

# DTBird® & DTBat®, world wide reference for bird and bat protection at wind farms

MARCH 2015



● DTBird® On Shore   ● DTBird® Off Shore   ▲ DTBat®

53 DTBird® units are distributed in 15 wind farms of 8 countries:

- ✦ France
- ✦ Greece
- ✦ Italy
- ✦ Norway
- ✦ Poland
- ✦ Spain
- ✦ Switzerland
- ✦ US (Montana)

2 DTBat® units have been installed in Poland and Switzerland.

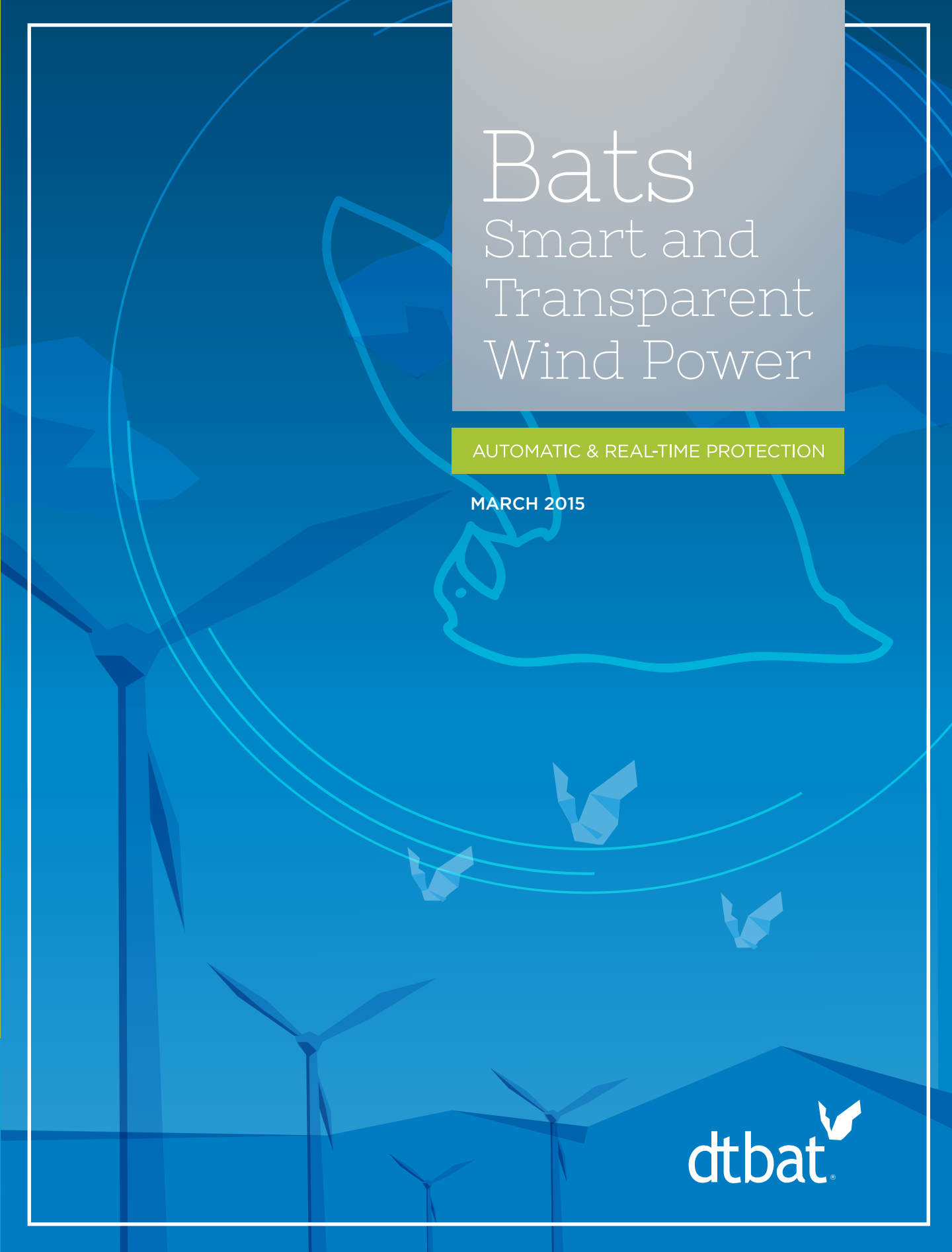


[www.dtbat.com](http://www.dtbat.com)  
[info@dtbat.com](mailto:info@dtbat.com)

# Bats Smart and Transparent Wind Power

AUTOMATIC & REAL-TIME PROTECTION

MARCH 2015



# Bat Protection Automatic & Real-Time

DTBat® is a self-working system developed to reduce bat mortality in wind farms, that detects bats and takes automatic actions, as Wind Turbine Generator (WTG) Shutdown linked to real-time bat activity.

DTBat® has 2 modules available: Detection and Stop Control.

## Bat Detection

Automatic and real-time detection of bats with ultrasound recognition.

### Features

- ❖ **Detection sensors:** Bat detectors installed at height (2-3 units).
- ❖ **Surveillance area:** Rotor Swept Area.
- ❖ **Service period:** Continuous monitoring in bat activity periods.
- ❖ **Precision** of Real time detection > 0,97 (97% detections are actual bats).

### Observations:

\* Environmental variables include, at least: temperature, rain and wind speed.

### Recorded Data

- ❖ Sonograms of every bat pass.
- ❖ Bat pass time.
- ❖ Environmental data\* and WTG operation parameters.
- ❖ Species/Group identification from sonograms review.

## Stop Control

Automatic WTG Shutdown linked to real-time bat detection.

### Features

- ❖ **Interface with WTG:** DTBat® hardware and software compatible with all WTG manufacturers.
- ❖ **Automatic Stop trigger**, linked to bat activity detected in real-time.
- ❖ **Stop trigger**, < 2 s after bat pass detection.
- ❖ **Complete rotor Stop:** 10 to 45 s after Stop trigger, depending on Stop protocol and WTG model.
- ❖ **Stop length** according to bat activity detected.
- ❖ **Automatic restart** of the WTG.
- ❖ Automatic **notification** of every Stop: Trigger (first notification), end time and duration (second notification).
- ❖ **Stop adjustment** to legal requirements.

### Recorded Data

- ❖ Stop time data: Init time, end time and duration.
- ❖ Sonograms of all bat passes detected.



## Data Analysis Platform

DTBat® online Data Analysis Platform provides:

- ❖ Access to bat calls, environmental data, WTG operation parameters, and Shutdown actions.
- ❖ Data summarization in charts and graphics.
- ❖ Automatic Service Reports.

