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Invitation to apply for licenses for geological storage of CO_2 on the Danish continental shelf

The Danish Energy Agency hereby publishes the conditions for applying for licenses under Section 23 of the Danish Subsoil Act for geological storage of CO2. Applications will be received from 15 August 2022 onwards and must be received by the DEA no later than 1 October 2022.

The granting of a license is, among other things, conditional on the applicant having the necessary technical and financial capacity to operate geological storage of CO2 in accordance with the Subsoil Act.

The area offered in the North Sea on the Danish continental shelf west of 6 degrees 15' east and north of 56 degrees 00' N is shown on the map enclosed as Appendix 1.

On 22 June 2020, the Danish Government (The Social Democrats) signed the Climate Agreement for Energy and Industry etc with the other parties – Venstre – The Liberal Party of Denmark, Danish People's Party, Green Left, The Red/Green Alliance, Conservative People's Party, Liberal Alliance and The Alternative.

The agreement states that CO2 capture and storage (CCS) as well as capture and use of this (CCU) can be used to both reduce fossil emissions and to create negative emission figures when the technology is applied to biogenic material, and that CCUS is an important part of the transition of production and the achievement of climate policy goals.

The licenses will stipulate that the Danish North Sea Fund (Nordsøfonden) participates on behalf of the State with a share of 20 percent. The detailed conditions for the tender are laid out in the report that I presented to the Danish Parliament's Climate, Energy and Utilities Committee before the summer holidays, which is enclosed here, and in the model license for geological storage of CO_2, which is also enclosed.

The general terms and conditions for the tender have also been published in the Official Gazette, on the Danish Energy Agency's website and in the Official Journal of the EU.

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Content

1. Form of invitation to tender

The tender for licenses for geological storage of CO_2 is the first tender on the Danish shelf, and will enable companies to obtain exclusive rights to a defined geographic area of the North Sea for the purpose of carrying out investigations to demonstrate the presence of suitable geological structures to store CO_2. If such structures are detected, the investigating undertaking shall have priority to use the structure to store CO_2.

The tender is made by notice in accordance with Section 23b(1)(2) of the Danish Subsoil Act, where the Executive Order specifies both the area in which licenses can be granted and an annual application period with a filing date.

Executive Order no. 1165 of 11/08/2022 regarding certain areas in Denmark that are open for successive awarding of licenses for the investigation and storage of carbon dioxide was issued on 12 August 2022. The notice can be viewed as legal information via this link.

Applications for licenses can then be submitted from 15 August to 1 October 2022. Applications can then be submitted to the Danish Energy Agency every year in the period 15 August to 1 October of the same year. A decision on the granting of authorisations shall be taken at the end of each application period.

Licenses are granted after submission to a committee set up by the Danish Parliament.

2. Areas

Licenses apply to the investigation and use of the subsoil for geological storage of CO_2 in the tendered area of the North Sea on the Danish continental shelf west of 6 degrees 15' east and north of 56 degrees 00' N. The boundary is depicted on the attached map as Appendix 1.

Licenses for CO_2 storage can be delimited both in area and depth. Companies will thus also have the opportunity to apply for a license for investigation and geological storage of CO_2 in deeper or possibly higher layers, respectively, under or above other licenses for CO_2 storage.

It will also be possible for a licensee of an existing oil or gas field to apply for permission to store CO_2 in the field in the future, provided that this activity does not become a means of extracting more oil and gas than without the CO_2 storage activity.

3. Operatorship

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

Applications from groups must indicate which company will function as the operator. Similarly, individual applicant companies must indicate any requests for operatorship in the specific cases where the operatorship is carried out by a company not participating in the license.

The operator must possess the necessary technical and financial capacity; cf. Section 24 d(1) of the Subsoil Act.

In this connection, the Danish Energy Agency involves the Danish Working Environment Authority in order to: assess the operator's qualifications, including capacity to meet safety and environmental requirements in the legislation in connection with offshore activities; cf. Section 5(2) of the Offshore Safety Act.

In the event of disagreement about the choice of operator among the companies applying for a license, the Minister for Climate, Energy and Utilities may appoint the operator on the basis of the applicants' qualifications; cf. Section 23 c(6) of the Subsoil Act.

4. Content of the application and selection criteria

Applications will first and foremost be evaluated and selected according to the criteria laid out in Section 23c(1) of the Subsoil Act, i.e. the applicant's technical and financial capacity, as well as the exploratory and investigative work that the

applicant offers to carry out or the manner in which the applicant intends to carry out storage; see the Work Programme to be included in the application.

This invitation to tender is accompanied by an Annex 2 with indicative documentation requirements for the application.

In this connection, it is noted that work programmes from awarded licenses are published on the Danish Energy Agency's website.

Technical and financial capacity
The applicant must be able to explain how the applicant will ensure a satisfactory financial and technical capacity. The application shall include evidence that the applicant has satisfactory financial and technical capacity to fulfil all unconditional obligations under the work programme applied for. The application shall specify how technical and financial capacity will be provided in the later stages of the license.

The applicant's documentation and technical and financial capacity statement shall be proportionate to the work programme offered. The documentation requirements for financial and technical capacity are set out in the attached appendix on requirements for applications. In relation to technical capacity, please also refer to the DEA's Guidelines on Technical Capacity, which can be accessed via the DEA's website.

Documentation of the applicant's financial capacity requires, inter alia, annual reports and financing plans. The applicant may also include other documentation that can support the Danish Energy Agency in the evaluation of the applicant's financial capacity.

In order to demonstrate technical capacity, it is essential that the applicant can demonstrate that the applicant has, at the time the services are to be provided, full control over the staff and equipment necessary to carry out the works offered in the work programme. The DEA will therefore require documentation in the form of agreements with suppliers, CVs of technical employees, an organizational chart, a description of decision-making procedures and steps in connection with projects, including drilling, as well as an explanation of why the company considers it to have both the right organization and the right competencies to perform the task.

If the applicant consists of several participants, a cooperation agreement between the participants must be attached. In this

respect, it should be noted that, at the time of application, the applicant must be able to demonstrate that it has full control over the necessary financial and technical resources (stated above) necessary to fulfil the obligations of the unconditional work programme offered. Unclear cooperative relationships between companies jointly applying for a license may hinder the applicant's evaluation of sufficient financial and technical capacity.

Where technical and financial capacity requirements can be characterised as minimum requirements to be met in order to be considered for a license at all, the evaluation of the applicants' work programmes with investigation or storage plans will be the determining criteria if there are several applicants for the same area.

In this case, it will be necessary to compare, among other things, work schedules and the knowledge or data that the work can provide to the Danish state. It could also be positively assessed if an applicant is able to assess particularly quickly which areas within the requested area can be used for CO_2 storage and which can be relinquished.

This will be a comparative evaluation based on three criteria in particular (not weighted order:

1. Data collection
2. Schedule
3. Detectability of specific storage potentials in the area applied for

1. Data collection

The evaluation of data collection involves an evaluation of the amount and category of data and knowledge about Danish subsoil, which is collected in connection with the investigation work in the specific license.

This will be an evaluation based on the extent to which the works offered contribute to an increased understanding of Danish subsoil and the realisation of CO_2 storage potentials. This means that the data type, content, scope, location and whether the works offered are put in context of existing data and knowledge are included in the evaluation.

In general, collecting new data is considered better than processing existing data, and drilling with an adequate data collection program is generally considered superior to new 2D seismic surveys, which in turn are considered better than desktop studies.

More boreholes are weighted higher than fewer bores and unconditional works are weighted higher than conditional works. For example, an unconditional well

would be considered better than a conditional well and a borehole in a geologically complex area where the existing data density is low is considered to increase understanding of Danish subsoil more than a well in a geologically simple area and with high data density.

However, it will always be a specific evaluation, and depend on the quality and scope of existing data in the area.

2. *Schedule*

The DEA makes an evaluation of the temporal aspects in relation to when the applicant plans to carry out the works and the duration of the works offered. In the evaluation of this, it is more important that there is shorter rather than longer time for the start of the works offered. The timetable must be realistic for the applicant to meet so that the need for postponements of time limits in the license does not arise as a result of an unrealistic timetable.

3. *Detectability of specific storage potentials in the area applied for*

The evaluation of the area applied for includes the size of the area and the suitable storage sites in the area in relation to the works offered. In the evaluation, a smaller area applied for will generally weigh higher than a larger area applied for. The evaluation shall include the proportion of the area applied for that consists of expected suitable storage sites and how long the applicant wishes areas to be maintained, i.e. the evaluation includes whether the applicant offers to limit the area and, if so, when.

In general, the possibility of being able to release all or part of areas where the applicant does not consider it possible to store CO_2 more quickly will be given higher weight. In connection with the case processing, the Danish Energy Agency will make a specific evaluation of whether the weighting of the area size as described above is appropriate in relation to the geology of the area applied for and/or existing data and/or data quality.

When assessing how the applicant intends to store CO_2, the DEA will include e.g. wells for extraction, including number, sites, implied locations (distance between wells), design etc. in the area applied for. For example, optimising the location and distances between wells at a site that accommodates the desired deliveries of CO_2 for storage and at the same time accommodates the surrounding areas in relation to other exploitation of the subsoil, will weigh higher than distance between and location of wells that limit other use of the subsoil, i.e. construction plans that allow the greatest possible use of the subsoil are given higher priority.

In a competitive situation where several applicants request permission to investigate and store CO_2 in the same or overlapping area, the work programmes

are compared against the parameters described above. The winner will be the applicant who, overall, is considered to offer the most comprehensive work programme and the best way to facilitate storage. Here, in particular, the type of work in the individual work programmes will be of great importance for the evaluation. If the applications are very similar in relation to the type of work, the other criteria could also be decisive.

Furthermore, the Minister for Climate, Energy and Utilities may refrain from granting licenses on the basis of the applications received in connection with the tender rounds; cf. Section 23b(3) of the Subsoil Act.

5. Conditions for licenses for geological storage of CO_2

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

The rules of the Subsoil Act can be found in chapter 6 and 6 a of the Act[1].

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 an exclusive right to investigate within the area of the license according to the detailed work programme. If the work programme is satisfactorily implemented, priority will be given to the licensee to have the license extended in order to carry out storage activities for up to 30 years (the storage phase).

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

[1] When the CCS Directive was implemented in 2011, the rules at the legislative level were implemented by new or amended provisions of sections 23-23v of Chapter 6 of the Act. As of July 1, the Subsoil Act has been amended so that Chapter 6 contains rules on full-scale CCS permits, while Chapter 6a contains rules on so-called pilot and demo permits (less than 100 kilotons of CO_2 stored).

It will be possible for companies to obtain a license for investigation and use of the subsoil for geological storage of CO_2 with very little or no investigation phase. The granting of such a storage license requires that the undertaking is able to provide a report containing the evaluations of the CO_2 storage complex on which it is suitable for its intended purpose, as well as an application for approval of a plan for the storage undertaking containing, inter alia, the organization of operations and the facilities for its use.

When granting licenses for CO_2storage in connection with this tender, so-called pilot or demonstration projects with CO_2storage in the area covered by the rules of the Executive Order for pilot and demonstration projects for the storage of CO_2 in the North Sea may already exist. An operator already engaged in such activities would be subject to the same conditions for obtaining an exclusive license in this tender as an operator who does not, i.e. they will have to apply for a license on equal terms with other operators and, if they obtain a license, carry out a work programme for investigation before an extension can be granted for the purpose of obtaining a license for full-scale storage of CO_2.

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 2 (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 corporate taxation rules (22%) and thus not subject to the special hydrocarbon tax.

Over the summer holidays, the Minister for Industry, Business and Financial Affairs has had a bill sent in hearing for consultation to amend the act on the North Sea Unit and the North Sea Fund with a view to facilitate the North Sea Fund's participation in licenses for the storage of CO_2 according to the same model as for hydrocarbon licenses, where the Fund can participate on behalf of the State with a share in the licenses. The size of the North Sea Fund's share is determined specifically for the individual license, based on the consideration of ensuring the balance between the risk associated with state participation in relation to the possibility of ensuring that society shares in the economic benefits of CO_2 storage. The bill enabling the North Sea Fund’s participation in CO_2 storage licenses is expected to enter into force on 1 January 2023. In connection with the first tender for storage licenses, the Fund's share in the licenses will be set at 20 percent, as a result of the Agreement on Framework Conditions for CO_2 Storage in Denmark of 22 June.

6. Provision of guarantees

In order to ensure that the licensee fulfils its obligation under licenses issued in the round, each participant shall, within a period of 30 days after the awarding of the license, provide security equalling the amount and nature as may be approved by the DEA. For licensees who are a subsidiary or a branch of a subsidiary, a guarantee from the ultimate parent company is required as a general rule; cf. Section 24 f of the Subsoil Act and Section 32 of the Model License.

7. Environmental evaluation of the round

A strategic environmental evaluation has been carried out in connection with the preparation of the tender. The environmental impact evaluation has been subject to consultation in Denmark and the other North Sea countries.

During the consultation period, a total of 5 responses were received from *The Danish Agency for Culture and Palaces*, *The Danish Fisheries Agency, the Danish Environmental Protection Agency's Unit for Business, the Danish Environmental Protection Agency's Unit for the Marine and Aquatic Environment* and *The Danish Energy Agency's Centre for Supply,* of which several contained several comments.

No responses to the consultation have been received with comments in the international consultation.

The overall result of the strategic environmental evaluation and consideration of the responses to the consultation is laid out in the consultation note containing the summary statement of 9 August 2022, which is also attached here as Annex 5.

8. Application

Applications for licenses are sent by e-mail to the Danish Energy Agency via ens@ens.dk.

Applications must be in Danish or English.

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

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

9. Appendices

- Annex 1 – Map of the tendered area with existing licenses
- Annex 1.1 – Map of the tendered area with block-numbers
- Annex 2 – Documentation requirements for the application

- Annex 3 – Model License for CO_2 Storage
- Annex 4.1 – Model Joint Operating Agreement for CO_2 Storage
- Annex 4.2 – Model Accounting Procedure for Joint Operating Agreement
- Annex 5 – Consultation note for the strategic environmental impact evaluation of the plan for the tendering of licenses for CO_2 storage (Danish version only)
- Annex 6 – The Minister for Climate, Energy and Utilities' report to the Danish Parliament's Committee on Climate, Energy and Utilities on the tendering of licenses for geological storage of CO_2 in the North Sea (Danish version only)
- Annex 7 – Executive Order no. 1165 of 11/08/2022 on certain areas in Denmark open for the successive awarding of licenses for the investigation and storage of carbon dioxide