

УДК 620.91

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RENEWABLE ENERGY SOURCES

Renewable energy resources hold great promise for meeting the energy and development needs of countries around the world. This promise is particularly strong for developing countries, where many areas have not yet committed to dominating fossil fuels.

Renewable energy sources include a significant number of proven and new technologies. For example, electricity can be generated from sunlight using photovoltaic cells for individual buildings or communities of buildings, for generating electricity at central stations, and for local tasks such as providing homes with hot water or heating rooms. Other renewable energy sources include parabolic collector fields that focus on a fixed source of hot water or solar ponds, crop waste pulp that can be gasified for thermal, electrical, and transportation applications, as well as energy derived from wind, geothermal applications, ocean tides and waves, temperature fluctuations between the surface and the depths of the ocean, hydroelectric installations, biomethanation (energy from agricultural waste), and biomass from crops grown for energy use.

Many countries have significant renewable installations and programs. For example, in Europe, Finland produces about thirty percent of its electricity from renewable sources, most of which comes from biomass. Other Nordic countries and Germany also have significant renewable energy programs. Renewable resources are attractive to developing countries, where about two billion people do not have access to electricity. In 1990, fifty-six percent of the world's rural population did not have access to electricity, and today, ninety percent of the entire population of Africa does not have electricity. In rural areas, renewable resources are often much cheaper than traditional resources, which have large capital costs for generating equipment, and also require high transmission and distribution requirements.

Wind, photovoltaic, biomass and hydroelectric resources are today the most profitable and widely used renewable energy sources in developing countries. Wind power for electricity generation is a mature, competitive and virtually non-polluting technology that is widely used in many regions of the world. It is also still used to some extent for pumping water; however, wind power systems have some placement issues, such as aesthetics and a real but diminishing danger to birds that fly into the blades. Denmark used wind power for electricity generation for the first time. Currently, fourteen percent of the country's electricity is generated by wind. The partial repayment of the Danish carbon tax levied on all electricity, regardless of its origin,

provides the main support mechanism for the Danish wind energy industry. Denmark operates 4,800 wind turbines, more than eighty percent of which are owned by wind energy cooperatives or individual farmers. Approximately 100,000 families either own shares in wind energy cooperatives or own their own wind turbines. Wind power has become a big business for Denmark. It exports windmills to thirty-five countries and produces more than fifty percent of all devices produced in Germany, also has extensive applications in wind power, and is a major manufacturer and exporter of wind machines.

Based on these successful models, developing countries can also produce and sell their own wind machines. Solar energy offers great opportunities for development in developing countries, especially because most of them receive a significant amount of sunlight throughout the year. In rural areas not served by electric grids, solar photovoltaic power can provide basic services such as cooling, irrigation, communications, and lighting.

Thus, the development of renewable energy in the world is an actual and promising project. First, the development and use of renewable energy has a positive impact on the environmental situation in the world, which has recently been "limping". Secondly, in the future, the lack of traditional resources can have a strong impact on the market, perhaps there will be a global energy crisis, so it is very important to start developing non-traditional energy sources now, so that in a few decades, and maybe less, to prevent economic collapse.