## OPTIMISATION OF ILLUMINANCE OF MUNICIPAL FACILITIES AND PROTECTION OF RETAIL POWER CONSUMERS: INTERDEPENDENCE OF PROCESSES

Gulnara F. Ruchkina, Sergei G. Pavlikov, and Elena Yu Matveeva

Financial University under the Government of the Russian Federation, Moscow E-mails: GRuchkina@fa.ru; eyumatveeva@fa.ru

### **ABSTRACT**

The article characterises the main directions of optimisation of electric power market legal regulation including such its specific segment as illumination of cities within the context of determination of resources for increase of electric energy quality, its saving and protection of consumers (subscribers). Interdependence of the processes of enforcement of the rights and legal interests of electric energy consumers and one of the most energy demanding factors, lighting of municipal facilities, was discovered. It was found that guarantees for electric energy consumers specified by art. 38 of the Federal Law "On Electric Energy" (prohibition of consumption limitations including the so called rolling blackouts, etc.) are detailed by subordinate legislation some items of which require clarification of legal categories of relations between the terms "wholesale" and "retail" market of electric power.

The opinions of the Supreme Court announced in 2019, which provide higher level of legal protection of consumers as the weakest party of legal relations in the examined market, were subject to scientific analysis; it is justified that, in view of the requirements of art. 126 of the Constitution of Russia, they shall become a target for elimination of numerous contradictions in court practice regarding this matter.

Specific propositions on amendments (modification) of some federal laws and acts of the Government of the Russian Federation are specified.

**Keywords:** electric power, illuminance, light emitting diode (LED), illumination, market, consumer, law, court, legal opinion, service, agreement, quality, methodology, capacity, mode, consumption, modification, unification, explanations, accessibility, municipal formation, process, property, street illumination

## 1. INTRODUCTION

Based on the results of sociological and other studies conducted by the scientists of Economical Activity Legal Regulation Department (DPRED) of the Financial University under the Government of the Russian Federation in respect of the process of legal regulation of activity, status of and relations between participants of the electric power market, its incompleteness may be acknowledged. Moreover, its implementation (the specific orders were given to the Parliament and the Government of the Russian Federation) is contingent upon a number of negative factors related to particular reduction (instability) of consumption in the electric energy market and growth of electric power costs; for example, the problems related to attempts to obligate natural persons (consumers of retail energy market services) to pay for illumination of facilities which are not the common property of an apartment complex are not taken into account completely, there are numerous claims of subscribers (consumers) regarding the quality of the provided services including the level of illuminance of municipal formations (ac-

cording to the International Energy Agency, 19 % of all energy consumed in the world is spent for illumination) [1].

The practical aspect of the problem is rather obvious since Russia is the world's third largest producer of electric power significant part of which is spent for illumination of streets and other municipal facilities [2]. Against the backdrop of new geopolitical matters providing growth of expenditures for defence of the country and, hence, increase of social and economical problems, it is necessary to search for new legal instruments providing increase of the share of the electric energy market in the Russian GDP and, on the other hand, to analyse any factors having energy saving potential including for street illumination. As a result, social preferences shall be achieved by retail consumers, for example, those related to reduction of electric energy tariffs. However, unfortunately, contrary processes requiring scientific analysis exist too.

In this context, the relation between theoretical and applied aspects shall be provided by, for instance, not only by elimination of terminological ambiguity ("electric power market", "electric energy market", "resource supply") and appearance of new study categories (electric capacity market providing propositions on introduction of modifications in art. 539 of the Civil Code of the Russian Federation), etc. In terms of research, the most interesting aspect is the method of increase of not only quantity but also quality of electric power in the relevant market (the Federal Law "On Electric Energy" uses the terms "wholesale" and "retail" energy markets) for benefit of the least protected party of the studied social relations, the consumer of electric energy.

The authors of the article presume that the modifications in local governance legislation related to erosion of local significance matters of street illumination provision obligation shall be analysed critically (hereinafter we will provide arguments for this opinion).

Together with implementation of applied propositions (some of them are rather obvious: for example, in the Moscow Gostiny Dvor, with the very high level of illuminance, no louvers which may be shut during night time for significant energy saving are used [2]), a higher level of energy saving in street illumination shall be provided.

## 2. ANALYTICAL REVIEW (FORMULATION OF THE PROBLEMS OF THE RESEARCH)

The basis of the study comprises contemporary scientific works which propose to increase efficiency of legal regulation of the electric energy market as a whole and, in particular, quality of supplied electric energy and degree of protection of retail electric energy market consumers on the basis of: improvement of competition [3], enhancement of procedures (in particular, conducting of tenders including the so called electronic tenders for construction and repair works) of maintenance of street illumination objects [4], improvement of legal statutes related to protection of rights of subscribers from improper fulfilment of obligations on supply of electric energy [5], setting of particular preferences for small and medium business entities, manufacturers of agricultural products [6], etc.

Special attention was paid to works of the practising experts: judges specialising in reviewing of cases to protect of consumers' rights in the analysed market [7, 8].

Studying of civilised aspects of regulation of the energy services market required reference to monographic studies of supply of resources in the Russian housing and utilities sphere [9], civil regulation of energy exchange [10], including those based on studying of corresponding foreign experience [11].

Websites of energy organisations and other Internet resources were used. For instance, the expert and analytical report of the experts of ENERGYNET NTI workgroup characterises low efficiency of electric power sector as "a major challenge for Russia" "intensification" of which is caused by the fact that contemporary consumers become more demanding for accessibility, reliability and quality of electric energy [12].

In the study, emphasis was laid on the Internet resources which, in particular, review specific opportunity for reduction of energy consumers' expenditures (e.g. economical feasibility of replacement of obsolete lighting sources with state-of-the-art high luminance LED lamps [13].

Online questionnaire of stakeholders and experts regarding the studies matters was conducted; more than 60 enterprises participating in the energy market took part in it. The results of the questionnaire allowed to draw the following conclusions: 22 % of

experts presume that the problems of electric energy quality (EEQ) may be solved by means of statutory and legal methods, whereas 33 % of them set their hopes on the so called "technological" combined approach; almost a half of the experts (44 %) point at deficiency of statutory and legal motivation for solving of EEQ. Different categories of the electric energy market consumers are interested in research and solving of EEQ problems to different extents. Rejections to take part in the study are often based on low significance of the problem. It is especially common for electric power generators. For example, the Counsel of Energy Producers flatly refused to provide experts and to take part in expert and project events (it is declared that "members of the Counsel of Energy Producers hold about 70 % of the installed capacity of the United Energy System of Russia"). Necessity of research is often thrown doubt upon by representatives of network companies. Consumers of electric energy are a more interested group, and this matter is studied in this article in detail.

There is similar data of the online questionnaire in respect of irrational lighting of objects which are the most frequently used by natural persons consuming electric energy (for instance, in **corridors and halls**, lighting is turned on in absence of people for 80 % of time) [2].

Some of the most popular websites of the largest companies which are de facto monopolists in work with retail market consumers (for example, the website of the United Energy Company (UNECO): uneco.ru/peredacha-elektricheskoy-energii/uchetelektricheskoy-energii) were not only studied by the authors of the article but also used by one of them for practical purposes: primary connection of a consumer to the electric network, which uncovered a number of complications in practical application.

# 3. GOALS AND METHODS OF THE STUDY

The following main goals of the study conducted within the scope of this article may be specified.

1. Determination of the ways of optimisation of legal regulation of activity, status and relations of participants of the electric energy market (retail market in the first instance). In this context, rather significant, in the authors' opinion, problems and legal conflicts may be found. For instance, the basic law in respect of regulation of the analysed social

relations, the Federal Law № 35-FZ "On Electric Energy" dated on 26.03.2003 (as amended) does not contain the term "electric energy" among the main terms. Consequently, it is necessary to refer to GOST R52002–2003 which contains a more "technocratic" than legal definition for formulation of the term "electric energy" since it is this product that consumers get.

But the nature of this research task is wide and may be detailed in respect of formulation of theoretical conclusions and practical proposals for increase of the level of legal protection of the largest group of the subjects in the analysed legal relationship: the consumers of electric energy.

The guarantees for electric energy consumers are specified by art. 38 of the Law on Electric Energy (it is prohibited to limit the mode of consumption if there is no indebtedness, including the so called rolling blackouts) and are detailed by subordinate legislation and mostly by the decrees of the Government (the latter de facto set the only real criterion for legal differentiation between the wholesale and retail electric energy markets although is obvious that it requires substantiation (the indicators within the range between 670kW and 759kW are set).

2. Research of the practice of application of the above mentioned and other statutory legal acts in the course of which the initial sense and purpose of the adopted act may be significantly strained; the authors of the article are particularly concerned about the situations when it leads to derogation of rights and legal interests of a subject in respect of which special additional legal protection guarantees are set (e.g. in the consumers' rights protection legislation). Due to the said factor, the reasons for setting of such research goal require additional arguments.

For instance, studying of the court practice allows us to make a conclusion that many of court opinions related to the studied problems are controversial. First we will note those ones in respect of which the opinions of the Supreme Court of Russia were also formulated in 2019, which allows to hope for appearing of a steady direction of court law enforcement (the controversial opinions will be partially characterised further).

The opinions providing a higher level of legal protection of a consumer as the weakest party of legal relationship in the studied market were formulated not so long ago. The judgement № 305-ES18–26293 dated on 23.05.2019 regarding the case

№ A40–200484/2017 contains an opinion according to which, if a subscriber claims that an energy supply company has not sealed a metering device, it is this company that has to prove the contrary. The argument, that a subscriber discovered lack of seals has to address a network or energy supply company, is vicious.

The largest number of disputes and controversial judicial acts were caused by the situation related to the question of whether a consumer is entitled to appeal against a notification on limitation of energy consumption mode. One can only express hope that the opinion expressed in the Judgement № 306-ES18–20653 dated on 15.04.2019 regarding the case № A57–25248/2017, according to which a consumer is entitled to appeal against a notification on limitation of the energy consumption mode and the courts have to check whether such notification is sent reasonably assessing the causes of indebtedness will become an orientation point for all courts.

A similar conclusion may be made in respect of a judicial act № 309-ES18-24456 dated on 23.05.2019 regarding the case № A60-64563/2017: The Supreme Court explained which moment the period of uncounted electric energy consumption shall be counted from if the period between the date of the last scheduled checking of a metering device and the date of discovering of such consumption exceeds a year. It is necessary to take the date when the last scheduled checking before the moment of discovering of the uncounted consumption should have been conducted into consideration.

But there are much more controversial court opinions; there is such situation in relation to the question which legal regulations are applicable to electric power transfer (transport) agreements. Some courts proceed on the basis that legal relationship relating to transfer of electric energy by a network company are regulated by regulations on provision of services for a fee. For instance, the act of the supreme judicial authority № 305-ES18–8863 dated on 27.09. 2018 regarding the case № A40–49067/2017, states that "…Legal relationship for electric energy transfer is mediated by a public service provision agreement…"

According to the second opinion, the legal relationship for transfer of electric energy by a network company is regulated by statutes on provision of services for fee (chapter 39 of the Civil Code of

the Russian Federation) with consideration of provisions on power supply agreements (§ 6 of art. 30 of the Civil Code of the Russian Federation). For example, the Ruling of the Court of Arbitration of the Central District № F10–1051/2018 dated on 11.04.2018 with regard to the case № A36–9002/2015 states: "...the courts of arbitration correctly characterised the relations established by the parties as the legal relations arisen from the service provision agreement regulated by chapter 39 of the Civil Code of the Russian Federation..."

Elimination of the mentioned and other controversies is an essential element of improvement of legal regulation of the electric energy market and protection of the rights of consumers (subscribers).

3). The third research goal is obviously linked with the above mentioned ones but is distinctive due to its higher significance for consumers of electric energy. It is related to improvement of the system of monitoring and control of quality of electric energy, adaptation of all-new equipment (sensors, analysers, etc.) which shall comply with specific functional requirements (accuracy of readings) and cost criteria (affordability for consumers). The technical solutions, which provide adaptation of network smart control facilities and which, in our opinion, have a simple nature for consumers not requiring complex mathematical calculations, are promising.

This goal provide determination of interdependence between the processes of protection of electric energy consumers (subscribers) and one of the most energy-demanding processes of illumination of municipal formations. We will further address the specific theoretical and applied aspects of this problem.

A set of scientific knowledge methods was used as the methodological framework of the study. However, the authors of the article consider it necessary to draw attention to the fact that with respect to the studied problem application of mathematical methods is not a goal in itself or a fashionable necessity of a symbiosis of legal and technical studies but is a real necessity caused by the content of corresponding statutory legal acts. For example, let us address the decree of the Government "On Provision of Utility Services to Owners and Users of Premises in Apartment Blocks and Residential Buildings" according to which the amount of payment for electric energy for general house needs is determined using the following formula:

$$P_i^{odn} = V_i^{odn} \times T^{kr},$$

where  $V_i^{odn}$  is the amount of electric energy supplied for general house needs during the reporting period for specific premises;  $T^{kr}$  is the electric power rate set in accordance with the legislation of a constituent entity of the Russian Federation. But the method of calculation in respect of a consumer becomes even more complicated.

We presume that the nature of this method is rather complex, especially when it is used by consumers of electric energy. For example, different practical approaches to the question whether expiration of the calibration period of a metering device leads to uncounted consumption of electric energy or not are also caused by this circumstance.

There is a section for individual consumers on the UNECO website (uneco.ru/peredacha-elektricheskoy-energii/uchet-elektricheskoy-energii) which contains methodology of calculation of the offered mode of consumption; unfortunately, a consumer is not able to puzzle out this methodology, to select the required mode and, accordingly, the cost of services without assistance of a specialist, which one of the authors of the article ascertained.

The similar conclusions may be made in respect of particular sections of the UNECO website (for example: Requirements to Places of Installation of Metering Devices, Requirements to Devices Metrological Characteristics) etc.

As for the question of interdependence between the processes of protection of consumers (subscribers) of electric energy and one of the most energy-demanding processes of illumination of municipal formation, in our opinion, previously the nature of legal regulation of the latter concept had been rather clear and non-controversial.

For instance, in the Law № 443-FZ dated on 28.12.2013 "On General Principles of Local Governance in the Russian Federation", the provisions directly classifying the obligation of street illumination as a matter of local significance became invalid (clause 21 of article 14 "Arrangement of Street Illumination and Installation of Street Signs and Building Numbers" is not applicable any longer). Nowadays, the said statutory act contains only article 45.1 (introduced by the Federal Law № 463-FZ dated on 29.12.2017) with, in our opinion, a rather vague nature of imposing of the analysed obligation ("The rules of landscaping of the

territory of a municipal formation shall be approved by a representative body of a relevant municipal formation. The rules of landscaping of the territory of a municipal formation may regulate the matters: ...4) of organisation of illumination of the municipal formation territory including architectural illumination of buildings and structures.").

### 4. RESULTS OF THE STUDY

For the purpose of optimisation of legal regulation of the electric energy market as a whole and improvement of legal guarantees of protection of a relevant consumer, we consider it is necessary:

- Since the Federal Law № 35-FZ dated on 26.03.2003 "On Electric Energy" does not contain the term "electric energy" among the main terms, it is necessary to supplement art. 3 with the following term: "Electric energy means a technically complex product (an assembly of charged particles carrying an elementary electric charge) supplied to a wholesale consumer or a retail consumer (subscriber) in accordance with art. 539 of the Civil Code of the Russian Federation".
- For the purpose of protection of the rights of consumers from improper fulfilment of obligations related to supplies of electric energy (power), we propose:
- 1. To supplement clause 1 of article 13 of the Federal Law of November 23, 2009 № 261-FZ "Concerning Energy Saving and Increasing Energy Efficiency and on Amending Certain Legislative Acts of the Russian Federation" with the following text: "requirements to characteristics of metering devices as well as to quality of the used energy resources shall be defined in accordance with the legislation of the Russian Federation";
- 2. To specify a provision stating that obligation of street illumination is one of the matters of local significance in the Federal Law № 443-FZ dated on 28.12.2013 "On General Principles of Local Governance in the Russian Federation";
- 3. To introduce modifications and an amendment in section X of the Rules (the Decree of the Government of the Russian Federation № 354 dated on 06.05.2011 (as amended on 13.07.2019) "On Provision of Utility Services to Owners and Users of Premises in Apartment Blocks and Residential Buildings") regarding provision of a utility service with improper quality relating to quality of electric energy;

4. To introduce modifications in departmental statutory legal acts regarding electric energy quality monitoring, in particular, in the Rules of Electric Energy Monitoring [The Rules of Electric Energy Monitoring: approved by the Ministry of Fuel and Energy of the Russian Federation on 19.09.1996 and by the Ministry of Construction of the Russian Federation on 26.09.1996);

5. To introduce the following modifications and amendments in the Main Provisions of Functioning of Retail Electric Energy Markets: to impose obligation of maintenance of an installed and approved for operation monitoring device, its safety and integrity as well as safety and integrity of seals and/or visual control signs, reading and storage of its readings and timely replacement on owners of electric energy monitoring devices;

6. To introduce modifications and amendments in the Order of the Ministry of Industry and Trade of the Russian Federation № 57 dated on January 21, 2011 "On approval of methodology recommendations for technical requirements to water, gas, heat energy and electric energy metering systems and devices" regarding setting of technical requirements to electric energy metering systems and devices related to determination of quality of electric energy.

7. To supplement art. 10 of the Federal Law № 209-FZ dated on 24.07.2007 (as amended on 26.07.2019) "On Development of Small and Medium Business in the Russian Federation" with the following provision:

– "16) In those constituent entities of the Russian Federation where tariffs and reduced social standards of electric energy consumption are not specified, the state authorities of the constituent entities of the Russian Federation have the authority to provide support for individual entrepreneurs and heads of agricultural enterprises registered in these regions carrying out production and/or other economical activities in agriculture in accordance with art. 25 of the Law "On Development of Small and Medium Business in the Russian Federation" and art. 2 of the Law "On Agricultural Enterprises".

With consideration of adoption of a number of above characterised legal opinions of the Supreme Court of Russia in respect of consumers of electric energy services (if a subscriber claims that a power supply company has not sealed a metering device, it is this company that shall prove the contrary (1); a consumer is entitled to appeal against a notification on limitation of energy consumption mode and

the courts shall check whether such notification had been sent reasonably assessing the causes of indebtedness (2); if the period between the last scheduled checking of a metering device and the date of discovering of uncounted consumption exceeds one year, It is necessary to take the date when the last scheduled checking before the moment of discovering of the uncounted consumption should have been conducted into consideration (3) and a number of other opinions, it is necessary to adopt a Resolution of the Plenum of the Supreme Court of the Russian Federation "On Practice of Reviewing of Cases with Participation of Electric Energy Consumers by Courts."

Such necessity is also caused by the fact that even opinions of the Supreme Court of the Russian Federation do not become orientation points for provision of uniformity of court practice (we already gave such example: The Ruling of the Chamber for Commercial Disputes of the Supreme Court of Russian Federation № 305-ES18–8863 regarding the case № A40–49067/2017) and, in accordance with art. 126 of the Constitution of Russia ("The Supreme Court of the Russian Federation... provides explanations for matters of court practice"), such task may be completed by the supreme judicial authority by adopting the said judicial act.

Otherwise, unfortunately, the researchers' expectations that, for example, before improvement of the law and establishment of the automatic monitoring system, the judges will have to avoid formalism in resolving specific cases will be just vain wishes. The courts of arbitration shall elaborate new approaches to non-monitored consumption in respect of good faith electric energy consumers not interfering into the metering system when there are no proofs of actual corruption of energy resources consumption volume data given that energy consumption monitoring functions shall be performed by professional energy companies. It is not acceptable to presume a consumer's guilt for uncounted consumption of electric energy without considering actual condition of a metering device and good faith of the latter.

And finally, we would like to express a wish for the administration of the UNECO website regarding simplification of information addressed to citizens; we have a similar opinion regarding complex methods of calculation of consumed electric energy (the Decree of the Government of the Russian Federation № 354 dated on 06.05.2011 (as amended

on 13.07.2019) "On Provision of Utility Services to Owners and Users of Premises in Apartment Blocks and Residential Buildings") which are probably acceptable for participants of the analysed wholesale market but not for subscribers.

## REFERENCES

- 1. https://www.svetstk.ru/post/osveshhenie-gorodov-primery-energosberezheniya
  - 2. https://www.nevs.kremlin.ru
- 3. https://econet.ru/articles/181522-umnoe-ulichnoe-osveschenie-pozvolit-sekonomit-do-70-zatrat-na-elektroenergiyu
- 4. Gurin, O. Yu., Romanenko, A.A. Tender Shutdown: What Shall Be Known about Cancellation of a Tender [Zakupochniy stop-kran: chto nuzhno znat ob otmene zakupki] // IndustrialStateOrder RF. 2018. N8. P. 14–22.
- 5. Varlamova A.N. Competition Law and Industrial Markets: Electric Energy Market [Konkurentnoye pravo i otraslevyiye tovarnyiye rynki: rynok elektroenergii] // Konkurentnoye pravo. 2019. Vol. 2. P. 9–13.
- 6. Ruchkina, G.F. Quality of Electric Energy: the Problems of Statutory Legal Regulation [Kachestvo elektroenergii: problemy normativnogo pravovogo regulirovaniya] // Imushchestvennyiye Otnosheniya v Rossiyskoy Federatsiyi. 2018. Vol. 12. P. 44–52.
- 7. Malyshenko, E.V. On the Procedure of Setting of Benefits for Electric Energy for Agricultural Entrepreneurs [O poryadke ustanovleniya lgot na elektroenergiyu dlya selskolkhozyaistvennykh predprinimateley] // Gosudarstvennaya vlast i mestnoye samoupravleniye. 2018. Vol. 11. P. 44–48.
- 8. Khorosheva, N.V. Uncounted Consumption of Electric Energy upon Expiration of Calibration Period: Problems of Law Enforcement and Court Practice, Ways of their Solving [Bezuchyotnoye potrebleniye elektroenergii v svyazi s istecheniyem mezhpoverochnogo intervala: problemy pravoprimenitelnoy i sudebnoy praktiki, puti ikh resheniya] // Vestnik arbitrazhnoy praktiki. 2018. Vol. 4. P. 58–69.
- 9. Kamyshanskiy, V.P., Serebryakova, S.A. Limitation of Electric Energy Consumption Mode: Social and Legal Aspect [Ogranicheniye rezhima potrebleniya elektricheskoy energii: sotsialno-pravovoy aspekt] // Vlast Zakona. 2018. Vol. 1. P. 231–238
- 10. Kantser, Yu.A. Supplies of Resources in the Russian Housing and Utilities Sphere: Theory and Practice [Resursosnabzheniye zhilishchno-kommunalnogo khozyaistva Rossii: voprosy teorii i praktiki] // Ed.-inchief V.A. Vaipan. Moscow: Yustitsinform, 2017. 196 p.

- 11. Svirkov, S.A. Main Problems of Civil Regulation of Energy Exchange: Monography [Osnovnyiye problemy grazhdansko-pravovogo regulirovaniya oborota energii: monografiya]. Moscow: Statut, 2013. 479 p. P. 98–99.
- 12. Energy Law in Russia and Germany: Comparative Legal Study [Energeticheskoye pravo Rossii i Germanii: sravnitelno-pravovoye issledovaniye] / Eds F. Yu. Sekker, P.G. Lakh.№ Moscow: Yurist, 2011. 1076 p.
- 13. http://komitet2-13.km.duma.gov.ru/Novosti-Komiteta/item/16425224/16.
- 14. http: www.nevs.kremlin.ru; http: komitet2–13. km.duma.gov.ru/Novosti-Komiteta/item; http: neco.ru/peredacha-elektricheskoy-energii/uchet-elektricheskoy-energii and other.
- 15. https://cyberleninka.ru/article/n/harakteristiki-vnedreniya-led-istochnikov-osvescheniya-v-organizat-sii-na-primere-modernizatsii-sistemy-osvescheniya-korpusa-instituta.
- 16. https://begrussia.ru/blog/2016/08/23/umenshaem zatrati na elektroenergiyu/



Gulnara F. Ruchkina,
Dr. in Law Science, Prof.,
Head of the Economical
Activity Legal Regulation
Department of the Financial
University under the
Government of the Russian
Federation, the faculty of
law



Sergei G. Pavlikov, Professor of Activity Legal Regulation Department of the Financial University under the Government of the Russian Federation, Doctor in Law Science, the faculty of law



Elena Yu. Matveeva,
Ph.D. in Law Science,
Associate Professor of
Activity Legal Regulation
Department of the Financial
University under the
Government of the Russian
Federation, the faculty of
law