

ENERGY EFFICIENCY AND ENERGY SAVING IN BUILDING SECTOR



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One of the main goals that are stated in the Baltic Sea Region Programme 2014-2020 is increasing energy efficiency. One of the aim of the programme is support the projects deal with efficient management of natural resources http://eu.baltic.net/Future_period_2014_2020.26029.html. So the reduction of energy consumption and reducing emissions of CO₂, that are fundamental in energy reform strategy of all Baltic Sea Region Countries are still actual problem.

The complex approach to the analyze of the thermotechnical property of building constructions will get the opportunity to create constructions with high insulation properties for energy economy in building sector in focus on energy reforms.

Regulatory requirements for thermal insulate characteristics of building envelop are reached their maximum values in all countries. Next step for decreasing of energy use in buildings is implementation and wide use of heat recuperation systems, improvement of central heating and cooling systems. Development of district heating and cooling systems is very important for the big cities because only large installations can give the most efficient thermodynamic cycles for cogeneration (combined heat and power).

Experience advanced European countries for example such as Den-

mark has shown that the energy consumption per 1 m² can be cut in two by minimizing heat losses in the network.

Most power-consuming sectors of the Polish economy are building sector and industry. One of the most actual problems for the regions with large number of hotels is peak loads in the evening time and emissions into the environment from burning coal. This question was also raised during the seminar in Kolobrzeg that organized by InnoHeat in the April. By the data of Polish Information and Foreign Investment Agency production of primary energy in Poland is based mainly on fossil fuels - coal and lignite, which cover 56% of the demand. Crude oil also has a significant share of 25%. The Polish

Government forecasts that primary energy consumption in Poland will grow between 2010 and 2020 at 1.5%. Use of renewable energy sources between 2010 and 2020 should reach 12%.

It is need implement 'Clean coal technology', which have the ability to sharply reduce air emissions and other pollutants. These new technological breakthroughs make it possible for new and older coal-burning power plants to produce power in an economical and environmentally responsible manner.

Comparing Poland with other post-soviet countries we can state the significant progress towards energy efficiency of district heating, but to achieve the level Nordic countries there is still a lot of work.

My studies focus on Buildig constructions, energy efficiency. Determination of impact of air permeability and thermotechnical inhomogeneity (such as thermal bridges) on the thermal insulation properties of the constructions.

<http://www.kth.se/om/miljo-hallbar-utveckling/forskning-miljo-hallbar-utveckling/phd-students-forum-for-sustainability-1.438451>