

Space Policy and Space Law of Ukraine: “Relatives” or “Strangers”

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Malysheva, Nataliia (2024) Space Policy and Space Law of Ukraine: “Relatives” or “Strangers.” *Advanced Space Law*, Volume 13, 32-42. <https://doi.org/10.29202/asl/13/3>

The purpose of this article is to analyze Ukraine's space policy from the viewpoint of its correlation with space law, to clarify the peculiarities of the respective interaction, its advantages and weaknesses, as well as to develop recommendations for improving the efficiency of space activities using the mechanisms of strategic planning and improving the systemic links between policy and law. The study is carried out in a chronological context: from the collapse of the USSR and the formation of an independent Ukrainian State to the present day, taking into account the dominant trends at each stage. Based on a systematic analysis of political processes and their correlation with law-making and law enforcement mechanisms, the author concludes that the current state of Ukraine's space activities is in crisis. This situation is largely due to the absence/insufficiency of strategic planning of space activities in Ukraine. Until Ukraine is placed outside the brackets of the world's space powers, it is necessary to pay serious attention to the development of a doctrine of Ukraine's space activities with the broad involvement of science. On its basis, having taken into account all economic, political, infrastructural, technological factors, as well as current existential challenges, the Strategy of Space Activities of Ukraine should be elaborated, with a legal component as an organic part of it.

Keywords: Ukraine; Space Policy; Space Law; Space Strategy, Concept, National Space Program.

Received: 20 May 2024 / Accepted: 18 June 2024 / Published: 1 July 2024

Introduction

Policy and law represent two main regulators of social relations, which are closely interconnected and mutually determined. Their interrelationships largely influence the progress in promoting the State development as a whole, as well as the efficiency of social processes in particular sectors. This thesis is relevant for all territorial and temporal dimensions. But the most important thing is to maintain adequate links between policy and law in the context of social transformation and existential challenges. The objective of this article is to identify the patterns of space law and space policy development in Ukraine during different stages of independent statehood, to determine the gaps in this way and, on this basis, to elaborate proposals for ensuring the sustainable development of space activities in Ukraine by adapting its political and legal system to modern existential challenges.

Some theoretical concerns

For many years in modern legal, political, sociological literature, the debate on the correlation between policy and law has not ceased. The starting points of the research are either the analysis of law in the political dimension and policy in the legal dimension (Kresina, 2003); or the determination of the predominance of one of the two categories in comparison with the other: the eternal problem of “chicken and eggs” (Yushchuk, 2014; Perehuda, 2006), or the main directions of interaction between policy and law, such as unity, disagreement, mutual support, confrontation, blocking, etc. (Skrypniuk, 2006).

The most promising is the analysis of policy and law in the paradigm of their interconnection and interdependence, their ability to regulate social relations on the basis of justice and national interests. After all, for both, policy as well as law, the only object of targeted influence is relations in society, the desire to achieve their expediency and sustainable ordering. The struggle for power and its retention, the formation and functioning of state institutions – this is what some researchers consider to be sphere of policy (Skakun, 2001). Sometimes policy is called a kind of search mechanism for social development, in the framework of which projects for such development are elaborated, and law is seen as a mechanism for making these projects of a generally valuable nature (Kresina, 2003).

I consider the relationship between law and policy to not be unidirectional and linear. In a democratic State governed by the rule of law, such relations should be formed and realized in the opposite direction, and should have a mutual influence over each other.

State policy determines the strategic course of the State and has three successive dimensions (stages):

- 1) elaboration of policy courses (there may be several of them, coming from different groups),
- 2) course selection (ideally, a single course is chosen in a competitive way, which can also be a symbiosis of positive ones coming from the presented ones),
- 3) implementation of the chosen course.

At all these stages, policy and law interact. At the first stage, it is politically impossible to propose something that does not fit into the general metamodel of legal regulation in the State.

At the second stage (course selection), the link between policy and law is established through the consolidation of this course in the normative acts of political significance: laws, governmental regulations, departmental/interdepartmental orders, i.e. legal acts that enact political guidelines: concepts, basic principles of policy (strategy), state programs, action plans.

In some areas, there is a doctrine as a separate type of political guidelines that precedes the concept. However, the elaboration and adoption of a doctrine is an exception rather than a rule that is not common to all areas. Normative acts defining the political course in a certain area are developed for the perspective: long-term (more than 5 years), medium-term (from 1 to 5 years) or short-term (up to 1 year). But such a time frame is inherent in the conditions of normal social development. Another concept is the so-called “emergency lawmaking,” which is used for extraordinary conditions, in particular, for martial law and long-term planning of post-war reconstruction. It is in these conditions that Ukraine has been living since the armed aggression of the Russian Federation against it, and perhaps it is to these conditions that our political and legal strategic planning should be tied today, because, unfortunately, we cannot define a specific time frame.

Finally, at the 3rd stage of the political process, law begins to play a major role, because policy must be implemented through various state and public institutions, through law-making and law enforcement mechanisms, i.e., through legal acts.

Policy and law are only effective and socially beneficial when they have a common goal, are based on shared values, defined priorities, are understood by society and are supported by realistic possibilities of achievement.

It is very important to maintain a link between the declared policy and its implementation in lawmaking and subsequently in law enforcement. If the real legal reality reflected in positive law significantly “deviates” from the course determined by political means, this leads to rejection of such reality by society. And this, in turn, cannot but affect the attitude towards the political force whose course the society has preferred.

Here, we will try to extrapolate the above theoretical guidelines to the sphere of space activities in Ukraine, considering it in the historical context.

Development of Space Law and Space Policy in Ukraine since gaining independence

After the collapse of the Soviet Union in the early 1990s, Ukraine inherited a third of the former Soviet state’s space potential: 120 space industry enterprises, including the flagships of the former space industry: Pivdennyi Machine-Building Plant and Pivdenne Design Bureau, as well as a dozen and a half research institutes of the National Academy of Sciences of Ukraine.

Ukraine’s space policy has faced new challenges and the need to make a choice: first, whether to maintain close ties with segments of space activities of other post-Soviet states that used to be part of the unified space complex of the USSR, or to seek a new integration framework. The second problem, dependent on the first, required determining the main directions of development of the Ukrainian space industry: to maintain its traditional focus, namely the design and construction of launch vehicles and the provision of launch services, or to expand the areas of domestic space activity, taking into account global trends in space development, Ukraine’s existing space potential, and the future needs of the national economy, science and technology development, as well as the security and defense sector. The second approach was more complex and resource-intensive in the short term, but in the long term it would have been promising in terms of gaining true independence of the industry from the old integration framework, primarily from the Russian Federation. Unfortunately, a simpler and more understandable path was chosen – to continue using the resources available at the time and develop traditional space technologies. This became the basis of Ukraine’s space policy during

the first two decades of independence (from the early 90s of the XX century to approximately the early 10s of the XXI century).

An important achievement of the Ukrainian Space policy in the first years of independence was the beginning of its formation on the basis of the National Space Programs, which were developed for a 5-year perspective. This was primarily facilitated by the establishment of the National Space Agency in 1992. Although at that time the respective programs were not preceded by long-term strategies and concepts, the development and adoption of national programs was of great importance for forecasting and planning space activities in Ukraine.

Looking ahead, we would like to note that to date, 5 such programs have been adopted and implemented in Ukraine: 1) 1994-1997; 2) 1998-2002; 3) 2003-2007; 4) 2008-2012; 5) 2013-2017.

In the context of our interest, it is significant to trace the relationship between law and public policy, which was enshrined in the National (later the State) Space Programs. It should be noted that this connection was closest and most direct in the 3 first Space Programs, which testified to the prudence of space policy, which was not only proclaimed politically but also implemented through law-making and law enforcement mechanisms, managed from a single center, the core of which was the NSAU. The most important sign of this symbiosis was the adoption of the Law of Ukraine "On Space Activities" (1996) during the implementation of the first Space Program. It is the adoption of this law that finalized Ukraine's status as a Space State, which already had a state body to manage the space sector, the main regulatory legislative act (at that time, no more than 10 world countries had relevant comprehensive space laws), and a developed space industry (Malysheva, 2018).

Ukraine's space status was confirmed not only by its technological capabilities, but also by the existence of a structure for the creation of rocket and space technology and the launch of spacecraft for various purposes, their operation in orbit and the use of the information received (Fedorov, 2019). The law gave normative significance to the process of space policy formation by adopting the National Space Program for 5 years.

All the main factors, directions and features of space policy in the initial period were adequately reflected in legal norms. One of the basic political postulates enshrined in the Law "On Space Activities" is the compliance of the political and legal system with the requirements of international space law, primarily the United Nations Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Outer Space Treaty, Art. 6). Hence the reflection in this Law of the international legal principle of State responsibility for all space activities carried out in Ukraine and abroad under the jurisdiction of Ukraine. The legislative regulation of these relations is carried out through the consolidation of the NSA of Ukraine's powers to license space activities, register space objects, certify space equipment, organize international cooperation, etc.

In an effort to preserve the traditional space infrastructure inherited from the Soviet era, Ukrainian legislation has stipulated that space activities be carried out exclusively by state entities. And this postulate remained intact until 2019, when amendments to the legislation allowed activities related to the development, testing, production and operation of launch vehicles, including their space launches for any purpose, to be carried out by institutions and organizations of any form of ownership and legal form.

Starting from the 2000s, the priority of the space industry for scientific, technical, economic development, defense and security of the State was embodied in legislation. Thus, in 2000, the Law "On State Support of Space Activities" was adopted, according to which enterprises of the

space industry were granted significant tax, customs, insurance and other benefits, as well as privileges in settlements for export-import operations.

To ensure the implementation of the guidelines of the first National Space Programs, in addition to the formation of a specially authorized government body – NSAU, a number of important organizational structures were established by way of legislation: The National Center for Spacecraft Control and Testing, the National Center for Aerospace Education of Youth, the International Center for Space Law, and some others.

An important factor that ensured the close connection between space policy and law in Ukraine was the proclamation in political documents and legal enshrinement of the decisive role of science in regulating and managing space activities. This was reflected primarily in the consolidation of the basic principles of space activities, the provision on forming the National Space Program with the participation of the National Academy of Sciences, the creation of two scientific institutions of dual subordination: NAS of Ukraine and NSAU, namely the Institute of Technical Mechanics and the Institute of Space Research.

The dominant political orientation of Ukraine's activities in the field of space exploration and use in the early decades was accurately reflected in the State's international cooperation. Ukraine became a party to four of the five major UN treaties on outer space and has gained membership in the most influential international space organizations, in particular, the UN Committee on the Peaceful Uses of Outer Space. The geography of bilateral relations in this area is illustrative: at the initial stage, it was in the "lion's share" focused on cooperation with the Russian Federation and some other post-Soviet states within the framework of traditional cooperative ties and the use of existing markets. These include a number of agreements on the joint use of space infrastructure facilities (for example, the Yevpatoria Center for Long-Range Space Communications), framework treaties on the principles of cooperation in the space sector, some agreements on the implementation of joint space projects. Such agreements overwhelmingly served the interests of the Russian Federation, but made it possible to use existing Ukrainian infrastructure capacities, which were sometimes redundant for self-use.

At the same time, the designs and innovations of the leading Ukrainian space companies have formed the basis for some international commercial projects that go beyond traditional post-Soviet ties. The most ambitious of these projects was Sea Launch. The Dnipro project on the conversion of defense space technologies, the participation of Ukrainian enterprises in the European Vega project, and some other commercial projects were also successful. In total, in 1992-2016, 140 domestically produced launch vehicles launched 370 spacecraft at the request of customers from 25 countries. In addition, 27 spacecraft developed by the Pivdenne Design Bureau and manufactured by the State Enterprise Pivdenmash were launched (Fedorov, 2019: 121).

To summarize the above, it should be noted that during the 1990s – 2010s, space policy and space law were quite organically linked. It is important to emphasize that the first 4 National Space Programs provided their legal support as a mandatory part of the program body.

At the same time, this connection is gradually becoming weaker, as is the overall decrease in government attention to the space sector as a priority. This situation has begun to increasingly affect the strategic formation of the space policy. The attitude of the State to a particular sector is most clearly demonstrated by the level of appropriate funding. In this regard, it should be emphasized that when approving only the First Space Program, the Law charged the Cabinet of Ministers of Ukraine with the following: to provide for the allocation of funds for each year

of the Program, in full with their attribution to *protected budget expenditures*¹. In the Second Program, was stipulated that the amount of the annual funding is determined at the level of not less than 0.2 percent of the planned gross domestic product. In the Third, Fourth and Fifth Programs, funding for the Program was declared in amounts based on the capabilities of the State Budget of Ukraine, which of course gradually reduced such funding to certain percentages of the planned amount. For example, while the Fourth Space Program (2008-2012) was funded at almost 38% of the planned amount, the planned amount of funding for the Fifth Program (2013-2017) was not only almost 80% lower than in the previous period, but only 30% of the planned amount was executed.

It should also be noted that this last program document did not provide for legal support of the National Space Program at all.

The current development of Ukraine’s Space Policy and its relation to Space Law

Since 2018, for the seventh year already, Ukraine has been in the absence of an approved National Space Program. This is a serious violation of the Law on Space Activities, which in itself not only breaks the link between space law and policy, but also has a detrimental effect on the State’s space activities. Let us leave aside the analysis of the reasons for this situation in this article. They are not linear and unambiguous; they have objective and subjective components, and we will only note this as an analysis of the reasons for this situation will be left aside.

At the same time, we will try to find out what policy instruments currently determine the political priorities for the national development of space activities, and thus serve as a guide for the development of space law in Ukraine. What is the current relationship between policy and law in the field of space exploration and use? Back in 2011, the Government of Ukraine approved a long-term Concept for the Implementation of the State Policy in the Sphere of Space Activities, which was designed for the period up to 2032 (Concept, 2011). The problem that was declared to be solved as a result of the Concept realization was a significant disproportion between the level of space potential and its impact on solving urgent national and social tasks. The concept was planned to be implemented by 2032 in 4 stages: the first – for 2011-2017, the second – 2018-2022, the third, in which we are currently, – 2023-2027, and the fourth – 2028-2032. In January 2012, the Action Plan for the execution of this Concept was approved (Plan, 2012).

The directions of the Concept realization were defined as follows:

- ensuring the development of space technologies and their integration into the real sector of the national economy and the sphere of national security and defense;
- obtaining new knowledge, improving the scientific, technical and educational level of its citizens;
- improvement of rocket and space engineering and technologies for its creation;
- ensuring commercialization of space activities;
- deepening international cooperation in the field of space activities.

Assessing the relevant Concept, we have to admit that it can serve as a negative example of a strategic document that was envisioned as an example of good wishes without the necessary economic, technical, technological, scientific, and financial revision. In the context of our interest,

¹ In accordance with Article 55 of the Budget Code of Ukraine, “protected budget expenditures are those expenditures that cannot be changed in the event of a reduction in approved budget allocations”.

we note that the goals expressed in the Concept have not been embodied either in lawmaking or in law implementation. It is being observed a growing gap between political proclamations and their enforcement in Ukrainian legislation. Here are a couple of examples. Thus, the most important way to ensure investment attractiveness of space activities, the Concept calls improvement of the mechanism for providing state support to the space sector. However, the scope of such support, which was laid down in 2000 by the Law on State Support of Space Activities, was gradually nullified by subsequent amendments to the legislation. Among the priorities for the development of space application, the Concept named the satisfaction of social needs in the field of remote sensing of the Earth, as well as satellite navigation and telecommunication services. Among these 3 areas, only telecommunications relations have received legal support: the Laws of Ukraine “On Radio Frequency Resources” (June 1, 2000) and “On Telecommunications” (November 18, 2003) were adopted; both expired after the adoption of the Law of Ukraine “On Electronic Communications” (December 16, 2020) (On Electronic Communications, 2020). However, the destiny of the legislation on remote sensing and satellite navigation turned out to be much more complicated. Back in 2013, the Concepts of two laws of Ukraine were approved: “On State Regulation in the Field of Satellite Navigation” of 03.01.2013 (On State Regulation in the Field of Satellite, 2013) and “On State Regulation in the Field of Remote Sensing” of 28.08.2013 (On State Regulation in the Field, 2013). The following year, draft laws were elaborated in these two areas. However, to date, these important laws have not been adopted, although their adoption is the part of Ukraine’s obligations under the EU-Ukraine Association Agreement.

An important part of the long-term Concept up to 2032 is devoted to international cooperation in the space sector. It is hard to imagine how a strategic document that is still now in force recognizes Russia, a state that has been waging aggression against Ukraine since 2014, as the first priority for cooperation in this area. And after it – the USA, the EU, and other countries are listed.

The measures envisaged by the Action Plan also turned out to be completely unrealistic. In particular, one of the results of the second stage, ended in 2022, was to ensure systematic data acquisition from the national space system for Earth observation and geophysical monitoring “Sich” in the amount of 5 spacecraft, and by the end of the deadline, 10 such spacecraft were to be launched. Today, this looks absolutely impossible.

When evaluating this so-called strategic policy document in total, we would like to point out the main thing: the basic principles of strategic planning were ignored in the process of its elaboration, first of all, the impossibility of defining the concept of the *state policy implementation without defining the substance of the state policy itself*.

Another attempt to define the state space policy was made at the agency level in 2015, when Strategy of Space Activities of Ukraine for the period up to 2022 was approved by Order of the State Space Agency №100 of May 21, 2015 (Strategy, 2015). It should be noted that the document identified problems that really needed to be addressed, set the appropriate goals, and determined adequate priorities. The motivations for the adoption of this Strategy were the recognition that the policy of preserving and modernizing the space achievements of previous periods and adapting them to new launch sites or new projects was ineffective; the lack of focus on the introduction of modern spacecraft manufacturing technologies; and the insufficient involvement of other sectors and industries in space activities. It was noted that the focus of the sector’s enterprises on financing from the state budget or attracting loans under state guarantees did not allow for sufficient financing, and thus for the innovative development of the industry. It was noted that the focus of the industry’s enterprises on obtaining funding from the state budget

or attracting credits under state guarantees did not allow for sufficient financing, and thus for the innovative development of space sector.

Based on the problematic situation in the space sector, the Strategy's goal was to increase the efficiency of space activities, solve urgent national security and defense problems and realize the geopolitical interests of the State, promote socio-economic, scientific, educational, environmental and cultural development of society, enhance the prestige of Ukraine as a space power on the world stage, and transform the space industry of Ukraine into a multiplier of high-tech development of the national economy. In the context of our study, it is important to emphasize the Strategy's emphasis on the need to create legislative motivational grounds for attracting investment in the space sector on the principles of public-private partnership and private entrepreneurship (Strategy, 2015). In this regard, it is possible to note that there was a clear correlation between the proclaimed strategic guidelines and their implementation in law? It is partially yes, since in 2019 amendments to the legislation on Space Activities were adopted, which, among other things were made important modifications to part 2 of Article 4 of the Law “On Entrepreneurship” and removed restrictions on the implementation of activities related to the development, production and operation of launch vehicles, including testing, production and operation of launch vehicles, including their space launches for any purpose (On Amendments, 2019). At the same time, it was not succeeded in achieving a legislative solution to the stimulation of public-private partnerships as a way to attract investment in the sector of space activities before the expiration of the Strategy in 2022. In general, we have to state that the strategic guidelines of the relevant Strategy were not implemented by 80%. This was largely due to the suspension of the programmatic approach to planning, financing and implementation of space activities.

The path to the adoption of the 6th Space Program is not easy for Ukraine. Two concepts of such a program have already been developed and approved by the Cabinet of Ministers: for 2018-2022 (Concept, 2018) and for 2021-2025 (Concept, 2021). But even today, in 2024, such a program has not been adopted.

Evaluating the quality of the political documents (strategies, concepts) adopted in Ukraine in the modern period (provisionally – in the last decade, and especially after the expiration of the fifth National Space Program), we must recognize that most of the goals set in them have not been achieved. This is primarily due to the unrealistic nature of the goals that were set, as they still could not break away from the capabilities of structures and facilities that historically were part of a single all-Union complex. The state's underestimation of the importance of space potential and the related lack of adequate funding for the industry cannot be ignored. And the focus on private sector participation in space activities was proclaimed and implemented too late and was truncated which did not allow the private segment to effectively demonstrate its capabilities.

International cooperation has also not become a tool for achieving the goals of space policy guidelines. Despite the political intentions expressed in strategic documents, the opportunity to integrate into the European Space Agency was not used. At the same time, Ukraine has practically no space projects of its own, and is not a participant in international or European space projects (Fedorov, 2019:142). The only exception in recent years is the signing of the international Artemis Program Agreements in December 2020. However, Ukraine's real participation in this program has not yet been operationalized (Malysheva, 2021). Ukraine's participation in international space projects has been reduced to individual Ukrainian enterprises performing work for foreign customers (among the most successful are the American Antares project and the ESA Vega project).

State space governance also began to show its inefficiency: especially authorized space bodies were in a mode of constant turbulent structural, functional and staff changes that were not always scientifically justified; and rapid legislative changes often occurred without strategic justification and taking into account positive foreign experience.

Compared to the previous period, the connection between space policy and space law has significantly decreased. It is observed at all stages: at the stage of choosing political decisions that would fit into the framework of general legal guidelines, during the period of coordinated implementation of the political goals in legal norms, during the process of enforcing them and evaluating the results.

Ukraine's space sector faced special requirements in the context of existential challenges due to Russia's brutal aggression. This required a decisive change in the state's space policy, its reorientation to the primary use of space capabilities to the country's security and defense issues. Here, the connection between space policy and law becomes crucial, since Ukraine is currently going through a stage of large-scale social transformations, when the direction of political and legal interaction is determined not so much by internal preconditions as by external factors (Pereguda, 2006). Unfortunately, the legal and institutional measures that were initiated in this regard in the initial period of the full-scale invasion were not brought to a logical conclusion.

Having carried out this analysis, we arrive at the following inference: the link between space policy and law in Ukraine was quite adequate in the first years of independence, but became increasingly unbalanced over the years. And after the completion of the 5th National Targeted Scientific and Technical Space Program, it was practically lost. Its restoration at the level of strategic planning is an indispensable condition for the successful space activities to ensure sustainable development of Ukraine.

Conclusions

Concluding this research, it should be noted that Ukraine's space activities are currently facing a crisis. The current situation in the sector was formed gradually. Its prerequisites were laid in the first years of independence due to the inherited space infrastructure having a clear orientation to be a segment of the powerful space complex of the USSR. This segment was very large in scale and disproportionate to Ukraine's own needs. On the other hand, it was not multifunctional, providing Ukraine with a full cycle of space activities. Therefore, since the first years of independence, the national space industry has chosen the simplest and least resource-intensive path, focused on preserving the traditional framework of international cooperation. Such cooperation was mostly initiated by Russia and was primarily aimed at satisfying its interests. But the availability of Ukraine's own high-quality launch vehicles in the early decades also ensured international cooperation in providing launch services to other countries. At the same time, Ukraine's space activities did not become a powerful factor of innovative sustainable development inside the country, and did not sufficiently serve its economic, social, environmental, security, and defense needs. All of these factors gradually pushed the space sector out of the top priorities and into the backyard of development.

The biggest problem of Ukrainian cosmonautics in the modern period is the lack of strategic planning of space activities (Fedorov, 2019), despite the existence of a significant number of political guidelines enshrined in various strategies, concepts, action plans, etc. A prerequisite for the formation of the relevant Strategy should be its scientific grounding and well-established economic, political, financial, technological, and infrastructural aspects, as well as ensuring the

inextricable link between the political and legal components. All strategic decisions should be subject to legislative enactment and law enforcement.

Law without policy has no strategic guidelines for development. And a policy without law has no legal framework for introduction, and as a result, remains a good wish.

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