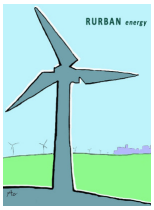

Workshop

„Rural-Urban energy co-operations for energy efficient and ecological housing”

5 November 2012, Albert hotel (Dzirnavu 33, Rīga)

Report

Opening of the workshop and introduction to the program

Ingrida Brēmere, Baltic Environmental Forum-Latvia

Ms. Bremere opened the workshop, pointing out the importance of local/regional co-operations between urban and rural areas taking into account energy demand/supply relationships. It can be envisaged that utilization of renewable energy sources (RES) e.g., biomass will increase. Therefore such cooperation becomes even more essential in order to avoid unnecessary competition and the so called “neighbouring conflicts” because of e.g., counting on the same amount of resources available in the area thus overestimating the real potential of the resource.

The current workshop provides a possibility to get acquainted with the exiting experience in Germany, Latvia and Norway in utilisation of RES at local/regional level and the related rural-urban energy co-operations.

Best practices of regional (rural) renewable energy concepts

Lioba Kucharczak, deENet, Germany

Ms. Kucharczak highlighted that several regions in Germany want to become 100%RES regions. More frequently 100% $RES_{electricity}$ targets are set. The respective potential in the heating sector in Germany is lower due to e.g., high heat energy consumption of buildings and not so well developed local district heating system that could be switched from conventional fuels to RES. For example, the county of Osnabruck has set a 100% $RES_{electricity}$ target to be reached by 2025 or by 2050 latest depending on the rising electricity demand. The county Aller-Leine-Tal is another good practice example of 100%RES county in Germany. Both counties have elaborated Sustainable energy action plan envisaging cooperation schemes between rural and urban areas for energy supply and plan to increase the share of use of RES in heating as well.

Experiences of energy-efficient city of Wolfhagen (Small city in Northern Hesse)

Kirsten Lück, Fraunhofer IBP, Germany

Ms. Lück introduced that experience of the city of Wolfhagen having set a target to develop sustainable energy supply system in the city. They are aiming to reduce significantly energy consumption and reduce at least 40% CO_2 emissions by 2020. The city has participated in a Community contest organised in 2008 and was one of 5 cities selected for receiving governmental support for implementation of its energy efficiency concept. The city of Wolfhagen plans to increase refurbishment rates and efficiencies overcoming barriers related to building age, ownership structure, income structure at the same time securing regional economic development. The focus will be on local renewable energy plants, utilisation of solar energy, development of e-mobility infrastructure, awareness raising of general public on possibilities to reduce energy consumption.

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Practical experience of using biomass and solar energy in combi-systems for heat supply of multi–apartment building in Latvia

Aivars Žandeckis, Riga Technical University, Latvia

Mr. Žandeckis introduced the solar - pellet module that has been installed for heat supply in a multi apartment building in Sigulda (Latvia) substituting natural gas heating. Even before or in parallel with installation of such combi-system in an existing house, full renovation of the house increasing its energy performance is recommendable. Such approach allows reducing costs in the future. It is also more efficient, cheaper and allows to find the best aesthetical solution for the house for installation of such combi-system. Another important aspect is appropriate orientation of the solar collector, well performed capacity calculations of the system as well as monitoring and optimisation of the system according to real needs. The house has not faced any problem with supply of pellets. Pellets are supplied from ~30 km transportation distance.

Implementation of complex solutions for energy efficiency and use of renewable energy sources in Latvia

Ilze Puriņa, Latvian Environmental Investment Fund, Latvia

Ms. Puriņa gave an overview on projects having received the financial support from the Climate change financial instrument (Green Investment scheme) in Latvia. This instrument is formed by the proceeds from the Assigned amount units purchase agreements made within the international emissions trading under the Kyoto Protocol. Within the frame of this instrument several tenders been organised e.g., for use of RES for reduction of greenhouse gas emission; technology conversion from fossil to renewable energy sources, complex solutions for greenhouse gas emission reduction in municipal and manufacturing buildings and many others. Municipalities could be applicants in many of these tenders. For example in a tender of "Technology conversion from fossil to renewable energy sources" out of 51 projects 11 contracts have been signed with municipalities. The following technologies have been supported: solar power plants (photovoltaic), solar collector systems, wind power plants, hydro power plants, wood-chip, biomass pellet and straw boiler houses with the total installed heat capacity not exceeding 3 MW; energy sources with heat pumps (with transformation coefficient 4 and higher); combined application of technologies listed above. Several good practice examples of projects implemented by municipalities in Latvia were described in detail. Activities of most of the projects shall be finalised by the end of 2012. Afterwards the monitoring for 5 years will be performed and the compliance with the envisaged CO_2 reduction evaluated.

Experience of using biomass in energy production at local level

Edgars Vīgants, Ltd. "Ludzas Bio-Enerģija", Latvia

Mr. Vīgants admitted that biomass (wood fuel in particular) plays a significant role in a country's heat supply. According to the data of the Latvian Ministry of Economics the share of wood based fuels is ~38% in boiler houses (the share of natural gas is 55%). Future prospect for increased use of wood fuel is rather good in Latvia taking into consideration the resource availability and increasing price for fossil fuels.

A boiler house (8MW wood chips + 7MW diesel for peak loads) in a municipality of Ludza was installed in 2000. Currently wood fuel is supplied from different suppliers, majority situated in a distance of ~50km. Mr. Vīgants pointed out several economic and environmental benefits of using wood based fuels for heating instead of using fossil fuels. He admitted that heat production from biomass is feasible and cost-effective in Latvia. Tariffs in towns having district heating systems that use wood based fuels in most cases are lower if compared to the tariffs for fossil fuels. Also the number of wood fuel suppliers is increasing in Latvia and wood fuel supplies are satisfactory. For further development new technologies are necessary that are suitable for combustion of different types and quality of wood fuels.

Sustainable land management from an urban-rural perspective

Christian Strauss, Leibniz-Center for Agricultural Landscape Research, ZALF, Germany

Mr. Strauss pointed out that most frequently the potentials and possible conflicts with respect to use of RES are related to the interests for the land use. The major drivers for land use change are economic and social changes, e.g. demographic change, migration; globalisation, global economy/markets; global climate change; energy demand, scarceness of resources; new technologies, political priorities; urbanisation, suburbanisation and urban-rural linkages. With respect to RES, rural areas are the main producers of biomass. Suburban areas can be biomass producers, too. At the same time here transportation of biomass to urban areas takes place. Urban areas are energy users and thus here e.g., energy efficiency of buildings play a significant role. Rural-urban energy co-operations combining energy policy with land management through e.g. spatial planning is important and demands new integrated solutions.

Chances and Challenges of Rural-Urban Energy cooperation's – First results from a explorative study in Germany

Urban Kaiser, Fraunhofer Center for Central and Eastern Europe, Germany

Mr. Kaiser admitted that the target for local /regional municipalities to become 100% RES regions is ambitious, but achievable, at least in the medium term in Germany. The major challenges are particularly related to heat demand and mobility sector. Therefore the focus shall be put also towards energy saving. More efficient technologies for energy production and storage have to be developed.

Specialists from several municipalities have been interviewed and asked to point out the chances and challenges of rural-urban energy cooperation. Interview results show that there is great optimism (based on theoretical potential studies and practical experiences) that the energy demand of cities can be satisfied by the surrounding rural area. Within cities there is also a potential for energy production (e.g. solar collectors on roofs). Use of former military or industrial areas for RES production (e.g. short-rotation plantations) should be promoted. Major challenges deriving from increasing use of RES are related to possible conflicts among food and energy production, conflicts among traditional municipal commercial areas and RES energy plants. There is a danger of monoculture landscapes, particularly in tourism regions. Increase of e-mobility has the potential to intensify such conflicts.

Better coordination of actions is necessary between different decision making levels – national, regional, local. Communication, financing and active stakeholder dialogue are the key factors for success of rural-urban energy co-operations. Energy security has to be in the focus of rural-urban cooperation.

Inland Norway Energy Agency

Erik Longva, Inland Norway Energy Agency

Mr. Erik Longva introduced to the Inland Norway Energy Agency that has been established with the support from the EU-program Intelligent Energy Europe. It is an independent, autonomous and non-profit organization - a supplement to existing players and a regional driving force to promote increasing of energy efficiency and use of RES. The Inland Norway Region covers Hedmark County and Oppland County and is mostly rural area. The average energy consumption in the region is 14000GWh yearly (56% RES, 44% fossil fuels).

Discussion on rural-urban energy co-operations

It was discussed that rural-urban energy co-operations in Latvia are functioning mostly based on market (demand/offer) based conditions. It would be useful to tackle planning of rural-urban energy cooperation involving various stakeholders at local/regional level in order to optimise the use of renewable energy sources available in the country.