

## **CALCULATION METHOD OF AIR CONDITIONER CONSUMPTION ACP-12CH35AEHI+ R32**

According to the energy efficiency label data of the ACP-12CH35AEHI+ R32 air conditioner in the moderate climate zone (to which the Republic of Macedonia belongs), it consumes 776 kWh annually when used in a space for which the air conditioner of such power is typically intended for heating.

According to Commission Delegated Regulation (EU) No. 626/2011 of May 4, 2011, amending Directive 2010/30/EU of the European Parliament and of the Council regarding the labeling of the energy efficiency of air conditioners, Commission Regulation (EU) 626/2011, available at the following link: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32011R0626>, and Table 4 of the Regulation specify that the air conditioner, when in heating mode, operates on average for 1400 hours annually.

According to the general conditions for the supply of thermal energy (NN 3/2014), Article 23 stipulates that the heating season begins with the heating readiness period, i.e., no earlier than September 15 and lasts no later than May 15 of the following year, while the supply begins based on the distributor's decision when weather conditions allow.

According to data from the following links:

<https://www.hep.hr/toplinarstvo/zapocinjje-ukljucivanje-grijanja-u-ogrijevnoj-sezoni-2021-2022/1832>

<https://www.hep.hr/toplinarstvo/zavrsetak-ogrijevne-sezone-2021-2022/1853>

<https://www.hep.hr/toplinarstvo/zapocinjje-ispоруka-toplinske-energije-za-grijanje-u-ogrijevnoj-sezoni-2022-2023/1866>

<https://www.hep.hr/toplinarstvo/hep-toplinarstvo-zavrsava-ogrijevnu-sezonu-2022-2023/1871>

Heating started on October 4, 2021, and ended on May 9, 2022, for a total of 217 days in the heating season 2021/2022.

Heating started on October 25, 2022, and ended on May 15, 2023, for a total of 198 days in the heating season 2022/2023.

Heating started on October 16, 2023, for the heating season 2023/2024.

Despite the indicated data, for the purposes of this calculation, the heating season duration is limited to the period from October 15 to February 15, totaling 120 days. Note that the daily heating cost would be even lower than advertised if real heating days were used for the calculation, as indicated in the previous links.

The average price of one kWh of electricity was obtained from the HEP website (<https://mojracun.hep.hr/kalkulator/index.html>) as follows:

Selected the blue tariff model as the unit price per kWh is the same for 24 hours.

Chose the calculation for 1 month.

After receiving the calculation for one month, i.e., 73.68 EUR, it was divided by the quantity of kWh to obtain the price per kWh, which is 0.147 € (calculation with VAT and costs).

The representation of the explained calculator follows below:

## Informativni izračun - kućanstvo

Tarifni model:

plavi

samo korištenje mreže

Broj mjeseci

1 3 6 9 12

Potrošnja ( kWh ):

500



Izračun

Stavka	Količina [ kWh ]	Cijena [ EUR ]	Iznos [ EUR ]
energija	500	0.070276	35.14
prijenos	500	0.011945	5.97
distribucija	500	0.029199	14.60
			<b>55.71</b>
opskrba	1 mj.	0.9820	0.98
mjerno mjesto	1 mj.	1.5400	1.54
ole	500	0.013936	6.97
osnovica za PDV			65.20
PDV ( 13 % )			8.48
<b>Ukupno</b>			<b>( 555.14 HRK ) 73.68</b>

Annual consumption in the heating season (kWh)	Heating season (number of days)	Price kWh	Daily consumption in euros
776	120	0,15 €	0,95 €
ENERGY EFFICIENCY LABEL IN COMPLIANCE WITH EC REGULATION REFERENCE POINT	HEATING SEASON HEATING PLANT	CALCULATION ON HEP WEBSITE BLUE TARIFF - HOUSEHOLD	

To obtain the average power of the air conditioner during the heating season, we divided the consumed electrical energy of 776 kWh by the operating hours of 1400. According to this, the average input electrical power of the air conditioner is 0.55 kW. When we divide the 1400 operating hours per year by the 120 days taken as the reference duration of the heating season, we get that the air conditioner operates for 11.67 hours per day. The obtained value of the electrical power of the air conditioner, i.e., 0.55 kW, multiplied by the hours of operation per day, results in a daily consumption of 6.42 kWh. When multiplied by the price of one kWh, which is 0.15 euros, the cost of an average day using the air conditioner during the heating season is 0.95 EUR, as shown in the table above.