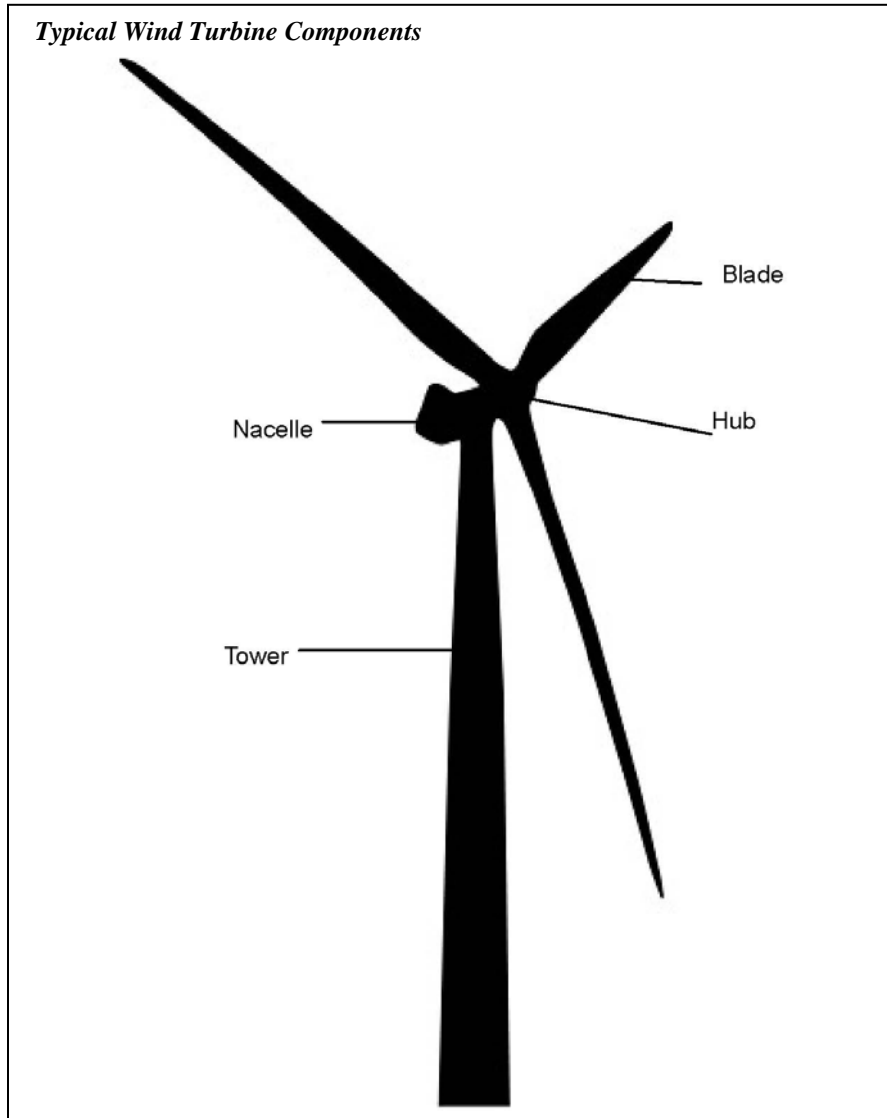


EXHIBIT B-1: DESCRIPTION OF FACILITY COMPONENTS

Wind Turbines

A wind turbine generator (WTG) features a nacelle mounted on a tower. The nacelle houses the generator and gearbox, and supports the rotor and blades at the hub. The turbine tower supports and provides access to the nacelle.



Tower

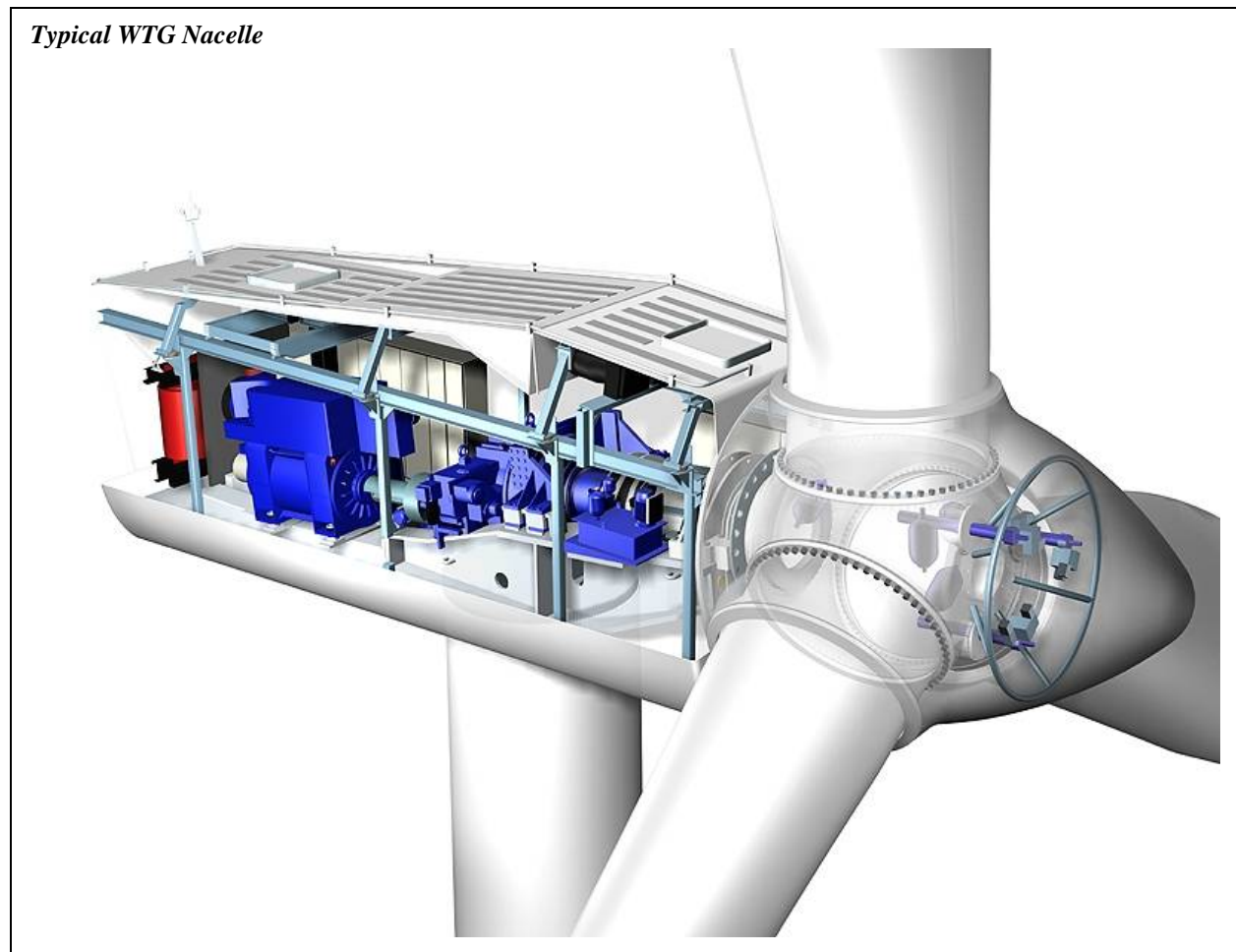
The WTG tower is a tubular conical steel structure that is manufactured in multiple sections depending on the tower height. Towers for the Facility will be fabricated, delivered and erected in 3 or 4 sections each. A service platform at the top of each section allows for access to the tower connecting bolts for routine inspection. An internal ladder runs to the top platform of the tower just below the nacelle. A nacelle ladder extends from the machine bed to the tower top platform allowing nacelle access independent of its orientation. The tower is equipped with interior lighting and a safety glide cable alongside the ladder.

EXHIBIT B-1: DESCRIPTION OF FACILITY COMPONENTS

The tower design is certified by experienced and qualified structural engineers who have designed several generations of turbine towers that have proven themselves well in some of the most aggressive wind regions of the world. The towers and foundations are designed for a survival gust wind speed of 90+ mph with the blades pitched in their most vulnerable position. For the cold-weather winter conditions on the Facility site, special material specifications are set to ensure that materials do not go below the brittle transition temperature.

Nacelle

The figure below shows the general arrangement of a typical nacelle that houses the main mechanical components of the WTG. The nacelle consists of a robust machine platform



mounted on a roller bearing sliding yaw ring that allows it to rotate (yaw) to keep the turbine pointed into the wind to maximize energy capture. A wind vane and anemometer are mounted at the rear of the nacelle to signal the controller with wind speed and direction information.

The main components inside the nacelle are the drive train, a gearbox and the generator. On some turbines, the step-up transformer is situated at the rear of the nacelle, which eliminates the need for a pad-mounted transformer at the base of the tower.

EXHIBIT B-1: DESCRIPTION OF FACILITY COMPONENTS

The nacelle is housed by a fully-enclosed, steel-reinforced fiberglass or an all steel shell that protects internal machinery from the environment and dampens noise emissions. The shell is designed to allow for adequate ventilation to cool internal machinery such as the gearbox and generator.

Drive Train

The rotor blades are all bolted to a central hub. The hub is bolted to the main shaft on a large flange at the front of the nacelle. The main shaft is independently supported by the main bearing at the front of the nacelle. The rotor transmits torque to the main shaft that is coupled to the gearbox. The gearbox increases the rotational speed of the high speed shaft that drives the generator at 1200-1800 RPM to provide electrical power at 60 Hertz (Hz).

Rotor Blades

The modern WTGs under consideration for the Facility have 3-bladed rotors that range in span from 70 to 112 meters (230 to 367 feet) in diameter. The adjacent figure illustrates the rotor hub, spinner nose cone, and rotor blade assembly on the ground prior to erection. The rotor blades turn quite slowly; typically between 15 and 20 RPM, resulting in a graceful appearance during operation. The rotor blades are typically made from a glass-reinforced polyester composite similar to that used in the marine industry for sophisticated racing hulls. Much of the design and materials experience comes from both the marine and aerospace industries and has been developed and tuned for wind turbines over the past 25 years. The blades are non-metallic, but are still equipped with a sophisticated lightning suppression system.



Turbine Control Systems

Wind turbines are equipped with sophisticated computer control systems which constantly monitor variables such as wind speed and direction, air and machine temperatures, electrical voltages, currents, vibrations, blade pitch and yaw angles, etc. The main functions of the control system include nacelle operations as well as power operations. Generally, nacelle functions include yawing the nacelle into the wind, pitching the blades, and applying the brakes if necessary. Power operations controlled at the bus cabinet inside the base of the tower include operations of the main breakers to engage the generator with the grid as well as control of ancillary breakers and systems. The control system is always running and ensures that the machines are operating efficiently and safely.

Turbine Foundations

During the detailed engineering design phase of the Facility and prior to construction, a formal geotechnical investigation will be performed to analyze soil conditions and test for voids and homogeneous ground conditions. Depending on the results of the geotechnical investigation, either spread footing type foundation or a vertical mono-pier foundation will be used for the WTG foundation design. The foundation design will be tailored to suit the soil and subsurface

EXHIBIT B-1: DESCRIPTION OF FACILITY COMPONENTS

conditions at the various turbine sites. The foundation design will be certified by an experienced and qualified, state-registered structural engineer.

Spread Footing Type Foundation



Mono-Pier Type Foundation



EXHIBIT B-1: DESCRIPTION OF FACILITY COMPONENTS

Met Towers

The Facility will include permanent meteorological (met) towers that are fitted with multiple sensors to track and monitor wind speed and direction and temperatures. The met towers will be connected to the wind plant's central SCADA system. The permanent towers will be free-standing, un-guyed structures to reduce the risk of avian collisions and will be as tall as the hub height (HH) of the WTGs.

Each met tower will also have a grounding system similar to that of the wind turbines with a buried copper ring and grounding rods which will all be tied to the lightning dissipaters or rods installed at the top of the towers.



EXHIBIT B-1: DESCRIPTION OF FACILITY COMPONENTS

SCADA System

Each turbine is connected to a central Supervisory Control and Data Acquisition (SCADA) System, through a network of underground fiber optic cable. The SCADA system allows for remote control monitoring of individual turbines and the wind plant as a whole from both the central host computer and from a remote PC. In the event of faults, the SCADA system can also send signals to a fax, pager, or cell phone to alert operations staff.

The SCADA system delivers real-time power output from the Facility which can be accessed by power scheduling and system controls personnel to support real-time and hour-ahead power schedule schemes.

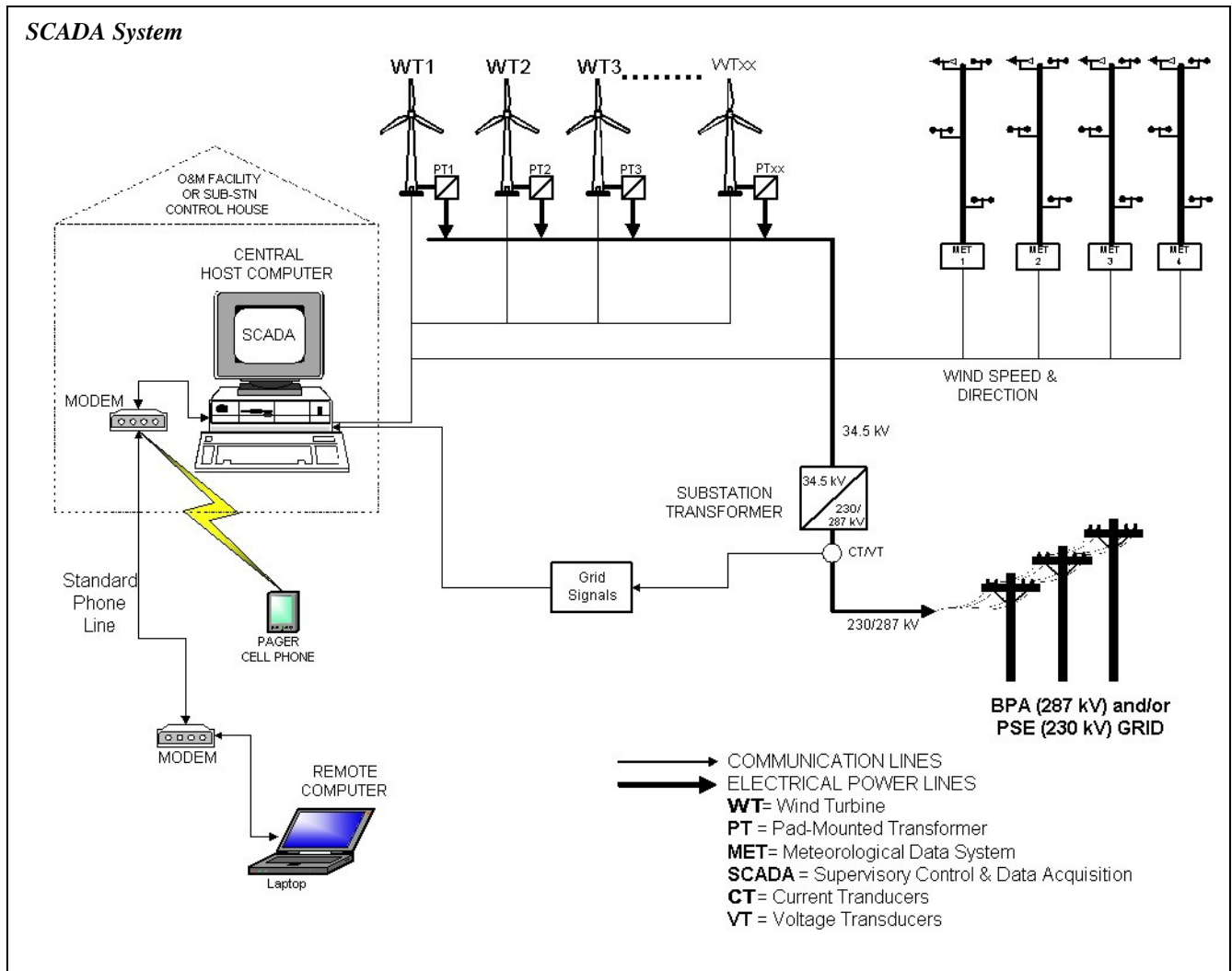


EXHIBIT B-1: DESCRIPTION OF FACILITY COMPONENTS

Electrical System and Collection System Infrastructure

Electrical power generated by the wind turbines will be transformed and collected through a network of underground and overhead cables that terminate at the Facility substation.

Power from the wind turbines will be generated at 575 Volts to 690 Volts (V) depending on the type of wind turbine utilized for the Facility. Power from the turbines is fed through a breaker panel at the turbine base inside the tower and is interconnected to a nacelle-encased or pad-mounted step-up transformer at the tower base that steps the voltage up to 34.5 kilovolts (kV). The transformers are networked on the high side to underground or overhead cables that connect all of the turbines together electrically. Where practicable, the underground cables are installed in a trench that runs beside the Facility's roadways as shown in the adjacent figure. Depending on geotechnical analysis at the site, native material or a clean fill material such as sand or fine gravel will be used to cover the cable before the native soil and rock are backfilled over the top. In locations where two or more sets of underground lines converge, underground vaults and/or pad mounted switch panels will be utilized to tie the lines together into one or more sets of larger feeder conductors.

Typical Underground Cable Trench



The below figure shows a typical pad-mount transformer used at each wind turbine. The underground collection cables feed to larger feeder lines that run to the main substation.

Typical Pad-Mount Transformer
(shown during construction before terminations landed)



EXHIBIT B-1: DESCRIPTION OF FACILITY COMPONENTS

Short sections of overhead collector cable may be required at a few locations, such as over steep ravines or riparian areas, where trenched cable would have a greater environmental impact. For these runs of 34.5 kV overhead power lines, a fused, switch-riser pole will be used to run the cables from the underground trench to the overhead conductors.

The collection cables feed to a step-up substation where the voltage is stepped up to interconnection voltage (230kV), and delivered to the point of interconnection (POI) at Bonneville Power Administration's (BPA) 230kV La Grande substation, Idaho Power Company's (IPCO) Ladd Canyon Substation and/or IPCO's North Powder Substation to the south of the Facility. A typical overhead high-voltage 230kV transmission pole arrangement is pictured below.

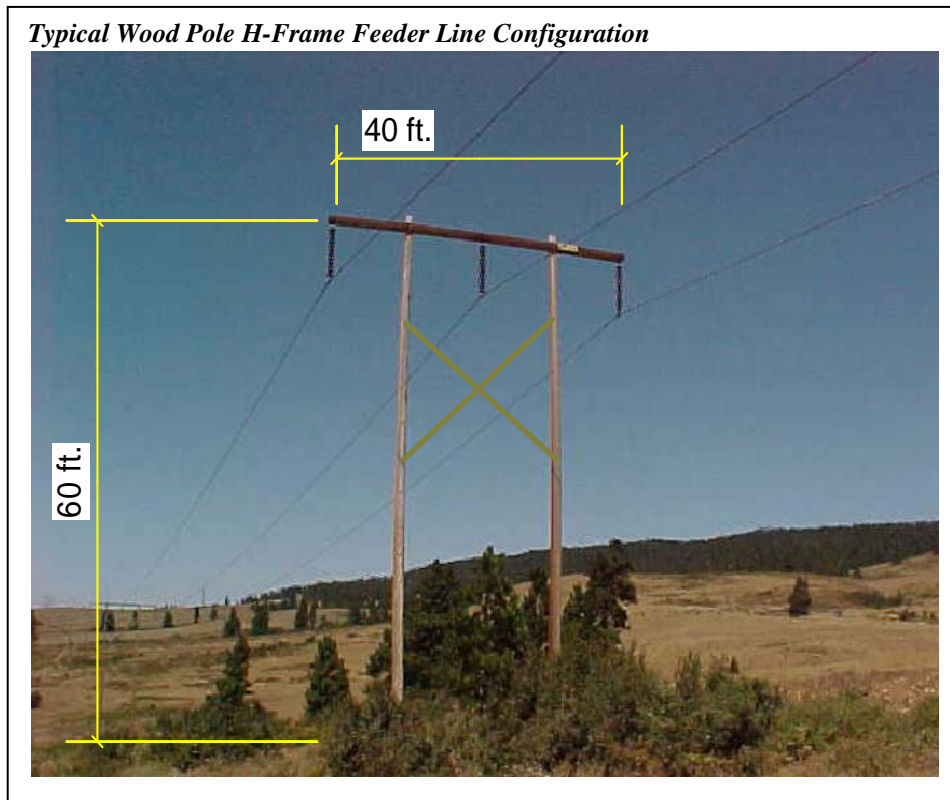


EXHIBIT B-1: DESCRIPTION OF FACILITY COMPONENTS

Substation and Interconnection Facilities

Typical Wind Power Facility Substation



The main functions of the substation and interconnection facilities are to provide fault protection and to step up the voltage from the collection lines (at 34.5 kV) to the transmission level required to interconnect to the utility grid. The basic elements of the substation and interconnection facilities are a control house, a bank of main transformers, outdoor breakers, relaying equipment, high voltage bus work, steel support structures, and overhead lightning suppression conductors. All of these main elements will be installed on concrete foundations that are designed for the soil conditions at the substation sites. The substations and interconnection facilities each consist of a graveled footprint area of approximately 5-10 acres, a chain link perimeter fence, and an outdoor lighting system.

Final adjustment to the substation and interconnect are generally made during design review with the interconnecting utility and their system protection engineers to accommodate for conditions on the grid at the time of construction.

EXHIBIT B-1: DESCRIPTION OF FACILITY COMPONENTS

Operations & Maintenance Facility

An O&M facility will be located within the project boundary. The O&M Facility will include a main building with offices, spare parts storage, restrooms, a shop area, outdoor parking facilities, a turn-around area for larger vehicles, outdoor lighting and a gated access with partial or full perimeter fencing. The O&M facility area will be leveled and graded.

Top of Iowa O&M

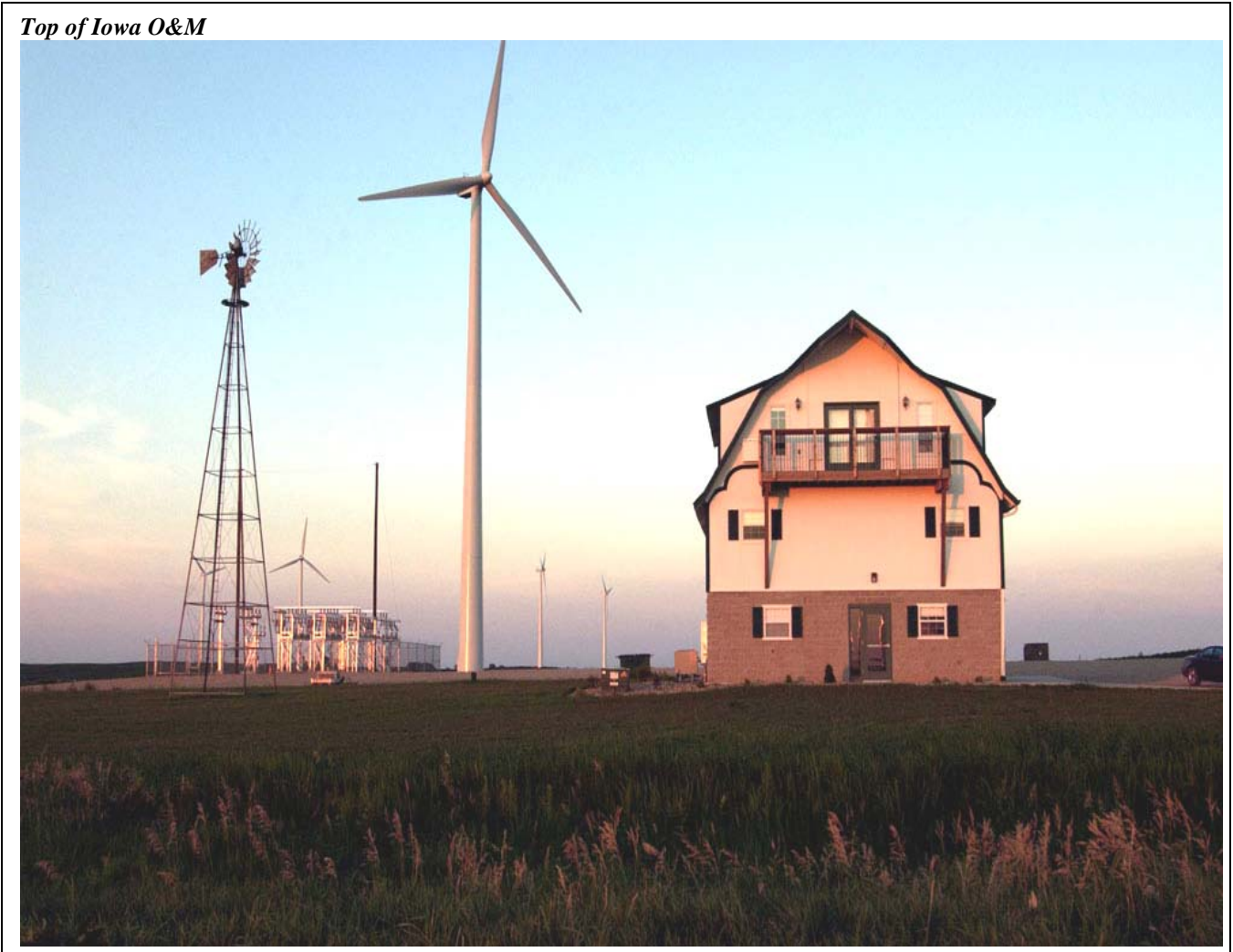


EXHIBIT B-1: DESCRIPTION OF FACILITY COMPONENTS

Laydown Areas

There will be up to two principal, temporary laydown areas for the staging of construction equipment, wind turbines and their components, towers, and other parts, facilities, and equipment. Each temporary laydown area will be up to 10 acres and will be covered with gravel. The gravel will be removed and the area restored after construction has been completed and the ground restored. Additionally, temporary laydown areas will be located at each wind turbine location as depicted in the below figure.



EXHIBIT B-1: DESCRIPTION OF FACILITY COMPONENTS

Roads and Civil Construction Work

Access to the various rows of turbines will be achieved via graveled access roads. The new site roads are designed to allow heavy equipment to traverse the Facility site and will be used throughout the life of the Facility to allow access to and from the wind turbines, substations and meteorological monitoring towers. The Facility site access roads will be designed to meet Union County fire and emergency access standards and will be maintained by the Applicant over the life of the Facility.

The road design has been prepared to minimize the overall disturbance footprint and avoid erosion risks. Wherever practical, existing roads have been utilized to minimize new ground disturbance. The roads will consist of a 22-foot wide compacted graveled surface in some areas, with other areas of road between turbines up to 34 feet wide to support large cranes used to erect the WTGs. In areas of steeper grades, a cut and fill design will be implemented to keep grades below 12% to help prevent potential erosion issues and to comply with Union County standards.

Typical Wind Power Facility Gravel Road

