



RESTRICTIONS ON THE DECENTRALIZATION OF RENEWABLE ENERGY IN BULGARIA

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Abstract: *The promotion of decentralized systems for renewable energy is one of the key moments in the proposals for a new EC energy policy. In the recent years, despite the encouragement by the law, their development has been restricted which has required rethinking both the existing incentives and overcoming some barriers. This article identifies these barriers existing before the development of the decentralized renewable energy production in Bulgaria and provides recommendations on how these could be overcome based on the good practice of the other countries.*

Key words: *Renewable energy sources, Hybrid system, administrative barriers.*

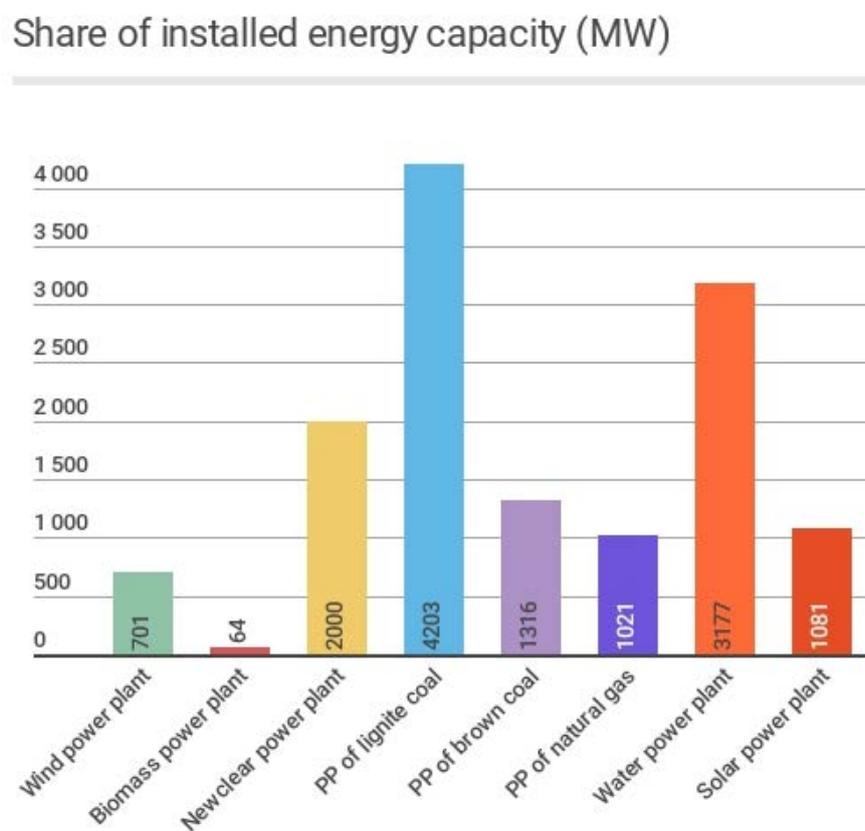
Promoting decentralized systems for renewable energy production is the focus of the proposed legislative amendments to the energy policy of the European Commission (EC) by 2030. The objectives on the new ten-year horizon are entirely in the spirit of the Paris Agreement signed on December 12, 2015. The Agreement contains a plan of action to limit global warming well below 2° C. It covers the period from 2020 onwards. [1]

In the context of this objective, one of the main instruments on which EC relies is the increase of the renewable energy share in the final energy consumption of EU by 27%. One of the mechanisms by which this shall be achieved is through encouraging the independent production of this type of energy by more households, which will result in greater decentralization of the energy system.

This article aims to review the Bulgarian legislation and the secondary legislation in this area, in order to discover the weaknesses that hinder the development of the decentralized renewable energy production in Bulgaria and give suggestions on how they can be overcome.

1. Types of energy capacity in the electricity system of Bulgaria

There are a variety of capacities for electricity generation in Bulgaria, however the lignite power plants still have their predominant share. The chart below shows the distribution capacity by types of power plants by 2015.



Source: Project "Energetics in the light", Capital newspaper.

Fig 1: Share of installed energy capacity (MW)

Although the capacity of the installed photovoltaic power facilities is more than 1,000 MW, their electricity production is much less effective, especially when compared to the conventional power plants. In terms of renewable energy, the main reason for this is the unstable character of the photovoltaic energy which totally depends on the external weather conditions. Therefore, the energy from the

Table 2: Legislative provisions for energy facilities from renewable sources up to 30 kW according to EREA

Requirements to renewable energy sites over 200 KW	Requirements for renewable energy sites up to 30 and 200 KW
	(biomass plants not considered)
Investment intentions for the construction of energy facilities for electricity production from renewable sources are preceded by an assessment of the available and estimated potential of the respective energy resource.	The provision does not apply to the construction of energy facilities for electricity production from renewable sources with a total installed capacity up to 30 kW, including on roofs and facades of buildings and on real estates within urban areas;
Installing new capacities shall follow the 10-year plan for network development of the system operator, determinable annually.	There are no limits to the annual capacity of accessing power plants with a total installed capacity up to 30 kW or less, which are planned to be built on roofs and facades and on properties in urban areas;
Upon submitting an application for accession, a guarantee of BGN 5 000 shall be deposited for the requested MW capacity.	Not applicable
There is no deadline for issuing a statement	A statement for accession shall be issued within 30 days upon receiving the request. A pre-accession contract shall not be concluded. Upon request for a contract for accession, the distribution company shall provide a draft contract within 30 days.
The accession of the new power facility shall be within the borders of the property or in close proximity, and the costs shall be covered by the owner of that facility.	The accession point for the power plant up to 30 kW shall be within the building where it shall be installed, as long as its capacity does not exceed that of the building, which should not require additional expense. Not valid for plants up to 200 KW
	Accession fee for a power plant is individual, including the construction costs for the accession facilities to the relevant distribution network, and is determined by the methodology adopted by the Energy and Water Regulatory Commission under the relevant regulation.

The operator of the electric power transmission or distribution grid shall restrict remotely or with a dispatch order the energy supplied, when the transmission capacity of the network has been exceeded.	Energy production from plants to 30 KW cannot be restricted but should follow a timetable. The accession contract should contain the penalties due by the operator in case of restrictions to production mode.
Since 2015, no preferential rates for renewable energy plants with a capacity of over 30 KW have been provided.	Electricity from renewable sources is purchased at a price specified by EWRC, as of the date of application for complete installation of the electricity production unit.
The producer of electricity from renewable sources with installed capacity over 200 kW provides data transmission in real time to the operator of the transmission or distribution grid for the electricity delivered at the accession point, as well as a remote control of this power unit.	Not applicable

The legislative requirements related to the energy capacity from renewable sources to 30 KW show that the majority of them have been introduced with the legislative amendments adopted in 2012 and 2015. The reason for this is that together with the concessions for this type of power plants, restrictions on greater energy capacity from renewable sources have been adopted, excluding those up to 30 kW.

As regards the requirements for accession of energy capacity facilities to 30 Kw, the Law on Spatial Planning (LSP) also provides certain concessions. These facilities have been moved from third to sixth category for construction. This, according to Art. 147 does not necessitate approval of investment projects for the issuance of a building permit [3]- "installation of plants producing electricity, heating and/or cooling from renewable sources with a total installed capacity up to 30 kW including existing buildings in urban areas, including on the roof and their façade and in their own territory." For construction objects of sixth category, there are also no requirements for applying for a permit for use issued by the National Construction Supervision Directorate or by the municipality. Concessions provided by the Law on Spatial Planning with the higher construction category for energy facilities from renewable sources to 30 kW shall save about 2-3 months for their construction, the interviews conducted with the Bulgarian Solar Association recently revealed.

3. Restrictions of the secondary legislative framework

Regarding the accession of energy facilities up to 30 kW, the Energy from Renewable Sources Act refers to the secondary legislative framework [4] whose rules have been composed by the Energy and Water Regulation Commission (EWRC), imposing certain restrictions on the development of decentralized systems for renewable energy. For the purposes of this article, there are interviews carried out with companies involved in installing such electricity facilities and representatives of the industry associations. Based on them, the following restrictions have been classified which greatly prevent the more widespread development of renewable energy plants by up to 30 Kw.

Table 3: Restrictions on the decentralized renewable energy roofing systems in the secondary legislative framework

Regulatory framework	Implementation	Restriction
The distribution system operator may reasonably refuse to add the site to the network within the requested deadline and to propose a new date for negotiations.	From the interviews with the experts and the stakeholders, it can be concluded that there are many cases in which the distribution companies have unreasonably refused accession to small photovoltaic power plants (there are examples of rejected projects with a capacity of 4 kW/p). In such cases, after appealing before EWRC, the accession procedures have been resumed but in most cases the delays of about 12 months caused to the project activities have made it impossible for the realization of the planned investments due to changes in the pricing components of the installations.	Insufficient control on the implementation of the requirements of the secondary legislative and regulatory frameworks and a lack of sanctions for non-compliance.

<p>When generating capacity, which is greater than the capacity allowed, the accession point may not be close to where the commercial measurement unit is installed.</p>	<p>According to stakeholders, there are a number of examples of unsubstantiated indication of a remote point of accession of renewables to the networks, which significantly raises the investment costs, making the implementation of the projects impossible and the investors having no legal procedure with which to appeal.</p> <p>The prices for accessing renewables to the grid are unreasonably inflated.</p>	<p>Ability to interpret the requirements. Need for clarification of the texts.</p> <p>No price caps for accession.</p>
<p>For sites for renewable energy production to be joined to the distribution network, no "island mode,, is allowed.</p>	<p>In this case, the provision, prevents the development of hybrid systems that can operate without being connected to the distribution network.</p>	<p>Restricting the decentralization of electricity production facilities.</p>

Besides the restrictions contained in the secondary legislative framework, there are also restrictions associated with the adaptation of this framework to the general legislation.

According to the interviews conducted with the stakeholders, the power supply companies speculate with omission to reveal the requirement of ERSA for a 30-day period to complete the procedure of the Rules on the terms and conditions for accession to the transmission and distribution networks. This leads to delays in providing purchase contracts, accession agreements and additional agreements with producers of renewable energy with nearly a year. There have also been cases when plants of 5 and 30 kWp, which have already been built, had no purchase contracts and the plants respectively cannot produce energy.

Another restriction within the secondary legislative framework is the lack of so-called "net metering". This means installation of small generating facilities allow accounting with two-way metering, thereby levelling the amount of the energy produced and the energy consumed for a certain period of time. As there is no specific definition in European legislation, but some authors [5] define "net

metering" as the scheme in which the generation facility is connected inside the network of a consumer and produces electricity for both, simultaneous and post consumptions. In cases where the generation exceeds the consumption, the surplus energy is discharged into the electric system. This excess energy can be recovered in those times when consumption exceeds generation, and it is not enough with the power generated. Net metering scheme usually uses the electrical system as a " Back – up".

This solution has been used in many EU countries. According to the experts, the small decentralized systems are sufficiently advanced both technologically and in terms of safety, and it is high time for them to be regarded as an inherent part of the indoor electricity systems of the urban, industrial and agricultural buildings and facilities. Currently, their status is almost equivalent to the major electricity facilities and this significantly impedes their further distribution.

Conclusion:

The restrictions on the decentralized systems for production of renewable energy in Bulgaria have been mainly identified in the secondary legislative framework, creating administrative risk for the development of this type of systems. This can be overcome both by changing the secondary legislative requirements and adapting them to those of the primary legislation and through further facilitation of the administrative regimes.

The construction of small power capacity facilities can be offset largely by the transition from licensing to registration regime for their legalization. Such a positive example has already been used in Germany where the construction of such facilities requires only submitting a notification to the specialized state institution, and the distribution companies are obliged within one month to provide a signed contract thereto.

The use of decentralized electricity production systems shall become increasingly popular issue within the context of the new EU legislative initiatives in the field of renewable energy. However, they will not give specific answers on how the national governments to achieve the goals but will rather leave each Member State to decide how this should be done. In this regard, it is important for Bulgaria to overcome the administrative obstacles imposed by the bylaws, which shall ease the development of hybrid systems for renewable electricity in people's homes.

References:

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