

***Appendix D-Attachment C-2***

***Wind MFS Bidder Questions***

***for***

***2021 Request for Proposals***

***for***

***Renewable Resources***

***For Entergy Arkansas, LLC***

 Entergy Arkansas, LLC

August 3, 2021

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| **Appendix C-2: Proposed Project Information** | | | |
| Bidder must fill out this table for the proposed wind project and attach equipment datasheets. | | |  |
| **Item** | **Site Information /Design Conditions** | **Responses** | **Units** |
| 1 | Design Lifetime of the plant |  | Yr |
| 2 | Site coordinates |  |  |
| 3 | Project Size |  | Mwac |
| 4 | Project Land Area |  | ac |
| 5 | Site Description |  |  |
| 6 | Distance to POI |  | miles |
| 7 | Annual Yield |  | GWh/yr |
| 8 | Seasonal Yield |  | GWh/yr |
| 9 | Project Availability |  | % |
| 10 | Average Elevation |  | FT a.s.l |
| 11 | Ambient Temperature Recorded (Minimum/Average/Maximum) |  | °F |
| 12 | Design Temperature for Operation (Minimum/Maximum) |  | °F |
| 13 | Design Relative Humidity |  | % |
| 14 | Design wind speed |  | mph |
| 15 | Rainfall (Annual Avg/Annual Max/1-day Max) |  | in. |
| 16 | Seismic Zone (Zone and ground acceleration values shall be confirmed by the geotechnical study). |  |  |
|  |  |  |  |
| **Item** | **Wind Turbine Generators (WTG)** | **Responses** | **Units** |
| 1 | *Attach datasheets* |  |  |
| 2 | Manufacturer |  |  |
| 3 | Model Number |  |  |
| 4 | Wind Turbine Classification |  |  |
| 5 | Turbine Nameplate for MW |  |  |
| 6 | Turbine Nameplate for Power Factor |  |  |
| 7 | Turbine Nameplate for MVA |  |  |
| 8 | Cut-in Wind Speed |  | mph |
| 9 | Rated Wind Speed |  | mph |
| 10 | Cut-Out Wind Speed |  | mph |
| 11 | Survival Wind Speed |  | mph |
| 12 | Standard Operating Temperature Range |  |  |
| 13 | Cold Weather Package Temperature Range |  |  |
| 14 | Hot Weather Package Temperature Range |  |  |
| 15 | Hub Height |  | m |
| 16 | Rotor Diameter |  | m |
| 17 | Rotor Swept Area |  | m² |
| 18 | Gearbox or Direct Drive |  |  |
| 19 | Gearbox Manufacturer |  |  |
| 20 | Gearbox Model |  |  |
| 21 | Generator Manufacturer |  |  |
| 22 | Generator Model |  |  |
| 23 | Blade Manufacturer |  |  |
| 24 | Blade Model |  |  |
| 25 | Plant Control Platform / System |  |  |
| 26 | SCADA for Turbine or complete Wind Farm including MET tower |  |  |
| 27 | WTG transformer location (up tower, down tower, pad mount) |  |  |
| 28 | Can the Gearbox be replaced without removing the blades? |  | Y/N |
| 29 | Can the Generator be replaced without removing the blades? |  | Y/N |
| 30 | How often does the WTG require regular maintenance? |  |  |
| 31 | Warranty for WTG Performance |  |  |
| 32 | Warranty for Gearbox (years) |  | YRS |
| 33 | Warranty for Generator (years) |  | YRS |
| 34 | Warranty for Blades (years) |  | YRS |
| 35 | Warranty for Tower (years) |  | YRS |
| 36 | Warranty for Other Parts |  | YRS |
| 37 | How many of these WTG Models are operational in the USA? |  |  |
| 38 | How many years has this WTG model been operational in the USA? |  |  |
| 39 | Please confirm the WTGs meet each of the following conditions: |  |  |
| 40 | Curtailment Control |  | Y/N |
| 41 | Voltage Control |  | Y/N |
| 42 | Voltage Droop Control |  | Y/N |
| 43 | Power Factor Controls |  | Y/N |
| 44 | Frequency Controls |  | Y/N |
| 45 | Integrated Control of Capacitor and Inductor Banks |  | Y/N |
| 46 | Reactive Power Production During Zero Real Power  Production |  | Y/N |
| 47 | Mechanical Loads Analysis included in SCADA? |  | Y/N |
| 48 | Low/High/Zero Voltage Ride-Through |  | Y/N |
| 49 | Special Installation Tools Included |  | Y/N |
| 50 | Wind Farm Control Management System included in  SCADA? |  | Y/N |
| 51 | Does the WTG include electrically driven service Lift? |  | Y/N |
| 52 | Which of the following WTG options are included in this Proposal: |  |  |
| 53 | Weather Condition Monitoring System |  | Y/N |
| 54 | 24/7 Offsite Monitoring (if yes, how many years) |  | Y/N |
| 55 | Icing Detection System |  | Y/N |
| 56 | Corrosion protection category for exposed sections |  | category C1 - C5 |
| **Item** | **WTG Transformer** | **Responses** |  |
| 1 | *Attach datasheets* |  |  |
| 2 | Manufacturer |  |  |
| 3 | Model Number |  |  |
| 4 | WTG transformer location (up tower, down tower, pad mount) |  |  |
| 5 | Rating / Cooling |  | kVA |
| 6 | Is the transformer Dry-type or oil insulated? |  | Y/N |
| 7 | If wet, what is the oil quantity? |  |  |
|  |  |  |  |
| **Item** | **Wind Monitoring Stations** | **Responses** |  |
| 1 | Type of System to be Used (Met Towers, LIDAR/Sodar, etc.) |  |  |
| 2 | *Attach datasheets* |  |  |
| 3 | Number of towers or LIDAR/Sodar installations |  |  |
| 4 | Tower or LIDAR/Sodar Manufacturer |  |  |
| 5 | Tower or LIDAR/Sodar Model |  |  |
| 6 | Is the tower in accordance to IEC 61400-12? |  |  |
| 7 | Is the data integrated with the WTG OEM SCADA system? |  |  |
| 8 | Is remote monitoring available? |  |  |
| 9 | Provide list of sensors installed and data provided to SCADA system |  |  |
| 10 | What wind heights (i.e. 40m, 60m & 80m) or range of heights will be measured? |  | Y/N |
| 11 | Are met towers guyed or free standing? |  | Y/N |
| 12 | Do the monitoring systems have UPS system? How many hours? |  | Y/N |
|  |  |  |  |