

Echanis Wind Energy Project

Hazardous and Solid Waste Management Plan

Hazardous Waste:

Fuel and lubricating oils from construction vehicles and equipment and the mineral oil used to fill the substation transformer(s) are the only potential sources for a spill prevention control program during construction activities. The EPC contractor designated by Echanis, LLC will be responsible for training its personnel in spill prevention and control and, if an incident occurs, will be responsible for reporting, containment and cleanup.

During construction, the EPC contractor will utilize fuel trucks for refueling of construction vehicles and equipment on site. There will be no fuel storage tanks used at the Echanis Wind Energy Project (Project) site. The fuel trucks will be properly licensed and will incorporate features in equipment and operation, such as automatic shut off devices, to prevent accidental spills.

The Project will have a substation with one or two substations transformers which need to be filled with mineral oil on site as they are delivered without oil in the tank. As part of the commissioning process of the main transformers(s), they will be filled and tested. The oil truck will be properly licensed and will incorporate several special features in equipment and operation, such as automatic shut off devices, to prevent accidental spills.

Lubricating oils used during construction will mostly be contained in the vehicles and equipment for which they are used. Small quantities of lubricating oils may also be stored in appropriate containers at the construction staging area located at the site of the O&M facility.

For discussion on herbicides, please see section 5.3 of the Weed Management and Control Plan.

Operations Spill Prevention:

Project operations will not require the use of a permanent fuel storage tank, as fuel use during operations is limited to maintenance vehicle fueling which will be done at existing licensed gas stations in nearby communities (Hines or Burns.) The potential for accidental spills is minimal, as the only materials used during Project operations that present any potential for accidental spills are lubricating oils and hydraulic fluids used in the wind turbine generators and transformers.

Wind Turbine Generator Fluids:

Each turbine model has different specifications for lubricating oil and hydraulic fluid quantities. There are three main types of fluid in a wind turbine generator (WTG): Cooling fluid for the generator (a mix of glycol and water, similar to that used in automobile radiators), lubricating oil for the gearbox (typically a synthetic lubricating oil), and hydraulic oil for operating the blade pitch system, yaw mechanism and rakes. The maximum volumes of fluids contained in any of the turbines being considered for this project are listed below in Table 1.

Table 1
Maximum Fluid Quantities for Wind Turbine Generators

Turbine Component	Fluid Type	Quantity per WTG (maximum)
Generator cooling system	Glycol-water mix	50 gallons
Hydraulic systems (blades, brake, yaw, etc.)	Hydraulic oil	85 gallons
Gearbox lubrication	Lubricating oil	105 gallons

All of the WTGs being considered for this Project are equipped with sensors to automatically detect loss in fluid pressure and/or increases in temperature which enable them to be shut down in case of a

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fluid leak, as well as fluid catch basis and containment systems to prevent any accidental releases from leaving the nacelle.

Based on the limited quantities of fluids contained in the WTGs and the leak detection and containment systems engineered into their design, the potential for an accidental spill from WTG malfunction is extremely limited. Furthermore, any accidental gear oil or other fluid leaks from the wind turbines will be contained inside the turbine towers which are sealed around the base. The fluids described in the table above are checked by Operations staff periodically and must be replenished or replaced on an infrequent basis (generally less than once per year and sometimes only once every five years.) When replacing these fluids, Operations staff will climb up to the nacelle and remove the fluids in small (typically 5 gallon) containers and lower them to the ground using a small maintenance crane built into the nacelle itself. The containers are then transferred to a pickup truck for transport to the O&M facility for temporary storage (typically less than one month) before being picked up by a licensed transporter for recycling. Replacement fluids are added in the same method, only in reverse. Small quantities of replacement fluids, typically no more than a few 50 gallon drums, of lubricating oil and hydraulic oil may be stored at the O&M facility for replenishing and replacing spent fluids. These fluids will be stored indoors in appropriate containers. All Operations staff will be trained in appropriate handling and spill prevention techniques to avoid any accidental spills. Because only small quantities of fluids are transported, added or removed at any one time and are stored for short periods of time, the potential for an accidental spill during routine maintenance is extremely limited.

Transformer Mineral Oil Coolant:

Pad Mounted Transformers

Each wind turbine generator has a pad mounted transformer located at its base. These transformers contain mineral oil which acts as coolant. Each pad-mounted transformer contains up to 500 gallons of mineral oil. The transformer is designed to meet stringent electrical industry standards, including containment tank weldment and corrosion protection specifications.

Substation Transformer(s)

The Project will be electrically connected to the grid at the substation which will be equipped with either one or two transformers. Each substation transformer contains up to 12,000 gallons of mineral oil for cooling. The transformer is designed to meet stringent electrical industry standards, including containment tank weldment and corrosion protection specifications. The substation transformers are equipped with an oil level sensor that detects any sudden drop in the oil levels, and sends an alarm message to the central SCADA system. Finally, the substation transformers are surrounded by a concrete berm or trough to ensure that any accidental fluid leak does not result in any discharge to the environment.

Accidental spill on transmission line procedure:

In the unlikely event of an accidental spill occurring on public lands along the transmission line right of way (such as a crank case failure or punctured fuel tank), safety precautions will be initiated (in the case of flammable fuels). Soils tainted by fuels will be removed and hauled to an approved disposal site as quickly as safely possible. Contaminated soils will be stored in an appropriate container until they can be safely disposed of. BLM's construction monitor will be notified and appropriate remediation will be determined with the construction monitor to restore the accidental spill site to normal condition.

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Accidental spill reporting

Oregon rules regarding spills or releases of oil and/or hazardous substances are found in OAR 340, Division 142. Rules require that any reportable amount of material spilled within a 24-hour period be reported to the State DEQ. Any such spills will also be reported to the Burns BLM office.

DIVISION 142 OIL AND HAZARDOUS MATERIALS EMERGENCY RESPONSE REQUIREMENTS

340-142-0040

Required Reporting

(1) Reporting is required if the amount of oil or hazardous material spilled or released, or threatening to spill or release, exceeds the reportable quantity established in ORS 466.605 or listed in OAR 340-142-0050, or will exceed a reportable quantity in any 24-hour period. Immediately report the spill or release or threatened spill or release to the Oregon Emergency Management Division's Oregon Emergency Response System (OERS) by calling 1-800-452-0311.

340-142-0050

Reportable Quantities

(1) Spills and releases, or threatened spills or releases of oil or hazardous materials as defined by OAR 340-142-0005(9) in quantities equal to or greater than the following amounts must be reported:

(b) If spilled or discharged into waters of the state or in a location from which it is likely to escape into waters of the state any quantity of oil that would produce a visible film, sheen, oily slick, oily solids, or coat aquatic life, habitat or property with oil, but excluding normal discharges from properly operating marine engines;

(c) If spilled on the surface of the land and not likely to escape into waters of the state, any quantity of oil over one barrel (42 gallons);

(d) An amount equal to or greater than the quantity listed in 40 CFR Part 302 - Table 302.4 (List of Hazardous Substances and Reportable Quantities) and amendments adopted prior to July 1, 2002;.

Stat. Auth: ORS 183, ORS 459, ORS 465, ORS 466 & ORS 468B

Stats. Implemented: ORS 465.550, ORS 466.605, ORS 466.625, ORS 466.630 & ORS 466.635

Hist.: DEQ 3-2003, f. & cert. ef. 1-31-03

Contacts for Burns BLM office and OR DEQ:

OR DEQ: 1-800-452-0311

Burns BLM Office: 1-541-573-4400

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Solid Waste: **Solid Waste:**

The transmission line construction site and access roads on BLM-administered lands will be kept in an orderly condition throughout the construction period. In accordance with the Harney County Conditional Use Permit (CUP) (item #24) and the Record of Decision, Echanis LLC shall provide for solid waste disposal at regulated and licensed landfills. All construction waste including stakes, flags, trash, litter, garbage and other solid waste will be removed and transported to a disposal facility authorized to accept such materials. No open burning of construction debris will occur on BLM-administered lands.