

Renewable Energy Policy in the Czech Republic. Focus on biomass utilization.

Zuzana Polova

Biomass as an energy source of future? How is real potential of renewable energy sources in various EU member states? These are questions which are discussed more and more often in context of energy self-sufficiency and sustainability not only in European Union but of course in each member country. In this short article, I would like to outline this issue in context of the Czech Republic.

Wider background of renewable energy sources in EU

Expansion of renewable energy sources (RES) is a priority for the European Union. The European Union attaches great importance to the development of clean energy sources and wants to increase the share of renewable sources in each member state. According to the EU Directive 2009/28/EC on the promotion of energy from renewable sources, EU should produce 20% of its energy from renewable sources by 2020. In addition, each member state shall ensure that the share of renewable energy in transport will be at least 10% by 2020. Use of renewable energy is unbalanced within the EU because of differences between environmental conditions of states. So each member country will have to fulfil different EU commitment of share of renewable energy in gross final energy consumption. According to the Directive, all members have to create National Action Plan for Energy from RES which sets national targets for the share of energy from renewable sources and demonstrates how the commitments of EU are fulfilled.

One of the most widely used renewable sources is biomass. Biomass can be generally defined as a substance of biological origin. It was, in the form of wood, used as a main source of energy for thousands of years before the advent of fossil fuels. After the discovery of fossil fuels biomass receded into the background but in the postmodern world it celebrates the Renaissance again. Nowadays it is considered to be a renewable energy source and some politicians and power companies see it as an energy source of the future.

How does it look in the Czech Republic?

In the Czech Republic, basic framework of renewable energy sources including biomass energy utilization is implemented by two documents: Act on the promotion of electricity from renewable sources (180/2005 Sb.) and the National Action Plan of the Czech Republic for Renewable Energy Sources. The National Action Plan for RES (approved by the Czech government on 25. August 2010) is designed to fulfil the EU required targets (minimally 13% share of energy from renewable sources in gross final energy consumption and 10% share of renewable energy in transport) by 2020. The Action Plan proposes the Czech target - share of energy from renewable sources of 13.5% (in transport of 10.8%) by 2020, 17% by 2030 and to 23% by 2050, on the assumption achieving economic competitiveness of renewable resources with other types of energy.

According to the National Action Plan, biomass, as the primary renewable energy source in the energy mix of the Czech Republic, plays the indispensable role. It is significant not only for increasing national energy self-sufficiency of the Czech Republic by using indigenous energy resources but it also helps create new jobs, mainly in those areas where it is usually the biggest problem with unemployment (rural areas), supports local economy and regional development. State Energy Concept of the Czech Republic considers biomass as a major renewable energy source too and there was also created the Biomass Action Plan for the Czech Republic 2012-2020 which shows real potential of various types of biomass for efficient energy use.

Biomass is one of the few renewable energy sources for which the Czech Republic has really good environmental conditions. Biomass covers the largest part of the total potential of renewable energy sources in the Czech Republic and therefore its share reaching 75% of total energy production from renewable sources. So it is expected that biomass may be the main vehicle for the fulfilment of the objectives of the Czech Republic to the year 2020.

Biomass is renewable but local raw material. The best utilization of biomass is in the area where the biomass arises and consequently is also consumed. Biomass potential is divided mainly between woody biomass (wood chips are widely used in the Czech Republic) and agriculture biomass which use is still in its infancy (there are sufficient reserves in the emerging biomass on agricultural land and in the use of wood pellets).

Support or restriction?

Ministry of Agriculture promotes the production and use of biomass energy by several forms. At the same time, however, it must keep within the confines of dedicated EU legislation which does not allow duplication of subsidy. It means in practice that if one segment is subsidized by EU it cannot be supported at the national level too. Ministry of Agriculture, therefore, applies mainly European subsidies to the maximum extent and creates the legal framework at the national level.

The structure of economic instruments that relate to the promotion of energy from renewable sources can be divided into two forms: Indirect forms of support (mainly Acts and Laws which aim to support the operation of equipment and the amount is linked to the level of production by promotions and restrictions) and direct forms of support (supports from the programs of the Ministry of Agriculture, Ministry of Industry and Trade and the Ministry of Environment which have a character of single investment aid).

Subsidies should serve primarily to start-up and operational validation of new technologies to achieve economic competitiveness. But a practice is often different and it is thought that renewable sources are not viable without subsidies. Nevertheless, the Biomass Action Plan notes that the use of biomass energy is more expensive than coal so it is necessary to continue to support biomass subsidies.

As I have mentioned, biomass energy, as same as energy from other renewable sources generally, is still more expensive than coal. And subsidies to RES deform mainly electricity market. According to the National Action Plan, the Czech Government will emphasize a development of certain types of renewable sources that do not require operational support. On the contrary, the development will be limited to the most expensive sources such as particularly solar, biomass and biogas. The concept seeks to reduce support for renewable sources by 2014 and avoid rising electricity prices which are unsustainable for some sectors of the Czech economy and industry.

In addition, last update of the Act on the promotion of renewable energy sources in the Czech Republic in 2011 does not provide support for building new facilities for biomass burning because the current ones are able to meet the objectives of the Czech Republic. The Czech Republic will therefore rely on existing resources and will not support new ones.

Current issues of biomass

An objective assessment of biomass must point out the drawbacks too. The use of biomass is limited by the lack of technological and financial background. The use of biomass for electricity production is often criticized for its inefficiency but this problem can be solved by the so-called cogeneration (simultaneously production of electricity and heat).

Another point of controversy regarding the use of biomass is its co-firing with coal (wood chips are yet relatively ineffectively utilized for co-firing with coal in large power plants) which is not so friendly to the environment. This method of biomass utilization, according to studies, is the simplest and the cheapest. But the burning of biomass causes release of CO₂ and persistent organic pollutants into the air and co-firing of biomass is very problematic because it is difficult to check whether the operator of the resources actually co-incinerates declared amount of biomass.

Amount of energy produced from biomass can significantly compete with other primary energy sources (primarily non-renewable – especially coal). There are also other problems on the market such as poor customer-supplier contracts, multi-year supply of fuel subsidy policy unstable and frequent changes in related legislation. Moreover, biomass is still relatively expensive energy source for households.

What to say in conclusion...

The Czech Republic, as a member state of EU, has committed to comply with all regulations and targets of the European Union. It includes Directive 2009/28/EC thus fulfilment of 13% share of renewable sources. The Czech Republic has always had a potential of RES (especially biomass) but neither political and economic nor social climate (people are distrustful to RES and media highlights mainly its disadvantage) do not wish to biomass to be popular and self-sufficient energy source of today. The State Energy Concept of the Czech Republic highlights primarily nuclear power as an energy source of the future and there is still a big domination of fossil sources (coal) and lobby of coal industry. So in my opinion, biomass does not have good position on energy market nowadays and it is only purposeful promoted energy source which will be not sustainable without EU subsidies. In addition, biomass is still relatively expensive especially for households. But do not think negatively, biomass, sooner or later, may gradually become an alternative for the ever-dwindling supplies of fossil fuels mainly due to the rising of fossil fuels prices and the introduction of environmental taxes. But the future depends mainly on prices of technologies (e.g. boilers) and available raw materials. And as I have said, The Czech Republic has a potential but, I think, it is still not ready to become “green economy”.

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