Danish Energy Agency

Invitation to market dialogue biochar aid scheme

Office/department
Gas and biogas

Date
26 June 2026

J no.
2026 - 9688
/SNCN, STNI, NCWST

Danish Energy Agency

Carsten Niebuhrs Gade 43
1577 København V

T: +45 3392 6700
E: ens@ens.dk

www.ens.dk

Indhold

1 Introduction

The Danish Energy Agency (DEA) invites potential Bidders and relevant market operators to participate in this public consultation on the deployment of a new forthcoming Danish aid scheme for biochar carbon storage on Danish agricultural soils.

With the June 2024 Agreement on a Green Denmark, the Danish government of the time and non-government parties of the Green Tripartite agreed on a subsidy scheme from 2027 until 2045 for storing carbon in biochar produced by pyrolysis. The November 2024 agreement between a majority of Parties in the Danish Parliament on the Implementation of a Green Denmark set aside 10.2 billion DKK (approx. EUR 1.5 billion) (2025-prices) to support biochar carbon storage - so-called biochar carbon removal - and adding biochar to Danish agricultural soils with the aim of reducing Danish net greenhouse gas emissions.

The main objective of the scheme is to reduce the yearly aggregated Danish domestic net greenhouse gas (GHG) emissions by permanently storing carbon in biochar applied to Danish agricultural soils, thereby increasing net carbon storage in Danish agricultural soils. Biochar carbon removal is recognized by the Intergovernmental Panel on Climate Change (IPCC) as a negative emissions technology if the biochar is added to agricultural soil, and thereby as a means to permanently sequester carbon from biogenic CO_2.

The DEA is planning a tender procedure tentatively to be announced in December 2026 with a scheduled deadline in March 2027. This timeline can be changed and depends on finalization of the Danish Environmental Protection Agency's (MST) planned new environmental regulation for biochar application to agricultural soils, the European Commission's state aid approval of the aid scheme, the Danish Ministry for Climate, Energy and Utilities' project to establish a methodology for accounting biochar carbon removal in the Danish greenhouse gas inventory report as well as clarification of the possible requirements for certification of biochar quality and monitoring, reporting and verification (MRV).

The DEA's overall considerations regarding the deployment of the fund are outlined in this note. The DEA wishes to emphasize that no final determinations and decisions

have been made with respect to e.g. the legal framework and structure of the deployment of the funds and the foreseen tender process.

This market dialogue will provide an opportunity for the market and potential Bidders to submit written feedback, input, and recommendations regarding the main elements of the tender.

To support this dialogue, the DEA provides an overview of the biochar value chain and the key processes and requirements underpinning eligible carbon storage activities. Figure 1 illustrates the biochar value chain and its link to the aid scheme. Figure 1 exemplifies the biogas digestate value chain involving using waste from biogas plants. Other value chains are also planned to be eligible using other biomass sources for producing biochar.

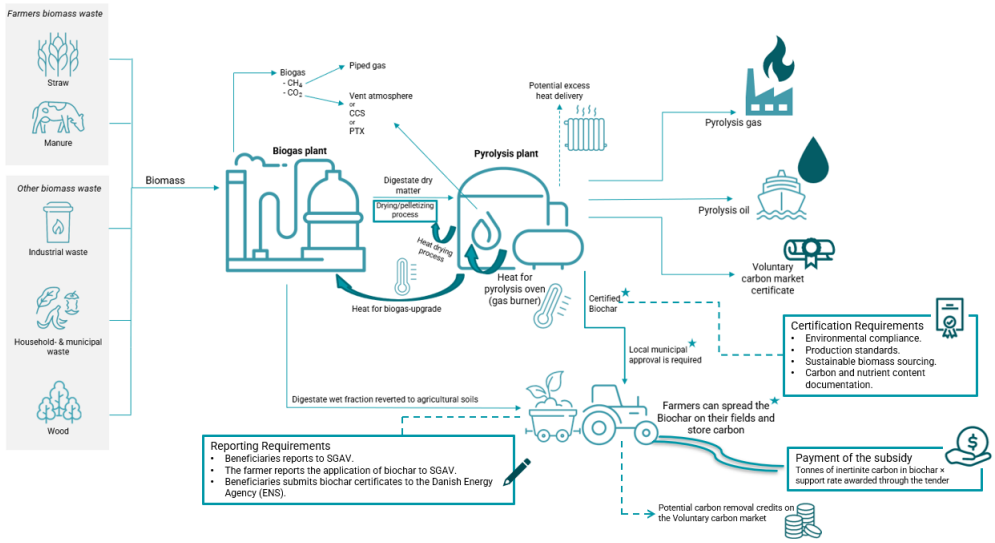

Figure 1. Biochar value chain, including considerations related to the support scheme.

To be eligible for aid, it is considered that biochar must be certified for carbon storage on mineral agricultural soils. Beneficiaries are expected to submit certificates as well as possibly other information to the DEA documenting that the biochar complies with applicable environmental regulation, production standards and the use of sustainable biomass. The specific certification requirements are not yet decided upon and depends on the forthcoming environmental regulation as well as an ongoing research project that will elaborate a Danish methodology to be used for accounting biochar carbon storage on Danish agricultural soils.

For carbon to be considered stored, biochar must be applied on Danish agricultural soils. While the final framework is still subject to clarification, beneficiaries are expected to be responsible for reporting the sale or transfer of biochar to Danish farmers in SGAV's reporting system for fertilizer suppliers. The subsidy is expected to be paid once the biochar has been applied to agricultural soils and reported by farmers to SGAV's fertilizer reporting system. There may also be a potential to sell carbon removal credits on the voluntary carbon market in addition to receiving support under the aid scheme.

2 Input encouraged from the market dialogue

The DEA invites the market to provide written input on questions specified below as well as general remarks to the content of this document including the Requirement specification Contract on subsidy for biochar carbon storage on Danish agricultural soils in Annex 1.1. The output of the market dialogue serves as input for the DEA's final design of the tender material. Statements from the Bidder at this time are in no way binding. The DEA would like to invite the market to comment on the following. If respondents are unable to answer all questions, the DEA also welcomes input on selected questions or parts of the questions.

2.1 Value chain for biochar production and storage

a) What is the quantity of biochar and calculated CO_2 reduction in the form of permanent carbon storage in biochar on Danish agricultural soils that the Bidder expects to be able to provide yearly in the offer from year 2027 and until end of Contracting Period in 2045?

b) Would it be realistic for the Bidder to store biochar on Danish mineral agricultural soils in the year 2027? Please specify in yearly thousands of tonnes of CO_2 that can be stored permanently as carbon in biochar as from 2027 until 2045. Please indicate only the expected amount in tonnes of CO_2 (or stored carbon) that can be stored long-term or permanently. The assessment of carbon stability and permanence may be based on methodologies and indicators, including inertinite fraction, use of high carbonisation/pyrolysis temperature or other validated stability metrics. This matter is currently being addressed as part of an ongoing project by the Danish

Ministry for Climate, Energy and Utilities to establish emission factors for biochar and related accounting principles.

c) Does the Bidder intend to store biochar from existing or new pyrolysis plants? If so, please specify whether the biochar is expected to originate from existing or new facilities, and whether such facilities are located in Denmark or abroad?
d) Does the Bidder intend to buy and store biochar from one or several pyrolysis plants?
e) Has the Bidder considered which specific types of biochar to be included?
f) With the current information available about the biochar value chain, which considerations does the Bidder deem relevant to share with the DEA to improve price certainty during the Contract?

2.2 Certification, monitoring, reporting and verification

a) Are there comments to the proposed draft requirements for certification, monitoring, reporting and verification described in Annex 1.1?
b) Please indicate if certain elements of the requirements for certification and MRV described in Annex 1.1 can be made in a simpler or more easily administrative way?
c) Please indicate if any elements may be added to the certification- and MRV-system?

2.3 Finances and payment

a) Does the proposed subsidy model and bid ceiling give rise to any remarks?
b) To what extent does the Bidder assess the market for the sale of voluntary carbon removal certificates (credits) from biochar carbon removal? Do you expect to make agreements or contracts on selling voluntary carbon removal certificates 1) before building the pyrolysis plant, 2) after building the pyrolysis plant but before producing biochar or 3) after the biochar has been applied to agricultural soils? What is the Bidders expectations for credit price and market size?
c) What financial means does the Bidder consider to secure and ensure sufficient financial capabilities e.g. equity for the establishment of the project?
d) Does the proposed penalty mechanism, including the proposed penalty level and the circumstances under which penalties may be waived or reduced, give rise to any comments?

2.4 Project maturity

a) Which specific technical activities does the Bidder expect to prepare before making a final investment decision for a pyrolysis plant?

b) Which regulatory approvals are needed in order to establish a biochar value chain and what is the expected time frame? Please provide further information on the concerns regarding regulatory approvals including any suggestions as to how this can be taken into consideration in the process.

c) Which barriers does the Bidder expect to be the most significant challenges regarding the project's time schedule?

2.5 Public acceptance

a) Are there any challenges that need to be addressed regarding the public acceptance of biochar carbon removal projects?

b) If so, how can these challenges be tackled?

2.6 Substantial comments regarding information presented in this document

a) Based on the information presented in this document, does the Bidder have any other substantial comments?

2.7 Additional input encouraged from the market dialogue concerning state aid approval

a) In addition to the questions posed above, the DEA invites the market to comment on the following:

2.7.1 Technologies eligible for aid

a) Given the requirement that pyrolysis technology is needed to produce biochar eligible for aid, does the Bidder have any comments regarding the limitation of the pyrolysis technology under this Contract?

2.7.2 Method and estimate of subsidy per tonne of CO_2e emission avoided (per reference project)

a) Does the Bidder have any comments regarding the assumptions stated in section 3.2 of this memo that the estimated subsidy per tonne of permanent biochar carbon storage is equal to the total levelized cost of biochar carbon removal or should other parameters be included in the estimate?

2.7.3 Proposed use and scope of the competitive bidding process

a) The DEA believes that the tender process outlined in this memo is a efficient way to ensure competition among Bidders, while keeping the aid for each beneficiary to the minimum needed to induce storage of biochar and thereby carbon storage. However, the DEA welcomes opinions on how the use or scope of the tender process could be amended to achieve more competition for the funds.

2.7.4 Main parameters for allocation of the aid including for enabling competition between different types of technologies/Bidders

a) The DEA believes that the proposed evaluation criteria outlined in section 7 of the memo ensure sufficient competition between different technologies and obtaining the lowest possible subsidy per tonne of permanent biochar carbon storage achieved. However, the DEA welcomes considerations concerning the criteria used for allocating the aid, enabling competition between different types of technologies.

2.7.5 Main assumptions used to demonstrate the incentive effect, the necessity and the proportionality of the aid.

a) Is it a reasonable assessment of the counterfactual scenario, i.e. the situation without aid, that no biochar will be applied to Danish agricultural soils?
b) Are the assumed financial elements outlined in section 3.2 in alignment with the expected cost base and revenue streams?
c) In case a claw back mechanism is introduced, as described in Annex 1.1, to avoid overcompensation from sale of voluntary biochar carbon removal certificates (climate credits) from biochar carbon removal, how would that affect your bid?

3 State aid approval

The DEA assesses that the funds constitute state aid as defined in art. 107(1) of the Treaty on the Functioning of the European Union (TFEU). The DEA will notify the tender to the European Commission following the procedure prescribed by Article 108 of the TFEU as state aid for the removal of greenhouse gases. The measure will be designed in accordance with the Commission's Guidelines on State aid for climate,

environmental protection and energy 2022 (CEEAG)[1] to ensure compatibility with the internal market under art. 107(3)(c) of the TFEU.

According to section 4.1.3.4 of the CEEAG, Member States must conduct a public consultation, asking for views on the scheme's competition impact and proportionality, before notifying the aid. The duration of the public consultation should be at least six weeks and should cover the following topics:

i. The scope of the technologies eligible for aid under the scheme.
ii. Method and estimate of subsidy per tonne of CO_2e emission avoided (in this case permanent carbon storage in biochar per reference project).
iii. The proposed use and scope of the competitive bidding process.
iv. Main parameters for allocation of the aid (i.e. evaluation criteria used in the tender).
v. Main assumptions used to demonstrate the incentive effect, the necessity and the proportionality of the aid.

In addition to allowing potential Bidders to submit feedback on different aspects of the tender, this market dialogue also serves as the public consultation that the DEA must conduct according to section 4.1.3.4 of the CEEAG.

3.1 Technology eligible for aid

The eligible technology will be biochar produced from biomass in a pyrolysis plant, which is applied to agricultural mineral soil in Denmark to achieve negative CO_2 emissions through biochar carbon storage.

Specific requirements for biochar quality are currently being developed. The preliminary expectations regarding these requirements are outlined in Annex 1.1.

The Danish Ministry for Climate, Energy and Utilities is currently carrying out a project that will set emission factors for biochar. These factors will determine the share of carbon in biochar that is expected to degrade and be emitted as CO_2 and may also account for potential increases in CO_2 emissions from existing soil carbon following biochar application. In this project a new national methodology for accounting for

[1] Communication from the Commission, Guidelines on State aid for climate, environmental protection and energy 2022 (2022/C 80/01) (CEEAG).

biochar carbon storage on Denmark's National Greenhouse Gas Inventory Report is to be developed before the subsidy scheme becomes operational.

3.2 Incentive effect and need for aid

The production and application of biochar is currently estimated to be associated with a net cost that must be covered before biochar by pyrolysis can be deployed on a larger scale.

There is currently no major market for the sale of biochar or financial incentives for the application and use of biochar on agricultural land. Therefore, it is assumed that biochar does not currently have a value in itself. However, biochar can potentially have a soil-improving effect and a fertilizer effect that has not yet been determined and that may vary based on the input biomass and production conditions.

The net financing requirement for the production and deployment of biochar is estimated based on the Danish Energy Agency's Technology Catalogue for Renewable Fuels, including in relation to the size and production properties of the pyrolysis plant and energy balance, as well as a number of other assumptions for the price of biomass and energy products. Figures with ranges for the funding gap and socioeconomic cost per ton of CO2 can be found in Annex 1.2.

3.3 Quantification of the subsidy per tonne of CO_2e emissions avoided

The aid will be directed towards the amount of biogenic carbon being permanently stored in biochar applied to Danish mineral agricultural soils.

A Danish research project is currently in the process of designing a new Danish methodology on how to account for biochar carbon removal in Denmark's National greenhouse gas Inventory Report. This new methodology may take into account that different types and qualities of biochar store varying amounts of carbon per weight unit of the biochar. Furthermore, there are variations in the share of carbon being permanently stored in non-degradable form depending on type of biomass and the way the biochar is being produced. In addition, the upcoming Danish methodology used for estimating carbon storage may also take into account other elements.

On the basis of this research project a methodology for calculating aid to biogenic carbon being permanently stored in biochar and applied to Danish mineral agricultural soils will be developed.

Tentatively, for subsidy per ton of CO_2e emissions avoided, the amount of aid is estimated to DKK 1000 ex. VAT per tonne of CO_2 stored as in Annex 1.2 Strategy & Work Program for Pyrolysis p. 17. The final estimate may be updated after the public consultation when the methodology for greenhouse gas reporting of biochar is finalized as explained above.

4 Current assumptions and considerations

This section outlines the current assumptions and preliminary considerations related to the proposed design and implementation of the aid scheme. The DEA will notify the scheme to the European Commission. Thus, the deployment of the scheme is dependent on the Commission's approval, which may entail changes of the considerations outlined in this memo.

4.1 Scope of Contract

The aid will be granted as operating aid through a competitive bidding process.

Potential beneficiaries include any entity willing to assume responsibility for applying biochar to Danish agricultural soils. These may include farmers, transportation companies or operators of pyrolysis plants, or parties external to the biochar value chain, such as an intermediary energy trader providing services by engaging subcontractors.

Beneficiaries can be any type of undertaking, including natural persons, limited liability companies, or privately and publicly owned companies. Independent undertakings may also submit a joint bid, i.e. as a consortium.

The biochar must be applied to Danish soils, but there are no requirements regarding the nationality of the beneficiaries. However, it is expected that beneficiaries must comply with different certification criteria. These could include the criteria in the Commission Delegated Act concerning methodologies for certification of permanent

carbon removal activities or criteria set by for example European Biochar Certificate. The specific certification requirements for the support scheme have not yet been determined.

The operator must produce or purchase biochar and apply it to Danish mineral agricultural soils. Only biochar applied to mineral agricultural soils by farmers required to report to the SGAV fertilizer register is eligible. Thus, biochar applied to agricultural organic soils is not eligible. Similarly, biochar applied by very small farmers not registered in the SGAV fertilizer registration system are not eligible for aid. Biochar carbon storage in forests or fortified areas (such as buildings, cities, roads, gravel pits, etc.) is also not eligible, nor is storage in cement, asphalt or similar products. In line with the priorities in the Agreement on the Implementation of a Green Denmark, it is proposed that biochar may not be applied to so-called potential areas (low-lying projects and nitrogen wetlands) or to selected existing natural areas (Natura2000, §3 areas and HNV-5 or more). Further restrictions may apply in the forthcoming environmental regulation.

Biochar produced in Denmark or imported biochar is eligible for aid provided that it is certified for soil application and comply with the requirements listed in Annex 1.1.

Furthermore, the Bidder will be responsible for reporting biochar certificates, including numbering of each individual yearly batch of biochar, to DEA (Danish Energy Agency) and SGAV (Danish Agency for Green Land Use and Aquatic Environment) in accordance with the description in Annex 1.1.

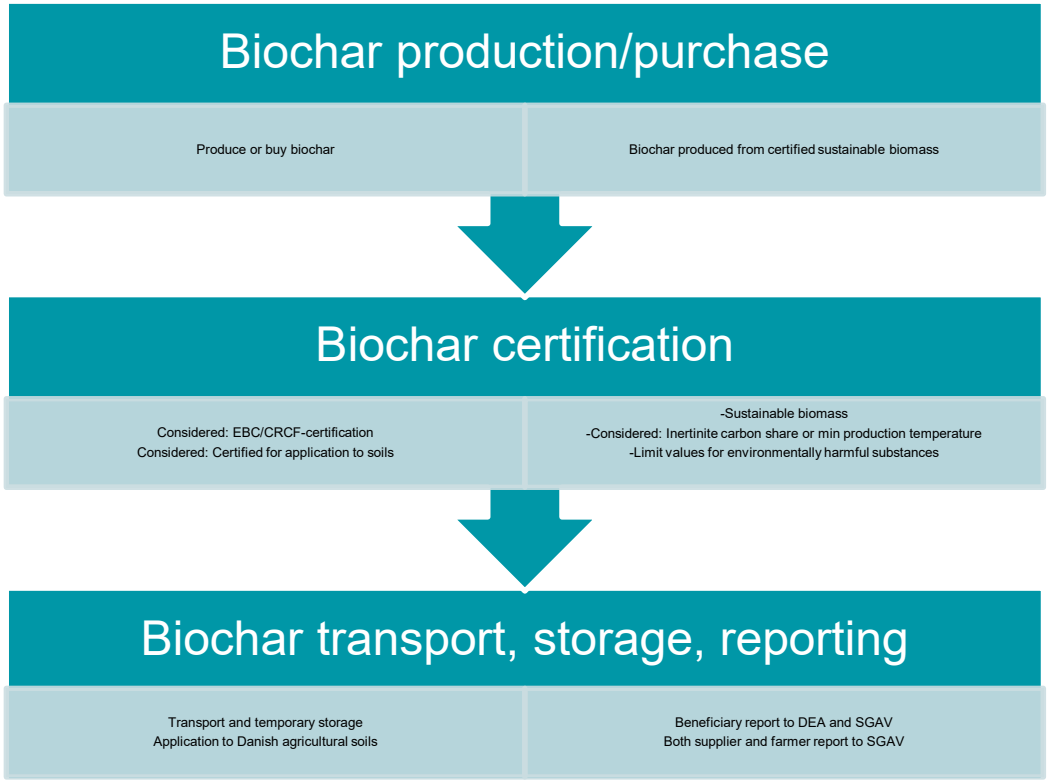

Figure 2: Description of biochar carbon storage value chain.
Note: SGAV = Danish Agency for Green Land Use and Aquatic Environment). DEA = Danish Energy Agency (Energistyrelsen).

4.2 Multiple contracts to be awarded

The DEA has the option to offer multiple contracts for carbon storage in biochar.

4.3 Storage commencement

Deliveries must start no later than either 2030 or 2032; see section 5.5 and section 6.1.

4.4 Contracted quantity of the carbon storage

The aid will be directed towards carbon permanently stored in biochar applied to Danish mineral agricultural soils. As mentioned in section 3.3 it is not yet decided exactly how the aid is to be calculated.

The Operator must commit to capture and store biochar equivalent to at least 400 tonnes CO_2 per year in the period 2027-2045. This corresponds to the permanent storage of 109 tonnes of carbon in biochar per year.

The quantity to be delivered annually by the Operator will be the actual, verified quantity of biogenic CO_2 stored permanently as carbon in biochar applied to Danish agricultural soils. As described in section 3.3 above the specific methodology for calculating the aid is not yet decided upon but expected to be based primarily on the amount of non-degradable carbon permanently stored in biochar applied to Danish mineral agricultural soils.

4.5 Duration of Contract

The aid will be disbursed over a period of up to 19 years, from 2027 to 2045, as a fixed payment per tonne of CO_2 permanently stored in biochar applied to Danish soils. As mentioned in section 3.3 it is not yet decided exactly how the aid is to be calculated.

4.6 Extension of time

The DEA considers allowing delay without penalty in certain situations. This may include situations such as archeological finds and complaints regarding permits at boards of appeal and will be further specified.

If the Operator considers itself entitled to a time extension, it must notify the DEA in writing as soon as possible. The Operator must submit documentation confirming that the delay has been caused by the claimed circumstances, and that the delay could not have been avoided or mitigated.

4.7 Force Majeure

The DEA considers the following Force Majeure clause:

4.7.1 If a force majeure event occurs, the Parties' obligations towards each other shall be suspended to the extent that they cannot be performed due to the force majeure event, provided that the force majeure situation is notified to the other Party, with supporting arguments and particulars describing the nature and scope of the event. The notification must be received within ten (10) Business Days after the Party becomes aware, or should have become aware, of the force majeure event.

4.7.2 For this purpose, force majeure is defined as an event:

a) outside the control of the Parties, and of a certain qualified nature (e.g. terrorism, sabotage, war, hostilities, riots, nuclear or natural disasters,

epidemics and evacuation; while this list is not exhaustive, only events of a comparable nature shall be included);

b) unforeseeable or not reasonably foreseeable at the Operator's offer submission deadline; and

c) not possible to overcome; neither by investments of work, money, etc.

4.7.3 For the avoidance of doubt, industrial disputes, strikes and events of a similar nature relating to the Operator or a subsupplier shall not be regarded as force majeure.

4.7.4 If the Operator's failure to perform under the contract is due to a failure by a third party engaged by the Operator to perform all or part of the contract, the Operator is exempt from performance only if:

a) the Operator is exempt under clauses 4.7.1-4.7.2; and

b) the third party engaged would also be exempt if clauses 4.7.1-4.7.3 applied to it.

4.7.5 Continued force majeure

If the force majeure event continues beyond twelve (12) months after a Party's notification under clause 4.7.1., the other Party (the Party who did not invoke force majeure) is entitled – but not obliged – to terminate the contract.

If the Operator gives notice of termination in accordance with the above, the DEA shall be entitled to require the Operator not to terminate provided that the DEA undertakes to cover the Operator's documented and incurred additional costs for the continued force majeure period, i.e. after the expiry of the one hundred and eighty (180) Business Days after the force majeure notification.

4.8 Other requirements

For additional requirements that the DEA intends to incorporate into the tender material, please see the Requirement Specification Contract on subsidy for biochar carbon storage on Danish agricultural soils in Annex 1.1.

5 Payment and adjustment of subsidy

This section outlines the conditions for subsidy payments.

The subsidy is paid per tonne biogenic CO_2-equivalent verified as captured and permanently stored as carbon in biochar, cf. section 3.1. The exact methodology is to be developed, cf. section 3.3. The aid scheme will not be applicable to up-front costs, such as projecting, construction, etc. Neither will the winning bidder be remunerated by the aid scheme for the delivery of any other service or compensated for any costs other than the agreed subsidy per tonne of biogenic CO_2-equivalent stored.

5.1 Bid cap

The aid will be granted as operating aid through a competitive bidding process.

The bidding process will include a bid cap, which is expected to be DKK 1,750 per tonne of permanently stored CO_2 (2025 prices) applicable to all types of projects eligible for aid under the scheme. The aid will be for carbon storage in biochar and thus when converted with a factor of 3.666 equal to the weight share of CO2 to carbon, the bid cap is equal to DKK 6,416 per tonne of carbon stored permanently in biochar. Offers exceeding the bid cap will be rejected. While the bid cap constitutes the maximum aid rate the Danish State is to pay for biochar carbon removal, it also incentivizes Bidders to submit realistic projects and competitive pricing.

The aid level, i.e. the bid prices, will be adjusted by yearly inflation rates according to the consumer price index published by the Danish Agency for Public Finance and Management.[2]

The DEA notes that beneficiaries may receive a price premium for early delivery, as described below in section 7.

5.2 Payment profile

The total maximum budget of the scheme is DKK 10.2 billion (2025-prices) disbursed over the years 2027 to 2045. Table 3 below shows the specific yearly amounts set

[2] Se footnote 3.

aside in the November 2024 broad political Danish Parliament agreement on the Implementation of a Green Denmark.

Tabel 3: Budget for biochar carbon storage (million DKK/year) (2025-prices)				
2027	2028	2029	Each year 2030-2045	Total budget
184	270	398	586	10,228

The yearly budgets are regulated each year due to inflation according to the consumer price index published by the Danish Agency for Public Finance and Management.[3]

The winning Bidders cannot receive an annual payment exceeding the total allocated annual budget. Hence, funding cannot be transferred between years.

The scheme is financed through the State budget of Denmark.

5.3 Obligation to comply with the sustainability requirements

The winning Bidder is obligated to comply with the requirements applicable at all for the use of sustainable biomass etc. that are set out in the European Commission's delegated regulation on certification methodologies for permanent carbon removals (the socalled CRCF). This is described further in Annex 1.1.

5.4 Annual adjustment of subsidy

Subsidies will be adjusted for inflation annually, in accordance with the Price- and Wage Assumptions underpinning public grants on the Danish Financial Act.

The Price- and Wage Assumptions are set in May for the following year by the Danish Agency for Public Finance and Management.

The DEA will announce the inflation adjustment rate and its effect on subsidies paid to the contracting parties in January of any given year. As such, each contracting party will receive information from the DEA about the inflation adjustment rate and adjusted

[3] The index is updated and published yearly in June, at the latest, by the Agency for Public Finance and Management as part of the Price and wage assumptions (available in Danish here: https://oes.dk/statsregnskab/finanslov-og-udgiftsopfoelgning/indeks/pris-og-loenforudsaetninger/).

subsidy paid per tonne of biogenic CO_2 measured as permanent carbon storage in biochar delivered in 2027 in January that same year.

5.5 Accounting in Danish national greenhouse gas inventory report

The overall aim of the subsidy scheme is to increase carbon storage on Danish agricultural soils. It is therefore a general requirement that the biochar carbon removal activity can be accounted for in the yearly updates of the national Danish greenhouse gas emission inventory report.

Biochar carbon removal accounted for in other countries outside Denmark is not eligible for aid.

5.6 Subsidy rate deduction regarding excess carbon credit income (Claw-back)

The subsidy scheme is expected to include a mechanism to adjust the level of support in response to potential revenues generated from the sale of voluntary carbon removal credits associated with biochar carbon storage on Danish agricultural soil.

If revenues from voluntary carbon removal credits exceed a predefined baseline level, a significant share of the excess revenue may be deducted through a reduction of the applicable Subsidy Rate. The purpose of this mechanism is to ensure cost-effective use of public funds by limiting the risk of overcompensation, while maintaining appropriate incentives for project development and operation.

Assessment of relevant revenues and any potential adjustments to the Subsidy Rate are to be carried out on a periodic basis, for example annually, and applied consistently across the relevant period. The mechanism is expected to apply irrespective of how carbon removal credits are generated, certified, or commercialised, and regardless of whether revenues are realised directly by the project operator or through third parties.

Bidders indicate in their bids the expected income from the sale of voluntary biochar carbon removal climate credits. Beneficiaries will be required to report annually to the DEA on the realized income from the sale of these credits.

If future European regulation affects whether, and how biochar carbon removal is included in the European Emission Trading Scheme (ETS), any resulting income from the sale of credits or allowances associated with activities covered by the subsidy scheme shall be treated in the same manner as income from voluntary carbon credits. This shall apply regardless of whether such inclusion in the ETS is voluntary or mandatory.

If inclusion in the ETS is implemented whereby biochar carbon removal on Danish agricultural soils is to be accounted for in the national greenhouse gas emission inventory report in the country where the buyer of the biochar carbon credit is situated, then this biochar carbon removal activity will not be eligible for aid. This follows from the requirement mentioned in the previous section that the biochar carbon removal activity shall be accounted for in the yearly updates of the national Danish greenhouse gas emission inventory report.

5.7 Penalties

All Bidders participating in the subsidy scheme will be subject to a penalty mechanism.

Beneficiaries with deliveries commencing in the first batch in 2027-2030 are expected to be subject to a contractual penalty if they do not permanently store at least 80 pct. of the yearly quantity of CO_2 stated in their bids from the year 2030 until 2045. Beneficiaries with deliveries commencing in the second batch for 2030-2032 are also subject to a contractual penalty if they do not permanently store at least 80 pct. of the yearly quantity of CO_2 stated in their bids in the year 2032.

The penalty will be deducted from future subsidy payments, when possible or else payment will be required from the beneficiary. The penalty is calculated as the undelivered quantity in 2030 multiplied by 25 percent of the bid price (for bids in batch 1). For bids in batch 2, the calculation is based on the undelivered quantity in 2032.

In situations where the delivery of biochar is delayed or prevented due to unforeseen circumstances, such as archaeological discoveries, appeals against permits to relevant appeals boards, or similar conditions, the DEA has the possibility to grant an extension of the deadline. In such cases, the beneficiary may also be exempted from

the penalty. The penalty will likewise not apply in cases of force majeure (cf. section 4.7).

Where a Bidder can demonstrate that substantial costs have been incurred, for example investments in facilities, but that the project could nevertheless not be realized, the DEA may grant an exemption from the penalty. If the conditions for exemption are not considered fulfilled, the penalty will apply. The penalty will also not apply in cases of force majeure (cf. section 4.7).

All Bidders will be required to provide a letter of intention to provide a financial guarantee from a financial institution as part of their bid to ensure their ability to pay any applicable penalty.

6 Tender Procedure

The tender procedure is a one-step tender process, which means that there will be no negotiations. The aid will be granted through only one competitive bidding process. The bidding process will be open to all eligible technologies for biochar carbon storage in Danish agricultural soils, provided that the biochar meets the quality criteria in the monitoring, reporting and verification system explained in appendix 1.1.

All relevant information regarding the bidding process, including the ex-ante defined award criteria and a draft of the aid contract, will be made publicly available to any interested party within the EU or abroad.

The bidding process will be announced on an online application platform, and tender documents will in addition be available on the DEA's website. Bidders will have to submit their bids through an online application platform. The DEA will not have access to the bids before the application deadline to ensure a transparent bidding process.

Potential Bidders can submit questions regarding the scheme on the online platform before the deadline for submission of bids. The DEA will only answer questions on the platform during the bidding process and will not answer questions related to a specific project, but only questions of a more general nature. The DEA will publish anonymized questions and answers on the online platform, ensuring that all potential Bidders receive the same information at the same time.

6.1 Award criteria and ranking

The aid will be based on the pay-as-bid principle, and the only award criterion will be the lowest amount of aid per tonne of carbon from biogenic CO_2 permanently stored in biochar applied to Danish agricultural soils. Accordingly, subsidy contracts will be awarded to the lowest-priced bids, subject to the available funds.

Bidders shall state in their bid a subsidy amount in DKK per tonne of CO_2 as well as the tonnes of CO_2 to be permanently stored per year via biochar applied to Danish mineral agricultural soils in their bids. The Bidders must also state the year of commencement of aid in the bids, such that they may begin to receive aid either in 2027, 2028, 2029 or 2030 and until 2045.

It is being considered to divide the tender into two batches with different delivery years. The first batch would cover delivery commencing in one of the years 2027-2030 with full delivery in 2030. The second batch would cover the remaining amount after allocation under the first batch and is intended for delivery commencing in 2030 with a penalty applying to delivery in 2032.

If several bids contain the same price, the bids in question will be ranked according to the quantity of biochar, from the largest to the smallest. If two or more bids, each of which but not together may be accommodated within the available funds, contain the same price and the same quantity of biochar, the bids in question will be ranked through a drawing of lots.

6.2 Marginal bid

A marginal bid means a bid that complies with the requirements set out in the conditions for the competitive bidding process and that, based on the score of the bid, could be awarded a contract but which would entail exceeding the scheme's budget.

In case of a marginal bid, the Bidder with the marginal bid will be offered a reduced amount of subsidized tonnes of carbon storage that can be contained within the scheme's budget. Subsequently, the following bid in the ranking is awarded aid or offered an aid contract with a reduced subsidized amount of tonnes of carbon storage. The procedure for handling marginal bids will apply to both the batch of bids offering to begin biochar carbon storage in one of the years between 2027-2030 and the batch

offering to begin in 2030 and penalty applying regarding full delivery in 2032. The procedure will be described beforehand in the bidding conditions.

A situation may arise in which lower-ranked bids cannot be awarded their full offered volumes. For example, if the two lowest-priced bids together account for 90% of the available funds, the third-lowest bid may exceed the remaining 10%. In such cases, it must be clarified whether the Bidder is willing to reduce the offered volume to align with the remaining available funds. Two possible approaches to address this situation are currently being considered: allowing Bidders to indicate in advance whether and to what extent they are willing to scale down their bid ("filling bid"), or offering a reduced volume to the relevant Bidder after bid evaluation based on the remaining available funds.

7 Price Premium for early delivery

To promote early deliveries, the scheme provides a price premium for the first three years (2027-2029) as a percentage of the bid price. The Premium incentivizes the early commencement of storage and thus contributes to national CO_2 reductions on the pathway towards the 2030 greenhouse gas reduction targets.

Table 4: Price Premium for early delivery

Year	Price Premium (percentage of bid)
2027	10
2028	7.5
2029	5
2030-2045	0

8 Participation in the dialogue

The deadline for submitting written contributions to the market dialogue is:

26 August 2026

Written contribution can be submitted by e-mail under the headline “Market dialogue biochar aid scheme” to biokul@ens.dk with a copy to stni@ens.dk.

The written input may be further elaborated in writing and/or discussed during the market dialogue meeting 18 August 2026. The DEA may ask a limited number of market operators specific additional questions and/or invite a limited number of market operators to participate in dialogue meetings.

9 Preliminary timeline and next steps

The DEA plans for the tender to open for submission of offers by the end of 2026 and with a tender deadline in March 2027. Please note that this timeline is tentative.

The outcome of the market dialogue will serve as input for the DEA’s design of the tender documents.

We look forward to receiving your response no later than 26 August 2026 23:59.

Best regards

Danish Energy Agency

9.1 Glossary

1. Bidder covers potential Bidders.
2. Biogenic carbon is carbon originating from biomass.
3. Carbon capture and storage (CCS) is a process consisting of the separation of CO_2 from industrial and energy-related sources, transportation to a storage location, and storage of the CO_2.
4. Biochar Carbon Removal (BCR) refers to storing biogenic carbon permanently as non-degradable inertinite carbon in biochar. As the biogenic carbon is sourced from atmospheric CO2 taken up by growing biomass, the process removes carbon from the atmosphere. In this aid scheme, the biochar must be applied to mineral agricultural soils, and the activity must be reported to SGAV by both biochar suppliers and Danish farmers before the carbon contained in the biochar is considered stored and thereby eligible for biochar carbon removal aid.
5. Inertinite carbon refers to the fraction of carbon contained in biochar that is non-degradable. According to research by GEUS, the share of inertinite carbon in biochar relates to achieving high carbonisation temperature in the production process.
6. Contract means an agreement between the parties on the delivery of biochar carbon storage in the period 2027-45.
7. Contracting Period is the duration of the contract.
8. Operator means the winning Bidder(s), that have entered the Contract with the DEA.
9. Beneficiary means the winning Bidder(s), that have entered the Contract with the DEA.
10. Party means either the Operator/beneficiary or the DEA.
11. Tonne is a metric ton, equal to 1,000 kg.
12. Value chain is the full range of activities needed to produce, transport, and permanently store non-degradable biogenic carbon in biochar.
13. DEA is the Danish Energy Agency.
14. SGAV is the Agency for Green Land Use and Aquatic Environment.
15. MST is the Danish Environmental Protection Agency.

16. Certification refers to criteria and requirements set for certifying biochar for carbon storage. The certification criteria must be met for biochar carbon removal to be eligible for aid.
17. MRV system refers to requirements set for monitoring, reporting and verification of the biochar carbon removal activities. The MRV requirements must be met for biochar carbon removal to be eligible for aid.