



PacifiCorp moving forward with study on bird safety near wind turbines

GLENROCK, Wyo. (Dec. 27, 2023) – PacifiCorp and its research partners are moving forward with a highly anticipated and ambitious study to evaluate the effects of painting a single wind turbine blade in black on 36 different turbines to reduce collision risks to birds flying near the wind turbines.

“This is an extraordinary partnership of scientists, federal regulators, wildlife managers, a non-governmental organization, academia, developers and utility companies working together to find solutions to reduce the impacts of critical electric infrastructure to birds” said Travis Brown, director of compliance and permitting for PacifiCorp. The Glenrock, Wyoming, study is being supported through a public-private partnership that includes:

- United States Geological Survey
- U.S. Fish and Wildlife
- U.S. Department of Energy
- Oregon State University
- Renewable Energy Wildlife Institute
- Invenergy
- NextEra Energy Resources

Thus far, the team has painted 28 blades and will complete the remaining 8 in 2024.

The study will focus on how the painted blades affect fatality rates for eagles, diurnal (active in daytime) non-eagle birds, and bats. Experts hypothesize that both eagles and diurnal non-eagle birds can perceive painted blades, resulting in higher turbine avoidance. Recent research in Norway documented a nearly 72% decline in turbine blade-related bird collisions as a result of painting one turbine black. Painting blades is thought to visually disrupt what otherwise may appear to the bird as a uniform airspace, making the turbine more visible, and helping trigger avoidance behavior.

Bats have different visual and auditory perceptions of their surroundings while flying so the study incorporates a second hypothesis that bats do not perceive painted blades and there would be no change in bat collision fatalities at turbines with a painted blade.

“The research team has produced a very innovative approach to accurately estimate the benefits of painted turbine blades in the hope of minimizing impacts on eagles and other diurnal birds. PacifiCorp’s facility allows us to study this interaction at an impressive scale, with 36 painted turbines and even more control turbines to include in the experiment. We’re honored to be part of the team and excited to see the results as the study progresses,” said Shilo Felton, a senior scientist at the Renewable Energy Wildlife Institute.

“If proven effective, the manipulation could reduce bird fatalities at wind facilities that would be realized over decades, with minimal maintenance, infrastructure, or other constraints required of current technologies,” said Brown. *(Continued)*

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The single painted blade stands out prominently among the non-painted blade turbines.



The first painted blade was completed in April 2023 in Glenrock, Wyoming.

There has been widespread support in the U.S., as evidenced by this study by PacifiCorp and its partners, to replicate the Norway study with more treated turbines to confirm if similar results can be reached at other wind energy sites.

Oregon is one of the country's top producers of wind energy (ranked 11th), and although this study is being performed in Wyoming, there was a vested interest by the Oregon state legislature to explore methods to reduce wildlife collision risk with turbines. The legislature looked to Oregon State University to identify a project that would evaluate the effectiveness of painted blades on wildlife collisions. "The timing of the legislature's interest and the engagement of PacifiCorp could not have been better! We have a diverse and well-rounded scientific team tackling this important question, and OSU is proud to be a partner," says Christian Hagen, associate professor at Oregon State University.

Two of the country's largest developers, owners and operators of renewable energy, Invenergy and NextEra Energy Resources, have also joined the research team adding expertise and financial support and other renewable energy companies have demonstrated their support for the study through the Renewable Energy Wildlife Research Fund.

"Invenergy is committed to developing, building, and operating environmentally responsible clean energy projects, and this new research will provide our team of environmental experts with robust information on this promising risk-reduction approach," says Brad Romano, Vice President and Research

Lead of Invenergy's Environmental Compliance and Strategy group. "Research like this will continue to play a critical role in advancing responsible clean energy projects."

"NextEra Energy Resources is proud to be part of this study, given its potential to identify an effective measure to minimize bird collision impacts from wind turbines," said Matt Raffenberg vice president of environmental services for NextEra Energy Resources. "As an industry leader in renewable energy, we have been committed to environmental conservation and stewardship for decades. We believe it's important that we find real world solutions that balance our country's need for renewable energy and protect wildlife."

Several other renewable energy companies have demonstrated their support for the study through the Renewable Energy Wildlife Research Fund. The fund is an industry-led initiative that advances scientific research on solutions to mitigate the impacts of solar and wind generation on wildlife as accelerating renewable energy is developed to meet growing energy demand. "Industry members formed the Renewable Energy Wildlife Research Fund to combine our resources and advance our understanding of how renewable energy projects impact wildlife. We are pleased to support the painted wind blade study effort and look forward to the results of this study, from which we hope to gain insights into how the industry can reduce and ultimately eliminate adverse impacts on wildlife," said Ray Kelly, Renewable Energy Wildlife Research Fund Chair.

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The National Audubon Society supports this study as part of its work as a founder and board member of the Renewable Energy Wildlife Institute, a partner with PacifiCorp, NextEra Energy Resources, Invenergy, and advisor and supporter to researchers at the U.S. Geological Survey and Oregon State.

Responsibly sited and operated renewable energy and transmission are critical to reducing pollution, lowering global temperatures, and protecting the two-thirds of North American bird species at risk of extinction due to climate change.

“Conservation and wind energy generation must go hand in hand to create a future in which birds and people can thrive, and this collaboration exemplifies how industry, science, and nongovernmental organizations can work together to find climate and biodiversity solutions,” said Garry George, senior director for climate strategy at the National Audubon Society. “Painting turbine blades has worked in Norway, and we are hopeful this will prove to be a simple solution that will reduce impacts on eagles and other birds in North America.”

About PacifiCorp

PacifiCorp is one of the lowest-cost electrical providers in the United States, serving 2 million customers. The company operates as Rocky Mountain Power in Idaho, Utah and Wyoming and as Pacific Power in California, Oregon and Washington. PacifiCorp provides safe and reliable service through a vast, integrated system of generation and transmission that connects communities as the largest regulated utility owner of wind power in the West. For more information, visit www.pacificorp.com.

