

INNOVATIONS IN ENERGY AS A RESOURCE FOR ECONOMIC DEVELOPMENT

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Ключевые слова: энергетика, инновации; виды инноваций, инновационная деятельность.

Key words: energy, innovation; types of innovation, innovative activity.

Аннотация: Сегодня инновации в энергетическом секторе становятся стратегическим фактором экономического роста, а также оказывают прогрессивное воздействие на структуру общественного производства и изменяют экономико-энергетическую организацию страны. При этом, стратегической целью развития отрасли является эффективное использование энергетического потенциала и получения наибольшей выгоды для экономики. Одним из направлений обеспечения конкурентоспособности и устойчивости развития экономики Республики Беларусь является повышение энергетической эффективности.

Summary: Today, innovations in the energy sector are becoming a strategic factor in economic growth, and also have a progressive impact on the structure of social production and change the economic and energy organization of the country. At the same time, the strategic goal of the industry's development is the efficient use of energy potential and obtaining the greatest benefits for the economy. One of the areas for ensuring competitiveness and sustainable development of the economy of the Republic of Belarus is increasing energy efficiency.

Modern technologies in various industries and fields are constantly evolving through the introduction of creative innovations. The energy sector is no exception - innovations in the energy sector stimulate the development of business, automotive, oil and gas and other industries, and also significantly improve the quality of life of the population. Innovations, or innovations, are the testing and use of technological or other new products aimed at the qualitative development of life processes, industry, etc. Energy innovation is a set of processes that lead to the emergence of new or improved existing technologies that increase the variety of energy resources used, increase the reliability of energy systems, and reduce the economic, environmental and political costs associated with the production and distribution of electricity.

The universal classification identifies the following types of innovation: 1. Product innovations represent significant changes in the properties of goods

and services produced by a company. 2. Process innovations are driven by significant changes in the methods of producing and delivering products or services. 3. Organizational innovations – innovations in business practices, workplace organization, as well as in the organization's external relations. 4. Marketing innovations - changes in product design and packaging, placement, pricing methods [1].

Energy innovations are being introduced by various countries in the most actively used industries, and are also borrowed from each other. Speaking about the electric power industry, one should take into account the peculiarity of electricity as a commodity: at any given time, an amount of electricity must be produced equal to its consumption (One of the most significant innovations is:

- Fracking technology using shock waves.
- The latest oil production technologies.
- Using bacteria to clean up oil spills.
- Use of biofuels for cars [2].

Speaking about the first innovation, it is worth noting that the shock wave is the most effective way to dissipate energy. It can be successfully used at depths of shale formations up to a thousand or one and a half thousand meters. An Indian company specializing in fracking technology research has proposed using shock waves as a simpler and more cost-effective technology for fracturing compared to hydraulic fracturing. Such an energy innovation could significantly change the oil and gas industry, since it would completely eliminate the need to use water in these operations. This will significantly reduce the level of water pollution, because hydraulic fracturing requires at least 4 million gallons per well [3].

The second important innovation in the energy sector is an improved method of oil production. The so-called enhanced oil recovery method involves tertiary processing of formations in order to extract as much product as possible. This technology is based on the use of carbon dioxide, which increases the speed of oil flow and reduces its viscosity.

As for the use of bacteria to eliminate oil spills, this innovation is based on the use of two groups of bacteria - both of them have the ability to oxidize oil and thus reduce the scale of the spill, or prevent it in advance. At the moment, experts are studying the genus of bacteria *Oleispira antarctica* to find out the ability to exist in low temperatures. This innovation will allow us to develop an effective strategy to preserve the environment and prevent oil pollution.

And finally, another innovation is automotive biofuels obtained from plant and animal cells. Biodiesel and ethane (the most popular types of biofuels) will help stabilize the situation with prices on the world market and reduce R&D costs [4].

In addition to the above, innovations in the energy sector include other achievements, some of which are already quite widely used. For example, wind energy is the use of wind energy to operate engines of various types. Similar systems can be found in many foreign countries, and this technology also finds its application here.

Heat pumps should not be neglected; they can rightfully be called the future of energy. They will significantly improve the environmental situation through the production of thermal energy, while significantly increasing the standard of living of the population, since heat supply is one of the key energy sectors [4]. The operating principle of heat pumps is based on the transformation of low-temperature renewable energy; it has been known for more than a century, but is only now being actively used.

The latest energy innovation can be called LED lamps. They appeared on the market relatively recently, but have already managed to gain a fairly wide share. Compared to fluorescent lamps and luminaires, LED options are more practical and economical, and they have a long service life. Practical material allows for cost reduction, which is very important for a wide range of consumers. This new product continues to gain popularity; the growth of office LED lamps and devices for lighting stores is especially noticeable [5].

An original innovation in the world of energy is an osmotic station, which is based on the use of sea salt water. Osmosis is a physical effect that occurs in tree trunks and is designed to transfer nutritious juices to the area where photosynthesis occurs. Specialist scientists have proposed using a similar process to interact with water. If you place fresh and salt water in one vessel with a partition, then the pressure difference will cause the osmosis process to work. A similar reaction can be used in the operation of hydroelectric power plants [5].

An interesting idea requires further development - in particular, while scientists cannot resolve the issue of selecting the most suitable membranes for osmotic stations. If this can be done, then the new product will firmly take its place in the field of hydropower and will significantly increase the volume of energy production, stably providing for the ever-growing population around the world.

The reserves of a process such as osmosis can be called quite impressive. This innovation will help to easily use the energy of the ocean depths in human life, since the degree of salinity of water largely depends on temperature, and it changes with the level of depth. In this regard, the technology will make it possible to avoid linking the construction of hydroelectric power stations to river mouths; they can be placed directly in the oceans. Therefore, today scientists are actively developing this innovation for its speedy implementation.

The successful and full development of living conditions, improving the quality of life and the ability to save on daily needs depend on how actively innovations are introduced in the energy sector and other sectors of human life. It is for these reasons that experts all over the world study new developments every day and try them in practical conditions in order to find truly profitable and useful innovations. Thus, the modern innovative component influences almost all aspects of social life through the energy vector, ensuring economic stability, social and environmental balance, activating international scientific cooperation, and increasing the competitiveness of the economy.

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УДК 338.488

МЕТОДОЛОГИЯ ОЦЕНКИ И ПРОГНОЗИРОВАНИЯ ПОТЕНЦИАЛА РЫНКА СПЕЦИАЛИЗИРОВАННЫХ МЯСНЫХ И МОЛОЧНЫХ ПРОДУКТОВ

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Ключевые слова: методология, оценка, прогнозирование, рынок, специализированные продукты, ценность, агрегативный, доступность.

Key words: methodology, assessment, forecasting, market, specialized products, value, aggregate, availability

Аннотация: В данной статье установлено, что в последние годы имеет место увеличение научных публикаций по исследованию традиционных методологических подходов к оценке и прогнозированию потенциала рынка специализированных мясных и молочных продуктов, практикоприменение которых отличается незначительной действенной рыночной эффективностью. Авторами статьи предложена методология оценки и прогнозирования потенциала рынка специализированных белорусских мясных и молочных продуктов и инструментарий ее практикоприменения на основе учета сетевого smart-бизнеса, закона «умно-сплетенного»