

**Report submitted to the European Commission in accordance with Article 6(3) and Article 10(2) of Directive 2004/8/EC of the European Parliament and of the Council on the promotion of cogeneration based on a useful heat demand in the internal market, drafted following the template provided by the Commission**

**1. Transposition into national legislation / implementation of the legal text of Directive 2004/8/EC**

**Q1. What is the level of transposition of the Directive in your country? What is the timeline for the remaining parts of the transposition, if any?**

Cypriot law has been harmonised with the legislative text of Directive 2004/8/EC through the implementation of Act No 174(I)/2006 (2006 Act on Promoting Cogeneration of Electricity and Heat). The Act entered into force on 29 December 2006.

**Q2. What is the timeline for implementing measures based on the Commission Decision of 19 November 2008 establishing detailed guidelines? Please indicate how this has taken place (revision, regulatory legislation, etc.)**

To implement the legislation on Promoting Cogeneration of Electricity and Heat No 174(I)/2006 (Act), the Ministry of Commerce, Industry and Tourism prepared the 2011 (Amending) Act and the 2011 Regulations on Cogeneration of Electricity and Heat (Publication process, Management and Safeguarding Mechanism of Guarantees of Origin of the Electricity Supply)'.

2011 (Amending) Act on Promoting Cogeneration of Electricity and Heat (**Annex I**) sets provisions regarding the withdrawal, amendment or annulment of guarantees of origin and the imposition of administrative fines by the Cyprus Energy Regulatory Authority (CERA). The draft legislation also provides for issuing Regulations on setting the type and content of the guarantee of origin, the functioning of the electronic register, setting registration fees, the procedure for amendment, withdrawal, transfer or issuing guarantees of origin and the procedure for certifying installation.

The 2011 Regulations on Cogeneration of Electricity and Heat (Publication process, Management and Safeguarding Mechanism of Guarantees of Origin of Electricity Supply) (**Annex II**) establish the implementing rules for the system for issuing guarantees of origin and the system for safeguarding the reliability of the system.

We expect a Decree to be issued in the coming month on setting the calculation methodology for electricity.

**Q3. To what extent do you consider your country to have already significantly implemented the Directive?**

The Directive has been implemented to a great extent, taking into account the size and capacity of a small country such as Cyprus. Although the Directive has been almost completely implemented, there are significant barriers to the development of CHP units in Cyprus.

**Q4. Is your country using the alternative calculation method according to Article 12(2)?**

The calculation method used is in accordance with Article 12(2) of the Directive. The calculation for primary energy savings (PES) is done in accordance with the methodology set out in Annex III.

Cyprus does not have cogeneration units bigger than 25MW and as such the methodology in Annex II for calculating electricity from cogeneration is not used.

**Q5. Is there any need for your country to review the threshold values used for calculation of electricity from cogeneration and/or the threshold values used for calculation of efficiency of cogeneration production and primary energy savings in accordance with Article 13?**

In the current situation, no review or reassessment of threshold values as set is deemed useful.

**2. National potential to increase the share of high-efficiency cogeneration****Q6. Can your country already show progress in high-efficiency cogeneration since the last report on national potential which can be ascribed to either EU or national legislation and support schemes?**

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**Q7. What is your evaluation of the progress towards increasing the share of high-efficiency cogeneration in your country? Your assessment should be based on the specific figures to be included in the attached spreadsheet (Excel file) designed to facilitate the submission of your data.**

Based on the data so far and recent calculations, there has not been a significant increase in high-efficiency cogeneration since the last report on national potential. Here are the calculations for 2010:

2010	Electricity	Capacity	[GW]	0.01458
		Output	[TWh]	0.04568
	Heat	Capacity	[GW]	0.03020
		Output	[TWh]	0.02967
	Fuel	Input	[PJ]	0.41797

The biggest high-efficiency cogeneration sector is industry (75%) and the rest is from biomass units (biofuel) for electricity production.

Cyprus also has low-efficiency cogeneration units. Here are the calculations for 2010:

2010	Electricity	Capacity	[GW]	0.00665
		Output	[TWh]	0.00805

	Heat	Capacity	[GW]	0.00653
		Output	[TWh]	0.00952
	Fuel	Input	[PJ]	0.21760

The principal low-efficiency cogeneration sector is industry (50%) and the rest is from biomass units for electricity production.

Please note that the calculations have been made by the Energy Department of the Ministry of Commerce, Industry and Tourism in accordance with the methodology and provisions of the Directive on cogeneration. The calculations were done based on data received by the owners of the units (producers). In many cases the data on useful heat are not based on real readings but on cogeneration calculations and/or estimations. A detailed breakdown with the calculations can be found on the spreadsheet which accompanies this report, which was completed in accordance with the Commission's instructions (**attached – Annex I**).

The small progress that has been made is mainly thanks to national support schemes (funding schemes) to promote cogeneration and specifically biomass/biofuel units (autoproducers).

### 3. Barriers to high-efficiency cogeneration

#### Q8.

In Cyprus there are no noteworthy barriers relating to administrative procedures or barriers relating to the electricity grid and pricing issues. More details are referred to in the report Cyprus sent to the Commission in accordance with Article 9 (**attached – Annex 2**) and the website of the Cyprus Energy Regulatory Authority ([www.cera.org.cy](http://www.cera.org.cy)).

In summary, other significant barriers to the development of cogeneration in Cyprus are as follows:

- **Fuel prices:** Given the absence to date of natural gas from Cyprus' energy system, an important issue regarding the promotion of CHP in Cyprus is the price of fuel used in these units. The absence of natural gas results in high CHP fuel prices. High fuel prices result in micro cogeneration systems not being financially viable and especially so in the tertiary sector. In addition, uncertainty about future fuel prices is a deterrent to investing in CHP.

- **Weather conditions/Need for cooling and heat loads:** Due to Cyprus's warm climate, in order for a CHP system to be viable, the system needs to work for the least time possible. If the CHP unit is restricted to covering heating needs and the system does not work during the summer months, then the investment is not economically viable. As such, in order for the cogeneration systems to be economically viable they must function for both heating and cooling, which will significantly increase the initial investment cost (not an attractive investment if there is no capital funding). Given that summer in Cyprus lasts much longer than the winter period, it is obvious that in the tertiary and domestic sector there are greater needs for cooling loads rather than heat loads.

- Heating and air conditioning needs are covered either through CHP technology or through other competitive alternative, cheaper, more efficient and low or zero-emission technologies

which contribute positively to energy saving (such as solar power and cooling, geothermal pump for heating and cooling, energy-efficient air conditioning systems, etc.).

- The investment risk inherent in choosing CHP is a significant barrier. It is due to the high financial demands for CHP investments when compared to other more competitive technologies (mostly technologies exploiting solar power), as mentioned above.

- There is a lack of information, training, experience, and technical knowledge on the part of professionals/engineers/investors with regard to CHP/ tertiary systems. Potential investors are not yet convinced by this type of technology.

- There is a lack of national financial sources to provide more attractive incentives for investors. The cogeneration systems, and in particular the micro units, are not financially viable without contribution to the initial cost.

- In Cyprus there are no district heating networks. The study 'Appraisal of the National Cogeneration Potential in Cyprus' found that the promotion of cogeneration in Cyprus should not be based on developing district heating networks, but on developing district cogeneration systems in the tertiary sector (hotels, hospitals, office buildings etc.) and for industry (foods and drinks, non-metallic minerals, biogas etc.). It also says that cogeneration investments are not attractive or financially viable for households.

- Finally, please note that the problem of the absence of natural gas in the energy system (and consequently the high cost of fuel), the high cost of the initial investment to also cover cooling loads, in combination with the competitiveness of other alternative technologies, and in particular those which use renewable sources of energy, are barriers which are very difficult to overcome.

#### **4. Guarantees of origin and support systems**

**Q9. Article 5 of the Directive requires Member States to ensure that accurate and reliable guarantees of origin are issued according to objective, transparent and non-discriminatory criteria. Please indicate what the situation is concerning the implementation of this measure in your country (information on primary energy savings, type of registration system)?**

In order to comply with Article 5 of Directive 2004/08/EC and Directive 2001/77/EC on renewable energy sources, and based on Act No 174(I)/2006 and Act No 162(I)/2006 on the promotion of CHP facilities and renewable energy sources, an electronic register has been created and is up and running, through which Guarantees of Production Origin from CHP and REN will be issued, transferred and cancelled. This sector has regulations, laws, technical manuals and other information regarding the electronic register. The electronic registration system for guarantees of origin is handled by the Transmission System Operator (TSO).

The electronic register offers the possibility of searching for data on the guarantees of origin, by producing related reports depending on the choices available to the user for this purpose. This function of the electronic register is available on the TSO website and user authorisation is not required to access the site.

The home page allows authorised users to connect (once they have registered), new users to register and allows access to public reports. The last option is not restricted to authorised users but is available to the general public. The rest of the functions of the Register are

exclusively for authorised users only and require registration. Data entry is done via an electronic document 'Application to register on the high-efficient CHP register'. Companies and facilities are stored on the register following an application, provided it is accepted by the TSO. Users from other European Union Member State registers can also join the register.

More information on how the system for issuing guarantees of origin works can be found in the report that Cyprus has already submitted to the Commission in accordance with Article 10(1) and 5(3) (**attached – Annex 3**) and on the Transmission System Operator website ([www.tso.org.cy](http://www.tso.org.cy)).

**Q10. Does your country have support schemes for cogeneration/CHP based on Directive 2004/8/EC (operational and/or investment aid)? What kind of support is provided (feed-in tariffs, certificates and quota, priority access to the grid...)? Are they designed to provide stable long-term investment conditions? Which sectors will be targeted (agriculture and/or industrial and/or heating cogeneration)?**

In Cyprus there are currently support schemes to promote CHP. There are two different support schemes: one for the high-efficiency cogeneration investments and one for promotion of cogeneration using biomass (biogas). One scheme is for 'Legal persons and bodies in the public sector engaged in an economic activity' and the other scheme is for 'Natural persons and organisations that are not engaged in an economic activity (non-profit making)'.

The scheme for 'Natural persons and organisations not engaged in an economic activity' is designed for non-profit organisations, local councils, municipalities, churches monasteries, unions and public authorities, CHP units and high-efficiency and cogeneration units from renewable energy sources of up to 1MW. The scheme offers a two-fold benefit to the investor. There is a grant of 30% of the eligible initial cost (with an upper limit of EUR 160 000 per investment) and in addition there is a feed-in tariff for the electricity produced and supplied to the EAC network. Please note that, in accordance with CERA Decision of 23 November 2010, the assessment of the market price for electricity produced by electricity cogeneration and high-efficiency useful heat, or through cogeneration through renewable energy sources, is the same as the market price for electricity produced by renewable energy sources and which is based on the EAC's emission prevention cost. The EAC is obliged to buy electricity produced by combined electricity and high-efficiency useful heat, or through cogeneration from renewable energy sources at the current emission prevention price, as set by CERA at that time.

The scheme for 'Legal persons and bodies in the public sector engaged in an economic activity' relates to CHP and high-efficiency and cogeneration from renewable energy sources. It covers only the funding of the electricity produced by the EAC at the price set by CERA.

Also, the support scheme to encourage electricity production from large commercial wind, solar and photovoltaic systems and using biomass provides that the minimum sale price of electricity produced from biomass and supplied to the distribution/transfer electricity grid will be EUR 0.1179/KWh for the first 20 years that the system exists. The subsidy issued by the Special Fund for Renewable Energy Sources will come from the difference between the total sale price and the market price of the electricity produced from renewable energy sources by the EAC, as set by CERA. Please note that should the EAC KWh market price exceed the total sale price, then EAC will deposit the additional sum into the Special Fund for Renewable Energy Sources and Energy Conservation. The minimum sale price given above will be

increased with a premium of 1.71 cents per KWh of electricity in cases where the electricity is produced by electricity cogeneration units for heat and/or cooling.

Further details on the above grant schemes can be found on Cyprus Institute of Energy website ([www.cie.org.cy](http://www.cie.org.cy)).

**Q11. How much money on a yearly basis has been provided in this way in the past years to the promotion of high-efficiency cogeneration in particular? And how much money is expected to be made available on a yearly basis to the promotion of high-efficiency cogeneration in the coming year?**

In 2008 EUR 103 609 was made available and in 2009 EUR 436 906 via the grant scheme Development of Biomass/Combined heat and power. No sum was made available in 2010.

In 2011 provisions were made for EUR 50 000 out of the budget of the Special Fund for Energy Conservation and Utilisation of Renewable Energy Sources for 'Legal Persons in the public sector engaged in an economic activity'.

Please note that recent data on the development of cogeneration in Cyprus and the implementation of Directive 2004/8/EC were sent to the Commission on 5 October 2011, in the form of answers to the questionnaire prepared by the Commission for the Committee meeting on CHP which took place in Brussels on 7 October 2011 (**attached – Annex 4**).