

Leaning Juniper II Wind Project: Revegetation Plan

[SEPTEMBER 21, 2007]

I. Introduction

This plan describes methods and standards for restoration of areas disturbed during the construction of the Leaning Juniper II Wind Power Facility, excluding areas occupied by permanent facility components (the “footprint”).¹ The objective of revegetation is to restore the disturbed areas to pre-disturbance condition or better. The site certificate for the facility requires restoration of these areas. This plan has been developed in consultation with the Oregon Department of Fish and Wildlife (ODFW).

The site certificate describes the area of disturbance anticipated during construction of the Leaning Juniper II facility. The affected area includes cultivated or otherwise developed agricultural land (cropland) as well as areas of grassland, shrub-steppe habitat and other habitat subtypes (wildlife habitat areas). The intensity of the construction impact will vary. In some areas, the impact will be relatively light, but in other areas, heavy construction activity will remove all vegetation, remove topsoil and compact the remaining subsoil. Where vegetation has been damaged or removed during construction, the certificate holder must restore suitable vegetation. In addition, the certificate holder shall maintain erosion and sediment control measures put in place during construction until the affected areas are restored as described in this plan and the risk of erosion has been eliminated. The plan specifies monitoring procedures to evaluate revegetation success of disturbed wildlife habitat areas. Remedial action may be necessary for wildlife habitat areas that do not show revegetation progress. Additional mitigation may be necessary if revegetation is unsuccessful.

II. Description of the Project Area

The facility is located in Gilliam County, Oregon. The project area is on private agricultural land used primarily for livestock grazing and some dry land winter wheat production. Soils are typically loess formations of well-drained, moderately permeable, fertile silt loams over basalt. The area receives approximately 9 inches of precipitation annually, most of which occurs between October 1 and March 31.

The project area is within the Columbia Plateau physiographic province. The facility is located on an upland plateau at elevations ranging up to 980 feet, with relief of about 130 feet. Most of the native vegetation in the project area has been modified by recent patchy hot fires coupled with periods of lower than normal precipitation. Very little intact sagebrush habitat exists, occurring predominantly along the plateau margins and steep side slopes of Juniper Woodland Canyon. Category 2 open low shrub, shrub-steppe habitat is present in the eastern portion of LJ-South, and some Category 2 bitterbrush shrub-steppe habitat is present in the northern portion of LJ-North. Plant communities in these areas consist of low-stature snakeweed and rabbitbrush-dominated shrub lands with patches of sagebrush and native bunchgrass grasslands, each with varying degrees of non-native invasive grass and forb species.

¹ This plan is incorporated by reference in the site certificate for the Leaning Juniper II Wind Power Facility and must be understood in that context. It is not a “stand-alone” document. This plan does not contain all mitigation required of the certificate holder.

Leaning Juniper II Revegetation Plan

[SEPTEMBER 21, 2007]

1 **III. Revegetation Methods**

2 The certificate holder shall begin restoration of disturbed areas as soon as possible after
3 completion of facility construction activity in the area to be restored. The certificate holder shall
4 restore areas of disturbance by preparing the soil and seeding using common application
5 methods. The certificate holder shall use mulching and other appropriate practices to control
6 erosion and sediment during facility construction and during revegetation work. The certificate
7 holder shall restore topsoil to pre-construction condition. The certificate holder shall select the
8 seed mix to apply based on the pre-construction land use, as described below.

9 **1. Seed Planting Methods**

10 Planting should be done at the appropriate time of year to facilitate seed germination,
11 based on weather conditions and the time of year when construction-related ground disturbance
12 occurs. The certificate holder shall choose planting methods based on site-specific factors such
13 as slope, erosion potential and the size of the area in need of revegetation. Disturbed ground may
14 require chemical or mechanical weed control before weeds have a chance to go to seed. Two
15 common application methods are described as follows.

16 (a) Broadcasting

17 Broadcast the seed mix at the specified application rate. Where feasible, apply half of the
18 total mix in one direction and the second half of mix in the direction perpendicular to first half.
19 Apply weed-free straw from a certified field or sterile straw at a rate of two tons per acre
20 immediately after applying seed. Crimp straw into the ground to a depth of two inches using a
21 crimping disc or similar device. As an alternative to crimping, a tackifier may be applied using
22 hydroseed equipment at a rate of 100 pounds per acre. Prior to mixing the tackifier, visually
23 inspect the tank for cleanliness. If remnants from previous hydroseed applications exist, wash
24 tank to remove remnants. Include a tracking dye with the tackifier to aid uniform application.
25 Broadcasting should not be used if winds exceed five miles per hour.

26 (b) Drilling

27 Using an agricultural or range seed drill, drill seed at 70 percent of the recommended
28 application rate to a depth of ¼ inch or as recommended by the seed supplier. Where feasible,
29 apply half of the total mix in one direction and the second half of mix in the direction
30 perpendicular to first half. If mulch has been previously applied, seed may be drilled through the
31 mulch provided the drill is capable of penetrating the straw resulting in seed-to-soil contact
32 conducive for germination.

33 **IV. Restoration of Cropland**

34 The certificate holder shall seed disturbed cropland areas with wheat or other crop seed.
35 The certificate holder shall consult with the landowner and farm operator to determine species
36 composition, seed and fertilizer application rates and application methods.

37 Cropland areas are successfully revegetated when the replanted areas achieve crop
38 production comparable to adjacent non-disturbed cultivated areas. The certificate holder shall
39 consult with the landowner or farmer to determine whether these areas have been successfully
40 revegetated and shall report to the Department on the success of revegetation in these areas.

Leaning Juniper II Revegetation Plan

[SEPTEMBER 21, 2007]

V. Restoration of Wildlife Habitat Areas

The certificate holder shall seed all disturbed grassland, shrub-steppe and other wildlife habitat subtype areas that are not cropland. The certificate holder shall consult with ODFW and the landowner to determine the appropriate seed mix and application rate for these areas, including a combination of grasses, forbs and shrubs based on the characteristics of the affected area. The mix should contain native species selected based on relative availability and compatibility with local growing conditions. Seed mix selection should consider soil erosion potential, soil type, seed availability and the need for using native or native-like species. The certificate holder shall obtain approval of the composition of the seed mix from the Oregon Department of Energy (Department). The certificate holder shall use seed provided by a reputable supplier and complying with the Oregon Seed Law.

VI. Monitoring

1. Revegetation Record

The certificate holder shall maintain a record of revegetation work for both cropland and wildlife habitat areas. In the record, the certificate holder shall include the date that construction activity was completed in the area to be restored, a description of the affected area (location, acres affected and pre-disturbance condition), the date that revegetation work began and a description of the work done within the affected area. The certificate shall update the revegetation records from time to time, as revegetation work occurs. The certificate holder shall provide copies of these records to the Department at the time of submitting the annual report required under the site certificate.

2. Monitoring Procedures

The certificate holder shall monitor the revegetation of wildlife habitat areas as described in this section, unless the landowner has converted the area to a use inconsistent with the success criteria. The certificate holder shall employ a qualified investigator (an independent botanist or revegetation specialist) to examine all non-cropland revegetation areas to assess vegetation cover (species, structural stage, etc.) and progress toward meeting the success criteria described below.

Weed Control

A qualified investigator shall inspect each revegetation area on an annual basis during the first five years following initial seeding to assess weed growth and to recommend weed control measures. The investigator shall report to the certificate holder, the Department and ODFW following each inspection, describing weed growth and the success of control measures. Based on the Year 5 report (described below), the certificate holder shall confer with the Department and ODFW to develop a weed control plan for subsequent years.

Wildlife Habitat Recovery

After the first growing season following initial seeding (Year 1), a qualified investigator shall inspect each revegetation area to assess revegetation success based on the success criteria and to recommend remedial actions, if needed. The qualified investigator shall reinspect these areas at two years and at four years after the first inspection (Year 3 and Year 5). The investigator shall report to the certificate holder, the Department and ODFW following each

Leaning Juniper II Revegetation Plan

[SEPTEMBER 21, 2007]

1 inspection. The report shall include the investigator's assessment of whether the revegetated
2 areas are trending toward meeting the success criteria and any remedial actions recommended.

3 Based on the Year 5 report, the certificate holder shall confer with the Department and
4 ODFW to develop an action plan for subsequent years. If an area is not trending toward meeting
5 the success criteria at Year 5 and has not been converted by the landowner to an inconsistent use,
6 the certificate holder may propose remedial action and additional monitoring based on an
7 evaluation of site capability. As an alternative, the certificate holder may conclude that
8 revegetation of the area was unsuccessful and propose appropriate mitigation for the loss of
9 habitat quality and quantity. The certificate holder shall implement the action plan, subject to the
10 approval of the Department.

11 The certificate holder's qualified investigator shall evaluate whether a wildlife habitat
12 area is trending toward meeting the success criteria by comparing the revegetation area to a
13 reference area. In consultation with ODFW, the investigator shall choose reference sites near the
14 revegetation area to represent the target conditions for the revegetation effort. The investigator
15 shall select one or more reference sites that closely resemble the pre-disturbance characteristics
16 of the revegetation area as indicated by site conditions, including vegetation density, relative
17 proportion of desirable vegetation and species diversity of desirable vegetation. "Desirable
18 vegetation" means those species included in the seed mix or native or native-like species,
19 excluding noxious weeds. The investigator shall consider land use patterns, soil type, local
20 terrain and noxious weed densities in selecting reference sites. It is likely that different reference
21 sites will be needed to represent different pre-disturbance habitat conditions of the disturbed
22 areas.

23 During the monitoring visits in Year 1, Year 3 and Year 5, the certificate holder's
24 qualified investigator shall compare the revegetation area to the selected reference sites, unless
25 some event (such as wildfire or tilling) has changed the vegetation conditions of a reference site
26 so that it no longer represents the pre-disturbance conditions of the revegetation area. If such
27 events have eliminated all suitable reference sites for a revegetation area, the investigator, in
28 consultation with ODFW, shall select one or more new reference sites.

29 Within each revegetation area, the investigator shall evaluate the progress of wildlife
30 habitat recovery in comparison to the reference sites. The investigator shall evaluate the
31 following site conditions (both within the revegetation area and within the reference sites):

- 32 • Degree of erosion due to disturbance activities (high, moderate or low).
- 33 • Vegetation density.
- 34 • Relative proportion of desirable vegetation as determined by the average number of
35 stems of desirable vegetation per square foot or by a visual scan of the area, noting
36 overall recovery status.
- 37 • Species diversity of desirable vegetation.

38 The certificate holder shall report the investigator's findings and recommendations
39 regarding wildlife habitat recovery and revegetation success on an annual basis to the
40 Department (as part of the annual report on the facility) and to ODFW.

Leaning Juniper II Revegetation Plan

[SEPTEMBER 21, 2007]

1 3. Success Criteria

2 In each monitoring report to the Department, the certificate holder shall provide an
3 assessment of revegetation success for all previously-disturbed wildlife habitat areas. A wildlife
4 habitat area is successfully revegetated when its habitat quality is equal to, or better than, the
5 habitat quality of the reference site as measured by the site conditions listed above.

6 When the Department finds that the condition of a wildlife habitat area satisfies the
7 criteria for revegetation success, the Department shall conclude that the certificate holder has met
8 its restoration obligations for that area. If the Department finds that the landowner has converted
9 a wildlife habitat area to a use that is inconsistent with these success criteria, the Department
10 shall conclude that the certificate holder has no further obligation to restore the area for wildlife
11 habitat uses.

12 4. Remedial Action

13 After each monitoring visit, the certificate holder's qualified investigator shall report to
14 the certificate holder regarding the revegetation progress of each wildlife habitat area. The
15 investigator shall make recommendations to the certificate holder for reseeded or other remedial
16 measures for areas that are not showing progress toward achieving revegetation success. The
17 certificate holder shall take appropriate action to meet the objectives of this revegetation plan.
18 On an annual basis as part of the annual report on the facility, the certificate holder shall report to
19 the Department the investigator's recommendations and the remedial actions taken. The
20 Department may require reseeded or other remedial measures in those areas that do not meet the
21 success criteria.

22 If a wildlife habitat area is damaged by wildfire during the first five years following
23 initial seeding, the certificate holder shall work with the landowner to restore the damaged area.
24 The certificate holder shall continue to report on revegetation progress during the remainder of
25 the five-year period. The certificate holder shall report the damage caused by wildfire and the
26 cause of the fire, if known.

27 VII. Amendment of the Plan

28 This Revegetation Plan may be amended from time to time by agreement of the
29 certificate holder and the Oregon Energy Facility Siting Council ("Council"). Such amendments
30 may be made without amendment of the site certificate. The Council authorizes the Department
31 to agree to amendments to this plan. The Department shall notify the Council of all amendments,
32 and the Council retains the authority to approve, reject or modify any amendment of this plan
33 agreed to by the Department.