



## Analysis of green electricity production in municipalities of Slovenia

(RES-e Regions / WP 3)

### *Introduction: Details of Slovenian municipalities*

In Slovenia there are 193 municipalities. Some of them are very small, since there are 92 municipalities (47.6 %) which have up to 5000 inhabitants. 10 interviews in 10 municipalities (bigger and smaller) were carried out in the June 2005. Nine of them had made energy plan, but one of them still does not have it.

### **OPINION**

#### **General opinion of local authorities**

Most of examinees are in general very favorable for renewable energy sources and also for electricity production from those sources. They affirm that share of renewable energy sources in primary energy balance must increase if we would like to follow the developed European countries. They say that state should more inform, advise and educate inhabitants of individual municipalities about green electricity. But also all of examinees agree that systems for green electricity production should be set up on places where this is economically reasonable.

#### **Opinion according to the production technology**

Wind: Since wind power plants present relatively high visual intervention into space and suitable areas with enough wind speed are mostly protected (Natura 2000), precise measures of wind speed on selected areas should be made before every setting up of the wind power plant. With help of data of wind speeds and their analysis it is possible to decide on economic suitability of investments. Also a compromise with defenders of nature should be reached.

PV: Very suitable technology for electricity production since there is no intervention into space and also visually does not bother the environment. Therefore PV is very suitable technology if we do not consider a long pay-back period of investment due to both low efficiency and dependence on weather circumstances.

Biogas: Suitable technology for those farms which have high enough potential of waste for suitability into this investment. The same example is also for purifying plants. Here are problems due to different factors like smell.

Cogeneration on biomass: Due to high investment costs for combined heat and power systems, state must subsidize construction. In spite of high potential of biomass in Slovenia, price for biomass is low and wood biomass market is unestablished. It is more suitable as cogeneration on coal and other fossil fuels in general.

Small hydropower plants: For potential investors it is necessary to provide a technical and financial support and to simplify procedures. At small hydropower plants there are no pollution of the environment. But there are problem at very dry and wet periods.

### **Public opinion, as felt by the local authorities**

The most of examinees have opinion that their inhabitants do not have whatever prejudices against renewable energy sources and electricity produced from renewable energy sources – therefore they have neutral opinion. But some of examinees affirm that general opinion in their municipality regarding electricity production from renewable energy sources is very positive. Although there is a question what kind of opinion would be if such a system was set-up in their immediate neighborhood.

## **PROJECTS**

### **Energy strategy and targets as regards energy production**

Most of municipalities (9 from 10) have made the energy plan, but in spite of that they affirm that they do not have any energy targets or strategies. Exception are municipality Železniki, where case study of combined heat and power from biomass has been made, municipality Žiri, where case study of district heating system on biomass has been made and municipality Tržič, where has as a target increasing of electricity supply with small hydropower plants and biomass consumption defined in their territory plan.

### **Consumption of green electricity**

In Slovenia feed-in tariff system is valid because this is for now the most suitable form for stimulation of qualified producers of electrical energy in Slovenia. In Slovenia green certificate system has not valid yet in spite of some different offerers of green electricity, which deal it under different names (Blue energy, Green energy). Italia introduced green certificate system in the year 2002 which obligates importers and producers of electrical energy to cover 2 % of all electricity feed-in net from RES. Because of that importers need suitable evidence about green electricity. The consequence of this is incorporate of Holding Slovenske Elektrarne (HSE) into RECS (Renewable Energy Certificate System).

## **BARRIERS AND SUPPORT**

The most of examinees think that the biggest barrier for development of green electricity market is financial nature. Less barriers examinees see in administrative procedures and just a few in public opposition, which is proved by the fact that people in general are not against such a systems for electricity production. Other barriers are also lack of promotion, informing about advantages, which are brought by such a systems of electricity production and momentary indifference – not aware of future problems. As the best support for all examinees would be financial (subsidies) and political nature.

## **CONCLUSIONS**

After analysis of answers we are concluding that higher awareness about greenhouse gas emissions, which are originated at fossil fuels combustion, is necessary for higher production of electrical energy from renewable energy sources in Slovenia. Further informing of people with seminars, info lists, various workshops, etc. will be necessary. For case studies as well as realization of concrete systems for green electricity production state subsidies will be necessary as well.

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