

Invitation to tender for supply, delivery, erection and commissioning of a single turbine for Ambition Community Energy

Introduction

This invitation to tender is for the wind turbine supply, installation and commissioning of a single turbine for Ambition Community Energy CIC (“ACE”).

Customer

ACE was established as a Community Interest Company (CIC), a private company limited by guarantee without share capital. It is owned by Ambition Lawrence Weston, a charity to provide activities which *“benefit the community and, in particular for the development and commissioning of renewable electricity assets for the benefit of the community of Lawrence Weston and neighbouring communities, and alleviation of fuel poverty.”* Any such assets are held under an asset lock in the interest of the community. ACE has a properly constituted Board of Directors. It employs no staff. It contracts with consultants as required to carry out its activities. Profits arising go to a community fund held by ALW for furthering of the local community and economic plans.

The Ambition Community Energy registered office address is: Lawrence Weston Community Centre, Lawrence Weston, Bristol, United Kingdom, BS11 0RX Company number 11294351

Project Outline

A brief summary of the project (“The Project”) is provided as Appendix 1. A wind turbine of not greater than 150m tip height is to be supplied and erected in compliance with Planning Conditions all as specified. ACE received final planning permission for the project in September 2020. The overarching objective is to provide the lowest cost energy at the greatest advantage to the local community. There is no upper or lower limit to the capacity of the turbine. The site is less than 5 km from the industrial port of Avonmouth.

Definitions

ACE	Ambition Community Energy CIC
ALW	Ambition Lawrence Weston
ANM	Active Network Management control of turbine by DNO
BoP	Balance of Plant
Contestable Works	The works which ACE has agreed shall be carried out by WPD in addition to the non-contestable works
DNO	Distribution Network Operator (Western Power Distribution)
EPC	Engineer, Procure and Construct
I/O	Control Input / Output
LTOMSA	Long Term O&M Supply Agreement
Non-Contestable Works	The works which may only be carried out by WPD
Owner	Ambition Community Energy CIC or an SPV created for the purpose.
Planning Conditions	The conditions set out in the planning permission provided in Appendix 2
Project	This project
SCADA	Supervisory, Control and Data Acquisition system
Site	The physical location of the Project
TSIA	Turbine Supply & Installation Agreement
WPD	Western Power Distribution – the local distribution system operator
Bidder	The turbine supplier responding to this invitation to tender

Turbine Supply, Delivery, Erection and Commissioning

This invitation invites bids for the turbine supply, delivery, erection and installation. It includes delivery, sea and road transport, cranes and other ancillary equipment needed for the erection, putting into service and commissioning of the turbine. The BoP Works will be provided by others. The Bidder will be required to provide a detailed specification of its requirements for the BoP work and, in particular, the loads and other specification to be used for the design of the turbine foundations and for hard-standing, crane and access roads.

Balance of Plant Works

Balance of Plant (“BoP”) is by others. However, when preliminary civils design is complete, in early December, ACE will invite Bidder to offer a complete turn-key (EPC) service which will include both the work described in this document and also the BoP work.

Information Provided

This section and the associated appendices provide a detailed set of information which describes the Project. The Bidder may request further information from ACE by e-mail if it considers that additional information will provide a more competitive price.

Site

The turbine location is shown in Figure 1. The British National Grid coordinates of the Site are 3533515N, 1823266E.

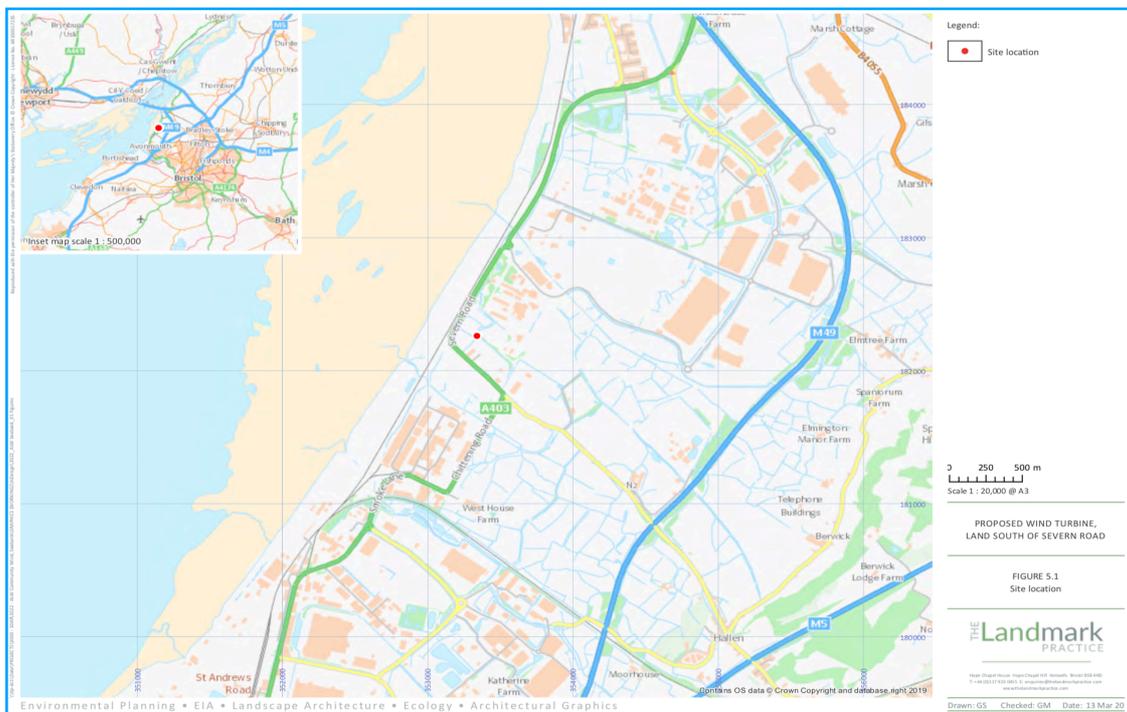


FIGURE 1 LOCATION

Figure 2 shows a more detailed plan of the site. The planning “red-line” is shown together with the access to the public road. The site is at sea level in an industrial area close to the port of Avonmouth.



FIG 2 PLANNING RED LINE, PUBLIC ROAD ACCESS AND INDICATIVE LAY DOWN AND CRANE PAD

The site is upwind of two operational Nordex 100m turbines owned by Bristol City Council: BCC#1 which is approximately 420m from the site and BCC#2 which is approximately 500m from the site. The locations of these two turbines are shown in Figure 3. Their respective locations are listed below in British National Grid coordinates.:

Site	E	353351
	N	182326
BCC #1	E	353135
	N	181967
BCC#2	E	353394
	N	181824

The proximity of the two turbines and the industrial nature of the location should be carefully included in the assessment of the Site in order to choose an appropriate turbine. Higher than ambient turbulence may be expected in the wake of the turbines. Evidence of such consideration should be provided with the tender documents.

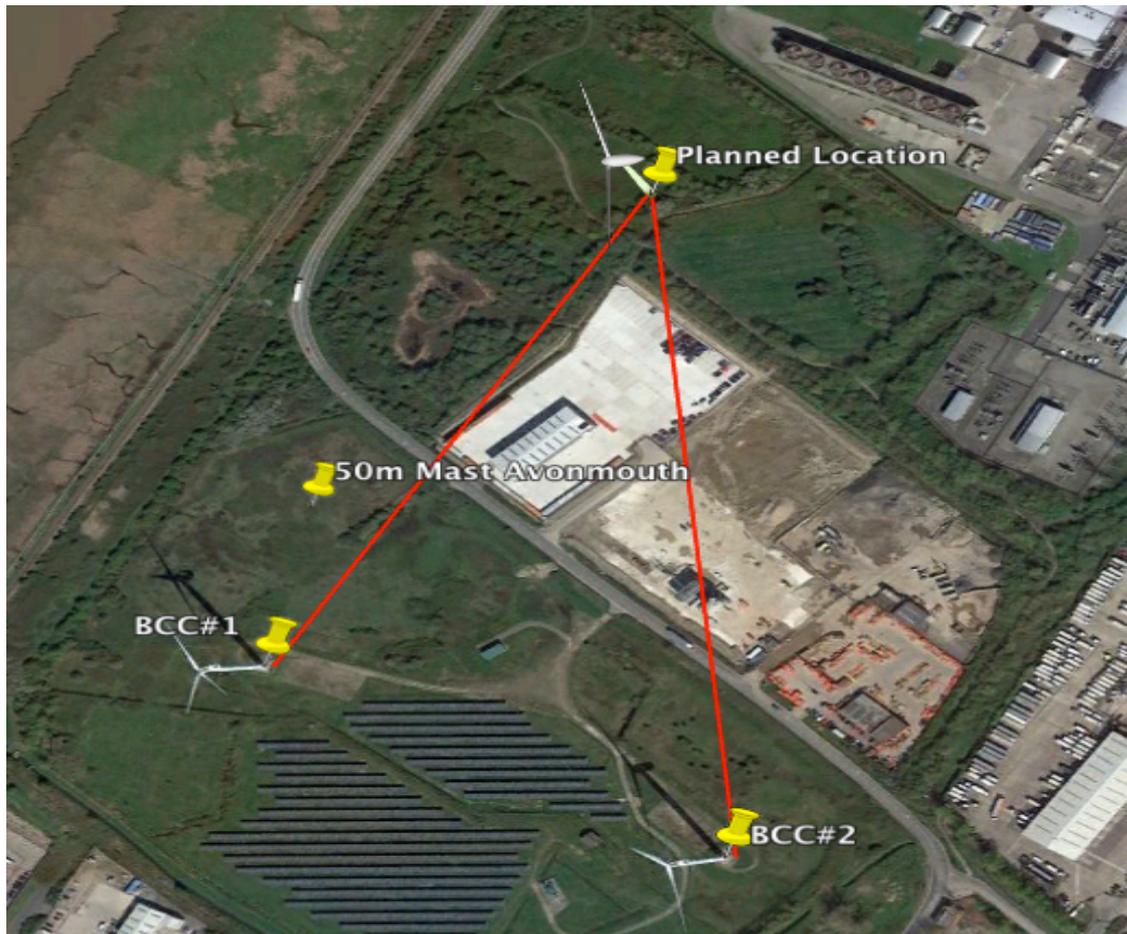


FIG 3 LOCATION OF NEIGHBOURING BRISTOL CITY COUNCIL TURBINES

Wind Regime

A report describing the wind regime and the expected energy production of two example turbines has been prepared by the independent consulting company Everoze. It is stressed that two example turbines have been adopted in this report for illustration only. No choice of turbine has been made. A link to the Everoze report is provided in Appendix 2.

The ambient turbulence of the Site is typical of the industrial surroundings. There will be some operational time spent in the wake of the two BCC turbines when the turbulence will be higher. The Everoze report provides a wind rose which may be used to investigate this characteristic. The extreme wind speed will be consistent with the annual mean wind speed at hub height of 7.2 m/s.

Schedule of documentation provided

Appendix 2 lists documents provided by ACE as part of this specification. Attention is drawn to the following:

- All the requirements set out in the planning conditions must be respected including working hours and environmental limitations to construction work. This document is part of the information package.
- There will be no electrical power or water available from utility on the site.

ACE will provide reasonable local support and information free from charge.

The Bristol Port Authority at Avonmouth has been briefed about the Project and will be able to answer any queries that the Bidder may have about the use of the port.

Scope of Work and Time Scale of TSIA

The scope of work which will be required within the TSIA is summarised below. This list is not comprehensive. The Bidder will be expected to undertake all and any work required to deliver a fully operational turbine given only that the site BoP works, undertaken to the specification provided by the Bidder, have been completed by others.

1. Supply, transportation erection and commissioning of a wind turbine suitable for the local wind regime and planning conditions and with 25-year design life minimum.
2. Provision of all equipment and machinery to perform the tasks in (1).
3. Embedment ring for inclusion in the top of the foundation together any fixings required. It should be noted that the foundations will require piles.
4. SCADA system including remote display and access for the Owner.
5. Customer Control interface to WPD ANM control at turbine substation as specified in the document package.
6. Turbine electrical system to be compatible with interface requirements set out below and to comply with current Grid Code Issue 5 Revision 45. Documentary evidence of compliance must be provided.
7. Insurance cover for period until provisional take-over has been achieved.
8. ACE has full planning permission for the construction and operation of the turbine. The Bidder is responsible for the procurement and execution of all additional licenses, permits and any other documentation and/or permissions needed to allow the execution of the delivery, erection and commissioning tasks.
9. All work to be undertaken in strict compliance with Health and Safety Executive requirements, and in compliance with the Planning Conditions.
10. Turbine commissioning tests.
11. Turbine provisional take-over tests.
12. Turbine final take-over tests.
13. Liaison with BoP contractor to resolve any issues affecting turbine delivery and installation.

The following to be delivered as part of the Offer.

14. Draft turbine long term operations and maintenance agreement (“LTOMSA”) together with standards of performance expected. Preference will be given to all-encompassing service agreements.
15. Turbine warranty agreement.
16. An applicable Type Approval Certificate issued by a recognized certification authority proving suitability for the Site.
17. Independently measured turbine power curves according to IEC 61400-Part 12-1.
18. Independently measured noise sound power level.
19. Grid connection requirements needed for the turbine in construction and operation.
20. A clear and unambiguous interface drawing showing extent of supply for civil, mechanical, electrical and communications connections in accordance with this specification.
21. Track record of proposed turbine – list of installations world wide.
22. Specification of required infrastructure – design loads for the site wind speeds and other specific requirements for the foundations, crane pads and hard standing. Design loads for foundations should be based upon the wind conditions appropriate to the Site.. The extreme stationary load should be considered carefully and an appropriate extreme wind speed used in order to allow design of optimum pile foundations.

Timescale

ACE shall achieve commercial operation at the latest by March 31 2022.

Interfaces

Bottom flange of tower together with threaded embedment ring for inclusion in the foundation and associated seals, caps and nuts together with connection protocols and torquing requirements.

11kV tails on turbine tower base switchgear, auxiliary power terminals, turbine tower lightning and earth connections.

SCADA remote comms, turbine I/O terminals for ANM control.

Form of Contract

The contract will be based on the FIDIC Yellow Book or bespoke with standard clauses.

Response from Bidders

Bidders should let us know asap that you intend to bid for this work.

Compliant bids from Bidders detailing their Offer and payment milestones as set out in Appendix 3 should be provided by email by midnight 21st November 2020.

All communications should be sent to

Dr Charles R Gamble

als.community.energy@gmail.com,

Tel +44 (0)1179855898 / +44 (0)7921524207

on behalf of

Ambition Community Energy
Ambition Lawrence Weston
Long Cross Community Centre
Lawrence Weston
Bristol BS11 0RX
England

How the successful candidate will be chosen

The successful Bidder will be chosen on the basis of the following criteria, with weighting factors listed below and overall scoring additionally per the table.

- Price is included in Cost of energy including capital cost, energy production and payment milestones
- Compliance with this specification
- Delivery by required commercial operation date
- Track record of the turbine offered
- Scope and cost of LTOMSA
- Requirements of lenders

Criterion	Advisory	Mandatory	Weighting
Quality, H&S			Mandatory
Compliance		Compliance with Scope of Work of TSIA as set out above.	Mandatory
Delivery timetable		COD before end March 2022	Mandatory
Price - modelled by Levelised cost of energy formula. (for variables see Note 1 below)	$LCOE = \frac{\sum_{t=1}^n \frac{[I_t + M_t]}{(1+r)^t}}{\sum_{t=1}^n \frac{E_t}{(1+r)^t}}$		50%
Note 1	LCOE = Levelised Cost of Energy I = Investment expenditures in year t (including financing) (GBP) M = Operations and maintenance expenditures in year t (GBP) E = Electricity generation in year t (MWh) r = Discount rate assumed 3.5% n = Life of the system (25 years)		
Lender approval - bankability			25%
Track record			20%
Payment terms and milestones			5%

Overall Scoring		
Score	Description	
0	Poor	No response and/or evidence is unacceptable or non-existent, or there is a failure to properly address any issue. The ACE does not have any confidence in the Bidder's experience, capacity and ability to meet its requirements.
1	Weak	The response and/or the evidence are deficient (or not relevant) in the majority of areas and the ACE has a low level of confidence in the Bidder's experience, capacity and capability to meet its requirements.
2	Unsatisfactory	Large portions of the response are not satisfactory and/or are not supported by a satisfactory level of evidence and the ACE has limited confidence in the Bidder's experience, capacity and capability to meet its requirements.
3	Satisfactory	The response is satisfactory and supported by an acceptable standard of relevant evidence but with some reservations/issues not addressed. The ACE is satisfied with the Bidder's experience, capacity and capability to meet its requirements.
4	Good	The response is comprehensive and supported by a good standard of relevant evidence and provides the ACE with a good standard of confidence in the Bidder's experience, capacity and capability to meet its requirements.
5	Very Good	The standard of the response is very high and the relevance of the response and the supporting evidence is very comprehensive and provides the ACE with a very high level of confidence in the Bidder's experience, capacity and capability to meet the ACE's requirements.

Details of how to apply

This invitation is being sent to Bidders who have already expressed a general interest in the Project. In order to meet formal contractual obligations this opportunity will also be advertised on the WECA web site

<https://www.westofengland-ca.gov.uk/wind-turbine-supply-opportunity/>

for a period in excess of 10 days.

Please apply to Dr Charles R Gamble at the address specified above.

Appendices

Appendix 1 – Brief Summary of the Project

ACE-20-MKT1	Brief description of the project.	
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Wind Turbine Approved for Community

Ambition Community Energy CIC (ACE) was set up in 2018 as an SPV by the Ambition Lawrence Weston Community organisation, to look into the feasibility of a wind turbine as part of the Community Plan. The community is in a deprived area of Bristol and the intention of the development is to provide financial support from revenue and equity returns, to help reduce fuel poverty, and deliver an Energy Learning Zone for local schools.

Supported by a strong board of directors, ACE raised development funding from the Bristol Community Energy Fund, Power to Change, the Port Community Resilience Fund, and Bristol & Bath Regional Capital, and the West of England Combined Authority.

Planning Approval Granted for Onshore Wind Turbine

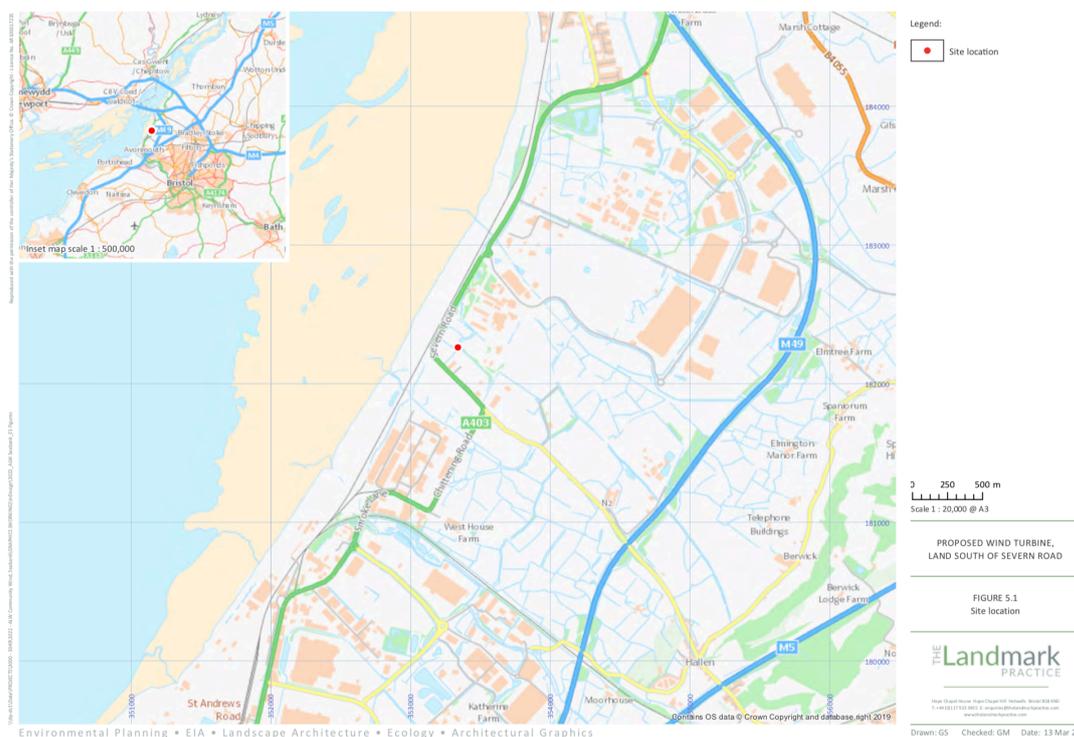
On the 8th July 2020, ACE's planning application, supported by comprehensive and detailed Environmental, Ecological, Transport, and Community reports, received a unanimous vote for approval from Bristol City Council's Planning Committee. The turbine approved has a maximum tip height of 150m. It is to be built on Council land at the site shown. The permission was granted for 25 years from commissioning.

Grid Connection Secured

In August 2019 ACE secured a grid connection agreement with Western Power Distribution for an 11kV supply to the turbine site. The works include the provision and installation of HV cable and substation equipment. ACE will carry out the necessary civil works and installation of the private 11kV cable from the turbine to the substation.

Land Agreement

ACE secured an exclusivity agreement on the use of the land from Bristol City Council in 2019.



Site Location

Main Parameters

The wind turbine is expected to have a maximum tip height of 150m, and a rotor of approximately 115-120m diameter.

Energy production is provisionally estimated at 10GWh / a based on uncurtailed p50, subject to final turbine selection and bankable wind report.

It will produce enough low carbon electricity to power 3,500 homes and make CO₂ savings of 1,965 tons every year, 49,199 tons over a 25 year life.

We seek to have all contracts in place by end of Q4 / 20 and be generating by Q4 /21.

We shall negotiate the turbine and BOP purchase on a competitive basis and we expect to go to selective tender.

The ACE Team

ACE are a two man team - Mr David Tudgey, energy champion and activist, and Dr Charles R Gamble, engineer and wind energy expert.

First Class Consultants

ACE have been supported by local consultants specialising in environmental assessments, ecology, planning, wind resource and more. They include

- Everoze Partners
- Pegasus Group
- The Landmark Practice
- Womble Bond Dickinson

Board of Directors

We are delighted to have as directors persons with excellent skill sets in finance, wind energy, community and technology. Board members include

Dr Andrew Garrad cofounded Garrad Hassan consultants and was Chairman of Bristol Green Capital.

Mark Pepper leads ALW and is a talented and effective community organiser successful in raising significant funds for his community.

Local LW Community

The strong support of the Lawrence Weston Community has been continuous throughout the development, and was evident in the many letters of support.

Appendix 2 - Documents provided by ACE

Ref	Document description	Dropbox link
ACE-20-PLNN2	Notice of Full Planning ref_20.01270.F certificate & Planning Conditions as Granted	link to be provided upon Expression of Interest
ACE-20-PLNS2	PROPOSED_SITE_PLAN-2525218	link to be provided upon Expression of Interest
ACE-20-PLNS3	SITE_LOCATION_PLAN-2525223	link to be provided upon Expression of Interest
ACE-20-PLNT3	TRAFFIC_MANAGEMENT_PLAN-2532957	link to be provided upon Expression of Interest
ACE-20-BOPA12	Transport Plan Smoke Lane Bridge (Caveat - This is for information only. Bidder to satisfy themselves by other means.)	link to be provided upon Expression of Interest
ACE-20-PLNS8	Electrical connections at Metering substation	link to be provided upon Expression of Interest
ACE-20-BOPC1	ACE-20- Cables Route pdf from CAD dwg	link to be provided upon Expression of Interest
ACE-20-GRD16	Specification of active network management requirements - 1	link to be provided upon Expression of Interest
ACE-20-GRD17	Specification of active network management requirements - 2	link to be provided upon Expression of Interest
ACE-20-GRD18	Specification of active network management requirements - 3	link to be provided upon Expression of Interest
ACE-20-BOPA5	Geotechnical report	link to be provided upon Expression of Interest
ACE-20-WND1	Wind Speed Report	link to be provided upon Expression of Interest
ACE-20-WND2	Wake analysis for BCC - ACE turbine interaction	link to be provided upon Expression of Interest
ACE-20-PLNU26	Hydrology BR-640-0001 Flood Risk Assessment	link to be provided upon Expression of Interest

Appendix 3 Response Questionnaire - Offer

Bidder name	
Contact name	
e-mail address	
Telephone number	

Prices to be quoted in € or £

Price without LTOMSA		
Validity period of prices quoted, Minimum 90 days		
Price for LTOMSA	Please divide into year groups if appropriate	
	From Year to Year	
	From Year to Year	
	From Year to Year	

Please supply payment milestones below

	% of price excluding LTOMSA
On order	
On delivery	
On successful completion of provisional operation test	
On final completion	
One year after final completion	

Please supply delivery time scales below.

Delivery of turbine to site	
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Completion of infrastructure	
Erection of turbine	
Turbine commissioned	

Please provide any other comments or qualification in the box below.

Please check that the following documents have been attached to your response

- *Draft turbine long term operations and maintenance agreement (“LTOMSA”) together with standards of performance expected. Preference will be given to all-encompassing service agreements.*
- *Draft turbine warranty agreement.*
- *An applicable Type Approval Certificate issued by a recognized certification authority proving suitability for the Site.*
- *Independently measured turbine power curve according to IEC 61400-Part 12-1.*
- *.Independently measured noise sound power level.*
- *Grid connection requirements needed for the turbine in construction and operation.*
- *A clear and unambiguous interface drawing showing extent of supply for civil, mechanical, electrical and communications connections in accordance with this specification.*
- *Track record of proposed turbine – list of installations world wide.*
- *Specification of required infrastructure – design loads for the site wind speeds and other specific requirements for the foundations, crane pads and hard standing. Design loads for foundations should be based upon the wind conditions appropriate to the Site.*

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