



Domestic energy efficiency

One of the main ideas of the "green" economy is that being environmentally effective is economically beneficial. In Russia, 11% of all electricity consumed is used by households.

Moreover, we have no legal limitations or norms for energy consumption by electrical appliances.

But this certainly does not mean that the efficient consumption of electricity, or the resulting savings in your personal budget, are forbidden. We have tried to analyse how much money, in rubles, you could save by applying simple energy-saving rules in your own household.

We switch to energy saving light bulbs:

A light fitting of four typical bulbs will "eat up" 1,270 rubles over the first year, whereas the same fitting of energy saving bulbs costs 871 rubles. (taking into account expenses on the purchase of 75 and 25 Watt bulbs respectively). Over the course of four years typical bulbs will cost you 6336 rubles, while energy saving bulbs will cost 2544 rubles. The logic of the assessment is simple:

4.03 rubles – price per kWh, increase in price – 15%, 1000 hours of operation per year, purchase of typical bulb – once a year, energy saving bulb – once every four years.

Thus, the energy saving bulbs pay for themselves within half a year. If all typical bulbs were replaced by energy saving ones, the annual consumption of electrical energy in Russia would reduce by 50-100 billion kWh or 5-10%.

We don't leave mobile phone chargers in plug sockets

We spend over 1 billion rubles per year on standby mode. According to other calculations, each apartment overpays more than 1000 rubles per year for standby mode.

We only boil the necessary amount of water

An electric kettle with a capacity of 1.5 kWh which is full of water and switched on for 10 minutes increases energy consumption by 0.25 kWh. A million kettles consume 0.25 million kWh and 22.5 million kWh per month. For the purposes of comparison, the monthly production of electrical energy from Regional Electrical Power Plant – 24 is 195.3 million kWh.

We switch to multi-tariff metres

A refrigerator consumes a third of all energy in an apartment. By switching to a dual tariff system on the refrigerator alone, it is possible to save 1% of all expenditure on electricity.

We change the bags in the vacuum cleaner before cleaning

A vacuum cleaner bag filled by a third reduces the suction of the vacuum cleaner by 40%; thus, the consumption of electrical energy increases by the same amount.

We buy the appropriate pans

When using pans that do not correspond to the dimensions of the electrical hob, 5-10% of energy is lost. A pan with a curved bottom can lead to overconsumption of electrical energy of up to 40-60%.

We choose the appropriate washing mode

Washing clothes at a temperature of 30°C is 40% more efficient than washing them at a temperature of 60°C.

We don't use large televisions and we control the settings

- A television with a screen diameter of 21 inches in standby mode consumes 297 Wh in a day – almost 9 kWh per month.
- In California, they expect to save \$8 billion with a ban on LCD televisions with a diameter of over 40 inches.
- Saving the standard brightness settings for the screen will make it possible to save up to 1000 rubles a year.

We don't open the windows in winter

- An open window under a temperature of -10°C reduces the temperature in a room with an area of 20 metres squared by 1.5°C on average.
- The amount of energy expended on heating 10 metres squared of accommodation is equivalent to one kWt. If the outside temperature reduces by 1.5°C, a 2.5°C increase in the temperature of the heater of is required.
- The average cost to produce 1 kWt of heat with an old boiler, taking into account losses on the heating pipelines, is 1.1-1.2 rubles. The heat loss through an open window is 20-30 W/h per metre squared. Thus, if the area of an apartment is 70 metres squared, approximately 2 kWh of thermal energy is lost.

Therefore, 1 million open windows in apartments with an area of 70 metres squared lose 2 million kWh or 2.2-2.4 million rubles.

Authors:

Elena Lazko
Partner

Mikhail Saranchev
Analyst



Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee, and its network of member firms, each of which is a legally separate and independent entity. Please see www.deloitte.com/about for a detailed description of the legal structure of Deloitte Touche Tohmatsu Limited and its member firms. Please see www.deloitte.com/ru/about for a detailed description of the legal structure of Deloitte CIS.

Deloitte provides audit, tax, consulting, and financial advisory services to public and private clients spanning multiple industries. With a globally connected network of member firms in more than 150 countries, Deloitte brings world class capabilities and deep local expertise to help clients succeed wherever they operate. Deloitte has in the region of 200,000 professionals, all committed to becoming the standard of excellence.

Deloitte's professionals are unified by a collaborative culture that fosters integrity, outstanding value to markets and clients, commitment to each other, and strength from diversity. They enjoy an environment of continuous learning, challenging experiences, and enriching career opportunities. Deloitte's professionals are dedicated to strengthening corporate responsibility, building public trust, and making a positive impact in their communities.