



**EUROPEAN COMMISSION**

**DIRECTORATE-GENERAL FOR ENERGY**

**SAVE II Programme**



**Energy Savings by CHCP plants in the Hotel Sector**

**Energy and price parameters**

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## 1. Energy and price parameters

### 1.1 Energy and price parameters for Cyprus

**Table 1: Energy and price parameters Cyprus**

<b>Basic energy parameters</b>		
<i>Lower Heating Value (LHV)</i>		
▪ Light fuel oil (diesel)	11,41 kWh/kg	
▪ Liquefied petroleum gas (LPG)	12,86 kWh/kg	
Efficiency of electricity generation from the conventional units of Electricity Authority of Cyprus	38%	
<b>Economical parameters</b>		
<u>Electricity purchase prices</u>	<i>Energy</i> €MWh	<i>Power</i> €month
High voltage (Tariff 23)*		124
▪ (1) First 200 kWh	68,6	
▪ (2) Rest kWh	59,2	
Maximum demand		
▪ (1) November - March		4,97/kVA
▪ (2) April - October		2,29/kVA
<u>Electricity sale prices</u>	<i>Energy</i> €MWh	<i>Power</i> €kW/month
<i>Grid-connected system</i>	€MWh	€kW/month
▪ High voltage (all tariffs)	63,6	-
<i>Fuel Prices</i>		€MWh
▪ Light fuel oil (diesel)	0,29 €/t	32,4
▪ LPG	0,28 €/kg	21,8

Notes:

- \* As shown in the above table, hotels are under the high voltage tariff 23. The charges under this tariff consist of three items. A fix sum per month, 124 €month, a charge related to the consumption, and a charge related to the monthly maximum demand, which is related to high, and low periods.
- \* In any case, the selling price is fixed (for CHP self-production at the grid-connected system): 63,6 €MWh.
- \* All the above economical parameters are based on current prices of 2000.



## 1.2 Energy and price parameters for Greece

**Table 2: Energy and price parameters Greece**

<b>Basic energy parameters</b>		
<i>Lower Heating Value (LHV)</i>		
▪ Light fuel oil (diesel)	11,92 kWh/kg	
▪ Liquefied petroleum gas (LPG)	12,73 kWh/kg	
▪ Propane (LPG)	12,85 kWh/kg	
▪ Natural Gas (NG)	13,83 kWh/kg	
Efficiency of electricity generation from the conventional units of Greek Public Power Corporation	37%	
<b>Economical parameters</b>		
<i>Electricity purchase prices</i>	<i>Energy</i> €MWh	<i>Power</i> €kW/month
▪ Medium voltage (Tariff B1)*		8,094
▪ (1) First 400 kWh/kW	48,22	
▪ (2) Rest kWh	31,93	
▪ Medium voltage (Tariff B2)	63,13	2,917
▪ Low Voltage	78,06	2,236
<i>Electricity sale prices</i>	<i>Energy</i>	<i>Power</i>
<i>Grid-connected system</i>	€MWh	€kW/month
▪ Medium voltage (all tariffs)	37,89	-
▪ Low Voltage	46,84	-
<i>Isolated system (i.e. islands)</i>	€MWh	€kW/month
▪ All voltage ranges	46,84	-
<i>Fuel Prices</i>		€MWh
▪ Light fuel oil (diesel)	0,37 €/t	37,5
▪ LPG	0,44 €/kg	34,6
▪ NG for heating	0,32 €/Nm <sup>3</sup>	31,9
▪ NG for CHP	0,23 €/Nm <sup>3</sup>	23,2



Notes:

- \* As shown in the above table there are two different tariffs for medium voltage electricity purchase, which is the case for medium-sized and large hotels with installed power > 250 kVA. Thus hoteliers have to choose between these two general tariffs (B1, B2). The first one is suited to hotels that are operated all year round (i.e. city hotels, with high utilisation factor) and the second for seasonal hotels. All these prices are fixed and there are not deviations for high, intermediate or low periods.
- \* Tariff B2 price is also fixed for all kWh consumed, but for Tariff B1 there are two scales, as shown in table: (1) For the first 400 kWh per kW peak the price is: 48,22 €/MWh and (2) For the rest 31,93 €/MWh.
- \* In any case, the selling price is fixed (for CHP self-production at the grid-connected system): 37,89 €/MWh. (60% of Tariff B2 purchase price for medium voltage). All the above economical parameters are based on current prices of 2000.



### 1.3 Energy and price parameters for Portugal

**Table 3: Energy and price parameters Portugal**

<b>Basic energy parameters</b>			
<i>Lower Heating Value (LHV)</i>			
▪ Light fuel oil (diesel)		11,92 kWh/kg	
▪ Liquefied petroleum gas (LPG)		12,73 kWh/kg	
▪ Propane (LPG)		12,85 kWh/kg	
▪ Natural Gas (NG)		13,83 kWh/kg	
Efficiency of electricity generation from the conventional units of the Portuguese Public Electric System		39.5%	
<b>Economical parameters</b>			
<i>Electricity purchase prices</i>	<i>Energy</i>	<i>Peak Power</i>	<i>Contracted Power</i>
	€/MWh	€/kW/month	€/kW/year
▪ Medium Voltage	48.52	3.22	9.66
▪ Low Voltage >41.4kVA “	69.37	1.87	5.60
<i>Electricity sale prices</i>			<i>Energy</i>
<i>Grid-connected system</i>			€/MWh
▪ Minimum			20
▪ Maximum			85
<i>Fuel Prices</i>			€/MWh
▪ LPG		0.793 €/kg	62.3
▪ <i>Natural Gas</i>		€/Nm <sup>3</sup>	€/MWh
▪ I3 (<40000 m <sup>3</sup> /year)		0,375	35.93
▪ I4 (40001 - 125 000 m <sup>3</sup> /year)		0,355	33.99
▪ I5 (125 001 - 350 000 m <sup>3</sup> /year)		0,336	32.18
▪ I6 (350 001 - 700 000 m <sup>3</sup> /year)		0,311	29.80
▪ I7 (700 001 – 1300 000 m3)		0,287	27.44



Notes:

- \* The electricity tariffs for installed powers above 41.4 kVA, are of the TOU type with three rate schedules. There are also several options available. However, for hotels the common options are average use of power and weekly cycle for TOU schedules, so prices above reflect these options.
- \* Since December 1999 the electricity selling price for CHP, is defined through a complex formula, which is strongly connected to the CHP unit design and to its performance. The price has three components, one fixed, one reflecting the evolution of Natural Gas prices and one reflecting the environmental benefits of that specific CHP unit. The above prices are then only a possible result of the formula. The price is higher in the peak and intermediate periods defined for the purchase prices, but depends on the stability of the diagram.
- \* Until January 2000, there are no differences in Natural Gas prices for CHP and for boilers. However, with CHP one customer may go over the upper consumption limit of the rate in which NG was priced, so in this way he may get a lower price for all the gas consumed. Above 2 000 000 cubic meter, the customers have the possibility of buying directly to the main network, being able to negotiate special prices.
- \* All the above economical parameters are based on current prices of 2000.