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HOW ECOLOGY HAS CHANGED PACKING MATERIALS

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Packing materials play a critical role in modern-day supply chains. However, their widespread use has led to environmental degradation, and the search for more eco-friendly alternatives has been the subject of much research. In this report, we will explore how the field of ecology has changed the way we think about packing materials.

The problem with traditional packing materials such as plastic and styrofoam is that they are non-biodegradable, and thus they end up in landfills, oceans, and other natural habitats, where they persist for years, posing a threat to wildlife and ecosystems. As a result, there has been an increasing demand for environmentally-friendly packing materials.

Biodegradable Materials. Ecologists have been at the forefront of advocating for the use of biodegradable packing materials. These materials decompose naturally when exposed to the environment, reducing waste and pollution. Biodegradable materials can be made from a variety of sources, including corn starch, sugarcane, and mushrooms. One notable example is the use of mycelium, the root structure of mushrooms, as a packing material. Mycelium-based packaging is biodegradable, renewable, and requires fewer resources to produce than traditional packing materials.

Ecologists have also been promoting the use of recyclable materials for packing. This includes materials such as cardboard and paper, which are easily recyclable and biodegradable. These materials can be used as an alternative to plastic and styrofoam, reducing waste and pollution.

Renewable materials. Renewable materials, such as bamboo and hemp, have also gained popularity as packing materials. These materials are sustainable and require less energy to produce than traditional packing materials. They also have the added benefit of being biodegradable and compostable. Biodegradable bags have emerged as an alternative to conventional plastic packaging. If containers made of petroleum products decompose within a few hundred years, then eco-packaging breaks down into harmless components in two to three years. According to scientists, environmentally friendly packaging is destroyed both in air

(aerobic decomposition) and without oxygen - in soil or water. Renewable raw materials ensure sustainable stocks in the long term. Stocking is a key goal for many packaging organizations that consider sustainability as an integral part of their strategy. Renewable packaging is a relatively young industry, but the technology is evolving rapidly.

Natural materials. Another approach is the use of natural materials, such as leaves and grass, as packing materials. These materials are renewable, biodegradable, and do not require any manufacturing processes, making them an eco-friendly alternative to traditional packing materials. It also solves the problem of recycling fallen leaves and cut grass towards useful and rational use.

Innovative materials. Ecologists are also exploring innovative materials for packing, such as seaweed-based packaging. Seaweed is a renewable resource that is biodegradable and compostable. It can also be grown sustainably and is an abundant resource, making it an attractive alternative to traditional packing materials.

Design. From a painted, synthetic-shiny look with acidic bright colors, gradients, and accents, modern design has evolved - to a minimalist look that incorporates soothing natural tones. Due to its composition, natural packaging acquires these colors on its own without the intervention of dyes and other chemical additives. This, in turn, will help to reduce the use of petroleum-based dyes, which will positively affect not only the cost and complexity of production, but also the natural component of the packaging itself and its environmental friendliness.

The field of ecology has played a critical role in changing the way we think about packing materials. Through the promotion of biodegradable, recyclable, renewable, natural, and innovative materials, ecologists have helped to reduce waste and pollution in our environment. As the world continues to grapple with the challenges of climate change and environmental degradation, the need for eco-friendly packing materials will only continue to grow. Decree of the Council of Ministers of the Republic of Belarus dated January 13, 2020 No. 7 approved the Action Plan for the phased reduction in the use of polymer packaging with its replacement with environmentally friendly. The plan provides for the widespread organization of separate waste collection; increase in production of environmentally friendly, including paper, glass and biodegradable packaging. In addition, economic incentives for the transition to eco-packaging will be identified. A draft resolution has been submitted to the government, which provides for a phased limitation of the maximum capacity of polymer containers used for low-alcohol drinks, up to and including one liter. In the field of scientific research it is planned to implement an action plan for the creation of technology and the production of biodegradable packaging from plant materials. In February 2020 Gosstandart approved an action plan within the framework of the system to gradually reduce the use of polymer packaging with its replacement with environmentally friendly

packaging for the coming years. Industry guidelines are currently being developed to reduce the use of polymer packaging. These recommendations will become the basis for local regulatory legal acts and their implementation in all organizations of the Gosstandart system.

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ENTWICKLUNG ALTERNATIVENERGETIK IN DER REPUBLIK BELARUS

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Unser Land gehört zu den Ländern, die keine signifikanten Brennstoff-Energie-Ressourcen haben. Dazu gehören Öl, Gas, Kohle, Torf und andere. Die Sicherstellung der Republik mit eigenen Brennstoff-Energie-Ressourcen liegt bei 15–17 %, deshalb wird die Frage der Entwicklung alternativer Energetik immer aktueller.

Alternative Energetik ist eine Gesamtheit vielversprechender Methoden, Energie zu gewinnen, zu übertragen und zu nutzen. Sie ist nicht so entwickelt wie traditionelle Energiemethoden, aber sie ist von großem Interesse, weil sie perspektiv ist und die Umwelt nur wenig schadet. Heute gibt es in Belarus 43 Biogasanlagen, 114 Windenergieanlagen, 105 Solarkraftwerke und 55 Wasserkraftwerke.

Der Mangel an eigenen Bodenschätzen macht die Bioenergie zum vielversprechendsten Entwicklungszweig des Agroindustriekomplexes. Belarus hat ein gutes Potenzial für die Entwicklung Biogastechnologien. Jedes Jahr produziert die Landwirtschaft unseres Landes 30 Millionen Kubikmeter Abfall, die entsorgt werden müssen. Biogasanlagen können diese Aufgabe erfolgreich bewältigen. Heute beträgt die Gesamtkapazität aller Biogasanlagen, die in unserem Land