



Site Selection and Land Agreements



Robi Robichaud

National Renewable Energy Laboratory

August 15 2010

Wind 101

The Wind Development Process

- **Site Selection**
- **Land Agreements**
- Wind Assessment
- **Environmental Review**
- Economic Modeling
- Interconnection Studies
- **Permitting**
- **Financing**
- **Sales Agreements**
- **Turbine Procurement**
- **Construction Contracting**
- **Operations & Maintenance**

Site Selection

- Basic steps to select a site:
- **FATAL FLAW ANALYSIS**
- Prospecting – evidence of significant wind
- Transmission /distribution lines – distance & availability?
- Road access?
- Environmental concerns?
- Operations impact?
- Receptive community?

Site Selection

- **Impact upon training**
- **Available space**
- **Potential interference with future expansion**
- **Proximity to suitable electrical transmission/distribution**
- **Slope and grade**
- **Minimal environmental disturbance**
- **Proximity to flooding/tornado/hurricane/seismic events**
- **View from housing**
- **Visible to visitors/passersby**

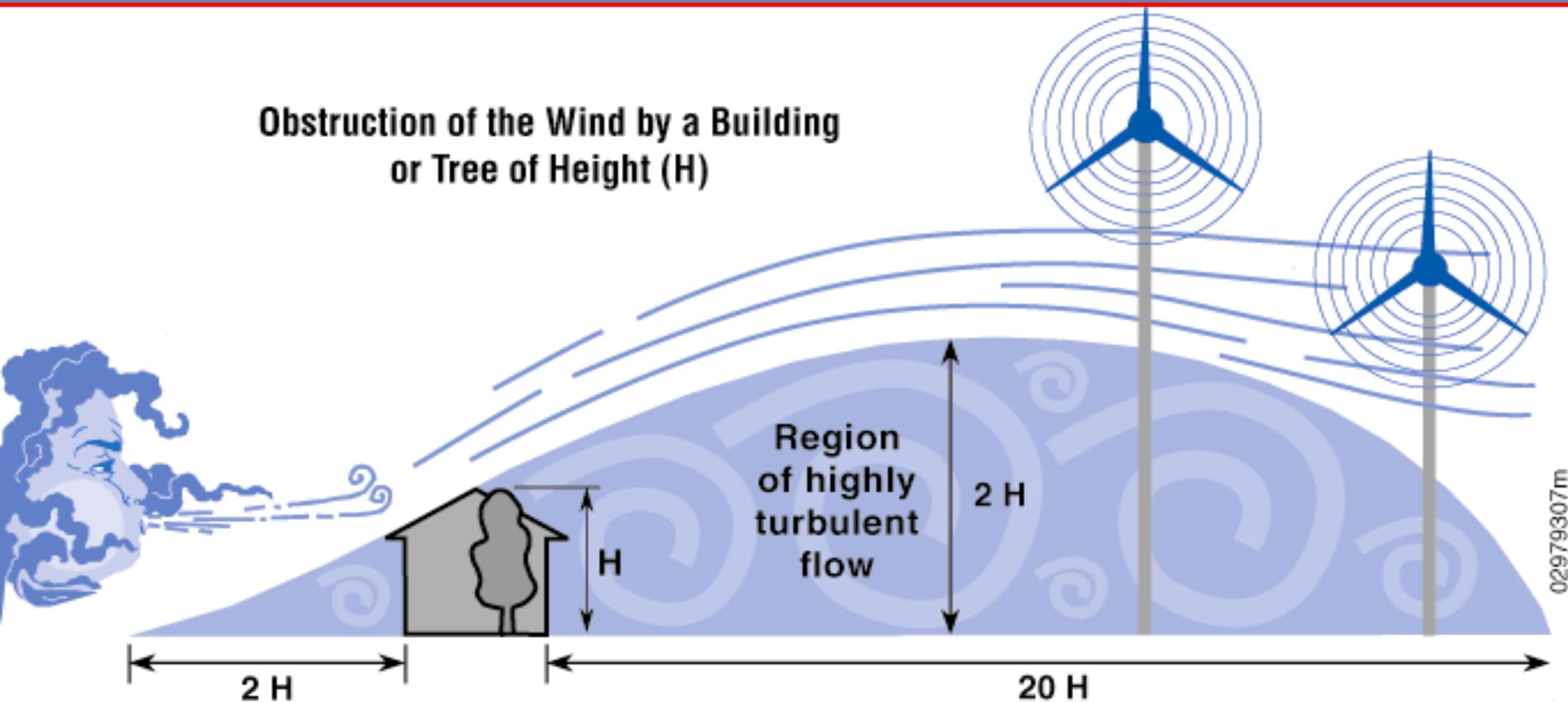
Land Agreements:

Identify all the interested parties for:

- Siting MET towers & wind turbines
- Operations impact – towers and turbines
- Transmission/distribution access
- Adjacent to or otherwise affected by the wind turbine or wind farm
- Investigate ownership options
 - Leasing – Enhance Use Lease or other leasing

Micro-Siting Example: Obstruction of the Wind by a Building

Obstruction of the Wind by a Building
or Tree of Height (H)



Environmental Review

- Endangered species?
- Avian studies?
 - Raptors
 - Migratory birds
 - Bats
 - Other

Communicate with interested parties

- Local, state, and federal authorities
- Local Audubon society

- Wetlands review

Environmental Review (cont.)

Visual studies

- Photosimulation

- Historical and archeological review

Communicate with interested parties

Local, state, and federal authorities

Local Audubon society, Greenpeace, etc

Permitting

- Local, State and Federal rules/laws may apply
- FAA, DoD – airports, radar, NEXRAD
- Public land vs. private land – different issues and development costs and timelines
- Land Use Permit
- Building Permit



Frequently Asked Questions – Wind Turbine Siting



- Setback: ~200-250m
- Noise:
 - Noise test reports on the Web:
<http://www.nrel.gov/docs/fy04osti/34662.pdf>
- Impact on avian/bats and wildlife habitat: Proper siting is key

Carpe Ventem



www.windpoweringamerica.gov

Questions?

For more info:

<http://www.nrel.gov/wind/>

<http://www.eere.energy.gov/windandhydro/windpoweringamerica/>

<http://www.awea.org/>

<http://rredc.nrel.gov/wind/pubs/atlas/>

Robi Robichaud

Senior Engineer

NREL MS # 3811

1617 Cole Blvd

Golden CO 80401

Tel: 303-384-6969

robi.robichaud@nrel.gov

