

**КРАТКОСРОЧНОЕ ПРОГНОЗИРОВАНИЕ ГЕНЕРАЦИИ ЭНЕРГИИ
СОЛНЕЧНЫХ ЭЛЕКТРОСТАНЦИЙ С ИСПОЛЬЗОВАНИЕМ ТЕХНОЛОГИЙ
НЕЙРОННЫХ СЕТЕЙ В РЕСПУБЛИКЕ БЕЛАРУСЬ**

**SHORT-TERM FORECASTING OF ENERGY GENERATION
FROM SOLAR POWER PLANTS, USING NEURAL NETWORK TECHNOLOGIES
IN THE REPUBLIC OF BELARUS**

人工智能短期估测白俄罗斯太阳能发电厂的发电量

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***Abstract:** artificial Intelligence consist attribute of science and computer that creates the system or program or any machines perform the Intelligent and Imaginative functions of a human, independently and solution of problems which are able to make some actions. Basic areas of application are smart grids, electricity trading, the sector coupling of electricity, heating and transport etc. Prerequisites for a wide using of AI in the energy system are correspondingly large set of data that is evaluable and the digitalization of the energy sector. AI makes the energy industry more efficient and secure by analyzing and evaluating the data volumes. The main aim of AI and producing energy is creating system, which will be able to make predictions of solar energy resources in definite place. Data massive will be collected and separated on few types. The results shows "future" time: what amount of energy "we" can get in certain period of time in certain place. I use 2 points, which situated in different places (active solar power station); 1 square meter ($kW\cdot hr/m^2/day$) by solar panel.*

Many industrialized nations have installed significant solar power capacity into their grids to supplement or provide an alternative to conventional energy sources while an increasing number of less developed nations have turned to solar to reduce dependence on expensive imported fuels (see solar power by country). Long distance transmission allows remote renewable energy resources to displace fossil fuel consumption. Solar power plants use one of two technologies:

–Photovoltaic (PV) systems use solar panels, either on rooftops or in ground-mounted solar farms, converting sunlight directly into electric power.

–Concentrated solar power (CSP, also known as "concentrated solar thermal") plants use solar thermal energy to make steam, which is thereafter converted into electricity by a turbine.

Electricity is by its content difficult to store and has to be available on demand. Therefore, unlike other products, keeping it in stock, ration it or have customers queue for it, is not possible, under normal operating conditions. So, it necessary to have truly accurate information about future energy plot.

The solar energy generating system, whether grid-connected or stand-alone, is most commonly used in places when possible to install solar equipment (roofs, pollutes areas, closed rubbish dumps, rural and suburban areas). It is based on converting solar radiation (i.e., photons that are sent from the sun) to produce electricity. The PV system has a lot of ways of applications. For example, in developing countries, PV is used for basic life needs, such as heating and cooking, while in developed countries, the system is used to supply electricity for homes and grids. Due to its importance in the solar energy field, global solar radiation data (GSR) forecasting has become more popular to facilitate solar system installation.