**Report**

**about the work of the dissertation council on 6D071800 - "Electrical power engineering" at KazNRTU named after K.I. Satpayev on making decisions on awarding (refusing to award) the degree of Doctor of Philosophy (PhD) in specialty 6D071800 - "Electric Power Engineering" for 2023.**

**1. Number of meetings held**

**During the reporting period, the Dissertation Council held 2 (two) meetings.**

**2. The name of the members of the dissertation council who attended less than half of the meetings is no.**

**3. List of doctoral students indicating the organization of training**

| № | Doctoral student's name | Organization of training |
|---|---|---|
| 1 | Omarov Anuar Serikovich | Karaganda Technical University named after A. Saginova |
| 2 | Minazhova Saulesh Amanbaevna | KazNRTU named after K.I. Satpayev |

**4. Brief analysis of dissertations reviewed by the council during the reporting year**

During the work, the dissertation council reviewed 2 (two) works, one in the specialty and one in the educational program. The names of dissertations by specialty and EP are given below:

| № | Doctoral student's name | Work theme | Code and name of specialty and EP |
|---|---|---|---|
| 1 | Omarov Anuar Serikovich | Research of parameters and development of modules for an automatically controlled wind power plant with a swinging umbrella sail | 8D07103 – Electric power industry |
| 2 | Minazhova Saulesh Amanbaevna | Principles of an integrated approach to increasing the efficiency of renewable energy complexes of autonomous energy supply | 6D071800 – Electric power industry |

**4.1 Analysis of the topics of the reviewed works**

**4.1.1** Analysis of the work of Omarov Anuar Serikovich on the topic "Research of parameters and development of modules of an automatically controlled wind power plant with a swinging umbrella sail", submitted for the degree of Doctor of Philosophy (PhD) in specialty 6D071800 - "Electrical power engineering".

The dissertation work of Anuar Serikovich Omarov is devoted to a pressing issue on renewable energy sources - sail-type wind sources. Currently, in world practice, developments aimed at an integrated and comprehensive solution to the problem of creating a wind source of small-scale renewable energy capable of satisfying the production capacity and needs of the population of territories with low wind speeds (from 2.5 m/s), with unpredictable changing direction and magnitude of wind speed up to hurricane force.

The purpose of the work is to modernize by studying the parameters and developing the designs of the main modules of a wind power plant with a swinging sail.

The scientific novelty of the dissertation work is the development of a modernized wind farm with an umbrella sail and actuators containing electric current generators. The use of a PVPP generation system, built on the basis of a parallel connection of six synchronous generators, as well as the method of energy analysis, for the first time, a comparative assessment of the efficiency and selection of parameters when designing a PVPP was carried out.

**4.1.2** Analysis of the work of Saulesh Amanbaevna Minazhova on the topic "Principles of an integrated approach to increasing the efficiency of renewable energy complexes of autonomous power supply", submitted for the degree of Doctor of Philosophy (PhD) in the specialty 6D071800 - "Electric power engineering".

The dissertation work of Saulesh Amanbaevna Minazhova is devoted to an urgent issue in the direction of an integrated approach to studying the development of renewable energy sources, and in particular solar energy, and increasing the efficiency of renewable energy complexes for power supply to low-power consumers.

The purpose of the work is to study and develop an integrated approach to the development and improvement of the efficiency of low-power renewable energy sources.

The scientific novelty of the work is as follows:

1. Development of a device model that allows increasing the efficiency of a low-power solar installation;

2. Development of a prototype device for protecting the inverter system of a solar installation;

3. Development of recommendations for the development of small-scale solar energy.

**4.2 Connection of the topics of dissertations with state and regional scientific and scientific-technical programs, which are formed by the Higher Scientific and Technical Commission under the Government of the Republic of**

**Kazakhstan in accordance with paragraph 3 of Article 18 of the Law "On Science" and (or) state programs;**

**4.2.1** The dissertation work of Omarov Anuar Serikovich was carried out within the framework of the grant funding project IRN AR09562116 "Development of designs of components of a prototype of a small wind power plant with a swinging sail working body" 2021. And also as part of grant funding for a scientific project for 2022-2024. IRN AP14869386, "Research, development of a set of designs and creation of an experimental model of an automatically controlled sail wind power plant with a swinging working body." The dissertation work corresponds to the priority direction of the development of science in the Republic of Kazakhstan; 1) Energy and mechanical engineering.

**4.3 Analysis of the level of implementation of the results of theses into practical activities.**

**4.3.1** The practical significance of the work of Omarov Anuar Serikovich lies in the development of an autonomous sailing wind farm with a swinging umbrella sail, generating electrical energy in low winds (from 2.5 m/s) regardless of the direction and speed of the wind. The results of the dissertation work were used in the implementation of the grant funding project IRN AR09562116 on the topic "Development of designs of prototype units of a small wind power plant with a swinging sail working body."

**4.3.2** The practical significance of the work of Saulesh Amanbaevna Minazhova lies in the confirming act of introduction into the educational process of the Department of Electric Power Engineering of the Taraz Regional University named after M.Kh. Dulati. The results of research and development are used in laboratory classes in the discipline "Relay protection and automation of electrical power systems" for EP: 6B07113 – "Electromechanics" and 6B07114 – "Power supply of industrial enterprises and civil facilities" in the direction of training 6B071-Engineering and engineering.

**5. Analysis of the work of official reviewers (with examples of the most low-quality reviews)**

Persons were appointed as reviewers of doctoral students' dissertations for the degree of Doctor of Philosophy (PhD) in accordance with the requirements of the Model Regulations on the Dissertation Council.

Details of the assigned reviewers are provided below:

| № | Doctoral student's name | Reviewers | |
|---|---|---|---|
| 1 | Omarov Anuar Serikovich | Tanasheva Nazgul Kadyralievna – PhD, associate professor, Karaganda University named after academician E.A. Buketova | Isembergenov Nalik Turegalievich – Doctor of Technical Sciences, Professor of the Department of Electronics, Telecommunications and Space Technologies, KazNRTU named after. K.I.Satpayeva |
| 2 | Minazhova Saulesh Amanbaevna | Almuratova Nurgul Kanaevna – PhD, Associate Professor of the Department of Renewable and Alternative Energy Sources, Almaty University of Energy and Communications named after G. Daukeev | Erbaev Erbol Tolegenuly – PhD, Associate Professor of the Department of Electrical Engineering and Automation of the West Kazakhstan Agricultural Technical University named after Zhangir Khan |

**Chairman**
**dissertation council for**
**6D071800 – "Electric power industry"** **A. Bekbaev**

**Scientific Secretary**
**dissertation council for**
**6D071800 – "Electric power industry"** **Assel A. Zhumatova**