# Rail Tie Wind Project
# Albany County, Wyoming

# Waste Management Plan

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# ACRONYMS AND ABBREVIATIONS

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|---|---|
| ConnectGen | ConnectGen Albany County LLC |
| Plan | Waste Management Plan |
| Project | Rail Tie Wind Project |
| WECS | Wind Energy Conversion System |

# 1 INTRODUCTION

The Rail Tie Wind Project (Project) is a proposed utility-scale wind energy facility under development by ConnectGen Albany County LLC (ConnectGen). The Project would be located in southeastern Albany County, Wyoming, and the Project Area would encompass approximately 26,000 acres of ranchland on private and Wyoming State Lands located near Tie Siding, Wyoming. The Project would have a generating capacity of up to 504 megawatts (MW) of renewable wind energy.

The Project meets the definition of a Wind Energy Conversion System (WECS) Project as defined by Chapter 5 Section 12 of the Albany County Wind Energy and Solar Energy Siting Regulations, as amended on October 6, 2020 (Regulations; Albany County 2020). Albany County is currently considering proposed ordinance revisions to the current Regulations, anticipated in March 2021. Specifically, Section 12.M (as proposed) of the Regulations requires applications for conditional use permits for any WECS to include "a waste management plan that includes an inventory of estimated solid wastes and proposed disposal program for the construction, operation, and eventual decommissioning of the proposed WECS Project or solar energy facility."

This Waste Management Plan (Plan) identifies the solid and hazardous waste to be generated by the Project and the proposed program for waste disposal, including strategies for waste minimization through salvage and reuse or recycling of materials. This Plan will be modified as needed to meet applicable regulations and to address the changing conditions and requirements of the Project.

## 1.1 Objectives

The objective of this Plan is to minimize the amount of waste generated by the Project to the extent practicable. When possible, waste material generated will be recycled, salvaged, reused, or otherwise diverted from direct landfill disposal. Recycling, reusing salvaged materials, and minimizing materials and packaging can reduce waste disposal costs and material expenses. Waste reduction will be achieved through best management practices and recycling or reuse efforts. The activities described in this Plan will be utilized during construction, operations and maintenance, and decommissioning of the Project and reclamation of the Project Area.

## 1.2 Licenses, Permits, Fees, and Taxes

All solid and hazardous wastes related to the construction, operations and maintenance, and decommissioning of the Project will be handled, stored, and disposed of in accordance with this Plan and all applicable federal, state, and local laws and regulations. ConnectGen and their contractor(s) will be responsible for any required fees, licenses, permits, and taxes.

# 2 SOLID WASTE GENERATION

## 2.1 Construction

The Project will generate municipal solid waste and construction waste during construction of wind turbine generators, foundations, access roads, substations, and the electrical collection and transmission system.

Typical wind projects in Wyoming have been estimated to generate approximately 20 cubic yards of solid waste and 15 cubic yards of recycling per wind turbine generator (maximum number of turbines is estimated at 120) and 2 cubic yards per construction worker (estimated monthly average of 120 workers) annually, leading to an estimate of approximately 2,640 cubic yards of solid waste and 1,800 cubic yards of recycling for the Project throughout Project construction. The Project is expected to generate the following types of wastes:

- Packaging materials (e.g., plywood crates, wood pallets, plastic bags and wrapping, tarps)
- Construction debris (e.g., scrap steel, concrete, wood forms, wiring, flagging)
- Discarded erosion control materials (e.g., silt fencing, stakes, straw bales, hydromulch)
- Miscellaneous equipment and vehicle parts
- Containers, paper, food packaging/scraps, etc.

The generation of solid waste and materials for recycling during the construction phases will be handled by a solid waste hauling and management firm contracted by ConnectGen or their contractor(s). ConnectGen or their contractor(s) will solicit bids from waste management companies in the area. The contracted waste hauler will remove the portable dumpsters depending on the rate of waste generation from construction activities. Exact timing of waste removal and size of the portable dumpster will be determined based on the type of construction activities being conducted on site. Solid waste will be hauled to permitted disposal facilities in the Project vicinity (including landfills and recycling centers). A list of these facilities is provided in Table 2 at the end of this Plan.

## 2.2 Operations and Maintenance

During operations and maintenance of the Project, the estimated annual municipal solid waste that will be generated is approximately 25 cubic yards per year. Approximately 23 full-time employees will perform routine operations and maintenance activities. Associated municipal solid waste will be handled through curbside or dumpster collection and delivered to a nearby landfill. All waste will be disposed of properly according to state and federal regulations.

## 2.3 Decommissioning

ConnectGen anticipates salvaging as much of the decommissioned Project components and materials as possible. The options for wind turbine recycling are evolving and are expected to be very different at the time of decommissioning than they are currently. Many of the wind turbine components and electrical materials have a high scrap value and will therefore be recycled. The current expectations for the recycling or landfilling of major Project components and materials are summarized below:

- Wind Turbine Nacelles: Transported to scrap yards where they will be disassembled, with components reused, scrapped, or landfilled.
- Wind Turbine Blades/Nacelle Covers: Most likely broken down and either landfilled or recycled depending upon options available at the time of decommissioning.
- Wind Turbine Towers: Transported to scrap yards where they will be recycled.
- Substation Components: Resold to reuse if possible; otherwise transported to scrap yards where they will be dissembled, with components reused, scrapped, or landfilled.
- Recovered Aggregate: Taken to nearby quarries where they will be reused locally.

The Plan will be updated prior to decommissioning to account for the options available at the time of decommissioning.

The facilities listed in Table 2 at the end of this Plan provide examples of the types of facilities that could handle solid waste to be generated during Project decommissioning. Given the expected life of the facility (greater than 30 years), disposal options are expected to change by the time the Project is decommissioned.

# 3 WASTE MINIMIZATION

ConnectGen and their contractor(s) will minimize the amount of construction waste and debris disposed of in landfills to the extent practical. ConnectGen and their contractor(s) will be responsible for communication and training of field personnel and subcontractors regarding waste minimization.

## 3.1 Packaging

ConnectGen will encourage all vendors and their suppliers to minimize packaging for materials and equipment and to identify opportunities for the return of packaging materials for reuse. ConnectGen will evaluate packaging materials and their selection will take into consideration opportunities for reuse and recycling.

## 3.2 Materials Storage

ConnectGen and their contractor(s) will store all materials in a manner to prevent contamination, expiration, and deterioration. This ensures that the material will meet the specified requirements and that unused or off-specification products will not become waste. ConnectGen and their contractor(s) will implement inventory control procedures to minimize the volume of excess materials brought on site.

## 3.3 Material Disposition

ConnectGen and their contractor(s) will store all waste within designated temporary waste collection areas until it is collected for transport to an approved disposal facility. Materials that can be recycled will be stored and transported separately. Used oil will not be mixed with other solid or hazardous waste and will be stored separately within appropriate secondary containment in accordance with all applicable rules and regulations. Any concrete waste will be hauled and disposed of at a permitted site. Sanitary waste will be handled by a licensed sanitary waste vendor or disposed of in a permitted wastewater treatment facility.

## 3.4 Recycling

Recyclable materials for the Project may include paper, aluminum cans, corrugated cardboard, glass, aerosol cans, wood, plastic, and metals. ConnectGen and their contractor(s) will provide containers for waste that is to be recycled. Containers will be clearly labeled as such with a list of acceptable and unacceptable materials and will meet all applicable rules and requirements for the recycling program. To the extent local recycling programs are available and can be implemented, these materials will be recycled. Table 2 identifies permitted facilities in the Project vicinity that accept materials for recycling.

## 3.5 Salvage and Reuse

Salvage is the recovery of materials for on-site reuse, off-site sale, or donation to a third party. Reuse is making use of a material without altering its form. Materials can be reused on site or reused on other projects off site. To the extent practicable, ConnectGen and their contractors will arrange for salvage or reuse materials to divert them from landfills.

## 3.6 Refuse Disposal

ConnectGen and their contractor(s) will not allow refuse to accumulate on site for extended periods of time; refuse materials will be removed from the Project site on a regular basis. Refuse materials will be transported off site and legally disposed of. On-site disposal or burning of refuse materials will not be permitted.

The location of permitted disposal facilities and the materials that they accept are listed in Table 2 at the end of this Plan.

# 4 HAZARDOUS WASTE

## 4.1 Construction

It is anticipated that minimal hazardous wastes will be generated during construction of the Project. Potential generation of hazardous wastes could include lubricants, hydraulic and insulating fluids, and glycol-based coolants. Compressed gas cylinders for welding and cutting, such as oxygen and acetylene, and modest amounts of cleaning solvents, paints, and corrosion-control coatings could also be present.

Table 1 identifies the materials to be stored at the Project during construction activities.

**Table 1: Materials Stored at Project During Construction Activities**

| Material | Quantity | Storage Details |
|---|---|---|
| Diesel Fuel | 500 gallons | Double-wall tank with automatic shut-off valves |
| Gasoline | 250 gallons | Double-wall tank with automatic shut-off valves |
| General lubricants and cleaning solvents | <100 gallons | 55-gallon drums located in separate spill containment pits |
| Explosives (if necessary) | <2,000 pounds | Secured magazines located away from other buildings; blasting caps and detonator cord stored separately and securely |

Any hazardous wastes generated during construction will be properly characterized and managed by ConnectGen and their contractor(s) using established Spill Prevention, Control, and Countermeasure protocols.

ConnectGen and their contractor(s) will review any hazardous materials to be used on site prior to authorizing their use on the Project and will monitor and limit the quantities of hazardous materials brought on site to minimize the amount of hazardous waste generated. ConnectGen and their contractor(s) will incorporate procedures for handling of hazardous materials into their workplace health and safety program prior to introducing the hazardous materials on site. The procedures will identify all hazardous materials that will be used, stored, or transported on site and will establish requirements for inspection, storage, inventory control, product substitutions, and disposition of excess materials. The procedures will also identify requirements for notices to emergency response agencies.

The handling of hazardous materials and waste will be done in accordance with all federal, state, and local laws and regulations.

No extremely hazardous materials, as defined by 40 Code of Federal Regulations part 355, are anticipated to be produced, used, transported, or disposed of during Project construction.

## 4.2 Operations and Maintenance

Hazardous waste generation during operations and maintenance of the Project is anticipated to be minimal and quantities be well below the regulatory thresholds for small-quantity or large-quantity generator programs. Any waste generated will be handled to ensure the health and safety of the environment, operations and maintenance workers, and local residents in compliance with federal, state, and local laws and regulations. As part of the waste management bid for operations and maintenance of the Project, ConnectGen will also contract services for oil waste disposal from Project facilities.

Below is a list of hazardous materials that could potentially be used during operations and maintenance of the Project:

- Cleaners and degreasers
- Greases
- Gear oils
- Mineral oils (for use in transformers as coolant)
- Antifreezes

ConnectGen and their contractor(s) will select products that do not contain compounds listed as “extremely hazardous” by the U.S. Environmental Protection Agency. All of these products will be used in small quantities and any potential spill will be contained to the wind turbine spill trap. Lubricating oils will be checked routinely and filled and changed as needed. Transformers will also be inspected regularly. Spent oils will be recycled with a certified waste contractor. The oil change will be performed up-tower where any accidental spills will be contained by the nacelle prior to prompt cleanup.

It is anticipated that all towers and ancillary equipment will arrive on site already painted and aside from occasional touchups, will rarely need to be repainted during the life of the Project. Should any significant repainting of facilities be needed, it will be performed by qualified, licensed contractors.

# 5 PERMITTED DISPOSAL FACILITITIES

Table 2 below lists permitted disposal facilities that could be used to dispose of municipal solid waste, hazardous waste, and recyclable materials generated by construction, operation, maintenance and decommissioning of the Project.

**Table 2: Permitted Disposal Facilities**

| Name and Location of Facility | Materials Accepted |
|---|---|
| **Solid Waste** | |
| Laramie Landfill, 1167 N. 4th St., Laramie, WY 82072 | Construction material. Recycled household items: aluminum, cardboard, paper, plastics, and steel cans. |
| Cheyenne Landfill, 1461 Happy Jack Rd., Cheyenne, WY 82009 | Construction material and contaminated soil. Recycled household items: aluminum, cardboard, paper, plastics, and steel cans. |
| **Hazardous Waste** | |
| Casper Special Waste & Diversion Facility, 1883 Stanton Rd., Casper, WY 82609 | 22 pounds per month per customer limit. Most of the hazardous materials potentially being disposed of would not count toward the limit. |
| Safety-Kleen, 5231 Poison Spider Rd., Mills, WY 82644 | All hazardous materials that will be produced. |
| **Recycle** | |
| Rawlins Recycling Center, 1524 East Daley St., Rawlins, WY 82301 | Aluminum, cardboard, glass containers, paper, and plastics (#1-7), and steel cans. |
| V&V Salvage, Old Sinclair Hwy., Rawlins, WY 82301 | Metal and salvage materials. |
| Cheyenne Recycling, 809 W. College Dr., Cheyenne, WY 82007 | Aluminum, brass, copper, lead, catalytic converters, batteries, and wiring. |
| Ace Salvage Enterprises, Inc., 2724 Fort Sanders Rd., Laramie, WY 82070 | Aluminum, brass, copper, steel, catalytic converters, radiators, batteries, and wiring. |
| Wyoming Salvage Co., 2222 Snyder Ave., Cheyenne, WY 82001 | Aluminum, brass, copper, lead, steel, catalytic converters, radiators, batteries, and wiring. |

# 6 ENVIRONMENTAL TRAINING AND ORIENTATION

ConnectGen and their contractor(s) will implement an Environmental Training and Orientation Program, including Health, Safety, and Environmental training, for Project personnel specific to their job responsibilities to support compliance with environmental requirements, including waste management. The Project Environmental Training and Orientation Program will be designed to consistently communicate expectations and applicable permit requirements to individuals working on the Project so that both managers and workers understand how to incorporate them into their daily work activities. All personnel working on the Project will be required to attend the training prior to accessing or working on site. Training related to waste management will include general topics such as permit requirements, best management practices, spill prevention and cleanup measures, solid waste disposal, and recycling expectations. Multiple environmental training sessions may be required throughout the duration of the Project and will be conducted by ConnectGen or designated contractors.

# 7 LITERATURE CITED

Albany County. 2020. Albany County Zoning Resolution. Originally Adopted August 1, 1997. Last Amended October 6, 2020. Albany County Planning Department. Available online at: https://www.co.albany.wy.us/DocumentCenter/View/1004/Zoning-Resolution-PDF. Accessed January 2021.