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MINISTRY OF THE ECONOMY

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Report of the Republic of Slovenia to the European Commission pursuant to Article 10(1) of Directive 2004/8/EC regarding the establishing of appropriate mechanisms whereby Member States can ensure that guarantees of origin are both accurate and reliable, and an indication of measures adopted to ensure the reliability of the system of guarantees of origin.

Ljubljana, January 2008

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## **1 Introductory explanations to the report**

Article 5(1) of Directive 2004/8/EC provides that on the basis of the harmonised efficiency reference values for separate production of electricity and heat, Member States must, not later than six months after adoption of these values, ensure that the origin of electricity produced from high-efficiency cogeneration can be guaranteed.

Pursuant to this provision of the Directive, Member States must formulate criteria to determine whether electricity has been produced from high-efficiency cogeneration of heat and electricity and establish a system of issuing guarantees of origin based on objective, transparent and non-discriminatory criteria which each Member State will determine.

The criteria and system of issuing guarantees must serve as a basis for enabling producers to prove, through the guarantee of origin of electricity, that the electricity they sell is produced from high-efficiency cogeneration. Guarantees of origin must be issued at the request of producers by authorities that are independent of any production and distribution activity.

Harmonised efficiency reference values for separate production of electricity and heat were brought into force on 21 December 2006 through Commission Decision 2007/74/EC.

In addition to the obligations to establish criteria and a system for issuing guarantees of origin, pursuant to Article 10(1) of Directive 2004/8/EC Member States are bound to report to the Commission on the establishing of the aforementioned mechanisms and on the implementation of measures to ensure the reliability of operation of the system of guarantees of origin.

## **2 Guarantees of origin for electricity produced from high-efficiency cogeneration of heat and electricity**

The issuing of guarantees of origin and the functioning of the entire system in Slovenia are governed by two regulations that will be presented in greater detail below.

The method of issuing guarantees of origin for electricity produced from high-efficiency cogeneration of electricity and heat is provided by the Decree on the issuing of guarantees of origin of electricity, published in the Official Gazette of the Republic of Slovenia [*Uradni list Republike Slovenije*, hereinafter UL RS] No 121/2005 (30 December 2005), hereinafter referred to as Uredba PoI.

Determining when electricity is produced from high-efficiency cogeneration of electricity and heat and how much there is of such electricity is provided by the Decree on the conditions for obtaining the status of qualified producer of electricity, published in the UL RS, No 71/2007 (7 August 2007), hereinafter referred to as Uredba KPEE.

## **2.1 Decree on the issuing of guarantees of origin [Uredba PoI]**

The basis for this decree is Article 29a of the Energy Act (UL RS, No 26/05 – official consolidated text), which provides that for electricity generated from renewable sources of energy or in the cogeneration of heat and electricity, the electricity producer may request the issuing of a guarantee of origin. A guarantee of origin can also be requested, with the authorisation of the producer, by a trader, intermediary or agent on the electricity market.

Guarantees of origin represent proof that a specific quantity of electricity was generated in a specific generation facility in a specific period by the method stated in the guarantee of origin of electricity.

Guarantees of origin are generally issued in electronic form. By special request of the electricity producer, a guarantee of origin may also be issued in printed form.

The information pursuant to Uredba PoI that a guarantee of origin issued in Slovenia must contain is given in Appendix I to this report.

Guarantees of origin are issued for the basic unit, which is 1 kWh of electricity, retrospectively. The submission of requests for guarantees of origin of electricity is possible over a maximum period of three years. The validity of the actual guarantee of origin is five years from its issue.

Guarantees of origin are issued by the Energy Agency of the Republic of Slovenia, hereinafter the Agency<sup>1</sup>. The Agency is independent of any activity of producing electricity or of distributing electricity.

In order to support the system of issuing guarantees of origin the Agency has established a central database and register. The following data are kept in the register:

- a list of generation facilities that are qualified to obtain guarantees of origin or that have a valid 'declaration regarding a facility for

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<sup>1</sup> The Energy Agency of the Republic of Slovenia is the "regulator" of the market for electricity and natural gas in Slovenia.

the production of electricity'. The list of facilities is separated into facilities for generating electricity from renewable sources of energy and production facilities with high-efficiency cogeneration of electricity and heat.

- an overview of electricity generated in individual production facilities by month
- an overview of persons who have received and hold guarantees of origin, including information on the country in which the individual guarantee was issued
- an overview of all transfers of ownership
- a list of redeemed guarantees of origin
- a list of guarantees of origin that have been exported or imported.

Data in the database are updated on every 15<sup>th</sup> working day in the month for the previous month.

Each producer of electricity in Slovenia that is connected to the public electricity grid is bound once a month to report to the network system operator data on electricity generated. The period for reporting of data coincides with the period for reporting data for the requirements of accounting the electricity placed on the network. In cases where production facilities are equipped with meters for remote reading, these data are transferred automatically.

The network system operator is bound to enter the data on the production by each production facility in the database of guarantees of origin.

Requests for guarantees of origin are submitted to the Agency, usually in electronic form, by the owner or operator of the electricity production facility.

In addition to general data, requests for guarantees of origin must contain: the quantity of electricity for which the guarantee of origin is requested and the period in which the electricity for which the guarantee of origin is requested was generated.

In combined generation facilities (facilities using both renewable energy sources and fossil fuels) and in cogeneration the request must also contain data on the proportion of the entire production of electricity that qualifies for a guarantee of origin of electricity, data on the type and quantity of fuel consumed in the period to which the request relates and data on useful heat generated.

The Agency must issue the requested guarantee of origin within ten working days of receiving the request from the owner or operator of the facility. Information on the issued guarantee of origin is entered in the database of the list of issued guarantees of origin.

Prior to the issuing of a guarantee of origin, the owner or operator of the facility must submit to the Energy Agency a decision granting the status of qualified producer of electricity<sup>2</sup>. Based on the decision granting the status of qualified producer of electricity

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<sup>2</sup> Producers of electricity that generate electricity from renewable energy sources or in above-average efficiency cogeneration of electricity and heat may, according to Article 29 of the Energy Act, obtain the status of qualified producer of electricity. The conditions for obtaining such status are provided by the Uredba KPEE. For renewable energy sources the conditions for status are equated to those in Directive 2001/77/EC, and for cogeneration with the conditions in Directive 2004/8/EC.

the Energy Agency opens an account for the owner or operator of the electricity generation facility in the database and allocates an identification number to the generation facility.

All potential holders of guarantees of origin may hold an account in the database.

Guarantees of origin and accounts in the database are free of charge.

The holder of a guarantee of origin may redeem it for the purpose of proving consumption or supply of a specific quantity of electricity from renewable energy sources or from a cogeneration facility.

Following redemption, all redeemed guarantees of origin are transferred to the list of redeemed guarantees. Redemption is performed by the Energy Agency.

Guarantees of origin of electricity from other EU Member States and third countries issued in accordance with the provisions of Directives 2001/77/EC and 2004/8/EC are also valid in Slovenia.

As the issuer of guarantees of origin and administrator of the aforementioned registers, the Agency is a member of the Association of Issuing Bodies (AIB) and uses the prescribed Domain Protocol for electricity generated from renewable energy sources and from high-efficiency cogeneration.

The Agency has issued guarantees of origin for electricity generated from renewable energy sources since the entry into force of the decree (December 2005), while since August 2007, when the Uredba KPEE was adopted, it has also been able to issue guarantees of origin for electricity produced from high-efficiency cogeneration.

In 2007 the Agency issued guarantees of origin for 2,348,449,592 kWh of electricity, exclusively for electricity generated from renewable energy sources. Despite the fact that since August 2007 it has been possible to request and obtain guarantees of origin for electricity produced from high-efficiency cogeneration, as of the date this report was concluded, no such guarantees had yet been issued.

## **2.2 Decree on the conditions for obtaining the status of qualified producer of electricity [Uredba KPEE]**

The basis for the Uredba KPEE is Article 29 of the Energy Act<sup>3</sup>. This decree lays down the conditions for obtaining the status of qualified producer of electricity. Obtaining the status of qualified producer signifies at the same time confirmation that the conditions for obtaining a guarantee of origin have been met.

Guarantees of origin for electricity generated from renewable energy sources did not require any amendment or harmonisation of Slovenian regulations with Directive 2001/77/EC. Guarantees of origin for electricity produced from high-efficiency cogeneration, however, required the amending and harmonisation of the existing conditions for obtaining the status of qualified producer of electricity for cogeneration facilities with Directive 2004/8/EC and Decision 2007/74/EC.

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<sup>3</sup> Energy Act UPB2, UL RS No 27/2007.

In order to harmonise these conditions, on 7 August 2007 the Slovenian Government adopted a new Decree on the conditions for obtaining the status of qualified producer of electricity, published in the UL RS, No 71/2007, and this replaced entirely the decree of the same name of 2001.

#### Comparison of the old and new decrees

Here we present briefly the differences between the old and new KPEE decrees. The following differences exist between the old Decree on the conditions for obtaining the status of qualified producer of electricity (UL RS, Nos 29/01 and 99/01) and the new decree:

- Although the old decree was adopted in 2001, in that part relating to the conditions for the qualification of simultaneous production of heat and electricity it was based on the same principles as those of Directive 2004/8/EC (hereinafter the Directive) of 2004, specifically on the overall annual efficiency that must be achieved by cogeneration and on the savings of primary energy that simultaneous production of electricity and heat must achieve.

The general definitions of the above criteria in the decree were the same as in the Directive. The differences lay in the numerical values, for which reason a new decree had to be adopted.

- The old decree prescribed for all types of cogeneration a minimum overall cogeneration efficiency of 78%. Under the old decree the saving of primary energy achieved had to amount to at least 8%.

- The Directive and the new Uredba KPEE drafted after it separate up the minimum efficiency depending on the individual technological type of the power station. Thermal heat and power stations with back pressure turbines or gas turbines and simple cycle motors with heat recovery (only the most common types of energy technology used in heating stations and industry are mentioned) must achieve an overall efficiency of 75%, while combined cycle gas turbines with heat recovery and steam condensing extraction turbines must achieve an efficiency of 80%.

Both groups must achieve savings of primary energy of 10%. Only micro and mini-cogeneration does not need to achieve these values, and it is sufficient if they achieve at least a minimal saving.

Under the old decree, if a power station did not meet these conditions, it could not obtain the status of qualified producer and would not be able to obtain guarantees of origin.

The new decree, however, allows for the possibility of power stations that do not achieve the prescribed overall efficiency obtaining the status of qualified producer and obtaining guarantees of origin, by taking into account only that part of their operation when the power station is actually operating a high-efficiency cogeneration process. In this case the quantity of electricity that

fulfils the criteria for high-efficiency cogeneration is determined for such stations by a special calculation adopted by the new decree from the Directive.

- One major difference between the old decree and the Directive was the reference values used in the formula for calculating savings of primary energy. The old decree compared all technological types of cogeneration and all types of fuel in the generation of electricity with the reference efficiency of 55%. It took the highest possible efficiency of the combined cycle for generating electricity. Certain reductions applied just to power stations connected to the medium and low voltage grid and micro-stations.

Equally, on the heat generation side a relatively high reference efficiency was taken, 100% for natural gas power stations and 90% for other energy sources.

- On the basis of the Directive the new decree provides that in the equation for calculating primary energy savings, harmonised reference values are to be used. These values take into account the type of power station, the fuel, age of power station and average temperature in the country as well as the voltage level at which the power station is connected. Moreover the electricity generated is taken at the generator connectors and not, as in the old decree, at the power station gate.

- Comparisons of reference data for the calculations indicate that in the conditions for obtaining the status of qualified producer, which are at the same time the conditions for obtaining guarantees of origin for high-efficiency cogeneration, despite the required lower primary energy savings, Slovenian cogeneration facilities were governed by significantly more rigorous conditions for qualification and for guarantees of origin.

#### Review of the provisions of the Uredba KPEE linked to guarantees of origin

The definitions from the Directive, especially efficiency and overall efficiency, primary energy savings, useful heat and the power to heat ratio correspond fully to the definitions in the Directive.<sup>1</sup>

The decree provides that the reference efficiency values for separate production of heat and electricity that is due to be replaced by cogeneration are governed by the values and other conditions from Commission Decision 2007/74/EC establishing harmonised efficiency reference values for separate production of electricity and heat in application of Directive 2004/8/EC, OJ L 32 /2007.

The decree incorporates all the cogeneration energy technologies listed in Annex I of the Directive. The same electrical power as in the Directive is used to differentiate micro and small cogeneration (less than 50 kW and less than 1 MW).

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<sup>1</sup>

**Translator's note:** This is a faithful rendering of what appears to be an error in the original Slovenian.



Equally, the quantity of electricity from high-efficiency cogeneration is calculated according to the methodology that is identical to the methodology provided by Annex II of the Directive.

If cogeneration based on individual energy technologies does not achieve overall efficiencies of 80% or 75% respectively, the annual quantity of electricity generated through high-efficiency cogeneration is determined by the following equation:

$$ESPTE = HSPTE \cdot C$$

Where:

ESPTE is the annual quantity of electricity produced through high-efficiency cogeneration

HSPTE is the annual quantity of usefully used heat produced through cogeneration

C is the power to heat ratio

The annual quantity of usefully used heat produced through cogeneration is the overall heat generation, from which is deducted useful heat if it was produced in separate boiler facilities and/or useful heat produced from steam prior to its entry into the steam turbine and unused waste heat.

The ratio between electricity produced from cogeneration and useful heat is determined where the facility is operating in pure cogeneration, or where the process does not involve any emission of heat that could otherwise be used as useful heat into the environment.

In its regulations Slovenia has adopted the position that the power to heat ratio must be based on actual measured data on electricity and heat. The decree does not envisage the permitted default power to heat ratio “C” also being used. If the actual power to heat ratio cannot be measured, use may be made of the values in the technical documentation according to which the facility obtained an operating licence.

Fuel consumption for the production of the remaining electricity not generated with high efficiency is determined as the remaining electricity divided by the efficiency of the unit in the condensation regime of operation (electrical efficiency of the unit in producing electricity without useful heat use). If this efficiency is not known, the efficiency reference value for separate production of electricity is used (Commission Decision 2007/74/EC).

Power stations with cogeneration, where generated electricity is determined in the aforementioned way, are classed as high-efficiency cogeneration if the cogeneration achieves a primary energy saving (PES) of at least 10%. Micro and small power stations with cogeneration are classed as high-efficiency cogeneration if the generation achieves a primary energy saving (PES) greater than 0%.

Power stations with electricity cogeneration that do not achieve the prescribed overall efficiency and whose quantity of electricity generated with high efficiency is

determined by using the power to heat ratio must, for the period when they are producing electricity from high-efficiency cogeneration, achieve a primary energy saving of 10%, and in the overall period such power stations must achieve a primary energy saving greater than 0%.

The Uredba KPEE does not envisage “other methods of calculation” pursuant to Article 12 of the Directive, which with the prior approval of the Commission Member States may use up until the end of 2010.

Notwithstanding the fact that the announced Guidelines for implementing Directive 2004/8/EC (Annexes II and III) have not yet been adopted and published, on the basis of working versions of the Guidelines and instructions presented at the cogeneration committee (CHP Committee), Slovenia has drawn up a provisional “Manual with procedures for determining electricity produced from high-efficiency cogeneration” (address below), which should make it easier for those applying for the status of qualified producer and for guarantees of origin to complete their applications.

[http://www.mg.gov.si/fileadmin/mg.gov.si/pageuploads/Energetika/Porocila/Prirocnik SPTE.pdf](http://www.mg.gov.si/fileadmin/mg.gov.si/pageuploads/Energetika/Porocila/Prirocnik_SPTE.pdf)

### **3.0 ENVISAGED CHANGES IN THE AREA OF REGULATIONS COVERING COGENERATION OF ELECTRICITY AND HEAT**

In recent years the European Commission investigated - in Case C7/05 - whether the Slovenian scheme of support for qualified producers of electricity constituted inadmissible state aid. The Commission's position is that Slovenia's encouragement of certain categories of producer, because of their organisation and ownership on the electricity market, constitutes a form of state aid. Despite the fact that this involves a permitted form of state aid, Slovenia decided to harmonise its scheme of support for qualified producers, and will have to implement the scheme in line with the rules and guidelines in this area.

Amendments are currently being drafted to the Energy Act, primarily regarding the provisions relating to what are termed “qualified producers of electricity”. In the proposed amendments the definitions of renewable energy sources will not be changed, since they already comply with Directive 2001/77/EC.

Major changes are in the area of cogeneration of heat and power. Given that keeping the expression “qualified producer of electricity” would introduce a duplication into expressions such as high-efficiency cogeneration of electricity and heat that are precisely defined by the Directive, the expression “qualified producer” has been left out in the proposed amendments to the act.

#### **Guarantees of origin**

Guarantees of origin have gained enormously in importance through the proposed amendments to the Energy Act. They have become the proof that electricity has been generated from renewable sources or from high-efficiency cogeneration. Only electricity for which the producer has obtained a guarantee of origin is eligible for

special status in the electricity sector and on the electricity market. In order to obtain any kind of support, however, in addition to the guarantee of origin, power stations must fulfil other conditions required by the guidelines and rules for providing state aid.

With the decree the Slovenian Government will provide a new system governing the issuing and content of guarantees of origin, and will establish appropriate mechanisms to ensure that guarantees of origin will be accurate and reliable. Like the existing one, the decree will be harmonised with the Commission recommendations for issuing guarantees of origin on the European Union level and will in essence be harmonised with the amendments to the Energy Act.

The core changes will relate to support for production facilities with high-efficiency cogeneration of electricity and heat (and of course the generation of electricity from renewable energy sources).

## **APPENDIX I**

### Data in the guarantee of origin of electricity

Guarantees of origin of electricity from renewable sources contain the following data:

- type of guarantee of origin;
- name and address of owner/operator of the production facility;
- source of energy from which the electricity was generated;
- the starting and closing date of electricity production for which the guarantee is issued;
- name of the production facility at which the electricity for which the guarantee of origin is issued was generated;
- threshold capacity of the production facility;
- quantity of generated electricity for which the guarantee of origin is issued;
- name of issuer of the guarantee of origin;
- identification number of the guarantee;
- validity of the guarantee of origin.

In the case of combined power stations the guarantee must additionally contain:

- the quantity of fossil fuel used at the power station during the period for which the guarantee is issued;
- the quantity of fuel from renewable sources used at the power station during the period for which the guarantee is issued.

Guarantees of origin of electricity from efficient cogeneration facilities contain the following data:

- name and address of owner/operator of the production facility;
- source of energy from which the electricity was generated;
- the starting and closing date of electricity production for which the guarantee is issued;
- name of the production facility at which the electricity for which the guarantee of origin is issued was generated;
- threshold capacity of the production facility;
- quantity of generated electricity for which the guarantee of origin is issued;
- lower calorific value of the fuel from which the electricity was generated;

- purpose of use for the heat produced together with the electricity;
- primary energy savings in the generation of electricity for which the guarantee of origin is issued;
- name of issuer of the guarantee of origin;
- identification number of the guarantee;
- validity of the guarantee of origin.