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Ownership Features and Developments in the Use of Subterranean Depths in the Republic of Latvia

Summary of the Doctoral Thesis for obtaining
the scientific degree “Doctor of Science (*PhD*)”

Sector Group – Social Sciences

Sector – Law

Sub-Sector – Civil Rights

Rīga, 2023



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Abbreviations used in the Thesis

UN	United Nations
CO ₂	carbon dioxide
EU	European Union
UGS	underground gas storage
UTC	Coordinated Universal Time

Introduction

The right to property is an essential right of an individual, since it governs the well-being of a particular person. The right to property is one of the oldest and best developed branches of law.¹

The task of balancing mutually opposing interests is at the heart of each legal framework. One of the main basic tasks of ecological rights is to balance the need for conservation and protection of natural environmental objects (for example, land, its subterranean depths, forests, waters, animals and plants, air, ozone layer) with the needs of people for the use of natural resources.²

In the Republic of Latvia, an analysis of the concept of ownership has been carried out, as well as an analysis of the institution of possession. One of the researchers who has carried out such an analysis in the Republic of Latvia is Professor Jānis Rozenfelds. However, in his writings and studies, Prof. J. Rozenfelds has not basically carried out any detailed examination of the issue of ownership of subterranean depths in the conditions of the modern legal environment.

A strategy for the use of subterranean depths on the State and municipal lands has not been so far developed in the Republic of Latvia. There is neither any systematic prospection and exploration for new mineral and other subterranean resources, nor any additional exploration of known mineral deposits to ensure their more rational use.³ These activities are not being developed at the present time, because of the gaps in the legal framework in

¹ Reine, I. 1999. Tiesības uz īpašumu un īpašuma atsavināšana valsts vai sabiedriskajām vajadzībām. 28.01.1999. *Latvijas Vēstnesis*. 5/6.

² Statkus, S. 11.03.2003. *Ekoloģiskās cilvēktiesības – starp vides patēriņu un saglabāšanu*. Retrieved from: <https://providus.lv/raksti/ekologiskas-cilvektiesibas-starp-vides-paterinu-un-saglabasanu/> [viewed 28.09.2022.]

³ Vides aizsardzības un reģionālās attīstības ministrija. 2013. gada 16. maijs. Informatīvais ziņojums “Par zemes dziļu izmantošanu” (VSS-466). Retrieved from: <https://tap.mk.gov.lv/lv/mk/tap/?pid=40284493> [viewed 28.09.2022.]

the Republic of Latvia, as well as the lack of practice, which does not create conditions for the potential of subterranean depths in Latvia to be explored qualitatively and then developed subsequently, which would also provide added value to the development of the national economy.

At the moment of preparation of the research paper and at the stage of conducting the research, it has been established that the degree of identification of the research paper topic in the legal framework is relatively low. In 2014, within the procurement of the Ministry of Environmental Protection and Regional Development, the law firm “Raidla, Lejiņš & Norcouc” produced a legal analysis report “On improvement of the legal framework for the use of subterranean depths for attracting potential investments”.⁴ Whereas in 2016, at the Riga Graduate School of Law, mg. iur. Juliija Dzigulska has addressed the issue of ownership of subterranean depths, analysing the public interest over the private rights in her work under the English title – “Subsurface property rights in Latvia: Public interest over private rights?”⁵.

At the same time, the Author has not found any extensive and detailed research publication, compilation, or monograph published, which would explore the features of ownership and development trends in the use of subterranean depths. It is also not established that detailed and extensive studies have been carried out in the Republic of Latvia in order to enable the storage of carbon dioxide (CO₂) in the depths of the earth⁶, which could be carried out in

⁴ Zvērinātu advokātu birojs “Raidla, Lejiņš & Norcouc”. 2014. *Juridiskās analīzes ziņojums “Par zemes dziļu izmantošanas tiesiskā regulējuma pilnveidošanu potenciālo investīciju piesaistei”*. Retrieved from: https://www.varam.gov.lv/sites/varam/files/content/files/2014-10-21_zinojums_final.pdf [viewed 28.09.2022.]

⁵ Dzigulska, J. 2016. *Subsurface property rights in Latvia: public interest over private rights?*. Riga Graduate School of Law. Retrieved from: <https://www.rgsl.edu.lv/uploads/research-papers-list/9/dzigulska-julija-6-final.pdf> [viewed 28.09.2022.]

⁶ Brehm, D. 2007 *Storing carbon dioxide below ground may prevent polluting above*. Massachusetts Institute of Technology, volume 51, number 16.

the EU in the near future (some pilot projects are currently underway, for example, in France and Norway). Accordingly, in the Republic of Latvia, such a legal framework should be considered by revising the temporary ban on the storage of CO₂ in the subterranean depths, introduced in 2011 and coming into force as a permanent ban in 2013. The topic of research work in this form and scope on subterranean issues has so far been practically unaddressed in the Republic of Latvia, and such research work can make a positive contribution to the improvement of the legal environment.

On the other hand, looking at research from the point of view of geology potential, the State research program “Subterranean depths”, implemented between 2009 and 2013 by researchers from the University of Latvia and Riga Technical University, could be mentioned as the most voluminous in the last decade. The aim of the program was to support and promote by means of knowledge the transition to a more science-intensive production of products from the local subterranean resources of the Republic of Latvia with the highest possible added value.

The subterranean resources of the Republic of Latvia cannot be compared to the countries rich in natural resources such as Russia or Norway, but it possesses underground waters, sand, gravel, clay, dolomite, gypsum, limestone, amber, possibly diamonds, iron ore, and also oil deposits that have become an apple of discord in the last decade.⁷ The population density of the Republic of Latvia is relatively small; therefore, Latvia is one of the greenest and least urbanised areas of the EU. The greatest natural treasures of the Republic of Latvia are soil, subterranean depths and water, as well as flora and fauna.⁸

⁷ Gavena, I. 2001. Zemes dzīles kā īpašums. 08.05.2001. *Latvijas Vēstnesis*. 70.

⁸ Latvijas ziņojums Apvienoto Nāciju organizācijai par ilgtspējīgas attīstības mērķu ieviešanu. 2018. Retrieved from: <https://www.pkc.gov.lv/sites/default/files/inline-files/Latvija%20IAM%20Zinojums%20ANO.pdf> [viewed 28.09.2022.]

Mineral resources in the subterranean depths of the Republic of Latvia are a national treasure, but due to the limited nature of their natural diversity, their full identification and rational use require even closer cooperation and exchange of information between many research groups and mineral resource extraction and processing companies.⁹

Even now, in 2023, in the Republic of Latvia, the ownership of subterranean depths is stipulated in the Civil Law and several special sectoral laws, such as the Energy Law¹⁰, and the Law “On Subterranean Depths”¹¹. The Republic of Latvia has introduced a model of ownership where the energy resources in the subterranean depths belong to the owner of the upper layer of land. Such a model is very rare at both EU and global level. However, considering that there has been no significant use of subterranean depths in the Republic of Latvia to date, the legal framework introduced in this respect has not been widely exercised in practice. Nor has it been fully explored whether such an ownership model can be sustainable in terms of meeting the country’s energy and economic needs. At the same time, in the context of subterranean depths, the issue of using the unique properties of land is also relevant. For example, the natural gas energy resource stored in the Inčukalns underground natural gas storage facility does not belong to the State of the Republic of Latvia and does not come from subterranean depths, however, it is stored in the territory of Latvia, using the unique properties of the structure of natural formation.

⁹ Lazdiņš, A. 2016. Promocijas darbs “Latvijas reģionu minerālo resursu tirgus attīstība”, 140.

¹⁰Enerģētikas likums: Latvijas Republikas likums. 15.10.1998. *Latvijas Vēstnesis*. 273/275. *Latvijas Republikas Saeimas un Ministru Kabineta Ziņotājs*. 20.

¹¹Likums “Par zemes dziļēm”: Latvijas Republikas likums. 21.05.1996. *Latvijas Vēstnesis*. 87.; 11.07.1996. *Latvijas Republikas Saeimas un Ministru Kabineta Ziņotājs*. 13.

With regard to the use of subterranean resources in the Republic of Latvia, in accordance with the Civil Law, subterranean depths, including mineral resources, belong to the landowner. However, in order to ensure the sustainable use of resources, the State has set its own conditions. Based on the provisions of the Law “On Subterranean Depths”, the Law “On Environmental Impact Assessment” and other regulatory enactments, a compromise has been reached between the interests of landowners, development needs and environmental protection requirements.^{12, 13}

The Ministry of Environmental Protection and Regional Development also considers the situation regarding the use of subterranean resources in the Republic of Latvia a peculiar one – in accordance with the Civil Law, subterranean depths, including mineral resources, belong to the landowner.¹⁴

In fact, a situation has arisen where economic activities important for the national economy of the Republic of Latvia cannot be carried out and developed due to subterranean depths being owned by private owners, the fragmented conditions for their use and various exceptions specified in the legal framework.

In its report for 2019, the State Audit Office concludes that, unfortunately, Latvia has not developed a strategy for the use of subterranean depths in State and local government lands, and therefore there is no planned and systematic exploration of new subterranean resources, nor any additional research works of known mineral deposits in order to ensure their use as rationally as possible.¹⁵

¹² Piğēns, K. Zemes dziļu izmantošanas tiesiskais regulējums: *quo vadis*. Jurista Vārds, 04.07.2017., Nr.28 (982), 25-27.

¹³ Rīgas pilsētas Vidzemes priekšpilsētas tiesas 2019.gada 25.oktobra spriedums lietā Nr.C-2491-19/5, 5.

¹⁴ Vides aizsardzības un reģionālās attīstības ministrija. Retrieved from: <https://www.varam.gov.lv/lv/zemes-dziles> [viewed 28.09.2022.]

¹⁵ Valsts kontrole. 13.12.2019. *Kā Zemkopības ministrija pārvalda valstij piederošu īpašumu – derīgos izrakteņus?* Retrieved from: <https://www.lrvk.gov.lv/lv/revizijas/revizijas/noslegtas-revizijas/zemkopibas-ministrijas-darbiba-valstij-piederoso-derigo-izraktenu-apsaimniekosana> [viewed 22.07.2022.]

As already mentioned, aspects of the legal regulation of subterranean depths in the Republic of Latvia have not been extensively studied, except for a separate legal analysis review conducted by the law firm “Raidla, Lejiņš & Norcous” in 2014. A more in-depth study of the situation in 2022 is necessary for the development of use of subterranean depths in the Republic of Latvia and, consequently, for the development of the national economy and the overall level of social welfare and energy independence.

At the meeting of the Saeima Sustainable Development Committee in 2015, where the issue of subterranean depths was discussed, the opinion was expressed that attracting foreign investments was the main motive when thinking about the solution of this issue. Investors are interested in Latvia, but when they learn about the fact that the legislation makes their work here difficult, they give up their interest. It was revealed at the meeting that this issue was prompted by the interest of a Canadian company in exploring the possibilities of studying potential mineral resources in Latvia.¹⁶ According to the head of the Saeima Sustainable Development Committee in 2015 (M. Kucinskis), despite the lack of legal regulation, Canadians have been exploring the economic potential of subterranean depths in the Kurzeme region for several years. *“The first thing they have done is to analyse all the Soviet-era samples and all the materials that the geology centre has available, noting that there is a reason to believe that there could be very significant deposits in the entire Baltic area. To confirm the fact that these samples have indeed been taken from below, where the wells have already sunk, a scan is already taking place with the technique available, which means that at a depth of several kilometres everything at the bottom is visible as in an X-ray. Then, according to their plans, if there is a reason to think so even*

¹⁶Studente, L. 2015. *Zemes dziļēs ar varu netiksi*. LV portāls.

*after scanning, separate wells will be needed, in which these materials will be extracted from the depths”.*¹⁷

At the same time, in 2022, Norway has invested in the world’s first large-scale carbon capture and storage project¹⁸ and has indirectly expressed interest in using the unique formations of subterranean depths of the Republic of Latvia for a possible European-level CO₂ storage project.

In order for the aforementioned Canadian investors to conduct research and potential mining in Kurzeme, as well as for potential investors from Norway and other countries to have an interest in implementing a CO₂ storage project in the Republic of Latvia, a clear legal framework is needed regarding the processes of research and development of subterranean depths, as well as ownership issues. Taking into account that the cases mentioned, which are not the only ones, but have been publicly expressed on the widest scale, the study conducted in this Thesis on the ownership of subterranean depths and the possibilities to improve the legal framework is currently relevant for the Republic of Latvia, so that foreign investors would be interested in acquiring the potential of the subterranean depths of Latvia and promoting the development of the Latvian economy, and Latvia – contributing to the objectives of the Green Deal¹⁹ set by the EU for 2030 and 2050. Accordingly, at the end of the Thesis, proposals are made both for strengthening the State interests in relation to subterranean depths within the scope of private law, as well as for introducing a legal framework that

¹⁷ LSM.lv portāls. 2015. *Pēc kanādiešu ģeologu pamudinājuma grib mazināt šķēršļus zemes dziļi izpētei*. Retrieved from: <https://biznesam.swedbank.lv/ievads/lsm-lv-zinas/pec-kanadiesu-geologu-pamudinajuma-grib-mazinat-skerslus-zemes-dzilu-izpetei-37378> [viewed 09.11.2022.]

¹⁸ ABB. 27.06.2022. *ABB tehnoloģijas tiks izmantotas pasaulē pirmajā CO2 transportēšanas un uzglabāšanas infrastruktūrā*. Retrieved from: <https://new.abb.com/news/lv/detail/92626/abb-tehnologijas-tiks-izmantotas-pasaule-pirmaja-co2-transportesanas-un-uzglabšanas-infrastruktura> [viewed 28.09.2022.]

¹⁹ Eiropas Parlaments. 07.08.2018. *ES reakcija uz klimata pārmaiņām*. Retrieved from: <https://www.europarl.europa.eu/news/lv/headlines/society/20180703STO07129/es-reakcija-uz-klimata-parmainam> [viewed 28.09.2022.]

would permit the storage of CO₂ in the geological structure or subterranean depths of the Republic of Latvia.

The subject of this work is also reinforced by the draft Critical Raw Materials Act announced by the European Commission in September 2022. The Critical Raw Materials Act should provide a shared understanding of which critical raw materials can be considered as particularly strategic. This requires setting criteria for identifying raw materials which are of particular strategic relevance for our twin transition and defence needs, including economic importance, supply concentration, strategic applications and forecasted supply gaps.²⁰

To allow for a detailed exploration of subterranean depths, the issue of ownership of subterranean depths is another important factor from the civil law perspective, which can accordingly facilitate or slow down the possibilities of exploring and researching subterranean depths in the absence of a clearly defined ownership boundaries between private law and the State.

The **aim of the Doctoral Thesis** is to study the use and development of subterranean depths of the Republic of Latvia, to identify the problem issues and provide possible solutions for the promotion of the use of subterranean depths in the Republic of Latvia from the perspective of the legal framework.

To achieve the aim of the Doctoral Thesis, the **following tasks are set**:

- 1) To determine the defining elements of the concept of subterranean depths and to define the concept of subterranean depths;
- 2) To identify the means of acquiring, changing and terminating the legal status of ownership of subterranean depths;

²⁰Eiropas Komisija. 14.09.2022. *Critical Raw Materials Act: securing the new gas & oil at the heart of our economy*. Retrieved from: https://ec.europa.eu/commission/presscorner/detail/lv/STATEMENT_22_5523 [viewed 20.01.2023.].

- 3) To compile and evaluate the regulatory framework related to ownership of subterranean depths from the point of view of legal policy.

The **research object** of the Doctoral Thesis is a set of legal relations that are formed in the field of ownership of the subterranean depths between private-law entities and the State.

The **research subject** of the Doctoral Thesis is the study of national and international legal norms, theoretical and scientific papers affecting subterranean issues, as well as the study of case law and legal policy.

Research questions of the Doctoral Thesis:

1. How should the scope of the concept of subterranean depths be defined?
2. What should be the scope of the rights of landowners to be determined?
3. How should national boundaries of influence be defined in private law as regards the ownership of subterranean areas?
4. How should the ownership of subterranean depths be granted to the State?

Novelty of the Thesis

A number of subterranean resources and the current uses of subterranean depths are critical or may become critical in the near future, such as urban and interurban underground infrastructure, geothermal resources, mineral resources and groundwater. The current policy, legislation and institutional framework, as

well as the management of information and knowledge, at both EU and national level, seem ineffective to cope with this new trend.²¹

The useful properties of subterranean depths of Latvia have not been explored substantially to date, since neither energy resources, nor other chemical elements have been extensively extracted in the Republic of Latvia, for example, the geothermal energy, which due to insufficient public interest and scarcity of a research base on the usage interests of the subterranean depths has not been extracted so far, but could be used or industrially developed in the near future.

According to the information provided by the Ministry of Economics, oil was found in the Republic of Latvia as early as in the 1960s, but no industrial extraction has taken place, because during the Soviet era oil reserves were considered too small compared to, for example, Siberian deposits. Since then, oil extraction technologies have progressed rapidly, enabling the development of relatively small deposits, as well as the advancement of this business sector also in the Republic of Latvia. Since 1996, 11 licenses have been issued for the prospection or exploration and production of hydrocarbons, five of which are active.

In the light of the study on the potential of the subterranean depths in the Republic of Latvia in 1996, it is necessary to highlight three strategic aspects when forecasting the use of subterranean depths in the future:

1. Use of geothermal energy, which is a local and environmentally safe source of energy;
2. Preparation of materials by structures that could be used in the future as underground storage facilities for natural gas;

²¹Hámor-Vidó, M., Hámor, T., Czirok, L. 2021. *Underground space, the legal governance of a critical resource in circular economy*. Resources Policy, Volume 73, ISSN 0301-4207. doi.org/10.1016/j.resourpol.2021.102171

3. Preparation of materials on the use of waters containing industrial bromine.²²

Along with the development of the State and society as a whole, its consumption and demands for energy resources and energy to meet the various needs of the national economy are also increasing. Since 2014, the issue of energy independence has become topical for the EU and, in particular, for the Republic of Latvia, taking into account the Russian aggression in Ukraine, which has caused negative indications regarding the provision of energy needs and energy independence of the Republic of Latvia.

Throughout Europe and most of the world, with the exception of the USA, people have realised that subterranean riches, which are not even fully identified, are not man-made and have appeared during the millions of years of the development process of the Earth. Mineral resources have been formed in the subterranean depths regardless of various administrative or property boundaries, and in order to ensure their rational use and protection based on the interests of all residents of the country, they should not be owned by individual landowners. When restoring and developing the legislative system of the Republic of Latvia, the opinion of geologists and environmental specialists was unfortunately not taken into account – the provision of the Civil Law of 1937²³ that the subterranean depths and all mineral resources therein belong to the landowner is still in force. The same provision was retained by the legislators, despite the objections of the society of geologists, in the law “On Subterranean Depths” adopted in 1996.²⁴

²² Valsts ģeoloģijas dienests. Latvijas zemes dzīļu resursi. 1996. Retrieved from: https://www.lu.lv/fileadmin/user_upload/lu_portal/projekti/vpp/mali_latvija/visp_geol/LATVIJAS_ZEMES_DZILU_RES_1998_pdf.pdf [viewed 28.09.2022.]

²³ Civillikums: Latvijas Republikas likums. 20.02.1937. *Valdības Vēstnesis*. 41.

²⁴ Gavena, I. 2001. Zemes dzīles kā īpašums. 08.05.2001. *Latvijas Vēstnesis*. 70.

Geothermal sources are currently making a rather modest contribution to the world's electricity supply so far, but the existing obstacles to increasing this contribution should be gradually removed, as has been done with motorised vehicles. Several companies are developing various innovations that will be based on scientific-technical achievements by also significantly increasing the productivity of oil and gas wells in recent years. For example, much more accurate tools are being developed to detect seismic activity, making it easier to find geothermal sources. For a safe and efficient organization of wells, horizontal drilling is used. Technologies originally developed for the extraction of fossil fuels, are helping to move towards zero emissions.²⁵

Accordingly, right now, in 2023, ownership of the useful properties of the subterranean depths is a matter of great urgency, because their use in the future can contribute to solving many EU-level strategic challenges, as well as to the EU's independence in the field of critical materials and to the development capacity of national economies.

The Doctoral Thesis analyses the scope and regulation of subterranean depths. The methodological basis of the study consists of several research methods: analytical method, comparative method, empirical method, deductive and inductive method, historical method, descriptive method, method of analysis of legal practice.

1. *The analytical method*, which is applied when obtaining and analysing the amount of information obtained, as well as when structuring the research work.
2. *The comparative method*, with the help of which the legal frameworks established by regulatory enactments in relation to the use of subterranean depths are analysed and compared.

²⁵Gates, B. 2021. *How to avoid a climate disaster: The Solutions We Have and the Breakthroughs We Need*. Alfred A. Knopf, Inc., 83.

3. *The empirical method*, which is based on facts that were obtained objectively and systematically through the collection of information.
4. *The deductive method*, examination of research issues of research work, deriving conclusions from them and comparing them with facts that were obtained in the framework of research work. At the same time, *the inductive method* is also used to describe the conclusions that have arisen in the course of the development of the Thesis.
5. *The historical method*, the identification of the historical and existing legal framework was carried out in order to be able to identify the genesis of the legal framework.
6. *The descriptive method*, used to study the legal framework and identify issues related to the ownership of subterranean depths in the Republic of Latvia. To provide an assessment of the views of various authors, to summarise case law and to put forward proposals based on the analysis made by author.
7. *The method of analysis of legal practice*, using illustrative and/or debatable decisions and court judgments of the courts of the Republic of Latvia and other countries. Materials obtained by collecting articles, doctrines, research findings corresponding to the study period, regulations of the Cabinet, laws issued by the Saeima and other regulatory enactments that allow to find an answer to the problem questions to be studied.

In the Doctoral Thesis, such methods of interpreting legal norms as the grammatical method, the systemic method, the historical method, the teleological method were also used.

1. *The grammatical (philological) method of interpretation* has been used to explore the verbal content of the concept of subterranean depths and to clarify the meaning of the terms used in legal norms.
2. *The systematic method of interpretation* is used to determine whether certain provisions are consistent with the purpose of the law by reference to their implementation, which the provision in question should achieve.
3. *The historical method of interpretation* has been used to study the meaning and essence of regulatory enactments, to develop the concept of subterranean depths.
4. *The teleological (meaning and purpose) method of interpretation* is used to clarify the meaning and purpose of the subterranean legislation, as well as to find out the scope necessary to ensure the private interests of persons to be included in the legal framework.

The Doctoral Thesis analyses the laws and regulations currently in force in the Republic of Latvia and abroad, as well as examines the historical development of regulatory enactments. Works by lawyers and scientists from other fields published in Latvian, English, as well as in Russian, publications in the press and web materials have been used. Within the framework of the Doctoral Thesis, 274 rulings of the jurisprudence of the Republic of Latvia have been looked, in which the key words “subterranean depths” are mentioned during the period from January 2007 to November 2022, of which ten rulings have been analysed in the framework of this study.

The theoretical significance of the Doctoral Thesis is manifested in promoting understanding of the definition of subterranean depths and providing Proposals for the promotion of the legal framework and public understanding. The practical significance of the Doctoral Thesis – the laws and regulations currently in force in the Republic of Latvia and abroad will have been analysed,

as well as the historical development of regulatory enactments and the works of lawyers and scientists from other fields, publications in the press and web materials will have been discussed, and the case law of the Republic of Latvia will also have been analysed, and Proposals for improving the legal framework of the ownership of subterranean depths will have been provided.

Description of the chapters of the Thesis

The first chapter examines the content of the concept of subterranean depths, aspects of the formation of the legal status of subterranean depths and regulatory framework in the Republic of Latvia, as well as the regulation of subterranean depths in other countries.

The second chapter analyses the aspects of ownership of subterranean depths at the planning level of the legal policy of the Republic of Latvia, the determination of the status of ownership of subterranean depths, as well as the processes of change and termination of the ownership status of subterranean depths.

The third chapter deals with the discretion of landowners in private law, in the direct context of the subterranean depths aspect. Within the framework of the chapter, the boundaries of State administration in private law and the impact of international law on the regulation of subterranean depths and private law of the Republic of Latvia are also discussed.

The Conclusion of the Thesis presents the conclusions drawn from the research and the developed proposals, which are summarised and included at the end of the Thesis.

Conclusion

With the development of the State and society as a whole, its consumption and demands for energy resources and energy to meet the various needs of the country's national economy are also increasing. In recent years, the issue of energy independence has become topical for the EU and, in particular, for the Republic of Latvia, taking into account both the trends of the global energy market and the Ukraine-Russia crisis, which has caused negative indications about ensuring the energy needs of countries and energy independence in general, as well as the crisis caused by the *Covid-19* pandemic and the fact that countries have begun to think more about their ability to supply themselves with resources and necessary materials, including those untapped resources available to countries in their subterranean depths. This Thesis has provided answers to the scientific questions raised.

At the end of the research, the Author puts forward two main conclusions:

- 1. The Republic of Latvia has a significant importance and the opportunity to use subterranean depths potential at the regional level, a clear regulatory environment must be created, which also promotes the entry of investors directly into the territory of the Republic of Latvia.**
- 2. In the legal system the Republic of Latvia, the regulation of subterranean depths in terms of property rights requires improvements by modernising the Civil Law, the Law "On Subsoil" and their subordinate regulatory acts, by more clearly defining boundary between the State and the private law subjects.**

By examining the 1st research question raised in the framework of this Thesis – *“How should the scope of the concept of subterranean depths be defined?”* the following can be concluded.

Today, when public demand for energy is increasingly growing and technologies are developing more and more rapidly, in order to ensure the well-being of society and to be able to absorb energy resources in an increasingly economical way, it is important to be able to distinguish between the common interest of society and the private law interest in energy resources and minerals located in subterranean depths.

The structure of subterranean depths, the boundaries and depth of the distribution of useful properties and resources are only relatively determinable, and do not coincide with the land ownership or administrative boundaries established in the Republic of Latvia on the surface of land and, accordingly, the possibilities of the landowner to implement efficient research and use of subterranean depths.

The Author concludes that today the term “subterranean depths” in the Republic of Latvia can be understood as all layers of the earth up to the earth’s core, which does not include only the upper layer of land, thus the concept of subterranean depths should be defined broadly. On the other hand, all the features that produce fruit or economic benefit when carrying out activities in the subterranean depths can be considered as useful properties of the subterranean depths.

In the opinion of the Author, in order to avoid the risks of effectively developing different types of quarries, as well as taking into account that the valuable minerals would be located below the 150-metre boundary line, the Author proposes this depth as a compromise option between the landowner and the interests of developers of quarries and other mineral resources (up to

150 metres deep). Accordingly, the element of the upper layer of land should not be included in the concept of subterranean depths.

By examining the 2nd research question raised in the framework of this Thesis – *“What should be the scope of the rights of landowners to be determined?”* the following can be concluded.

In countries where there are useful resources in the subterranean depths and the State also explores them, the legal framework provides for State ownership of these useful subterranean resources for the benefit of society as a whole, and only in rare cases does it provide for specific private ownership of the entire useful properties of the subterranean depths. The rights of the landowner of the subterranean depths are not unlimited, and in such countries, the legal framework usually also stipulates the procedure for carrying out initial exploratory work, such as geological drilling, which would be necessary to qualitatively identify of the extent and location of potential energy resources and to determine the ownership of certain resources or the entire subterranean depths to the State. The Author concludes that Latvia is one of the few countries in the world where the subterranean depths are fully owned by the landowner down to the core of the earth with no significant restrictions. Within the framework of this Thesis, the Author concludes that the landowner’s rights to the ownership of the subterranean depths may not be absolute.

By examining the 3rd research question raised in the framework of this Thesis – *“How should national boundaries of influence be defined in private law as regards the ownership of subterranean areas?”* the following can be concluded.

In the 21st century, the legal framework of the Republic of Latvia regarding the ownership of subterranean depths has not been implemented in accordance with the needs and technological possibilities of modern society, thus preventing both a qualitative performance of systematic work on the search and

exploration of new mineral resources and other subterranean resources, as well as identification of said resources to develop a national level strategy for the use of subterranean depths.

When approving the Concept, the option for the development of the subterranean depths of the Republic of Latvia was supported, which does not provide for significant changes to the existing legal framework. The Cabinet, by approving the Concept with the option described above in the Thesis, has chosen to maintain the legal framework that has existed in the Republic of Latvia since the times of the first independent state (from 1918–1940), one that practically does not exist anywhere else in the world, where the landowner owns not only the surface of the land, but also the airspace above it, as well as the earth layers below it and all the minerals contained therein. However, such regulation also ensures the influence of the State over the ownership of the subterranean depths. At the same time, it should be noted that the option supported by the Concept was not fully implemented and the Concept has lapsed. In the opinion of the Author, there is a need and urgency to improve the issue of ownership of subterranean depths in the Republic of Latvia.

When introducing principles of ownership and imposing various restrictions in order to maintain competitiveness and attractiveness in the eyes of investors, it is also important to take into account the practices and experience of the nearest neighbouring countries (Lithuania and Estonia), thus improving the possibilities of attracting investors and providing them with clear signals and long-term predictability, which is essential for the development of resource-intensive industries such as the subterranean research and development sector. Such legal clarity also reduces the potential risks of corruption in relation to the processes for determining the areas of use of subterranean depths.

The Author concludes that in practice subterranean depths are used without a license for use of subterranean depths or an Authorisation for the extraction of widespread mineral resources, and this violation has the most negative impact on subterranean depths, causing irreparable damage to the volume and quality of mineral resources found in the subterranean depths, since no conditions have been received for the rational, environmentally friendly and sustainable use of the subterranean depths. In order to improve possible control mechanisms, in the opinion of the Author, the ownership of subterranean depths should be determined by the State, which is able to perform the functions of monitoring the use of subterranean depths with more effective tools. In the opinion of the Author, it is important to define the legal framework for the limits of State influence in private law with regard to the ownership of subterranean depths as specifically as possible.

By examining the 4th research question raised in the framework of this Thesis – *“How should the ownership of subterranean depths- be granted to the State?”* the following can be concluded.

In order for the economy of the Republic of Latvia to be able to obtain material benefits from the use of the mineral properties of subterranean depths, in the opinion of the Author, the Republic of Latvia should have a legal framework that would allow for the conduct of such subterranean exploration also in immovable properties owned by other persons (within the scope of the upper layer of land), as well as would provide for direct allocation of responsibility and ownership rights in cases of extraction of mineral resources and use of other useful properties of subterranean depths, and would establish specific compensation mechanisms for landowners.

The study carried out by means of the comparative method within the framework of the Thesis has proved that the legal framework for the use of subterranean depths in the Republic of Latvia is unique when compared with

the legal situation in other countries, and the legal framework currently in force in the Republic of Latvia requires improvements in accordance with the requirements of modern society and technological possibilities in order to improve the efficiency of the national economy and the potential for the use of subterranean depths in the foreseeable future.

The Republic of Latvia is bound by many international agreements and conventions that affect the scope of subterranean rights in the Republic of Latvia and are taken into account in the formation of case law regarding subterranean issues. However, international agreements and conventions do not restrict the right of the Republic of Latvia to determine various forms of subterranean affiliation (State, legal or natural persons) in regulatory enactments.

The problems identified in the study are based on shortcomings of regulatory enactments. The framework of the existing basic principle of ownership of subterranean depths was formed in the Civil Law at the beginning of the 20th century, during the formation of the regulation of private law of the Republic of Latvia. Since then, the legal framework of subterranean depths has not been modernised, but the legal system has been supplemented by legislation that, with certain exceptions, has an indirect impact on the principles of determining the ownership of quality subterranean depths in general and fragments the state of ownership, as well as creates confusion among owners of private property.

Within the framework of the Thesis, it was also concluded that there is a geological potential for CO₂ storage in the Republic of Latvia, but as of now the technologies may not yet have matured to the level of making such activities economically profitable. At the same time, in order for the Republic of Latvia to have an advantage in the EU when such a solution would become economically advantageous, it is necessary to provide for the possibility of using the useful properties of this type of subterranean depths in the legal framework in advance

and to determine clear conditions of ownership in regulatory enactments, clearly delineating the boundaries of private law and State ownership, granting more significant rights to the State in relation to the exploration and use of subterranean depths.

After evaluating the identified shortcomings of the legal framework in their context and the conclusions set out above, in the opinion of the Author there is a need for improvements in the legal framework of subterranean depths, and the Author puts forward the following **Proposals**:

1. The principle set out in the Civil Law that a landowner owns everything that extends to the airspace above the land and the depths of the earth originated at the beginning of the medieval era, and it would be necessary to adapt it to more recent requirements by modernising the Civil Law and providing that subterranean depths belong to the Republic of Latvia as a legal subject. This issue would also set clear boundaries for the use of geothermal heat, where there would be no change at the household level (ground-based heat pumps operate at depths of up to 150 metres), but geothermal energy to be developed at industrial level would already have a clearly defined State ownership of this type of energy. In the opinion of the Author, it would be necessary to implement Option C contained in the Concept with a modified scope, providing for a 150-metre boundary line, which is provided for in the proposed wording of Proposal 1. Consequently, the Republic of Latvia would have exclusive rights to the mineral resources, if found, from the depth of 150 metres. Similarly, the Republic of Latvia would have a legally identifiable right to the pores of subterranean depths (free space between rocks where it is possible to store gaseous substances). Individuals would have the right to use the land, soil, extract mineral

resources located at a depth of up to 150 metres. The rights to minerals, or mineral resource rights, make it possible to explore and extract mineral resources that are located deeper than 150 metres from the surface of the earth. A notional boundary line is set in the depths of the earth, beyond which the right to use the mineral resources belongs to the State. This boundary line is 150 metres deep, but it does not affect the private rights and possibilities of the landowner of using the land surface and reaping all the benefits of its use. To ensure this, the Author proposes the following improvement to the Civil Law.

1.1. To express Section 1042 of the Civil Law in the following wording:

“1042. The owner of land owns not only the surface thereof, but also the airspace above it, as well as the land strata below it and all minerals (and the useful properties of the subterranean depths) which are found in it to a depth of 150 metres (inclusive). The mineral resources (and useful properties of the subterranean depths) which are found below a depth of 150 metres belong to the State in the person of the Republic of Latvia.”

2. In order to improve the Civil Law, in the opinion of the Author, it would also be necessary to make changes to the special law regulating the scope of subterranean depths – the Law “On Subterranean Depths”, which should be amended as follows.

- 2.1.** To express Section 3, Paragraph one of the Law “On Subterranean Depths” in the following wording:
“(1) Subterranean depths and all mineral resources (and useful properties of subterranean depths) present therein beyond a depth of 150 metres shall be owned by the State in the person of the Republic of Latvia. If the State or an entity delegated by it has to restrict the rights of the owner of the upper layer of land within the framework of the process of use of subterranean depths, the landowner has the right to compensation specified by the Cabinet.”
- 2.2.** To supplement Section 3 of the Law “On Subterranean Depths” with Paragraph three:
“(3) The procedure for the use of subterranean depths, the determination of compensations and supervision regulations thereof shall be established by the Cabinet.”.
- 2.3.** To supplement the Transitional Provisions of the Law “On Subterranean Depths” with Paragraph 29:
“29. The Cabinet shall issue the Provisions referred to in Section 3, Paragraph three of this Law by 31 December 2023.”.
- 2.4.** The Author proposes the following draft of Cabinet Regulation, which would be implemented if Proposals 2.2 and 2.3 of this Thesis were adopted. For the scope of the legal framework, a certain analogy could be drawn from the existing and applied in the practice of compensation for limitation of the right to use land property the Cabinet Regulation No. 603 of 25 July 2006 “Procedure for Calculation and Payment of Compensation for Restriction of

the Right to Use Land Property Necessary for Installation or Reconstruction of an Energy Supply Facility”²⁶, which sets out the procedure for calculation and payment of compensation to owners of immovable property for losses directly related to the installation of new energy supply merchant facilities or the operation and repair of existing facilities.

In drawing up the procedure of the Cabinet, it should be taken into account for what purposes and whether, at all, the upper layer of land is used by the landowner. According to the Author, a landowner would not be entitled to compensation for the restrictions imposed at the subterranean level if he has not been maintaining his land or using it at the upper layer level at all for at least three years. However, this would not apply to cases if the land were to be expropriated.

*“Cabinet Regulation No. [..]
Rīga, [..].[..].[..] (prot. No. [..]. §)*

Procedure for determining compensation for the use of subterranean depths

Issued pursuant to Section 3, Paragraph three
of the Law “On Subterranean Depths”

I. General Provisions

1. The Regulation prescribes the procedure for the use of subterranean depths, the conditions for determining and monitoring compensation.

²⁶Kārtība, kādā aprēķināma un izmaksājama atlīdzība par energoapgādes objekta ierīkošanai vai rekonstrukcijai nepieciešamā zemes īpašuma lietošanas tiesību ierobežošanu: Ministru kabineta 2006. gada 25. jūlija noteikumi Nr.603. 27.07.2006. *Latvijas Vēstnesis*. 118.

2. The entity authorised by the State of the Republic of Latvia for the acquisition of subterranean depths and the landowner shall enter into a mutual agreement (hereinafter – the Agreement) which shall determine the amount of the compensation and other relevant conditions at the discretion of the parties.

II. Calculation of Compensation

3. The area of land for which the landowner is to be compensated shall be calculated as follows:
 - 3.1. on the basis of the site location plan, the configuration of the area of land shall be determined for which compensation is to be calculated for the landowner, and the abovementioned area of land shall be marked in the site location plan;
 - 3.2. the area of land shall be calculated in square metres, rounded to one square metre.
4. The amount of compensation to be paid shall be calculated by multiplying the number of units of the area of land calculated in accordance with the procedure referred to in Paragraph 3 of this Regulation by the amount of compensation per one unit.
5. Where this Regulation provides for several different levels of compensation for the restriction of the right to use an area of land, a single higher compensation shall be calculated.
6. The compensation for the restriction of the right to use a unit of land area shall be determined as follows:
 - 6.1. for the area of land which cannot be used for the former purposes of use of immovable property – in the amount of twice the cadastral value of that land area, but not less than EUR 1.42 per square metre;

- 6.2. for the area of land which can be used in the future for the former purposes of the immovable property, but with restrictions on the right of use – in accordance with Annex 1 to this Regulation;
 - 6.3. for trees, berry bushes, shrubs and crop plantations to be removed – in accordance with the agreement of both parties.
7. In forests and other land used for forestry owned or used by natural and legal persons, compensation for the restriction of the right to use the land shall not be granted if the land has not been maintained or used for at least three years at the upper layer level.
8. In forests owned or used by natural and legal persons and in other land used for forestry, the compensation for the alienation of the land area or restriction of the right of use to the extent that it can no longer be used for the former purpose of use of immovable property shall be determined in the amount of twice the cadastral value of the unit of land area, but not less than EUR 1.42 per square metre.
9. Land (except forests and other forestry land owned or used by natural and legal persons) which can no longer be used for its former purposes of immovable property includes the area of land occupied by underground gas supply installations and structures, gas storage facilities and storage tanks located shallower than 0,3 metres.

III. Harmonization of the Amount of Compensation

10. The State authorised entity for extraction of mineral resources of subterranean depths shall submit to the landowner:
 - 10.1. a draft agreement;

- 10.2. a plan of the new facility or a reconstruction plan of the facility, indicating therein the boundaries of the protection zone and the boundaries of the zone to be cleared of trees and shrubs, the driveway, as well as the boundaries of the land to be used during construction work outside the protection zone;
 - 10.3. information on the nature of the construction work, the beginning and duration of the planned construction work;
 - 10.4. the calculation of compensation for the restriction of the right of use of the land property.
11. If the installation or reconstruction of the facility requires felling of trees, berry bushes, shrubs or removal of crop plantations outside the forests and other land used for forestry in the ownership or use of natural or legal persons, the energy supply merchant shall, in addition to the documents referred to in Paragraph 10 of this Regulation, submit to the landowner written information on the location of the zone to be cleared and a proposal to jointly perform the assessment of trees, berry bushes, shrubs or crop plantations to be felled or removed.
 12. If the energy supply merchant and the landowner cannot agree on the amount of compensation, the aforesaid persons shall be entitled to apply to the court for the determination of the amount of compensation.

IV. Closing Provision

13. This Regulation shall come into force on the day following the publication thereof in the official gazette "Latvijas Vēstnesis".

- 2.5.** As already mentioned in the Thesis, and also in the Concept regarding the implementation of Option C, for the extraction of mineral resources deeper than the boundary line established by law, the landowner could receive a compensation, the amount of which is tied to the volume of mineral resources extracted (or sold) or to a percentage of the income generated by the use of the useful properties of the subterranean depths (gas or CO₂ storage in free-pores), thus ensuring that the minerals discovered in the future would also ensure that the rights of the owner are respected. In the opinion of the Author, such a procedure could be determined by the Cabinet and such a delegation would be included in Proposal 2.2. At the same time, as an alternative option, in order to consolidate the right to compensation within the scope of the legal framework, Section 3, Paragraph one of the Law “On Subterranean Depths” could be worded as follows (broader scope than in Proposal 2.1):
- “(1) Subterranean depths and all mineral resources (and useful properties of subterranean depths) present therein beyond a depth of 150 metres shall be owned by the State in the person of the Republic of Latvia. For the extraction of mineral resources deeper than 150 metres, the landowner shall receive compensation, the amount of which shall be tied to the volume of minerals extracted (or sold), thereby ensuring that the minerals discovered in the future shall also ensure that the rights of the landowner are respected.”
- 3.** In the opinion of the Author, Proposal 2 would be a legally correct solution to provide also for the registration of such State-imposed encumbrances in the Land Register divisions of all affected land properties, using the fact that there is a section on immovable property encumbrances in the already existing division system in

accordance with Section 14 of the Land Register Law. This function could be entrusted to the State Land Service. This would legally establish the boundary between the subjects of private law (landowners) and the Republic of Latvia as a legal subject.

4. In the opinion of the Author, using the idea included in Proposal 3 on the registration of the State-imposed encumbrances on the use of subterranean depths in the Land Register, it would also be necessary to register information on those plots of land, for which the section restrictions at the subterranean level have already been determined and in force in accordance with the Cabinet Regulation No. 773 of 13 December 2016, “Regulations on Determination of the Subterranean Section of National Significance “Inčukalns Natural Gas Storage Facility””²⁷ and Regulation No. 187 of 22 March 2022 “Regulations for the Use of the Subterranean Section of National Significance “Dobele Structure””²⁸, where a coordinate system has been applied to determine the boundaries of the land sections, accordingly the affected plots of land would be identifiable and thus the established boundaries of ownership of subterranean depths between subjects of private law (landowners) and the Republic of Latvia as a legal subject would also be clearly delineated by the State.

²⁷Noteikumi par valsts nozīmes zemes dziļļu nogabala “Inčukalna dabasgāzes krātuve” noteikšanu: Ministru kabineta 2016.gada 13.decembra noteikumi Nr.773. 15.12.2016. *Latvijas Vēstnesis*. 245.

²⁸Valsts nozīmes zemes dziļļu nogabala “Dobeles struktūra” izmantošanas noteikumi: Ministru kabineta 2022.gada 22.marta noteikumi Nr.187. 24.03.2022. *Latvijas Vēstnesis*. 59.

5. In the opinion of the Author, it would be necessary to reassess the prohibition contained in Section 8.² of the Law “On Pollution”²⁹ for the storage of CO₂ in geological structures, as well as in the water column throughout the territory of Latvia, its exclusive economic zone and on the continental shelf, taking into account the technological development trends, economic benefits and the potential of unique geological structures of the subterranean depths of the Republic of Latvia. This would establish the boundaries of the Republic of Latvia as a legal subject in the aspect of private law regarding the type of use of subterranean depths.
- 5.1. The Author proposes to make changes to Section 8² of the Law “On Pollution”, replacing the word “prohibited” with the word “allowed”.
- 5.2. The introduction of Proposal 5.1 would also require a Cabinet procedure specifying the storage of CO₂ in geological structures. Subsequently, the Cabinet should be delegated to develop specific CO₂ storage requirements. The Author proposes to supplement Section 11, Paragraph two of the Law “On Pollution” with Clause 22 in the following wording: “22) the requirements for storage of carbon dioxide in geological structures of the Republic of Latvia.”.
- 5.3. By introducing the Cabinet procedure included in Proposal 5.2, the Author proposes draft legal norms for the Cabinet Regulation that would provide for a market-based approach, as well as ensure a higher competition between CO₂ storers, thus also providing greater tax revenues for the Republic of

²⁹Likums “Par piesārņojumu”: Latvijas Republikas likums. 29.03.2001. *Latvijas Vēstnesis*, 51.; 03.05.2001. *Latvijas Republikas Saeimas un Ministru Kabineta Ziņotājs*, 9.

Latvia. For the purposes of the scope of the legal framework, the existing rules for the use of the Inčukalns underground gas storage facility³⁰, which are applicable in the practice of subterranean use, could be used by certain analogy. In the opinion of the Author, it is, of course, important to take into account the differences in products to be stored (CO₂ and natural gas) and their physical characteristics, as well as the differences in the use of storage facilities and possible services. Given that there is also potential for the use of CO₂³¹, the storage could provide the function of pumping the CO₂ both in and out. The draft Cabinet Regulation proposed by the Author would not prejudice private law entities (landowners), but would establish access to geological structures based on competition and free market conditions.

*“Cabinet Regulation No. [..]
Riga, [..].[..].[..] (prot. No. [..]. §)*

Requirements for carbon dioxide storage in geological structures of the Republic of Latvia

Issued pursuant to Section 11, Paragraph two, Clause 22
of the Law “On Pollution”

I General Provisions

1. This Regulation prescribes:
 - 1.1. the procedure for the use of geological structures;

³⁰Inčukalna pazemes gāzes krātuves lietošanas noteikumi: Sabiedrisko pakalpojumu regulēšanas komisijas padomes lēmums Nr.1/14. 06.10.2020. *Latvijas Vēstnesis*. 193.

³¹Rīgas Tehniskā universitāte. 24.08.2016. RTU zinātnieki pēta oglekļa dioksīda izmantošanas iespējas. Retrieved from: <https://www.rtu.lv/lv/universitate/masu-medijiem/zinas/atvert/rtu-zinatnieki-peta-oglekļa-dioksīda-izmantosanas-iespejas?view=pdf> [viewed 10.11.2022.]

- 1.2. the procedure for receiving the CO₂ storage service (hereinafter – the storage service);
 - 1.3. the rights, obligations, and responsibility of the manager of the CO₂ storage function of the geological structure (storage facility) (hereinafter – the manager) and the user of the CO₂ storage system (hereinafter – the system user);
 - 1.4. the procedure for the exchange of information between the manager and the system user;
 - 1.5. the procedure for discontinuation and restriction of the storage service;
 - 1.6. the procedure for submitting an application for storage rights and for concluding a storage service contract;
 - 1.7. the procedure for the manager to be entitled to require the performance security, and the amount of the performance security.
2. The following terms are used in this Regulation:
- 2.1. stocks – the amount of CO₂ in storage in accordance with the storage service contract;
 - 2.2. unused storage capacity – the part of the technical capacity of a storage facility reserved by system users for the storage of CO₂ stocks;
 - 2.3. available storage capacity – the part of the technical capacity of a storage facility which has not been allocated and is available to system users for reservation, taking into account the integrity of the storage facility and the requirements for the management of the storage facility;

- 2.4. technical capacity of the storage facility – the ability of a storage facility to ensure the maximum amount of CO₂ in storage, which the manager may offer to the system users;
- 2.5. applicant – a person who submits an application to the manager for the right to use the storage facility;
- 2.6. storage service contract – a contract entered into between the manager and the system user on the basis of which the manager provides the storage service to the system user.

II Using the CO₂ storage system

- 3. The Cabinet shall, by a separate decision, designate a manager for each area of a certain volume in the geological structure used for the storage of carbon dioxide and the related surface and injection equipment. The manager shall be selected within the framework of open competition organised by the Ministry of Environmental Protection and Regional Development.
- 4. The manager shall provide a storage service compatible with the use of the CO₂ storage service system, ensuring equal and nondiscriminatory treatment of system users.
- 5. In order to ensure efficient and safe provision of storage services, the manager has the right to request and receive information from the system user, which is necessary for the manager to perform the activities specified in this Regulation.
- 6. When contacting the manager in the cases provided for under this Regulation, the system user shall submit information and documents to the manager in Latvian or English. The documents specified in this Regulation, which have been sent electronically, shall be signed with a secure electronic signature, unless otherwise agreed between the manager and the system user.

7. The system user shall comply with the storage usage procedures specified in this Regulation and in the storage service contract, comply with the instructions of the manager necessary to receive the storage service, provide the manager with the information necessary to receive the storage service, and not use the storage service in a way that restricts, distorts or hinders competition, for example, by hidden storage of capacity.
8. The manager shall publish the availability of the technical capacity of the storage facility on its website.

III Procedure for concluding a storage service contract

9. The applicant shall submit an application to the manager to obtain the right to use of the storage. The applicant shall attach the following to the application:
 - 9.1. a document certifying that the applicant has registered commercial activity in accordance with the laws and regulations of the respective country;
 - 9.2. a document certifying the representation if the application is submitted by an authorised representative of the applicant;
 - 9.3. a document issued no earlier than one month before the day of submission certifying that the applicant has not been declared insolvent, that the applicant's economic activity has not been suspended, or that the applicant is not being liquidated;
 - 9.4. the annual report for the previous three years (or the actual period of operation, taking into account the time of establishment or commencement of activity of the applicant, for which the annual report is to be submitted) or any other equivalent document certifying the applicant's economic and

financial standing in accordance with the laws and regulations of the respective country.

10. If the information referred to in the documents specified in Paragraph 8 of this Regulation is available free of charge in Latvian or English in an official edition or in the public register, the applicant shall have the right not to submit the relevant documents, specifying in the application the website where the relevant information is available.
11. The manager shall examine the application referred to in Paragraph 9 of this Regulation and the documents appended thereto within five working days from the day of receipt and, if necessary, is entitled to request the applicant to submit the missing documents or additional information.
12. If the manager has requested that the applicant submit additional information or documents, the applicant shall submit them within ten working days from the date of the request. If, within the specified time limit, the applicant does not provide the additional information or documents requested, the applicant shall be deemed to have withdrawn his application.
13. The documents and additional information referred to in Paragraph 9 of this Regulation may be submitted electronically by the applicant to the system manager.
14. If the applicant has submitted all the documents and additional information referred to in Paragraph 9 of this Regulation, the manager shall, within five working days from the day of receipt of all documents and additional information, prepare a CO₂ storage service contract and send it to the applicant. The manager shall publish a sample contract for the CO₂ storage service on its website.

15. The applicant shall submit to the manager a signed storage service contract in two copies within ten working days from the date of sending the storage service contract. If the applicant has not submitted a signed storage service contract to the manager within ten working days from the date of the manager sending out the storage service contract, the applicant shall be deemed to have withdrawn his application.
16. The manager shall, within three working days from the day of receipt of the storage service contract signed by the applicant, sign the storage service contract and send one copy to the applicant.
17. The manager shall inform the applicant regarding the refusal to enter a storage service contract by sending a notification to the electronic mail address indicated in the application within one working day of the assessment of the application. The manager shall send a motivated written refusal to enter into a storage service contract by posting to the address indicated in the submitted application.

IV Suspension or restriction of the provision of the storage service

18. The manager has the right to restrict or stop the pumping of CO₂ into or from storage without prior notice to the system users in the following cases:
 - 18.1. there is damage to the CO₂ transmission system or storage facility which may cause an accident or emergency, or an accident or emergency has occurred;
 - 18.2. the CO₂ transmission system deviates from the normal operating mode or from the physicochemical properties of CO₂ for the quality characteristics of CO₂, and the manager has requested that CO₂ be stopped from being pumped into or from storage;

- 18.3. the flow pressure of CO₂ does not correspond to the pressure required to provide the storage service;
 - 18.4. it is necessary to carry out urgent repair work for the elimination of damages or consequences of an accident, it is necessary to carry out technical maintenance, repair, connection, disconnection, or dismantling measures, and it is not possible to carry out such work without restricting or interrupting the pumping of CO₂ into or from the storage facility.
19. In the cases specified in Paragraph 18 of this Regulation, the manager shall immediately, as soon as it is possible, but not later than within 24 hours, publish a notification on the website of the storage facility, indicating the time of publication, regarding the interruption or restriction of pumping CO₂ into or from the storage facility, the reasons and the estimated time of renewal of pumping CO₂ into or from the storage facility, and concurrently send a relevant electronic notification to the system users.
 20. The manager, subject to the provisions of this chapter, may reduce the amount of CO₂ pumped into or from storage determined on the calendar day within the period during which the maintenance, upkeep, and restoration work is carried out in the storage (hereinafter – the maintenance work). The manager shall carry out maintenance work in such a way as not to hinder the use of storage as much as possible and not to reduce the capacity for pumping CO₂ into or from storage.
 21. Each year, no later than by 1 September, the manager shall publish on its website information on the planned maintenance work, its characteristics, possible duration, and changes in the amount of CO₂

that may be placed in the storage or removed from the storage, regarding the time period from 1 October of that year to 30 September of the next calendar year. The manager shall update the information published depending on the progress of the maintenance work.

22. If the maintenance work affects the amount of CO₂ that can be stored or removed from storage, the manager shall inform the system users no later than 42 days before the start of the planned maintenance work by sending information electronically to the system users about the amount and duration of the maintenance work, and changes in the amount of CO₂ that can be stored or removed from storage.
23. The manager shall electronically inform system users of unplanned maintenance work that may affect the capacity to pump CO₂ into or from storage as soon as possible, but no later than 18:00 (16:00 UTC in winter time period and 15:00 UTC in summer time period) on the day preceding the unplanned maintenance work, also indicating the amount of CO₂ available on that day for storage and removal from storage.
24. The manager shall not cover the losses incurred by the system users in the cases specified in Paragraphs 18 and 20 of this Regulation, as well as in cases where the planned maintenance work is performed according to the time periods published in accordance with Paragraphs 22 and 23 of this Regulation.

V Performance security

25. During the term of the storage service contract, the system user shall ensure the fulfilment of contractual obligations by applying an appropriate credit rating or performance security of the system user.

The system user may choose one or several types of performance security (security deposit, guarantee of the financial service provider or related merchant that meets the criteria laid down in Paragraph 28 of this Regulation).

26. The system user, if he has chosen to ensure the fulfilment of contractual obligations with a credit rating, shall, after the first full calendar year since entering into the storage service contract, submit to the manager updated information on the credit rating of the system user by 1 May and 15 October of the respective year. The system user is obliged to immediately inform the manager about any changes in the credit rating of the system user. The manager is entitled to request the system user to submit updated information on the credit rating of the system user.
27. If the system user has chosen to ensure the fulfilment of contractual obligations with a credit rating, the manager is entitled, during the term of validity of the storage service contract, to request the system user to submit a performance security (a security deposit, guarantee of the provider of financial services or a related merchant that meets the criteria laid down in Paragraph 28 of this Regulation) to cover the requirements arising from the storage service contract, if:
 - 27.1. the manager has a reason to believe that the system user is fully or partially unable or will not be able to cover the liabilities arising from the storage service contract;
 - 27.2. the system user is in insolvency or liquidation proceedings;
 - 27.3. the system user does not have an appropriate credit rating in accordance with the criteria laid down in Paragraph 27 of this Regulation;

- 27.4. the system user has delayed the payments specified in the storage service contract twice within twelve months.
28. A system user's credit rating shall be considered eligible if it meets at least one of the following criteria:
 - 28.1. "Standard & Poor's" long-term rating BBB- or higher;
 - 28.2. "Fitch Ratings" long-term rating of BBB- or higher;
 - 28.3. "Moody's" long-term rating of Baa3 or higher.
29. If the system user or related merchant does not agree with the determination of the manager regarding nonconformity of the credit rating of the system user or related merchant, the system user or related merchant may, within five working days, submit appropriate evidence in order for the manager to objectively assess the creditworthiness of the system user.
30. The system user shall submit the performance security to the manager within seven working days from the day of receipt of the manager's request.
31. The manager shall recognise the guarantee as an adequate performance security if it complies with the following conditions:
 - 31.1. the guarantee has been issued by a financial service provider which, or a group of which, has a credit rating for long-term foreign currency borrowing of at least Baa1 in accordance with the agency "Moody's", or BBB+ in accordance with the agency "Standard & Poor's", or BBB+ in accordance with the agency "Fitch Ratings";
 - 31.2. the guarantee has been issued by the related merchant whose credit rating conforms to Paragraph 28 of this Regulation;
 - 31.3. the guarantee is on first demand and irrevocable.

32. The performance security shall be valid throughout the term of the storage service contract if the system user has chosen to ensure the fulfilment of contractual obligations with a performance security.
33. The performance security shall be in effect throughout the term of validity of the storage service contract, if the manager has requested the performance security of the system user who has chosen to ensure the fulfilment of contractual obligations with a credit rating in accordance with Paragraph 27 of this Regulation. If the system user does not submit a performance security to the manager within the time period specified in Paragraph 30 of this Regulation, the manager may restrict or discontinue the pumping of natural gas into the storage facility, withdraw it from the storage facility or transfer the CO₂ product placed in the storage facility.
34. If the obligations of the system user under the storage service contract exceed the amount by which the performance security has been submitted, the manager has the right to request that the system user increase the amount of performance security and submit a new performance security to the manager within seven days. If the system user does not submit a new performance security within the specified time period, the manager may restrict or stop pumping CO₂ into the storage facility, remove it from the storage facility, or transfer the natural gas or capacity product placed in the storage facility.
35. Upon terminating the storage service contract, the manager shall, within five working days, refund to the system user the amount of performance security that has not been used to cover the unfulfilled liabilities of the system user, or return the original guarantee issued to the system user by the financial service provider or related

merchant whose credit rating conforms to Paragraph 28 of this Regulation .

VI Closing Provision

36. This Regulation shall come into force on the day following the publication thereof in the official gazette “Latvijas Vēstnesis”.”

6. In order for the State and the national economy to benefit from the storage of CO₂ in the subterranean depths, in the opinion of the Author, a relevant fee should be determined, the amount of which the Author proposes, taking into account the amounts of other similar fees in the Republic of Latvia and other countries. The Author proposes to supplement the Cabinet Regulation No. 1055 of 19 December 2006, “Regulations regarding the State Fee for a License for Use of Subsoil, an Authorisation for the Extraction of Widespread Mineral Resources and a Passport of the Deposit”³² with Sub-paragraph 2.14 in the following wording: “2.14. for the storage of CO₂ in nationally defined geological structures – EUR 3 per ton of CO₂.”. The fee payers would be private law entities that use the useful properties of the subterranean depths for their own benefit, for example, for commercial activity.

7. In the opinion of the Author, it would be necessary to improve the legal framework by providing that disloyal people would not obtain detailed information on the useful properties of subterranean depths, thus creating risks to national security. Accordingly, it should also be carefully assessed whether the mechanism for the implementation

³²Noteikumi par valsts nodevu par zemes dziļū izmantošanas licenci, bieži sastopamo derīgo izrakteņu ieguves atļauju un atradnes pasi: Ministru kabineta 2006.gada 19.decembra noteikumi Nr.1055. 22.12.2006. *Latvijas Vēstnesis*. 204.

of private transactions poses risks to the public interest and subterranean depths. For example, the storage of natural gas of regionally significant volumes in the Inčukalns UGS, potential of the Dobeles underground storage facility and other geological structures, geology and other relevant information about the structure of subterranean depths, which can theoretically also pose security risks. In the opinion of the Author, the information on the results of geological exploration and the potential for use should be limited and subject to increased monitoring by the State. Currently, Section 22.⁴, Paragraph one of the National Security Law provides that in order to prevent potential threat to national security, access to information (geospatial information, technical documentation and data, and also other information describing the object) important for national security and State defence may be restricted in the State information systems on the following immovable property objects: 1) objects of critical infrastructure, including European critical infrastructure; 2) objects of the Ministry of Defence, the Ministry of the Interior, the Ministry of Justice and the objects subordinate thereto.

The Author proposes to supplement Section 22.⁴, Paragraph one of the National Security Law with Clause 3 in the following wording: “(3) the useful properties of the subterranean depths and the structure of the subterranean depths.”.

The research achieved its stated aim and fulfilled its defined tasks. The Doctoral Thesis identifies the issues of concern and reflects the diversity of ownership of subterranean depths in the legal practices of different countries. During the development of the research, the Author answered the research questions and concluded that it is necessary to develop and improve the

regulatory framework of subterranean depths in the Republic of Latvia in order to promote more efficient use of subterranean depths, ensure the interests of the State and promote the overall development and greater independence of the Latvian economy. In the public interest, restrictions should be placed on private law, with greater rights for the State as a legal subject in relation to the use of subterranean depths, in order to promote the Republic of Latvia as a regionally significant subject in the use of useful properties of subterranean depths.

Publications and reports on the topic of the Thesis

Scientific publications in editions included in international databases (*Web of Science, SCOPUS, ERIH PLUS*):

1. Piļēns, K., Kronis, I. 2021. *Aspects of Formation of Legal Status of Subterranean Depths*. *Socrates*. 2(20), 317–330. doi.org/10.25143/socr.20.2021.2
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1. October 10, 2018. International scientific conference “7th International Interdisciplinary Scientific Conference “Society. Health. Welfare””. Report: “Changes in regulation of subterranean depths use in the Republic of Latvia”.
2. April 26, 2017. International scientific-practical conference “Directions of Modernization of the Legal System: the Real State of Affairs and Future Prospects”. Report: “In the Interests of National Security in Energy”.
3. April 26, 2017. XXX Baltic Conference of Criminologists “SOCIETY. MAN. SECURITY. 2017”. Report: “The importance of strategically important energy supply facilities in Criminal Law”.
4. April 22, 2016. International scientific-practical conference “25 years of the restored Latvia, Lithuania and Estonia: experience of the Baltic States”. Report: “Problems of ownership determination”.
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7. October 26-28, 2014. International Scientific Conference “5th International Interdisciplinary Scientific Conference “Society. Health. Welfare””. Report: “Ownership tendencies of Subterranean Depths Use in the Republic of Latvia”.

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1. November 24, 2022. Webinar organised by the University of Latvia and the Ministry of Economics on the study “The Green Deal – Towards climate neutrality in 2050. Strategic investment directions for the development of export potential. Future technologies and investment projects for Latvia”. Study available: https://www.lvpeak.lu.lv/fileadmin/user_upload/lu_portal/lvpeak.lu.lv/LU_domn_ica_LV_PEAK/Projekti/investicijas_produkтивitate/LVPEAK_nodevums_Zalais_kurss.pdf

Article in Latvian editions:

1. Piģēns, K. *Zemes dzīļu izmantošanas tiesiskais regulējums: quo vadis*. Jurista Vārds, 04.07.2017., Nr. 28 (982), 25-27. The findings from the article are also used in the development of the case-law of the Republic of Latvia, such as the judgment of the Riga City Vidzeme District Court of 25 October 2019 in case No. C-2491-19/5.

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