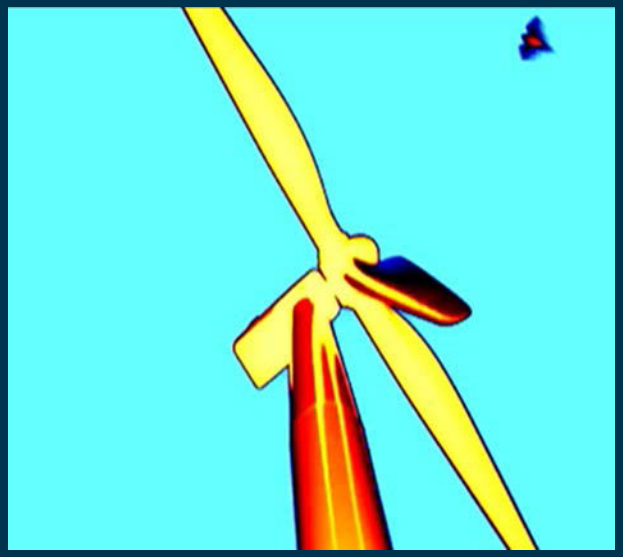
Evaluating the Effectiveness of Ultrasonic Acoustic Deterrents in Reducing Bat Fatalities at Wind Energy Facilities



Research on Bat Detection and Deterrence Technologies

NWCC Webinar

2 December 2015

batcon.org
BAT CONSERVATION INTERNATIONAL

BWEC & Ultrasonic Acoustic Deterrents (UAD)

- Since 2006, Bat Conservation International (BCI), under the auspices of the Bats & Wind Energy Cooperative (BWEC) has investigated the potential of using UADs to reduce bat fatalities at wind turbines
- BWEC priority to continue deterrent research
- Our project for DOE builds on previous studies & our understanding of how bats interact with wind turbines

Project Team

- Bat Conservation International
  - Cris Hein & Michael Schirmacher
- Iberdrola Renewables
  - Don Rogers & Jerry Roppe
- Renewable NRG Systems
  - Wally Lafferty & Tom Nostrand
- U.S. Geological Survey
  - Manuela Huso

Project Objectives

- Determine best placement & orientation to ensure safety, compatibility & functionality
- Assess functionality of newly designed UAD
- Evaluate the effectiveness of UAD to reduce bat fatalities
- Compare costs & benefits of UAD to operational minimization

Phase 1: Functionality Study

- Initial Installation Plan (Fall 2015)
  - Decide initial placement & orientation
  - Improve methods & infrastructure for installation
- Initial Manufacturing of UADs (Winter 2015–Spring 2016)
  - Build sample set of UADs for the functionality study
- Functionality Study (Summer–Fall 2016)
  - Use thermal cameras to monitor bat behavior at treatment & control turbines
  - Assess performance of UADs & determine gaps in coverage

Phase 2: Comparative Study

- Final Manufacturing UADs (Winter 2016–Spring 2017)
  - Make final modifications to UADs & installation strategy
- Comparative Study (Summer–Fall 2017)
  - Conduct fatality & video monitoring study comparing the following treatments
    - Control turbines (no deterrents & operating at manufacturer's cut-in speed)
    - Deterrent-equipped turbines
    - Higher cut-in speed turbines (TBD)
    - Deterrent-equipped & higher cut-in speed turbines