The design and structure of effective energy end-use policies and programs towards industrial SMEs

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Aim

- The aim of this paper is to present results of a study concerning the design and structure of effective energy end-use policies towards industrial SMEs.
- The paper is a result of Task I, in IEA IETS Annex XVI in co-operation with Japan and Spain.

About IEA IETS

The IEA Technology Collaboration projects are open to IEA member and non-member countries

Participants can be Governmental or energy technology entities representing governments, research institutes and universities, energy technology companies and industry.

Member Countries and Contracting Parties:

Belgium: FPS Economy, S.M.E.s, Self-employed and Energy
Denmark: Danish Energy Authority
Norway: The Research Council of Norway/Enova SF
Portugal: The Instituto Superior Tecnico da Universidade; Lisboa
Sweden: Swedish Energy Agency
USA: Department of Energy, Industrial Technologies Program
The Netherlands: the Government of the Netherlands
Korea: The Ministry of Commerce, Industry and Energy

Method

- *The major method used was four expert workshops.*
- *In addition, a literature study, mainly of country-specific reports and documents, mostly written in that countries native language, was conducted.*
- *The study paper includes findings from four countries. In the workshops, a larger number of participants from a total of 13 countries have contributed with knowledge and experience from their respective countries in at least one of these workshops*

Results

Key figures for industrial SMEs in the countries Belgium, Japan, Spain and Sweden.

	Industry share in energy	SME's share in energy	SME's share in economic output
Japan	46%	11% of industrial energy-related CO2 emission in 2010	48% of manufacturing shipments in 2006
Sweden	38%	25% of industrial energy use in 2010	37% of manufacturing value added in 2011
Spain	27%	N.a.	N.a.
Belgium	35%	11% of industrial energy use in 2010	40% of manufacturing value added in 2010

Please note that share of industrial energy use might not be representative, as in 2010, industry still suffered from the global financial crisis. Moreover, 2010 was an exceptional cold year in Europe with a higher energy use for heating.

Results
Administrative policies

- *Administrative policy instruments for medium-sized enterprises may be a sound policy but may be less effective for small-sized enterprises*

- *In regard to administrative policies, in Belgium, Japan, Spain, and Sweden, the governmental officials conducting the enforcement of the laws, many times are not well experienced in the energy issue, leading to problems of actually enforcing/stressing adoption of BAT (Best Available Technology).*

Results
Informative policies

- *This study showed that informative policies formed the backbone in the various countries' energy policy mixes towards industrial SMEs.*
- *Energy audit programs towards industrial SMEs have often been proven to be very cost-effective: Results from Sweden shows that they may be 10 more cost-effective than an LTA- or VA-program towards energy-intensive industry.*

Results
Economic policies

- *In both the energy audit programs and the Swedish LTA, informative policies are merged with economic policies, i.e. subsidies are given if joining the program.*
- *The level of subsidy has large implications on the policy's cost-effectiveness.*
- *There is little research on adequate levels of for example how much an industrial energy audit should be subsidized.*
- *Applying for funding for industrial SMEs should in any case be extremely*

Suggestion for policies directed towards industrial SMEs

Some characteristics for industrial SMEs.

	Medium-sized SMEs and energy-intensive industrial SMEs	Small-sized SMEs and non-energy-intensive industrial SMEs
Amount of energy used	Medium	Small
Human resource for energy management	Limited, but they usually have a couple of responsible engineers	Very limited, often without responsible personnel.
Type of technology	Production and support[3] processes	Mainly support processes

EE-policies for Medium-sized and energy-intensive industrial SMEs

1. *Energy Conservation Law/LTA/VA*
2. *Energy audit programs for industrial SMEs, preferably but not necessarily located regionally or locally*
3. *Energy networks (preferably locally or regionally anchored)*
4. *Investment subsidies mainly for investments in production-related technologies*
5. *Benchmarking*
6. *Sector guidelines*

EE-policies for Small-sized and non-energy-intensive industrial SMEs

1. *Energy audit program (preferably locally or regionally anchored)*
2. *Energy networks (preferably locally or regionally anchored)*
3. *Investment subsidy*
4. *Benchmarking*
5. *Sector guidelines*

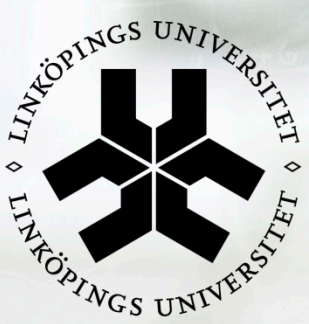
Conclusions

- *The overall energy use among industrial SMEs in the studied countries is lower than in larger and energy-intensive industry.*
- *This might be one major reason why there historically has been a scarcity in relation to energy end-use efficiency policies for industrial SMEs.*
- *High impact on GDP, and high cost-effectiveness for EE policies for SMEs*
- *If only viewing the availability of low-cost potentials of energy efficiency measures in the market, the deployable energy efficiency potential among SMEs might in fact be high.*
- *Policies should be stressed*

Conclusions

- *The goal or aim with energy end-use policies may be stated to be an attempt to improve energy end-use efficiency, but equally or perhaps more importantly support these firms in their long-term survival and success.*
- *It can also be concluded that there is a demand for guidelines or standard procedures on how to evaluate energy end-use polices for SMEs in the studied countries.*
- *This study has added a piece to the energy policy puzzle by evaluating, from an expert point of view, the effect of energy end-use policies for industrial SMEs, and contributes with added knowledge to other valuable international comparative studies.*

Thanks for your attention!



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