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Territorial concentration of the production of electrical machines in the branch policy of the Soviet government in the first half of the 1920s and Ukrainian electrical machine-building industry: historiography and reality

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***Abstract.** In Soviet territories in early 1920s, there was an attempt at global concentration of production — geographical concentration of manufacturing all volume of a certain technique. Due to a number of factors, the industry where such attempt became possible turned out to be electrical machine engineering, and during 1920–1923 production of electric machines began to concentrate in Moscow and Petrograd, which ended in failure there and undermined the potential of the Ukrainian branch. To historically neutralize this negative, the Soviet government presented it as a result of Tsarist policies, but the information available in documents completely refutes this.*

***Key words:** scientific-technical potential, electrification, industrialization, Marxism, competition, industrial activity.*

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Introduction

The concentration of production as a form of organizing the processes of manufacturing the same types of products has long and firmly taken its place among the economic principles of industrial management. However, not in all countries the implementation of this principle was painless and with unequivocal benefits for the industry, which, based on the permanence of the process of development of forms and types of production in the world, makes actual the study of individual moments in the history of its distribution in the world. Since there is a widespread opinion in the world (especially in developing countries) that it is possible to organize more effective forms of industrial management, if they been based on an ideological basis, those historical episodes in which the

difficulties of implementing the principle of concentration of production were caused by attempts to fill the objective principles of economic development political and ideological content, as happened, for example, in the Soviet Union, especially at the dawn of its creation, deserve close attention.

In fact, the entire period of the existence of the USSR, the concentration of production was the basis of the industrial policy of the Soviet government. At different times, depending on the views on the current state of industry and the ways of its further development, which dominated in the highest Soviet leading party-economic structures, the concentration of production was understood to be processes that were dissimilar in their essence. So, under the slogan of concentration of production, territorial, then branch, then territorial-branch concentration of capacities intended for the making of a certain kind of products were imply. Under the same slogan, the profiling of enterprises for specific types of products and their specialization in the manufacture of certain types of it and even certain models took place. Thus, the breadth of use of the concept of "concentration of production" in Soviet times is quite large, but only in the 20s of the last century this concept fully coincided with the concept of territorial concentration of the type of production activity as such as a whole, and not with concentration, in one way or another form, its individual sectors for the making of a certain range of relevant products.

The practical application by the Soviet government of such an imperative of concentration production used perhaps only the once – in electric machine-building industry. This was due to the ambitious and widely publicized plans for the electrification of the country proclaimed in 1920, the failure of which would make it problematic to carry out rapid industrialization and, as a result, would question the advantages in the effectiveness of the "Soviet" model of social order, in comparison with the one that it has replaced (Muraveva, 2003). Proceeding from this, the sphere of making of electric machines as a means of the most

productive consumption of electric energy received the primary attention of the Soviet government, as a result of which a measures for organizing the effective working of this particular branch of industry acquired a priority character also. In the historiography of the Soviet electrical machine-building, this moment found its reflection by information about the intensification since 1921 of the work of the corresponding production facilities concentrated in Moscow and Petrograd. Their subsequent continuous territorial-monopoly build-up continued until the middle of this decade, after which the process of deconcentration of electrical machine-building activities began in the USSR. Historians associate the beginning of this process with the resumption of full-fledged work at the electromechanical plant of the former Russian Society "Vseobshchaia Electricheiskaia Companiia" in Kharkiv [KhEMZ RS VEC], as well as the launch of the electromechanical plant of the Swedish Allmänna Svenska Elektriska Aktiebolaget in Yaroslavl. At the same time, researchers who worked both during the existence of the USSR and in the post-Soviet era, the concentration of electrical machine-building activity in the first half of the 1920s in Moscow and Petrograd is unconditionally recognized and also unconditionally presented as a rudiment of the sectoral industrial policy of the tsarist era.

Overview of historiography

It is characteristic of profiled historiography that the above position regarding the territorial concentration of the Soviet electrical machine-building in the early 1920s is supported by all researchers without considering industrial policy of the Soviet government in this branch that existed at that time, and sometimes even without invoking well-known historical facts that could sow doubts about the objectivity of this position. So, for example S. A. Gusev (Gusev, 1955), P. P. Uspasskiy (Uspasskiy, 1952), T. V. Alexeev (Alexeev, 2011), S. Ya. Rosenfeld & K. I. Klimenko (Rozenfeld & Klimenko, 1960) and the team of scientists under the leadership of I. A. Glebov (Glebov, 1999), absolutely bypasses that fact,

what the industrial activity in the first half of the 1920s in Ukraine to had the largest in the former Russian empire KhEMZ RS VEC, which received the name Electrosila No.1 after nationalization. And the organizational measures of the Soviet government for the consolidation of electrical machine-building capacities exclusively in Petrograd and Moscow are presented by the aforementioned researchers not as a result of the implementation of a purposeful policy, but as a situational action due to pre-existing circumstances. These authors did not examine the presence of any promising concept for the development of domestic electrical machine-building by the Soviet authorities in the early 1920s.

No attention is paid to the Ukrainian electrical machine building in the early 1920s and in the research devoted to the development of industry in Ukraine by O. O. Nesterenko (Nesterenko, 1966). However, it does not consider the Soviet electrical machine-building at this stage at all, and the analysis of the development of this industry both in the USSR as a whole and in the Ukrainian SSR separately begins by summing up the results of the 1924/1925 operating year. As a result of this approach, from the specified scientific work, it is impossible to determine either the existence of any branch policy of the Soviet government at the initial stage of the electrification of the country, or the role of the Ukrainian electric machine-building in this process. An analogical method of lighting the Ukrainian electrical machine building during the 1920s was applied in the study of F. M. Martyniuk (Martyniuk, 1958), except that the beginning of the examination of the work of the industry, in contrast to the previous scientific work, was laid from the 1925/1926 operating year. Even later, since 1927, begins to analyze the Soviet electrical machine-building M. M. Makeenko, citing the fact that in the early 1920s, the low level of development of electrical engineering did not allow separating the electrical machine-building industry from it (Makeenko, 1962). This argument is quite debatable, if only based on the presence in the Russian Empire already in the pre-revolutionary period of electrical engineering sphere profiled enterprises – insulator,

apparatus, cable, communication facilities and electromechanical, that is confirmed both by all the other authors, who are cited in this article, and by the historical sources used in its preparation. At the same time, the fact that there were electromechanical enterprises at the very beginning of the 1920s that combined the production of both electrical machines and communication facilities testified that the process of branch division in electrical engineering was not really completed yet. However, already at the end of 1921, created of the Electrical Machine-Building Trust [Elmashtrest] with the center in Petrograd, as well as the Electrotechnical Trust of the Central Region [ETCR] with a board in Moscow and the separated of independent units in the latter – the electromechanical factories Dynamo in Moscow and Electrosila No.1 in Kharkiv, that is electrical machine-building industry was administered as a separate branch of industry. Thus, real historical events contradict the statements of M. M. Makeyenko about the impossibility until 1927 to separate the industry of manufacturing electrical machines from electrical production as a whole.

Despite M. M. Makeenko's distortion of historical information on electrical machine-building, the study of this author does not lose its value for us, since by this much space is devoted to researches of conceptual foundations of the formation of industrial policy of the Soviet government in the 1920s as a whole and to the territorial concentration of production in particular. This information can be fully extrapolated to the Ukrainian segment of the all union industry branch that we are studying, although he himself is mentioned in this work only briefly and only at the end of the chronological period studied in this monograph. In passing, in the context of individual events within the framework of the scientific and technical policy in the electrical industry carried out by the Soviet government in the 1920s, the Ukrainian segment of the all union electrical machine-building is also mentioned in the scientific works of O. Ye. Tverytnykova (Tverytnykova, 2009), M. V. Novikov (Novikov, 2006), A. C. Sutton (Sutton, 1968) and prepared at the Moscow Power Engineering Institute, a

collective monograph on the history of power engineering in the USSR (Alexandrov et al., 1957). As in all previous works, these studies contain statements about the concentration at the initial stage of electrification of the country of electrical machine-building activities in Moscow and Petrograd. However, at the same time, the authors cite facts confirming the production activity of KhEMZ RS VEC both throughout the 1920s and in the previous decade. Meanwhile, the subsidiary Allgemeine Elektrizitäts Gesellschaft [AEG], evacuated from Riga to Kharkiv in 1915, and then named [until the summer of 1917] KhEMZ RS "Vseobshchaia Companiia Elektrichestva" [VCE] was the largest electromechanical plant in the Russian empire. Suffice it to say that its personnel at the beginning of the First World War was 3 600 people, which at that time exceeded the personnel of all the five electromechanical enterprises in Petrograd, which later became the base for Elmashtrest, taken together (Suzdal'cev et al., 1965). That is, the information provided on the work of even one, but the country's largest electromechanical enterprise outside the Northwest and Central regions gives a justified reason to doubt the ingrained opinion in historical science about the inherited territorial concentration of this type of industrial activity at the initial stage of electrification country, at least – in the form as presented in historiography.

Thus, the historiography analysis of the issue raised in this article shows its current lack of resolution. This makes the presented publication actual in historical content as well: both in terms of restoring the real picture of the relevant historical events, and in order to clarify the reasons for their interpretations in historical science. Additionally, the analysis of the concept of concentration of electrical machine-building production that existed in the USSR in the 1920s is actualized by the key role of this branch of industry in the electrification of the country. This moment allows us to consider the results of research on measures for its development as actions to generalize the experience of managing strategic knowledge-intensive branch of industry in the face of a surge in social demand for their products. Based

on the outlined relevance, the **purpose** of the article is to establish ways for the Soviet government during the 1920s to conduct a policy of concentration of electrical machine-building production in their causal relationship for the Ukrainian sector of this industry, as well as the objectivity of reflecting this process in historiography. To achieve this goal, it is necessary to solve the **tasks** of restoring an objective historical picture of the course of the process under study in the USSR as a whole, identifying the role of the Ukrainian segment of the all union electrical machine-building in it, and also analyzing the factors influencing the nature of the coverage of this issue in the corresponding historical scientific works.

Research methods

When conducting a scientific search, along with general scientific methods (of logics, systemic and multifactorial analysis, synthesis, deduction), special historical research methods were also used, which, in combination with the processing of archival materials, helped to recreate the most objective historical picture. The research is based on the principles of historicism and objectivity. During its implementation, historiographic methods were actively used, with the help of which estimates were given of the degree of reliability for the historiographic material, which represented historical publications in which, to varying degrees, the issue of concentration of production in the Soviet electrical engineering of the early 1920s was studied. Thus, the historical-cultural method made it possible to take into account the relevant social-cultural and ideological traditions that existed at the time of the creation of the studied historiographic material, which had an objective impact on the formation of the worldview of the authors of historiography. The use of the historical-situational method made it possible to correct the assessment of the necessary information available in historical works, according to the nature of the development of historical science, that is, according to the objective measure of the availability of factual material to historians, which was inherent in that time and the region in which each individual research work was

created for the issue of interest to us would be considered. To establish a real historical picture of the flow in the early 1920s on the territory of the later created by the USSR, the process of territorial concentration of the production of electrical machines, the problem-chronological method was used.

Results and discussion

First of all, it should be noted that according to historical sources processed during the preparation of this publication, upon the establishment of Soviet power, Ukraine inherited at least ten electromechanical factories from the imperial electrical industry, and not only KhEMZ RS VEC. True, of these, the former Vickers plant in Yekaterinoslav was just started in construction (SADR, F. 701, D. 1, C. 1, 1), and the Temvod plant in Mykolaiv, although it was fully built, was not fully equipped with technological equipment (SAMR, F. 301, D. 1, C. 10, 2 f.v.). And although there is a mention of the launch in 1921 of the nationalized Vickers plant as the Yekaterinoslav State Electrotechnical Plant (Vasilev, Potresov, & Teitel, 1922), the lack of information about its work both in this and in subsequent years allows us to consider this enterprise unfinished, and the facilities put into operation are not more than an attempt to organize electrical engineering production on unfinished areas. At the same time, four Ukrainian enterprises – in Kiev: an electromechanical plant and an electrical manufactory, a former Harris electrical plant in Odessa, a KhEMZ of the former Russian-French Society (RFS) in Kharkiv, in addition to electrical machines, produced communication facilities (Vasilev, Potresov, & Teitel, 1922). As a result, at the time of the establishment of Soviet power, in Ukraine there were six electromechanical in pure form enterprises, of which four were in a fully operational state: the Electrosila No.1 plant, the former Siemens-Schuckert electrical plant (SAKhR, F. p-1, D. 1, C. 35, 9) and the production facilities of the Assembly and Construction Bureau (ACB) of the former RS VEC (SAKhR, F. 349, D. 1, C. 196, 1–3) (all in Kharkiv), as well as the production facilities of the ACB of the former RS

VEC in Mykolaiv (SAMR, F. 302, D. 1, C. 28, 144). In addition, two electromechanical plants – Temvod in Mykolaiv and an electrical plant in Yekaterinoslav were in a state of readiness to carry out production activities, albeit on a different scale of the latter. That is, in 1921 – the year of the creation of Elmashtrest and the ETCR, which historians have taken as the starting point for the development of Soviet electrical machine building, there were at least eight operable electromechanical enterprises in the territory of the Ukrainian SSR, half of which were already finally profiled for the production of electrical machines. Thus, both in terms of the number of enterprises and their total production capacity, Ukrainian electric machine-building in 1921 surpassed the corresponding branch capacities of Moscow and Petrograd taken together. This completely refutes the assertion about that the Soviet power were inherit from the tsarist government production capacities of the electric machine-building industry, which concentrated exclusively in Moscow and Petrograd.

Meanwhile, despite the potential of the Ukrainian electrical machine-building that existed in the early 1920s, the Soviet government was not involving it in solving the problems of electrifying the country. Until the middle of that decade, the main burden on the production of electric machines really fell on the enterprises of Moscow and Petrograd. Situationally, this was largely determined by three objective factors, one of which was the fact that the process of electrification by the Soviet regime was started precisely in the "old" industrial regions of the Center and Northwest of the European part of Russia. This position of the government was conditioned, firstly, by the highest level of industrial development in these regions, in comparison with other regions of the RSFSR. Secondly, in the "old" industrial areas, the degree of destruction of the production potential of enterprises as a result of the events of the civil war of 1918-1922 was completely insignificant, while in Ukraine, where the scale of hostilities reached maximum values, the production potential of enterprises was undermined significantly. This moment required much greater financial and time costs to fully restore the

working capacity of the Ukrainian industry than for similar events in the North-West and Central industrial regions of Russia. In turn, without the restoration of the normal operation of the industry, it was impossible to provide the electrification process with the necessary volumes of consumption of electrical energy and, as a result, electrical machines, at least to the extent of its scale, which was approved by the Soviet government. The second factor was that in the Ukrainian SSR at the beginning of the 1920s, there was no possibility at all to organize a coordinated implementation of the electrification program - both due to the ongoing intense military clashes on the territory of the republic, and due to the complete disorganization of the management of the national economy in the regions, which only just finally taken under the control of the Soviet government (CSASAAU, F. r-573, D. 1, C. 26, 95–97). The third situational factor was the nominal independence of the Ukrainian SSR from the RSFSR, since until the end of 1922 Soviet Ukraine was not yet formally part of the unified state formation formed under the auspices of Soviet Russia – the USSR. In such a situation, the regulatory and legal aspect of the de facto unified government [Soviet of People's Commissars [SPC] of the RSFSR] measures to manage de jure individual national economic complexes required numerous approvals with the Ukrainian economic management bodies. Since the mechanism for implementing such approvals had not yet been fully optimized, the introduction of a single policy with the RSFSR to restore industry and conduct electrification required a certain amount of time for the Ukrainian SSR, which the central government did not have.

Together with the above, it should be noted that the chronology of the process of territorial concentration of electrical machine-building production in Moscow and Petrograd, carried out, as it is already quite obvious, not by the tsarist, but by the Soviet government, allows us to assert that in addition to the above objective circumstances, this phenomenon also had subjective reasons due to the initial the fact that the Soviet government had a clear

corresponding concept. So, despite its territorial location in Ukraine, KhEMZ RS VEC almost immediately after the final establishment of Soviet power in Kharkiv fell under the jurisdiction of the Supreme Soviet of National Economy [SSNE] of the RSFSR, and not to the Ukrainian Soviet of National Economy [USNE]. The management of this plant at that time was carried out both through the Organizational Bureau for the restoration of industry in the South of Russia under the SSNE of the RSFSR, and through the structure preceding Elmashtrest and ETCR – "Association of State Electrotechnical Enterprises" [Electrotrest] under the SSNE of the RSFSR (CSASAAU, F. r-573, D. 1, C. 113, 190). By the way, it was during the establishment of Electrotrest that all enterprises: those already profiled in the production of electric machines, and those on which this profile was only supposed to be fixed as the main one, were named "Electrosila" followed by a number in descending order of the plant's capacity in relation to the most powerful, which was, as already mentioned, the former KhEMZ RS VEC – Electrosila No.1. For example, the former Siemens-Halske Petrograd Electromechanical Plant became Electrosila No.2, and the former RS Dynamo Moscow Electromechanical Plant became Electrosila No.3. Accordingly, the plants located in Petrograd: the former The State Treasury electromechanical plant, the former Ericsson, the electrotechnical former Siemens-Schuckert, the electromechanical former Duflon-Konstantinovich were numbered from No.4 to No.7, and the plant similar to Temvod in Moscow was numbered 8 (Suzdal'cev et al., 1965). At the same time, both Siemens-Schuckert and Ericsson were not electromechanical in their "pure" form, since along with the production of electric machines they were engaged in the production of communication facilities.

As you can see, apart from Electrosila No.1, not a single Ukrainian electromechanical enterprise was considered by the Soviet government in Moscow as a component of the unified electric machine-building complex being created. At the same time, a picture is revealed before us that, most likely, historians have drawn a conclusion about the concentration of

electrical engineering in the early 1920s in Moscow and Petrograd on the basis of data from Electrotrest on the number of specialized enterprises included in it. Although it is possible that these data were supplemented by information on the results of the work of the factories of this trust, and this results in that time were disappointing for Electrosila No.1, which will be discussed below. However, if we evaluate the Soviet electrical machine building from the point of view of the geographical distribution of its production potential, then even without the rest of the group of Ukrainian electromechanical plants, the production potential of Electrosila No.1 alone was comparable at least with the Petrograd group of enterprises. Thus, the statements in historiography both about the absence of an electric machine-building industry in the USSR until the end of the 1920s, and about the concentration of industrial production potential at the beginning of this decade in Petrograd and Moscow do not stand up to criticism. At the same time, questions remain about how nine Ukrainian electromechanical factories ended up outside the framework of the industry being created and why this moment was not covered in historiography?

In the absence of identified direct historical sources, it can be assumed that the transfer by the central government to the USNE [and subsequently to the SSNE of the UkSSR] of nine local electromechanical plants was dictated by political considerations. In this way, perhaps, Moscow declared the opening of the way for the creation of the republican electrical machine building own, which in the absence of the flagship – Electrosila No.1 certainly became driven segment by centrally subordinate industry, but from this not ceased to be "own". In the context of the preparation of the Union Treaty between the Soviet republics, this political move could well have taken place as one of the means of reflecting the level of independence of the republican government in the future state formation. And the introduction before 1921 at the electrical engineering faculties and in the profiled departments of all higher technical institutions of the Ukrainian SSR disciplines on the basics of designing electrical machines

indicates that the high degree of independence of the republic's participation both in the process of electrification of the future union state, and in the organization of regional electrical machine-building by the leadership of the Soviet Ukraine at the turn of 1920-1921 was considered seriously (SAOR, F. r-126, D. 1, C. 147, 12–13; SAKC, F. r-308, D. 1, C. 48, 9–9 f.v.; SAKhR, F. r-1682, D. 1, C. 83, 12–12 f.v.; Savchuk & Siuh, 2012).

Despite the seemingly high probability of the implementation of this course of events, the available facts indicate that the Moscow government was not going to allow such. So, as early as July 6, 1920, the SSNE of the RSFSR adopted a decision about the terms of supply for electromechanical enterprises on the same conditions as for military factories, however for enterprises subordinate only to it, but not for enterprises subordinate to SSNE of the UkSSR (CSASAAU, F. r-573, D. 1, C. 275, 20–21). Thus, in the conditions of the fuel and raw materials crises that existed at that time, out of all the electromechanical enterprises located in Ukraine, only Electrosila No.1 got the opportunity of uninterrupted fuel, energy and raw materials supply of production processes. As a result, the electromechanical factories under the jurisdiction of the SSNE of the UkSSR were unable to guarantee the timely execution of orders received by them, the total volume of which in Ukraine, moreover, decreased to 4% of the pre-First World war period (Annikov, 2014). This situation was aggravated that the Bureau for Industrial Restoration [Prombyuro] organized by SSNE of the RSFSR, since mid-June 1920 begin stored electrical raw materials and components newly received by its Electrical Departments exclusively at centrally subordinate specialized factories (CSASAAU, F. r-573, D. 1, C. 181, 8). Taking into account their priority supply, the warehouses of the Provincial Soviets of the National Economy [Gubsovnarkhozes], where the accumulation of all types of material and technical support for the Ukrainian electrical engineering industry had been carried out before, began to be filled according to the residual principle. That is, the republican government until the end of 1921 actually lost the ability to influence the material,

technical and fuel and energy supply of the electrical machine-building subordinate to it, which, however, did not cause any particular concern from it.

In part, the lack of reaction of the Ukrainian government to the discrimination of electric machine-building enterprises subordinated to it in access to material, technical and energy resources was due to the insignificant role of this sector in the current situation with industrial production in the Ukrainian SSR. More pressing for the republic were the problems of the coal and metallurgical industries, as well as agricultural and transport engineering, the accumulation of material, technical and fuel and energy resources for which the Gubsovnarkhozes were still in charge (Zholkova, 1921). In the RSFSR, however, electrification was unfolding without delay, which, taking into account the future assumed status of the Ukrainian electrical engineering industry as being led by centrally subordinates, could not arouse any reasonable claims from the Ukrainian government at this stage to the process of concentration of sectoral material, technical and energy resources in the hands of Moscow. In addition, since 1921, the practice of virtually uncontrolled by state movement of equipment from factories suspended due to the crisis to operating enterprises has become widespread in the republic, which made it possible for the latter to quite simply solve their problems in terms of replenishing electric power equipment parks.

Thus, until the 1924/1925 operational year, the government of the Ukrainian SSR was not hot faced with the issue of developing its own electrical machine-building, as a result of which the formation this republican industry went spontaneously.

This favored the fact that within the framework of the program for the modernization of the submarine fleet of the RSFSR, whose tasks also included protecting the relevant interests of the Ukrainian SSR, there was an alienation in 1921 in favor of the Russian electrical machine-building of the ACB of the former RO VEK in Kharkiv, and in 1922 -

ACB RO VEK and plant "Temvod" in Mykolaiv. The reason for this was that both ACBs, together with KhEMZ RS VEC, took the greatest part in the creation of electric power equipment for submarines of the Russian Empire, which were to be finished building and modernized during the implementation of the above program (Annikov, 2019). Instead of the seized industrial site of the bureau at the Sevastopol Marine Plant, that part of the Temvod plant, which they managed to equip with technological equipment in the pre-revolutionary period, was attached to the Mykolaiv ACB, while the rest of the plant's areas were divided between other enterprises subordinate to the SSNE of the RSFSR (Annikov, 2015). The new enterprise, which received the name "Nikolaev Naval Construction Bureau" [NVMSB], immediately began to implement the naval program on the basis of both the components left over from the pre-revolutionary times and receiving them from the Electrosila No.2 plant in Petrograd, with the exception of electric machines produced at one time by AEG and repaired in Kharkiv (Gosudarstvennyi elektrotekhnicheskii trest, 1927). And Kharkiv ACB was reoriented to repair and restoration work of electric power equipment of the industry of Kharkiv and Donbas (SAKhR, F. r-1010, D. 1, C. 523, 25). That is, in reality, the government of the RSFSR did not consider the full participation of either Kharkiv ACB or the Electrosila No.1 plant in the program for modernizing the submarine fleet from the outset.

At the same time, due to limited access to the material and technical resources necessary for the production of electrical machines, the republican subordinate electromechanical enterprises could not timely meet even the small demand for their product that existed in the Ukrainian SSR at the beginning of the 1920s. Therefore, in 1922, the former Siemens-Schuckert plant in Kharkiv was mothballed, and the former KhEMZ RFS began specializing in the manufacture of more demanded communication equipment components (SAKhR, F. r-1010, D. 1, C. 80, 43). The fixed assets of the Yekaterinoslav plant by the local Gubsovnarkhoz were divided in parts between other enterprises of the

Association of Local Industry and the railway workshops of the People's Commissariat of Railways of the USSR, as a result of which a new Yekaterinoslav State Electrotechnical Plant was formed, but already in the system of the all union People's Commissariat of Railways (Gosudarstvennyi elektrotekhnicheskii trest, 1927). Both Kiev electromechanical plants, as well as the former Harris plant in Odessa, which, like in Yekaterinoslav, specialized in the production of railway signaling, were transferred to the subordination of this Commissariat, however they carried out too repairs of electric machines operated on the railway (Annienkov, 2015).

Thus, until 1923, only four out of ten electromechanical enterprises remained in the Ukrainian SSR, of which only one – the former Siemens-Schuckert in Kharkiv had republican subordination, but it was mothballed. Of the remaining three all union subordinate enterprises, ACBs both in Mykolaiv and in Kharkiv were focused mainly on the installation of electric power systems produced by the Elmashtrest and Electrosila No.3 plants in Moscow, and even more so by foreign electrical companies (SAKhR, F. p-15, D. 1, C. 25, 24). And the repair of electrical machines, together with the manufacture of assembly equipment and turbine blades, accounted for less than 30% of the total volume of work of these assembly bureaus (SAKhR, F. p-15, D. 2, C. 5, 34). In other words, Electrosila No.1, in fact, was left with that segment of the repair and restoration production of electric machines, which could not be covered by the ACBs in Mykolaiv and in Kharkiv due to the lack of a corresponding production base. However, complex repairs, which require a powerful production base, are often not economically feasible for machines which were by large-scale and mass-scale produced. But in the pre-revolutionary period, very few unique electric machines were brought to Ukraine, and the time they were in operation was not yet so significant that serious malfunctions caused by wear and tear began to appear en masse, with the exception of the power equipment of the submarines that took part in the hostilities. That is, the volume of work performed at

Electrosila No.1 objectively could not grow under the current conditions, which led to a decrease in the number of employees at the plant by almost half, and in March 1923 the management of the ETCR raised the question of its liquidation (SAKhR, F. p-1, D. 1, C. 896, 1). Meanwhile, neither in 1923 nor later was the Electrosila No.1 plant closed; moreover, since the end of this year, the production load of the enterprise has steadily increased due to the resumption of the production of the pre-revolutionary range of products (SAKhR, F. p-15, D. 1, C. 26, 40). In 1925, renamed into the State Electric Plant [GEZ], Electrosila No.1 did not have time to fulfill the requests of enterprises and for purpose of the meet the needs of the latter in electric machines, was reactivated and put into operation the former Siemens-Schuckert plant, which received the name Kharkiv Electric Plant [KhEZ] (SAKhR, F. p-1, D. 1, C. 1180, 58–59). Thus, the chronology of the process of development of electrical machine-building activity in the UkSSR during 1920-1925 shows that its almost complete curtailment in 1921-1923 had no objective reasons, it was carried out on the initiative of the government of the RSFSR, which later transformed into the government of the USSR, and precisely deliberately. The latter is also confirmed by the fact that from the point of view of logistics, placing orders at Ukrainian electric machine-building plants located in the north and north-east of the republic by enterprises of "old" industrial regions located south of Moscow was not costly than at electric machine-building plants in Petrograd. This distribution of orders made it possible to maintain the efficiency of the Ukrainian electric machine-building at the lowest cost and, thereby, to preserve the existing scientific and technical potential of the future all union profile industry in the volume inherited by the Soviet power from the Russian Empire. Nevertheless, despite the obvious self-interest of such actions, the central government in Moscow took exactly the opposite measures, which indicates the existence of some reasons during the period under study that allow it to assume that it will receive even more self-interest from this than in the previous case.

The aforementioned intentionality of the actions of the Soviet government became the reason that in the historiography of the Soviet electrical machine-building, the analysis of the state of its Ukrainian segment in the early 1920s is not carried out and is replaced either by unsubstantiated statements about the absence of this kind of industry in the UkSSR inherited from tsarism during this period, or by ignoring corresponding chronological segment in relation to the republican electrical machine-building. Meanwhile, as a result of the actions taken during the period under review by the government of the RSFSR, which led to a significant destruction of the Ukrainian electrical machine-building, the scientific-technical potential of the all union industry turned out to be weakened as a whole for many years to come. Considering the latter, an objective study of the development of Soviet or Ukrainian electrical machine-building during the 1920s would automatically reveal an absolutely erroneous sectoral policy during this period and, what is even more serious for the Soviet regime – the fallacy of the Marxist concept of industrialization on which based both indicated politics, and the construction of the Soviet state as a whole. And the fact that in the 1920s the industrial policy of the Soviet government was built exclusively on the postulates of dogmatized Marxism is confirmed by almost all historians who have studied the economy of the USSR of this period.

It was on the basis of these postulates, partly reflected in the previously mentioned monograph by M. M. Makeenko, was organization of the territorial concentration of the Soviet electrical machine-building as a type of activity took place. However, the specified author does not consider the policy of concentration of production pursued by the Soviet government in the early 1920s in this form of its manifestation, which is not surprising. As we mentioned earlier, M. M. Makeenko ruled out the existence of electrical machine-building in this period in the territories that entered the USSR. The rest of the industries that he studies, at the time of the establishment of Soviet power, had a geographically more ramified structure in

several orders of magnitude, which significantly complicated the implementation of measures for the territorial concentration of the kind of activity that there has. If we take into account that Soviet electrical machine-building [despite the proven fact of its existence] during this period is not considered by him as an industry, then we have reason with a high degree of probability to consider it not only the first, but also the only branch of Soviet industry, where the given imperative of concentration production was applied and, as we see, applied unsuccessfully. Therefore, the assertions of M. M. Makeenko that the policy of concentration of production pursued by the Soviet government in the early 1920s as a set of measures to create for each type of industrial activity networks of enterprises specialized in the production of a certain range of products organized according to the mass type of production are valid only for those industries that he gives. And this was due to the already existing extreme territorial ramification of these industries, and not that interpretation of the provisions of Marxism about the mass type of production in socialist industrialization, which M.M. Makeenko mentions (Makeenko, 1962). This interpretation appeared already at the turn of the 1930s - 1940s, and was finally consolidated during the "Khrushchev thaw", when the criticized monograph was prepared. Prior to that, K. Marx's undoubtedly fair assertion about the extraordinary economic efficiency of the mass type of production, which objectively leads to the specialization of the latter, was considered inseparably with his quite controversial substantiations of the phenomenon of competition, which led to the appearance of different M. M. Makeenko imperatives of concentration of production.

So, according to the provisions of Karl Marx, competition is inherent only in the market economy and its essence as a phenomenon lies exclusively in the equalization of the market value of the product with the differentiation of profits from (Marx, 1978). Since under the "Soviet" structure of the socialist economy, the differentiation of profits disappeared, then, accordingly, the phenomenon of competition disappeared too. In theory, this should have led

to a reduction in the nomenclatures of each type of manufactured product to exclusively utilitarian volumes of nomenclatures. This has its own logic, but only in the statically fixed utilitarian content of all types of products, which is permissible when considering the cost side of the essence of competition. However, if we take into account the dynamics of the properties of manufactured products demanded by society, the rates of development of which fully correspond to the rates of mastering new areas of application of technical means, then we can talk about the realization by manufacturers not only of a product itself as a thing with a certain value, but also of its consumer properties. And this already significantly corrects the perception of competition proposed by Marxism towards the fact that the equalization of the market value of a certain product in the process of competition is the result of the reaction of all its producers to the initial differentiation of profits, which arose, first of all, due to the priority of supply by one of them most demanded at the moment consumer characteristics of this type of product or, in general, a fundamentally new and highly demanded type of product.

The application of this broader approach to the consideration of the nature of competition allows us to see that its occurrence is a consequence of the laws of economic development, but existence is supported, among other things, by the laws of scientific and technological development. One of these patterns is that the volumes of the required utilitarian nomenclature of technical means increase as the scope of application of the knowledge acquired by the society about the world around it expands, moreover, they volumes grow exponentially. This is due to the objective, proceeded from the very nature of human cognition, the detailing of the initially obtained general knowledge about the essence of the phenomenon or process under study into separate components from more specific knowledge about the properties of this essence, and then to even more specific knowledge about the possibilities of practical use of these properties. Thus, every new overall knowledge, which acquired creates a set of specific knowledge, and the more specific areas of use of the

obtained specific knowledge we find, the more volume utilitarian technical means for their reification we need. Hence, the presence of a wide supply of technical means in the capitalist market analyzed by K. Marx was conditioned not only by the subjective interest of their producers in the differentiation of profits. In addition, there was an objective interest of users in obtaining precisely those technical means that, according to their characteristics, satisfied their consumer needs to the highest degree, and the process of scientific and technological development ensured steady progress in detailing these needs.

The cited role of scientific and technological progress in maintaining competitive relations in the capitalist market during the time of K Marx was insufficiently manifested due to the insignificant increase in specific [practical] knowledge, which, most likely, served as Marxism's neglect of the importance of the place of this phenomenon in the nature of competition. However, the avalanche-like increase in the acquired specific knowledge and, as a consequence, the scope of application of technical means in practice, which followed in the years after the death of K. Marx, showed that the diversity of the latter in the market is provided not only by the economic essence of the capitalist society studied by K. Marx and is not its distinctive feature. At the same time, in the USSR, back in the early 1930s, the thesis about the exclusively capitalist nature of the reasons for the production of a variety of models of certain types of technical means, conditioned by the economic foundations of the existence of the phenomenon of competition prevailed (Kritsman, 1932). The absence of such foundations in the "socialist" economy, from the point of view of the Soviet party and economic leadership, made possible to significantly reduce the variety of types of manufactured industrial products, due to which its production by mass type of making could be concentrate on the corresponding specialized capacities (Kritsman, 1933). By improving flow technologies, it was supposed to raise labor productivity to such an extent that would ensure the production of the entire required volume of certain technical means by a much

smaller number of industrial-production personnel than was done before. Thus, a decrease in the nomenclature within each type of consumed technical means, with a simultaneous increase in the rate of their manufacture, theoretically opened up the possibility of a significant quantitative reduction of core production capacities by reducing the number of manufacturing plants. In turn, the decrease in the number of manufacturers of profile products made it possible to concentrate them geographically where there were the most developed transport communications and also favorable conditions for the current and future provision of relevant industries with qualified personnel, that during the 1920s was the main problem of the Soviet government in planning the geographical location of certain types of production (CSASAAU, F. r-806, D. 1, C. 158, 3).

This conceptual view of the Soviet party and economic leadership on the issue of concentration of production was preserved throughout the period of interwar industrialization. However, with the development of industrialization processes and spheres of application of technical means in the USSR, which resulted in an avalanche-like growth of their demanded nomenclature, the corresponding theses of K. Marx quickly began to indicate their inconsistency and lose the character of postulates. Simultaneously, the degree of the Marxist-dogmatic approach of the Soviet government to the formation of the foundations of the concept of territorial concentration of production decreased, which led to its rejection of the imperative, which implies the territorial concentration of production as concentration the type of industrial activity as a whole.

Conclusions

The territorial concentration of the production of electrical machines in the branch policy of the Soviet government in the first half of the 1920s was based on the theoretical theses of K. Marx on the nature of competition, the nature of production and consumption of

technical means in socialist society, dogmatized by the party and economic leadership of the country. The uncritical application of the corresponding conceptual approaches of K. Marx allowed the Soviet party and economic leadership to suggest the possibility of further effective development of domestic electrical machine-building by concentrating this type of industrial activity in those regions where it had already become traditional until the 1920s - in Moscow and Leningrad. As a result of appropriately directed measures undertaken by Moscow, with the connivance of the Ukrainian authorities, by 1923 the electric machine-building of the UkSSR nearly ceased to exist. However, the subsequent development of the electrification process of the country showed the impossibility of meeting the growing needs for various types of electrical machines at the specialized capacities which geographically was concentrated specialized capacities in Moscow and Leningrad only. As a result, in 1924 the Soviet government began to restore the Ukrainian sectoral scientific and technical potential.

The obvious fallacy of the steps taken in the early 1920s by the Soviet government to manage the development of electrical engineering in the process of total electrification of the country was the reason for the subsequent concealment of this fact. This moment was aggravated by the fact that the government error was caused by the application of the postulates of Marxism - the basic ideology of the Soviet state. Thus, the unsuccessful result of the application of the imperative of concentration of production as a concentration of a type of activity as a whole could undermine public faith in the inviolability of the foundations of state ideology, which made the falsification of this issue of the history of the USSR for soviet government very requested. As a result, in Soviet historiography, contrary to the information existing in historical sources, statements appeared about the absence of electrical machine building as an industrial industry on the territory of the UkSSR until the mid-1920s. Since the existing archival material refuting such allegations was not available to foreign scientists, and official sources concealed the relevant data, the studies of foreign historians also turned out to

be much distorted information on the issue raised. In the post-Soviet period, there were no substantive studies of the development of Ukrainian electrical machine building in the early 1920s, which reinforced the established in Soviet historiography both the coverage of the process of concentration of electrical machine building conducted by the Soviet government in the early 1920s, and the mapping of the state of Ukrainian electrical machine building in this period.

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