



LPRO: LEGISLATIVE POLICY AND RESEARCH OFFICE

WIND ENERGY

BACKGROUND BRIEF

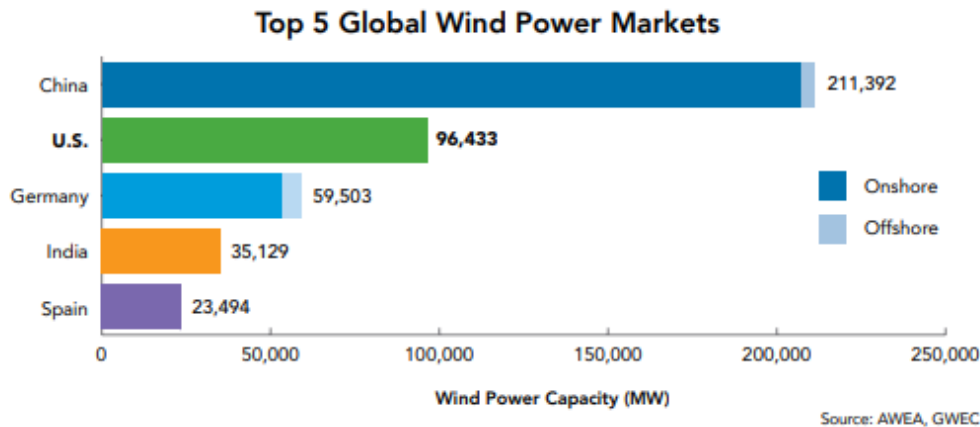
TABLE OF CONTENTS
WIND ENERGY
WIND ENERGY IN OREGON

WIND ENERGY

Wind energy is a rapidly growing source of renewable energy in the United States. According to the American Wind Energy Association 2018 U.S. Wind Industry Annual Market Report,¹ wind capacity in the United States has seen a nearly fourfold increase over the past 10 years reaching 96,433 megawatts (MW). The United States is the second largest wind power market in the

world (see Figure 1), representing 15 percent of new wind power capacity installed in 2018.

Figure 1: Top 5 Global Wind Power Markets



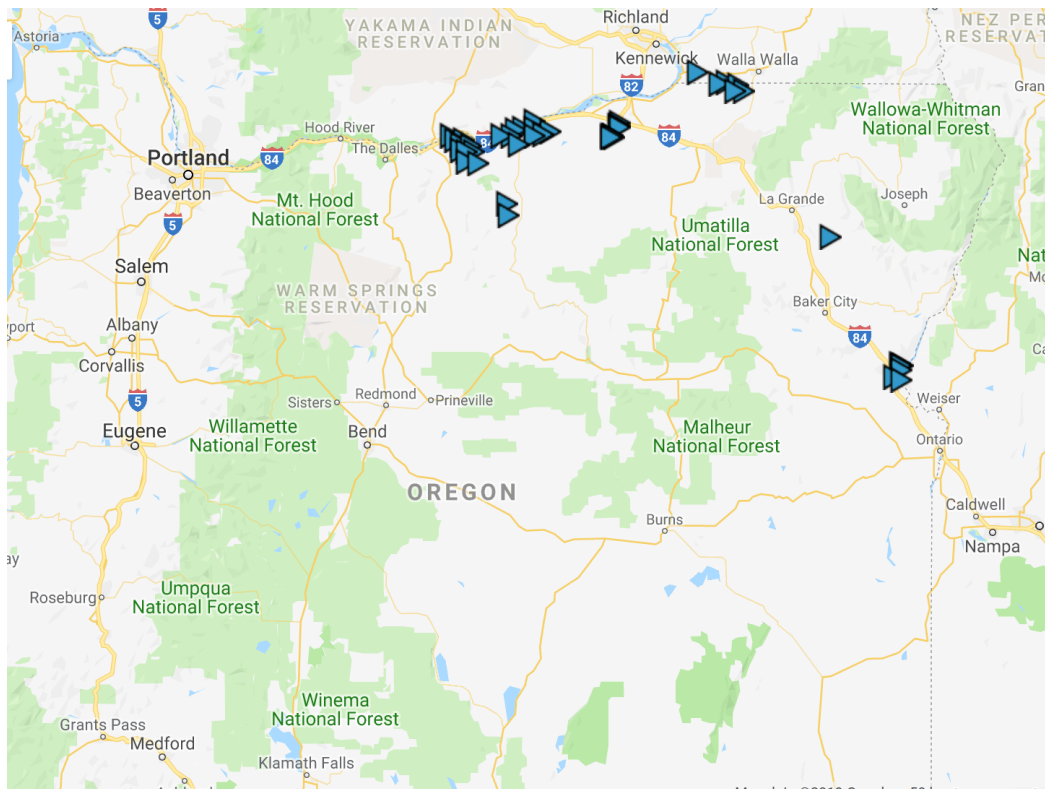
Wind energy projects are a zero-carbon emitting resource and have a low lifecycle carbon footprint associated primarily with the embedded greenhouse gas emissions from manufacturing and construction. Wind turbines can cause collisions with birds and bats, although newer designs with slower blade speeds and the elimination of lattice towers have reduced collisions and fatalities. Wind turbines are often sited in dryland agricultural areas versus irrigated high-value farmland, and while some land is removed from production for turbine sites and access roads, ranching and farming can coexist with many wind energy projects.

¹ www.awea.org/amr2015, American Wind Energy Association

WIND ENERGY IN OREGON

Wind energy projects in Oregon occur mainly on the Columbia River Plateau in north central Oregon. Wind farms have also cropped up in eastern Oregon near Milton-Freewater and North Powder (see Figure 2).² The majority of Oregon's wind generation capacity comes from large-scale wind projects supplying power directly to the electricity grid. Oregon has 10 wind facilities that produce under 10 MW of electricity and 34 that produce 10 MW or greater.³ Sherman County has 1,057 MW of capacity; Umatilla, Morrow, and Gilliam counties combined have 2,179 MW of capacity.

Figure 2: Operating Wind Energy Projects in Oregon



The state also has smaller-scale wind projects, including several community-owned projects consisting of a few mid-sized or large turbines and numerous installations of small-sized turbines that generate power on-site for homes and businesses. The industry for small-scale turbines is less developed than the large-scale wind industry.

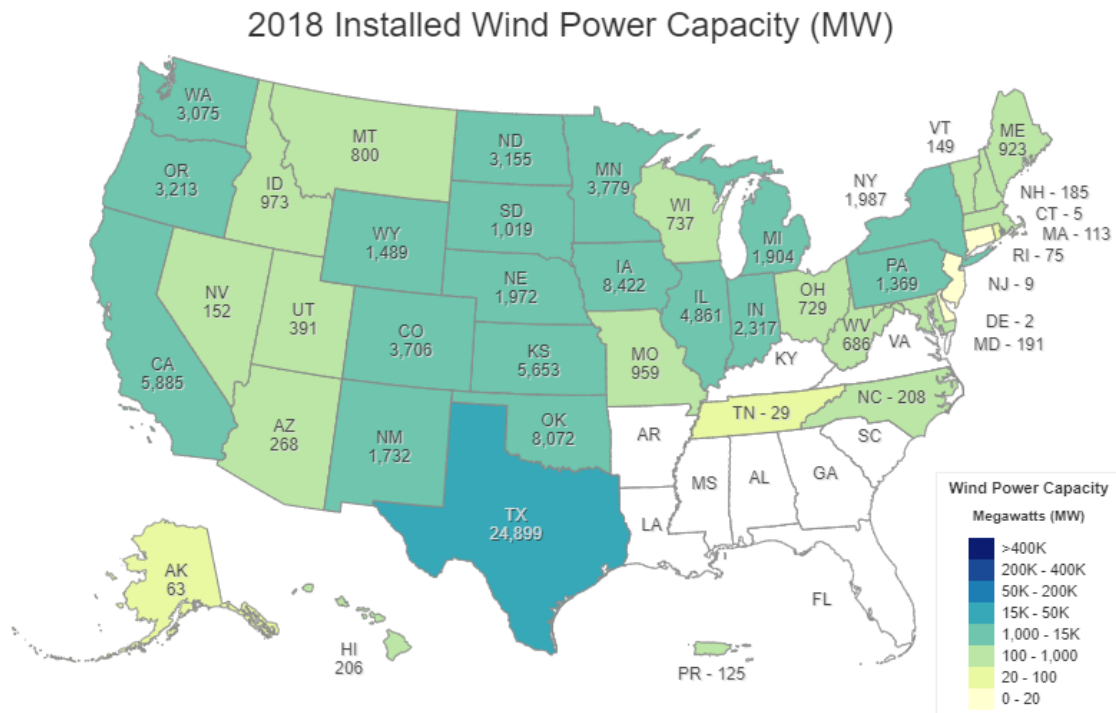
According to the National Renewable Energy Laboratory (**NREL**), as of December 2017, Oregon has a total installed capacity of 3,213 MW of wind energy, and is ranked

² http://www.rnp.org/project_map, Renewable Northwest

³ Oregon Department of Energy 2018 Biennial Energy Report: <https://www.oregon.gov/energy/Data-and-Reports/Documents/2018-Biennial-Energy-Report.PDF>

8th in the nation for installed wind capacity (see Figure 3).⁴ Between 2004 and 2016, wind energy consumed in Oregon has increased by 741 percent.⁵ Wind is the third largest electricity resource generated in the state, representing close to 12 percent of Oregon’s electricity generation in 2016. With the increase of the Oregon Renewable Portfolio Standard to 50 percent renewable energy by 2040, more wind projects will likely be built in the state by independent developers and utilities.

Figure 3: United States Installed Wind Power Capacity 2018



Source: American Wind Energy Association Market Report

Developing wind projects is a complex process. Particularly challenging are grid interconnection and transmission access. New large wind projects in Oregon will likely require significant transmission system investment. Small wind projects (<20 MW) have less impact on transmission but require complex system studies that may require expensive upgrades to the local grid.

⁴ <https://www.nrel.gov/docs/fy18osti/70738.pdf>

⁵ Oregon Department of Energy 2018 Biennial Energy Report: <https://www.oregon.gov/energy/Data-and-Reports/Documents/2018-Biennial-Energy-Report.PDF>

Please note that the Legislative Policy and Research Office provides centralized, nonpartisan research and issue analysis for Oregon's legislative branch. The Legislative Policy and Research Office does not provide legal advice. Background Briefs contain general information that is current as of the date of publication. Subsequent action by the legislative, executive, or judicial branches may affect accuracy.