

Addressing Barriers

Permitting and Interconnection

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Who to contact for permitting

- County
- Town
- Neighbors
- Lawyer?

Who to contact for permitting

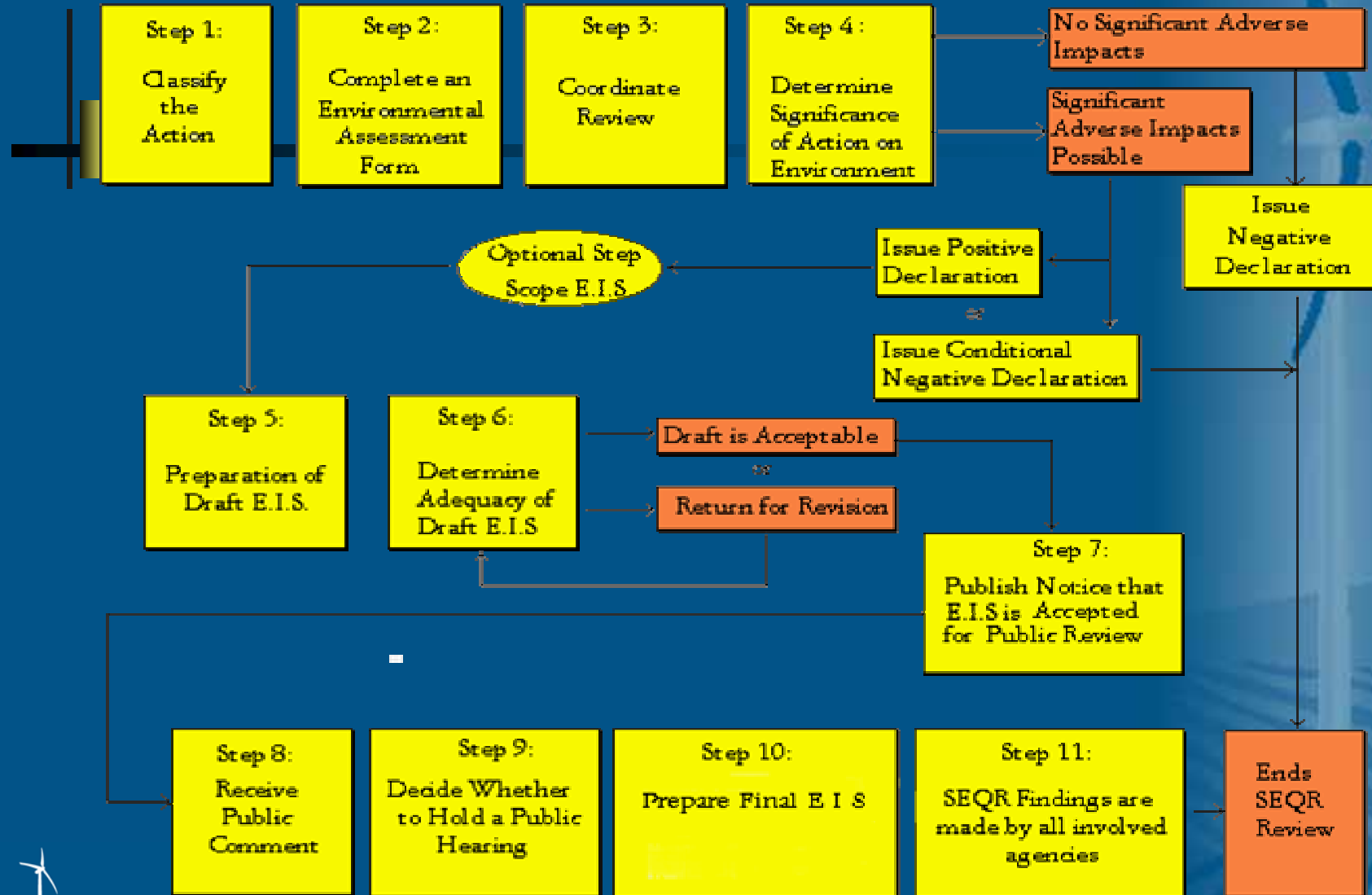


- Zoning Board
- Planning Board
- When in doubt, start with your local code enforcement officer (AKA the AHJ)

The permitting process

- Will likely require a special use permit unless turbines are classified a permitted or accessory use.
- In some states, the permit process will include an environmental review
- May involve a planning board
- May require a public hearing
- Neighbors may get involved

NY State's "user friendly" SEQR Review Process!



The permitting process



- Most existing ordinances do not address small wind systems
- Most zoning and permitting boards have had no prior experience with small wind
- Or their previous experiences have been ancient experiments and failures
- Little available information other than anti-wind web sites

Zoning- the largest barrier?

Zoning is driven by...

- Public perception
- Politics
- Educate your neighbors and zoning officials

Resources to educate

“Perception management”

Avoid terms such as:

- “fall zone”
- “ice throw” (doesn’t happen!)
- “hazard”
- “noise” (it’s sound, not noise!)



Relative Sizes of Wind Turbines
- proportionally scaled

Small Scale

Utility Scale



L&S Tech. Assoc., Inc.

Jacobs	Vestas	Vestas	Vestas	G. E.	
31-20	V15-65	V17-90	V47-660	1.5 MW	
31 ft	49.22 ft	55.8 ft	154.2 ft	252.6 ft	Rotor Diameter
120 ft	110 ft	140 ft	213.64 ft	262.5 ft	Hub Height
3.5	11.5	18.5	145	325	Average Homes Powered

Resources to educate

Be aware of “Good Neighbor” issues

- Setback from property lines
- Sound
- Color of turbine and tower
- Lights (not needed...maybe for Christmas?)
- Signs and advertising (not on the tower!)



Resources to educate

Legitimate public health and safety concerns

- Setbacks
- “Leprosy” or abandonment
- Attractive nuisance
- Tourism ?



Resources to educate

Non-public health and safety concerns

- Height restrictions
- TV and communications interference
- Noise
- Shadow flicker or strobing
- Lightning
- "Earth currents" or "stray voltage"
- Ice shedding
- Blade throws



Resources to educate

Not so legitimate concerns

- Birds, bats, and wildlife
- Aesthetics and “view shed”
- Property values
- “Payback” or economics
- Land use issues
- Etc., etc....



Resources to educate


Tools you can use....

- Respond to attacks immediately
- Don't let them define you
- Correct misinformation immediately
- People remember "visual images"
- The press abhors a vacuum
- Never end on a negative



Resources to educate



- Database for State Incentives, Net Metering and Interconnection Info www.dsireusa.org
 - Iowa Energy Center www.energy.iastate.edu
 - Wisconsin Wind Toolbox www.renewwisconsin.org
 - American Wind Energy Assoc. Small wind permitting handbook and other good resources
www.awea.org/smallwind
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Resources to educate



Iowa Energy Center – Wind Energy Manual

An online wind manual that walks you through the considerations involved with setting up small wind systems.

www.energy.iastate.edu/renewable/wind/wem/wem-01_print.html

Interconnection

General requirements for many states:

- Type-tested equipment- that which conforms to IEEE 1547, UL 1741 and the NEC
- One-line diagram and site plan
- External lockable AC disconnect switch
- Interconnection contract
- Commissioning tests
- liability insurance
- Interconnection fees

Interconnection in Iowa

- Eligible Renewable/Other Technologies: Photovoltaics, Wind, Biomass, Hydroelectric, Municipal Solid Waste
- Applicable Sectors: Commercial, Industrial, Residential, Nonprofit, Schools, Local Government, State Government, Fed. Government

- Iowa allows net metering for renewable-energy systems, but no uniform interconnection standards are currently in place either for small renewables or larger distributed generation.
- Existing provisions in the Iowa Administrative Code limits the discretion of utilities to impose onerous interconnection requirements. The law states that where systems meet the relevant requirements of the National Electrical Code (NEC), the Institute of Electrical and Electronics Engineers (IEEE), and Underwriters Laboratories (UL), utilities may not require system owners to comply with additional safety or performance standards, perform or pay for additional tests, or purchase additional liability insurance.

Interconnection goals

- Standardized interconnection requirements for all states
- A simplified interconnection process
- No liability insurance requirement for residential systems
- Low or no interconnection fees for residential systems

The first Windy Boy grid-tie
wind system in NY State
Installed by Four Winds
April, 2005



NY interconnection woes



We had to fight to get this 1.8 kilowatt “Windy Boy” grid tie system interconnected.

- The Windy Boy is actually an SMA America “Sunny Boy” PV inverter, which is listed on NY’s list of approved type tested inverters.
- But the utility would not accept it because it said Windy Boy on the box.
- With the help of the president of SMA, we had to convince the NY PSC and the utility that this was actually an SWR 1800U with revision 8.94 firmware, not a Windy Boy. It worked.....

African turbine on
an 85' tilt up in
Holland, NY



The Brains Behind Four Winds...the new intern He doesn't do "Windows"

