% (E and DH)
 - Agriculture and Forestry 100% (E and DH)

Calculation premises, assumptions, source information

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- Share of energy sold and distributed by the participating companies in the Action Plan for Energy Services of Finland's total electricity and district heating consumption
 - Information gathered via Energy Efficiency Agreements annual reporting
 - In 2012 e.g. share was for 89% electricity and 86% for district heating 86%
 - No big differences between the past few years
- Coverage reported by participating companies in measures related to advice and communications nearly 100%
 - Information gathered via Energy Efficiency Agreements annual reporting

Calculation of the savings for soft measures for Finland Article 7 notification 5.12.2013

- Savings calculation related to the Action Plan for Energy Services draws on:
 - The results of the study
 - %-savings from the energy use of customers
 - Information from Statistics Finland
 - Total energy consumption of different customer groups in Finland
 - Share of energy sold and distributed by the participating companies of total energy consumption in Finland
 - Information gathered via annual reporting of Energy Efficiency Agreements
 - Response rate always high (e.g. 2012 99% of the participated companies and their sites)
- Energy savings are calculated by year:
 - $0.025 \times \text{household energy consumption (electricity + district heating)} + 0.015 \times \text{other target group energy consumption (electricity + district heating)}$
 - Consumption in the formula is a corrected value from the total consumption in Finland. Correction made with the factors described in the previous slides
 - Cumulative energy savings for Article 7 in 2020 about 7 TWh_{kum} – annual savings about 1TWh/a

Other remarks

- Providing soft measures by participating companies to their customers is continuous
 - Lifetime of the savings in cumulative EED calculations is 1 year
 - Every year there will be new savings
- Overlapping is taken into account when defining the share of energy sold and distributed by the participating companies of the total energy consumption in Finland
- Same method used for services provided for owners of oil heated buildings
- Savings from all soft measures in Article 7 notification 5.12.2013 covered about 8% of the total savings Finland reported in the period 2014–2020
- The method is described in the notification for Article 7 5.12.2013
 - Measure “KETO-4-TEM”
 - An unofficial translation by the Commission (unchecked) is available:
 - http://ec.europa.eu/energy/efficiency/eed/doc/article7/2013_fi_eeed_article7_en.pdf

Thank you!



www.energyefficiencyagreements.fi