

1. Provide applicable and accurate information on all wind farm resources being registered.
 1. **Geographical Data** – One set of coordinates is required for the wind farm site and the met tower/nacelle anemometer. The placement of the met tower/nacelle anemometer should be within reasonable distance from the wind farm site. The height of met tower/nacelle anemometer should be within reasonable distance to the wind farm’s turbine hub height. If more than one set of coordinates will be provided for the wind farm and its met towers/nacelle anemometers, an email can be sent to OPSEMSEng@spp.org.
 - a. **Wind Farm**
 1. **Latitude** – Latitude of the resource location. Value should be entered in the decimal form of degrees. Value should be between 30 and 50 degrees and rounded to four digits. Value should represent the latitude at the mid-point of the wind farm.
 2. **Longitude** – Longitude of the resource location. Value should be entered in the decimal form of degrees. Value should be between -85 and -110 degrees and rounded to four digits. Value should represent the longitude at the mid-point of the wind farm.
 - b. **Met Tower/Nacelle Anemometer**
 1. **Latitude** – Latitude of the met tower/nacelle anemometer. Value should be entered in the decimal form of degrees. Value should be between 30 and 50 degrees and rounded to four digits.
 2. **Longitude** – Longitude of the met tower/nacelle anemometer. Value should be entered in the decimal form of degrees. Value should be between -85 and -110 degrees and rounded to four digits.
 3. **Height** – Height of the met tower/nacelle anemometer. Values should be entered in meters (m).
 2. **Turbine Data** – Turbine data characterizes the wind farm. If there more than one manufacturer, model, etc., provide the most dominant data among the wind farm site.
 - a. **Manufacturer** – Manufacture of the wind turbine.
 - b. **Model** – Model of the wind turbine. Provide any prefixes and suffixes if available.
 - c. **Turbines** – The number of turbines at the wind farm
 - d. **Capacity** – The nameplate capacity of each turbine
 - e. **Hub Height** – Height of the center of the turbine hub in meters (m) above ground level.
 - f. **Rotor Diameter** – Diameter of the rotor blades of the turbine in meters (m).
 - g. **Temperature Range of Operation** – Temperature range of operation. Value should be entered in degree Celsius. Value should reflect the turbine temperature range of operation.
 3. **Weather Data** – Submit the ICCP/XML Object ID’s that will be used when sending real-time weather data from the met tower/nacelle anemometer. If multiple met tower/nacelle anemometers will be used, an email can be sent to OPSEMSEng@spp.org.

For the following, if data is provided via ICCP a snapshot of the instantaneous value at the wind resource site is requested at a periodicity of every 60 seconds or faster. If data is provided via XML, a 5 minute average value representing the previous 5 minute period composed of data sampled at least every 60 seconds is requested at a periodicity of every 5 minutes, beginning at xx:00.

Required Data

- a. **Wind Speed** – Telemetered wind speed measured in meters per second (m/s) taken directly from the specified met tower/nacelle anemometer.
- b. **Wind Direction** – Telemetered wind direction measured in compass heading degrees (1 – 360) taken directly from the specified met tower/nacelle anemometer.

The following data is highly recommended by SPP in order to further improve the wind forecast however is not required to be submitted:

- a. **Temperature** – Telemetered temperature measured in degrees Celsius (C) taken directly from the specified met tower/nacelle anemometer.
 - b. **Pressure** – Telemetered barometric pressure measured in kilopascals (kPa) taken directly from the specified met tower/nacelle anemometer.
 - c. **Relative Humidity** – Telemetered relative humidity measured in percent (%) taken directly from the specified met tower/nacelle anemometer.
4. **Real-time Turbine Availability** – Number of turbines at the wind resource site that are able to generate power as a percentage (%) of the installed nameplate capacity of the site.

If data is provided via ICCP, a snapshot of the instantaneous availability at the wind resource site is requested at a periodicity of every 60 seconds or faster. If data is provided via XML, a 5 minute average value representing the previous 5 minute period composed of data sampled at least every 60 seconds is requested at a periodicity of every 5 minutes, beginning at xx:00.

5. CROW Data

- a. **Outage** – This is already in Criteria. Will remove.
- b. **Availability** – Provide the planned wind farm MW capability due to maintenance and any known power curve de-rate for the next 7 days. The threshold to submit, or update, availability reduction from max capability is 20% or 20MW whichever is smaller. SPP highly recommends submitting or updating availability information in 10% or 10MW step sizes but it is not required.

6. Contact Information – 24x7 contact information

- a. **Wind Farm Owner**
- b. **Wind Farm Operator**