

FUNDAMENTAL BASIS OF ENERGY LAW*

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The purpose of science, scientific research (broadly speaking, as defined by the law) is to gain new knowledge for the good of humanity. The current situation with the fundamentals of energy law is far from perfect. It is not about the existing bibliometric method of evaluating R&D results for science as a whole that is largely defective and essentially inapplicable to social sciences. It is about general deficiencies of organizational origins of scientific research in present-day Russia: both well-known and lesser known, mostly due to faulty legal regulation of multidisciplinary science in general. In this specific segment, one of such deficiencies is the lack of purpose of legal disciplines (its vagueness or underestimation in a best case scenario).

Science is crucial and R&D findings are much in demand in those spheres of public relations where the legal field is practically untouched, where there are only few scientists and scientific publications created by them (in both relative and absolute measures), the number of scientific organizations is next to nothing, and, consequently, the regulatory framework is flawed and the compliance practice is in a poor shape. A textbook example of this is the science of energy law, where the legal field is barely broken (if at all), with hardly any trails blazed... However, the practical need for large-scale, diverse scientific and legal research, both theoretical and those aimed at solving pressing practical problems, is enormous. We can be sure that the state of a branch of legal science (needless to say, this does not apply to all disciplines of legal science) reflects the state of the corresponding branch of law as well as the state of the corresponding sphere of public relations.

Keywords: energy law, fundamental basis of energy law, science studies, thesis objective.

Science studies, just like other studies, has a fundamental component, i.e., fundamental science studies as the general theory of science or a theoretical and methodological framework responsible for development of basic theoretical concepts and models of scientific knowledge, scientific research and scientific organization, as well as study and logical sequencing

of formation, functioning and development patterns of science as a whole. [1]

In fundamental science studies, it is generally believed that science began only in the classical era with Plato and Aristotle's epistemology of physics. This point of view is based on the fact that by that time different groups of people acquired a scope of knowledge which can be

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considered scientific knowledge and no proper science had existed before that: the preceding historical period is deemed pseudoscience and associated mainly with generation of prerequisites for scientific knowledge such as creating a writing system, learning to count, developing crafts... This standpoint continues to dominate educational literature on modern science studies. [2]

However, this view seems unreasonable with regard to the origin of science, acquiring scientific knowledge about the world. The term “science” has been defined in different ways, some definitions are witty, some grotesque, mocking, etc. But there are also serious definitions, mostly those established by law as a conceptual framework.

Notably, Article 2 “Basic Terms Used in the Federal Law” of Federal Law No. 127 On Science and National Research and Development Policy dated August 23, 1996 [3] (as amended on July 26, 2019) states: “Scientific research means activities aimed at acquisition and application of new knowledge”. As for fundamental scientific studies, it defines them as “experimental or theoretical activities aimed at acquisition of new knowledge on basic formation, functioning and development patterns of the humanity, society, environment”.

Meanwhile, Federal Law No. 253-FZ On the Russian Academy of Sciences, Restructuring of National Academies of Sciences and Amendments to Certain Laws of the Russian Federation dated September 27, 2013 [4] (as amended on July 19, 2018) states (in Article 6 Clause 1) that the goals of the Russian Academy of Sciences are “to conduct and develop fundamental scientific studies and exploratory research aimed at acquisition of new knowledge on laws of development of nature, society, humans and contributing to technological, economic, social and spiritual development of Russia”. The same objective is also mentioned first in Clause 12 (a) of the Articles of Association of the Russian Academy of Sciences approved by Decree of the Government of the Russian Federation No. 589 dated June 27, 2014 [5] (the goals remained unaffected by all subsequent amendments to the Articles of Association).

Thus, the purpose of science, scientific research (broadly speaking, as defined by the

law) is to gain new knowledge for the good of the humanity. It is safe to say that this purpose is immutable, it is what drives progress, what underlies development of human civilization. If this is the case, why do we say that science only began after people had developed calculation, writing, crafts? Quite the opposite, these things are results of scientific research of early men.

Indeed, fire was discovered at the dawn of history in primitive communities by efforts of individuals (the very first scientists). Different communities (tribes, families, encampments, etc.), in different locations on the planet, thousands and tens of thousands years apart, repeatedly made a scientific discovery in the field of energy, the discovery of fire: first, from such points of origin as naturally occurring wildfires, then they learned to maintain fire (in bonfire, hearths...) using scientific methods, experiments, then they learned how to create it using rotation in wooden objects, striking a spark with flint and steel, etc. It is safe to assume that the science of energetics originated at this point, with burning, the predecessor of all exact (natural, etc.) sciences, at its core.

Maintaining fire (feeding it firewood, peat, etc.) with shamanistic rituals and other religious rites, then obtaining it (also with a major mystical component) accompanied by organizational measures designed to prevent early men of neighboring communities from stealing it required organization of social activities in each community, their arrangement by creating and observing tribal traditions. This is the beginning of legal regulation (understandably, not in writing), the predecessor of the sciences later on referred to as socio-humanistic sciences, more specifically, social sciences, more specifically still, legal sciences, namely, energy law studies.

The author has a rampant imagination and is aware of it, he can easily imagine the progression described above that extended over hundreds of thousands of years. It could not have been otherwise, had some primitive community failed to discover fire or to maintain it upon such discovery, the community itself would have vanished. It is by discovering and maintaining fire that they ensured the possibility to evolve and develop.

However, it is only true as long as humans originated and evolved according to the so-called

Darwinian Theory. But there are other theories in this respect: humans were created by aliens or have a divine origin, etc. Incidentally, the latter version also refers to advent of fire: as is known, Prometheus gave fire to the people and was severely punished for it by other gods who chained him to a rock and sent an eagle to eat his liver every day.

In any case, fire (energy) was, is and will remain the foundation of the human civilization, and, to a certain extent, this foundation was regulated by the law, first of all, in application of energy studies. It will never change: it is the foundation of both energy studies and energy law.

In a similar vein, the use of animals muscle power by people, first and utmost, domestication of horses, should be considered. Today, horsepower is a unit of measurement of power, but, at the initial stage of domestication of the horse, it was a quantum leap in improvement of power capacity (in a biological form rather than physical) of humans and human communities that occurred nearly five thousand years ago. Further development in this sector was incremental, each step of development (mastering horseback riding without a saddle, then inventing horse tack: a saddle, stirrups, collars, etc., followed by off-wheelers, chariots, carts, carriages, phaetons, horse-drawn trams...) being a scientific discovery in the field of energy and, therefore, energy law.

What happened during different historical periods of different states can be determined using the method of legal stratigraphy widely applied in geology and archeology to study specific layers of Earth's crust or other strata (in geology) or layers discovered by archaeological excavations containing traces of cultures of certain historical periods. Legal stratigraphy, in the author's opinion, means in-depth tracing of history of legal field (laws and regulations, their practical application, scientific and Yuristic views) of specific historical periods. In this regard, history of Russian energy law is very eventful, still waiting to be researched.

What do we have now? The current situation with the fundamentals of energy law is far from perfect. It is not about the existing bibliometric method of evaluating R&D results for science as a whole that is largely defective and essentially inapplicable to social sciences. It is about general

deficiencies of organizational origins of scientific research in the present-day Russia: both well-known and lesser known, mostly due to faulty legal regulation of multidisciplinary science in general. In this specific segment, one of such deficiencies is the loss of purpose of legal disciplines (its vagueness or underestimation in a best case scenario). In particular, it is generally assumed that those scientific disciplines where many theses are written, many articles are published, many scientists conduct research are crucial and much-needed... Thus, it is believed that this field of study is in high demand, that it needs additional target funding, more postgraduate and doctoral openings, dedicated scientific research institutions with adequate human and material resources, etc. Ideally, cumulative results of all these measures should lead to highly effective legal regulation in this field of public relations and create a solid and sustainable compliance practice. Unfortunately, there is no such positive correlation, as is well known.

Conversely, if a field of legal studies has less theses defended, less articles published, etc. (relatively, of course, because quantity does not necessarily translate to quality in this case) it is far less needed by the state and the society, with all that this estimation implies.

However, it is obvious that this approach offsets the goal of scientific research. One way or another, science should benefit people: the society, the state, the entire human civilization. As mentioned above, science as such means of acquiring new knowledge for the good of humanity. It is not without reason that these are primarily evaluated by their academic novelty. However, if the legal field of a certain sphere of public relations has been traveled all over, beaten and rutted by numerous scientific studies conducted by multiple researchers, it is extremely difficult to create new insights, something really academically novel. Moreover, practical bearing cannot be significant in this case. This is the current state of such branches of legal science as civil law, business law, and a number of procedural fields...

The converse is also true: science is crucial and R&D findings are much in demand in those spheres of public relations where the legal field is practically unbroken, where there are only few

scientists and scientific publications created by them (in both relative and absolute measures), the number of scientific organizations is next to nothing, and, consequently, the regulatory framework is flawed, and the compliance practice is in a poor shape.

A textbook example of this is the science of energy law, where the legal field is barely broken (if at all), with hardly any trails blazed... However, the practical need for large-scale, diverse scientific and legal research, both theoretical and those aimed at solving pressing practical problems, is enormous. It is primarily due to the fact that the regulatory framework of entire energy law institutes (and, therefore, its practical application), such as hydraulic power, hydrocarbon power, coal, solar, nuclear, the so-called “clean” power (wind, tidal power at sea coasts), etc., is clearly inadequate in terms of various fields and parameters. Scientific challenges of legal regulation of the so-called “green” energy presents itself in all its magnitude: in 2020, the EU countries developed a “Green Deal” plan (within the “green wave” trend) according to which Europe has to become neutral in terms of greenhouse gas emissions (meaning that the European economy should generate as much carbon dioxide as it utilizes) by 2050. It would be wrong to say that this task belongs to the environmental law field of science, it is first of all the energy-saving segment of energy law, and the energy-environment issue is already a major burden on energy law studies. This segment of the law governs energy resource recovery and processing relations, while preserving a clean environment for the future of the Russian Federation, for our children is one of the main challenges facing Russia and the people living here today.

The effectiveness and actual performance of energy law studies of today can be viewed from another, purely pragmatic, angle. We can be sure that the state of a branch of legal science (needless to say, this does not apply to all disciplines of legal science) reflects the state of the corresponding branch of law as well as the state of the corresponding sphere of public relations. The state of specific sectors of our economy, their growth (stagnation or even degradation) is caused by the state of the corresponding industry-specific

legal regulation, and, strange as it may seem, mostly by its extensive scope rather than depth, the depth in this case is secondary. The energy sector of the economy, as well as the regulatory framework of the energy sector and, therefore, energy law are beyond competition (for now, even as compared to business law). Even now, profits from the energy sector of economy account for a major portion of the country’s entire economic profit. What will happen if the effectiveness of scientific research in the energy law sector of legal studies increases, improving the efficiency of legal regulation of the energy sector? The effect will be huge!

This field of energy law studies existing today is a new scientific and legal ground, barely broken, more specifically, it is a critically insufficient field of legal studies. Oddly enough, it is major legal gaps that inspire postgraduate students to stay on the beaten path rather than venture into this uncharted territory when choosing their subjects. Psychologically, it is understandable: a while back, the author described this paradox in a paper on thesis subject selection by postgraduate law students as follows (and this description is as relevant as ever): “Many (not all, but the majority) of those choosing a subject, mostly young people, honors students with much retained knowledge in all legal disciplines, including the one they are choosing their thesis subjects from, when narrowing down their line of research to approach a subject, automatically think: I know this much in this area, which is good, so I will keep searching for my subject in this vein. A brilliant contemporary Russian science fiction author, Vasily Zvyagintsev (who has sadly passed away), described a mind trap created by an Alien Intelligence superior to humans. In our case, it can be said that young legal scholars are caught in a mind trap they created themselves in their heads while pondering over the vector (not even a field, problem, or subject) of their future scientific research. As a result, the subject often lies within a thoroughly researched field of science, thesis research findings on the subject may be excellent in the qualification segment, but they will never be of any real value in the scientific segment (because nothing new can be discovered or said here), and the proposed highlights of the thesis are usually nothing more than elaboration on

someone else's thoughts, minor and insignificant definitions. It is phrase-mongering rather than expanding knowledge in this particular field of legal research." [6]

A research based on the first option is a sure thing: praise the right people, refer to the right sources, critique a few names, and you will have created your own paper (although it would be stretching a point to call it so) derived from dozens of previous papers by putting them together. It is of no interest to a real scientist, even a scientist to be. It is way more exciting to choose the second option and venture into uncharted territory. Yes, it is not as easy, there is no support, no (or almost no) previous research, you would have to determine research objectives, subjects and methods, sometimes even develop a conceptual framework. On top of that, prepare to be criticized, often unfairly. This option is not for those who tend to bend with the wind trying to fit in and please everyone. But this is what distinguishes a genius from a gifted person: a gifted person achieves the goal faster than everyone else whereas a genius sees a goal no one has seen before.

In energy law studies, there are (and were) a lot of (in absolute terms, but very few in comparison to the number of legal scholars in other scientific disciplines) outstanding scientists, talented researchers (the author omits their names intentionally, so as not to put either them or himself on the spot, caring about research ethics). It is they who should be role models for young scientists. When it comes to choosing a subject for thesis research, it means that you can: either choose a topic in a field thoroughly researched by others knowing that your research will hardly yield any new scientific insights, take a shortcut without having to suffer any bumps and bruises; or choose to break new ground, leave yourself open to attacks by critics and faultfinders alike, become a scientist the hard way, but actually solve a major scientific problem and reap the benefits (at least in your own personal opinion) in the form of being a pioneer in the long run (even though it will not make up for the bumps and bruises you have suffered along the way). Such are the current fundamental problems of energy law studies. Other scientists may (probably do and definitely will) have other views.

What prognosis can be made? What will be the fundamental problems of energy law studies in the near, not-so-distant and distant future? The author believes that some scientific inquiry methods such as foresight, intuition, extrapolation of the past through the present and to the future, simulation modeling, etc., even simple imagination (very different between optimists and pessimists), etc., can create the following picture.

In the conventional energy sector that demands an adequate scientific and legal framework, these are: controlled nuclear fusion; new ways to create innovative elements to store huge volumes of energy in small structures; or discovery of the same in the natural environment (not that of Earth but of the Moon at the very least) in large quantities, for example, Helium – 3; wireless transfer of large quantities of electrical power, including long-distance, etc. Microeconomics can be included in this list with some reservations, provided that both theoretical and practical value of legal research is determined by its energy component symbiotically combined with the informational one rather than the informational component alone (this is the sphere of scientific challenges of IT law).

In bioenergetics, the following statement was made 50 years ago: "... all structural parts of various sensory organs are very finely 'tuned' to energetic properties of the outer world... Each biological species has its own energy and information al niche" [7]. L. Ivashov, a geopolitician and, incidentally, a colonel general, answered the question "What is a thought generated by the human mind?" as follows: "It is energy loaded with various pieces of information and combined with emotional (psychological) energy". [8]. When asked "What is a word?", he answered: "It is also energy, otherwise, it would have no impact on the reader or listener". He concludes: "However, is thoughts and words are energy, they must have a material basis, a physical source of energy". [9]

Once again, the scientific and legal framework of bioenergetics, primarily human bioenergetics, is not a legal segment of such sciences as biology, neurophysiology, etc., but a symbiosis of human energetics and biology. This subject as a seamless whole offers humans the possibility to master

telekinesis, teleportation, time travel, all by each individual using their own energy.

Shifting from the microcosm (in the field concerned) to the macrocosm, the first thing to consider is the so-called dark energy (not to be confused with dark matter, although both are very likely to be closely linked, they could even be two sides of the same phenomenon). As of now, the dark energy is a very vague notion of theoretical physics, a sphere of scientific cognition of the physics of the Universe, studied by certain scientists (including those whose work can be found in open literature). [10]

Legal regulation of relations involving the dark energy will not be needed any time soon. It will happen when there is a potential for its actual application by our planet's population, then scientific and legal research in the field of energy law will become essential. However, it seems that it should be taken into account even now, at least by the branch of fundamental scientometrics that covers energy law research.

Additionally, on a cosmic scale, we should pay attention to problems of the Earth's energy and

informational field referred to as the noosphere (derived from Greek, meaning sphere of reason) by V.I. Vernadsky containing all the information that has ever existed on, inside or around the planet. Essentially, it is a field containing everything that has ever been created by people, an unimaginably enormous scope of knowledge. As opposed to dark matter, where no mind energy exists (which is not necessarily true), with the Earth's energy and informational field we will have to determine who, what agent owns the information (not the energy, it can be deemed a natural phenomenon in this case) contained within this field and consisting of countless thought forms while conducting scientific research using the instruments of energy law (related to other legal and interrelated branches of science).

In the even more distant future, we can discern the energy and informational field of the entire Universe, undoubtedly, origin of life itself, of all intelligent life forms in the Universe.

Further in the field concerned, there probably will be things we not only do not know, but do not know we do not know. ■

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