

# Potential Wind Facility Interactions With Wildlife

Presentation at the 1<sup>st</sup> Annual  
Great Lakes Wind Collaborative Meeting

By Jeff Gosse, USFWS



# Overview

A large white wind turbine is the central focus of the image, set against a clear, bright blue sky. The turbine's three blades are visible, extending from a central hub. The tower of the turbine is partially visible at the bottom. The overall scene is clean and modern, representing renewable energy.

- Direct Mortality
- Habitat Impacts
- Cumulative Impacts
- Current Issues
- Possible Solutions
- Summary

# Direct Mortality

A white wind turbine is the central focus of the image, set against a clear, bright blue sky. The turbine's three blades are visible, extending from a central hub. The background is a uniform blue, suggesting a clear day. The overall composition is simple and direct, emphasizing the subject of the text.

- Legislation
  - Migratory Bird Treaty Act (MBTA)
  - Bald and Golden Eagle Protection Act (BGLEP)
  - Endangered Species Act (ESA)
- Birds of Conservation Concern (BCC)

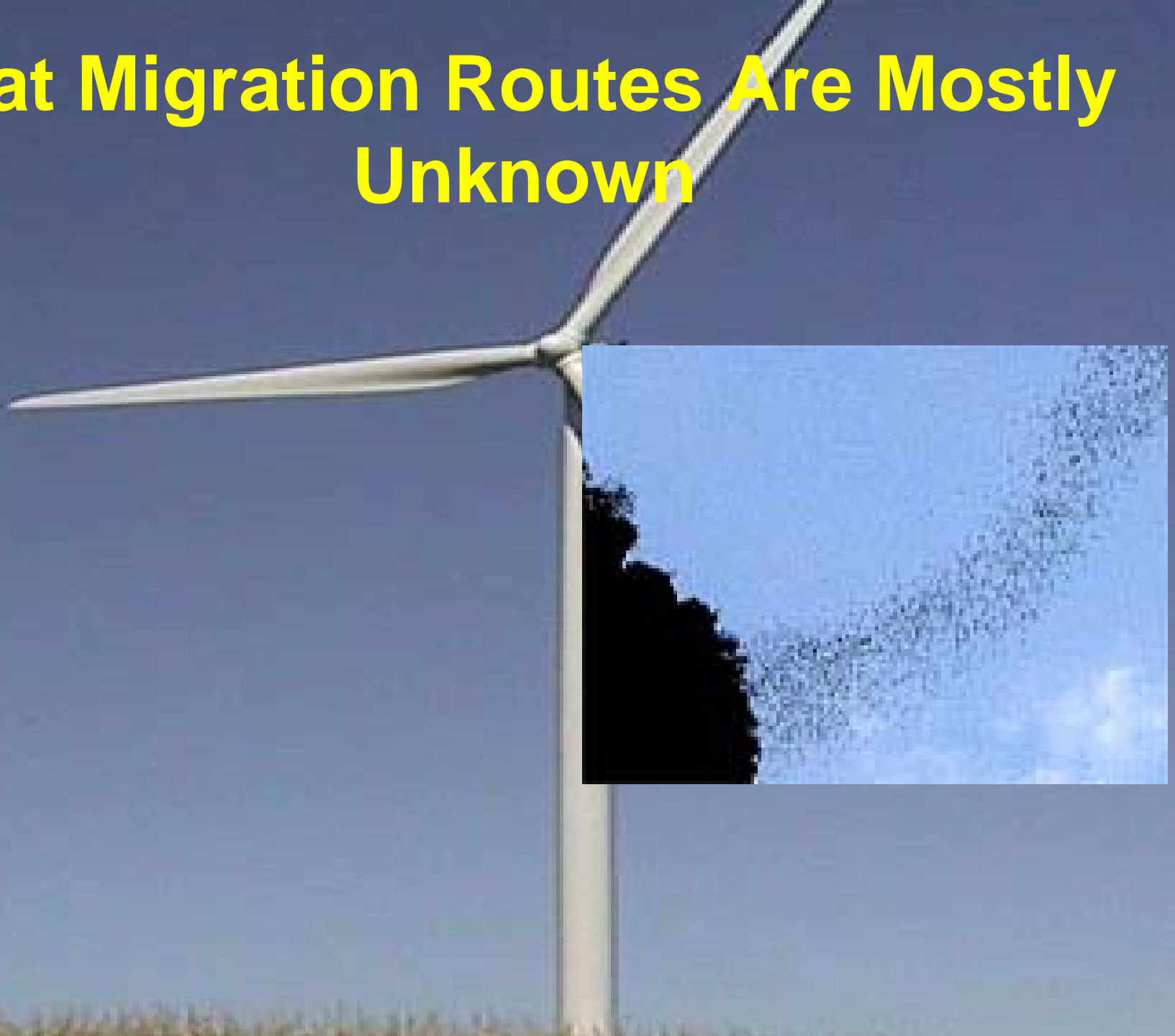
# Direct Mortality

A large white wind turbine is the central focus of the image, set against a clear, bright blue sky. The turbine's three blades are spread out, and its tower extends downwards. The overall scene is clean and minimalist, emphasizing the subject of the text.

- Most turbines cause some mortality
- Problem Areas
  - Migration Corridors



# Bat Migration Routes Are Mostly Unknown



# Concentration Areas

- Refuges
- Important Birding Areas (IBAs)
- Hibernacula



# Episodic Events



# Habitat Impacts

- Loss of rare habitat
  - Grasslands/prairie
  - Interior forests
  - Ridge tops



# Habitat Impacts

- **Habitat Fragmentation**
  - **Greater Potential Impact**



# Habitat Impacts

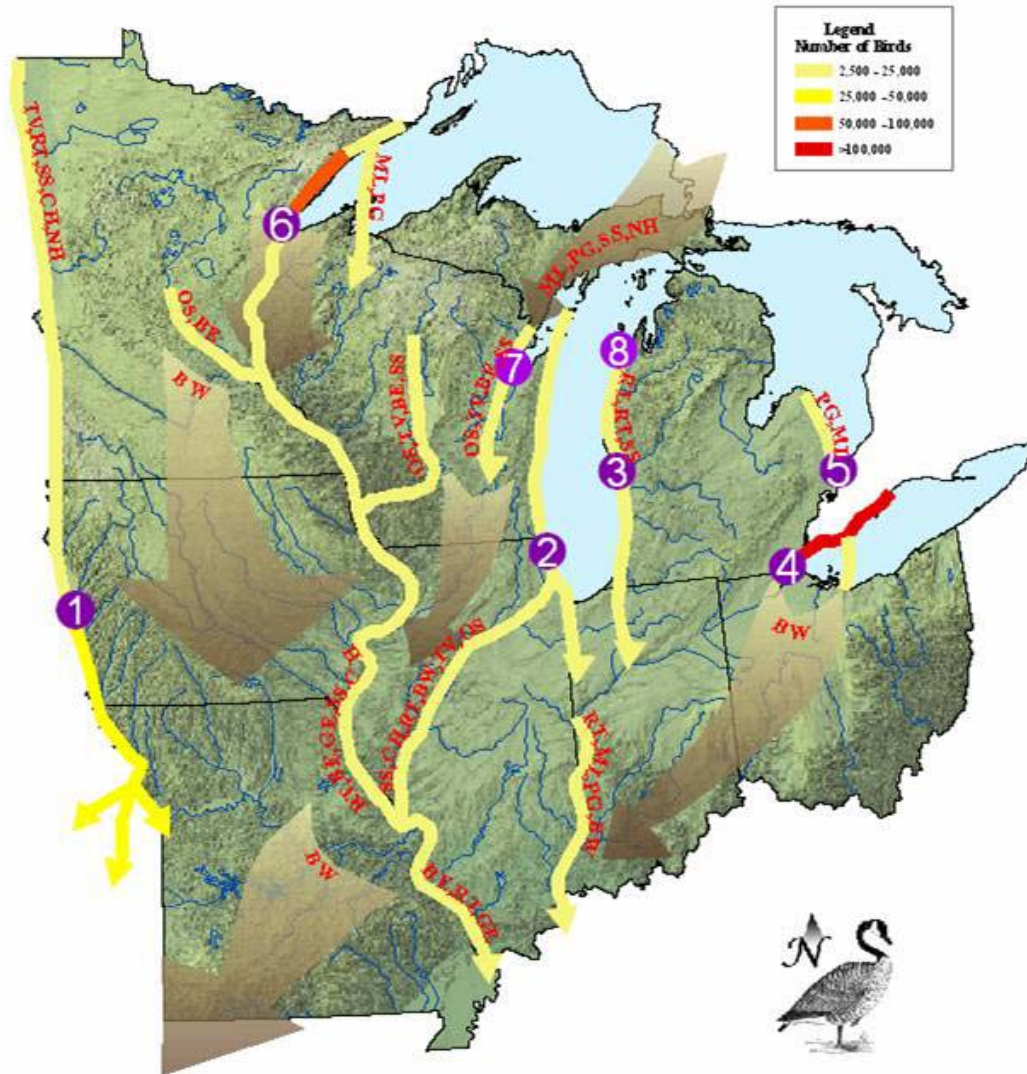
- Avoidance of turbines/tall structures



# Off Shore Development



# Potential Fatalities Migration Corridors



# Potential Fatalities Waterbird Colonies



# Migration – Open Water



# Great Lakes - Habitat

- Waterbird Islands
- Avoidance of turbine areas
- Fisheries
  - Spawning areas
  - Changing currents?



# Cumulative Impacts

A large white wind turbine is the central focus of the image, set against a clear, bright blue sky. The turbine's three blades are visible, extending from a central hub. The tower of the turbine is a thick, white vertical column. The bottom edge of the image shows a thin strip of green grass.

- Combination of past, present, and foreseeable future impacts from all sources
- Impacts from other sources are part of the cumulative impacts
- Add in current and future impacts from wind development

# Cumulative Impacts



# Cumulative Impacts - Habitat

A large white wind turbine is the central focus of the image, set against a clear, bright blue sky. The turbine's three blades are visible, extending from a central hub. The tower of the turbine is partially visible at the bottom. The overall scene is a clear, open landscape, likely a grassland or prairie, as suggested by the text.

- Projected number of turbines in rare habitat could be critical
  - Grasslands/prairies
  - Interior forests
  - Ridge lines
  - Great Lakes islands, points, and spawning reefs

# Current Problems

A white wind turbine is shown against a clear blue sky. The turbine has three blades and a tall tower. The blades are positioned at different angles, suggesting it is in operation or about to start. The tower is a simple, vertical structure. The sky is a uniform, clear blue.

- Lack of oversight
  - Varies greatly by state/province
  - Varies by size of project
  - Some developers are quite environmentally conscious
  - Others are not

# Current Problems

A white wind turbine is positioned in the center of the frame, extending from the bottom edge towards the top. The background is a clear, solid blue sky. The turbine's three blades are visible, with one pointing towards the top right, one towards the left, and one towards the bottom right. The tower is a vertical white line.

- Facilities in undesirable locations
- Rare habitat not being protected
- Left unchanged, industry may tend to lowest common denominator

# Possible Solutions

## Minimum Standards

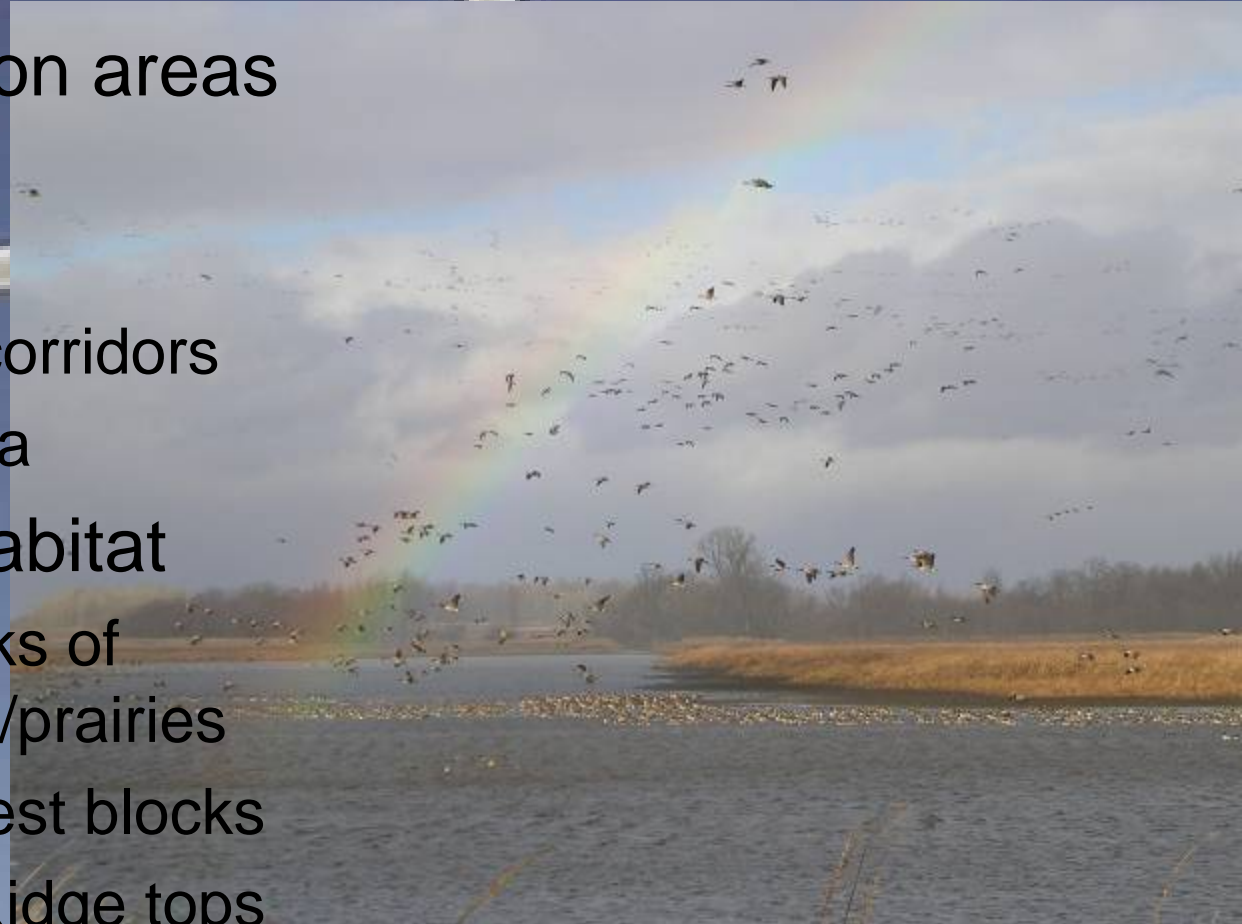
- Self imposed by industry
- State or local government
- Federal
  - FACA committee
- Wind certification program
  - Those who consult and meet standards would be certified
  - Could be used in marketing and financing



# Possible Solutions

## Avoidance

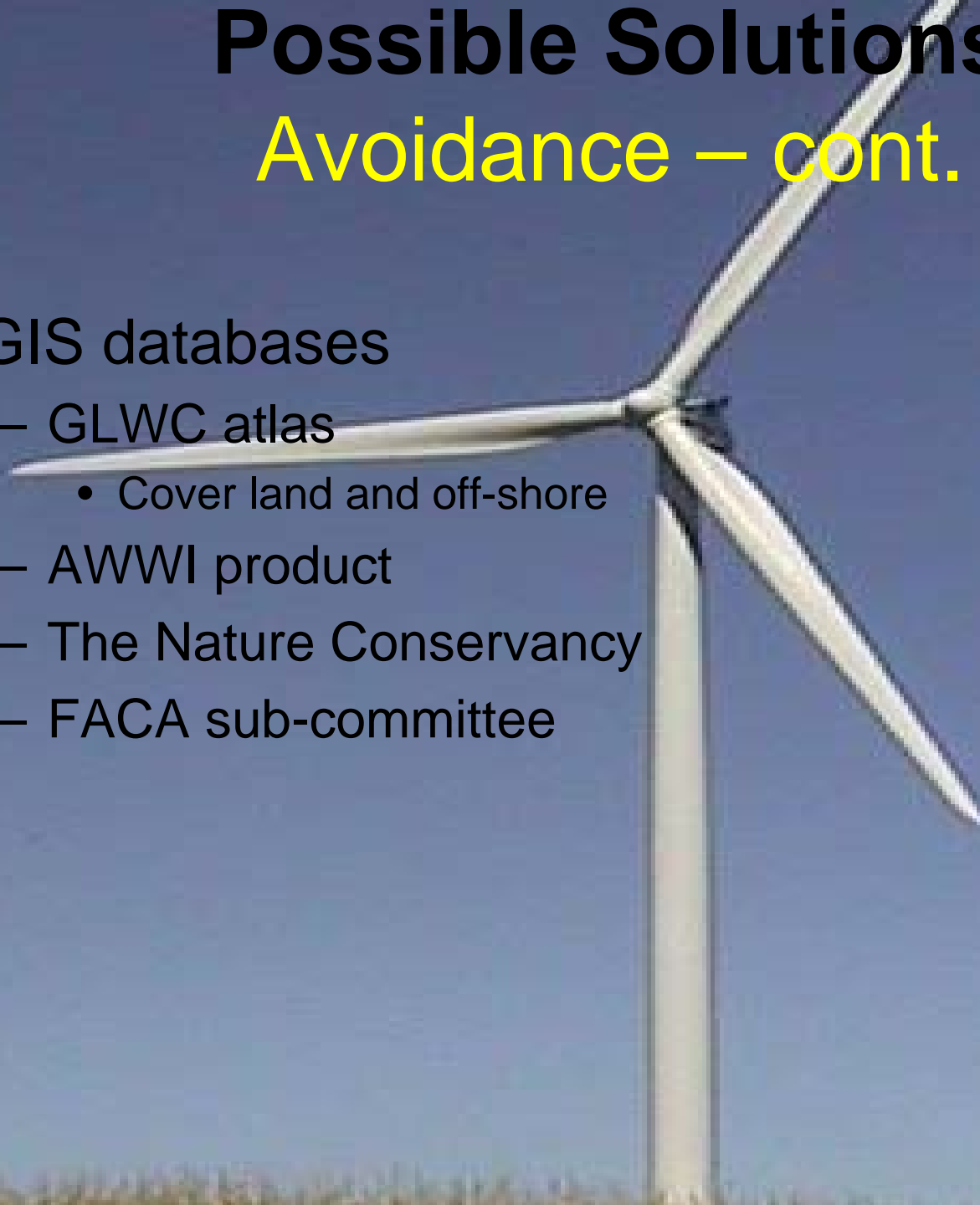
- Concentration areas
  - Refuges
  - IBAs
  - Migration corridors
  - Hibernacula
- Important habitat
  - Major blocks of grasslands/prairies
  - Interior forest blocks
  - Forested Ridge tops



# Possible Solutions

## Avoidance – cont.

- GIS databases
  - GLWC atlas
    - Cover land and off-shore
  - AWWI product
  - The Nature Conservancy
  - FACA sub-committee



# Possible Solutions

## Minimization

- Pilot developments
  - Near concentration areas
  - Where habitat impacts are possible
- F word



# FEATHERING



# Possible Solutions

## Minimization

- Pilot developments
  - Near concentration areas
  - Where habitat impacts are possible
- F word
  - Seasonal
  - Diurnal
  - Correlated to weather events
  - Radar activated



# Possible Solutions

## Mitigation

- Primarily for habitat loss
  - Defragment habitat parcels
  - Restore
    - Prairies
    - Grasslands
    - Forests
  - Protect rare habitats
  - Releasing studies/reports



# Summary

A large white wind turbine with three blades is shown against a clear blue sky. The turbine is positioned on the right side of the frame, with its tower extending downwards. The blades are spread out, and the overall scene is bright and clear.

- There a lot of issues
- We need renewable wind
- We need to protect aerial and aquatic fauna
- Can we talk?