

APPENDIX 4

SOLUTION DESCRIPTION

Contract on subsidy for carbon capture, transport, and storage

Danish Energy Agency

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Instructions for tenderers

~~This~~ Appendix 4 shall contain the ~~T~~tenderer's solution description.

The Tenderer shall complete ~~this~~ the solution description in accordance with the instructions and guidance text in this Appendix 4 and submit the ~~Appendix~~ solution description as a part of the Tenderer's Offer.

The solution description shall contain the Tenderer's responses to and description of how the Tenderer complies with the project description and the requirements, as specified in Appendix 3, Requirements specification.

The Tenderer should create sub-appendices to the solution description in accordance with the guidance text stated ~~when~~ herein ~~stated~~ and when deemed appropriate by the Tenderer. The sub-appendices to be delivered is specified below.

If relevant, the Tenderer should ensure that there is a clearly identifiable and traceable reference to the sub-appendices.

The Tenderer should make use of references to relevant standards, certifications, verifications, and similar documentation, as appropriate.

The Tenderer's responses to the overall solution description, the Financial Requirements, the Technical Requirements, and the Operational Requirements are included in the evaluation of Offers as specified in Appendix A, Offer evaluation.

~~This guidance text and the guidance text provided for the Tenderer's responses will be deleted by the DEA in connection with conclusion of the Contract.~~

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Overall solution description

Instruction

The Tenderer should provide an overall solution description as a complete and collective description of the entire project. The description should include, although not limited to, relevant illustrations, verbal descriptions of the entire value chain, applied technology and systems, operational processes describing how the Tenderer eventually will operate the entire system. The Tenderer should provide the overall solution description in sub-appendix 4.A, Overall solution description.

Formateret tabel

Overall solution description

Overview of sub-appendices to be delivered

Sub-appendices	Requirement
Sub-appendix 4.A, Overall solution description	
Sub-appendix 4.B, Planning Methodology and Milestone Plan Report	R-1
Sub-appendix 4.C, Authority Approval Plan	R-2
Sub-appendix 4.DD, Risk Management Plan	R-3
Sub-appendix 4.D, Risk assessment plan	R-3
Sub-appendix 4.E, Risk assessment matrix	R-3
Sub-appendix 4.F, Risk log	R-3
Sub-appendix 4.G, QHSE Plan	R-4
Sub-appendix 4.H, QHSE log	R-4
Sub-appendix 4.I, Inspection procedure	R-4
Sub-appendix 4.J, QHSE report	R-4
Sub-appendix 4.K, Knowledge Sharing Plan	R-5
Sub-appendix 4.L, Knowledge sharing summary report	R-5
Sub-appendix 4.M, Public Engagement Plan	R-6
Sub-appendix 4.N, Construction Interface Procedure	R-10
Sub-appendix 4.O, Financing Plan	R-11
Sub-appendix 4.P, Financing model summary sheet	R-11
Sub-appendix 4.Q, Business Plan	R-12
Sub-appendix 4.R, Business model summary sheet	R-12
Sub-appendix 4.S, Technical Design	R-13
Sub-appendix 4.T, Total design verification plan	R-13
Sub-appendix 4.U, Test and Commissioning Plan	R-14
Sub-appendix 4.UU, Test event log	R-14
Sub-appendix 4.V, Report on CO ₂ production (subject to the EU ETS)	R-18
Sub-appendix 4.W, Measurement system for CO ₂ storage reporting	R-19
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Overall solution description

Instruction

The Tenderer should provide an overall solution description as a complete and collective description of the entire project. The description should include, although not limited to, relevant illustrations, verbal descriptions of the entire value chain, applied technology and systems, operational processes describing how the Tenderer eventually will operate the entire system.

Sub-appendices

The Tenderer should provide:

- ~~The overall solution description in sub-appendix 4.A, "Overall solution description".~~

Overall solution description

Requirement R-1

Milestone Plan.

Instruction

~~The Tenderer shall should, as its answer to R-1 provide the following:~~

- ~~A draft Milestone Plan in Appendix 5, Time schedules.~~
- ~~Furthermore, the Tenderer shall provide A description of the Tenderer's chosen planning methodology and~~

~~The Draft Milestone Plan shall include what is described in R-1 in Appendix 3, Requirements specification and Appendix 5, Time schedules.~~

~~The Tenderer should as its answer to R-1 provide the following:~~

- ~~An example of the Milestone Plan report~~

~~The Tenderer's draft Milestone Plan, chosen planning methodology, and example of the the draft mMilestone plan report should all include what is described in R-1 of Appendix 3, Requirement specification, and Appendix 5, Time schedules~~

Sub-appendices

~~The Tenderer should all provide:~~

- ~~The draft Milestone Plan in Appendix 5, Time schedules.~~

The Tenderer should provide:

- ~~The~~ A description of the planning methodology and example of Milestone pPlan report in sub-appendix 4.B, "Planning Methodology and Milestone Plan Report"

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Requirement R-2

Authority Approval Plan.

Instruction

The Tenderer ~~should~~ shall as its answer to R-2 provide the following:

- ~~A~~ dDraft Authority Approval Plan.

~~The Tenderer's~~ dDraft Authority Approval Plan ~~should~~ shall include what is described in R-2 of Appendix 3, Requirements specification.

Sub-appendices

The Tenderer should provide:

- The draft Authority Approval Plan in sub-appendix 4.C, "Authority Approval Plan".

Requirement R-3

Risk Management Plan.

Instruction

The Tenderer ~~should~~ shall as its answer to R-3 provide the following:

- ~~a~~ dDraft Risk Management Plan. ~~As part of the Draft Risk Management Plan, a draft of a risk assessment plan, a draft of a risk assessment matrix, and draft of the content of a risk log should be provided by the Tenderer.~~
- A draft Risk assessment plan
- A draft Risk assessment matrix
- A draft Risk log

The dDraft Risk Management Plan ~~should~~ shall include a description of a chosen risk management framework and approach.

The Tenderer's dDraft Risk Management Plan, ~~draft of a~~ Rrisk assessment plan, ~~draft of a~~ Rrisk assessment matrix, and ~~draft of the content of a~~ Rrisk log ~~should~~ shall include what is described in R-3 of Appendix 3, Requirements specification.

Sub-appendices

The Tenderer should provide:

- The draft Risk Management Plan in sub-appendix 4.DD, "Risk Management Plan"
- ~~The A, the draft of a R-risk assessment plan in sub-appendix 4.D, "Risk assessment plan"~~
- ~~The A, draft of a risk assessment matrix in sub-appendix 4.E, "Risk assessment matrix", and~~
- ~~The A, draft of the content of the R-risk log in sub-appendix 4.F, "Risk log"~~

Answer to requirement R-3

Requirement R-4

QHSE Plan.

Instruction

The Tenderer ~~should~~ shall as its answer to R-4 provide the following:

- ~~A, a draft QHSE Plan including suggested KPI~~
- ~~A, Draft QHSE log~~
- ~~A Draft Inspection Procedure~~
- ~~Headlines for the QHSE report~~

The Tenderer's ~~Draft QHSE Plan, draft QHSE Log, draft Inspection pProcedure, and the headlines for the QHSE report~~ shall include what is described in R-4 of Appendix 3, Requirements specification.

The tenderer should as its answer to R-4 provide the following:

- A draft QHSE log
- A draft Inspection Procedure
- Headlines for the QHSE report

The draft QHSE log, draft Inspection Procedure, and headlines for the QHSE report should include what is described in R-4 of Appendix 3, Requirements specification.

The Tenderer should provide evidence documentation of relevant management system in the form of certificates, if ~~applicable~~ relevant.

Sub-appendices

The Tenderer should provide:

- ~~The dDraft QHSE Plan in sub-appendix 4.G, "QHSE Plan"~~
- ~~The dDraft of the content for QHSE log in sub-appendix 4.H, "QHSE log"~~
- The draft Inspection Procedure in sub-appendix 4.I, "Inspection Procedure"
- The headlines for the QHSE report in sub-appendix 4.J, "QHSE report"

Answer to Requirement R-4

Requirement R-5

Knowledge Sharing Plan.

Instruction

The Tenderer ~~should~~ shall as its answer to R-5 provide the following:

- ~~A example of the draft~~ Knowledge Sharing Plan ~~and~~
~~An example with headlines and KPI's of the Knowledge sharing summary report, specifically headlines and KPI's.~~

~~The Tenderer's example of the draft~~ Knowledge Sharing Plan ~~and example of the Knowledge sharing summary report should~~ shall include what is described in R-5 of Appendix 3, Requirements specification.

The Tenderer should as its answer to R-5 provide the following:

- An example of the Knowledge sharing summary report specifically headlines and KPI's.

The Tenderer's example of the Knowledge sharing summary report should include what is described in R-5 of Appendix 3, Requirements specification.

Sub-appendices

The Tenderer should provide:

- ~~The example draft of a~~ Knowledge Sharing Plan in sub-appendix 4.K, "Knowledge Sharing Plan"
- ~~The example of the Knowledge sharing summary report in sub-appendix 4.L, "Knowledge sharing summary report".~~

Answer to Requirement R-5

Requirement R-6

Public Engagement Plan.

Instruction

The Tenderer ~~should~~ shall as its answer to R-6 provide the following:

- ~~A~~ draft Public Engagement Plan.

The ~~Tenderer's~~ draft Public Engagement Plan ~~should~~ shall include what is described in R-6 of Appendix 3, Requirements specification.

Sub-appendices

The Tenderer should provide:

- ~~The~~ draft Public Engagement Plan in sub-appendix 4.M, "Public Engagement Plan".

Answer to Requirement R-6

Requirement R-10

Construction Interface Procedure.

Instruction

The Tenderer ~~should~~ shall as its answer to R-10 provide the following:

- A draft Construction Interface Procedure.

The ~~Tenderer's proposed~~ draft Construction Interface Procedure ~~should~~ shall include what is described in R-10 of Appendix 3, Requirements specification.

Sub-appendices

The Tenderer should provide:

- The draft Construction Interface Procedure in sub-appendix 4.N, "Construction Interface Procedure".

Answer to Requirement R-10

Requirement R-11

Financing Plan.

Instruction

The Tenderer ~~should~~ shall as its answer to R-11 provide the following:

- A draft Financing Plan.
- A draft Financing model summary sheet (only to be provided in case of external financing, i.e. not parent company financing).A

The ~~Tenderer's~~ ~~draft~~ ~~proposed~~ Financing Plan and if relevant, the draft Financing model summary sheet ~~should~~ shall include what is described in R-11 of Appendix 3, Requirements specification.

The Financing Plan shall be a written description of the input data and cost calculations provided in the excel sheet of the Financing model summary sheet.

~~and include a written description and an excel model, and~~ The Financing Plan should ~~shall, if relevant, provide~~ documentation of the expected investments and funding sources.

~~The Financing Plan should describe~~ ~~The Tenderer should describe the method for calculation and the validation of the consistency of the data used in the Financing Plan with the input data used in the relevant cost calculation sheets and mandatory financial model summary sheet.~~

If the Tenderer has obtained third-party validation, the Tenderer should describe the basis and scope of such validation.

Sub-appendices

The Tenderer should provide:

- ~~The draft Financing Plan in~~ sub-appendix 4.O, “Financing Plan”, ~~and~~
- ~~The draft Financing model summary sheet in~~ sub-appendix 4.P, “Financing model summary sheet”.

Answer to Requirement R-11

Requirement R-12

Business Plan.

Instruction

The Tenderer ~~should~~ shall as its answer to R-12 provide the following:

- A draft Business Plan
- A draft Business model summary sheet

The ~~Tenderer’s proposed~~ draft Business Plan and draft Business model summary sheet ~~should~~ all include what is described in R-12 of Appendix 3, Requirements specification.

The Tenderer should describe the method for calculation and the validation of the consistency of the data used in the Business Plan with the input data used in the relevant cost calculation sheets in the draft ~~and mandatory~~ Business model summary sheet.

If the Tenderer has obtained third-party validation, the Tenderer should describe the basis and scope of such validation.

Sub-appendices

The Tenderer should provide:

- ~~The~~ the draft Business Plan in sub-appendix 4.Q, “Business Plan”, ~~and the~~
- ~~The draft -B~~ business model summary sheet in sub-appendix 4.R, “Business model summary sheet”.

Answer to Requirement R-12

Requirement R-13

Technical Design.

Instruction

The Tenderer ~~should shall~~ as its answer to R-13 provide the following:

- ~~A~~ d ~~Draft~~ Technical Design
- ~~As part of the Technical Design, a~~ draft of the ~~T~~ total design verification plan

~~should also be provided.~~ The Tenderer's proposed draft Technical Design and draft ~~T~~ total design verification plan ~~should shall~~ include what is described in R-13 of Appendix 3, Requirements specification.

Sub-appendices

The Tenderer should provide:

- ~~The~~ d ~~Draft~~ Technical Design in sub-appendix 4.S, “Technical Design”.
- ~~The d~~ raft of the ~~T~~ Total design verification plan in sub-appendix 4.T, “Total design verification plan”.

Answer to Requirement R-13

Requirement R-14

Test and Commissioning Plan.

Instruction

The Tenderer ~~should~~ shall as its answer to R-14 provide the following:

- ~~a D~~ draft Test and Commissioning Plan
~~and draft of the content for the test event log~~

~~The Tenderer's D~~ draft Test and Commissioning Plan and the draft of the content for the test event log shall include what is described in R-14 of Appendix 3, Requirements specification.

The Tenderer should as its answer to R-14 provide the following:

- A draft Test event log

The draft Test event log should include what is described in R-14 of Appendix 3, Requirements specification.

Sub-appendices

The Tenderer should provide:

- ~~The d~~ raft Test and Commissioning Plan in sub-appendix 4.U, "Test and Commissioning Plan" "
~~and the~~ The draft of the content for the t est event log in sub-appendix 4.UU, "Test event Log".

~~Answer to Requirement R-14~~

Requirement R-18

Report on CO₂ production (subject to the EU ETS)

Instruction

If the CO₂ production is subject to the EU ETS, the Tenderer ~~should~~ shall answer R-18, otherwise not.

The Tenderer's shall as its answer to R-18 provide the following:

- An example of the Report on CO₂ production (subject to the EU ETS) Verified CO₂ emission report

The example of the Report on CO₂ production (subject to the EU ETS) shall include what is described in R-18 of Appendix 3, Requirements specification.

The example of the Report on CO₂ production (subject to the EU ETS) shall include a verified CO₂ emission report (In Danish: CO₂-udledningsrapport), documenting the actual Fraction of

~~The Tenderer should provide an example of the Report on CO₂ production. In the report, the Tenderer should document the actual Fraction of CO₂ production subject to the EU ETS. and The verification of the CO₂ emission report shall also be included.~~

The example of the Report on CO₂ production shall also include a ~~and~~ forecasted Fraction of CO₂ production (subject to the EU ETS).

Sub-appendices

~~In the Tenderer's answer to R-18, a current, verified CO₂ emission report (In Danish: CO₂-udledningsrapport), documentation of verification as well as an illustrative example of the forecasted fraction should be provided. The Tenderer should provide:~~

- ~~• The example of the Report on CO₂ production (subject to the EU ETS) in sub-appendix 4.V, "Report on CO₂ production (subject to the EU ETS)".~~

Answer to Requirement R-18

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Requirement R-19

Description of the measurement system for CO₂ storage reporting.

Instruction

The Tenderer ~~s~~ ~~should~~ shall as its answer to R-19 provide the following:

- A description of the ~~M~~ measurement system for CO₂ storage reporting
- An example of the Report of Delivered Quantity

The description of the measurement system for CO₂ storage reporting and the example of the Report on Delivered Quantity ~~should~~ shall include what is described in R-19 of Appendix 3, Requirements specification.

The description of the measurement system for CO₂ storage reporting ~~should~~ shall include documentation of any

~~The Tenderer should as its answer to R-19 provide a description of the measurement system for CO₂ storage reporting, an example of the Report on Delivered Quantity and information on / documentation for any validation and verification of the proposed measurement system for CO₂ storage reporting conducted at this time.~~

Sub-appendices

The Tenderer should provide:

- ~~The description of the M measurement system for CO₂ storage reporting in sub-appendix 4.W “Measurement system for CO₂ storage reporting”~~
- ~~The example of the R report on Delivered Quantity and the information on /documentation for any validation and verification conducted at this time in sub-appendix 4.X, “Report on Delivered Quantity”~~

Answer to Requirement R-19

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Requirement R-20

CO₂ Origin Verification Plan and Verification of origin of stored quantity of CO₂.

Instruction

The Tenderer ~~should~~ shall as its answer to R-20 provide the following:

- A draft CO₂ Origin Verification Plan.

The ~~Tenderer's~~ draft CO₂ Origin Verification shall include what is described in R-20 of Appendix 3, Requirements specification.

Sub-appendices

~~The~~ Tenderer should provide:

- ~~The~~ CO₂ Origin Verification Plan in sub-appendix 4.Y, CO₂ Origin Verification Plan”

Answer to requirement R-20

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