ENERGY SAVING TECHNOLOGIES

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Mankind, having gone through a difficult path of development of technologies for obtaining heat, has created high-tech equipment, which, it would seem, is difficult to further improve. And as paradoxical as it sounds, it returned to the so-called "non-traditional sources" - sun, wind, water. Technologies for obtaining heat from these

sources have also changed. Humanity has learned to use other resources, such as soil, air, and underground water. Today, environmental friendliness has become the main criterion for product quality all over the world. And this requires not only the use of equipment, but also the process of its production. Legislation and policies of many countries, especially European ones, promote the spread of alternative sources, which essentially affects their spread. The leaders in this matter are Sweden, France, Austria, Spain and Germany. Smart people learn from other people's mistakes and experience, so let's get world experience and not repeat the difficult path of development that the whole world has gone through and everything to reverse traditionality. The truth says: “Everything new is a well-forgotten old.”

The main direction of world energy development is the use of alternative energy sources, such as the sun, wind, water and biofuels. The use of waste from the agro-industrial complex, pellets, and conversion of gas boilers is also relevant for Ukraine.

Scientists are constantly looking for new opportunities to increase efficiency and use more available materials for renewable energy sources. For example, recently, Chinese scientists have increased the efficiency of organic solar cells, comparing them with conventional ones. Modules made of carbon and plastic have been found to be cheaper than conventional silicon ones, and thanks to their structure, they can be applied to thin and flexible surfaces such as windows, facades, columns, trees.

But don't forget that cheap and clean energy is important, but energy efficiency inside the building is just as important. According to recent research from the University of Michigan, 74% of the total energy consumption of commercial buildings comes from lighting, heating, air conditioning and ventilation systems, as well as water supply. What technologies can be used to reduce these costs?

Let's start with heating. Experts say that the most heat is lost through windows and walls, so insulating facades and replacing windows with energy-efficient ones are mandatory for any commercial building. The next step may be to modernize the heating system. Modern technologies make it impossible to modernize existing boilers and switch from gas to organic fuel.

A reduction in lighting costs can be achieved by the installation of lighting and

sensors, movement and maximum use of daylight. Thanks to the use of various sensors, you can automatically adjust the brightness of the lighting, turn off the light when people leave the room. In some cases, this can save you another 20%.

Regarding air conditioning and ventilation, the most advanced method of reducing costs is an installed heat recovery system. Proper setup and maintenance can reduce costs by up to 10%.

Water saving technologies include the collection and further processing of rainwater for further use in the building. Of course, it is relevant only in latitudes where it rains quite often, and in winter there is no sub-zero temperature. For most developed countries, automated water supply sensors and the use of the residual potential of coolants for water heating are relevant.

All these methods and technologies can be added separately or in combination. An individual approach, a preliminary study of construction and infrastructure features, conducting an energy audit to determine the most expensive sectors are important. In difficult economic conditions, the complete re-equipment of buildings with energy-efficient solutions can be difficult to achieve, but with a developed plan, the gradual reduction of costs can have a positive effect on the cost of products and work productivity.

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