ELECTRIC POWER ENGINEERING, ELECTRIC ENGINEERING AND ELECTROMECHANICS

DOI https://doi.org/10.30525/978-9934-588-79-2-1.38

THE GENERAL TREND OF ENERGY SAVING

Oliinyk Yu. S.
Candidate of Pedagogical Sciences,
Associate professor at the Department of Physics,
Electrical Engineering and Power Engineering
Ukrainian Engineering Pedagogics Academy
Kharkiv, Ukraine

Increasing role of saving energy in all industries including economy and utilities is connected with the rise of the power energy demand. As we now, the resources are not enough, the problem is inefficient use and also the cost of energy is constantly increasing.

During the last years housing and utilities havelow service prices. As a result, the potential of saving energy in the once of industrialization is the quarter of all potential in Ukraine. The most important task of reforms, which was provided, is implementing effective policies of saving energy. It needs for decreasing production losses and also for reduction losses on the payment of services consumed.

The reform was finished. As we mentioned, Ukraine has a great potential of saving energy. Despite that fact, the housing and utilitieshave been steel of energy-intensive enough. And the loss of energy, water, other resources and fixed capital are decreased. The housing, utilitydoesn't have the stimulus for implementation of saving energy, tariff optimization and increasing irrational loss the logistic resources.

The loss of power energy in production and sale1 cubic meters of water higher on 30% than in general in the Europe. Add to that, the using water is higher on two times than in general in the Europe too [4-6]. The government will plan for developing the investment projects which are aimed at decreasing power and provide for reduction activities by reducing the loss.

The cost of power resources is increasing always. It changed attitude to the problem of power energy accounting. Especially, the great pay attention to industrial enterprises. The users of power energy are increasing the precision of calculation. That's why the collection of indicators in time of

using power energy with the highest precision instrumentsis the base forimproving of systems accounting and control of energy. The process of generation of electric energy is unique and has a continuing character. The loss of energy in the process of generation account for approximately 22%, in the process of energytransfer and in the process ofconsumer energy consumption is approximately 30%. If we use the simple mathematics addition, we will get 80% of loss of power energy since the moment of generation to the moment of using. The saving of energy means comprehensive efforts, which are productive, technical, economic and beyond in the law. Also, it is directed on the economy and rational using of energy resources of our country. That's why the using of power energy has to restrict with the using of permissible limits. It can be possible of availability and use the equipment of accounting and control of energy as well in the industrial plants as domestic [1-3].

The saving of power energy resources without the general changing or improving electrical equipment can be possible if the person understands that the economy of power resources is benefited for herself. Perhaps save the power resources in the everyday life. It consists in the simplest of saving energy like turn off the lights in the room if it doesn't need, the using of saving lamps and others. Therefore, the easy habits can conserve upwards of 10%power energy nationally.

The saving of power energy, thermal energy and water must be implemented not just in the domestic, but also in the production. It must be obligatory consumption accounting the water, gas and energy, the commission of energy passport and implementation of energy audit in time. Also, more extensive use of renewable source energy and greater use ecological kinds of transport on the government level are helpful for saving energy.

The permanent increasing of demand of power energy promotes development of saving technology, which is more active and faster. They connect with the global problem in all worlds, like energy safety any country and the changing of the climate.

Reconstruction of power supply system in the industrial plants with using the modern equipment and electrical apparatus allowed for saving power energy on an industrial scale and improve the energy efficiency of technological process.

The modern equipment can increase the efficiency of electrical facilities and can enhance the efficiency the particular technological process. The specific details of synchronous engine have function of short circuit protectionand maintaining the power ratio in the optimum boundaries.

The authors article [7] propose an absolutely interesting distribution the norm of fuellosing, electrical energy and thermal energy. They suggest of classifying all of energy losing and fuel by the following features:

1. The degree of aggregation: individual or group;
2. The loss composition: technological or general production;
3. The period of validity: year, quarter, month.

Ifweconsider every points more detailed, we will make a conclusion. The individual norm of losing is characterized losing of fuel and energy which was established, according to particular electric installation type, thermal apparatus or flow chart. Also, we must consider a certain conditions of production on the general level of industrial enterprises. The group loss rate is determined according to in terms of the products which is based onsetting nomenclature [7].

The technological of norm of loss the electrical and thermal energy and also fuel are used for the base and additional process of generating. he general production of loss the fuel and energy is characterized as loss of the main and additional technological of process in the generation. Also, it is characterized the loss of own production needs, which include the heating, ventilation and lighting and others things, which are needed for normal work in the industrial plants [7].

The general production of loss the fuel and energy is characterized as loss of the main and additional technological of process in the generation. Also, it is characterized the loss of own production needs, which include the heating, ventilation and lighting and others things, which are needed for normal work in the industrial plants [7]. The standard of losing, which are characterized by time, can provide for calculation of the electric consumption value of the workshop. It is carried out on the base of plan manufacture of parts during the particular period. According to results of planning the consumption of power energy for workshop are restricted by consumption limits clearly [2, 3].

During the process of saving energy we can make the conclusion that the research in the sector of saving energy demonstrates that the important activities of saving resources are the next:

– Using the safe energy production;
– Increasing the level organization of saving technology;
– Reduction the material capacity production, which is produced;
– Improving the structure of energy equipment;
– Developing and further embodiment more effective consumers;
– Improving the management of mode the consumers;
– Less of consumers and increasing using the secondary fuel and energy resources.

Each country in the world pays attention of the saving energy. Also, Ukraine is too. Major purposes of energy politics arein Ukraine:

1. Increasing the ability to compete the different industrial plants;
2. Increasing the level of safe energy of the country, that is security level the country energy system from deficit of fuel and energy resources, which can available to all consumers;
3. The negative influence the using of energy resources on the environment have to decrease to a minimum.

Now the safe of energy is the problem the main meaning for national safe of the country. In Ukraine as in the most countries in the world that questions belong to national security and defense council [3-5].

All of these questions have to controlled at the highest government level and have to locate in the Ukrainian laws.

References:

1. [електронний ресурс] Державне агентство з енергоефективності та енергозбереження України, URL: https://saee.gov.ua/uk/consumers/energozberezhenya-v-pobuti
2. Нова енергетична стратегія України до 2035 року: «Безпека, енергоефективність, конкурентоспроможність». URL: http://mpe.kmu.gov.ua/minugol/control/uk/doccatalog/list?currDir=50358
3. Олійник Ю.С. Сучасні підходи у напрямку енергозбереження/ Ю.С. Олійник//Вісник Харківського національного технічного університету сільського господарства імені Петра Василенка. Технічні науки. Випуск 204 «Проблеми енергозабезпечення та енергозбереження в АПК України», Харків: ХНТУСГ, 2019. – с. 58-60.
4. Шматько Н.М. Організація планування структурних змін у процесі розвитку промислового підприємства / Н.М. Шматько // Харківський національний економічний університет імені Семена Кузнеця. Випуск 4. – С. 138–143.
5. Пантєлєєва І.В. Особливості розрахунків стійкості навантаження відносно систем електропостачання підприємств/ І.В. Пантєлєєва // Актуальные научные исследования в современном мире. – Выпуск 12 (32) Часть 1. – Переяслав-Хмельницкий. – 2017. – С. 41–45.
6. Енергетика: історія, сучасність і майбутнє. Електроенергетика та охорона навколишнього середовища. Функціонування енергетики у сучасному світі/ [упоряд. С.Г. Плачкова, І.В. Плачков та ін.] – К. : 2013 [http://energetika.in.ua/ua/]
7. Вагін Г.Я. Економія енергії в промисловості: [навч.посіб.] Г.Я. Вагін, А.Б. Лоскутов – Н. Новгород : Нижегород. Держ. техн. ун-т, НІЦЕ 1998 – 220 с.

8. Булгакова М., Приступа М. Енергозбереження в Україні: правові аспекти і практична реалізація/ навчально-практичний посібник – Наукове видання. Рівне: видавець О.Зень, 2011. 56с.

9. Erik Dahlquist, Iana Vassileva, Eva Thorin, Fredrik Wallin How to save energy to reach a balance between production and consumption of heat, electricity and fuels for vehicles Researcharticle Energy – Mälardalen University, Vasteras, Swedent -Volume 46, Issue 1, October 2012 – Pages 16–20.

DOI https://doi.org/10.30525/978-9934-588-79-2-1.39

ОЦІНКА ЕКОНОМІЧНОЇ ЕФЕКТИВНОСТІ ФУНКЦІОНАЛЬНО ОДНОРІДНИХ ГРУП БІОГАЗОВИХ УСТАНОВОК

Потапенко М. В.
кандидат технічних наук,
старший викладач кафедри енергетики і автоматики
Відокремленого підрозділу Національного університету біоресурсів
і природокористування України
«Бережанський агротехнічний інститут»

Рамш В. Ю.
кандидат технічних наук, доцент,
завідувач кафедри енергетики і автоматики
Відокремленого підрозділу Національного університету біоресурсів
і природокористування України
«Бережанський агротехнічний інститут»

Шаршонь В. Л.
асистент кафедри енергетики і автоматики
Відокремленого підрозділу Національного університету біоресурсів
і природокористування України
«Бережанський агротехнічний інститут»
м. Бережани, Тернопільська область, Україна

Складність сучасних гетерогенних технологічних систем виробництва біогазу, значні енерго- і металоємності, зростаючі вимоги до якості кінцевого продукту, зумовлюють вибір і застосування системного підходу до техніки розробки біогазових установок.