



- Legend**
- Preliminary Turbine Location
 - ⚡ Preliminary Collector Substation
 - ▣ Potential O&M Building
 - POI
 - Preliminary Transmission Line
 - Preliminary Access Road
 - Preliminary Collection Line
 - Permit Area
 - Seven Mile Hill Wind Farm
 - Signed or Targeted (Private Land)
 - State Land
- Road Classification**
- US/State Route
 - County Road
 - Local Road

All facilities shown are for a preliminary, representative layout, likely to change

Ekola Flats Wind Preliminary Project Layout & Permit Area

Carbon County, Wyoming

Rev. 00
April 13, 2018



Construction of the Ekola Flats Wind Energy Project is envisioned to begin after the thaw in the spring of 2019 and continue until the late fall of 2020, with a break for the winter, for a total duration of approximately 20 months. The first year of construction will consist largely of civil work. Turbine installation, erection, and commissioning will occur in 2020.

Traffic impacts to Carbon County and the towns surrounding the Project are likely to mirror the level of construction workforce present at the site. Maximum potential workforce on site is expected to peak at approximately 250 workers each summer during construction, and each worker is expected to drive a personal vehicle onto the site, though some workers may carpool. In addition to commuting traffic, the site will receive approximately 25-40 delivery trucks per day during peak construction. The delivery trucks will include approximately 30-40 concrete trucks per turbine foundation and 10 component trucks per Wind Turbine. There will also be additional deliveries for rebar, cable, cranes, padmount transformers, gravel, anchor bolts, and other miscellaneous equipment. All of these numbers are tentative and likely to change depending on final turbine technology selection. Currently the Vestas V-136 4.2MW turbine is anticipated for the site, along with GE 2.3MW-116 turbines.

Construction in 2019:

Before any significant civil work begins on the Ekola Flats Wind Energy Project, a county road survey will be conducted, pursuant to the Road Use Agreement, an initial draft of which is included in Supplement 10. The survey will be conducted by Project representatives, and representatives from the Carbon County Road and Bridge Department will be invited to join. The survey will be conducted in order to ensure a baseline of county road conditions is understood and recorded, such that the County will have a guarantee that Carbon County roads will be returned to their original or better condition post-construction.

In April of 2019, after the road survey is complete, heavy equipment is expected to arrive onsite, depending on weather conditions, and work will begin with the construction of the Project laydown yard where most equipment will be delivered and stored. Crews will then construct access roads and turbine foundations in preparation for turbine deliveries. In parallel, crews will be constructing the foundations for the Project's collector substations, where all energy from the wind turbines will be collected from buried 34.5kV collector cables and stepped up to the transmission-level voltage of 230kV and consolidated into a generation-line which will run from the collector substation to PacifiCorp's planned Aeolus substation.

This work is expected to run from April until October of 2019, though work may continue beyond October as weather permits. The site will be secured and readied for the winter of 2019-2020 and work on the site will drop off during the winter months. Work levels are expected to peak in July, August, and September of 2019 with up to approximately 250 workers active onsite or nearby in those months. During peak construction, the traffic hours are expected to be from 6:00 AM through 8:00 PM, depending on season, schedule, amount of daylight, etc.

Construction in 2020:

Work on the Ekola Flats Wind Energy Project is expected to pick back up in the spring of 2020. Before work commences in 2020, another road survey will be conducted pursuant to the Road Use Agreement to be finalized with Carbon County. Once completed, construction will begin again. Construction work in 2020 is expected to consist primarily of completion of any civil work not completed in 2019, turbine deliveries, installation, commissioning, site reclamation and transmission line and substation construction.

Turbine Deliveries are expected to commence in spring of 2020 and turbine components are expected to be delivered directly to each turbine site. Turbine deliveries will likely continue for approximately 7 weeks from May into June with turbines being delivered and erected throughout that time. Turbines are expected to be erected at a rate of approximately six per week. All turbines are envisioned to be erected by the end of July 2020, with wiring and mechanical completions complete by the end of September 2020.

As turbines are erected and completed, they will be connected to one another by buried electrical collector cabling. This cabling will be buried 3-4 feet underground and once electrified will carry current at 34.5kV. Collection construction will continue throughout 2020, envisioned to be complete by mid-September 2020.

In parallel to turbine and collection installation, primary substation components will be installed on the collector substation foundations completed in 2019. The generation-tie transmission lines within the Project area will also be constructed during this period, with work running roughly from May until mid-August. The collector substations are expected to be complete and energized by mid-August as well.

Once the Project is mechanically complete, roughly one and a half months of commissioning and testing is expected to be conducted throughout the Project to ensure that all components of the wind energy facility are correctly assembled and ready for full operation. The Project is planned to be fully commercially operational before the end of 2020. Work levels in 2020 are expected to peak in July, August, and September with up to approximately 250 workers active onsite in those months. During peak construction, the traffic hours are expected to be from 6:00 AM through 8:00 PM, depending on season, schedule, amount of daylight, etc.

Representative photos of some elements of Project construction can be found in [Appendix 19](#). A Gantt chart describing in more detail the tentative schedule outlined here can be found in [Appendix 20](#).

List of Hired Contractors:

Final turbine technology type has not yet been selected, though Vestas is the anticipated supplier, and contractors have not yet been hired for work on the Ekola Flats Wind Energy Project. Contractors are expected to be selected through a competitive bidding process in the spring and summer of 2018, and local and Wyoming contractors will be given preference whenever possible and commercially reasonable.

Workforce Housing Plan:

Project construction workers will be a blend of local citizens hired as contractors and subcontractors, as well as people who are not from the area but who have traveled to the area to participate in the construction of the Project. This latter group will generally stay in hotels, long-term rented housing, and in camp sites with RVs and personal trailers over a large area, which may consist of Medicine Bow,

Hanna, Rawlins, Sinclair, Saratoga, Elk Mountain, Rock River, and Laramie. As part of the Wyoming Industrial Siting Division state permit application process, Invenenergy is required to conduct a detailed analysis of workforce housing availability. Those studies are currently underway, and Invenenergy will be happy to share and review the results of the study with Carbon County officials. If it becomes clear through those studies that temporary workforce housing will be required, the Applicant will coordinate with Carbon County to ensure that such housing is properly sited, to code, and helps alleviate any negative impacts associated with an influx of workers to the area.