The role of small, household size power plant in the electricity supply by Hungarian municipalities – or what is the available capacity on the way of the local self-sufficiency enough for

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Abstract

The utilization of renewable energy sources spread with stormy speed on the world therefore more and more municipalities propose to provide their energy demand from renewable sources.
The fossil fuels represent a significant proportion in Hungarian energy balance and the majority of these is import energy.

The proportion of renewable energy sources must be increased to narrow the energy dependence and the energy cost of municipalities, to increase the energy security and to consider the aspects of environment.

The interest of Hungary is to increase the proportion of renewable energy sources in energy supply.

In order to this, the government created the small, household size power plant category in the Electricity law. This power plants should be not greater than 50 kW's performance. In this category, electricity can be produced from renewable and fossil sources.

Since the government introduced the small, household size power plant category the installed capacity grew quickly in the last seven years. The whole capacity was only 0.51 MW altogether at the end of 2008 but it has already approached 129 MW's at the end of 2015. The whole capacity was increased the multiple of the previous year amount every year between 2008 and 2015 and further dinamic capacity expansion will be expected. The 99.5% of installed capacity comes from renewable energy source and the 99.0% derives from solar energy.

This capacity increase is remarkable despite the fact that the price paid for excess production is lower the full end consumer price. If the input electricity volume is bigger the offtaken electricity volume in the accounting period then at a given connection point selling electricity trader or universal service bound to pay to the owner operator of the small, household size power plant lower price than the end consumer price. So only electricity saving and environmental awareness generated the capacity growth in Hungary.

The capacities and the produced electricity can be displayed as data on municipality level,

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too. The purpose of the researches is to determine how the built capacity of the small, household size power plant category can participate in the electricity supply of Hungarian municipalities.

So how many percentages of electricity demand can this electricity power gratify in the municipalities? Based on this, a municipalities ranking can be made which shows the level of sufficiency in production of renewable energy and give the possibility for planning the power shift. To what extent can we build upon on this power plant category that Hungary can comply its objective value.

The investment accomplishment of the residential, institutional and company segment was motivated by merely the energy saving while using renewable energy – primarily solar energy. Based on by accomplishments it can be assumed that production aid of energy production could help Hungary's renewable energy goals.
The accomplishments seem to disprove those hypotesis according to which a municipality can not satisfy its electricity demand from renewable energy source. The data provided shows that the electricity demand of municipalities can be provided in 100% by villages and this is not impossible by small or big cities.

Keywords: renewable energy, municipality sufficiency in Hungary, small household size power plant