

GOOD PRACTICES IN SME

Changing the electricity tariff



Designed by freepik

The following document was developed using European Union financing as part of the “Technical support for the promotion of energy audits and energy efficiency investments in small and medium-sized enterprises in Poland”. The opinions presented in this document should not be treated as the official stance of the European Union.

The project was financed by the European Union as part of Structural Reform Support Programme (SRSP) and realized by the Polish National Energy Conservation Agency (KAPE SA) in cooperation with the European Commission on behalf of the Ministry of Climate and Environment.

What is an electricity tariff?

An electricity tariff defines the rules for calculating the energy supply cost and includes the pricing which defines the amounts of the charges constituting the energy price for the consumer. There are different electricity tariffs for different types of consumers – households, agricultural producers, small businesses, large enterprises, industrial plants and the mining industry. For each group, energy tariffs can be further divided by time of day. Each time of day has a different price for 1 kW of electricity.

How to read the electricity tariff?

First character– defines the voltage of the network to which the consumer is connected.

Character	Voltage supplied	Consumer type
A	High voltage	Large industrial plants, mining operations
B	Medium voltage	Large companies, productions companies
C	Low voltage	Small companies, agricultural producers
G	Tariff independent from voltage	Predominantly households, but also buildings not meant for business activities, e.g. boarding houses, dormitories, summer houses, gazebos, hospices, nursing homes
R	Tariff independent from voltage	Consumers where, with the owner's approval, the energy consumption is not metered – e.g. events

First number – defines the power of the contracted supply

Number	Power of the contracted supply
1	< 40 kW
2	> 40 kW

Second number – defines the number of time of day rates

Number	Number of time of day rates
1	One time of day rate
2	Two time of day rate
3	Three time of day rate
4	Four time of day rate

Second character – defines the calculation methods for different times of day

Character	Calculation methods
a	Peak and off-peak rates
b	Day and night rates
as	Day and night rates
n	Day, night and Sunday rates
w	Day, Night and Weekend (Saturday and Sunday)
o	Energy consumption for lighting purposes

Example: C12a is a tariff for low voltage consumer, where the supply is no larger than 40 kW with peak and off-peak rates.

How to choose the right tariff?

The contracted supply power depends on the company's energy demand and will not change if demand remains the same. The voltage supplied will not change. However, the consumer does have an influence on the number of time of day rates according to which he wants their energy bill calculated.

In one time of day tariffs the price of electricity is the same throughout the day. In multiple time of day tariffs, it will be different for different hours. A peak and off-peak tariff will have higher energy prices during peak demand and lower prices off-peak. Similarly, with day and night tariffs – at night the price of electricity will be lower during the night than by day. Two time of day tariffs can be extended with the weekend. In this case the price of electricity will be lower from Friday evening until Monday morning. In a three time of day tariff we distinguish three separate rates – before midday (average price), after midday (high prices) and all the other hours of the day (low prices).

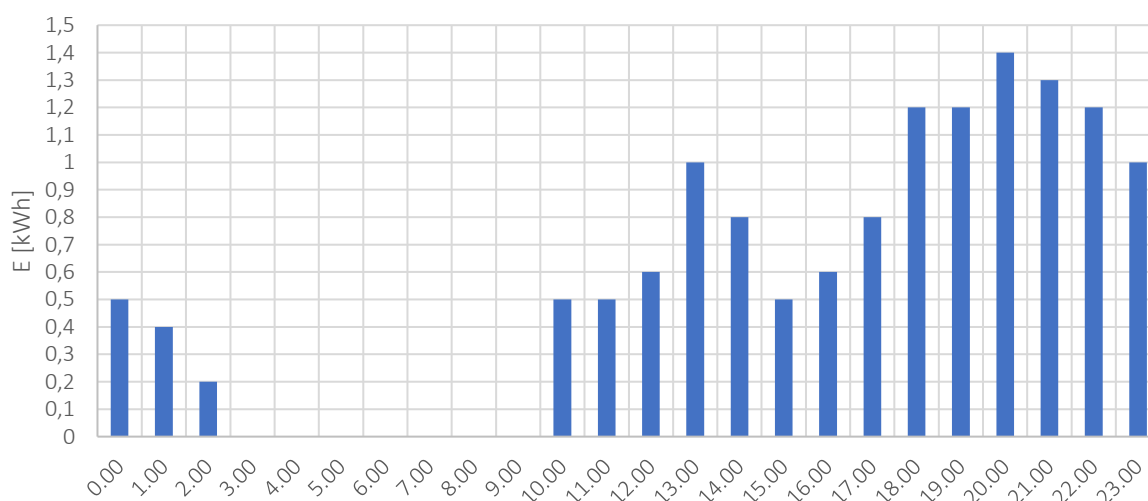
Choosing a tariff – example

A company from the entertainment industry operates 250 days a year and has an average daily energy consumption profile as shown in the graph below. It can choose one out of three tariffs: C11, C12a, C12b. Their details are presented below:

Gross electricity prices [PLN/kWh]	C11	C12a	C12b
All day rate	0,5230		
Peak rate		0,6273	
Off-peak rate		0,4120	
Day rate			0,6052
Night rate			0,4039
Gross fixed charge [PLN/m-c]	36,78	36,78	36,78

	Peak rate	Off-peak rate
April 1 – September 30	8.00-11.00, 20.00-21.00	11.00-20.00, 21.00 – 8.00
October 1 – March 31	8.00-11.00, 17.00 – 21.00	11.00-17.00, 21.00 -8.00
	Day rate	Night rate
January 1 – December 31	6.00-13.00, 15.00-22.00	13.00 -15.00, 22.00-6.00

Daily electricity consumption



Tariff C11:

Daily electricity consumption: 13,7 kWh

Annual electricity cost:

$$250 \text{ days} \times \frac{13,7 \text{ kWh}}{\text{day}} \times \frac{0,523 \text{ PLN}}{\text{kWh}} + 12 \text{ mth} \times \frac{36,78 \text{ PLN}}{\text{mth}} = 2 \text{ 232,64 PLN}$$

Tariff C12a:

	Daily electricity consumption [kWh]	
	Peak rate	Off-peak rate
April 1 – September 30	1,9	11,8
October 1 – March 31	5,1	8,6

Cost of electricity:

Spring/Summer:

$$125 \text{ days} \times \left(\frac{1,9 \text{ kWh}}{\text{day}} \times \frac{0,6273 \text{ PLN}}{\text{kWh}} + \frac{11,8 \text{ kWh}}{\text{day}} \times \frac{0,412 \text{ PLN}}{\text{kWh}} \right) + 6 \text{ mth} \times \frac{36,78 \text{ PLN}}{\text{mth}} = 977,36 \text{ PLN}$$

Autumn/Winter:

$$125 \text{ days} \times \left(\frac{5,1 \text{ kWh}}{\text{day}} \times \frac{0,6273 \text{ PLN}}{\text{kWh}} + \frac{8,6 \text{ kWh}}{\text{day}} \times \frac{0,412 \text{ PLN}}{\text{kWh}} \right) + 6 \text{ mth} \times \frac{36,78 \text{ PLN}}{\text{mth}} = 1 \text{ 063,48 PLN}$$

Annual cost of electricity:

$$977,36 \text{ PLN} + 1 \text{ 063,48 PLN} = 2 \text{ 040,84 PLN}$$

Tariff C12b:

Electricity consumption during the day: 8,6 kWh

Electricity consumption during the night: 5,1 kWh

Annual cost of electricity:

$$250 \text{ days} \times \left(\frac{8,6 \text{ kWh}}{\text{day}} \times \frac{0,6052 \text{ PLN}}{\text{kWh}} + \frac{5,1 \text{ kWh}}{\text{day}} \times \frac{0,4039 \text{ PLN}}{\text{kWh}} \right) + 12 \text{ mth} \times \frac{36,78 \text{ PLN}}{\text{mth}} = 2 \text{ 257,51 PLN}$$

In the case considered tariff C12a is the most cost-effective.

Source: KAPE