

Solar Energy and Wind-Power: The Renewable Sources of Energy in Hungary

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Abstract: *Wind-mills were commonly used in Hungary over the last decade for the crushing of maize. Use of solar power for supplying heat to water, bathing, showering, and drying cultivation has long been a practice. The source of the "renewed" energy source is traced all the way back to solar radiation. The rise in the ratio of the use of renewable sources of energy is aimed at mitigating the effects of global climate change by reducing carbon dioxide emissions and also at enhancing the reliability of the production of power by reducing the percentage of the use of fossil energy. This study presents how often the two sources of power are disposed over the period of every year, how this disparity between the concurrent disposability of the two energy sources completely depends on the seasons, as well as how the variables analysed can be defined by the diffusion and variation in a period, a portion of a day, or an hour.*

Keywords: *Energy, Solar Power, Turbines, Wind Mills, Wind Power, Renewable energy, Fossil fuel.*

INTRODUCTION

The very last use of ambient sources of energy (solar energy and wind power) in Hungary dates back centuries ago. Over the last decade, in a lot of communities in the Hungarian Lowland, wind-mills are commonly included in crushing maize. Since wind may also be used with a lower scientific level for energy production, there are no wind farms or wind turbines in the nation seems beyond several individuals. The same could be said for solar power as well [1]. For a lot longer, the use of solar power for water heating, taking a shower or a bath and drying produce has been a practice.

The source of the "renewed" source of energy is traced all the way back to solar radiation. A certain portion of solar power can, nevertheless, be included. The calculation and efficiency of use is influenced by the direction of solar ray's incident. In addition, in contrast to solar rays, the range between the project location and the equator (parallel) and the angle of change of the solar cell also affect the calculation and quality of use. In addition, as a feature of the weather, solar energy entering the implementation site often varies, not to include the weather conditions [1]. Within the European Union, the rise in the ratio of use of renewable sources of energy has two objectives: to minimise the impact of global climate change by reducing carbon emissions and, on the other hand, to change the protection of the production of power by reducing the proportion of the use of fossil energy sources. Due to rising oil prices, supply dependency can be reduced and environmental protection concerns also can tend to be more successful.

The decentralisation of energy production is one of the important goals of Guideline No. 2002/91/EK, which applies primarily to the usage of energy by citizens and

organizations. The use of solar energy relates most of all to people meeting the energy needs of their very own households through the provision of energy lacking emission-free sources of energy (i.e., renewed sources of energy). This article explains in what ratio the two sources of power are disposed over the period of every year, how this disparity can be described between the simultaneous disposability of the two types of energy varies depending on the seasons, but by what distribution and variation the parameters studied can be characterised in a period, a portion of the day, or an hour. The degradation of biodiversity has led to serious environmental degradation, permanent harm to biodiversity and pollutants to the atmosphere. It can be established as a consequence of these procedures that:

1. The stocks of traditional combustible (fossil) fuel (coal, mineral oil and natural gas) would be depleted at the expected level in 50 to 200 year if they are used.
2. An region of 6 hectares would be turned into a wasteland.
3. 17 million hectares of forests would be barren.
4. 26 trillion tonnes of land would be destroyed.
5. The stratospheric ozone layer is declining.
6. CO₂ emissions increase in a year by 28 percent

Fossil sources of energy available in nature also were provided by sun's radiation. There really is no real hope that these will be replenished due to its very lengthy time for the creation. Only so-called restored energy sources on Earth can therefore be counted. These sources of energy, nevertheless, have very different basic levels of intensity [2]. In the area of production for the use of revived sources of energy worldwide, an increased strength can be produced due to the insecurities induced by high oil prices and climate change. Shareholders are encouraged to set up wind turbines, solar power plants and biomass heating plants with these motivations as tax credits, improved electric power rates guaranteed for a long time, future data on wind turbine and solar energy in Europe, and increasingly in the U. S. The current share price of renewable energy companies is quite big and is continually rising existing cost of solar electricity generation by Conergy has risen by about 30 percent and that of its rival, SolarWorld, by 100 percent on the German stock market from May to August 2006-and governments (recently that of Romania) have declared their large-scale plans [3].

The key challenge with wind-power generation is that there are typically low wind speeds, occasionally strong wind, that only move for a limited period of time, so only slow-moving machinery could be worked efficiently. Wind turbines must therefore be built in Hungary in a particularly circumspect manner. It is important to locate so-called air ducts and choose the axis altitude of the turbines in such a way that the axis is as far from the ground as practicable. In Hungary, the use of solar energy also has a history. Drying solar-powered crops constitutes a significant fraction of the global energy usage of farming. For a long period of time, boiling air was created in vacation rentals and weekend-houses for having a shower. Photovoltaic systems and photovoltaic panels have emerged in recent decades, from which boiling air for consuming and electricity can be generated. In places where there was no electrical network, the construction of solar cell systems was initiated. The serious drawback of an island-like construction is that the storage of surplus quantities of energy

generated in the summer could not be tackled in the long term, while solar energy supply systems are often inadequate in the winter. No such issue occurs in the frameworks that feed into the system[4].

The most important issue with the availability of solar power is that there is no usable energy at night-time and only a comparatively low amount of solar energy is available in winter. Since the use of both wind power and solar energy has difficulties, now let's see in what ratio the two forms of energy can be used. In Hungary, the ratio of power stations generating renewed energy in the field of power generation is barely more than 1 per cent, that we would want to raise to 3.6 per cent by EU needs. The initiative, which aims to raise awareness among residents of renewed sources of energy, has been put into motion by the European Union. In the context of this initiative, a survey was conducted at the end of 2005, which sought answers to the question of the acceptable forum for the creation of, and the desire to improve, the output of renewed energy and energy consumption habits of residents.

European public opinion, as per the Hungarian Energy Association, encourages policymakers to take measures towards more aggressive technical research and integration of renewable energy generation to minimize the energy dependency. In the view of 47% of pollsters, the EU is the highest style for decision-making to tackle the problems of high energy costs, global warming and the protection of energy supply. Thirty-seven percent of the pollsters said that they should take effective decisions at the national scale[5]. In the circle of participants for reducing energy dependency, solar energy, which is the most common, received 48 percent of votes. This is accompanied by new technologies for energy generation such as hydrogen or pure coal (41%), while wind power, which is quite common in Hungary, has also been moved to third place. Only a few people consider the control of the oil industry (23%) or atomic energy in the long run (12 percent).

It is noteworthy that 43 percent of Hungarian participants have put solar energy in first spot, while wind and other renewable energies run dead heat in second place (37 percent). Atomic energy's prominence is less than 9 percent. As per Guideline No. 2001/77/EC released by the European Union, the share of electricity produced from renewed sources of energy in gross electricity consumption and general power consumption would have to be substantially increased by all National Governments. The highest growth can be expected in Lithuania (25 percent), Denmark (20.3 percent) and Cyprus, keeping this guidance into account (19.3 percent). In Hungary, the projected rate of increase is just 2.8 percent. This is substantially behind the expected average growth of neighbouring nations (Czech Republic 10 percent, Slovakia 16.4 percent, Slovenia 13.6 percent)[4][6].

With Decision No. 2199/1999, the Hungarian government began the restructuring of Hungary's energy system. (6.VIII.) as well as 1107/1999. (8.X.) in compliance with EU accession criteria and to take necessary organisational and financial steps in order to ensure that these objectives are attainable. The "20,000 houses with solar panels 2010" programme is one of the expected potential strategies for achieving these targets, the result of which is a remarkable increase to be anticipated by 2010. It is therefore very interesting to examine the implications of solar energy production that are suitable for reducing the use of fossil energy sources and replacing them at a recognizable or entrepreneurial stage.

CONCLUSION

The findings discussed in this report convincingly show that there are also very strong opportunities in Hungary for the widespread use of solar and wind energy technology. Both wind and solar power are reasonably modifiable and, at the very same moment, provide distinctive transient access to energy sources. A more efficient typical use becomes more feasible than now as soon as the temporal structure, variability, and key statistical characteristics of these two variables are understood. The Nagykall' o project would like to provide information on this. Knowing the data measurement, the internal structure of the daily data, the hourly information and also the data measured in 10 minutes, for which no measurement has even been conducted out.

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