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A BERKSHIRE HATHAWAY ENERGY COMPANY

Decommissioning / Reclamation Plan for the Foote Creek Rim I Wind Site after Proposed Repowering

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I. Executive Summary

This document outlines decommissioning / reclamation activities and costs associated with the deconstruction/decommissioning of the Foote Creek Rim I wind site (FCR1) located near Arlington, Wyoming after the proposed repowering is complete. Specifically, this cost estimate represents the removal of wind turbines and associated infrastructure located on the Bureau of Land Management (BLM) leased lands authorized under the Right of Way (ROW) agreement number WYW-142464, on State lands and on leased private lands. Deconstructing the proposed turbines to be located on FCR1 after the proposed repowering includes the removal of 12 wind turbines, 12 concrete pads, 12 gravel access pads, and approximately 8 miles of road. Additionally, the deconstruction results in the reclaiming of approximately 35 acres of disturbed area.

Attachment A provides detailed estimates for decommissioning and reclamation costs. The estimates were calculated using the State of Oregon's Department of Energy (ODOE) Energy Facility Siting Council Site Restoration Cost Estimating Guide (Guide or model). The ODOE states:

> "…the purpose of the [Guide] is to generate an estimate of the site restoration cost for an energy facility. The Cost Guide is used to estimate site restoration costs for newly proposed energy facilities as described in a site certificate application (SCA) or to estimate site restoration costs for a facility that is proposed for expansion or modification as described in a request for a site certificate amendment (RFA). To determine the amount of a bond or letter of credit required under OAR 345-022-0050 that would be adequate for the State to pay site restoration costs if the certificate holder fails to perform its obligation to restore the site, the Siting Council assumes a facility configuration under which the restoration cost would be highest. In other words, the Council bases the restoration cost estimate on 'worst case' assumptions…"

The model provides unit costs based on 2010 2nd quarter dollars. The unit cost has been adjusted based on the 2018 4th Quarter Gross Domestic Production (GDP) index to reflect inflationary costs. Based on the model inputs, the total estimated cost for deconstruction of turbines and associated infrastructure is $2,200,000.

II. Existing Conditions

The existing Foote Creek Rim I wind site located near Arlington, Wyoming originally included 69 turbines; however, one turbine was removed in 2013 due to a structural failure leaving 68 currently. After the proposed repowering, there will be 12 turbines.

A. Topography

Site is located on flat top of the Foote Creek Rim. Site topography is flat with little slope.

B. Vegetation

Typical cattle grazing lands with shrubs and native grasses.

C. Proposed Facilities/Structures

There will be 12 turbines. Each turbine location has one associated gravel pad and concrete foundation per turbine. There will be approximately 7.8 miles of access roads. The existing substation and overhead lines serve other projects and are assumed to remain in place after decommissioning of FCR1. In addition, the existing O&M facilities are rented from the landowner and are therefore not included in this decommissioning/reclamation plan.

III. Project Summary

A. Acreage and Facility Dimensions

The FCR1 is located on a combination of BLM, State of Wyoming and private lands. Each of the proposed 12 turbine sites will have an associated gravel pad, foundation and turnout with the following approximate dimensions:

- Foundations to 4 feet below grade is approximately 665 cuyd each (67ft x 67ft x 4ft).
- Tower and gravel pad approximately 1,300 sqft each.
- Road turnouts per turbine approximately 365 sqft.

There will also be two met towers with approximately 900 sqft occupied per tower and 7.8 miles of access roads approximately 20 linear feet wide.

B. Turbine Description

There will be 12 total turbines, eight (8) will be 4.2 MW and the four (4) will be 2.0 MW. The turbines will be an upwind, three-bladed, variable-speed turbine. The turbines will be arranged in a North/South array in T19N R78W.

Each turbine consists of the following components:

Rotor. The rotor is composed of three blades made of laminated fiberglass and a cast-steel hub. Wind creates lift on the blades, causing the rotor to spin. The hub connects the rotor blades to the main shaft and transmits torque.

Gearbox. The gearbox transmits rotor power to the generator and increases the rotational speed to the required speed of the generator.

Yaw system. The yaw system controls the directional orientation of the rotor, thereby maintaining an accurate upwind position. The system is composed of a bearing surface for directional rotation of the turbine, a drive system to maintain an upwind rotor position, an error sensing system, and a mechanical brake for use during system servicing. This yaw control system prevents the cables from twisting within the WTG and causing operating problems.

Nacelle. The nacelle protects the turbine from environmental exposure including precipitation, airborne particles, and sunlight. Access to the nacelle is gained from inside the tower to facilitate up-tower servicing (i.e., maintenance can be performed with the nacelle in place on the tower).

Tower. The tower is a free-standing, conical, structural-steel tubular tower which supports the nacelle and rotor. The towers will be painted with a durable finish that provides corrosion protection and to help mitigate visual impacts. Towers are numbered and marked for identification. Tower heights are as follows:

- 4.2 MW Turbine = 269 ft (82 m)
- 2.0 MW Turbine = 263 ft (80 m)

Generators. The generators produce alternating current electricity from the rotational power of the rotor.

Power electronics. Power electronics control the output of the generator and deliver power to the low-voltage side of the transformer.

C. Ancillary Facilities

There will be two met towers and two junction boxes in addition to the 7.8 miles of access roads and 12 turbines.

Meteorological towers will be 500 ft (152 m) tall and be constructed of galvanized steel. The towers are anticipated to be guyed, monopole (a solid tubular pole) or three-leg triangular design of sufficient dimensions and robustness to survive local wind and ice loads. Towers will be mounted on 3-ft (1-m) diameter concrete pier foundations. Each tower will be equipped with a safety climbing cable.

D. Erosion Control and Stormwater Drainage

Erosion control devices include, but are not limited to: waterbars, roadside ditches with subsurface culverts, berms, energy-dissipating structures, mulches, and permanent vegetation.

E. Waste and Hazardous Material Management

Waste removal is provided on a routine or as needed basis. Thermo Fluids removes used oil waste, Veolia removes any hazardous waste and MHIWIND is contracted to remove the universal waste.

F. Site Security and Fencing

A fence and locking control gate with a cattle guard and electric activation are located at the off-site entrance for security and safety. A second manually operable gate, chain locked, was installed to allow infrequent access for heavy equipment such as large cranes and grading equipment.

A. Power Lines, Substations, and Interconnection to Electrical Grid

Each turbine will have an internal transformer with a primary shut off switch and protective breakers.

In the medium-voltage system (34.5 kV), the transformers are interconnected with medium-voltage, high-density, insulated underground cables. These cables connect to each transformer with American National Standards Institute (ANSI)-standard insulated elbow connectors. Medium-voltage cables are installed underground adjacent to roads and connected to the Foote Creek Rim substation where voltage is stepped up for delivery to the high-voltage (230-kV) transmission line. Riser poles at the substation connection point have a pole-top three-phase switch (operable from the ground), surge protection,

insulated cable terminations and jumper wires, and wildlife boots (a protective covering over cable terminators) and lightning arresters. Approximately 3.5 miles of buried collector lines run along the access roads and are buried approximately 3 feet deep or greater.

I. Site Deconstruction Site Preparations and Management Activities

Reclamation will be conducted on all disturbed areas to comply with the BLM Wyoming policy on reclamation (BLM 1990) and any other applicable standards or lease terms. The short-term goal of reclamation will be to stabilize disturbed areas as rapidly as possible, thereby protecting sites and adjacent undisturbed areas from degradation. The long-term goal will be to return the land to approximate predisturbance conditions through the establishment of an ecologically sustainable vegetation community.

A. Access

Access to the site during construction and O&M will be controlled via an electric security gate at the entrance to the main access road on Wyoming Highway 13.

B. Fencing/Public Safety

Signs will be posted on the main access road noting the existence of high-voltage equipment and underground cable on the site. Signage related to the demolition will also be posted as required by local notification.

C. Administrative Areas/Staging/Laydown Areas/Power/Fueling

There are anticipated to be staging areas for concrete removal prior to recycling and using as backfill, excavated materials from grading to be used as backfill in other areas, stockpile for blades and hubs prior to removal from the site, roads will be temporarily widened (~4 ft) to accommodate demolition traffic, a guard shack will be installed for monitoring the stockpiles prior to disposal, and a temporary trailer installed onsite for the supervisor, foreman and clerical staff. One central laydown area and 4 string laydown areas are anticipated as well as a ¼ acre laydown area per turbine.

D. Erosion Control and Stormwater Drainage

Objectives of erosion control are to conserve soils and inhibit water pollution caused by stormwater runoff. Various surface manipulations and water management techniques are utilized to accomplish this (BLM 1990). Mitigation measures will include stringent erosion control measures and prompt revegetation.

Temporary erosion control devices will be installed during project decommissioning and will include (but not necessarily be limited to) waterbars, roadside ditches with subsurface culverts, berms, energy-dissipating structures, mulches, and establishment of permanent vegetation.

Site-specific circumstances will often dictate the types of erosion control measures needed, and while certain measures are recommended herein, the environmental inspector will have the authority to make

decisions on-site. The inspector will also monitor decommissioning to ensure that erosion control devices are functioning properly.

Decommissioning activities will be suspended when soils are so wet that equipment traffic causes deep ruts. Decommissioning will resume when soils become dry enough to support construction equipment. Due to the variability in soil conditions within the area, the environmental inspector will have the responsibility to determine when conditions are too wet to continue decommissioning.

Plant growth material salvaged during initial grading will be stockpiled in windrows along the sides of access road ROWs and turbine pads. If necessary, stockpiled topsoil will be protected from wind and water erosion using erosion control netting or blankets. Netting or blankets will be anchored according to manufacturers' specifications.

Erosion control blankets or other comparable devices will also be used, if deemed necessary by the environmental inspector, on cut-and-fill slopes, in roadside ditches, and on disturbed areas adjacent to the roadway in areas where cut slopes exceed 3:1. Temporary straw bales and/ or silt fences will be used in roadside ditches and at the base of cut or fill slopes to slow runoff and trap sediments wherever slopes exceed 5:1. Because only minimal disturbance will occur along the existing country road, temporary stabilization measures will be needed only near stream crossings or wetlands, and erosion control blankets or other comparable temporary erosion control devices will be used.

E. Invasive Weed Management

Noxious weeds will be controlled either mechanically or chemically. If herbicides or pesticides must be used to control weed growth or pests, only BLM-approved herbicides or pesticides will be used, and they will be applied by a permitted contractor in compliance with all federal, state, and local regulations.

F. Engineering, Design, and Construction (ED&C) Plan

The Decommissioning and Site Reclamation Plan, as well as, all required environmental permits will be developed by a third party contractor and reviewed/approved by appropriate agencies prior to commencement of activities.

II. Justification for Costs of Environmental Liabilities, Removal, and Reclamation

Post-construction land uses will include all pre-construction land uses [i.e., livestock grazing, wildlife habitat, transportation (roads, pipelines, fiber optic cables), and recreation] therefore some of the infrastructure such as access roads developed for FCR may be useful after reclamation. All proposed post-construction land uses will be approved by the appropriate parties/agencies however the costs included herein assume the majority of access roads will be removed.

A. Cost Narrative

The reclamation cost estimate includes costs associated with removing 12 turbines and associated turbine pads, foundations to four (4) feet below grade unless a variance is obtained from the Industrial Siting Commission requirements and the landowners , and restoring the turbine sites, dismantling and disposing

of 2 met towers, abandoning 3.5 miles of collector lines in place, removing 2 junction boxes to four (4) feet below grade, road removal including grading and seeding of 7.8 miles of access roads, grading and seeding any areas (approximately 18 acres) disturbed by temporary laydown areas, crane paths etc, and obtaining all required permits, mobilization, demobilization, engineering, contractor profit, and BLM overhead associated with the project. Costs were developed using 2010 dollars and adjusted using Oregon GDP values (factor of 1.162) to convert to 2018 dollars.

A. Removal Strategies

The actual removal processes may be modified at the time of dismantlement to reflect current industry practice or to realize cost savings; however, for purposes of developing the reclamation cost estimate, the following removal strategies were envisioned.

a) Turbine Removal

Turbine removal would start by disconnecting electrical components, cabling and wiring from the ground to the nacelle. The blades, hub and nacelle would be removed along with the thermal protection/insulation and would be loaded onto trucks and hauled away for disposal. The tower steel would then be removed and loaded onto trucks and hauled off site for disposal. Met towers would be similarly removed and sites restored.

b) Foundations

Belowground facilities will be removed to a depth of at least 4 feet below grade unless a variance is obtained from the Industrial Siting Commission requirements and landowners. Concrete foundations would be broken up, recycled and the site will be graded using excavation and backfill of existing materials. Concrete slabs will be removed and recycled.

c) Roads

Turbine sites, including spur road (turnout), as well as access roads will be graded, gravel removed as necessary and seeded with selected seed mixture. Sufficient top soil is assumed to exist to provide base for revegetation.

d) Buried Collector Lines

Collector lines are buried approximately 3 to 4 feet below grade and will be abandoned in place.

e) Overhead Power Lines

Not applicable.

f) Hazardous Materials and Other Environmental Liabilities

Dumpsters will be rented and portable toilets from a local sanitation company to collect and dispose of waste during decommissioning. Cleanup crews directed by the environmental inspector will patrol construction sites on a regular basis to remove litter.

Hazardous materials anticipated to be used or produced during operation of FCR fall into the following categories:

- fuels - gasoline (potentially containing benzenes, toluene, xylenes, methyl-tert-butyl ether, and tetraethyl lead) and diesel fuel;
- combustion emissions - nitrogen oxides (NOx, carbon monoxide (CO), and non-methane hydrocarbons (NMHCs);
- lubricants - grease (potentially containing complex hydrocarbons and lithium compounds), gear oil and motor oil; and
- distribution line emissions - ozone and NOx

No extremely hazardous materials (40 C.F.R. 355) are presently produced, used, stored, transported, or disposed of as a result of FCR operations nor anticipated for decommissioning activities. All production, use, storage, transport, and disposal of hazardous materials as a result of this project has been in strict accordance with federal, state, and local government regulations and guidelines. In the event of a spill or leak (i.e., undesirable event), notice is immediately given by owner as required by law.

Spent fluids are currently and will continue to be recycled via a certified waste contractor.

A Stormwater Pollution Prevention Plan will be prepared for the WDEQ to obtain National Pollutant Discharge Elimination System (NPDES) compliance under Wyoming's NPDES permit WYR10-0000. The Stormwater Pollution Prevention Plan describes site-specific erosion control and stream crossing measures that will be implemented during decommissioning construction. The Spill Prevention Containment and Countermeasures Plan describes procedures to be used in the event of an accidental spill from vehicles (e.g., motor oil, hydraulic fluid) or other equipment (e.g., transformer oil).

g) Re-vegetation Strategy (Contouring, Reseeding, and Monitoring)

Seeding will take place between September 15 and ground freeze-up, to take advantage of the increased soil moisture that occurs in early spring during snow-melt if it is not possible to seed in the fall, seeding will occur in spring prior to April 15 when the ground is thawed.

The seed mixtures shall contain species that are well-adapted to the short-grass prairie environment and will help stabilize disturbed areas and establish a self-perpetuating plant community that will support proposed reclaimed land uses. These species may be established via direct seeding and have excellent tolerance for drought. The BLM recommended seed mixture will be used for the site.

The seed mixtures will not contain noxious weed seed. If commercial seeds are used, the seed will be certified, and seed viability will be tested within 9 months of the planting date. Native seed will be collected from plants that are adapted to similar conditions (e.g., soils, aspect, and adjacent plant communities) as the area to be revegetated. Seed mixture containers will be labeled and available for inspection by the AO.

Seeds will be planted with a range drill equipped with a depth regulator to ensure proper seeding depth and an agitator to promote uniform seed distribution. Seeds will be planted 0.25 to 0.50 inch (0.64 to 1.27 cm) deep, and drill rows will be 8 to 10 inches (20 to 25 cm) apart. Drilling will be done on contour in areas

where equipment can be safely operated on contour. Winterfat seed, because it is fluffy, will be broadcast over the prepared seedbed prior to drill seeding other species. If broadcast seeding is necessary (i.e., in areas where it is unsafe to operate a range drill or terrain might damage the drill), a cyclone or similar-type broadcast seeder will be used.

Seeding rate will be doubled and the area raked with a chain or harrow to cover seed. The potential for wind erosion on top of the rim is moderate to severe and newly tilled and seeded soils will be particularly susceptible to wind erosion. All newly seeded areas will be mulched with a single layer of pea-sized gravel. Gravel mulch will minimize wind and water erosion, create microsites for water and snow accumulation, and absorb heat thereby promoting seed germination in spring. Material will be obtained locally, if possible, to minimize the visual contrast with undisturbed surfaces. Gravel will be spread with a truck-mounted spreader designed specifically for applying gravel mulch. If it is unfeasible to use gravel mulch, netting or other soil stabilizers will be anchored on all newly seeded areas and maintained until a good cover of self-sustaining vegetation becomes established.

B. Post-seeding Maintenance

Shrub debris (if any) will be scattered on disturbed surfaces for erosion control. Soil fertility tests show that soils are low in organic matter and cleared vegetation may be ground up using a mulching machine and incorporated into plant growth materials. Rocks will be placed at the base of fill slopes to reduce runoff and erosion or may be buried on-site in existing excavations, if appropriate. If landowners prefer removal of all debris, these materials will be taken directly to the certified landfill in Hanna or placed in dumpsters on-site which will be serviced by a locally licensed sanitation company. Vehicles will be prohibited from all reclaimed areas which will be clearly marked with signs prohibiting vehicle passage.

Noxious weeds will be controlled either mechanically or chemically. If herbicides or pesticides must be used to control weed growth or pests, only BLM-approved herbicides or pesticides will be used, and they will be applied by a permitted contractor in compliance with all federal, state, and local regulations.

C. Revegetation Monitoring

Seedling establishment and plant growth on Foote Creek Rim will be limited by the prevailing harsh environmental conditions (i.e., low precipitation, gravelly soils, severe winds, and extreme temperatures). Wind erosion can cause significant loss of topsoil, and abrasion by windblown sand commonly causes seedling mortality. Revegetation success will be monitored annually (during the growing season) by qualified reclamation specialists and inspected by appropriate representatives. Revegetation will be considered successful if perennial species vegetation cover and density are equal to or greater than 50% of the perennial cover for adjacent undisturbed areas after 2 years and equal or greater than 80% after *5* years. Erosion condition will be rated using BLM's Erosion Condition Classification. Reclamation monitoring results will be documented annually and provided to the BLM (BLM 1995c) and other parties as appropriate. Revegetation measures will be repeated, if necessary, until soils are stabilized and a sustainable vegetation community is established.

B. Recycling/Scrape Value Assessment

No recycle value considered in costs.

C. Re-Use of Facilities

The reclamation cost estimate assumes the access roads will be removed and restored to predisturbance conditions. If access roads are left in place there would be a cost savings from the estimate provided in this RCE. The RCE does not include costs for removal of buried collector lines; due to their depth it is assumed the collector lines will be abandoned in place.

III. Summary of Costs in RCE Worksheet (OR EFSC MODEL)

- Deconstruction, Operational, and Maintenance (DOM) Total Costs

$1,576,000

- BLM Administrative Costs

8% = $130,000

- BLM Overhead/Indirect Rate

23.1% of contract admin = $30,000

- Liability Insurance

$27,000

- Contractor Profit

$160,000

- Contingency/Overrun

10% =$162,000

- Payment and Performance Bonds

$47,000

- Engineering, Design, and Construction Plan

$130,000

- Final Costs

$2,200,000

IV. Itemized Costs as Calculated to Prepare RCE Worksheet (OR EFSC MODEL)

- Itemization of DOM Costs
    - Turbines - $570,000
    - Met Towers - $18,000
    - Access Roads - $235,000
    - Restoration of Additional Disturbed Areas - $76,000

- Equipment Costs

Assume rented or owned by contractor and included in unit price of demolition.

- Labor Costs

Included in unit cost of demolition.

- Site Management

Approximately $313,000 which assumes 6 man-months for supervisor, 5 months for foreman, and 6 months clerical as well as living expenses and utilities.

- Mobilization and Demobilization Costs

Approximately $32,000 which assumes 8 trips for trucking on/off site, subcontractor mobilizations, 11 on-site moves, and 2 minor equipment moves.