

DEVELOPMENT OF GREEN ECONOMY IN CHEMICAL INDUSTRY ENTERPRISES

<https://doi.org/10.5281/zenodo.8331848>

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Abstract

A green economy is aimed at reducing the negative impact of human economic activity on the environment, and measures that help maintain a balance between meeting people's needs and increasing production without harming the environment.

The green economy can be achieved on the basis of the principles based on the development of new technologies in the field of production and management of the economy in general, and the minimization of damage to the environment.

In this case, the following most important principles can be relied upon when choosing scientific knowledge and strategy development methods:

the priority of environmental factors in solving the problem of human existence in conditions of limited resources;

separation of levels of implementation of the green economy, which is carried out at the conceptual and economic level;

mathematical accuracy of calculations, interdisciplinary nature of analysis and development;

feasibility of introducing certain technologies.

In order to achieve a green economy, the proportional implementation of the "green chemistry" program in chemical industry enterprises, including the wide use of technologies aimed at reducing the use of hazardous substances in the production process, the production of products taking into account the ability of biodegradability to the environment, high value addition through processing products in several stages produce products of value.

The benefits of a green economy are that, in the short term, a green economy has the potential to grow GDP, per capita income, and employment at the same or even higher rates than a conventional economy.

Key words

Green economy, gross domestic product, economy, hydrogen, green hydrogen, electrolysis.

Introduction:

The term "green economy" was first coined two and a half centuries ago by the French philosopher, mathematician and academic **Nicolas Condorcet** (1743–1794), who first used arguments about environmental externalities in public policy planning.¹

In doing so, he focused on putting more emphasis on the green sectors of the economy, including sustainable production independent of fossil fuels, reducing carbon emissions, and reducing energy resource consumption through high-efficiency strategies.

In this regard, the chemical industry was one of the first among various sectors of the world economy to work on creating a reliable and safe position for sustainable development based on the "green economy" and "green chemistry" programs.

In 1783, a balloon filled with hydrogen took to the skies for the first time in France. The author of the innovative idea was the French scientist and inventor Jacques Alexander Cesar Charles².

From that time until today, this universal invention has been an integral part of our life.

In the second half of the 20th century, for the first time in the United States of America, Professor Lawrence Jones of one of the American universities published an article on how to transition to an economy based on "liquid hydrogen" fuel.

The professor believed that it was necessary to build an economy that would widely use "hydrogen" in all areas. The professor emphasized that "hydrogen" can be used as an alternative environmentally friendly raw material in place of fuel energy products (natural gas, diesel, gasoline, fuel oil, etc.) in all industries.

The main part. Today, developing countries are creating extensive opportunities for the development of hydrogen economy and technologies. In particular, a number of investment projects with foreign investors are being implemented in the chemical industry branch enterprises in our republic on the basis of innovative ideas.

In particular, it was agreed to implement the initial cooperation project in the chemical industry with Saudi Arabia on the basis of "Maksam-Chirchik" JSC, which is part of "Uzkimyosanoat" JSC network - "Green hydrogen production". This project is one of the first in the world to be implemented in Uzbekistan, and the total cost of the project 90.0 million dollars.

¹ <https://www.hse.ru/news/edu>

² <https://www.eprussia.ru/epr/398/790038.htm>

Hydrogen extraction is carried out by electrolysis, in which water is split into additional impurities, waste-free hydrogen and oxygen under the influence of electricity, there by converting hydrogen into an alternative fuel.

As a result of the commissioning of the project, a 52 MW wind turbine and a 20 MW electrolyzer will be installed, and 3,000 tons of green hydrogen, 17,800 tons of green ammonia, and 30,000 tons of green urea will be produced.

This project has a number of advantages:

first, 23-24 million cubic meters of natural gas will be saved annually;

secondly, when hydrogen is used as a fuel 47.9 thousand tons of SO₂ is not released;

thirdly, when burning one kilogram of hydrogen, 2.5 times more energy is released than burning the same amount of natural gas;

fourthly, hydrogen also has the ability to connect different sectors: heat supply, electricity supply, fuel sector (liquid and gaseous fuels), raw material for the chemical industry, and also provides long-term energy storage.

The growth potential of this market is enormous and has a large multiplier effect for the economy as a whole. That is, the creation of a scientific and technological infrastructure, on the basis of which the development of local hydrogen energy technologies, including technologies for the production, transportation and use of hydrogen, will be developed.

For reference: According to the leading independent price agencies, today the price of one ton of green ammonia is 720-1400 dollars, as a result of the widespread introduction of modern scientific and technological methods in the process of hydrogen processing and production, it will be reduced to 310-610 dollars by 2050.³

Conclusion. Also, hydrogen has become a very attractive solution to the problem of decarbonization in all specified areas, and according to the program of transition to a "green economy" in our country until 2030 and to ensure "green" growth, reducing greenhouse gas emissions per unit of GDP by 35% from the level of 2010, increasing the production capacity of renewable energy sources by 15 GW and increasing their share to more than 30% of the total volume of electricity production, lays the groundwork for a 30 percent reduction in energy consumption per unit of GDP, including by expanding the use of renewable energy sources.⁴

³ <https://www.argusmedia.com>

⁴ <https://lex.uz/en/docs/6303230>

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