

INTERNATIONAL CONFERENCE
ST PETERSBURG - KRASNOYARSK, RUSSIA
MAY 20-22, 2020

Science & Technology City Hall
Krasnoyarsk

 **SUAI** State University
of Aerospace Instrumentation



«ECONOMIC AND SOCIAL TRENDS FOR SUSTAINABILITY OF MODERN SOCIETY» ICEST-2020

«INNOVATIONS AND ENVIRONMENTAL ENGINEERING IN THE ENERGY SECTOR: MODERN MANAGEMENT EXPERIENCE»

M.A. Vlasova, E.E. Kononova, L.A. Terekhova, E.I. Alekhin



02

Problem statement

Management of implementation of ecological innovations and engineering into the energy sector rises a number of issues of theoretical and practical content.

Implementation of the best experience is one of the highest priorities of development of alternative energy sector

In course of the study the following questions were raised.

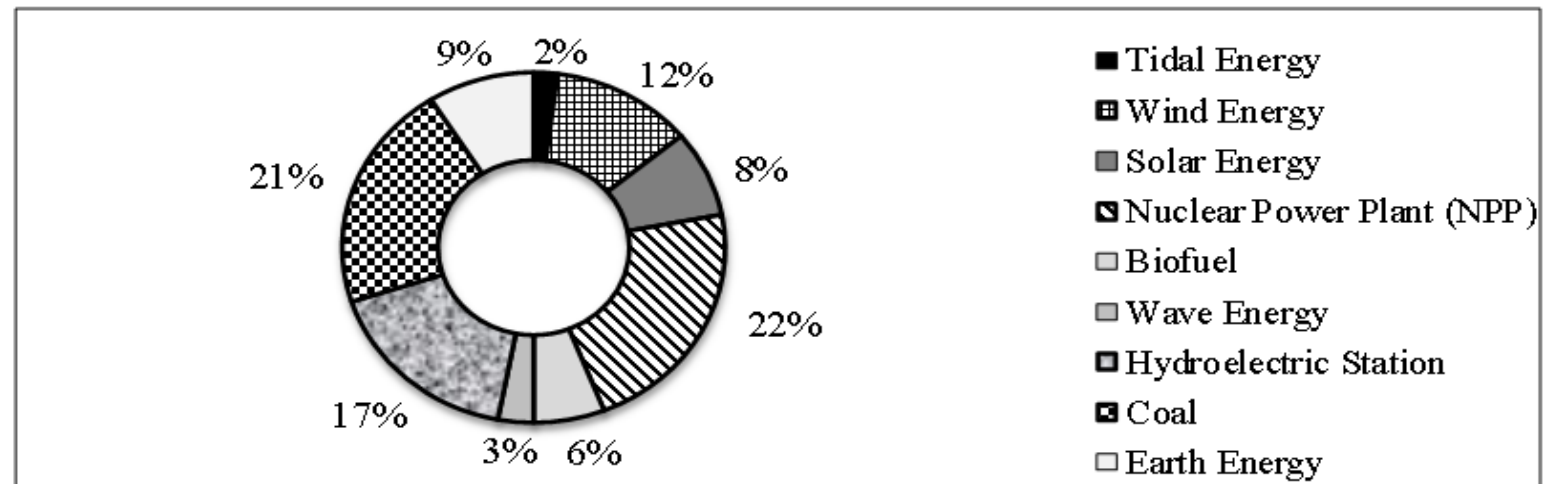
- What is the role of economical engineering in energy sector management?
- To what extent alternative energy sector has been developed in the world?
- What is Russia's experience with ecological management in energy sector?
- What is an example of successful experience in use of clean energy?



- Authors used the universal scientific research methods as well as methods for comparative and statistical analysis
- Over the past decade, wind and solar energy have increased by more than 20 and 400 times, respectively. The largest part, about 45% of the total, is nuclear power plants and thermal power plants. One can notice a positive trend in the spread of the use of wind energy (about 12%), which suggests that many countries are striving to make the transition to alternative environmentally friendly sources of energy. In the period from 2012 to 2019, the dynamics of changes in the share of energy resources produced using renewable energy sources in the total amount of energy resources changed significantly, starting from 15.5% in 2012 to 17.4% in 2019.

03

Solution methods



Distribution of various energy sources use in the global space according to 2019 data



04

Conclusions

Results, implementation

- ❑ The study indicates the promising outlook of practical implementation of large-scale environmental reengineering in order to use alternative energy technologies.
- ❑ The main activities of organizations in the field of environmental engineering are: the creation of environmentally friendly industries, the introduction of a closed-loop economy, environmental protection, environmental control and monitoring.
- ❑ In Europe and Russia, wind energy is the most competitive clean energy. The market for this energy is expected to grow by 20% each year.
- ❑ It is important to note one unique geographical feature of Russia: it is among small number of countries, which have the ability to use the heat derived within the sub-surface of the earth. Moreover, according to experts, the reserves of geothermal energy sources in our country are about 15 times more than coal. This is the least developed energy area in Russia, but it has great potential and development prospects.
- ❑ On the territory of Russia, it is advantageous to have stations based on renewable energy. In this case, it is necessary to study the maps of wind speed and solar insolation distribution in order to obtain the minimum time intervals between cycles of occurring phenomena at the output.

The results of environmental engineering in the energy sector are

A high degree of environmental diversification of various activities

Growth in investment in fixed assets related to environmentally friendly

Implementation of environmental innovation projects aimed at modernizing key business processes

Expanding corporate social responsibility of business in the field of improving business processes



ICEST

Economic and Social Trends
for Sustainability of Modern Society

Authors names: **M.A. Vlasova, E.E. Kononova, L.A.Terekhova, E.I. Alekhin**
University / organization: **Orel State University named after I.S. Turgenev**
E-mail: **len.kononowa@yandex.ru**

05

Contacts

**INTERNATIONAL CONFERENCE
St Petersburg - Krasnoyarsk, RUSSIA
20-22 May, 2020**

**«Metrological Support of Innovative
Technologies»
ICMSIT-2020**