

– вермикомпост – корма – животноводство» и «куриный навоз – вермикомпост – выращивание сельскохозяйственных культур» позволит по-новому взглянуть на устойчивое развитие сельского хозяйства.

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### THE PROBLEM OF IDENTIFYING ENVIRONMENTALLY FRIENDLY GOODS WITH NON-ENVIRONMENTALLY FRIENDLY GOOD

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**Summary.** *This article examines the problem of modern society's perception of some products as environmental, while they cause even greater harm to the environment.*

For quite some time now, people have been aware of environmental problems and have even tried to solve them. Before, the problem was that people just didn't really know what the problem was, but now we hear about it everywhere. It would seem that nowadays people are divided into two types: people who follow the environment saving movement and do everything they can to help global warming and other environmental problems and those people who know about it but and don't pay much attention to it and don't devote their energies to it. But there are actually at least three groups of people in the world today. The third group of people is people who think they are helping nature, but in fact they are not.

There is now a widespread belief that it is better to use paper bags instead of plastic bags. And not only bags, but also other things. Since high school, everyone knows that plastic takes hundreds of years to decompose, while wood is an ecological product. To understand everything, let's go in order and look at the production of plastic bags. Plastic bags mainly use such a material as polyethylene. More specifically, low density polyethylene, or LDPE. A gas called ethylene, or C<sub>2</sub>H<sub>4</sub>, is used to produce it. To produce polyethylene, the original gas is compressed and then heated to 160 degrees centigrade, after which the molecules begin to bond together. After that, the liquid polymer is poured into moulds and cooled, then sent to the required device. As for the production of paper bags, sawdust is poured into water, and it is not the water that is pumped out. It is fully usable again because of the fact that people have learnt over the years to

recycle it all very well [1]. It's talking about the water that eventually combines these sawdusts. Let's take into account that even though wood is used in one form or another, and wood is a renewable resource, but we use a bag a couple of times and throw it away, and trees take longer to grow. And a felled tree could be used more efficiently than for a few disposable bags.

In terms of production costs, paper production requires more energy and processing costs. Paper production uses twenty times more water than plastic production. The first 1,000 would require 1,004 gallons of water, while the plastic 1,500 would require just 58. The chemicals needed to heat and bind the wood chips contribute to acid rain near factories [2].

We looked at what happens to bags before final production, the first stage of their life cycle. And what happens at the end of their life cycle. Most people use plastic bags for their original purpose, and then they are often used as garbage bags. Paper bags are initially intended for their intended purpose, and then most likely their life cycle ends and they are thrown away. Unfortunately, now there are not many waste processing facilities, and therefore most of the waste is not recycled, but is simply taken to landfills, where all the bags decompose. As mentioned earlier, plastic takes hundreds of years to decompose, while paper takes about a few weeks to decompose. There is an opinion that in this way biodegradable plastic or paper produces more harmful gas due to the fact that they have a shorter decomposition time. And the greenhouse effect is not the only problem that worries today's environmentalists. The production of such bags releases substances that lead to cancer.

In this case, the conclusion is that the use of paper bags is more harmful than plastic ones. Most paper products can be recycled. One ton of recycled fiber saves an average of 17 trees, according to paper recycling research. Additionally, recycling paper uses 70 % less energy than producing new paper [3].

Having done this analysis, it can be difficult to make the only truly correct decision for yourself. But now there is a third option – fabric bags, simply string bags, which appeared many years ago and are now remembered and appreciated in a new way. If you look at this skeptically, then not everything is so easy. In addition to garbage dumps, there are also landfills of clothes that have outlived their useful life. The fabric also takes a long time to decompose and evaporate harmful gases. For every plastic bag used, people would need to reuse a paper bag an additional half time and an organic cotton bag an additional 150 times to equalize the release of cancer-causing chemicals. But fabric bags are designed to be used much more times than other types of bags. It is unlikely that anyone will throw them away after using them once or twice. Therefore, it is best to use them, especially since now they are available for every taste and color. The main thing is to use it for a long time.

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## **ПРЕИМУЩЕСТВА АБСОРБЦИОННЫХ БРОМИСТО-ЛИТИЕВЫХ ТЕПЛОВЫХ НАСОСОВ НАД КОМПРЕССИОННЫМИ ТЕПЛОВЫМИ НАСОСАМИ**

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**Summary.** *The article discusses the advantages of lithium bromide absorption heat pumps over compression heat pumps, because enterprises are somehow faced with the problem of fuel economy.*

Абсорбционный бромисто-литиевый тепловой насос (АБТН) – это устройство непрерывного действия, предназначенное для передачи тепловой энергии от источника с низкой температурой к источнику с более высокой температурой. Подводимой энергией привода для АБТН является тепловая энергия, а для компрессионных тепловых насосов – электрическая энергия. На рис. 1 в виде полосовой диаграммы Сэнки приведен энергобаланс системы генерации электроэнергии на тепловой электростанции, доставки ее потребителю и использованию в ПКТН [1].

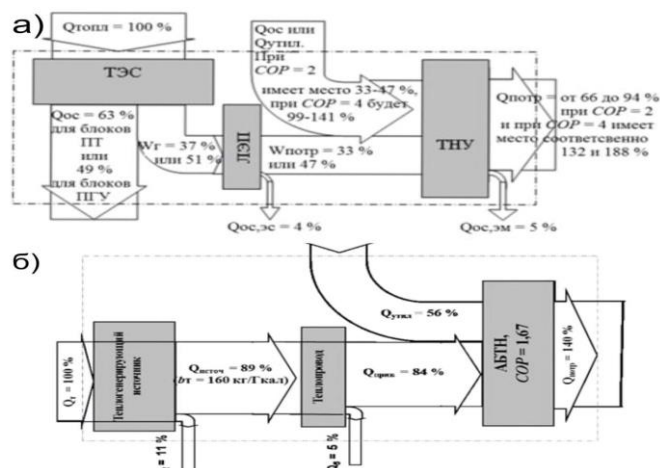


Рисунок 1 – Преобразование: *а* – энергии природного газа в тепловую энергию, сообщаемую сетевой воде парокompрессионным тепловым насосом; *б* – потоков тепловой энергии в абсорбционных бромисто-литиевых тепловых насосах

Для предприятий более важно обеспечивать финансовое благополучие, связанное с использованием установки. В этом отношении необходимо рассмотреть соотношение затрат ( $D_{зтр.}$ ) на покупку электроэнергии,