

Land Relations in the Construction of Linear Facilities in Ukraine: Institutional Aspect

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Abstract

The given paper is dedicated to the determination of the possible ways to solve the problems of extractive industries and power engineering spatial development in combination with sustainable use and protection of lands, as well as ensuring the institutionalization of various environmental, legal and economic aspects. Specific ways of improving servitude relations are determined by authors. Additionally, institutionalism is considered to be the methodological basis for the development of land relations at the state level. The current norms of land legislation in many cases do not take into account the spatial problems and production specificity with regard to the location of pipeline, energy infrastructure, oil and gas wells and production facilities associated with their operation. Temporary ways of solving issues related to the acquisition of the right of land for the needs of oil and gas industry by concluding land servitude agreements have been found. To solve this problem and to ensure timely implementation of the state program for the extraction of natural gas and oil is necessary to supplement the Land Code of Ukraine with a new Article 100¹ on the specifics of establishing land servitudes for the placement of pipeline transport facilities, oil and gas wells.

Keywords: *ecological; economic aspects; extractive industries; institutional; legal; servitude payments; spatial development.*

1. Introduction

Brief literature review. Scientific research of spatial development problems of extractive industries combined with sustainable use and protection of agricultural land, conservation of soil potential and determination of compensation for the loss of land resources in the context of current market conditions are considered to be the relevant issues for the domestic scientists.

The theoretical foundations of the ecological and economic use of agricultural land as well as the reform of land relations and the development of sustainable land use and management have been studied in the numerous scientific works written by such famous researchers and scientists as: O.F. Andriiko, A.I. Berlach, I.K. Bystriakova, Z.F. Bryndzya, V.M. Bydziak, V.M. Harashchuk, A.S. Gordiichuk, B.M. Danylyshyn, D.S. Dobriak, E.A. Zin', P.I. Korniuk, V.S. Kravtsiv, O.O. Kucher, I.I. Lukinov, Ye.V. Mishenin, T.S. Nikolayenko, V.I. Sapich, V.K. Sivak, A.Ya. Sokhnych, M.H. Stypen', V.V. Tarasova, V.M. Trehobchuk, O.I. Furdychko, M.A. Khvesyk, V.K. Shkarupa and many others. The first study of these issues, carried out by I. Goronovych in 1882, is of particular note.

The situation is complicated by the lack of a systematic scientific basis for the role of servitudes in the system of land relations.

The incompleteness of comprehensive theoretical development of the definition and change of the purpose of land, as well as spatial development patterns and the special economic significance of the category of "land servitude" lead to the inability to apply properly the norms of legislation that are intended to regulate land relations, including servitude at the national and regional levels in Ukraine.

The gaps in the effective implementation legislative regulation coupled with the lack of a theoretical basis, necessitate a comprehensive study of land-servitude relations.

At the present stage of the development economic science requires explanation the content of the concept "land servitude", the economic essence of this category and the rationale for the forms of its implementation which should be reflected in the current land legislation. Application of the institutional methodological approach will allow justifying the balanced regulatory means, in particular, servitude payments.

Obviously, this has important theoretical and practical significance both for the regulation of land relations and for the legislation of Ukraine.

2. Main Body

Spatial development of extractive industries and the energy sector in connection with the privatization of land, the capitalization of land relations, and the land turnover introduction in Ukraine occur in complex legal conditions. The current norms of land legislation in many cases do not take into account the spatial problems and production specificity with regard to the location of pipeline, energy infrastructure, oil and gas wells and production facilities associated with their operations.[1].

One of the most important problems facing enterprises of extractive industries and the energy sector in Ukraine is the registration of rights to land plots, since the procedure for land allocation for mining industry objects (quarries, mines, dumps, industrial wells, etc.) takes an average of two to ten years. For a long period of time it hinders the industrial development of the regions, disrupts the investment plans of enterprises and jeopardizes the implementation of state programs and the

compliance of subsoil users with licensing conditions. In connection with the moratorium on the sale of land and a special procedure for changing the purpose of particularly valuable land granted for the conduct of commodity agricultural production, industrial enterprises do not have the opportunity to finalize the rights of use and ownership of land [2].

The location of the Dnieper-Donets Basin (which is considered to be the main oil and gas producing region of Ukraine) in the area of particularly valuable lands, a dense settlement network, a complex ecological condition and geological environment require not only new innovative approaches of legal, economic and engineering nature, but also relatively new scientific innovations in many industries of the national economy. These problems go far beyond land management, cadastre issues, monitoring and land protection, gravitating mainly to the important environmental and economic issues, while demanding the appropriate institutional development of the legal, economic, financial and environmental regulatory state and public institutions.

2.1. Accounting for Environmental Engineering Approaches

Neglect of objective and subjective laws of development and reproduction of natural recreational potential caused a crisis state of the ecological environment in many regions of the country. The negative influence of the Kremenchug oil refinery with the existing 325-hectare evaporation pond (a peculiar reservoir of sulfur and phenols, which was built not as a storage facility but as a fenced part of a wetland in the lower reaches of the river Psel), for 50 years forms an environmental catastrophe on a local scale. It is polluting the area of 50 km². Therefore, further sustainable to be development of the metallurgical industrial region seems impossible.

Utilization of toxic, liquid industrial wastes through the earth's crust injection process has long been used in European countries, China, the United States and Canada [3].

The development of special wells in areas where the formation of the low-pressure reservoirs is expected, as well as the use of wells that have already completed geological and recoverable programs, will allow the elimination of permanent pollution of territories with man-made waste from oil production.

Undoubtedly, the most important direction of soil, surface and groundwater protection is the creation of non-stop water supply mechanisms at industrial facilities.

In general, greater land consumption and economic hazard in the construction of exploration and production wells are formed by technologies associated with the construction of the land-based slag storage facilities.

Geophysical, geochemical and geothermochemical methods for assessing soil contamination indicate the presence of petroleum products in the soil far beyond the technogenic impact of the slag storage and confirm the transfer of contaminants over considerable distances by surface and groundwater.

Certainly the cluster drilling of the inclined or directional wells and the construction of the slag storage for every 5-6 wells partially solve this problem and improve the current situation. However without deep processing and utilization of slag storages these facilities become the biological mines of delayed action.

2.2. Legal Institutions

Temporary ways of solving issues related to the acquisition of the right to land for the needs of the oil and gas industry by concluding land servitude agreements have been found.

On the 17th of August 2010, the Law of Ukraine "On Lands for Energy Facilities and the Legal Regime of Special Areas for Energy Facilities", which was adopted by the Verkhovna Rada of Ukraine of the 9th of July, 2010, at least came into force. The main purpose of this law is to determine the main legal and organizational basis of the procedure of land allocation and the use of lands for energy facilities. Additionally, it is defined in the

above-mentioned law that the land plots of all forms of ownership can be provided for electricity transmission facilities by establishing land servitudes without changing the purpose of the land parcels.

In addition, there has been a simplification of the procedure for agreeing issues related to the withdrawal (redemption) of the land plots and the procedure for the development of draft projects for energy facilities, which from the moment the law enters into force, are agreed exclusively with the landowners, land users and landlords.

According to the provisions of this Law, the establishment at the legislative level of servitude use of land plots for enterprises of the oil and gas complex will provide real opportunities to solve the problem of acquiring land use rights and significantly shorten the time required for the necessary documentation, avoiding the procedure for alienation (redemption) of land plots, is short-term period and the transfer of which from one category of land to another is impractical.

In servitude use the owner does not lose the right to own, use and dispose of the land, but only limited in such a right, therefore, the oil and gas complex enterprises will also be exempted from the obligation to compensate losses of agricultural and forestry production, and on the contrary, send their funds for the rehabilitation of technical and biological partially disturbed lands [4, 5, 6, 7, 8].

It is not possible to develop a land allotment project in advance, 2-3 years before drilling wells, since each new well is drilled to correct the location of the next well and the well point is issued just before the drilling begins. The settlement of the above problems is possible only if the Articles 6, 27, 97, 122, 149, 150, 151, 168 of the Land Code of Ukraine are amended, and the new Article 100¹ is adopted. These articles are provided for the necessity of changing the competence of the authorities and transferring the powers of the Verkhovna Rada of Ukraine in the regional councils for particularly valuable land. At the same time, the issues of approval of land allotment projects for the construction of wells must be transferred from the competence of the Cabinet of Ministers of Ukraine to the competence of the regional state administrations.

It is also necessary to improve the rules governing lease relations and servitude payments when providing land for temporary use in the reconstruction of facilities, repair and emergency works. Changes in the Article 97 of the Land Code with regard to the right of local administrations and local governments to provide promptly not only state, but also communal lands and the possibility of concluding agreements with land owners without registration of lease contracts and their state registration will reduce the time for conducting preparatory measures in 3-4 times up to 1-2 months.

When receiving an industrial inflow of hydrocarbons in exploratory wells, they are transferred to the production category. As a result, the construction and connection of these wells to industrial and backbone networks are carried out. Consequently, it is necessary to develop a project for the allocation of land for use in accordance with industry standards and the Land Code of Ukraine with a change in the designation of land.

According to the current legislation, until the completion of the land allocation procedure and obtaining a title document for the land plot, it is necessary to stop the development of the productive well, having conserved it for the period of registration of the right to the land plot (at a hydrocarbon pressure of up to 500 atmospheres on the surface), which in turn leads to disruption of the terms construction of pipelines to wells, and putting them into operation, reducing revenues to budgets of all levels, reducing the amount of accrual and resource payments. This is practically impossible and inexpedient neither in the geological, nor in the economic sense.

To solve this problem and ensure timely implementation of the state program for the extraction of natural gas and oil, it is necessary to supplement the Land Code of Ukraine with a new Article 100¹ on the specifics of establishing land servitudes for the

placement of pipeline transport facilities, oil and gas wells, which will be provided with the opportunity to extract gas and oil for the period of registration of the change in the purpose of the land plot and the documents certifying the right to use or own them, that is as follows:

- enterprises engaged in the construction, operation, maintenance, repair and reconstruction of pipeline transport facilities, the construction of oil and gas wells, access roads, electric power transmission lines and networks related to their operation processes have the right to use land plots under a permanent or urgent land servitude agreement with the landowner, the land user or the landlord;
- the annual payment for the use of land plots of private property under the land servitude agreement cannot exceed their normative and monetary valuation;
- the annual payment for the use of land plots of state and local property under the land servitude agreement cannot exceed 12 percent of the normative monetary estimation of the land plot;
- land servitudes can be set up for:
 - a) construction, operation, maintenance, repair and reconstruction of objects of pipeline transport;
 - b) passage, driving or carriage across a land plot of construction and other materials for construction and operation of pipeline transport facilities, oil and gas wells, industrial facilities, access roads, electric power transmission lines and networks related to their operation processes.
 - c) placing on the land plot of information screens, warning notices concerning the construction and operation of pipeline transport facilities, oil and gas wells, production facilities, access roads, electric power transmission lines and networks related to their operation;
 - d) carrying out of geological survey works, along with drilling, prospecting, geodetic and other survey works, the construction of oil and gas wells, production facilities, access roads, electric power transmission lines and communications associated with their operation for the period of registration of changes in the purpose of the land and documents that certify the right to use or possession of it;
- land servitudes regarding the right to construct, operate, maintain, repair and reconstruct the pipeline transport facilities, oil and gas wells, production facilities, access roads, electric power transmission lines and networks connected with their operation are established on the basis of the land servitude agreement between the enterprise and the owners or users of land plots, which is concluded in accordance with the procedure established by the Civil Code of Ukraine.
- land servitude on land plots of state and municipal property, which are not granted for ownership or use are established by the agreement between the enterprise and the executive authority or local government in the manner established by the Land Code of Ukraine;
- the validity period of the land servitude is determined in the land servitude agreement. In the land servitude contract, for the construction, operation, maintenance, repair and reconstruction of pipeline transport facilities, oil and gas wells, access roads, electric power transmission lines and networks related to their operation, the following aspects should be indicated: the maintenance of the land servitude, the cadastral number of the land plot in respect of which the land servitude is established (if available), the area of the land plot for which the land servitude applies, current data on the land plot on which the land servitude is established;
- in case of failure to reach agreement on the establishment of a land servitude, a land plot may be alienated in accordance with the Law of Ukraine “On Alienation of Land Plots and Other Objects of Real Estate Located there upon and Privately owned for public needs or on grounds of public urgency”. The boundaries of the part of the land parcel to which the land easement applies are indicated in the cadastral plan of the land plot and if necessary transferred to the nature (on the terrain) and fixed by appropriate landmark signs;

- if the establishment of a land servitude leads to the impossibility of using a land plot (or a separate part thereof), the owner or user of a land plot has the right to demand the repayment (or seizure) of his land plot (a separate part thereof) for public needs or for reasons of public need, and the lessee of such a land plot has the right to demand the termination of the land lease contract;

- financing of the land engineering projects, necessary to establish servitudes, and their further state registration is carried out at the expense of the funds of persons in whose favor a servitude is established.

The Land Code should be supplemented with an article on the settlement of private agricultural land purchase issue for industrial purpose by legal entities. Servitude relations should be improved not only in the direction of spatial development of the oil and gas complex but also in the direction of the improvement and introduction of a system of mandatory servitude payments to landowners for worsening, restrictions and encumbrances of land use conditions in connection with the placement on their lands of linear objects and facilities. The performed calculations indicate that only on the scale of Poltava region the peasants should receive about 320 million UAH of annual servitude payments or payments that must compensate for losses.

In our opinion, the loss of agricultural production should be divided at the legislative level into irreversible ones with total withdrawal of land and severe (temporary) losses. Resolution of the Cabinet of Ministers of Ukraine of November 17, 1997 No. 1279 “On Size of and Procedure for Calculation of Agricultural and Forestry Losses Subject to Compensation” also needs to be changed. There is a particularly urgent need to index the losses of agricultural production in connection with inflation during this period, since rural areas suffer from improper regulation of these aspects.

The integrated development of rural areas must be harmoniously combined with the activities of extractive industries and the energy sector, while providing for contractual relations in matters of coexistence with local communities, and not ignoring the basic social and economic needs of the region due to a sharp increase in the man-made impact on both the environment and the existing rural infrastructure as a whole.

2.3. Structural Development of Economic and Financial Regulatory Mechanisms

Regulatory norms on the right of land servitude including compensation for damage to landowners property have been widely used recently in the countries of the world.

For example, in Canada, damage from a metal lattice support with a base of 7.8×7.8 m is compensated to the owner of the land for the year at a rate of 13.68-30.3 USD, with a base of 8.5×8.5 m – at a rate of 15.79-32.46 USD, with the base of 9.8×9.8 m – at a rate of 17.59-38.05 USD, and from the wooden “Π”-shaped support – approximately 7.64-17.37 USD. In the United States, the damage is compensated for by the steel lattice support frame of the 500 kV transmission line when placed in the middle of the field is 31.48 USD, at the edge of the field is 36.74 USD, a wooden electric power transmission line with a voltage of 115-230 kV is compensated from 7, 7 to 9.96 USD per year.

The calculations are based on technical documentation on the land inventory of the Poltava Gaz-Extraction Company “Poltavagazvydobuvannia”, as well as the documentation on organization of the agricultural enterprise territory (crop rotation was introduced), the core performance indicators of agricultural enterprises’ activity, as well as general reports of the National Association of Exchanges of Ukraine on the results of trading in agricultural products and products of agricultural processing. The following factors were analyzed in order to determine the influence of electric power transmission lines location, pipelines and their service facilities and wells on the business activity of enterprises: decrease in fertility, related to soil softening throughout the profile;

- additional costs associated with the cultivation of soil in the area of location of electric power transmission lines and pipeline maintenance facilities;
- crop losses associated with damage to plants by machine-transport units (AIT) in the area of location of electric power transmission lines, pipeline maintenance facilities, wells and flare systems;
- crop losses caused by withdrawal of agricultural land from land plots occupied by electric power transmission lines and pipelines maintenance facilities;
- crop losses associated with reduced soil fertility in the pipeline pass and reclaimed areas of well sites;
- loss of livestock products caused by the restriction of crops of forage crops;
- losses caused by the reduction of the labor resources fund in connection with the withdrawal of agricultural land from agricultural use, damage to plants and a decline in soil fertility.

Indicators (standards) of additional costs for idle races and turns of the machine-tractor unit, crop losses caused by compaction of soils, reduced fertility in the zone of location of industrial enterprises are adjusted depending on the intensity of use of agricultural land. Average losses have been determined for losses in field crop rotation, and analogous indicators of fodder crop rotation have increased by 1.25 times, which is due to the increase in cultivated crops.

Calculation of the main factor of influence that is soil compaction in the area of the electric power transmission lines, pipeline maintenance facilities for the field crop rotation, is made as follows. Average soil compaction areas are determined: 49.15 sq. m.–for electric power transmission lines 0.4 kW, 6 kW, shutoff valves and exhaust candle; 54.25 sq. m. – for electric power transmission lines 10 kW, 35 kW; 60.0 sq.m – for electric power transmission lines 110 kW, 150 kW, 150 kW; 71.57 sq.m – for electric power transmission lines 330 kW.

Next, we suggest to consider the average indicators of crop losses in connection with the compaction of soils in the field crop rotation, depending on their type:

- on chernozems typical – approximately 1195 UAH/ha for cultures of continuous sowing;
- 1840 UAH/ha for cultivated crops;
- on chernozems typical – 1090 UAH/ha for cultures of continuous sowing;
- on weakly humified chernozems – 1175 UAH/ha for cultivated crops;
- on podzolized chernozems – 1080 UAH/ha for cultures of continuous sowing;
- 1825 UAH/ha for cultivated crops;
- on dark gray podzolized chernozems – 1275 UAH/ha for cultures of continuous sowing;
- 1785 UAH/ha for cultivated crops.

Losses of crops associated with soil compaction take into account a large-scale survey of soils on the territory of the enterprise and the location of the facilities. Calculation of the weighted average indicator of the cost of lost crop in the field crop rotation, which is caused by additional compaction of soil in the zone of location of the electric power transmission lines and pipeline maintenance facilities, adopted for chernozems typical for soils of I and II groups is about 1670 UAH/ha.

The combined calculation of the cost of crop losses concerned with the location of electric power transmission lines and pipeline maintenance facilities on agricultural land for field crop rotation provides for average indicators for factors affecting soil fertility decline and loss of crop yields in the main agro-industrial soil groups that occur in the Poltava region.

3. Conclusion

1. It is necessary to supplement the current Land Code with Article 100¹ on the specifics of establishing land servitude for the placement of pipeline transport facilities, oil and gas wells,

production facilities, access roads, electric power transmission lines and networks related to their operation.

2. Designing the development of new deposits and improving existing field development systems with the creation of permanent geological and technological models of oil and gas fields should take into account the optimal spatial development of wells, line structures and other objects of their operation for the purpose of rational land use, reducing land use, conservation and environmental protection environment and socio-economic development of the territories.

3. The integrated development of rural areas must be coordinated with the activities of extractive industries and the energy sector in Ukraine providing for contractual relations in the issues of coexistence and local communities and not ignoring the socio-economic needs of the region due to a sharp increase in the man-made impact on both the environment and rural infrastructure.

4. The inclusion of agricultural land in economic turnover is advisable to begin with the improvement of the system of settlements for the use of lands, taking into account the improvement of the methodology for normative assessment of land and the introduction of payment for the use of servitudes.

5. In general, servitude payments in the Poltava region could amount to about 320.0 million UAH, which would significantly increase the efficiency of agricultural production and improve the conditions for economic and sustainable development of rural areas in Ukraine

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