



## Resource efficiency and its necessity

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Renewable energy resources have an important role by improving energy efficiency, thereby contributing to the sustainable and eco-friendly use of local energy resources. The rationalization of energy management and the implementation of innovative renewable energy projects can be an excellent tool in terms of both corporate, municipal and household levels to reduce energy costs.

The Hungarian Power Companies Ltd. calculates that in Hungary new electricity generating capacity is needed for establishing growth in consumer demand and the replacement of old power plants. On 31st December 2013, there was 9 197 megawatts of installed electrical capacity in the Hungarian electricity system. By 2019, only 70% is expected to be available and by 2030, only 5 100 megawatts of capacity can be calculated. In addition to the replacement needs, the supposed increase in consumer demand also requires the establishment of new capacities (MTI, 2014).

In this study, we examined one of Hungary's leading agribusiness companies' technical and other parameters. In the company's head office, hot water is produced by a solar panel. The roof-mounted solar cells heat a 200-liter reservoir of stored water. The daily use of water each day account to between 50 and 200 liters. Waste heat in the cooling system of the company's shop is utilized by using a group-agregator. Cooling is done with significant heat removal. This amount of heat or a portion of it could be recovered. Therefore, a heat exchanger was inserted into the cooling gas cycle which leads to a secondary water cycle with a 300 litre water tank. This solution produces hot water, providing the shop workers' daily hot water needs. Lighting was upgraded by replacing traditional high-performance 250-watt bulbs to 130-watt more energy-efficient light bulbs. The saving achieved is 120 watts per bulb. The energy-saving light bulbs last longer than the mercury-filled bulbs. It is important that the sockets be the same, so they do not have to replace the luminaires. In addition to saving energy it is also important to protect the environment. The mercury-filled bulbs are obsolete pollute the environment after disposal. The other plant headquarters replaced 60 watts lamps to LED lamps. Also, lighting and the whole network will be replaced. The LED light's energy demand is 23 watts; therefore, barn lighting will result in savings of 2000 watts per hour. It is an important criterion of electricity to burden the electrical network only to the necessary extent. Therefore, services measure both the inductive and capacitive consumption. To avoid extra costs, factor correction capacitors are used. Therefore, reactive energy costs can be avoided.

The world's energy resources are finite and it is increasingly more expensive to produce them. Therefore, we must strive to make renewable energy systems involve greater proportion of today's power structure. The company contributed to the requirement that the share of renewable energy sources by 2020 should reach 14.65% in Hungary. Green energy investment pays off in a long run for all businesses and it is a necessary economic development.