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AZERBAYCAN'DA ALTERNATİF VE YENİLENEBİLİR ENERJİ KAYNAKLARININ KULLANIMINA YÖNELİK PLANLAMA FAALİYETLERİ VE STRATEJİSİ

PLANNING ACTIVITIES AND STRATEGY FOR THE USE OF ALTERNATIVE AND RENEWABLE ENERGY SOURCES IN AZERBAIJAN

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ABSTRACT

The State Agency for Alternative and Renewable Energy Sources of the Republic of Azerbaijan was established by the Decree of the President of the Republic of Azerbaijan dated February 1, 2013 to improve the management system in the field of alternative and renewable energy in the country. implements the state policy in the field of its use.

This Review reflects the results of the Strategic Environmental Assessment under the State Strategy for the Use of Alternative and Renewable Energy Sources - 2015-2020 (hereinafter referred to as the "Strategy"), as well as the results of previous discussions and consultations with relevant agencies and the public.

Keywords: Alternative Energy, Renewable Energy, Strategy

ÖZET

Azerbaycan Cumhuriyeti Alternatif ve Yenilenebilir Enerji Kaynakları Devlet Dairesi, ülkedeki alternatif ve yenilenebilir enerji alanındaki yönetim sisteminin iyileştirilmesi amacıyla 1 Şubat 2013 tarihli Azerbaycan Cumhuriyeti Cumhurbaşkanı Kararı ile kurulmuştur. kullanım alanında devlet politikasını uygular.

Bu İnceleme, 2015-2020 Alternatif ve Yenilenebilir Enerji Kaynaklarının Kullanımına İlişkin Devlet Stratejisi (bundan böyle "Strateji" olarak anılacaktır) kapsamında Stratejik Çevre Değerlendirmesinin sonuçlarını ve aynı zamanda önceki tartışmaların sonuçlarını ve ilgili ajanslar ve halk.

Anahtar kelimeler: Alternatif Enerji, Yenilenebilir Enerji, Strateji

1. Introduction.

Implements the state policy in the field of alternative and renewable energy and its efficient use in the Republic of Azerbaijan. Dagentlik is a central executive body that coordinates state regulation, activities on the use of ABEM and carries out state control, participates in the formation of a unified state policy in this direction, ensures the implementation of this policy, development and infrastructure in the economy and social spheres Ensures the application of alternative and renewable energy, the implementation of measures related to energy production, energy consumption and energy efficiency, maintains and carries out state registration and state cadastre in the field.

2. Strategy "Use of Alternative and Renewable Energy Sources 2015-2020"

The draft State Strategy for the Use of Alternative and Renewable Energy Sources in the Republic of Azerbaijan for 2015-2020 was prepared by ABEMDA and submitted to the Presidential Administration after coordination with the relevant authorities.

The main goal of the State Strategy for the Use of Alternative and Renewable Energy Sources 2015-2020 is to achieve electricity and heat generation, energy efficiency, energy efficiency and sustainable energy supply to consumers through the widespread use of ABOEM. Development of the distributed structure of generating

capacity through the use of ABOEM, diversification of energy sources, reduction of thermal gas emissions, application of ABOEM to all sectors of the economy and new generation capacity in the balance of energy consumption, covering ABOEM's consumption share in 2020. Necessary measures will be taken to deliver 20 percent. In this sense, the Strategy targets have been aligned with the EU Energy Efficiency Directive 2012/27 / EU.

The purpose of the implementation of the State Strategy is as follows:

- Determination of ABOEM, calculation of its potential in the republic and creation of the state cadastre on energy resources;
- creation of normative legal base in the field, as well as preparation of legislative acts regulating its activity;
- formation of a secure tariff policy, incentive measures and state innovation policy in the field;
- Creation of new generation forces at the expense of ABOEM and organization of their effective use;
- organization of centralized management structures in the field and interaction with other executive authorities and self-government bodies;
- Organization of the educational process in educational institutions and research centers in order to create specialized human resources in the field.
- The implementation of these measures will not only expand the use of ABOEM in the country and take a worthy place among the developed countries of the world, but also create new jobs and improve the social living conditions of the population, create a basis for more efficient use of natural resources.

It should be noted that due to the lack of detailed implementation of the planned goals in the draft Strategy, the document was adopted as a more “politically oriented” strategic document (eg location, proposed productivity) and the analysis was performed in this regard.

3. Planning for the use of alternative and renewable energy sources in the Republic of Azerbaijan and the Strategy for 2015-2020

The current activity on the use of ABEM in the Republic of Azerbaijan is based on the "State Program on the Use of Alternative and Renewable Energy Sources in the Republic of Azerbaijan" approved by the Decree of the President of the Republic of Azerbaijan No. 462 dated October 21, 2004. In fact, many projects have been implemented or are being implemented under the program.

Thus, after the adoption of the program in 2009, 14.4 MW, including 9 small hydropower plants with a total capacity of 12.2 MW and 2 wind power plants with a capacity of 2.2 MW were commissioned in the country.

In 2014, 1480.0 million kWh of electricity was generated in the country due to all renewable energy sources with an installed capacity of 1245 MW. According to rough estimates, this will save 298.5 thousand tons of fuel oil or 429.2 million cubic meters of natural gas, as well as prevent the release of 919.4 thousand tons or 763.9 thousand tons of carbon dioxide (CO2), respectively.

Construction and installation works of Surakhani and Pirallahi solar power plants (HPPs) with a design capacity of 2.8 MW each, Garadagh-Sahil HPP with a capacity of 3 MW and Garadagh-Sangachal HPP with a capacity of 9 MW are underway in Baku. In the first stage, 1.4 and 1.0 MW power plants, respectively, at the Surakhani and Pirallahi solar power plants, should be connected to the central network and start energy production.

During the reporting period, 1.7 MW of generating capacity was installed at the 2.8 MW HPP in Sumgayit and its connection to the general power system is underway.

In the Agro-energy complex of Samukh region, 1.0 MW generation capacity was installed on the HPP with a design capacity of 2.8 MW and connected to the general power system. The construction of a 3-storey control center and a dispatch service building is also underway in the complex.

In addition, research is underway to install a 10 MW hybrid power plant (HPP) to meet the energy needs of Chilov settlement of Pirallahi district.

With the financial support of the German KfW Bank, 500 ha areas were selected for the construction of wind and solar power plants in Absheron region and 300 ha in Khizi region, relevant documentation work was carried out, measuring and observation stations were purchased.

With the support of the United Nations Development Program, the installation of a 580 kW power unit at a small hydroelectric power plant (SMP) in Sheki has been completed and the plant has been connected to the grid. The 44MW Baku Solid Waste Incineration Plant of Tamiz Shahar OJSC, which is subordinated to the Ministry of Economy and Industry of the Republic of Azerbaijan, has been put into operation.

Discussions have been held with the relevant authorities in connection with the construction of a 200 MW wind farm in the Caspian Sea (offshore) and are currently under investigation.

With the participation of ABEMDA's Azalternativenerji LLC and invited experts from Germany, testing work is nearing completion at the 50 MW Wind Power Plant (WPP) jointly installed by Caspian Management Systems and Aztorg Limited Liability Companies in the Khizi region. Work on the connection is underway.

The state examination of 1.7 MW HPP installed by Caspian Technological LLC and 48 MW HPP under construction is underway. It is planned to put the stations into operation in 2015 and complete the installation of the 48 MW station.

Consumption of relevant devices under ABEM is exempt from customs duties. Nevertheless, it is planned to expand local production to meet the relevant demand. For example, the Solar Panels Plant of Azguntex LLC in Sumgayit produces solar panels. In 2014, the plant produced 16,300 panels. In addition, the plant's production capacity has been increased to 50 MW this year, which will make it possible to produce 200,000 solar panels a year.

4. Strategic planning for 2015-2020

The implementation of the above-mentioned measures on the "Strategy" is planned to be completed or expanded in the future. According to the strategic plan (2015-2020) adopted by the State Agency to ensure long-term and effective activities in the field of ABOEM in all regions of Azerbaijan, to implement projects in a planned manner and in accordance with the energy needs of the regions, "ABOEM Development Map 2020", and ABOEM development maps by 2020 ”and“ ABOEM management scheme of the Republic of Azerbaijan ”were prepare.

Opinions and suggestions on the results of the SEQ process on the Strategy Project will be taken into account in the Strategy, as well as in the future Action Plan to be developed within the Strategy. Currently, work is underway to develop an Action Plan for the Strategy.

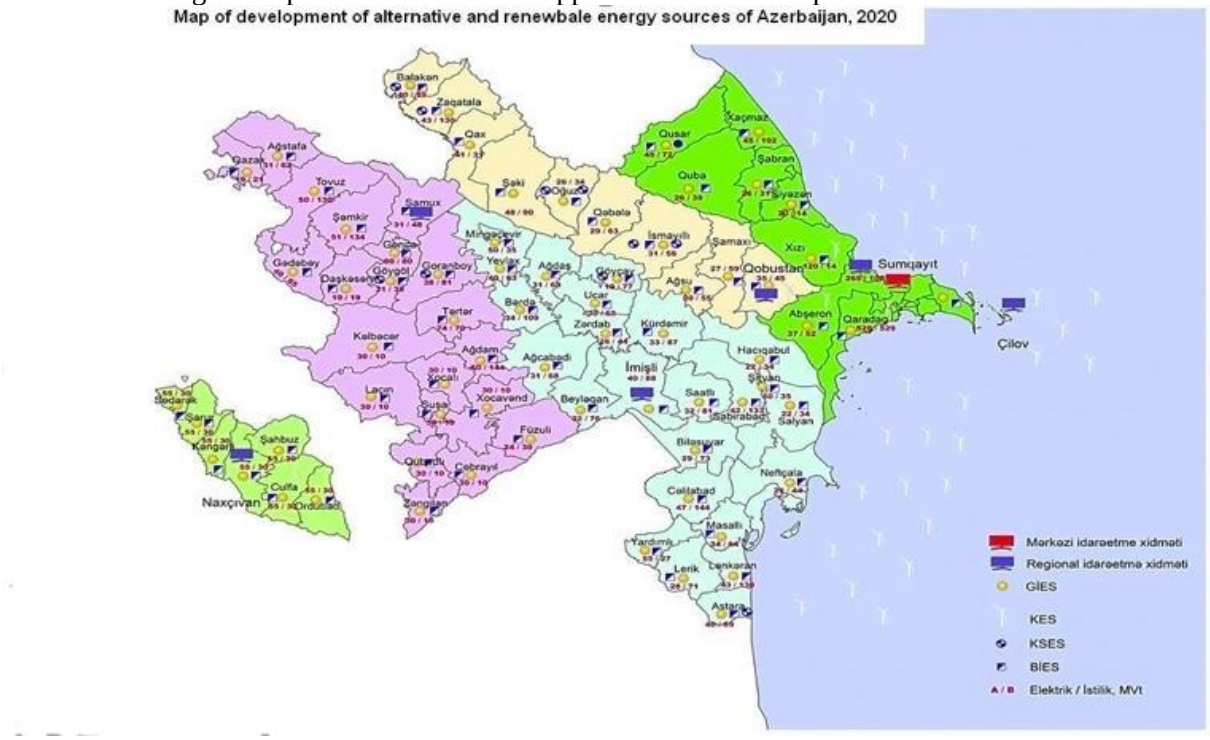
According to the plan, the distribution of alternative and renewable energy stations to be installed in the Republic of Azerbaijan in 2020-2030 was carried out by economic and administrative regions. The capacity of the stations to be installed in all economic and administrative regions has been determined and divided by ABEM types (see map below).

The type of stations was selected taking into account the ABEM potential of the regions and the amount of energy consumed. The table shows the capacity of Solar Power Plants, Solar Thermal Power Stations, Heat Pumps, Bioenergy and Cogeneration Facilities, Wind Power Plants, Small Hydroelectric Power Stations and Geothermal (and Geothermal) Stations for each region.

According to the strategic plan, the main goals are to build 2,065 MW of solar, 512.5 MW of wind, 515 MW of biomass, 60 MW of small hydropower plants and geothermal heating plants by 2020.

Azerbaijan The following goals related to the development of renewable energy by 2020 identified:
• Share of ABOE in electricity generation - 20%;
• The share of ABOE in total consumption - 9.7%;
• Determined capacity of ABOE - 2.000MW.

The following map shows the approximate development scheme of ABOEM:



5. Correlation of the State Strategy for the Use of Alternative and Renewable Energy Sources 2015-2020 with other planned strategic documents.

The State Strategy will have a direct and indirect link with other development sectors. The study of the relationship with other strategic documents is considered necessary in terms of harmonizing the ABOEM Strategy with development schemes for a number of existing or related relevant sectors. For the purposeful development of the strategy document at the next stage (preparation of the Action Plan here) in the SEQ process it was considered necessary to hold consultations with the relevant executive bodies on the mentioned development sectors:

The relevant strategic documents and sectors mentioned are explained below:
The Development Concept “Azerbaijan 2020: Vision for the Future” prepared on the basis of the Order of the President of the Republic of Azerbaijan dated November 29, 2011 (approved by the Decree of the President of the Republic of Azerbaijan dated December 29, 2012) is the main political and strategic document. Along with the development of the sector, the activity also envisages the expansion of the use of alternative and renewable energy sources.

Another of these documents is the Action Plan adopted under the "State Program for Socio-Economic Development of the Regions of the Republic of Azerbaijan in 2014-2018" (February 27, 2014), which may be related to the activities envisaged in the "Strategy".

It was considered expedient to coordinate the following other measures included in the State Program with the current "Strategy" and the Action Plan to be adopted in accordance with it:
- Measures for the development of industry and agriculture
- Ecology and use of natural resources
- Road facilities and transport measures
- Power supply
- Measures to improve water supply and sewerage services
- Amelioration and irrigation measures
- Tourism development measures

Table: 1 The evaluation results, effects and mitigation measures are given in the following tables:

1. **Positive effects:** +
2. **Adverse effects**: –
3. **No effect:** 0

Description of strategy goals	Atmosphe	Cli	W	Land	Biodiversi	Human	Landsc ape and Materia l-	Proposed changes in the direction of the strategy
KSES (derivation method)	0	0	_	0			0	The location of hydropower plants should be chosen so as not to touch the nature reserves (natural and biosphere reserves, national parks, etc.). During the construction of new facilities, it is important to take compensatory measures to minimize the negative impact on the fauna and flora and to improve the habitat, to protect the environment, as well as to ensure that spawning fish do not create isolation in migration routes.
GES	0	0	_	_			_	Less important soils should be used when selecting sites for solar installations, in those areas assessment of biodiversity samples and regular monitoring.
KES	_	_	0	0			_	Analysis of the importance of the area for birds (migration routes, important ornithological areas) when selecting the site for wind farms. Consideration of the habitat and lifestyle of birds and other fauna during the installation of facilities both at sea and on land. The work should not be carried out at times that are important for the life cycle of living organisms (reproduction, nesting, migration, etc.).

Biomass (biogas) energy	+	+	+	+	–	–	0	The use of more than 5% of plant mass for various economic purposes and as a source of energy can cause significant changes in the metabolism of substances in the biosphere.
Geotermal	–	–	–	–	–	–	–	Consideration of environmental pollution and biodiversity hazards in the design of subsoil energy potential use.
Other renewable energy sources	–	–	–	0	–	–	0	Mass use of energy potential of waves (marine currents) can adversely affect marine flora and fauna. This energy is used to oxygenate and nourish the surface layer of water can weaken the wave energy, which is important in enriching substances.

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