



Grid access and authorization procedures in Slovenia – Transposition report

(RES-e Regions / WP 2)

This document contains data and information about grid access for green electricity production and administration procedures for Slovenia. A short analysis of representatives of different institutions for grid access and administrative procedures was carried out at the Faculty of Mechanical Engineering in Ljubljana in June 2005. A summary of interviews are presented with *Italic style* after individual points. Public opinion on electricity production from renewable energy sources (RES) was carried out by the Agency Ninamedia d.o.o. with inquiry of public and is presented in the first point. A short examination of state of the art and perspective possibilities for Slovenia is also presented in the first point. In the second point conditions for grid access are showed where procedures for connection to the grid are presented schematically. 10 main procedures necessary for grid access are presented in tabular in the third point. Fourth point shows some systems of stimulating of electricity production from RES respectively the certificates of guarantee of origin. The last (fifth) point shows opinions of examinees regarding changes needed for easier grid access.

1. Real life conditions regarding electricity production from renewable energy sources

Agency Ninamedia d.o.o. executed a questionnaire about public opinion on green electricity production in Slovenia between 14th and 15th April 2005. If people had possibility to choice the electrical energy from different energy sources the most of examinees (86 % from 300 examinees) would decide for natural sources (Figure 1).

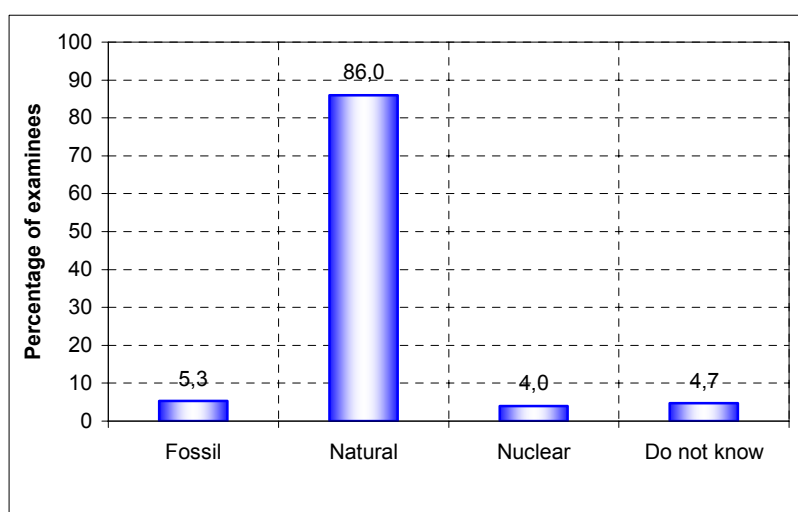


Figure 1: Public relation on energy source for electricity production.

60.3 % of examinees are prepared to pay a higher price for electrical energy from renewable energy sources. Among examinees, which are willing to pay a higher price for electrical energy from RES, there are 37 % of those who are prepared to pay a price, higher till 5 percent.

For most of examinees high investment costs, lack of technological know-how, public opposition and administrative procedures are the main barriers for higher electricity production from RES.

Most of examinees estimate, that the strongest trend of growth on the field of green electricity production in the next five years in Slovenia will have water energy, follow solar energy and then wind energy. But the electrical energy source of the future is for most of examinees sun, follow water, wind and biomass. Other sources including fossil nature are humble evaluated.

1.1 State of the art and potential possibilities for Slovenia

The most utilized energy source for electricity production in Slovenia is water, since there are more than 375 small hydro power plants. Hydro power plants (small and big) represent the highest share among RES and also for the future the highest potential in Slovenia. Beside renovation of old hydro power plants and construction of 5 new hydro power plants on river Sava, the main potential is indicated on the field of combined heat and power from biomass and construction of wind power plants. Due to very high potential of animal waste, a big emphasis will be also given on electrical energy production from animal waste.

The sun, as renewable energy source, represents a high potential for electrical energy production since at solar power plant there are neither influence into space nor visual disturbance of environment. Due to very high investment costs and small system efficiency, the electrical energy from those power plants is the most expensive and many times exceeds the price from other power plants on renewable sources. Because of that it is estimated that solar power plants will not influence essentially to the share of electricity produced from renewable energy sources in a short-term period.

2. Conditions of grid-access and related problems

The connection to the electrical grid in Slovenia is extremely complicated and therefore time consuming. The problem we have to face with is very high cost for grid connection, especially on some local levels. If we want to drive our own power plant on the field with poor infrastructure, then costs for grid connection can be very high (high connection costs including reinforce of local distribute network).

The Energy Law of 1999 stipulates advantages for qualified producers (QP, producers based on RES and CHP). Advantages differ by size and type of qualified producers facilities. Advantages to qualified producers in other regulations are based on the concept of priority dispatch. Network operators must take all electricity produced by qualified producers, whereby some qualified producers enjoy preferential feed-in prices. In the regulation on the status of qualified producers (of 2001), four classes by capacity are defined. Those four classes are:

- micro: till 36 kW of nominal electrical power,
- small: more than 36 kW – up to 1 MW of nominal electrical power,
- medium: more than 1 MW – up to 10 MW of nominal electrical power,
- large: more than 10 MW of nominal electrical power.

The Energy Law stipulates that qualified producers from a facility up to 1 MW can sell directly to any customer where only “minimal network charges” will apply. This clause has not been put in operation yet. However, the new decree adopted by the government defines a new purchased price and premium for electricity supply by qualified production of electricity from renewable energy resources (feed-in tariff).

For hydro power plants, by regulation of the government on feed-in prices 2002, no preferential price is defined for plants with capacity exceeding 10 MW. For other type of plants employing renewable energy sources, no upper capacity limit is given. Presently, a feed-in tariff is the main policy instrument for the support of electricity production from renewable energy sources.

The requested procedure for connection to the grid according to the recent regulatory framework of the government decrees and distribution utility guides is presented in the Figure 2.

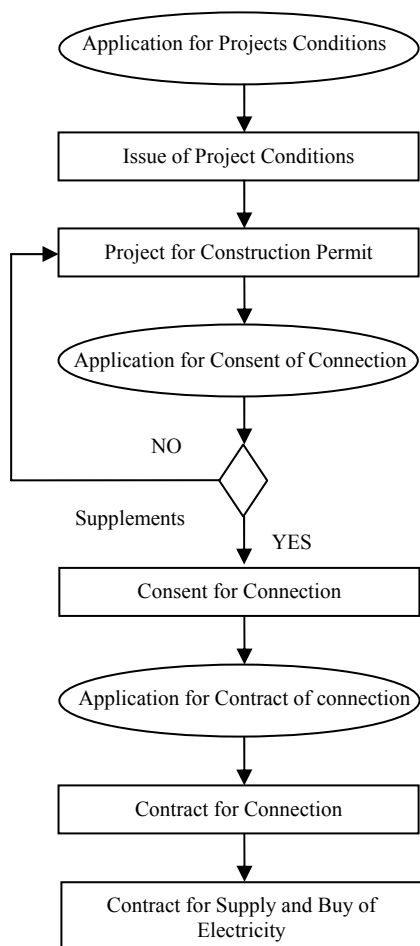


Figure 2: Procedure required for Connection to the grid.

In the inquiry, done in June 2005, representatives of different institutions were asked about conditions for connection to the grid and related problems. One of examinees answered that conditions is set-up by grid manager and that are technical nature. He also answered that there are no barriers respectively he do not know for them and that we should ask qualified producers.

One of examinees told that conditions are electro-energetic nature on the basis of which qualified power plant is built and connected to the grid. After successfully executed technical examination a permit for trial operation is issued and a Contract for Connection to the grid is issued. This contract should be in one way or other in the first place, which will probably happen in the future. As main barrier he sees a price which rises due to investments into public network for which investor is obliged if he wants to connect a new power plant to the grid.

One of examinees told that procedures for connection to the electrical grid in the case of PV plants are extremely complicated and time consuming. He affirms that the requirements for connection to the grid are not standardized and known to all involved actors. In this way the connection represents a serious barrier for potential investors of qualified power plants, especially for households.

But all of examinees are of the opinion that all costs are on investor side or side of electricity producers.

3. Streamlining of permission procedures and related problems

In Slovenia about 10 main steps are required to come from the idea to the contract for selling the electricity. The procedure involves a series of different actors. The procedures for permission of installation, connection to the grid and the right to sell the electricity should be substantially revised. They have to become very clear and transparent and easily available to the interested public. The government has to foresee that the investors should settle all what is required at only one institution. The best place would be the electrical distribution companies where the consumers are settling all what is required for the connection of their houses to the electrical grid. In the Table 1 all the main steps, needed for project realization are presented. For every step a responsible person is indicated.

Lengthy (and expensive for micro/small capacities plants) authorization procedures (permission) are considered as a major barrier for the development of RES-e electricity plants. This problem is mostly reflected when we are dealing with small-scale projects. So, at the moment there is a lack of clear legal framework, which will speed up procedure steps for very small plants. Government is now preparing new legislation, which will solve administrative problems connected with small-scale projects (simple authorization procedures).

Table 1: Ten steps from idea to the power plant operation.

Step	Activity	Responsibility
1	Decision for construction	<i>Responsible:</i> investor <i>Collaboration:</i> architect
2	Project conditions for connection to the electrical grid	<i>Applicant:</i> investor <i>Issued:</i> distribution company
3	Elaboration of the project design for connection to the grid	<i>Commission:</i> investor <i>Performed:</i> project designer
4	Consent for connection to the grid	<i>Applicant:</i> investor <i>Issued:</i> distribution company
5	Selection of the installer	<i>Commission:</i> investor <i>Collaboration:</i> project designer
6	Installation of the power plant	<i>Applicant:</i> investor <i>Performed:</i> installer
7	Contract for connection	<i>Applicant:</i> investor <i>Issued:</i> distribution company
8	Connection of the power plant to the grid	<i>Applicant:</i> investor <i>Performed:</i> installer + distribution company
9	Acquisition of the status “qualified electricity producer”	<i>Applicant:</i> investor <i>Issued:</i> Ministry of the economy
10	Contract for selling the electricity	<i>Applicant:</i> investor <i>Issued:</i> operator of distribution company

Additional barriers for small hydro power plants are “concessions for water use” which are needed. There is a lengthy, non-transparent procedure for obtaining concessions for water use and for a building permit. Several pre-authorization procedures are needed, so that the whole process can be excessively long. There are also some differences in the procedure for the concessions for water use depending on the stream or river.

On the question regarding the electrical grid access the examinees have mentioned an Energy Agency of the Republic of Slovenia as organization, which issues licenses for energy-related activity, a part of which is also electricity production from renewable energy sources.

One of examinees affirms that procedures needed for realization of the project of electricity production from RES are too complicated and that those procedures are very simplified in Germany. To get the status of qualified producers, all the renewable energy sources and the cogeneration power plants with high efficiency are eligible. The process for qualification is rather complicated and time consuming. At least for RES this process is not necessary. All the RES should become qualified producers per definition. Such qualification is required even for 1 kW_p PV power plant and is granted by the minister responsible for energy, which is complete nonsense. He affirms that Slovenian government does not fully understand the reasons why they are promoting the RES in general. The examinee also stated some unreasonable solutions in the regulatory documents for PV plants:

- *The support with higher fixed tariff has been foreseen only for small PV plants, up to 36 kW,*
- *The tariff for bigger PV units is unreasonably low,*

- The contract to sell the electricity is signed only for 10 years (the pay-back period even without depreciation is 12-15 years),
- The tariffs are reduced after 5 and additionally after 10 years of operation. The reason why is not known.

4. Guarantee of Origin

In Europe different systems for stimulating of electricity production from RES are used. The most frequently used are:

- Feed-in tariff system,
- Green certificates,
- Tenders and
- Tax incentives.

Green certificates are usually used as means for reaching the defined share of RES in electrical energy consumption. States are obligated to cover that share from RES (Directive 2001/77/EC). Those “state systems” are usually bounded with penalties, which have to be paid by distributors, suppliers, importers, consumers, etc. in the case if quota is not reached. Those systems are valid in countries, where feed-in tariff system is not used (as it is used in Slovenia).

Additional to “state systems”, which base on regulation of the “penalty stimulation”, also voluntary systems of the green certificates, where system functions in dependence on preparedness of consumer for paying more for green electricity, exist. Majority of Europe states know those systems, which function parallel to state systems. Those systems are also a RECS system as well as the following market names in Slovenia: Blue energy and Green energy.

Italia introduced the system of green certificate in the year 2002. Importers and producers of electrical energy are obligated to cover 2 % electrical energy feed-in grid from RES. Because this is the case also for importers (among others is Slovenia), Slovenia needs suitable evidence about green electricity. A consequence is inclusion of HSE (Holding Slovenian power plant) into RECS system (Renewable Energy Certificate System).

4.1 Estimation of suitability of individual stimulates for Slovenia:

- **Green certificates**

Because the share of the electrical energy produced by the qualified producers in Slovenia is small and it has not been increasing in the last 10 years the Green certificate system is not the most suitable system momentarily. When the share of the qualified electrical energy increases, this system will be more suitable because of the possibility of international trading.

Irrespective of the valid system of stimulation of the qualified producers, for development of qualified production is good if the system of the voluntary Green certificates is also enabled. The system of the voluntary Green certificates can be as an update or addition to all other systems of stimulation.

- **Feed-in tariff system:**

The Feed-in tariff system is the most suitable mode of stimulating of the qualified producers for Slovenia for now.

The share of the qualified producers in Slovenia is in comparison with EU relatively small and it is very noticeable that in the last few years there were not worth mention investments into qualified production of the electrical energy. For the initial stimulation of the new cycle of the investments into qualified production in Slovenia the feed-in tariff system is suitable, which show also German, Spanish and Danish cases. Those are countries of EU, which have valid the feed-in tariff system for the electrical energy from the qualified producers or power plants on renewable energy sources. In those three countries a lot of new qualified power plants were built in the last few years.

4.2 RECS system in Slovenia (evidence about origin of the electrical energy in Slovenia):

Member states have to establish a system of issuing of the evidences about origin of the electrical energy from RES for the following purposes (Directive 2001/77/EC):

- to relieve trading with the electrical energy from RES and
- to increase examination of customer's choice between the electrical energy from RES and other electrical energy.

The evidences about origin are issued on the demand and have to cover the electrical energy from all renewable energy sources, as it is stated in the Directive. Those evidences have to be clearly distinguished from the Green certificates and have to be interactive confessed from member states. The Evidences about origin have to contain the following information:

- source of energy from which the electrical energy was produced,
- date and place of the electricity production,
- a power of the producing plant – only in the case of production in hydro power plants.

RECS certificates must contain the following information:

- uniform number of certificate,
- data about publisher and time of issuing,
- data about the producing plant,
- technology of the electrical energy production,
- installed power of the producing plant,
- data about that if the produced electrical energy was participated in the framework of different support scheme.

The evidences about origin and the RECS:

- The evidences about origin are some sort of certificates.
- The evidences about origin serve to the same purpose as the RECS certificates.
- Requirements for the RECS acquisition are more expensive than basic requirements for the evidences about origin.

On the question about guarantee of origin of the electrical energy one of examinees has answered that in Slovenia there are two market names for the electrical energy from RES (Blue energy and Green energy). For Blue energy the evidence (not certificate) is issued by HSE (Holding Slovenian power plants). But their hydro power plants which produce the Blue

energy are certificated with the RECS certificate. Those certificates are issued by Energy Agency of the Republic of Slovenia. The Green energy is Ekowatt's market name and it is not certificated.

5. What are the main issues that need addressing to increase the amount of RES-e?

On the question "what are the main issues that need addressing to increase the amount of RES-e" one of examinees has answered that situation in the network should be clearer and uniform prices should be public announced.

One of examinees answered that the purpose of stimulating of qualified production is raising the interest for investments and to enlarge this special market. Current higher fixed tariffs for small PV plants should be high enough, to enable the investors a reasonable simple pay-back period, around 10 years (without depreciation and additional costs). Once the money is invested in the power plant, the investors should have an assured fixed real tariff for a longer period, for example 20 years. Such solution is provided in the law for RES in Germany. The examinee also affirms that as their normal obligation the distribution companies or their common associations have to define the standardized connection requirements and technical solutions for different power size capacities. Requirements and standardized connections have to be published and easily available to the interest actors. The examinee also states that the governmental support is available but at the same time not transparent and unnecessary complicated. The comparison with Germany gives us a clear signal that Slovenian approach should be substantially simplified. The requirements for connection to the grid represent a serious barrier for potential investors. Connection to the grid must be safe, simple and standardized.

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