UNOFFICIAL TRANSLATION

Energistyrelsen

Invitation to apply for a license for exploration and geological CO_2 storage onshore in Denmark

Division/department
CCS

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The Danish Energy Agency hereby publishes the conditions for applying for onshore licenses under section 23 of the Danish Subsoil Act for exploration and geological CO_2 storage.

Applications will be received from 13 December 2023 onwards and must be received by the Danish Energy Agency by no later than 24 January 2024.

The granting of licenses is conditional on the applicant having the necessary technical and financial capacity to explore and operate geological CO_2 storage in accordance with the Danish Subsoil Act.

It is possible to apply for a license to explore within the license area, and if the offered work programme is satisfactorily implemented, the licensee will have preferential right to apply to have the license extended with an exclusive right to carry out storage activities for up to 30 years.

The tendered areas are shown on the maps enclosed as Appendices 2.1 and 2.2.1-5.

On 20 September 2023, the Danish government (the Social Democratic Party, Denmark's Liberal Party and the Moderates) signed an agreement on regulatory framework for carbon capture and storage (CCS) in Denmark with the Green Left, Liberal Alliance, the Conservative People's Party, the Red-Green Alliance, the Danish Social-Liberal Party, the Danish People's Party and The Alternative.

The agreement states that, in order to meet the goals of the Paris Agreement, according to the UN IPCC scenarios, 730 billion tonnes of CO_2 must be stored globally up to 2100. CCS must therefore be accelerated to contribute to this. Denmark has a good foundation to use a great potential for CO_2 storage. The Geological Survey of Denmark and Greenland (GEUS) has estimated that the Danish subsoil has room for a total of 12-22 billion tonnes of CO_2, corresponding to 500 years of emissions from Denmark[1]. This means that there is room for CO_2

[1] Hjelm, L., Anthonsen, K. L., Dideriksen, K., Nielsen, C. M., Nielsen, L. H., & Mathiesen, A. (2022). *Capture, Storage and Use of CO_2 (CCUS). Evaluation of the CO_2 storage potential in Denmark. Vol.1: Report & Vol 2: Appendix A and B [Published as two separate volumes both with Series number 2020/46].*

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captured both in Denmark and abroad, and this could potentially create jobs and be a good business for Danish society. The rapid development of the CCS market can result in large investments and more green jobs in Denmark.

The licenses will stipulate that Nordsøfonden is to participate on behalf of the State with a share of 20% in accordance with the CCS agreement above. The detailed conditions for the tendering procedure are laid out in the enclosed report presented to the Danish Parliament's Climate, Energy and Utilities Committee on 30 November 2023, and in the model license for geological storage of CO_2, which is also enclosed.

The general terms and conditions for the tender will also be published in Statstidende, on the Danish Energy Agency's website and in the Official Journal of the European Union.

Contents

1. Form of tendering procedure

The tendering procedure for licenses for exploration and geological storage of CO_2 is the second tender in Denmark, and will enable companies to explore a defined geographic area to evaluate whether there are suitable geological structures to store CO_2. If the associated work programme is satisfactorily met, and such structures are proven, the licensee will have a preferential right to apply to have the license extended with an exclusive right to carry out storage activities for up to 30 years with a possibility for further extension.

(Geological Survey of Greenland Report; Vol. 2020, No. 46).
GEUS. https://doi.org/10.22008/gpub/34543

The tendering procedure by Executive Order in accordance with section 23b(1), no. 2 of the Danish Subsoil Act, under which the Executive Order specifies both the area under tender and period in which licenses can be applied for.

The Executive Order regarding certain onshore areas in Denmark that are open for granting licenses for exploration and storage of CO_2 will enter into force on 13 December 2023. The Executive Order can be viewed in Danish via this link and is also enclosed with this invitation as Appendix 1.

Applications for licenses can then be submitted from 13 December 2023 to 24 January 2024. A decision on the award of licenses is expected to be made in 2024.

Licences will be granted following submission to the Climate, Energy and Utilities Committee set up by the Danish Parliament (Folketing).

2. Areas

Licenses apply for exploration and use of the subsoil for geological CO_2 storage in the areas under tender illustrated on the map enclosed as Appendix 2.1.

Appendices 2.2.1, 2.2.2, 2.2.3, 2.2.4 and 2.2.5 with detailed maps of the individual areas are also enclosed. The maps show the planning area and surface designation, which defines where surface installations and facilities can be placed. Digital maps are available at the DEA's website.

Note that there is a differentiated subsoil and surface designation for certain areas. This means that there is a difference between the license's area on the surface and in the subsoil in order to account for Natura 2000 sites, for example. This difference is stated in the annexes to the Executive Order. This also means that licenses issued in these areas will have to be differentiated for surface and subsoil.

The five tendered areas were selected from a larger number of areas, where GEUS has identified appropriate geological structures for storage of CO_2.

In relation to the political agreement of 20 September 2023, this only involves onshore structures and not nearshore structures. Nearshore structures have been identified at sea, and these are deemed geologically appropriate for storage of CO_2. However, it has been assessed that the change in the maritime spatial plan to designate the areas for CO_2 storage must be formally adopted before these areas can be included in a tendering procedure for licenses.

3. Operatorship

Applications may be submitted by groups of companies as well as individual companies.

Applications from groups must state who is to be appointed as the operator. In specific cases, where the operatorship is requested to be carried out by a company not participating in the license, the applicant companies must state this and the company concerned.

The operator must have the necessary technical and financial capacity, cf. section 24 d (1) of the Danish Subsoil Act.

In this connection, the Danish Energy Agency will brief the Danish Working Environment Authority regarding the assessment of the operator's qualifications, including capacity to meet health, safety and environmental requirements for the license. In the event of disagreement between the companies applying for a license on the choice of operator, the Minister for Climate, Energy and Utilities may appoint the operator based on the qualifications of the applicants, cf. section 23 c (6) of the Subsoil Act.

4. Content of the application and selection criteria

Applications will first and foremost be assessed and selected according to the criteria laid out in section 23 c (1) of the Subsoil Act, i.e. the applicant's technical and financial capacity, as well as the exploration activities that the applicant offers to carry out, cf. the work programme to be included in the application.

This invitation to tender is accompanied by an Appendix 3 with indicative documentation requirements for the application.

Note that work programmes from licenses granted are published on the Danish Energy Agency's website. The application must include a summary of the work programme with the most important milestones preferably in a table, which is suitable for later publication in connection with possible award of a license for the area.

Requirements for technical and financial capacity can be considered minimum requirements that must be met in order to be considered for a license.

Technical and financial capacity

The applicant must be able to explain how the applicant will ensure satisfactory technical and financial capacity. The application must include documentation that the applicant has satisfactory technical

and financial capacity to meet all unconditional obligations under the work programme under application. The application must specify how technical and financial capacity will be provided in later phases of the license.

The applicant's documentation and description of the technical and financial capacity must be proportionate to the work programme tendered. The documentation requirements for technical and financial capacity are set out in the enclosed Appendix 3 on requirements for applications.

In relation to technical capacity, see also the Danish Energy Agency's Guidelines on Technical Capacity, which can be accessed via the Danish Energy Agency's website, particularly section 6 on documentation for the assessment of technical capacity. The guidelines are formally aimed at offshore hydrocarbon licenses, but apply correspondingly to activities with CO_2 storage and related activities.

Required documentation of the applicant's financial capacity includes annual reports and financing plans. The applicant may include other documentation to aid the Danish Energy Agency in its assessment of the applicant's financial capacity.

In connection with granting licenses, the Danish Energy Agency will require a guarantee from a suitable parent company in the applicant company's group. A guarantee from the ultimate parent company to the company that is to take part in the license is required as a general rule. The Danish Energy Agency's model guarantee to be used in this connection is enclosed as Appendix 4 to this invitation. The guarantee must be unlimited in terms of time and amount.

In order to demonstrate technical capacity, it is essential that the applicant can demonstrate that, at the time the services are to be provided, the applicant will have full access to the staff and equipment required to carry out the work tendered in the work programme. The Danish Energy Agency will therefore require documentation such as legally binding agreements with suppliers, CVs of technical staff, an organisation chart, and a description of the decision-making process and steps in connection with projects, including drillings, as well as an explanation of why the company assesses it has the right organisation and the right competences to perform the task.

If the applicant consists of several participants, documentation for the collaborative relationship between the parties must be enclosed, for example in the form of a cooperation agreement or similar. A model for such cooperation agreement and an accompanying accounting procedure are enclosed as Appendix 5.1 and Appendix 5.2. Note that, at the time of application, the applicant must be able to demonstrate that it has full access to the technical and financial resources required (stated above) to meet the obligations of the unconditional work programme tendered. Unclear cooperative relationships between companies jointly applying for a license may hinder the applicant from being assessed as having adequate financial and technical capacity.

Applications are assessed on the basis of three criteria in particular (not in weighted order):

a. Data collection
b. Provability of specific storage potentials in the area applied for
c. Timetable

a. Data collection

The assessment of data collection involves an evaluation of the amount and type of data and knowledge about the Danish subsoil that is collected in connection with the exploration work in the specific license.

This will be an assessment based on the extent to which the tendered work contributes to a greater understanding of the Danish subsoil and realisation of CO_2 storage potentials. In other words, how the type, content, and scope of data, the location, and the work tendered align with existing data and knowledge will also be included in the assessment.

Generally, the collection of new data will be considered as better than processing existing data, and drillings with a complete data-collection programme will generally be considered as better than new 2D seismic surveys, which in turn will be considered better than desktop studies.

Several drillings will be weighted higher than fewer drillings, and unconditional work will be weighted higher than conditional work. For example, an unconditional drilling will be considered as better than a conditional drilling, and a drilling in a geologically complex area, where the existing data density

is low, will be considered to increase understanding of the Danish subsoil more than a drilling in a geologically simple area and with high data density.

The assessment will always be specific and depend on the quality and scope of the existing data in the area.

b. Provability of specific storage potentials in the area applied for

The assessment of provability includes the suitable storage sites in the area in relation to the works tendered. The assessment includes potential for storage reservoirs in the area applied for, and how much geological certainty and mapping of uncertainties and main risks an applicant can provide for a storage project in the area applied for.

This will be an assessment based on the extent to which the tendered work can contribute to a more thorough geological understanding of a suitable structure with a view to identifying geological risks and potential for storage. This may be carrying out 3D seismic surveys or further drilling of exploration appraisal wells to prove the suitability of the storage complex, clarify any hydraulic communication with other potential storage reservoirs, or to map potential geological risks.

In connection with the evaluation of the applications, the Danish Energy Agency will make a specific assessment of whether the tendered work as described above is appropriate in relation to the geology of the area applied for and/or existing data and/or data quality and is sufficient for the work to be suitable to lead to use of the subsoil for geological storage of CO_2 and to avoid area reservation.

c. Timetable

The Danish Energy Agency will assess the temporal aspects in relation to when the applicant plans to carry out the work offered and the duration of the work. In this assessment, a shorter period of time until commencement of the work tendered will be weighted higher than a longer period of time. The timetable must be realistic for the applicant in order to minimise the need to postpone deadlines in the license as a result of an unrealistic timetable.
In general, being able to return the license more quickly if the applicant does not consider it possible to carry out the CO_2 storage project will be given higher weight.

Whereas the requirements for technical and financial capacity can be characterised as minimum requirements that must be met in order to be considered for a license, the assessment of the applicant's work programme

with regard to exploration will be the determining criteria if there are several qualified applicants for the same area.

In such cases, it will be necessary to compare work timetables and the knowledge or data that the work can provide for the Danish State. It will also be considered positive if an applicant is able to assess with greater certainty a storage complex's suitability for CO_2 storage.

In a competition situation, in which several applicants apply for a license for exploration and storage of CO_2 in the same area or in an overlapping area, the work programmes will be compared on the basis of the parameters described above. The license will be awarded to the applicant assessed overall to offer *the most ambitious and realistic work programme and the most appropriate way to facilitate storage.* In this context, the type of work in the individual work programmes will have significance for the assessment. In the event that applications are very equal with respect to the type of work, the other criteria regarding timetable and provability could also be decisive.

In competition situations, the Danish Energy Agency will also assess how applicants intend to store CO_2 and the assessment will cover drillings for injection, including number, location, distance between drillings, design, etc. in the area applied for. For example, optimising the location and distances between drillings in a facility that accommodates the desired deliveries of CO_2 for storage and at the same time addresses the surrounding areas in terms of the environment and other exploitation of the subsoil will be weighted higher than distances between drillings and locations that limit other use of the subsoil. This means construction plans that allow the greatest possible use of the subsoil will be given higher priority.

Furthermore, the Minister for Climate, Energy and Utilities may decide not to grant a license on the basis of applications received in the licensing round, cf. section 23b(3) of the Subsoil Act.

5. Conditions for licenses for geological storage of CO_2

The conditions and regulations of licenses for geological storage of CO_2 follow partly from implementation of the EU CCS Directive in the CCS Executive Order, as well as from the regulations already established in the Subsoil Act.

As follow-up on the Agreement of 20 September 2023, social clauses are now included in exploration licenses for CO_2 storage. These are in section 7 of the model license. The social clauses are equivalent to those applied in the first tendering procedure of the CCUS pool.

There are also new conditions regarding public involvement, fees for the State's expenses in connection with validating the areas put up for tender, and obtaining baseline studies from GEUS according to section 6 of the model license.

Other current regulations
The rules of the Subsoil Act regarding CO_2 storage are in chapters 6 and 6 a of the Act.

Latest Executive Order for the Subsoil Act (2019)

Amending Act to the Subsoil Act of 7 June 2022

Amending Act to the Subsoil Act of 30 May 2011 (implementation of the CCS - Directive etc.)

Detailed rules implementing the CCS Directive are also laid down in the CCS-Executive Order, last amended in 2017.

Initially, it is possible to apply for a license to explore within the area of the license according to the detailed work programme. The Subsoil Act states that licenses may be granted for a term of up to six years, with the possibility of extension up to ten years.

If the work programme is satisfactorily implemented, and suitable geological structures are proven, the licensee will have a preferential right to apply to have the license extended to carry out storage activities for up to 30 years (the storage phase), with a possibility of further extension. The license thus entails an exclusive right to store CO_2 from the beginning, but storage cannot be commenced until more detailed conditions of the license are met.

The licenses thus basically follow the system used for hydrocarbon licenses, where the license is divided into two phases.

A standard license (the so-called *model license*) has been prepared, which will be used in connection with the tender of licenses for geological storage of CO_2. The model license is enclosed as Appendix 6 (model license). This is a standardised license, and based on the specific application, there may therefore be a need for specific adjustments in relation to the individual application.
CO_2 storage will be subject to general corporation tax rules (22%).

In connection with this tendering of licenses for onshore exploration and geological CO_2 storage, Nordsøfonden's share of licences will be 20%, as a result of the agreement on the framework conditions for CO_2 storage in Denmark of 21 June 2022 and later the agreement on regulatory framework for carbon capture and storage (CSS) in Denmark of 20 September 2023.

Nordsøfonden will participate from the date of granting of the license. Nordsøfonden will therefore not pay any costs incurred before the license has been granted.

6. Guarantees

To ensure that the licensee fulfils its obligations pursuant to licences issued under the tendering round, no later than 30 days after the date of granting of the license, each participant is to provide security of an amount and nature that can be approved by the Danish Energy Agency.

In connection with granting licenses, the Danish Energy Agency will generally require a guarantee from the ultimate parent company in the applicant company's group. The Danish Energy Agency's model guarantee to be used in this connection is enclosed as Appendix 4 to this invitation. The guarantee must be unlimited in terms of time and amount. A guarantee from the ultimate parent company to the company that is to take part in the license is usually required.

The Danish Energy Agency will regularly examine whether other forms of guarantee may be suitable for CO_2 storage activities.

7. Environmental assessment of the round

A strategic environmental assessment has been carried out in connection with the preparation of the tendering procedure. The environmental assessment has been subject to consultation in Denmark and, pursuant to the Espoo (EIA) Convention, by the Norwegian and German authorities.

During the consultation period in Denmark, a total of 21 responses were received from *Kredsløb A/S*, *the Danish District Heating Association*, *City of Aarhus*, *Randers Municipality*, *Thy Natur*, *DN Kalundborg*, *Energinet*, *the Ministry of Defence*, *the Ministry of Transport / BaneDanmark*, *the Danish Environmental Protection Agency*, *the Danish Agency for Planning and Rural Development*, *Anne-Grethe Westergaard Hedebo*, *Municipality of Herning*, *the Danish Maritime Authority*, *the Danish Safety Technology Authority* and jointly *Nordic Folkecenter for Renewable Energy, NOAH Friends of the Earth Danmark, Miljøforeningen Ren Nekselø Bugt, Miljøforeningen Havnsø-Føllenslev, Levende Hav, Klimabevægelsen, Det Fælles Bedste, the Danish Society for Nature Conservation Kalundborg by Susanne Ladefoged* and *Bürgerinitiative gegen CO_2 Endlager e.V.*

Moreover, consultation responses were received from *the Norwegian Environment Agency* in Norway and from *Bergamt Stralsund*, *Gemeinde Ostseebad (Mayor)*, *Staatliches Amt Für Landwirtschaft und Umwelt Vorpommern*, *Bundesamt für Naturschutz*, *Schleswig-Holstein Ministerium für Energiewende, Klimaschutz, Umwelt und Natur (Ministry for Energy Transition, Climate Protection, Environment and Nature)*, *Bundesamt für Seeschifffahrt und Hydrographie (Federal Ministry for Digital and Transport)*, *Umweltbundesamt* and *Bundesamt für Infrastruktur, Umweltschutz und Dienstleistungen der Bundeswehr* in Germany. The overall result of the strategic environmental assessment and consideration of the responses to the consultation are laid out in the Report for the strategic environmental assessment of the plan for the tendering of licenses for CO2 storage and the Summary form on how environmental considerations have been integrated in the plan as well as how public consultations has been taken under consideration, which are enclosed as appendices 7 and 8. A guide to appeal the strategic environmental assessment is enclosed as appendix 9.

8. Application

Applications for licenses should be sent by email to the Danish Energy Agency via ccs-lagring@ens.dk.

Applications must be in Danish or English.

The Danish Energy Agency will require reimbursement for processing applications, cf. Executive Order no. 1105 of 21 August 2023 on reimbursement of expenses for case processing by authorities in connection with subsoil activities etc.

This is a fee calculated on the basis of a statement of the number of hours the Danish Energy Agency spends on processing the individual application.

Further information can be obtained from the Danish Energy Agency. Write to: jbr@ens.dk or hesu@ens.dk.

Material relating to the licensing round can also be found on the Danish Energy Agency's website.

9. Appendices

- Appendix 1 – Executive Order no. 1589 of 11 December 2023 regarding certain onshore areas that are open for granting of licenses for the exploration and storage of CO_2
- Appendix 2.1 – Map of the tendered areas
- Appendix 2.2.1 – Map of the tendered area at Gassum, including surface designation
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- Appendix 3 – Documentation requirements for the application
- Appendix 4 – Model parent-company guarantee
- Appendix 5.1 – Model Joint Operating Agreement for CO_2 storage
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- Appendix 6 – Model License for CO_2 storage
- Appendix 7 – Report for the strategic environmental assessment of the plan for the tendering of licenses for CO2 storage
- Appendix 8 - Summary form on how environmental considerations has been integrated in the plan as well as how public consultations has been taken under consideration
- Appendix 9 - Guide to appeal the strategic environmental assessment