

L.N. 2 of 2007

**MALTA RESOURCES AUTHORITY ACT
(CAP. 423)**

Cogeneration Regulations, 2007

BY virtue of the powers conferred by article 28 of the Malta Resources Authority Act, the Minister for Resources and Infrastructure, after consultation with the Malta Resources Authority, has made the following regulations:-

1. (1) The title of these regulations is the Cogeneration Regulations, 2007. Title and date of commencement.

(2) These regulations shall come into force on 19th January, 2007.

2. These regulations give effect to Directive 2004/8/EC of the European Parliament and of the Council of 11 February 2004 on the promotion of cogeneration based on a useful heat demand in the internal energy market and amending Directive 94/42/EEC. Object.

3. These Regulations shall apply to cogeneration as defined in regulation 4 of these regulations and cogeneration technologies as listed in the First Schedule to these regulations. Scope.

4. (1) In these regulations unless the context otherwise requires - Interpretation.

“the Act” means the Malta Resources Authority Act; Cap. 423.

“the Authority” means the Malta Resources Authority;

“back-up electricity” means the electricity supplied through the electricity grid whenever the cogeneration process is disrupted, including maintenance periods, or is out of order;

“cogeneration” means the simultaneous generation in one process of thermal energy and electrical and/or mechanical energy;

“cogeneration production” means the sum of electricity and mechanical energy and useful heat from cogeneration;

“cogeneration unit” means a unit that can operate in cogeneration mode;

“Commission” means the Commission of the Community;

“the Community” means the European Community;

“the Directive” means the Directive 2004/8/EC of the European Parliament and of the Council of 11 February 2004 on the promotion of cogeneration based on a useful heat demand in the internal energy market and amending Directive 94/42/EEC;

“economically justifiable demand” means the demand that does not exceed the needs for heat or cooling and which would otherwise be satisfied at market conditions by energy generation processes other than cogeneration;

“efficiency” means efficiency calculated on the basis of “net calorific values” of fuels (also referred to as “lower calorific values”);

“efficiency reference value for separate production” means efficiency of the alternative separate productions of heat and electricity that the cogeneration process is intended to substitute;

“electricity from cogeneration” means electricity generated in a process linked to the production of useful heat and calculated in accordance with the methodology laid down in the Second Schedule to these regulations;

“high efficiency cogeneration” means cogeneration meeting the criteria of the Third Schedule to these regulations;

“Member State” means a Member State of the Community;

“micro-cogeneration unit” means a cogeneration unit with a maximum capacity below 50 kW_e;

“the Minister” means the Minister responsible for resources;

“overall efficiency” means the annual sum of electricity and mechanical energy production and useful heat output divided by the fuel input used for heat produced in a cogeneration process and gross electricity and mechanical energy production;

“power to heat ratio” means the ratio between electricity from cogeneration and useful heat when operating in full cogeneration mode using operational data of the specific unit;

“small scale cogeneration” means cogeneration units with an installed capacity below 1 MW_e;

“top-up electricity” means the electricity supplied through the electricity grid in cases where the electricity demand is greater than the electrical output of the cogeneration process; and

“useful heat” means heat produced in a cogeneration process to satisfy an economically justifiable demand for heat or cooling.

(2) In addition, the relevant definitions in the Electricity Regulations, 2004, and in the Promotion of Electricity produced from Renewable Energy Sources Regulations, 2004, shall also apply to these regulations. L.N. 511 of 2004.
L.N. 186 of 2004.

5. (1) On the basis of the harmonised efficiency reference values established by the Commission in accordance with the Directive, the Authority shall, within six months after the adoption of these values, ensure that the origin of electricity produced from high efficiency cogeneration is guaranteed according to objective, transparent and non-discriminatory criteria: Guarantee of origin of electricity from high-efficiency cogeneration.

Provided that in so doing the Authority shall ensure that this guarantee of origin of electricity enables producers to demonstrate that the electricity such producers sell is produced from high efficiency cogeneration and is issued to this effect in response to a request from the producer.

(2) The Authority shall have in place mechanisms that ensure that the guarantee of origin is both accurate and reliable.

(3) Schemes for the guarantee of origin do not by themselves imply a right to benefit from the national support mechanisms.

(4) Apart from any such additional information that the Authority may decide to include, a guarantee of origin shall:

(a) specify the lower calorific value of the fuel source from which the electricity was produced, the use of the heat generated together with the electricity and, finally, the dates and places of production,

(b) specify the quantity of electricity from high efficiency cogeneration in accordance with the Second Schedule to these regulations that the guarantee represents,

(c) specify the primary energy savings calculated in accordance with the Third Schedule to these regulations based on harmonised efficiency reference values established by the Authority as referred to in sub-regulation (1) of this regulation.

(5) Guarantees of origin issued in other Member States according to Article 5 (1) of the Directive, shall be recognised by the Authority, exclusively as proof of the elements referred in sub-regulation (4) of this regulation:

Provided that any refusal to recognise a guarantee of origin as such proof, in particular for reasons relating to the prevention of fraud, shall be based on objective, transparent and non-discriminatory criteria:

Provided further that, where the Authority refuses to recognise a guarantee of origin issued in another Member State, it shall recognise that guarantee of origin where the Commission requires such recognition under Article 5(6) of the Directive.

Potentials for high-efficiency cogeneration.

6. (1) The Authority shall establish an analysis of the national potential for the application of high-efficiency cogeneration, including high-efficiency micro-cogeneration.

(2) The analysis shall:

(a) be based on well-documented scientific data and comply with the criteria listed in Fourth Schedule to these regulations;

(b) identify all potential for useful heating and cooling demands, suitable for application of high-efficiency cogeneration, as well as the availability of fuels and other energy resources to be utilised in cogeneration;

(c) include a separate analysis of barriers, which may prevent the realisation of the national potential for high-efficiency cogeneration. In particular, this analysis shall consider barriers relating to the prices and costs of and access to fuels, barriers in relation to grid system issues, barriers in relation to administrative procedures, and barriers relating to the lack of internalisation of the external costs in energy prices.

(3) The Authority shall for the first time not later than 21 January 2007 and thereafter every four years, evaluate progress towards increasing the share of high-efficiency cogeneration.

7. (1) The Authority may promote the use of cogeneration through the implementation of such measures as it may consider expedient and which are not contrary to the provisions of the Act or of these regulations. Support Schemes.

(2) The Authority shall ensure that support for cogeneration is based on the useful heat demand and primary energy savings, in the light of opportunities available for reducing energy demand through other economically feasible or environmental advantageous measures like other energy efficiency measures.

8. (1) For the purpose of ensuring the transmission and distribution of electricity produced from high-efficiency cogeneration the provisions of regulation 7 of the Promotion of Electricity produced from Renewable Energy Sources Regulations, 2004, and relevant provisions of the Electricity Regulations, 2004, shall apply. Electricity grid system and tariff issues.
L.N. 186 of 2004.
L.N. 511 of 2004.

(2) The Authority shall take the necessary measures to ensure that the tariffs for the purchase of electricity to back-up or top-up electricity generation are set on the basis of published tariffs and terms and conditions.

(3) The Authority, subject to the Minister's approval, may facilitate access to the grid system of electricity produced from high-efficiency cogeneration from small scale and micro cogeneration units.

9. (1) The Authority shall evaluate the existing legislative and regulatory framework with regard to authorisation procedures or the other procedures laid down in regulation 12 of the Electricity Regulations, 2004, which are applicable to high-efficiency cogeneration units. Such evaluation shall be made with a view to: Administrative procedures.

(a) encouraging the design of cogeneration units to match economically justifiable demands for useful heat output and avoiding production of more heat than useful heat;

(b) reducing the regulatory and non-regulatory barriers to an increase in cogeneration;

(c) streamlining and expediting procedures at the appropriate administrative level; and

(d) ensuring that the rules are objective, transparent and non-discriminatory, and take full account of the particularities of the various cogeneration technologies.

(2) The Authority shall provide an indication of the stage reached specifically in:

(a) coordination between the different administrative bodies as regards deadlines, reception and treatment of applications for authorisations;

(b) the drawing up of possible guidelines for the activities referred to in subregulation 1 of this regulation, and the feasibility of a fast-track planning procedure for cogeneration producers; and

(c) the designation of authorities to act as mediators in disputes between authorities responsible for issuing authorisations and applicants for authorisations.

(3) In carrying out its functions under this regulation, the Authority shall cooperate with other national regulatory authorities in other Member States and with the Commission.

Reporting.

10. (1) The Authority shall not later than 21st February, 2007, and, thereafter, every four years, submit to the Minister a report with the result of the evaluation referred to in sub-regulation (3) of regulation 6.

(2) The Authority shall submit to the Minister, on an annual basis, statistics on national electricity and heat production from cogeneration, in accordance with the methodology shown in the Second Schedule to these regulations:

Provided that the Authority shall also submit annual statistics on cogeneration capacities and fuels used for cogeneration:

Provided further that the Authority may also submit statistics on primary energy savings achieved by application of cogeneration, in accordance with the methodology shown in the Third Schedule to these regulations.

Alternative calculations.

11. (1) Until the end of 2010 and subject to prior approval by the Minister, the Authority may use methods other than the one provided for in paragraph (b) of the Second Schedule to these regulations to subtract possible electricity production not produced in a cogeneration process from the reported figures:

Provided that, for the purposes referred to in sub-regulation (1) of regulation 5 and sub-regulation (2) of regulation 10 of these regulations, the quantity of electricity from cogeneration shall be determined in accordance with the Second Schedule to these regulations.

(2) The Authority may calculate primary energy savings from a production of heat and electricity and mechanical energy according to paragraph (c) of the Third Schedule to these regulations without using the Second Schedule to these regulations to exclude the non-cogenerated heat and electricity parts of the same process:

Provided that such a production can be regarded as high-efficiency cogeneration if it fulfils the efficiency criteria in paragraph (a) of the Third Schedule to these regulations and, for cogeneration units with an electrical capacity larger than 25 MW, the overall efficiency is above 70%:

Provided further that specification of the quantity of electricity from cogeneration produced in such a production, for issuing a guarantee of origin and for statistical purposes, shall be determined in accordance with the Second Schedule to these regulations.

(3) Until the end of 2010, the Authority may, using an alternative methodology, define a cogeneration as high-efficiency cogeneration without verifying that the cogeneration production fulfils the criteria in paragraph (a) of the Third Schedule to these regulations if it is proved that the cogeneration production identified by such an alternative calculation methodology on average fulfils the criteria in paragraph (a) of the Third Schedule to these regulations:

Provided that, if a guarantee of origin is issued for such production, then the efficiency of the cogeneration production specified on the guarantee shall not exceed the threshold values of the criteria in paragraph (a) of the Third Schedule to these regulations unless calculations in accordance with the Third Schedule to these regulations prove otherwise:

Provided further that specification of the quantity of electricity from cogeneration produced in such a production, for issuing a guarantee of origin and for statistical purposes, shall be determined in accordance with the Second Schedule to these regulations.

FIRST SCHEDULE

Regulation 3

Cogeneration technologies covered by these regulations

- (a) Combined cycle gas turbine with heat recovery
- (b) Steam backpressure turbine
- (c) Steam condensing extraction turbine
- (d) Gas turbine with heat recovery
- (e) Internal combustion engine
- (f) Microturbines
- (g) Stirling engines
- (h) Fuel cells
- (i) Steam engines
- (j) Organic Rankine cycles
- (k) Any other type of technology or combination thereof falling under the definition laid down in sub-regulation (1) of regulation 4 of these regulations.

SECOND SCHEDULE

Regulations 4(1), 5(4), 10(2), 11(1) and (3), 12(1) and (3)

Calculation of electricity from cogeneration

Values used for calculation of electricity from cogeneration shall be determined on the basis of the expected or actual operation of the unit under normal conditions of use. For micro-cogeneration units the calculation may be based on certified values.

(a) Electricity production from cogeneration shall be considered equal to total annual electricity production of the unit measured at the outlet of the main generators:

(i) in cogeneration units of type (b), (d), (e), (f), (g) and (h) referred to in the First Schedule to these regulations, with an annual overall efficiency of at least 75%; and

(ii) in cogeneration units of type (a) and (c) referred to in the First Schedule to these regulations with an annual overall efficiency set by the Authority at a level of at least 80%.

(b) In cogeneration units with an annual overall efficiency below the value referred to in paragraph (a)(i) (cogeneration units of type (b), (d), (e), (f), (g), and (h) referred to in the First Schedule to these regulations) or with an annual overall efficiency below the value referred to in paragraph (a)(ii) (cogeneration units of type (a) and (c) referred to in the First Schedule to these regulations) cogeneration is calculated according to the following formula:

$$E_{\text{CHP}} = H_{\text{CHP}} \cdot C$$

where:

“ E_{CHP} ” is the amount of electricity from cogeneration

“ C ” is the power to heat ratio

“ H_{CHP} ” is the amount of useful heat from cogeneration (calculated for this purpose as total heat production minus any heat produced in separate boilers or by live steam extraction from the steam generator before the turbine).

The calculation of electricity from cogeneration must be based on the actual power to heat ratio. If the actual power to heat ratio of a cogeneration unit is not known, the following default values may be used, notably for statistical purposes, for units of type (a), (b), (c), (d), and (e) referred to in the First Schedule to these regulations

provided that the calculated cogeneration electricity is less or equal to total electricity production of the unit:

<i>Type of the unit</i>	<i>Default power to heat ratio, C</i>
Combined cycle gas turbine with heat recovery	0.95
Steam backpressure turbine	0.45
Steam condensing extraction turbine	0.45
Gas turbine with heat recovery	0.55
Internal combustion engine	0.75

If the Authority introduces default values for power to heat ratios for units of type (f), (g), (h), (i), (j) and (k) referred to in the First Schedule to these regulations, such default values shall be published and shall be notified to the Minister.

(c) If a share of the energy content of the fuel input to the cogeneration process is recovered in chemicals and recycled this share can be subtracted from the fuel input before calculating the overall efficiency used in paragraphs (a) and (b) of this Schedule.

(d) The Authority may determine the power to heat ratio as the ratio between electricity and useful heat when operating in cogeneration mode at a lower capacity using the operational data of the specific unit.

(e) The Authority may use other reporting periods than one year for the purpose of the calculations according to paragraphs (a) and (b) of this Schedule.

THIRD SCHEDULE

Regulations 4(1), 5(4), 10(2), 11(2) and 12(2)

Methodology

for determining the efficiency of the cogeneration process

Values used for calculation of efficiency of cogeneration and primary energy savings shall be determined on the basis of the expected or actual operation of the unit under normal conditions of use.

(a) *High-efficiency cogeneration*

For the purpose of these regulations high-efficiency cogeneration shall fulfil the following criteria:

(i) cogeneration production from cogeneration units shall provide primary energy savings calculated according to paragraph (b) of this Schedule of at least 10% compared with the references for separate production of heat and electricity,

(ii) production from small scale and micro cogeneration units providing primary energy savings may qualify as high-efficiency cogeneration.

(b) *Calculation of primary energy savings*

The amount of primary energy savings provided by cogeneration production defined in accordance with the Second Schedule to these regulations shall be calculated on the basis of the following formula:

$$PES = \left(1 - \frac{1}{\left(\frac{CHP H\eta}{Ref H\eta} \right) + \left(\frac{CHP E\eta}{Ref E\eta} \right)} \right) \times 100\%$$

where:

“PES” is primary energy savings.

“CHP $H\eta$ ” is the heat efficiency of the cogeneration production defined as annual useful heat output divided by the fuel input used to produce the sum of useful heat output and electricity from cogeneration.

“Ref $H\eta$ ” is the efficiency reference value for separate heat production.

“CHP $E\eta$ ” is the electrical efficiency of the cogeneration production defined as annual electricity from cogeneration divided by the fuel input used to produce the sum of useful heat output and electricity from cogeneration. Where a cogeneration unit generates mechanical energy, the annual electricity from cogeneration may be increased by an additional element representing the amount of electricity which is equivalent to that of mechanical energy. This additional element will not create a right to issue guarantees of origin in accordance with regulation 5 of these regulations.

“Ref $E\eta$ ” is the efficiency reference value for separate electricity production.

(c) Calculations of energy savings using alternative calculation according to sub-regulation (2) of regulation 11 of these regulations

If primary energy savings for a process are calculated in accordance with sub-regulation (2) of regulation 11 of these regulations the primary energy savings shall be calculated using the formula in paragraph (b) of this Schedule replacing:

“CHP $H\eta$ ” with “ $H\eta$ ” and

“CHP $E\eta$ ” with “ $E\eta$ ”,

where:

$H\eta$ shall mean the heat efficiency of the process, defined as the annual heat output divided by the fuel input used to produce the sum of heat output and electricity output.

$E\eta$ shall mean the electricity efficiency of the process, defined as the annual electricity output divided by the fuel input used to produce the sum of heat output and electricity output. Where a cogeneration unit generates mechanical energy, the annual electricity from cogeneration may be increased by an additional element representing the amount of electricity which is equivalent to that of mechanical energy. This additional element will not create a right to issue guarantees of origin in accordance with regulation 5 of the regulations.

(d) The Authority may use other reporting periods than one year for the purpose of the calculations according to paragraphs (b) and (c) of this Schedule.

(e) For micro-cogeneration units the calculation of primary energy savings may be based on certified data.

(f) *Efficiency reference values for separate production of heat and electricity*

The principles for defining the efficiency reference values for separate production of heat and electricity referred to in sub-regulation (1) of regulation 5 of these regulations and in the formula set out in paragraph (b) of this Schedule shall establish the operating efficiency of the separate heat and electricity production that cogeneration is intended to substitute.

The efficiency reference values shall be calculated according to the following principles:

(i) For cogeneration units as defined in regulation 4 of these regulations, the comparison with separate electricity production shall be based on the principle that the same fuel categories are compared.

(ii) Each cogeneration unit shall be compared with the best available and economically justifiable technology for separate production of heat and electricity on the market in the year of construction of the cogeneration unit.

(iii) The efficiency reference values for cogeneration units older than 10 years of age shall be fixed on the reference values of units of 10 years of age.

FOURTH SCHEDULE

Regulation 6(2)

Criteria for analysis of national potentials for high-efficiency cogeneration

(a) The analysis of national potentials referred to in regulation 6 of these regulations shall consider:

(i) the type of fuels that are likely to be used to realise the cogeneration potentials, including specific considerations on the potential for increasing the use of renewable energy sources in the national heat markets via cogeneration;

(ii) the type of cogeneration technologies as listed in the First Schedule to these regulations that are likely to be used to realise the national potential;

(iii) the type of separate production of heat and electricity or, where feasible, mechanical energy that high-efficiency cogeneration is likely to substitute; and

(iv) a division of the potential into modernisation of existing capacity and construction of new capacity.

(b) The analysis shall include appropriate mechanisms to assess the cost effectiveness — in terms of primary energy savings — of increasing the share of high-efficiency cogeneration in the national energy mix. The analysis of cost effectiveness shall also take into account national commitments accepted in the context of the climate change commitments accepted by the Community pursuant to the Kyoto Protocol to the United Nations Framework Convention on Climate Change.

(c) The analysis of the national cogeneration potential shall specify the potentials in relation to the timeframes 2010, 2015 and 2020 and include, where feasible, appropriate cost estimates for each of the timeframes.