ISSN: 2776-0960 Volume 2, Issue 7 July, 2021

ResearchJet Journal of Analysis and Inventions
https://reserchjet.academiascience.org

USE OF ELECTRICITY IN THE NATIONAL ECONOMY

Sharipov Farkhod Fazliddinovich
Namangan Engineering Construction Institute
E-mail: nammqi_info@edu.uz

Zokirov Shokirjon Odiljon o'g'li
Namangan Engineering Construction Institute
E-mail: nammqi_info@edu.uz

Annotation
This article provides ideas and comments on the use of electricity in the national economy, the structure and scheme of the energy system, power grids, and systems.

Keywords: Electricity, transformer, power system, heat.

Widespread use of electricity in the national economy is due to its following characteristics:

- The ability to convert into virtually all types of energy (thermal, mechanical, light, etc.);
- Ability to transmit large quantities over certain distances;
- Feature of energy distribution and change of its parameters (voltage and frequency);
- Occurrence of electromagnetic processes at high speeds.

The distribution of electricity provides endless possibilities. It allows the creation of devices with large and small capacities, for example, presses with a large electric motor or watches with a small electric motor.

Electricity consumption. Industrial enterprises consume the bulk of electricity.

The increase in the production rate of industrial enterprises also depends on the electrification of auxiliary robotic devices. Electrification of ancillary and transport operations is 3-4 times more efficient than the production of basic means of production.

Electrification of agriculture depends on the specific characteristics of this industry. That is, the spread of production over a large area, the low concentration of labor, the seasonality of work, and so on.

Electrified rail transport also consumes large amounts of electricity.

ResearchJet Journal of Analysis and Inventions
https://reserchjet.academiascience.org

Electrified railway transport uses both alternating and constant current. But some of the indicators of alternating current are more efficient and currently alternating current is used in the electrification of railways.

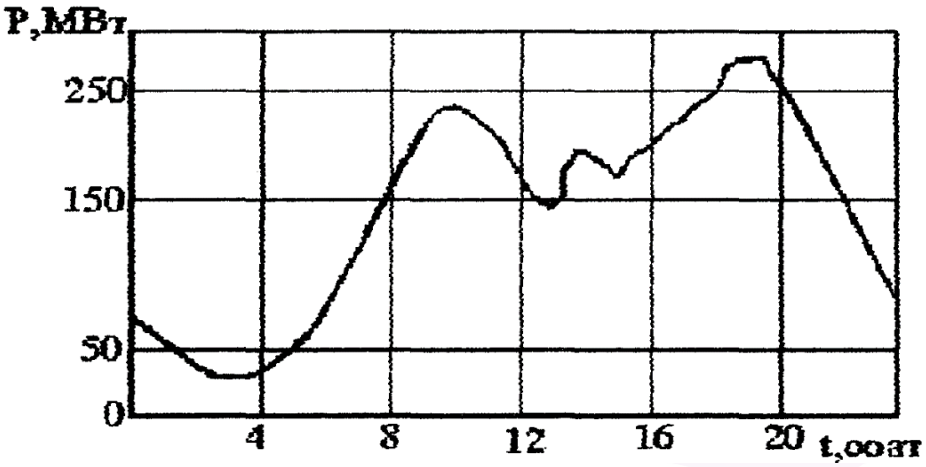

Figure 1. Graph of winter electricity consumption in a large city

In the future, the use of battery-powered, electric cars and electric buses is expected in urban transport. When the consumption rates in the system decrease, the batteries can be recharged.

In the past, electricity was used only for lighting in everyday life, but now electricity is used to power household items such as refrigerators and televisions. The use of electricity in industrial plants, transportation and other consumers will change throughout the year as it changes overnight.

Electricity consumption is also affected by the seasons. In winter, a large amount of electricity is used for lighting and heating. Weather conditions should also be taken into account. Heavy snowfall will increase the demand for electricity in transport.

A power system is a combination of power plants, transmission lines, substations for general loads, and heat networks operating in an agreed manner.

District power systems connected by communication lines that serve the exchange of power between systems form an integrated power system.

For example, the power systems of Latvia, Estonia, Belarus, Lithuania and the western regions of Russia, connected by a 330 kV line, form the North-West Unified Power System, which is a common dispatch control point in Riga.

A power system consists of two different types of elements: a transmitter, i.e., energy is transferred from one type to another using these elements, a transmitter,

ResearchJet Journal of Analysis and Inventions
https://reserchjet.academiascience.org

i.e. these (overhead and cable lines) serve to transmit energy over the required distances.

The part of the power system that generates, distributes, and converts electricity is called the electrical system.

The electrical system includes generators, distribution equipment (TU), power lines, and power receiving equipment.

Power grids are part of the electrical system and serve to transmit electricity from the source to consumers, as well as to distribute it among them.

Power lines consist of power transmission lines, substations, distribution points. It is economically viable to transmit large amounts of electricity over relatively long distances only through high-voltage lines. For this purpose, transformers that convert the energy produced by generators into high-voltage energy serve.

A substation (PS) is an electrical equipment designed to convert and distribute electrical energy and consists of transformers, distribution equipment, and ancillary equipment.

PSs can be amplifying and reducing. In booster substations, electricity is converted from low voltage to high voltage, and in booster PSs, it is converted from high voltage to low voltage.

Substations designed to receive and distribute electricity at the same voltage without change are called distribution points (TP).

According to their functions, power grids can be conditionally divided into three groups:

1. Local power grids up to 35 kV (including 35 kV) serving to supply relatively small areas with an average radius of up to 30 km. This can include urban, rural, industrial and other similar power grids.
2. District power grids with a voltage of 775 kV and above serving longer distances.
3. Intersystem power grids that connect individual systems to each other.

According to the conditional scheme of connection, power lines can be radiant and closed-circuit. If electricity is received from a single source and transmitted only in one direction through the power grid, such a network is called a radiant power grid.

A power supply supplied from two or more sources is called a closed circuit.

ResearchJet Journal of Analysis and Inventions
https://reserchjet.academiascience.org

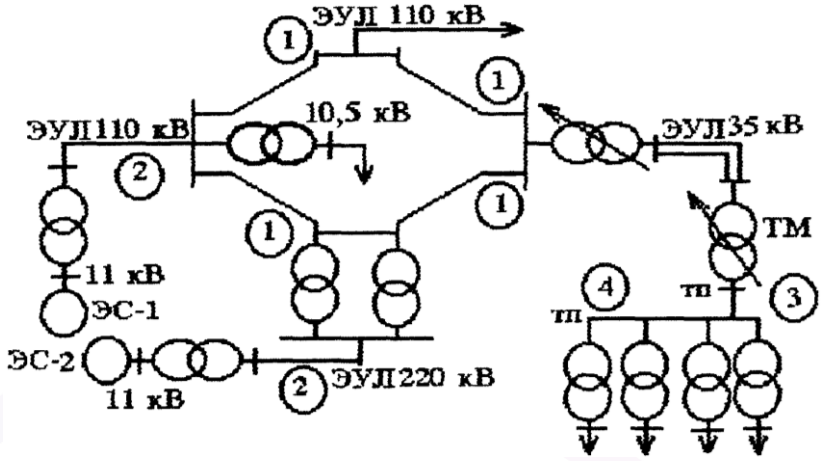

Figure 2. Conditional scheme of the power grid in the power system

Electricity is transmitted from power stations (ES) directly to the loading centers through the transmission lines (1) that make up the district power grids or through the supply, receiving transformer substations and the power transmission lines (EUL) (2) that connect them. To increase the reliability of electricity supply, many district power grids will be closed-circuit.

Receiving substations mainly consist of load-adjustable (U.H.R.) transformers, which serve as the supply center (TM) of the distribution network, are transmitted from the supply center to the distribution points (TP) and then distributed among electrical equipment at this voltage or transformer substations. Here, it is converted to low voltage and distributed among consumers.

It is referred to as the EUL (3) provider, which transmits electrical energy from TM to TP or directly to the substation along its length. EUL (4), which is connected to several transformer substations or consumer equipment along its length, is called a distributor.

Adopting the shape and scheme of the network is a very complex task, it must meet the requirements of reliability, economy, ease of use, security and opportunities for further development.

References

1. Даминов, А. А., Атмирзаев, Т. У., Махмудов, Н. М., & Шарипов, Ф. Ф. (2017). ПЕРСПЕКТИВНЫЕ НАПРАВЛЕНИЯ АВТОМАТИЗИРОВАННОГО УПРАВЛЕНИЯ ПРОЦЕССА ПРОИЗВОДСТВА, ПЕРЕДАЧИ И ПОТРЕБЛЕНИЯ ЭЛЕКТРОЭНЕРГИИ. Актуальные проблемы гуманитарных и естественных наук, (2-3), 59-62.

ResearchJet Journal of Analysis and Inventions
https://reserchjet.academiascience.org

2. Мамаджанов, А. Б., & Шарипов, Ф. Ф. (2016). Электр таъминоти тизимига энергия назорати ва хисоблашнинг автоматлаштирилган тизимларини жорий этишнинг самарадорлиги хакида. International scientific journal, (1 (1)), 76-79.
3. Даминов, А. А., Махмудов, Н. М., & Шарипов, Ф. Ф. (2016). ПРИМЕНЕНИЕ БЕСКОНТАКТНЫХ АППАРАТОВ И ЛОГИЧЕСКИХ ЭЛЕМЕНТОВ В СХЕМАХ УПРАВЛЕНИЯ ЭЛЕКТРОПРИВОДАМИ. Science Time, (11), 143-147.
4. Мамаджанов, А. Б., & Шарипов, Ф. Ф. (2016). EFFICIENCY IN THE INTRODUCTION OF AUTOMATED SYSTEM OF CONTROL AND ACCOUNTING OF ELECTRIC POWER SUPPLY SYSTEMS. Міжнародний науковий журнал, (1-1), 76-79.
5. Шарипов, Ф. Ф., & Мамаджанов, А. Б. ОБ ЭФФЕКТИВНОСТИ ПРИ ВНЕДРЕНИИ АВТОМАТИЗИРОВАННОЙ СИСТЕМЫ КОНТРОЛЯ И УЧЕТА ЭЛЕКТРОЭНЕРГИИ (АСКУЭ) В СИСТЕМЕ ЭЛЕКТРОСНАБЖЕНИЯ.