Legal Requirements Affecting Energy Facilities Established by Russian Federation Laws on Natural Resources and Land

Vasilyeva M.I.
Doctor of Law, Professor of Environmental and Land Law Department, College of Law, Lomonosov Moscow State University

Abstract: This paper focuses on the general terms of natural resources legislation that affect energy production. Accordingly, it discusses some of the numerous environmental requirements applicable to energy facilities, with a focus on legal terms limiting the use of natural resources. Three major themes are developed: (1) Land law and urban development law define the legal framework affecting the operations of energy facilities; (2) restricted areas have been established to ensure the safe operation of energy facility sites; (3) the Water Code and subsoil legislation governs the use of water bodies for prospecting and mining of mineral resources; (4) the Forestry Code governs the extent to which energy sites may operate in forest lands and other wooded areas; (5) siting and operating energy facilities within specially protected natural areas is prohibited or severely restricted; and (6) the desire to develop and use renewable energy resources necessitate significant changes in natural resources law.

Keywords: aboretums, allotment (lease), biogas, biomass energy, botanical gardens, buffer areas, buffer breaks, concentrating mills, electricity generation, energy sector land, environmental externalities, environmental law, environmental protection, extraction of natural resources, flood management, forest fund lands, forestry code, forestry management unit, gas pipelines, gas supply systems, geological exploration, geometrized subsoil block, geothermal, green zones, hazardous emissions, high water releases, hydraulic facilities, land law, linear facilities, national parks, natural landmarks, natural parks, natural reserves, oil pipelines, oil refineries, oil terminals, power grid facilities, primary energy sector, public servitudes, renewable resources, restricted areas, site rehabilitation plan, solar, special discharges, subsoil use, thermal regime of water bodies, transmission lines, transport land, urban development law, urban development regulations, urban zoning and planning, water biological resources, water bodies, water code, water discharge, water flow, water fund land, water legislation, water reservoir replenishment, water reservoirs, water resources, water use facilities, wildlife preserves, wind

Environmental law encompassing law on natural resources and their protection, determines key legal terms and conditions for the energy sector at all levels – from extraction of primary mineral resources to power delivery. Development of energy industries involved in mining of mineral resources and transformation of them to energy (primary energy, mining sectors) depends to a large extent on the legal framework specifying the use of natural resources, mostly on the conditions for subsoil use. Transmission of generated power requires certain physical space to be used with some restrictions specified in the law on land, urban development, natural resources, and environmental protection. Law on natural resources governs the use of water, forest and other natural resources by energy related industries.
Extraction of natural energy resources including geological exploration, prospecting and mining of mineral resources is subject to the Russian Federation Law 2395-1 of February 21, 1992 On Subsoil, and other regulations of the Russian Federation and its constituent entities. This paper is not meant to review the entire relevant legal framework but rather focuses on the general terms of the legislation on natural resources that the energy facilities should comply with.

The terms under which the natural resources may be used are interrelated with the legal requirements on environmental protection aimed at creation of a safe and favorable environment for people. Any activity with a potential negative impact, including energy sector, is experiencing a significant pressure from environmental concerns that limit its further development. These concerns translate into legal requirements of a general nature applicable to any activity with environmental externalities. (See Article 34-39 and other norms of Federal Law No.7-FZ of January 10, 2002 On Environmental Protection, as well as energy-specific Articles 40 and 46 of the above law). This paper discusses some of the numerous environmental requirements to energy facilities focusing on the legal terms limiting the use of natural resources.

Land law and urban development law define legal framework for operations of energy facilities.

Federal energy systems and nuclear facilities occupy the federal land. The land parcels occupied by the federally owned nuclear energy facilities, nuclear material storage areas and radioactive waste storage locations are withdrawn from circulation, i.e. they cannot be traded or privatized. Land parcels under hydraulic facilities (including hydropower plants) are subject to certain limitations, i.e. they cannot be privatized except for the cases specified by the federal legislation. The latter is silent about such cases.

The Russian Federation land code issued in Federal Law 136-FZ on October 25, 2001 regulates the use of land occupied by energy facilities (Articles 87, 89) treated as a special
category of “land for industry, energy, transport, communications, radio broadcast, television, information technologies, land for support of space explorations, land for defense, security/safety, and land meant for other special purposes”. When land property is referred to any of the categories specified in the RF Land Code, it means that the relevant property is subject to the laws and regulations governing this category, those laws and regulations being different depending on the purpose of the property. Areas occupied by pipelines are treated as transport land within the same category of land meant for special use. Power facilities occupy various categories of land (land of settlements, forest land, etc.) and regulation mechanisms applied to certain land property depend on the category where that land belongs and the mission of the land. While the mission of energy sector land is to accommodate and support power facilities, the other type of land may not regard power as its main mission but allow some energy sector infrastructure functions (heating supply systems in the urban areas, power transmission lines in the forests and cities, etc.) Therefore, construction and operation of power facilities, as well as the use of land for other purposes in the cities shall comply with the urban development regulations\(^1\) in specific areas defined by the municipal land management and development rules for urban zoning and planning.

In general, legal treatment of a specific land property depends on its mission and includes such issues as a permitted use of a land parcel, rights and duties of a legal owner of the land, potential limitations of the title and encumbrances. The contents of rights and obligations depend on the mission of the land and the land title (right of ownership, lease, perpetual use, etc.). In their turn, titles are predefined by the types and kinds of legal entities, and by geometry of the sites – whether they are linear or spatial. There is still a need to have

---
\(^1\) Urban development regulation – allowable uses of parcels of land within a relevant area, including everything above and underneath of such parcels of land, to be used during construction and further operation of capital buildings, size limitations for parcels of land (both minimum and maximum), limiting parameters of permitted construction and rehabilitation of the capital buildings, limitations on the use of parcels of land and capital construction projects (Article 1 of Urban Development Code No.190-FZ of the Russian Federation, December 29, 2004)
a better legal definition for types of rights to land occupied by linear sites and facilities.

Coal, oil and gas producing industries in the primary energy sector are located on the land for industries belonging to the same category. The size of land allocated for operation of these sites, for production and administrative functions, for buildings and infrastructure utilities is determined by legal norms or design documentation. Mine operators, oil and gas field developers get the land after allotment (lease) is formalized, the site rehabilitation plan is approved, recovery of earlier developed land is complete. Allotment (lease) is a geometrized subsoil block to be used for mining of mineral resources (Article 7 of the RF Law On Subsoil). The right to allotment is the basis for getting the right to a parcel of land, and the latter is operational while the allotment is still retained.

One of the most prominent features of the regulatory regime of industrial, energy and other special mission land parcels accommodating generating and linear facilities (transmission lines, pipelines) or mines is the creation of areas with special conditions for use of land parcels.

**Restricted areas are established to ensure a safe operation of sites specified by the Russian legislation.**

Rules for establishing restricted areas for power grid facilities and special conditions for the use of parcels of land within such areas (approved by Resolution 160 of the Russian Federation Government on February 24, 2009) prohibit any activities that may interfere with the safe operation of power grid facilities, including activities that may damage or destroy them, or cause any harm to health or safety, or damage property of individuals or legal entities, result in an environmental impact or start a fire. The rules define types of activities in the restricted areas, which may not be allowed without an agreement in writing from the grid entities – owners of such sites. Land parcels within the boundaries of restricted areas shall not be withdrawn from their owners, or land owners, or land leasers. Scheduled maintenance of power facilities happens with prior notification of owners or leasers of land.
parcels. Emergency prevention or response measures undertaken on the power grid sites do not require such prior notice. Upon completion of the maintenance activities, accident prevention or emergency response measures, the grid operators shall make the land parcels ready to serve their primary mission, or return them back to the state they had been in before the above measures were undertaken, and compensate land users, land owners and lessees for damages inflicted during the work.

Restricted area for gas supply systems is an area with special conditions for use established in accordance with the procedures set forth by the Russian Government along the pipelines and other gas supply utilities, to facilitate normal operation of such systems and exclude any damage to them (Article 2, Federal Law 69-FZ of March 31, 1999 *On Gas Supply in the Russian Federation*). Boundaries of such restricted areas are defined by the construction norms and regulations, guidelines on the protection of main pipelines, other regulations approved in accordance with the current procedures. Economic use of such parcels of land does not allow construction of any buildings or utilities within the minimal distance to the gas supply facilities without a prior consent from an entity that owns the gas supply systems or any other properly authorized entity. The owner of gas supply systems or its properly authorized representative may not be impeded in doing maintenance and servicing activities, or implementation of response or recovery activities in case of emergencies or management of their consequences. It is the responsibility of the executive authorities of the Russian Federation constituent entities to approve the boundaries of the restricted areas for gas distribution grids and impose limitations (encumbrances) on the land parcels within such areas (See *Regulations for Protection of Gas Distribution Grids*, approved by Resolution 878 of the Russian Federation Government on November 20, 2000).

There is always a higher failure risk associated with many energy facilities, therefore one cannot rule out such cases when neighboring areas may be involved in accident response
or recovery measures. Public servitudes may be established to use parcels of land owned by other people if that is required for rehabilitation of power grids (Article 23 of the *Land Code of the Russian Federation*). The owner of a gas supply system or his/her authorized representative operating this system may freely deliver all required equipment and resources to the location where a failure of the gas supply system occurs and shall compensate for the inflicted damage to the owner of a land parcel where delivery routes went through (Article 28 of the Federal Law *On Gas Supply in the Russian Federation*). There are no universal rules on how energy facilities may use parcels of land owned by other land users, therefore all procedures to be followed by economic entities, their rights and duties shall be based on the common norms of the land and civil codes, and comply with the legislation on emergency situations and any other such norms as applicable in various cases.

*Buffer areas* are established to protect the public from negative impacts of energy, industrial and other facilities. These are special areas subject to specific control regimes for their use, and their size helps mitigate chemical, biologic and physical air pollution impact, bringing the numerical exposure values to the levels required by the public hygiene regulations. In case with facilities of the 1\textsuperscript{st} and 2\textsuperscript{nd} class of hazard these pollution impact values shall be brought to the levels required by the public hygiene regulations and to the levels of acceptable risk to the public health. A buffer area functions as a protective barrier to promote public safety when a power site performs according to the design. By way of example, a buffer area shall be 1,000 m wide for a heating power plant of 600MW rated capacity and above, coal- or black oil-fired, referred to Class 1 hazard level, however, when the same power plant is gas- or gas and black oil-fired, the buffer area may be 500 m, and for power substations the buffer area will vary depending on their type (open or covered) and
capacity, based on the estimated physical impact on the air and in-situ measurements\(^2\).

*Buffer breaks* are very similar to buffer areas and shall be established for hydrocarbon main pipelines and other linear facilities. Buffer breaks shall protect the people from the electric field impact resulting from the high-voltage transmission lines, where the electric field strength exceeds 1kW/m, these buffer breaks should be from 20 to 55 m wide. Recommendations on the minimal size of buffer breaks for hydrocarbon mains and compressor plants shall take into account pipeline diameter, presence of other buildings and structures in the neighborhood, availability of water bodies, agricultural land and other factors.

The land law regards development of energy industries as a priority economic activity of public importance. There is a general principle to allow withdrawal (including buyout) of land parcels for national or municipal needs in exceptional cases only (Article 49 of the Land Code of the Russian Federation). Such exclusive cases include the need to accommodate the following sites of national or municipal importance:

- facilities of the federal and regional energy systems;
- nuclear energy sites;
- linear facilities of the federal and regional significance supporting the activities of the natural monopolies [power- and gas supply systems, heat supply systems, and centralized hot water supply systems].

Land parcels may be withdrawn for the above purposes provided there is no other option to place a facility in question. Extraction of mineral resources, building of power transmission lines, oil and gas pipelines provide exceptional grounds for conversion of agricultural land into a different category (Article 7 of Federal Law 172-FZ of December 21, 2004, *On Conversion of Land and Parcels of Land from One Category to Another*). One mandatory condition for conversion is the availability of an approved land reclamation project.

\(^2\) See *Buffer Areas and Health Classification of Enterprises, Buildings and Other Facilities: SanPiN 2.2.1/2.1.1200-03*. Approved by Resolution 74 of the Chief National Medical Officer of the Russian Federation on 25.09.2007.
The Water Code and subsoil legislation govern the use of water bodies for prospecting and mining of mineral resources.

From the point of view of water legislation, the land under hydraulic facilities belongs to the land of the water fund (Article 102 of the Land Code of the Russian Federation). Hydraulic facilities include dams, hydropower plants (Federal Law No. 117-FZ dated July 21, 1997, *On Safety of Hydraulic Facilities*). Therefore, land occupied by dams and hydropower plants is subject to the water fund land regulatory regime. Water reservoir projects, as well as building of hydraulic facilities implies conversion of the land they would occupy into the category of water fund land.

Protection of water bodies, water biological resources, wildlife and plants shall remain the focus of the design, construction and modernization, and operation of hydraulic facilities. The Water Code of the Russian Federation approved on June 3, 2006 by Federal Law 74-FZ defines general rules for the use of water reservoirs.

According to the Water Code, water bodies in federal, regional or municipal ownership, may be placed at somebody’s disposal in the following cases: (a) to be used without water intake for generation of electricity – on the basis of a water use agreement; (b) for construction of hydraulic facilities, pipelines, prospecting and mining of mineral resources, creation of stationary and floating platforms – on the basis of decisions providing water resources for use. Provision of water resources for use on the basis of water use agreements or decisions shall be done by the executive authorities of the Russian Federation and its constituent entities, and by the local authorities within their competence. No water use agreement or decision is required if the water body is going to be used for (a) prospecting or mining of mineral resources, construction of pipelines, power transmission lines in the swamps, except for the wetlands and marshes in the high-water river beds; and (b) water intake from the underground water bodies containing mineral resources, and thermal waters.
Use of water resources for power generation. The Water Code of the Russian Federation regulates the above issues in the following manner (Article 46): use of water bodies for electricity generation shall take into account the interests of other water users and efficiency requirements with consideration of the need to protect the water resources; operators of hydropower facilities shall ensure that water reservoirs can discharge and take water as required by prioritized water supply program for provision of public with potable water or water for other domestic needs.

Protection of water bodies during their use for electricity generation (Article 62 of the Water Code) includes (a) responsibility of the water users to comply with the thermal regime of water bodies while using them for thermal or nuclear energy production process needs; (b) responsibility to take into account the interests of other water users in the process of using a water body for generation of electricity by hydropower facilities, as well as the responsibility to comply with the requirements for preservation of water biological resources and other wildlife and plants, and requirements regarding prevention of negative impact from the water and address its consequences.

Guidelines on the use of water resources of water reservoirs define how they can be used, filled in and discharged. The Water Resources Federal Agency is responsible for development, coordination and approval of guidelines on the use of water reservoirs from the list approved by Ordinance 197-r of the Russian Federal Government on February 14, 2009. The use of water reservoirs outside the list shall be governed by the standard guidelines for use of water reservoirs approved by the Ministry of Natural Resources and Ecology of the Russian Federation.

The Water Resources Federal Agency is responsible for setting the regimes for management of flood and high water releases, special discharges, replenishment of water
reservoirs and water discharge\textsuperscript{3}. Notwithstanding the expressed legal requirement to protect aquatic biological resources, there are examples of damage inflicted to them by the regulation of water levels in reservoirs. It would be beneficial to implement a risk assessment component associated with the above type of work in operating practices and spell it out as a regulatory requirement in the agency documents of the Water Resources Federal Agency.

\textbf{The Forestry Code governs the extent to which energy sites may operate in forest lands and other wooded areas.}

When energy sites operate on the land of the forest fund, the forestry legislation comes into play. The Forestry Code expressly allows presence of energy sites on the forest fund lands (Article 21) and has some references to their presence in other wooded areas (those may include forests on the agricultural land or within human settlements). In the past, mining of mineral resources required conversion of forest fund land into industrial and energy land. It might be considered as a formal constraint for the use of land for energy purposes, but practically it made very little sense, as in the example with forestation of an abandoned well, although such a land parcel would never return to the forest fund regardless of the fact that it was no longer needed in the power industry. Pursuant to the current Forestry Code 200-FZ approved on December 4, 2006 (Article 25) the following activities are considered \textit{types of forest use}\textsuperscript{4}: geological exploration, development of mineral resources, construction and operation of water reservoirs and hydraulic facilities, construction, reconstruction and operation of power transmission lines and pipelines, and as such, may be performed without conversion of relevant lands to the category of land for industrial, energy, transportation and other specific purposes. There is evidence from management practices that the forest fund land tends to be converted to other categories mostly for construction of


gas- and oil pipelines and related facilities, gas stations, for construction of power transmission lines, oil refineries, oil terminals, and concentrating mills.

General terms of use of forests for geological exploration and development of mineral resources, construction and operation of water reservoirs and hydraulic facilities, construction, reconstruction and operation of power transmission lines and pipelines are defined in Articles 43–45 of the Forestry Code of the Russian Federation, applicable with a due consideration of other norms of forestry, land and environmental legislation.

State- or municipal-owned forest land is provided on lease terms for geological exploration and development of mineral resources. Lease contract is awarded without an auction process in this case. Forest land is used in accordance with a forestry plan of a constituent entity of the Russian Federation and a forestry regulatory framework of a forestry management unit. Geological exploration, if not implying felling, may be done without provision of a forest land allotment, being based on permissions of federal authorities and local governments.

Use of forests for geological exploration, development of mineral deposits allows construction, reconstruction and operation of facilities in accordance with the forest development plans but unrelated to the forestry infrastructure. These activities shall preclude development erosion processes on the occupied and adjacent areas. Use of forests for geological exploration, development of mineral deposits does not allow the following activities: felling of trees and clearing of forest areas with bulldozers; flooding of forests, damage to forests, vegetation and soils outside the provided site boundaries, littering of forests with construction, industrial, wood, household waste and debris, pollution of forests with chemical and radioactive substances, movement of vehicles by random and unspecified

---

5 Перечень объектов, не связанных с созданием лесной инфраструктуры для защитных лесов, эксплуатационных лесов, резервных лесов, утвержден распоряжением Правительства РФ от 27 мая 2013 № 849-р.
routes. Facilities related to geological exploration and development of mineral resources shall be subject to shutdown and disposal after the relevant activity is completed.

Entities involved in building, reconstructing and operating linear facilities on forest lands shall remain responsible for: regular clearing in the forest cuttings, clearing on forest edges, cleaning of natural and man-made water streams off industrial and toxic waste, rehabilitation of forest roads, reclamation canals, forest cuttings when damaged by production processes; implementation of emergency response measures and elimination of their consequences, when caused by the above entities. The soil shall be reclaimed if damaged or polluted through construction, reconstruction or operation of linear facilities on the forest land.

As mentioned earlier, in the discussion of the withdrawal of agricultural land, the energy sector needs are given higher priority, and the Russian legislation allows waivers from environmental conditions for certain economic activities. This trend is evident in the forestry legislation too. In addition to regarding some energy-sector activities as equal to forest use activities, the laws include certain waivers from negative norms on protection of forests performing an important environmental function, improving the quality of air and water, promoting health and other public goods. In parallel with the general prohibition to carry out activities incompatible with the core function of a protected or a specially protected forest area (Part 5, Article 102, Forestry Code of the Russian Federation), the same code allows linear facilities, hydraulic facilities, and facilities related to geological exploration and development of hydrocarbon deposits in the buffer forests in water protected areas, and along the water bodies (Paragraph 5 of Part 1 of Article 104, Part 3 of Article 106 of the Forestry Code of the Russian Federation). Linear sites and hydraulic facilities may be located in the valuable and specially protected forest areas, except for forest reserves (Part 2, Article 106, paragraph 3, Part 2.1., Article 107 of the Russian Forestry Code). Power transmission lines,
Siting and operating energy facilities within specially protected natural areas is prohibited or severely restricted.

Energy sites may not be located or operated on the land of specially protected natural areas, or they may use it with restrictions. The land of natural reserves, national parks, natural parks, state wildlife preserves, natural landmarks, arboretums and botanical gardens may not be used for activities beyond conservation and exploration of natural phenomena, or for activities undefined in the federal laws and laws of the constituent entities of the Russian Federation (the general principle as per paragraph 3 of Article 95 of the Land Code of the Russian Federation). No changes may be made in the status of the land parcels and no land property rights may be terminated for the land within the boundaries of specially protected natural areas, if such a change or termination is not consistent with the original purpose of the land. The Land Code expressly prohibits construction of pipelines, power transmission grids, construction and operation of unrelated industrial facilities on the land of specially protected natural areas.

Environmental legislation does not allow exploration and development of mineral deposits within the boundaries of national parks, as well as any activities causing damage to soil and rock outcrops, change to the hydrology regime; it also prohibits construction of pipelines, power transmission lines, (Article 15 of Federal 33-FZ dated March 14, 1995 On Specially Protected Natural Areas). This ban is even more valid for natural reserves, where any activity inconsistent with the mission of natural reserves is not allowed, and the law
expressly refers to the list of acceptable activities for such areas (Article 9 of the above federal law).

In general, legislation on land, mineral and natural resources plays a significant role in the regulation of fuel and energy industries. But the energy sector internal tendencies themselves provide a noticeable impact on the development of laws on land and natural resources, spelling out their own ‘order’ on putting the needed relevant regulations in place.

Developing and using renewable energy resources may necessitate significantly changing natural resources law.

Plans for increased generation of power on the basis of renewable sources may be expected to instigate development of new requirements and proposing amendments to the existing ones in the legislation on natural resources. Renewable resources include both the natural primary energy resources (solar, wind, geothermal, water flow, biomass energy), and secondary resources (industrial and household waste, biogas, gas from industrial waste, from landfills, from coal mines). A more extensive use of renewable energy is determined by the importance of these sources in reduction of hazardous emissions from power facilities, and in the mitigation of a negative impact of the entire energy sector. Another as important reason for changing the energy balance in favor of alternative energy sources is the economic and environmental requirement to save nonrenewable resources for future generations. The documents entitled Main Areas for Government Energy Efficiency Policy in the Power Sector Based on the Use of Renewable Energy until 2020 (approved by Ordinance 1-r of the RF Government on January 8, 2009) expressly declares the intent to implement measures to improve regulatory framework for use of natural resources for building and operation of power generation facilities based on renewable energy.

High power intensity of the Russian economy and a growing demand for energy in the international and domestic markets, coupled by exploitative treatment of natural resources, inherent to various extent to all countries, are the core reasons why businesses tend to
disregard environmental protection standards, although some gaps in the legislation and law enforcement may also play a role. Therefore, a current revision of the legislation aimed at promotion of energy efficiency and saving is a very important development for both energy and environmental policies. One may look at the reduction of power losses during consumption of energy, including transportation of energy resources, their commercial and household consumption, as a way to improve the use of natural resources and protect the environment. However, the legal support to the *rational use of natural resources* shall remain a permanent and persistent task for law makers. In case with the energy sector, this task can be pursued in 2 key areas: (1) to promote inexhaustible and environmentally safe development of mineral resources, and (2) to establish such environmental protection terms and conditions as to discourage energy industries from further “attack” on the nature.

This challenging mission would require the efforts of other areas of the Russian law in addition to the regulations governing the use of natural resources.