

SUPPORT SYSTEMS FOR ELECTRICITY PRODUCED FROM RENEWABLE ENERGY SOURCES IN THE EUROPEAN UNION

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Renewable energy sources are concerned solar, wind, water, waves, bio and geothermal energy. Each of these sources has unique characteristics which influence how and where they are used.

The mass production of electricity using renewable energy has become commonplace recently, because the major threats of climate change due to pollution and the environmental, social and political risks of fossil fuels and nuclear power. The one important reason to increase renewable energy is worldwide aspiration to decrease greenhouse gases.

The countries of the EU are currently the leading world power in the development and application of renewable energy. Promoting the use of renewable energy sources is important both to the reduction of the EU's dependence on foreign energy imports and in meeting targets to combat global warming. In the figure below are per cents of electricity produced from renewable sources of completely electric production in some of the European Union countries and in Ukraine in year 2004.

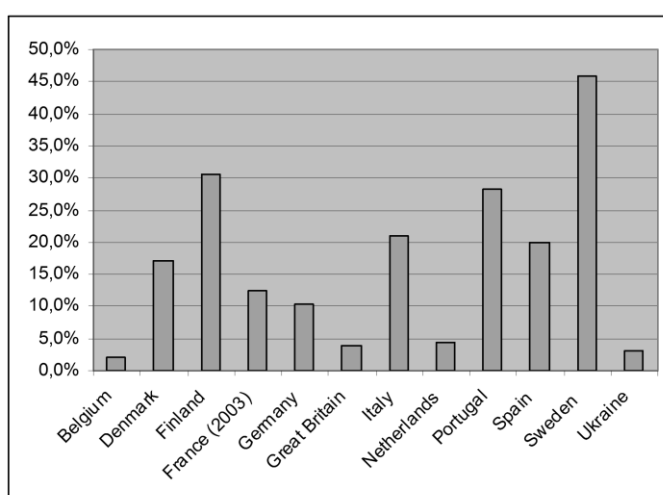


Figure 1. % of electricity produced from renewable sources of whole electric production in some of the European Union countries and in Ukraine in year 2004

The profitability of producing electricity from renewable energy sources is not very good at present. Therefore; there has been created many kinds of support systems to make business more interesting also for investors. Support systems are developed to increase renewable energy production, to take

into account the technology development, to support new environmentally friendly technologies, to establish long-term and secure investment conditions, to fair conditions for different operators. There are following support schemes exist on EU electricity market: investment and tax support, fixed price system, green certificates, tendering, price premiums.

Feed-in tariffs are one of support scheme to involve obligation on the part of utility to purchase electricity generated by renewable energy producers in this serviced. Feed-in tariff determined by public authorities and guaranteed for a specific period. Electricity price is a fixed price stated in the legislation (regulations). Feed-in tariffs takes market risks away from investors, required lower returns and provides usually long-term security, enhances bank ability and the quality of the project development. Different tariff can be defined for different technologies for different countries depending on resource conditions.

Green certificate support scheme is created by obligating consumers to purchase certain percentage of their electricity from renewable sources. RES-E generators get revenues by selling these renewable energy certificates in a separate certificate market. In liberalized electricity market, consumer can comply with the obligation by buying enough certificates. The buying obligation is defined as percentage of the total purchases and its increases annually. Competitive tendering based on the government decisions about the amount of new renewable capacity to invested, and publishes a request for tenders from interested producers. All interested parties can submit a proposal for the government in which technology, capacity and price they are willing to investing. If it a price premiums than RES-E generator receives a fixed premium in addition to the electricity price. The additional premium thus keeps constant, but the total revenues for producer change if electricity price changes.

Tax relief are practically has the same as price premium support mechanisms. The RES-E generator receives the decrease of tax on the energy production. Tax relieves may lead to complex tax planning including tax optimising ownership arrangements.

The certificate systems are more flexible, has a good cost efficiency level and they can increase the use of renewable energy sources in the most cost efficient way. The green certificate could cover different type of renewable energy sources as extensive as possible that encourage more investment in this.

Investment subsidy is non-market based mechanism, usually continuously available but discretionary (must be applied for). RES-E generators get a certain percentage of the eligible costs of the total investment form government. Usually the percentage is not exactly fixed, but is decided case-by-case based on the estimated need for support, the size of the project and state budget situation. After the investment and the received investment subsidy, the generator should do on its own at the electricity market. Investment subsidy is used in parallel with others.

For conclusion, it obvious that without support systems, the rate of electric produced from renewable sources would not be even as high as it is now. Nevertheless, there are still plenty of works to do and support systems have to be developed further.

