Legal Framework for the Coordination of Competing Uses of the Underground in Germany

Hartmut Weyer

Institute of German & International Mining and Energy Law,
Clausthal University of Technology, Clausthal-Zellerfeld, Germany

Abstract. Suitable geological sites for underground storage are limited. Therefore it is important to coordinate the combined use of underground for different storage purposes (in particular gas, oil, compressed air and CO_2) as well as for other uses (in particular geothermal energy, mining). This paper proposes to examine the legal framework in Germany as well as in the EU CCS directive. Land use in Germany is subject to regional planning. Yet the existing plans only rudimentarily cover underground sites. So far a decision on competing uses of these sites therefore has to be taken mainly within the framework of the authorization procedures for underground uses. In general two coordination mechanisms can be distinguished: the conferral of an exclusive right on the company for exploration / production / CO_2 storage purposes, which excludes its use by other companies for the same purpose, and the authorization, in the absence of such exclusive rights, r within the operations plan procedure according to German mining law. This paper gives an overview of the authorization regimes which exist for different uses of underground which have been little explored in comparison. The recent German CO_2 Storage Act is taken into account. The result is that for most cases there are no general statutory criteria giving priority to specific uses of underground. Therefore an authority will have to base its decision on a case-by-case analysis. Due to the lack of guidance on the weight that has to be attached to the different purposes it is difficult to predict the outcome of the selection decision. The resulting legal uncertainty may hamper investments, yet granting priority to a specific use needs detailed analysis of the competing projects which in general cannot be accomplished by legal means.

Keywords: underground usage, EU CCS directive, coordination mechanisms, authorization regimes, German CO_2 Storage Act.

1 Introduction: Need and Mechanisms for the Coordination of the Use of the Underground

Underground sites are used for an increasing number of different purposes, including in particular the storage of gas, oil, compressed air and CO_2 as well as

M.Z. Hou et al. (Eds.): *Clean Energy Systems in the Subsurface*, SSGG, pp. 21–28.
DOI: 10.1007/978-3-642-37849-2_2

geothermal and mining activities. Since suitable geological sites are limited, it is important to coordinate their use for these different purposes. This paper proposes to examine the legal framework in Germany as well as in the European CCS directive with respect to the purposes mentioned [1].

German law does not contain explicit statutory provisions on the priority of certain uses of underground. Only to a limited extent are there provisions giving preference to certain underground uses for specific regions in Germany. They are n a particular section of the German law on regional planning and will be discussed in section 2.

In the majority of cases, the selection decision has to be taken on a case-by-case basis within the framework of the authorization procedures for given projects. Three different authorization regimes will be addressed in the present context:

- Mining and geothermal activities are regulated in Germany to a large extent by the Federal Mining Act (Bundesberggesetz (BBergG)).
- CO_2 storage is regulated by a separate statute, the Federal CO_2 Storage Act (Kohlendioxid-Speicherungsgesetz (KSpG)), which shows some similarities to Mining Law but is based on the European CCS directive.
- Other underground storage facilities are (only) subject to certain provisions of the Federal Mining Act (BBergG).

Before the mining of so-called free minerals (bergfreie Bodenschätze) and geothermal energy can start, the competent *authority* is supposed to grant an initial license for exploration or production purposes respectively. At the second stage, the technical realization of the exploration / production project will requires a separate permit from the mining authority, the so-called operations plan (Betriebsplan). For underground storage activities other than CO_2 storage only such an operations plan, but not a prior license is needed. For CO_2 storage, the technical realization of an exploration / storage project requires a similar authorization.

The following description first treats the exclusive rights concerning certain natural resources, geothermal energy or storage sites for CO_2. This approach applies to competing underground uses for the same purpose (e.g. two projects on geothermal energy). In this case the selection among competing projects is decided on the basis of this exclusive right (section 3. below). If no prior licencing is provided for or if competing projects concern the use of underground sites for different purposes (e.g. projects for geothermal energy and for underground storage), the selection decision will be taken within the authorization procedure, which is often the operations plan procedure (section 4. below).

2 Coordination by Means of Regional Planning

Land use in Germany is subject to regional planning. Yet the existing plans basically restrict themselves to the use of the surface and only rudimentarily cover underground projects. In general, there is no decision as to its use for the purpose

of underground storage or geothermal energy, and only to a limited extent does regional planning cover mining projects.

For the future, a more detailed regional underground planning regime is conceivable. In particular, the concept of "space", as used in the Federal Regional Planning Act (Raumordnungsgesetz (ROG)), is not limited to the surface [2-4]. The principles for regional planning with regard to natural resources (§ 2 no. 4 clause 4 ROG) and to the storage of climate-damaging substances (§ 2 no. 6 clause 8 ROG) prove that provisions on the use of underground sites are not excluded, which is also consistent with provisions for mining in existing plans. Yet the above-mentioned principles as such – without further elaboration – are not sufficient to support a specific selection decision [5]. It is possible , according to the Federal Regional Planning Act, to define regions where priority is given to specific uses of the land or where such uses are not admitted outside these regions (Vorrang-, Vorbehalts- oder Eignungsgebiete, § 8 (7) ROG).

Such selection decisions within the context of regional planning are being discussed in particular for CO_2 storage. The State of Lower-Saxony has expressed its intention to examine the need for further regional planning at State level in order to take account of the growing importance of subjacent geological structures for purposes of energy or climate policy [6]. According to the Energy Concept of the German government, an atlas for geothermal energy is being drawn up, in particular, to depict possible conflicts with CO_2 storage [7, 8]. The new Federal CO_2 Storage Act provides that the German States can designate regions, in which CO_2 storage is admitted or prohibited, taking into account in particular other possible uses of the potential storage site, geological specialties of the region and other public interests (§ 2 (5) KSpG). This possibility served as a compromise to gain the consent of German States opposing the storage of CO_2 on their territory. In fact, pursuant to Act 4 para 1 of the EU CCS directive Germany might have excluded the storage of CO_2 on its territory in general [9, 10].

3 Coordination by Means of Exclusive Rights

3.1 Mining and Geothermal Energy

A company aiming at underground exploration for a certain natural resource, i.e. a free mineral or geothermal energy, has to apply for an exploration license (Erlaubnis) to the competent mining authority. For production purposes the company has to apply for a production license (Bewilligung or Bergwerkseigentum). These licenses, within their geographical and temporal limits, confer the exclusive right for the activity and resource concerned, e.g. an exploration license for natural gas excludes any other exploration activities for natural gas within the field covered by the license and for the duration of the license, save with the consent of the license holder.

Given the limited number of suitable sites, this may lead to a race for exploration / production licenses. In the case of competing applications, the

mining authority has to give priority to the applicant that, with regard to his work program and economic power, seems best fitted to provide a useful and systematic exploration or production (§ 14 (2) BBergG). If a company already holds an exploration license (Erlaubnis zur Aufsuchung zu gewerblichen Zwecken) and later requests a production license, it is always given priority, due to the investments already made (§ 14 (1) BBergG). As a result, in the fields of mining and geothermal energy, the selection decision among competing projects aiming to use underground sites for the same purpose is often taken when issuing an exploration license, but at the latest when issuing a production license. An additional selection decision during the operations plan procedure therefore is not needed.

In order to prevent the permanent blockage of reserves, licenses may only be granted for a limited time period, but can be prolonged. The initial maximum time limit for exploration licenses is five years. Production licenses in general have an initial maximum duration of 50 years. One important element for the decision about the prolongation of a license is the extent to which the holder has complied with his work program [11]. As to the geographical extent of the license it is noteworthy that German mining law only allows for a horizontal delimitation but not for a vertical delimitation of the license area. Therefore it is not possible to issue separate licenses for the same natural resource, including geothermal energy, at different depths. Though this question is being discussed under the heading of "floor ownership" (Stockwerkseigentum), a change is not foreseeable. Unless a natural resource, in particular geothermal energy, is produced in relation to building purposes on certain premises, it is not subject to an authorization procedure and therefore is not excluded by a licence granted for the same natural resource produced at greater depth (§ 4 (2) no. 1 BBergG).

The coordination mechanism of exclusive rights means that the selection decision concerning a certain activity and natural resource is taken in advance for a given time and space. This gives a chance to gain priority at an early stage.

3.2 CO_2 Storage

In the field of CO_2 storage, the Federal CO_2 Storage Act does not follow the two-stage approach of the Federal Mining Act, distinguishing between a prior exploration / production license on the one hand and the subsequent operations plan on the other. Yet similar to mining law the CO_2 Storage Act, in accordance with the EU CCS Directive, attaches an exclusive right to the exploration / storage permit. Thus no parallel explorations or storage activities for CO2 are admitted during the period of validity of the permit (§ 7 (5) KSpG, § 12 (4) KSpG).

In the case of competing applications for an exploration permit, the competent authority has to decide first which application has an exploration program that best fulfills the legal requirements of § 7 (1) KSpG, e.g. concerning the financial potential of the applicant or the protection of the environment. Should applications for an exploration permit be equivalent, priority is given to the application that

first meets the requirements (§ 8 (1) KSpG). As to storage permits, the holder of an exploration permit has priority over any other applicant (§ 12 (4) KSpG). Thus the selection decision among competing projects for CO_2 Storage is generally taken when issuing an exploration permit, similar to the situation for mining licences.

Exploration permits are limited to the time necessary for an orderly exploration and may only be prolonged once. The maximum time limit in any case is the end of the year 2015 (§ 9 (1) KSpG). For storage permits the CO_2 Storage Act does not require a time limit, but the permit has to define inter alia the total quantity of CO_2 to be stored. Different from the normal situation in mining law, a storage site s cannot be used after closure.

Also the geographical extent of the exploration or storage permit for CO_2 is defined differently from mining law. The exploration permit is granted for activities within a specified exploration field (similar to mining law) but is limited in depth (§ 3 no. 16 KSpG). Moreover the permit is restricted to designated layers of rock within the exploration field (§ 8 (5) KSpG). The exclusive right established by the storage permit is similarly limited to the storage site within the designated layers of rock (cf. § 12 (4) KSpG, art. 6 para 1 CCS Directive).

3.3 Underground Storage Other Than CO_2 Storage

The situation is different for underground storage activities other than CO_2 storage. This concerns in particular the storage of natural gas, oil, hydrogen or compressed air. German law neither provides for an exploration or storage license as in the case of natural resources, nor for an exploration or storage permit establishing an exclusive right as in the case of CO_2 storage. Therefore competing projects for the same purpose are not excluded by means of an exclusive right.

In consequence, competing underground uses of the underground – also for the same purpose – have to be coordinated within the operations plan procedure (section 4.3. below).

4 Coordination in the Absence of Exclusive Rights

4.1 Mining and Geothermal Energy

The exclusive right granted by an exploration / production license for certain natural resources (free minerals or geothermal energy) only regulates the conflict with other uses of the underground for the same purpose, i.e. concerning the same activity and natural resource. Yet conflicts can also arise with regard to projects for different purposes, e.g. for the production of natural gas on the one hand and geothermal energy on the other. In principle such conflicts will already be considered by the mining authority when deciding about an exploration or

production license. Should the conflict not have been dealt with in the licensing procedure, this will at least have to be done in the context of the operations plan procedure.

Within the licensing procedure the mining authority pursuant to § 11 BBergG (as appropriate in conjunction with § 12 BBergG) has to examine in particular whether granting the license could endanger a sensible and systematic exploration and production of natural resources (no. 8), whether natural resources of public interest would be adversely affected (no. 9) or whether overriding public interest excludes exploration throughout the whole field (No. 10). Thus no. 8 and no. 9 are limited to conflicts with the exploration or production of other natural resources whereas no. 10 takes account of other conflicts as well, in particular underground storage.

At the stage of the operations plan procedure the mining authority similarly has to examine pursuant to § 55 (1) no. 4 BBergG whether this would entail an impairment of natural resources that are of public interest, thus taking account conflicts with the exploration or production of natural resources. Conflicts with underground storage or other underground uses can be considered pursuant to § 48 (2) BBergG which takes account of any overriding public interest. The operations plan procedure applies not only to activities with regard to free minerals and geothermal energy but also with regard to other natural resources belonging to the landowner.

The approach means that the mining authority normally has to decide on a case-by-case basis which competing project should be given priority. It will therefore be important what weight the authority attaches to different purposes from the perspective of public interest, e.g. concerning the reduction of CO_2 emissions, the increase of power generation from renewable energy sources, the security of gas supply or the supply of other natural resources. Due to the lack of statutory rules it is difficult to find general guidance on the weight that has to be attached to such different purposes. The outcome of the selection decision therefore is hard to foresee.

Though the resulting legal uncertainty may hamper investments, it is difficult to see how priority could be granted to specific uses of underground facilities without a detailed analysis of the specific situation, e.g. concerning the benefits of the projects for climate protection, security of energy supply etc., the environmental impact of the projects, the availability of the natural resources concerned and so forth. Such an analysis in general cannot be accomplished at a statutory level. In particular, the environmental impact assessment foreseen by EU and German law can only take place in depth within the authorization procedure. Yet it might be possible and worth considering having statutory provisions giving guidance on particular aspects of the selection decision like the weight attached to different purposes (e.g. CO_2 storage, geothermal energy etc.).

4.2 CO_2 Storage

The CO_2 Storage Act takes a similar approach in dealing with competing uses for underground storage. Pursuant to § 7 (1) no. 3 KSpG (as appropriate in conjunction with § 13 (1) KSpG) an exploration / storage permit for CO_2 may only be issued if an impairment of natural resources and of other possible uses for underground storage that are of public interest can be excluded. In this respect the German legislator has clearly stated that not all natural resources and possible uses of the underground have priority per se, but only those which are of greater importance for the public good than the permanent storage of CO_2. Special weight is attached to such natural resources and underground uses that – like CO_2 storage – serve the aim of climate protection, e.g. compressed air storage and geothermal energy [12]. In addition, the mining authority may only grant an exploration permit if it is not contrary to other statutes of public law and if there is no other prevailing public interest (§ 8 (1) no. 8 KSpG). For storage permits the corresponding provision is limited to opposing statutes of public law (§ 13 (1) no. 8 KSpG) which for the purpose of underground uses does not seem to apply.

In consequence, the selection decision between conflicting uses for underground sights follows rules similar to those of the Federal Mining Act. It is up to the competent authority to determine and weigh the public interest in the competing projects. There is no general guidance as to the weight attached to CO_2 storage in comparison to other underground uses, particularly if they are also relevant for climate protection.

4.3 Underground Storage Other Than CO_2 Storage

Underground storage of gas, oil, hydrogen or compressed air is regulated by the Federal Mining Act, but does not follow the two stage approach applicable to free minerals and geothermal energy. Yet such projects in general will still need an authorization by way of the operations plan procedure. Thus competing uses of the underground will be coordinated by the mechanism described above with regard to the operations plan procedure for natural resources. The mining authority therefore normally has to decide on a case-by-case basis which competing project should be given priority. This applies not only to conflicts with other uses of underground storage for different purposes but, since no exclusive rights are established, also to uses for the same purpose like e.g. competing gas storage projects.

5 Résumé

Conflicting underground use is of increasing importance.

So far German Regional Planning Law covers the use of underground facilities only to a very limited extent.

In the case of free minerals, geothermal energy and CO_2 storage, conflicts with other underground uses for the same purpose are regulated by the mechanism of exclusive rights. This gives a chance of gaining priority at an early stage for a given time and space.

Conflicts with other uses of the underground for different purposes are decided on a case-by-case basis by the competent authority. There is little general guidance on the weight that has to be attached to such different purposes and therefore it is difficult to predict the outcome of the selection decision. The same holds true for competing projects of underground storage (other than CO_2) even if they serve the same purpose.

Though the resulting legal uncertainty may hamper investments, granting priority to a specific use of the underground needs a detailed analysis of the competing projects which in general cannot be accomplished at the statutory level. Yet it might be possible and worth considering to have statutory provisions giving guidance on partial aspects of the selection decision like the weight attached to different purposes (e.g. CO_2 storage, geothermal energy etc.).

References

1. Weyer, H., Oppelt, C.: Geothermie: Notwendigkeit einer spezifischen Förderpolitik. In: Müller, T. (ed.) 20 Jahre Recht der Erneuerbaren Energien, pp. 660–687 (2012)
2. Deutscher Bundestag. Bundestags-Drucksache 16/10292: safeguarding sites for CO_2 storage by regional planning (2008)
3. Franke, P.: Die Einlagerung von CO_2 in unterirdischen geologischen Formationen unter besonderer Berücksichtigung des Bergrechts. In: Kühne, G., Ehricke, U. (eds.) Bergrecht Zwischen Tradition und Moderne, pp. 99–137 (2010)
4. Dietrich, L.: Nutzungskonflikte unter Tage. In: Kühne, G., Ehricke, U. (eds.) Bergrecht Zwischen Tradition und Moderne, pp. 139–167 (2010)
5. Dietrich, L., Schäperklaus, S.: Der Raum wird knapp: über die Steuerbarkeit von Nutzungskonflikten unter Tage. Zeitschrift für Erdöl, Erdgas und Kohle 125(1), 20–26 (2009)
6. Notice of 29 April 2009 – 303.1-20 302/25-2-1, `http://www.ml.niedersachsen.de/live/live.php?navigation_id=26909&article_id=90404&_ps-mand=7` (accessed December 21, 2010)
7. Deutscher Bundestag. Bundestags-Drucksache 16/13083, p. 8 (2009)
8. Deutscher Bundestag. Bundestags-Drucksache 17/3049, p. 10 (2010)
9. Weyer, H.: Legal Framework for CCS in the EU and Germany. In: Hou, Z., Xie, H., Yoon, J.S. (eds.) Underground Storage of CO_2 and Energy, pp. 3–8. CRC Press/Balkemap, London (2010)
10. Sellner, D.: Das CCS-Gesetz – Gesetzgebung im schwierigen Terrain. In: Appel, I., Hermes, G., Schönberger, C. (eds.) Öffentliches Recht im offenen Staat: Festschrift für Rainer Wahl zum 70, p. 595. Geburtstag (2011)
11. Verwaltungsgerichtsh of Mannheim. Zeitschrift für Neues Energierecht (ZNER), p. 499 (2010)
12. Deutscher Bundestag. Bundestags-Drucksache 17/5750, p. 40 (2011)