



Windmills Not so Green for Wildlife

Windmills are seen as a source of green energy, but researchers have found that they pose a threat to wildlife in forests through collisions and noise.

Wind Energy in India

- Wind energy is the kinetic energy generated due to the movement of wind. Wind speed of essentially 14-16 km/h is required for rotating the turbines. Wind energy accounts for 70% of the total renewable energy installed in India.
- Tamil Nadu has by far the largest installed wind capacity in India, followed by Maharashtra, Karnataka and Rajasthan.
- In Paris Agreement India has aimed to achieve 60 GW of total installed capacity in wind energy by 2022.
- It has also come out with a 'National Offshore Wind Energy Policy', aiming to harness wind power along India's 7,500 km coastline.

Impact on the Wildlife

- Researchers found that there are about 50% fewer birds in the areas of windmills compared to undisturbed sites.
- **Collisison:** The researchers from Salim Ali Centre for Ornithology and Natural History (SACON) have found that windmills kill birds and bats in collisions.
 - It has also led to their movement to the fringes of forests which might increase conflict with humans.
- **Noise:** Birds and mammals have moved away due to noise made by windmills. The noise levels near windmills go up to 85 decibels (dB), which is the equivalent to that of large trucks.
 - The drone of a turbine, which operates day and night, is above 70 dB (noise in urban areas is 55 dB and even in industrial areas, is lower at 75dB).
 - Ambient noise in forests is less than 40 dB.
 - Due to noise pollution by windmills, herbivores have moved away, with predators following them. For eg: In Karnataka different types of antelopes-four-horned, chinkara, and blackbuck moved away towards fringes of forests consequently followed by their predators such as wolves and small carnivores. This is bound to increase the man-animal conflict.
- Forests and Wildlife departments have assured that the impact of windmills on birds and mammals will be looked into by them and guidelines will be drawn to mitigate these effects.
- Protocols and policy guidelines have been called for, before diverting forest land for wind farms.
- Project developers are required to collect data through monitoring efforts at existing and proposed wind energy sites.
- **Careful site selection** is needed to minimize fatalities and in some cases additional research may be needed to address bird and bat impact issues.

Salim Ali Centre for Ornithology and Natural History (SACON)

- SACON, established in 1990 at Anaikatti, Coimbatore (Tamil Nadu) is a national centre for information, education and research in ornithology and natural history in India.
- It was named after Dr. Salim Ali in appreciation of his lifelong services to India's bird life and conservation of natural resources.

- It designs and conducts research in ornithology covering all aspects of biodiversity and natural history.

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