CONCERTED ACTION
ENERGY EFFICIENCY
DIRECTIVE

Efficiency in Energy Supply

Executive Summary Report 7.3

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1 Summary

This report focuses on the following key topics:

1. Comprehensive assessment of potential for CHP and district energy
2. Socio-economic cost-benefit analysis (CBA) – national level
3. Cost-benefit analysis - installation level

A survey was undertaken among all Member States (MS); 20 MS returned the questionnaire. The level of implementation of the comprehensive assessment varies significantly across MS with the majority still in the early stages of implementation.

The survey offers a series of concrete examples of approaches being used to overcome the challenges of the comprehensive assessment, the national level CBA and the installation level CBA.

Methods differ considerably between MS. For example, some MS apply analytical tools to assess energy demand, while others use surveys or actual meter readings provided by energy suppliers as a basis.

On the other hand, the survey also reveals that a large number of MS are facing major challenges with lack of data and lack of methodological clarity.

From a timing perspective, the most urgent issue to be addressed is development of the administrative framework for installation-level CBA, which is due to be in place by June 2014. In addition, the comprehensive assessment, including “elaboration of strategies, policies and measures that may be adopted up to 2020 and up to 2030 to realise the economic potential”, remains a challenging task to perform by the end of 2015.

The survey also confirms the observation made during previous research that contexts differ significantly between MS in the South, MS in the East and MS in the Central/Northern/Western part of Europe. These differences are largely a result of differences in climatic conditions as well as differences in the political and regulatory history and traditions of the MS. This research therefore intended to address the key challenges through discussions in three sub-groups covering each of these regions with the aim of enhancing the exchange of the most relevant experiences.

Exemptions, Art. 14.6

19 MS have notified exemptions under Art. 14.6, of which 11 have notified four exemptions. Exemptions cover peak heat thresholds (23), load/backup load systems (15), carbon capture and storage (CCS) (13), and nuclear (12).

2 Conclusions

Comprehensive assessment

The main benefit of the comprehensive assessment is that it provides a solid basis for developing efficient and cost-effective policies to implement EU energy efficiency policy.

Furthermore, the comprehensive assessment may “open the market” for actors through identification of the technical potential, the economically viable potential and, to some extent, the financially viable potential for increased use of

- combined heat and power production,
- surplus heat from industrial plants,
- district heating and
- district cooling.

Most MS are challenged with lack of data required for the comprehensive assessment. Many MS are also challenged by not yet having a fully developed methodology. Data related to cooling demand is particularly scarce.

CBA methodology and tool

A tool for CBA analysis is under development by the Joint Research Centre for DG-ENER. It is still not clear when the tool will be made available to MS, but progress will be reported in coming months. The tool is much needed to help clarify issues such as valuation of externalities, energy price assessment etc.

Regional perspectives

The national background for preparing the comprehensive assessment varies a lot among MS due to differences such as climate, history and political and regulatory framework. Consequently, discussion groups were formed according to context similarities, with a Southern European group, an Eastern European group, a Central/Western group and a Northern group. Some key findings from the research:

South: Several Mediterranean MS consider the potential for CHP as well as district heating and district cooling in the range above 20 MW-th to be quite limited. Use of surplus heat outside the manufacturing site in question (for district heating purposes) also seems limited. Assessment of potential is largely hampered by limited availability of data. The current economic crisis is affecting the availability of resources within Government to implement the comprehensive assessment.

East: Most Eastern European MS have precise data from traditionally widespread DH systems; however, there is a lack of other data. Some MS are already active in heat planning, others are in the early stages or have not yet started their comprehensive assessment. Methodological issues are still to be dealt with. Cooling assessment is a critical issue.

Central/West: Most MS have GIS based mapping tools in place, and mapping is in progress. Existing studies are being developed. Cooling mapping is generally not being addressed as yet. MS are awaiting the tool for CBA under development by Joint Research Centre for DG-ENER.

North: Most MS have GIS based mapping tools in place, and mapping is in progress or completed. Most MS consider the main role of governments to improve market conditions by removing market barriers.

Combined Heat and Power production

Many MS face a decline in electricity production from CHP following an increase in natural gas prices and a reduction in electricity prices. Increased electricity production from wind energy and solar PV-systems may in future reduce the economically viable potential for CHP, compared to previous estimates. The main focus in MS is on the promotion of biomass-based CHP.

Authorisation of installations

For most MS, the deadline for notification of regulation regarding authorisation of installations including the CBA approach is very challenging. In some MS, only primary legislation will be notified by 5 June 2014.

There is a general perception that regulation should be flexible so as to accommodate the variety of conditions in industries etc.

3 Practical Examples

3.1 The CODE2 project

The CODE2 project is developing national roadmaps for cogeneration across Europe. The project builds on the findings of the CODE project, which concluded that many non-economic barriers to cogeneration remain, awareness of cogeneration outside traditional user groups is low and much policy is poorly targeted.

CODE2 focuses particularly on bio-energy and micro CHP. It uses MS published data and projections. Of particular relevance to the CA EED are:

- Micro CHP roadmap for each Member State and supportive analysis
- Bio energy roadmap for each Member State and supportive analysis
- 7 National CHP roadmaps for pilot Member States
- Web based tool for first pass assessment of economic feasibility of a specific CHP installation
- “How–to” guide for potential users of CHP interested in how to approach a development of CHP (hotels, hospitals, food industry, paper industry and small commercial are particular targets)

For more information, please refer to:

http://www.chpa.co.uk/knowledge-centre_13.html

3.2 Cooling potential assessment, Denmark

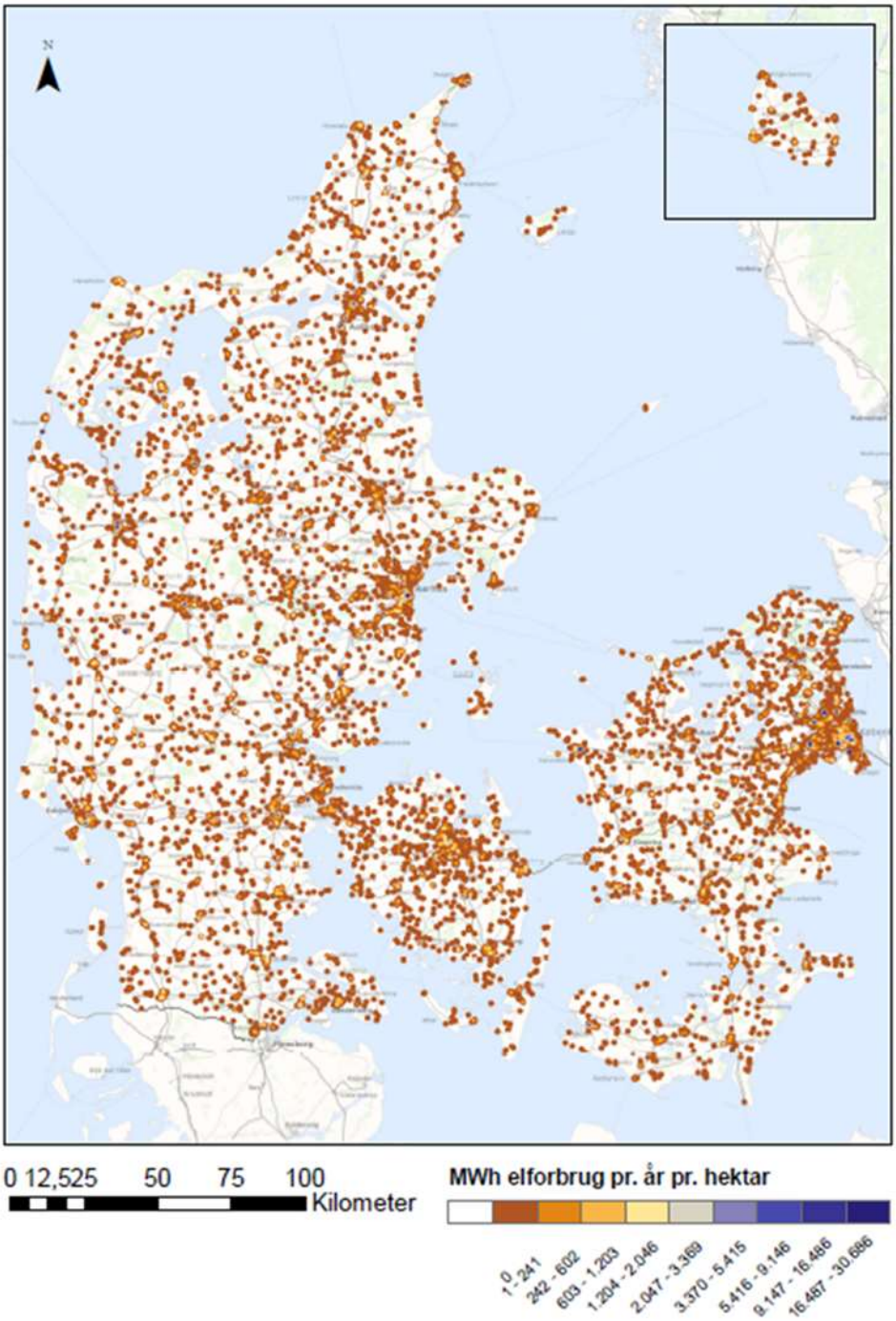
Danish Energy Agency has undertaken a comprehensive assessment of the potential for district cooling and recovery of waste heat from cooling systems.

A GIS mapping was done using building and enterprise registries in combination with detailed mapping of energy demand for cooling by industry sectors.

District cooling costs and benefits were compared with those of individual cooling systems to assess the potential for district cooling.

The analysis showed a district cooling potential of 40% of total cooling demand. Most of the excess heat from cooling could be profitably recovered for heating purposes.

COOLING DEMAND MAPPING, DENMARK



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Legal Disclaimer

The Concerted Action for the Energy Efficiency Directive (CA EED) was launched by Intelligent Energy Europe (IEE) in spring 2013 to provide a structured framework for the exchange of information between the 29 Member States during their implementation of the Energy Efficiency Directive (EED).

For further information please visit **www.eed-ca.eu** or contact the CA EED Coordinator Lucinda Maclagan at **lucinda.maclagan@rvo.nl**

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