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## USING LOW-POTENTIAL HEAT FOR REDUCING FUEL CONSUMPTION

Industrial facilities meet their energy needs by burning fuel or by utilizing electric power. During the production process, there remains some amount of excess heat which can be monetized, that is, converted to money. We are talking not only about metallurgical enterprises, but also, for example, in wastewater treatment plants, where it is possible to monetize the low-potential heat of waste water. Such losses are called environmental. Wastewater pollutes the environment not only due to chemical composition, but also due to heat that destroys the flora and fauna of the reservoir. Environmental losses include the heat of flue gases. Low-potential heat is produced in virtually any technological process in which fuel is involved.

You can monetize thermal and environmental losses in several ways. The most common way is to use a heat pump. Thanks to this device, the energy potential of the heat carrier can be increased due to low-temperature heat. For example, water for heating with a temperature of 60 degrees, can be combined with low-potential heat for an additional 5 degrees without burning at the same fuel. Thus, it will be possible to save about 5-10% of fuel. This method is quite well known and common in the countries of Europe. At some plants, waste heat boilers are installed, which also allow the use of heat from exhaust gases. Heat pumps are used not only at enterprises, but also in everyday life. Low-potential heat from the ground or warm air can be used to heat or cool the air in the room.

The issue of ecology also occupies an important place. Heat flowing into the environment not only accelerates the arrival of global warming, but also damages flora and fauna today. The harmful effects of the release of harmful substances and heat into the atmosphere have already been reflected on our planet.

Excessive or low-potential heat can be transformed into electricity. This is the most energetic type of energy from an engineering point of view. This kind of energy can be sold in the grid immediately by making a profit. To convert low-potential heat into electricity, power plants are used with low boiling working fluids or freons, ammonia, and propane. The electricity thus obtained can be sold to the electricity grid or used at the plant, saving fuel. Also, it is possible to receive electricity from low-potential heat at the thermal power station. In this case, low-potential heat can be used to heat the steam, which also leads to fuel economy. The most efficient use of the energy received at the enterprise itself.

It can be assumed that the absorption of low potential and excess heat makes it possible to effectively use the available potential of industrial enterprises. In addition to direct use of excess energy at the enterprise itself, it is possible to sell energy potential and to the network (electricity or heat networks). In any case, it is about monetization of excess energy, which today is lost and only enhances the complex environmental situation. In the simplest case, it is possible to use relief heat for heating the water, which for today is not always implemented by enterprises.