APPENDIX 3

REQUIREMENTS SPECIFICATION

Contract on subsidy for carbon capture, transport and Storage 2024

***Instructions for tenderers***

This Appendix contains the DEA’s overall description of the CCS Fund and the DEA’s requirements specification.

The requirements are divided into Minimum Requirements (MR) and General Requirements (R), see the Tender specifications paragraph 6.

The Tenderer shall not fill in or complete this Appendix and it should not be submitted as a part of the Tenderer’s Offer.

This guidance text will be deleted by the DEA in connection with conclusion of the Contract.

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## Introduction

This Appendix contains the Danish Energy Agency’s (“the DEA”) overall description of the CCS Fund and the DEA’s requirements specification.

The requirements are divided into Minimum Requirements (MR) and General Requirements (R). Each requirement has a unique number assigned for easy reference in communication.

Capitalised terms used in this Appendix shall have the meaning ascribed to them in Appendix 2, Definitions.

## Overall description of the CCS Fund

With the agreement on a strengthened framework for CCS in Denmark (in Danish: “*Aftale om styrkede rammevilkår for CCS i Danmark*”) of 20 September 2023, a majority of the Danish Parliament decided to merge the second phase of the CCUS fund[[1]](#footnote-2) and the GSR fund[[2]](#footnote-3) into one combined fund, the “CCS Fund”. In June 2024, a political decision was made to deploy the CCS Fund through one single competitive bidding process.

The CCS Fund’s total budget amount to approximately 28.3 billion DKK (2024 prices) (including VAT and coverage of potential derived tax losses[[3]](#footnote-4)), covering the period from 2029 to (and including) 2044.

The purpose of the CCS Fund is to achieve CO2 emission reductions and/or negative emissions by Storing[[4]](#footnote-5) fossil and/or biogenic or atmospheric CO2. The overarching aim of the CCS Fund is thus to contribute to the realization of Denmark's climate targets as outlined in the Danish Climate Act[[5]](#footnote-6).

The fund provides financial support towards the costs of capture, transport, and Storage of biogenic, fossil and/or atmospheric CO2. The deployment of the fund intends to support a synchronized establishment of CO2 capture, transportation, and Storage. To ensure this, the Operator will be responsible for achieving the CO2 emission reductions and/or negative CO2 emissions in accordance with the Contract

The financial support will be disbursed for up to 16 years as a subsidy paid to the Operator per tonne CO2 captured and Stored CO2.

The Operator has specified a Subsidy per tonne for the Contracted Quantity, cf. Appendix 6, Offered Rate and Contracted Quantity, i.e., the Offered Rate. The Operator has furthermore specified the 2029-Quantity and the Annual Quantity in Appendix 6, Offered Rate and Contracted Quantity.

An example of the CCS Value Chain is illustrated below.



The Operator may base their project on CO2 capture from one point source or direct air capture plant, a combination of point sources or direct air capture plants or a portfolio of several point sources or direct air captures plants. The Operator may be any economic operator or a group of operators willing to assume the responsibility for achieving the CO2 emission reductions and/or negative CO2 emissions in accordance with the Contract by performing the contract by itself and/or by engaging Sub-Suppliers.

By biogenic CO2, the DEA refers to CO2 that originates from the combustion, digestion, fermentation, decomposition or processing of non-fossil fuels or feedstock such as biomass. Furthermore, to qualify as biogenic CO2, the biomass input, from which the CO2 is captured, shall comply with the at any time applicable sustainability criteria for renewable energy production according to “Bekendtgørelse om bæredygtighed og besparelse af drivhusgasemissioner for biomassebrændsler og flydende biobrændsler til energiformål, m.v.” (BEK nr 641 af 27/05/2023) and later amendments thereof concerning use of biomass and biomass fuel for the production of electricity, heating or fuels, including biogas.

By fossil CO2, the DEA refers to CO2 that originates from the combustion of fossil fuels or products made from fossil fuels as well as process emissions from e.g. cement production. Fossil CO2 furthermore refers to CO2 that originates from the combustion, digestion, fermentation, decomposition or processing of biomass that does not comply with the at any time applicable sustainability criteria for renewable energy production according to “Bekendtgørelse om bæredygtighed og besparelse af drivhusgasemissioner for biomassebrændsler og flydende biobrændsler til energiformål, m.v.” (BEK nr 641 af 27/05/2023) and later amendments thereof concerning use of biomass and biomass fuel for the production of electricity, heating or fuels, including biogas.

By atmospheric CO2, the DEA refers to CO2 from the ambient air, not the emissions from energy or industrial plants.

## Minimum Requirements

The following table outlines the Minimum Requirements (MR).

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| **No. Minimum Requirement** | |
| MR-1 | The Operator is responsible for achieving CO2 emission reductions and/or negative CO2 emissions in accordance with the Contract. |
| MR-2 | The Operator must ensure that all certificates, approvals, and permits necessary to establish and operate the Value Chain are obtained. |
| MR-3 | The Operator shall ensure that the Delivered Quantity originates from (a) Carbon Capture Plant(s) placed in Denmark |
| MR-4 | The Operator shall ensure that the Annual Quantity of CO2 which as a minimum shall be 100.000 tonnes of CO2 is captured and Stored annually from year 2030 and until and including 2044. |
| MR-5 | The Operator shall be paid Subsidies per tonne of CO2 captured and Stored in accordance with the Contract. |

## General Requirements

This section outlines the General Requirements (R).

All documentation, reporting and notifications that shall be sent to the DEA in accordance with the requirements in this appendix shall be submitted to the DEA’s contact person for the performance of the Contract, see Appendix 9, Governance.

Commercial Operation Date (COD) means the date when the Operator shall

commence the operation of the full Value Chain. If the Operator’s performance

of the Contract is based on more than one Carbon Capture Plant, operation of

the full Value Chain (i.e. COD) encompasses operation of all Carbon Capture Plants.[[6]](#footnote-7)

If the Operator’s performance of the Contract is based on more than one Carbon Capture Plant and the date of commencement of operation of one or more of these Carbon Capture Plant(s) are before the COD, the obligations in R-2, R-4, R-5, R-6, R-7 and R-8 concerning deadlines that are connected to COD shall be adjusted to also match the date of commencement of operation of the(se) Carbon Capture Plant(s). This entails that the Operator’s compliance with the aforementioned requirements shall also be based on the date of commencement of operation of Carbon Capture Plant(s) that commences operations before COD[[7]](#footnote-8).

**R-1: Adjustment of the Solution Description**

If the Operator for the purpose of Sub-appendix 4.A, Project Description, Sub-appendix 4.B, Project Schedule, Sub-appendix 4.C, Authority Approval Plan and Sub-appendix 4.D, Risk Management Plan has assumed that the Contract was signed on XXX and the Contract was signed at a later date – within the minimum time frame during which the Operator was obliged to maintain the offer – the Operator is not entitled to any postponement of any timing in the project, including the Commercial Operation Date, i.e., the Operator bears the risk of the exact timing of the signature of the Contract within the minimum time frame during which the Operator was obliged to maintain the offer.

The Operator shall, if relevant, make the necessary adjustments in Sub-appendix 4.A, Project Description, Sub-appendix 4.B, Project Schedule, Sub-appendix 4.C, Authority Approval Plan and Sub-appendix 4.D, Risk Management Plan, to cope with the time difference and submit the adjusted Sub-appendix 4.A, Project Description, Sub-appendix 4.B, Project Schedule, Sub-appendix 4.C, Authority Approval Plan and Sub-appendix 4.D, Risk Management Plan, for the DEA’s review and approval 30 days after contract signing.

For other adjustments of the Solution Description reference is made to clause XX of the Contract.

**R-2: Information regarding the point source(s) and Carbon Capture Plant(s) of the Operator’s Value Chain**

If the point sources(s) and/or the Carbon Capture Plant(s) on which the Operator will base the capture of CO2 is not identified by the below mentioned information in Sub-Appendix 4.A, Project Description, at the time of submission of offer, the Operator shall inform the DEA of the following as soon as possible, and not later than 12 months before the COD:

* The address(es), cadastral number(s), and if possible, the registration number, and production unit (in Danish: “Produktionsenhed”/“P-nummer") for the point sources(s) and/or in case of direct air capture of atmospheric CO2 the Carbon Capture Plant(s); and
* The expected annual capture capacity of the Carbon Capture Plant(s).

**R-3: Demonstration of operation of Carbon Capture Plant(s) in 2029**

Requirement description:

The Operator shall commence demonstration of operation of the Carbon Capture Plant(s) encompassed by the Contract no later than 1 December 2029.

Compliance with this requirement:

The Operator shall satisfy this requirement by ensuring that a minimum of 1000 tonnes of CO2 is captured in the period from 1 December 2029 until 31 December 2029. If the Operator's performance is based on more than one Carbon Capture Plant, the minimum of 1000 tonnes CO2 in total shall be based on proportions from each of the plants.

The Operator shall submit documentation to the DEA demonstrating the compliance with the requirement no later than 10 January 2030.

This requirement is deemed irrelevant if the date of Commercial Operation Date is scheduled before or on the 1 December 2029 as stated by the Operator in Sub-Appendix 4.B, Project Schedule.

**R-4: Ensuring accurate Storage site injection data & Storage**

Requirement description:

The Operator shall ensure that the Delivered Quantity is measured and reported accurately to the DEA.

Compliance with this requirement:

The Operator shall satisfy this requirement by ensuring that the Operator’s Storage site complies with the EU’s CCS Directive as implemented by the home country of the Storage site from COD until end of Contract and is granted a Storage permit prior to COD.

Furthermore, the Operator shall ensure that the Storage site’s quantity measurement system, i.e. flow meters, pressure and temperature sensors and density meters used to determine the injected quantity of CO2, comply with ISO 27923:2022 or an equivalent standard, and have a maximum uncertainty of +/- 2.5% from COD until end of Contract.

The Operator shall submit the following to the DEA no later than 3 three months prior to COD:

* A copy of the Storage site’s Storage permit;
* Documentation, proving that the Storage site’s quantity measurement system complies with ISO 27923:2022 (or an equivalent standard);

Documentation, proving that the Storage site’s measurement of injection of CO2 have a maximum uncertainty of +/- 2.5%;

If requested by DEA, the Operator must, at no extra cost to the DEA, change the quantity measurement system if a new and improved standard is established. Such changes may include changes of the methodology, system, components, procedures, etc. of the quantity measurement system. The Operator shall provide documentation of the implementation of the requested changes.

The Operator shall immediately notify the DEA if the Operator’s Storage site fails to meet one or more of the requirements in the Storage permit prior to COD or during the contract period and of any changes, temporary or permanent, to the Storage site’s quantity measurement system.

**R-5: Accounting of Delivered Quantity**

Requirement description:

The Operator shall ensure and document that the Delivered Quantity originates from the Carbon Capture Plant(s) encompassed by the Contract.

Compliance with this requirement for Operators capturing CO2 from installations encompassed by Directive 2003/87/EC:

Operators that are capturing CO2 from installations encompassed by Directive 2003/87/EC shall satisfy this requirement by ensuring that all capture, transport and Storage activities of the Operator’s Value Chain complies with the applicable rules, procedures and standards described in Commission Implementing Regulation (EU) 2018/2066 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC and Commission Implementing Regulation (EU) 2018/2067 and any rules, including national rules, that may amend or supersede these rules.

From Commercial Operation Date until end of the Contract, the Operator shall ensure that the monitoring and reporting of all CO2 capture, transport and Storage activities of the Operator’s Value Chain are verified annually in accordance with Commission Implementing Regulation (EU) 2018/2066 and Commission Implementing Regulation (EU) 2018/2067 on the verification of data and on the accreditation of verifiers pursuant to Directive 2003/87/EC and any rules, including national rules, that may amend or supersede these rules.

The annual verification shall be carried out by EU ETS Third-Party verifiers that are accredited in accordance with Commission Implementing Regulation (EU) 2018/2067 and any rules, including national rules, that may amend or supersede these rules and holds CCS-related accreditation certificates as described in Annex I of Commission Implementing Regulation (EU) 2018/2067.

Compliance with this requirement for Operators capturing CO2 from installations not encompassed by Directive 2003/87/EC:

Operators that are capturing CO2 from installations not encompassed by Directive 2003/87/EC – such as e.g. biogas plants - shall satisfy this requirement by complying with the at any time applicable sustainability criteria for renewable energy production according to “Bekendtgørelse om bæredygtighed og besparelse af drivhusgasemissioner for biomassebrændsler og flydende biobrændsler til energiformål, m.v.” (BEK nr 641 af 27/05/2023) and later amendments thereof concerning use of biomass and biomass fuel for the production of electricity, heating or fuels, including biogas.

The Operator shall furthermore satisfy the requirement by ensuring that all transport and Storage activities of the Operator’s Value Chain complies with the applicable rules, procedures and standards described in Commission Implementing Regulation (EU) 2018/2066 and Commission Implementing Regulation (EU) 2018/2067 and any rules, including national rules, that may amend or supersede these rules.

From Commercial Operation Date until end of the Contract, the Operator shall ensure that the monitoring and reporting of all transport and Storage activities of the Operator’s Value Chain are verified annually in accordance with Commission Implementing Regulation (EU) 2018/2066 and Commission Implementing Regulation (EU) 2018/2067 and any rules, including national rules, that may amend or supersede these rules.

The annual verification shall be carried out by EU ETS Third-Party verifiers that are accredited in accordance with Commission Implementing Regulation (EU) 2018/2067 and any rules, including national rules, that may amend or supersede these rules and holds CCS-related accreditation certificates as described in Annex I of Commission Implementing Regulation (EU) 2018/2067.

Compliance with the requirement for Operators capturing CO2 by direct air capture:

For Operators that are capturing atmospheric CO2 based on direct air capture, the Operator shall - when regulation concerning documentation of the origin of atmospheric CO2 exist - comply with such requirements.

The DEA is entitled to require the Operator to submit documentation regarding the Operator’s compliance with such requirements.

**R-6: Forecast for the following year**

The Operator shall prior to a given year of operation report a forecast to the DEA, which shall include the following:

* The expected total quantity of CO2 for the following year (the Annual Forecast Quantity);
* The fossil fraction of CO2 of the Annual Forecast Quantity subject to EUA (the Forecast Fossil EUA Fraction) for the following year;
* The fossil fraction of CO2 of the Annual Forecast Quantity subject to CO2 related taxes (the Forecast Fossil Tax Fraction) for the following year; and
* The expected income of any agreement(s) on carbon credits related to the storage of CO2 in accordance with the Contract for the following year (the Forecast Carbon Credits Income). The expected income shall be separated into i) income which is encompassed by the specification in the offer (Baseline Carbon Credits Income), and ii) income in excess of the Baseline Carbon Credits Income. The Operator may specify the income as the income for each quarter or as the total income for the year.[[8]](#footnote-9) For the avoidance of doubt, this requirement applies regardless of whether the offer specified income generated by sale of carbon credits related to the storage of CO2 for each year (the Baseline Carbon Credits Income). If no income is expected for the following year, this shall be stated.

If future legislation entails that participation in the EU Emissions Trade Scheme (ETS), or a similar EU-mandated trade scheme, become mandatory for emitters of biogenic CO2 and/or for atmospheric CO2, the forecast shall also include the composition of CO2 (the Forecast Biogen/Atmospheric Allowances Fraction) of the Annual Forecast Quantity.

The forecast shall be reported annually with the first forecast being reported to the DEA prior to COD. The Operator shall report the forecast for the following year to the DEA no later than 15 August in a given year, including in the year prior to COD.

**R-7: Quarterly Report on Delivered Quantity**

The Operator shall no later than 10 Business Days after the end of every quarter from Commercial Operation Date until end of Contract provide the DEA with a Quarterly Report on Delivered Quantity. The Quarterly Report on Delivered Quantity in the last quarter of a year shall be submitted to the DEA no later than 10 January of the following year.

The Quarterly Report on Delivered Quantity shall include:

* The Delivered Quantity within the preceding quarter;
* An accounting of the total Delivered Quantity in the given year of operation and the degree to which the Contracted Quantity of the given year of operation has been fulfilled; and
* An updated forecast on the total Delivered Quantity in the given year of operation specified in actual numbers and percentage share.

If the Operator’s performance of the Contract is based on more than one point source and/or more than one Carbon Capture Plant, the information shall be provided as the collected numbers covering all point source(s) and/or Carbon Capture Plant(s).

The Quarterly Report shall furthermore contain documentation demonstrating that the reported data originates from the Operator’s Storage site.

**R-8: Annual Report on the Delivered Quantity**

The Operator shall annually from COD until end of Contract compile a report containing documentation and verification of the Delivered Quantity in the given year, determining the Delivered Quantity, the composition of the CO2 and the carbon credits income as well verifying the point source origin of Stored quantity of CO2.

The Annual Report shall include:

* The actual fossil fraction of the Delivered Quantity subject to EUA (the Actual Fossil EUA Fraction);
* The actual fossil fraction of the Delivered Quantity subject to CO2 related taxes (the Actual Fossil Tax Fraction);
* A statement regarding the actual income of any agreement(s) on carbon credits related to the storage of CO2 in accordance with the Contract (the Actual Carbon Credits Income). The actual income shall be separated into i) income which is encompassed by the specification in the offer (Baseline Carbon Credits Income), and ii) income in excess of the Baseline Carbon Credits Income. For the avoidance of doubt, this requirement applies regardless of whether the offer specified income generated by carbon credits related to the storage of CO2 for each year (the Baseline Carbon Credits Income). If no income has been generated, this shall be stated. If the Actual Carbon Credits Income differs from the Forecast Carbon Credits Income, the statement shall describe the reason for such difference. The statement shall prove that the income is correct based on the bookkeeping and financial report for the given year of the company, which achieved the income (e.g. where relevant, the Operator or a Sub-Supplier). The statement shall be signed by the company and an auditor;
* A copy of the annual emission report(s) and verification report(s) as described in Commission Implementing Regulation (EU) 2018/2066 based on the Operator’s capture activities. This requirement applies only for Operators capturing CO2 from installations encompassed by Directive 2003/87/EC;
* A copy of the sustainability report for the use of solid biomass fuels or biogas as described in chapter 4 of “Bekendtgørelse om bæredygtighed og besparelse af drivhusgasemissioner for biomassebrændsler og flydende biobrændsler til energiformål, m.v.” (BEK nr 641 af 27/05/2023). This requirement applies only for Operators capturing CO2 from installations not encompassed by Directive 2003/87/EC;
* A copy of the annual emission report(s) and verification report(s) as described in Commission Implementing Regulation (EU) 2018/2066 from the transport and Storage activities of the Operator’s Value Chain;
* A copy of the annual Storage site report described in the EU’s CCS Directive, containing all data and information pursuant to Article 14 of the EU’s CCS Directive on e.g. the quantities and properties of the CO2 streams delivered and injected, including composition of those streams in the reporting period; and
* Documentation of the compliance with the metering requirements in R-2, i.e.:
  + Documentation, proving that the Storage site’s quantity measurement system complies with ISO 27923:2022 (or an equivalent standard);
  + Documentation, proving that the Storage site’s injection of CO2 have a maximum uncertainty of +/- 2.5%; and
  + Documentation, proving that the information security management system complies with the requirements of the Contract in the form of a ISAE 3402 Type 1 or equivalent audit statement by an independent accredited third party.

If future legislation entails that participation in the EU Emissions Trade Scheme (ETS), or a similar EU-mandated trade scheme, become mandatory for emitters of biogenic CO2 and/or for atmospheric CO2, the Annual Report shall also include the actual biogen/atmospheric allowances fraction of the Delivered Quantity (the Actual Biogen/Atmospheric Allowances Fraction).

The Operator shall submit the Annual Report on the Delivered Quantity no later than 31 March in the following year.

**R-9: Notification of QHSE related accidents**

The Operator is from the date of signing of Contract until end of Contract required to notify the DEA without undue delay of any QHSE (“Quality, Health, Safety and Environment”) related accidents that has occurred as part of the establishment and operation of the Operator’s Value Chain.

By accident is meant an event that has unintentionally happened, that results in damage, injury, or harm to persons or the environment.

**R-10 CO2 capture from combined heat and power plants**

The Operator shall, to the extent that the Operator captures and Stores CO2 from a combined heat and power plant (with the exception of waste incineration plants) under this Contract, ensure that, from 1 January 2030, no more than 10% of such CO2 originates from fossil energy sources.

**R-11: Updates to the Project Schedule and Authority Approval Plan**

The Operator shall every quarter from contract signing provide the DEA with an update on the Project Schedule and the Authority Approval plan. Updates on the Project Schedule shall be provided until the Commercial Operation Date and updates on the Authority Approval Plan shall be provided until end of Contract.

The update shall include the status and actual progress of the Project Schedule and Authority Approval Plan. The update shall furthermore include the expected progress for the next quarter.

The update shall be submitted to the DEA no later than 10 Business Days after the end of every quarter.

For the avoidance of doubt, the Operator shall follow the change management process as set out in clause XX of the Contract and Appendix 8, Change management, in case of changes to the Project Schedule and Authority Approval Plan.

**R-12: The Authority Approval Plan**

If the Operator in Sub-appendix 4.C, Authority Approval Plan, for a specific permit, approval, or certificate has provided a time span for the time of submission and expected approval from authorities and/or third parties of that specific permit, approval, or certificate, the last date in the time span shall be considered as the time of submission and/or expected approval.

1. As established by the Danish Climate Agreement for Energy and Industry of 22 June 2020 [↑](#footnote-ref-2)
2. As established by the Agreement on green tax reform for industry of 24 June 2022 [↑](#footnote-ref-3)
3. In Danish: ”afledt afgiftstab” [↑](#footnote-ref-4)
4. Storage and its verb form Store (including any related verb conjugations) means either a physical CO2 storage site where the CO2 is permanently, geologically stored or the act of permanently, geologically storing CO2. [↑](#footnote-ref-5)
5. In Danish: “Klimaloven [↑](#footnote-ref-6)
6. For the avoidance of doubt, it will be possible for the Operator to receive subsidy for CO2 captured and Stored before COD in case the date of commencement of operation of one or more of the Operator’s Carbon Capture Plant(s) are before COD to the extent that the Operator has specified a 2029-Quantity. [↑](#footnote-ref-7)
7. This means for example in relation to R-2 that if the COD is on 1 January 2030, but the date of commencement of operation of one of the Carbon Capture Plants is on 1 April 2029, the Operator shall provide the DEA with the information in R-2 for that Carbon Capture Plant no later than 12 months before 1 April 2029. [↑](#footnote-ref-8)
8. If the income is specified as the total income for the year, the adjustment according to clause XX of Appendix 5, Subsidy and economy scheme, will for each quarter be based on ¼ of the income for the year in question. [↑](#footnote-ref-9)