

# Wind Farms of Thar Desert Record World's Highest Bird Mortality Rate

August 3, 2025 • vajiramandravi.com



## Wind Farms Latest News

- A new study has found that wind farms in India's Thar Desert have the world's highest recorded bird mortality rates, raising concerns over the environmental impact of renewable energy expansion.

## Introduction

- As India accelerates its push towards renewable energy to meet growing climate commitments and power demands, an unintended consequence has emerged in the form of large-scale bird deaths.
- A study by the **Wildlife Institute of India** (WII) reveals that **wind farms in the Thar Desert have the highest recorded bird mortality rates in the world**, with critically endangered species such as the **Great Indian bustard** under threat.

## Key Findings on Bird Mortality in the Thar Desert

- The study, published in *Nature Scientific Reports*, was conducted across **3,000 sq. km of desert landscape in Jaisalmer, Rajasthan**, which hosts about **900 wind turbines** and over **270 bird species**.
- Researchers conducted **seven multi-season surveys** around 90 randomly selected turbines, identifying **124 bird carcasses** within a 150-meter radius.
- The annual estimated bird mortality was a staggering **4,464 birds per 1,000 sq. km**, after accounting for carcass detection challenges such as scavenging and terrain obstacles.
- By contrast, control sites, located 500 to 2,000 meters away from turbines, showed **zero bird deaths**, confirming the turbines as the primary cause.
- Notably, the study's mortality estimate of **1.24 bird deaths per turbine per month** is significantly higher than previous findings from Kutch and Davangere, which reported **0.47 deaths per turbine annually**.

## Species at Risk and Regional Vulnerability

- The **Thar Desert forms a crucial segment of the Central Asian Flyway**, a major migration route for birds across Eurasia, making it an ecologically sensitive zone.
- The area also serves as a prominent wintering ground, further amplifying the risk of avian fatalities due to wind power infrastructure.
- Among the most vulnerable bird species are **raptors**, which are long-lived and reproduce slowly.
- Their **soaring flight patterns and altitude** bring them directly into the rotating blades of wind turbines, making them especially susceptible to collisions.
- These additional mortalities can lead to **population-level impacts**, particularly for endangered species.

## Proposed Mitigation Measures

- Several mitigation strategies have been proposed globally and domestically to address the issue of bird deaths at wind farms:
  - **Blade painting**: Painting one turbine blade black to increase visibility for birds.
  - **Timed shutdowns**: Halting turbine operations during high-risk periods such as migration seasons or early morning hours.
  - **Site selection**: Most crucially, experts recommend careful **pre-installation site assessments** to avoid high-avian-sensitivity zones.
- One key tool in this regard is the **Avian Sensitivity Tool for Energy Planning (AVISTEP)**, an open-source platform developed by BirdLife International.
- It helps developers identify zones classified into 'low', 'moderate', 'high', and 'very high' sensitivity to bird species.
- However, experts stress that **AVISTEP must be complemented by detailed ground-level studies**.
- Despite the severity of impacts, **onshore wind energy projects in India are currently not mandated to conduct environmental impact assessments (EIAs)** before installation, a gap that requires urgent regulatory attention.

## Offshore Wind Energy: An Emerging Focus

- India is now turning its attention to **offshore wind energy**, considered a less land-intensive alternative.

- The country plans to install **30 GW of offshore wind capacity by 2030**, with the Ministry of New and Renewable Energy already issuing **4 GW of bids in Gujarat and Tamil Nadu**.
- With **7,600 km of coastline** and 2.3 million sq. km of exclusive economic zones, India has immense potential for offshore wind.
- According to the Council on Energy, Environment and Water (CEEW), the addition of offshore wind capacity in states like Gujarat can help ensure **grid reliability during peak loads**.
- However, experts caution that **marine biodiversity impacts** must not be overlooked.
- Offshore wind projects involve complex infrastructure that can disrupt marine habitats, increase noise levels, and degrade water quality.
- The **Gulf of Khambhat EIA report** documented the presence of sensitive species like dolphins and sharks, with warnings about construction-phase disturbances.
- Although EIAs are **mandatory for offshore wind projects**, concerns remain about the **accuracy and duration of ecological assessments**, especially in high-biodiversity zones such as the Gujarat coast, which lies along both the **Central Asian and African-Eurasian flyways**.

**Source :** TH

---

Source: <https://vajiramandravi.com/current-affairs/thar-desert-wind-farms-study/>

© Vajiram & Ravi. For personal use only.