

Initial Feasibility Assessment of Renewable Energy Development Within Greater Sage Grouse Habitat in Oregon January 23, 2014

Initial Feasibility Inputs: The following data inputs were used to determine the potential overlap between renewable energy development and sage grouse habitat.

Dataset	Source	Criteria (Developed with input from RNP)
Sage Grouse Habitat	ODFW	BLM Preliminary Priority Habitat (PPH) and Preliminary General Habitat (PGH)
Transmission lines	Platts	See individual resources below
Wind Resources	NREL	-Eliminate areas with wind power class < 3 at 50m above ground and slopes >=30% Include areas within a specified distance of existing transmission lines based on voltage (69KV = 5 miles, 115-138KV = 10 miles, 230KV and above = 20 miles)
Solar Resources	NREL	-Eliminate areas with a Direct Normal Irradiance (DNI) of <5 kwh /m ² / day and slopes >3% -Transmission line capacity >=69kv -Distance from transmission lines = 20 and 40 miles
Geothermal Resources	WREZ geothermal resources, DOGAMI wells	-Include WREZ wells that represent known, quantifiable resources. -Include DOGAMI wells >180 deg F. -Eliminate slopes >5% -Transmission line capacity >=115kv -Distance from transmission lines = 20 and 40 miles

Initial Feasibility Assessment based on inputs

Wind: 488,616 acres of potential overlap based on data inputs (core = 230,679 acres, low density = 158,114 acres, BLM currently occupied habitat = 99,823 acres). The majority of the potential overlap area is located in the southern half of the Sage Grouse habitat boundary. There are 412,299 acres feasible for wind energy development that fall outside Sage Grouse habitat (within 10 miles of analysis area boundary).

Solar: 3,952,201 acres of potential overlap based on data inputs. The majority of the land within the Sage Grouse habitat boundary has potential for solar development. This creates both a high potential for overlap as well as the flexibility to avoid habitat.

Geothermal: 59 acres of potential overlap based on data inputs. There were only two identified wells where geothermal development could impact sage grouse habitat.

Outstanding Questions:

- Is the wind class threshold correct? Should it be modified given developing technologies and industry drivers?
- Has the analysis appropriately captured the scale of projects?
- Is the distance from transmission lines reasonable? Should it be modified?
- Can existing transmission line capacity data be obtained? Where are tie-in locations? Where is additional capacity likely to be developed in the future?
- What are the temporary (i.e. construction) and permanent footprint / uses associated with development?
- What are the general concerns around the avoidance and mitigation considerations for siting in and around sage grouse habitat?
- How is the BLM handling energy development in the DEIS?
- Are there other factors that should be considered in the analysis?

Potential Refinements: The following could be used to further refine the analysis.

Evaluate transmission line capacity: No evaluation has been done to determine if there is capacity for additional tie in with any of the identified transmission lines.

Include ID, NV & CA transmission lines: Transmission lines have been clipped to the Oregon state boundary. Transmission lines that exist near the border of Idaho or Nevada could have influence on energy development within Oregon sage grouse areas.

Utilize finer resolution data inputs: Increased resolution for data inputs could eliminate additional areas of overlap based on slope and orientation.

Factor in exclusion areas: Federal, state and local exclusion areas could be an added input that would eliminate additional areas of overlap.

Account for project size / configuration needs: Some areas identified may be insufficient in size for the development of a full scale wind, solar or geothermal project. A minimum project area (by type) could be identified in order to address this limitation.