Wind Energy Leasing Issues for Oklahoma
OACD Annual Meeting
February 24, 2009

Dr. Shannon L. Ferrell
Assistant Professor – Agricultural Law
OSU Department of Agricultural Economics

Photo source: Greg Highfill

Wind in Oklahoma

(as a force of nature and an industry, too)

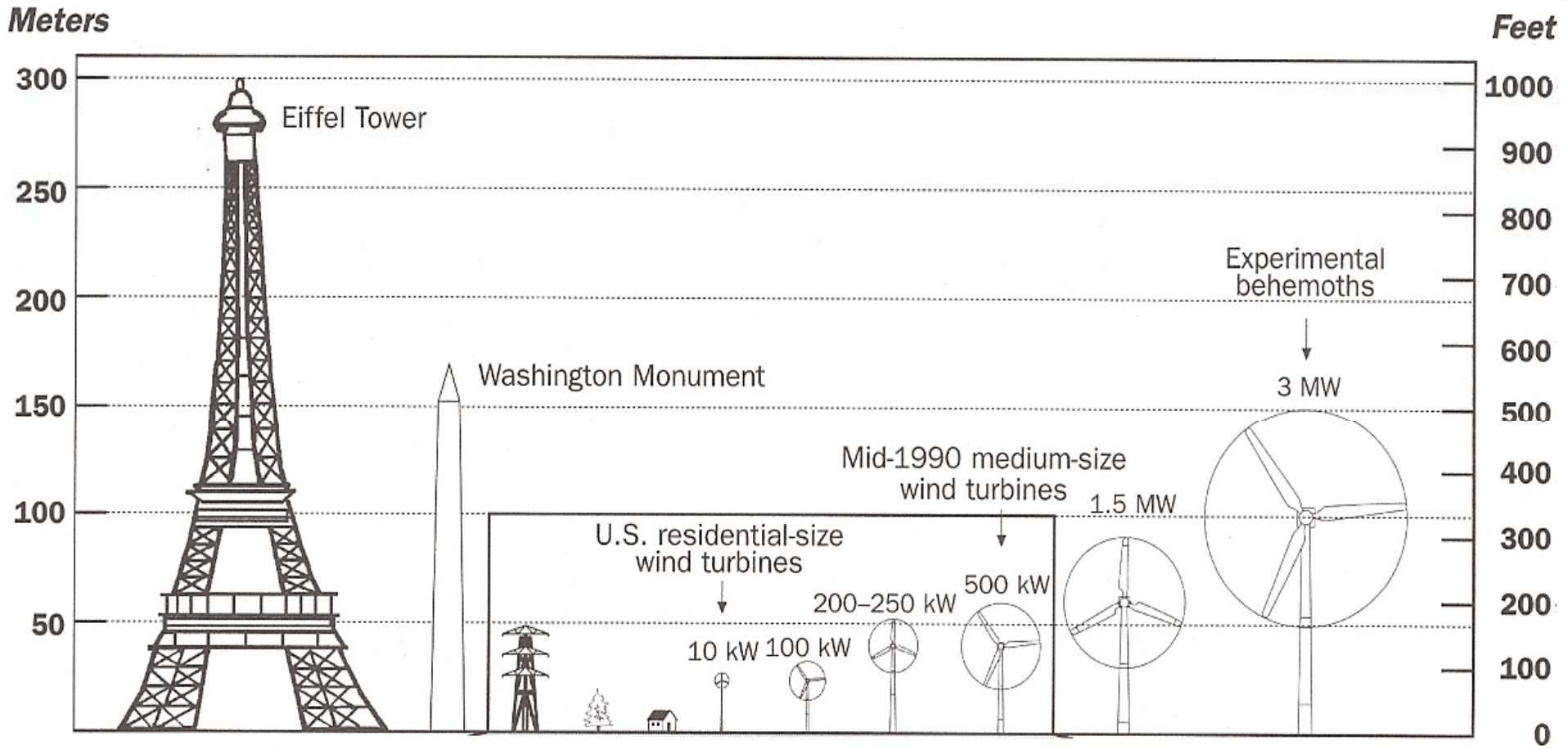
Power is a function of air density, swept area, and wind speed

- Doubling rotor length gets us 2^2 = four times the swept area and thus *four times* the power
- Since power increases as a cubic function of velocity, we see 2^3 = ***eight times*** **the power**.

$$P = \frac{1}{2}\rho v^3 \Pi r^2$$

Source: http://www.windpower.org/en/tour/wres/enerwind.htm,

A sense of turbine scale

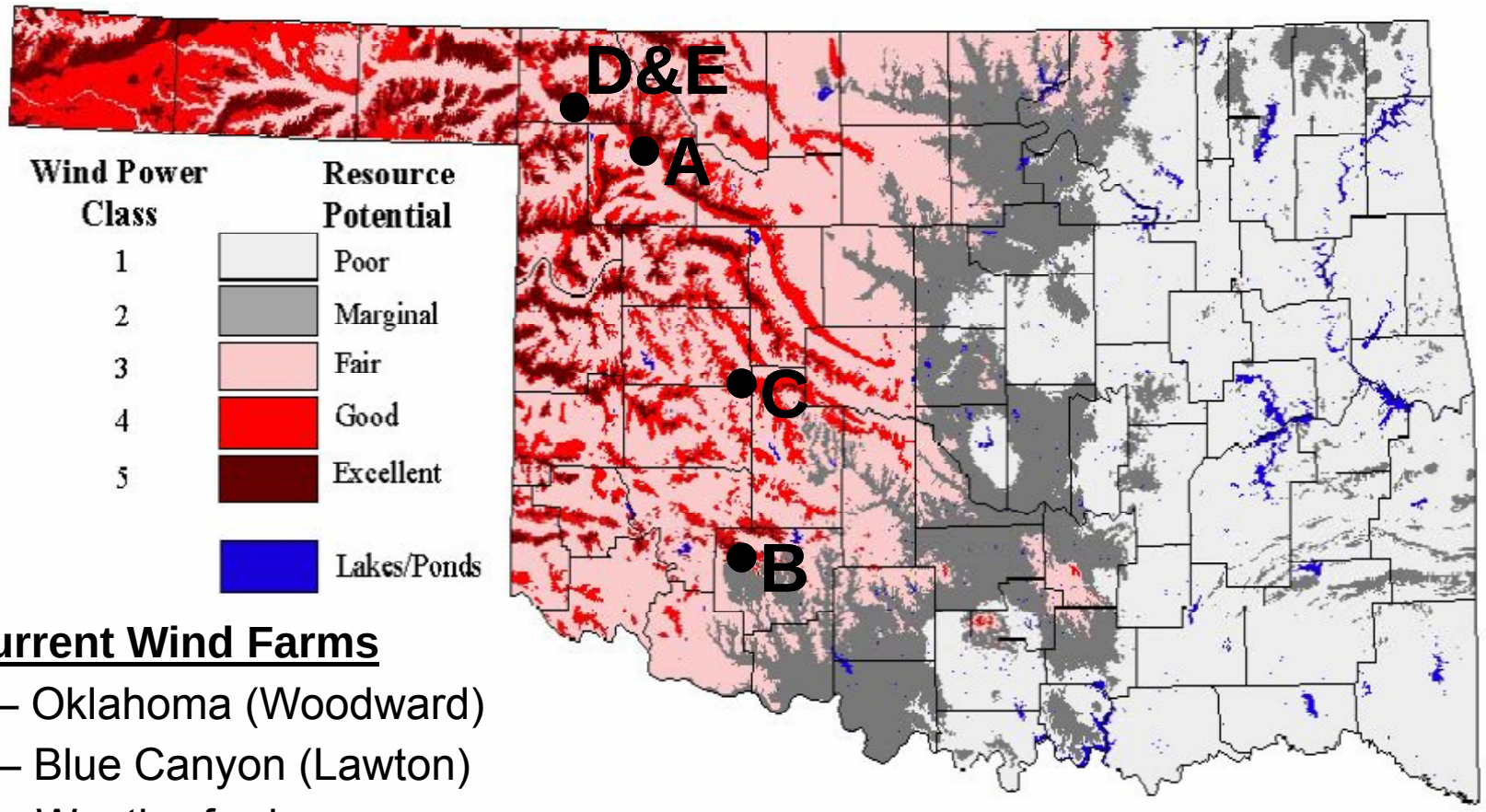


Source: Paul Gipe, *Wind Energy Basics* (Chelsea Green Publishing Co., 1999)

Oooooooklahoma, where the wind comes sweeping down the plain...

-Noted climatologists Richard Rogers and Oscar Hammerstien II

Oklahoma Wind Resource Map

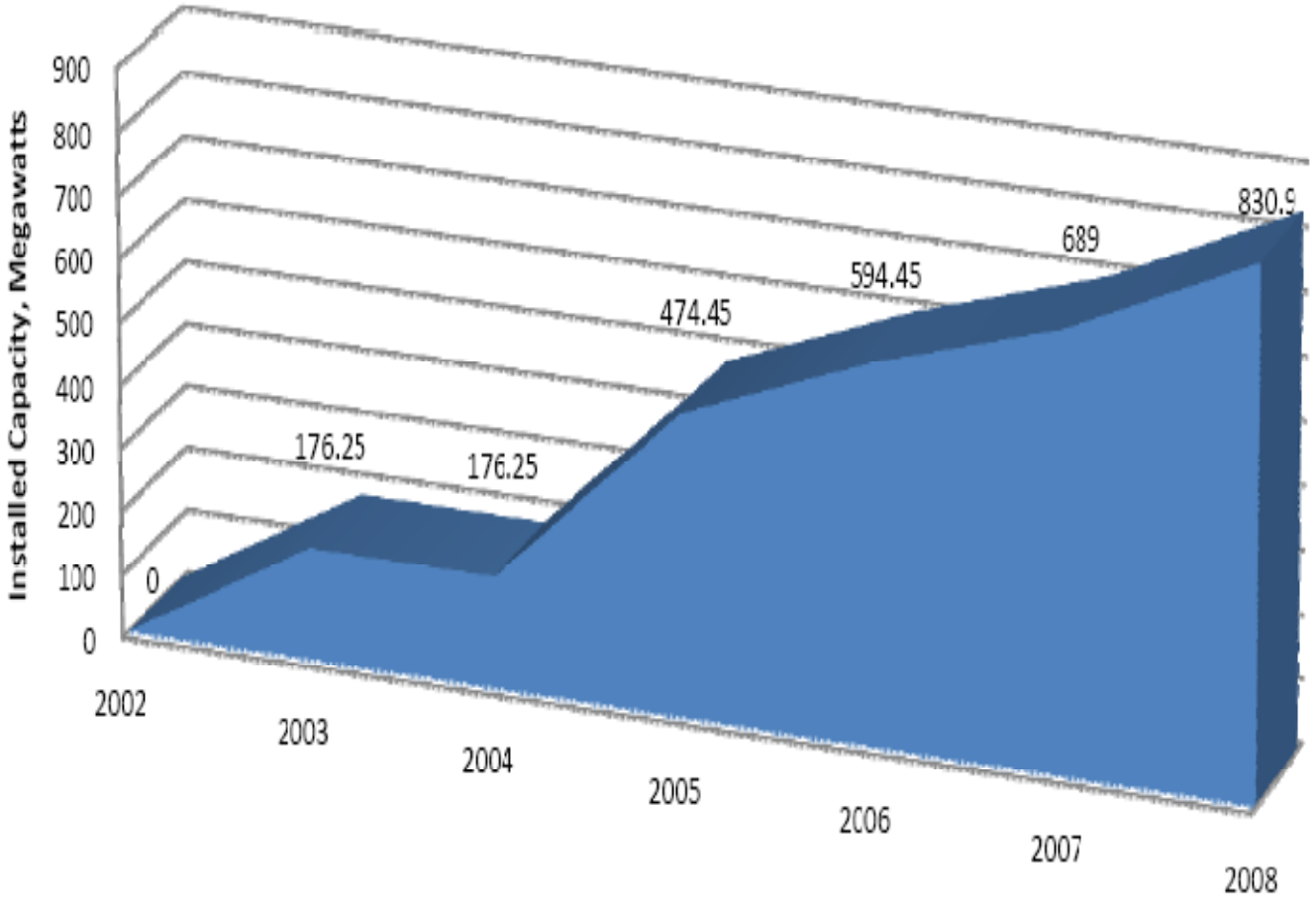


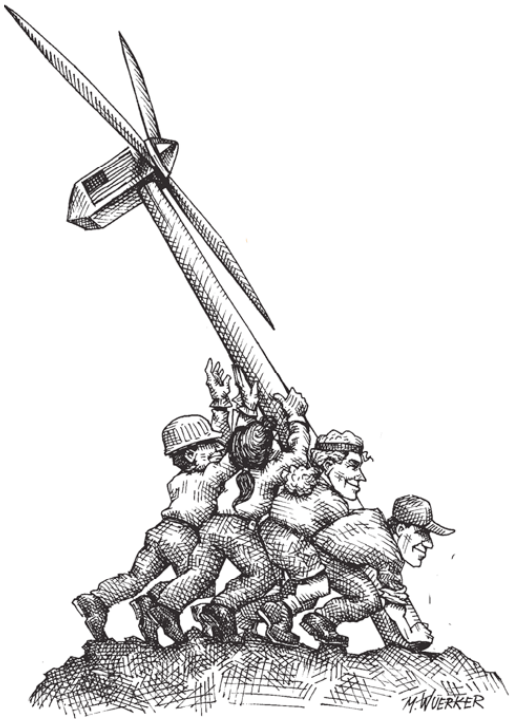
Current Wind Farms

A – Oklahoma (Woodward)
B – Blue Canyon (Lawton)
C – Weatherford
D – Centennial (Fort Supply)
E – Sleeping Bear (Fort Supply)

Source: Oklahoma Wind Power Initiative / Keith Tracy PLLC

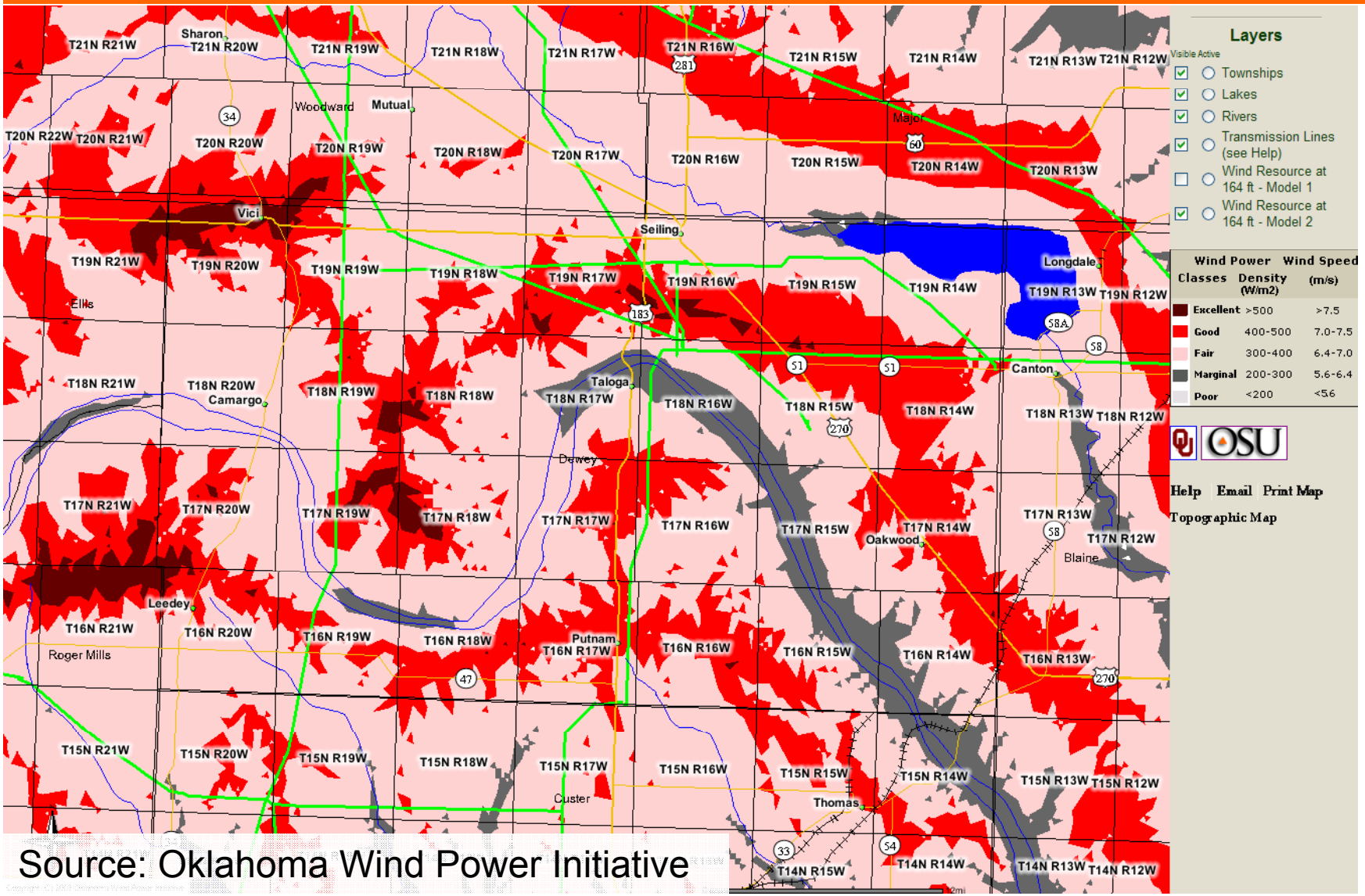
Oklahoma's Installed Utility-Scale Wind Power Capacity





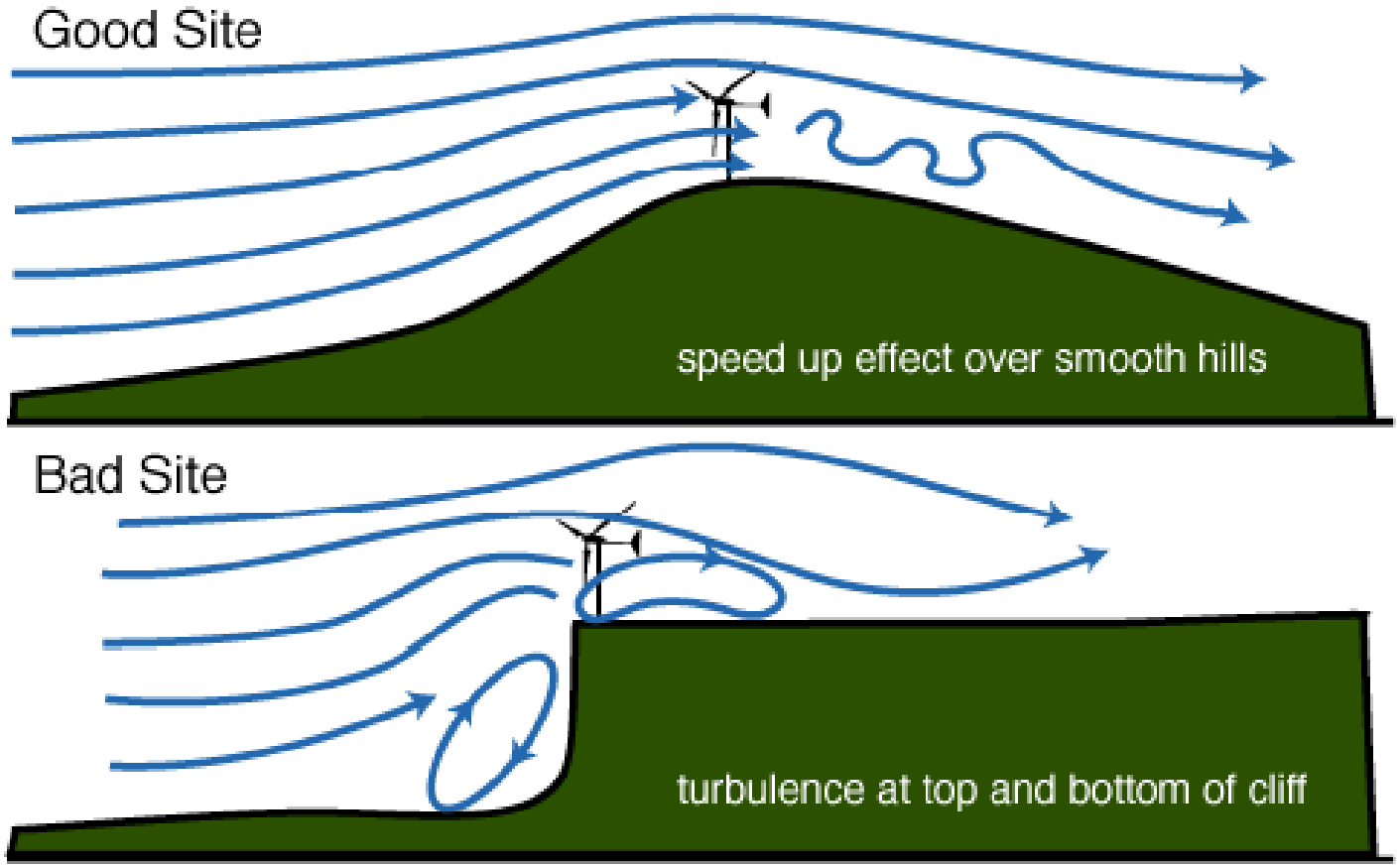
Source: Oklahoma Wind Power Initiative

Dewey County's Wind Resource



Source: Oklahoma Wind Power Initiative

Location, location, location

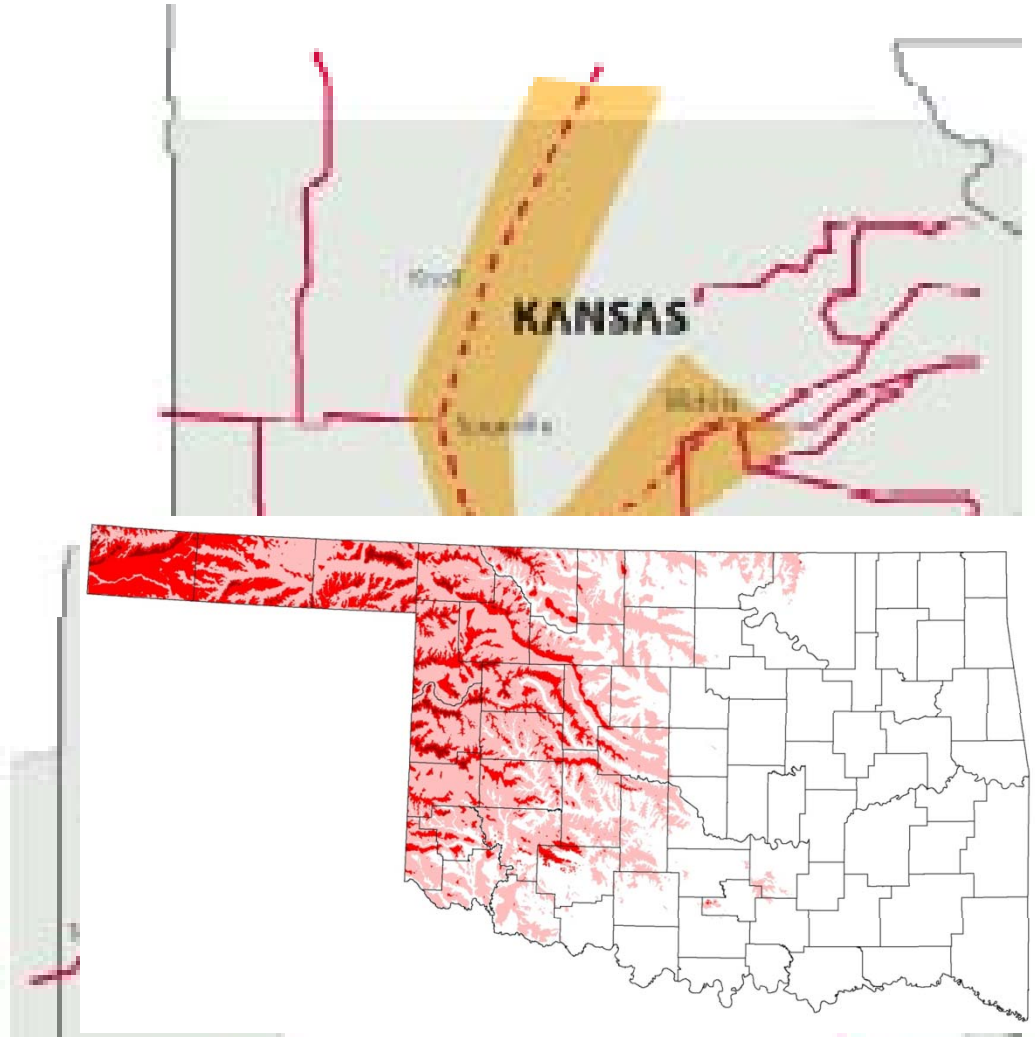


Source: http://www.greenspec.co.uk/html/energy/windturbines.html

Profitability in Wind

- It's a function of several variables:
  - Quality of the wind resource
  - Available incentives
  - Market for power
  - Costs incurred in capturing and selling power
    - Transmission costs?
    - Landowner Payments?
  - Financing (not much in the news about credit markets lately, though)

Southwest Power Pool (SPP's) "X-Plan"

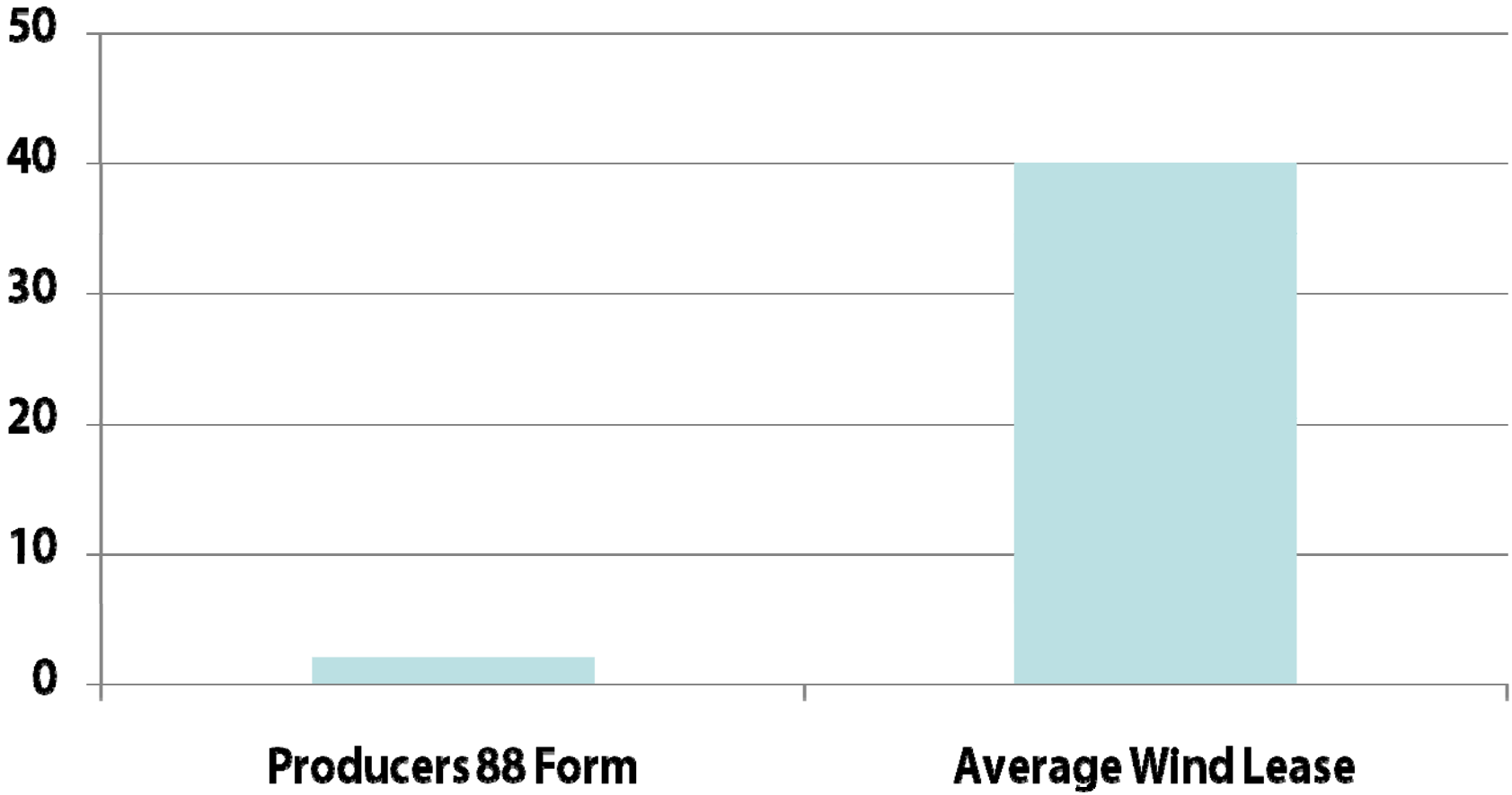


Source: Southwest Power Pool, available at: http://www.spp.org/publications/SPP_Wind_Integration_QA.pdf

Understanding wind energy leases

Source: Stephanie Buway, Oklahoma Wind Power Initiative

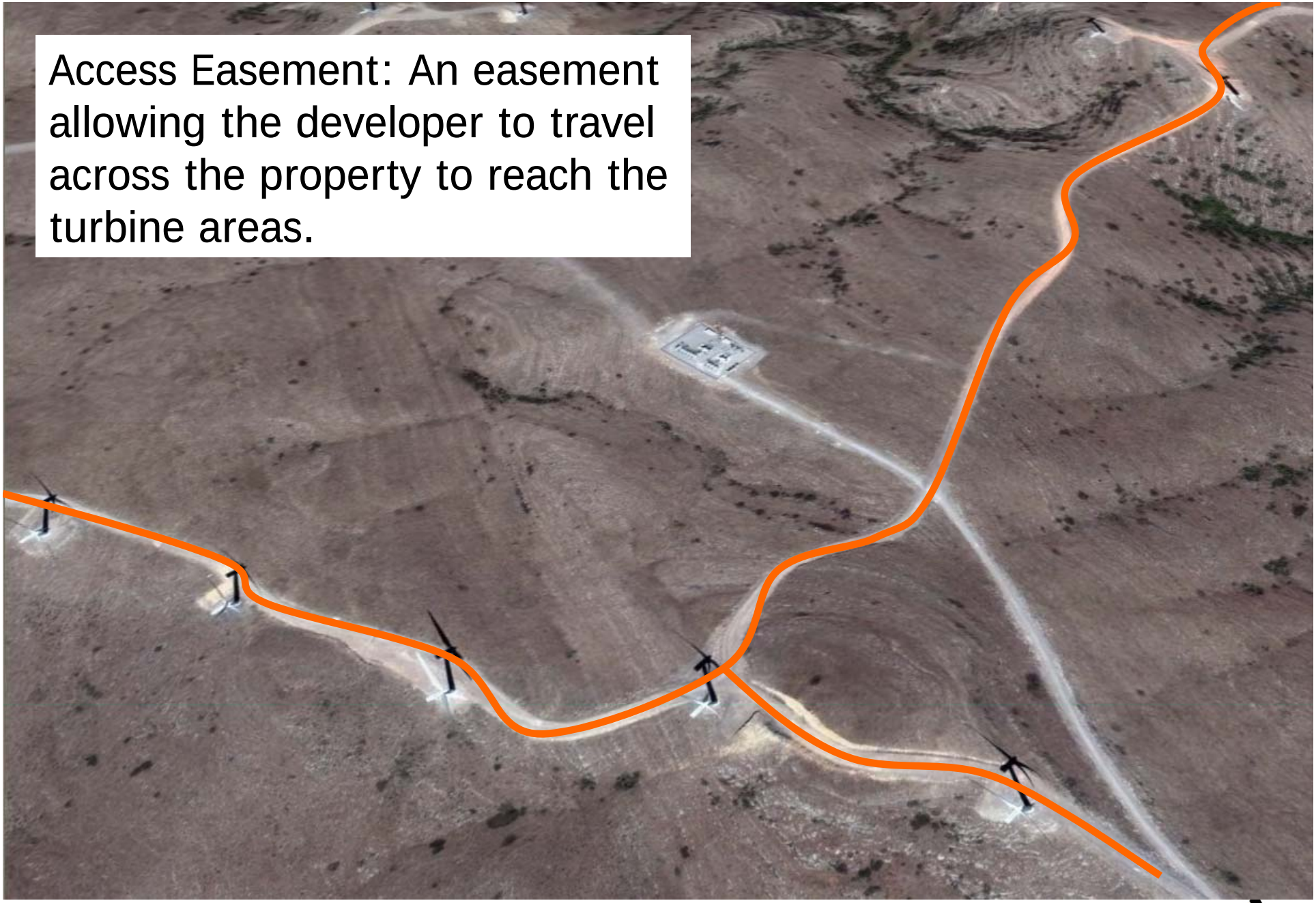
Comparative Lease Length (in pages)



Source: Ferrell's files

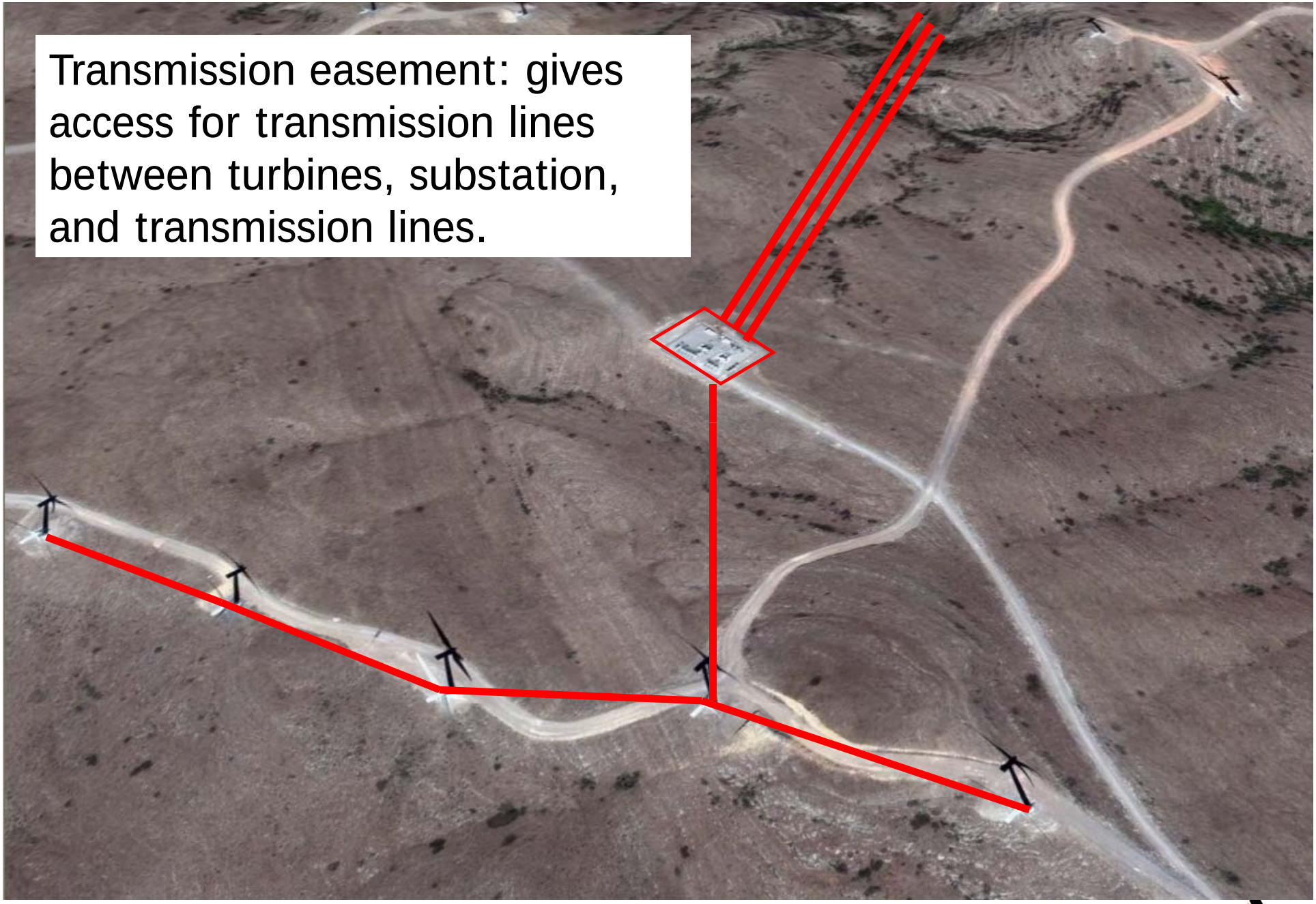
Wind energy projects: What's needed from the landowner?

- Short version: the ability to access the wind, convert it to electricity, and send the electricity off-site.
- Usually accomplished via series of easements coupled with an overlying lease.
  - Access
  - Construction
  - Transmission
  - "Non-obstruction"
  - Overhang
  - Noise

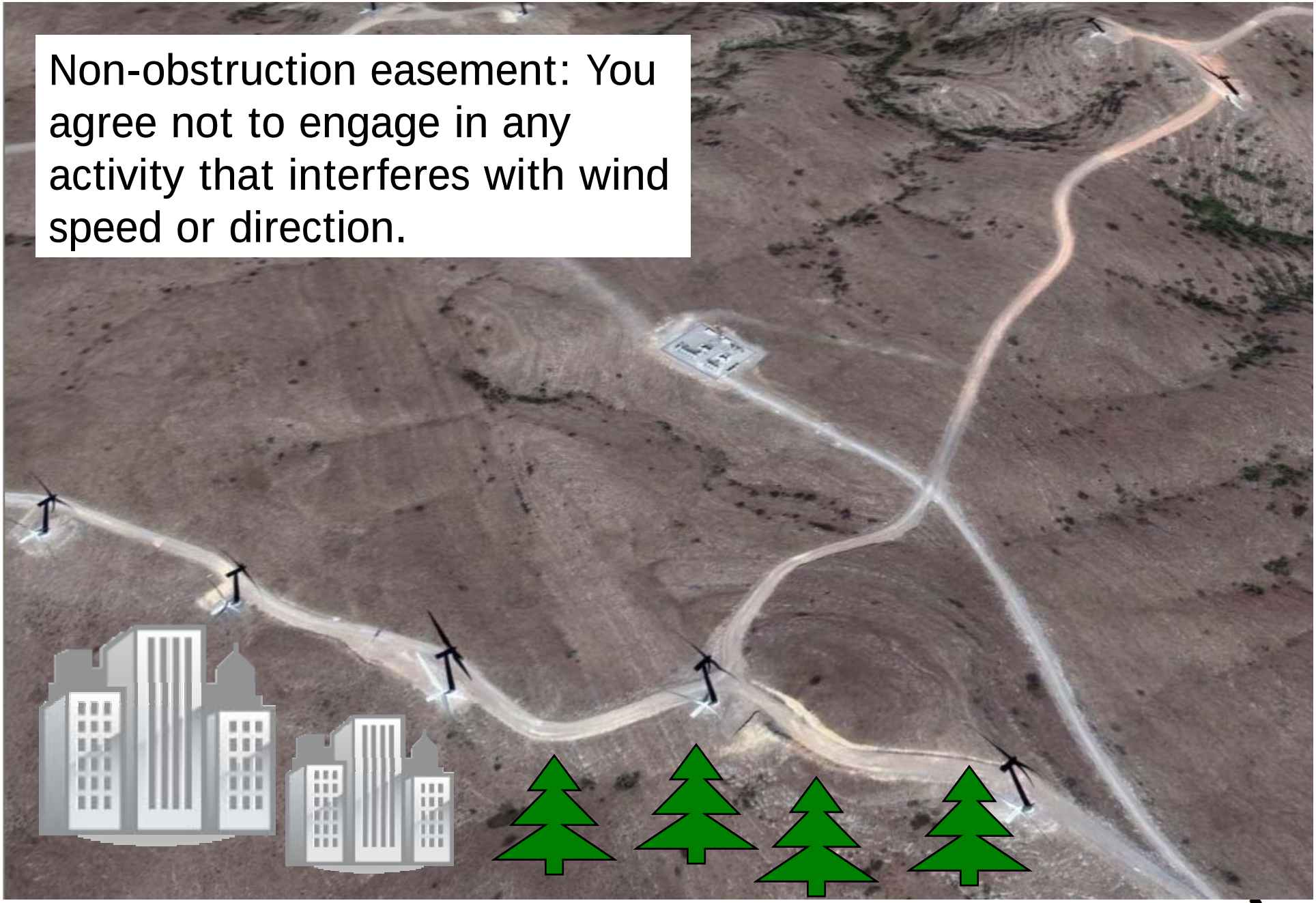


Source: Google Earth

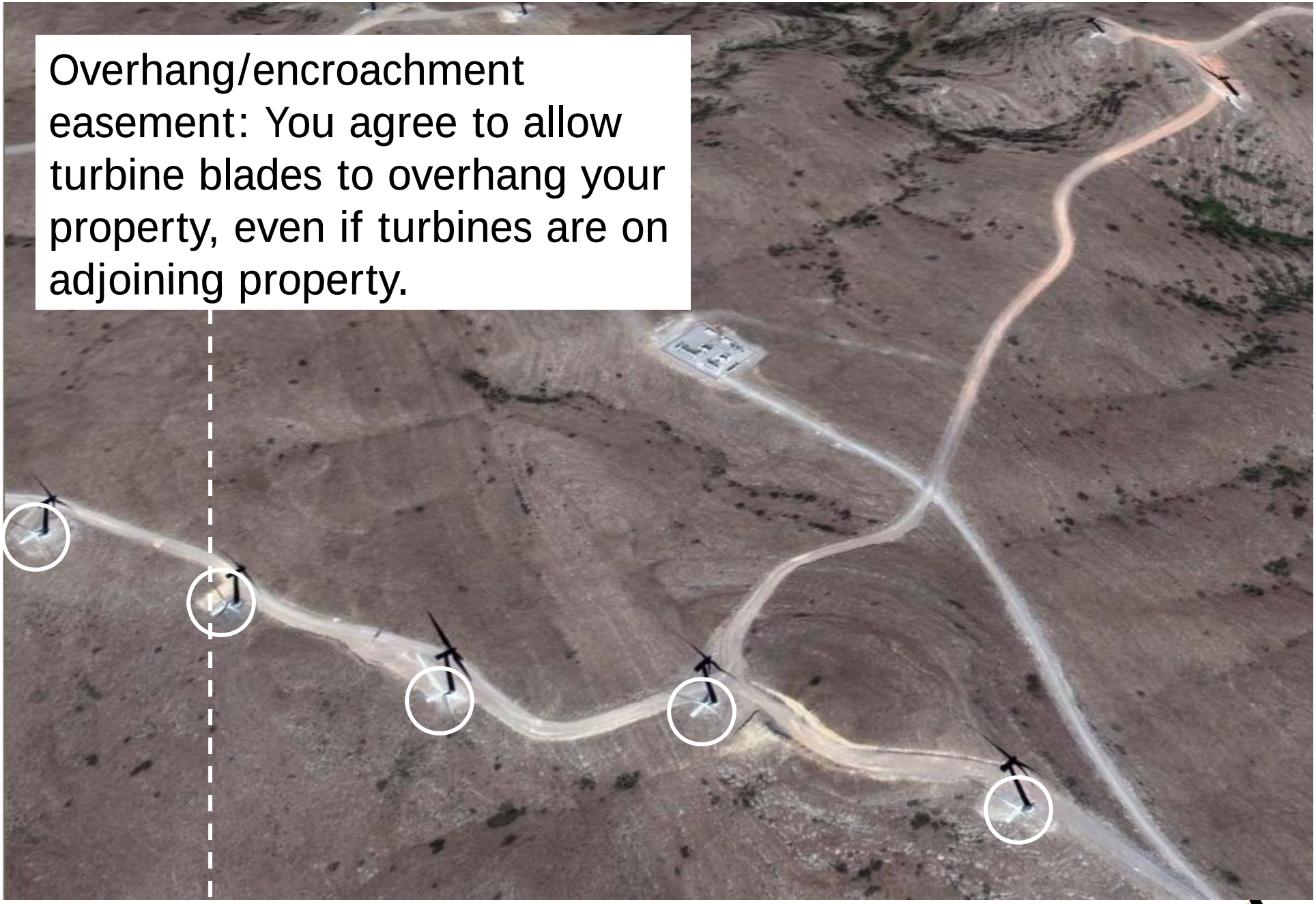
Source: Google Earth



Source: Google Earth

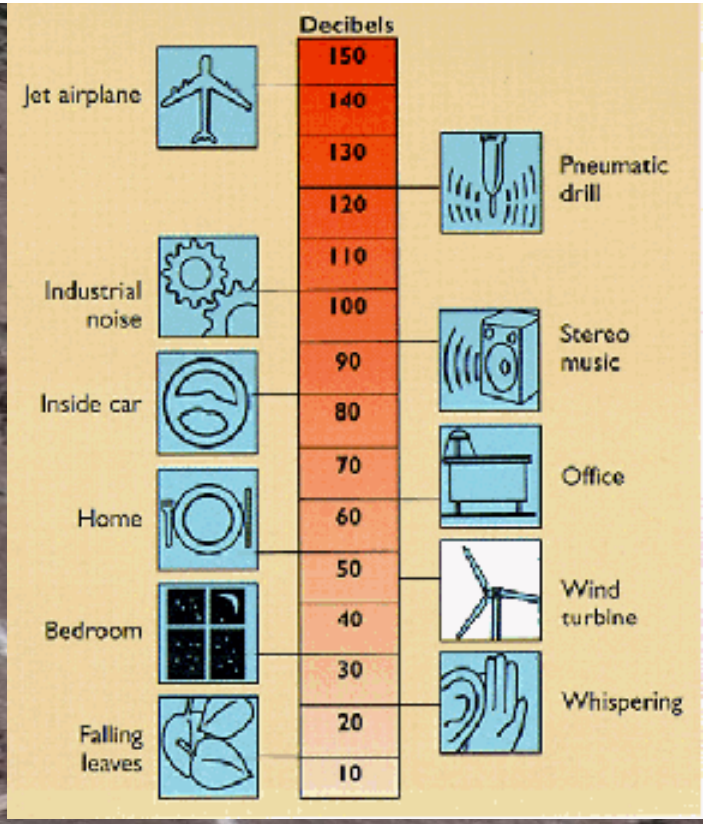


Source: Google Earth



Source: Google Earth

Noise easement: Allows for noise from operations up to a certain level (usually measured in decibels [dB]), often within a specific radius.



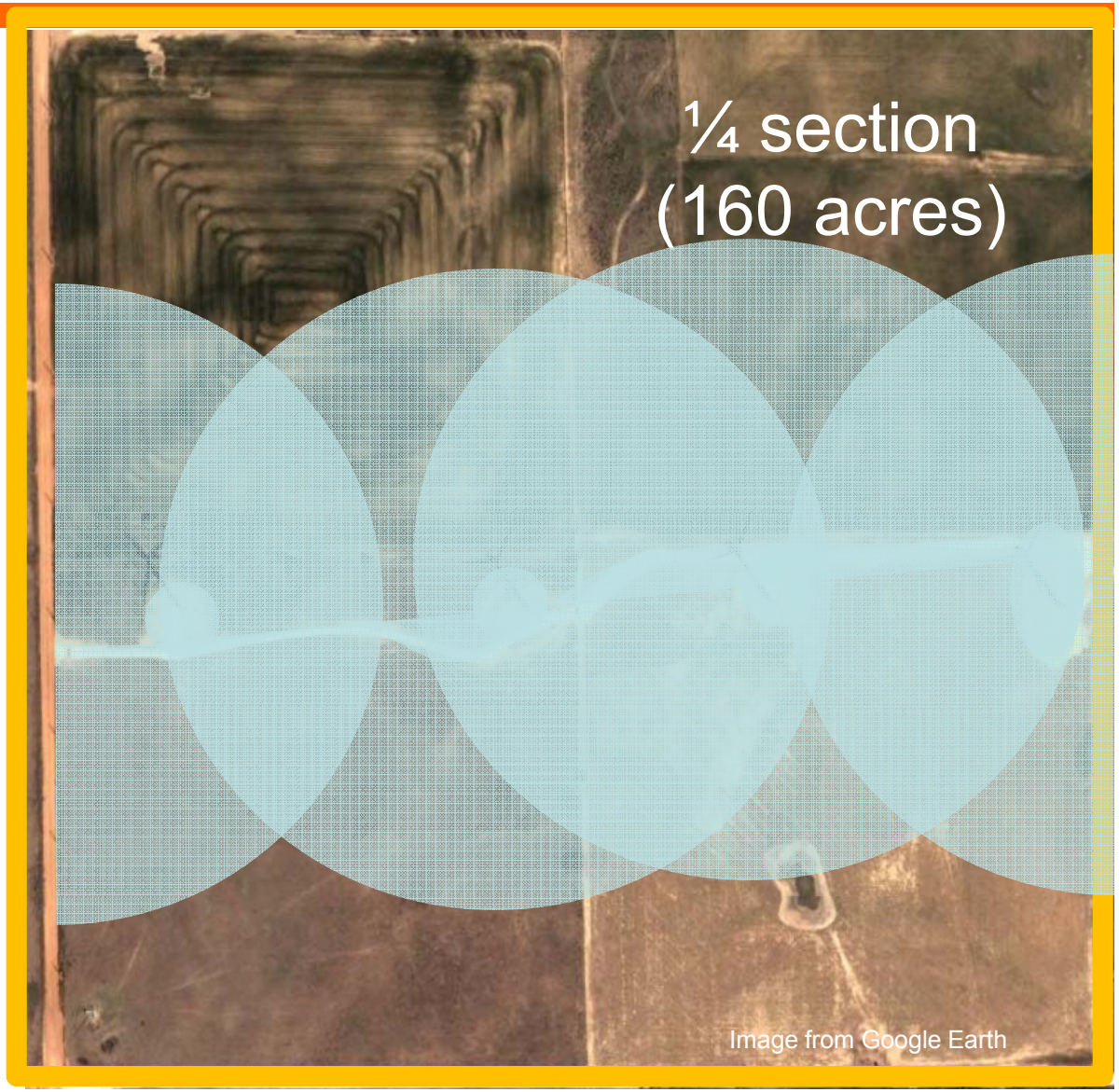
Source: American Wind Energy Association, available at http://www.awea.org/pubs/factsheets/092308_Sound_Factsheet.pdf

The Top 5 Questions to Ask about Wind Leases

1. How will your current uses of the property be affected by the project?
2. How long will agreement last?
3. What are your obligations under the agreement?
4. How will you be compensated?
5. What happens when the project ends?

How will your current uses of the property be affected by the project?

- American Wind Energy Association estimates total area of ≈ 60 acres/MW of capacity.
- ≈ 3 acres (5%) to actual physical occupation of land.
- ≈57 acres (97%) to exclusion area for windflow preservation.



The Exclusion Zone: Not *entirely* exclusive

How long will the agreement last?

- Agreements typically run from 30 – 99 years (150!) BUT
  - Leases have to be carefully reviewed for renewal clauses
    - Is renewal automatic?
    - Will notice of renewal be provided?
    - Is there any opportunity to re-open lease terms at renewals?

What are your obligations under the agreement?

- Surface uses – what will be required to satisfy “non-obstruction” requirements?
- Indemnity(!)
  - Will increased insurance be required?
  - What about third-party waivers?
- Who is responsible for increases in property taxes?
- What about compliance with government programs (CRP, EQIP, WHIP)?

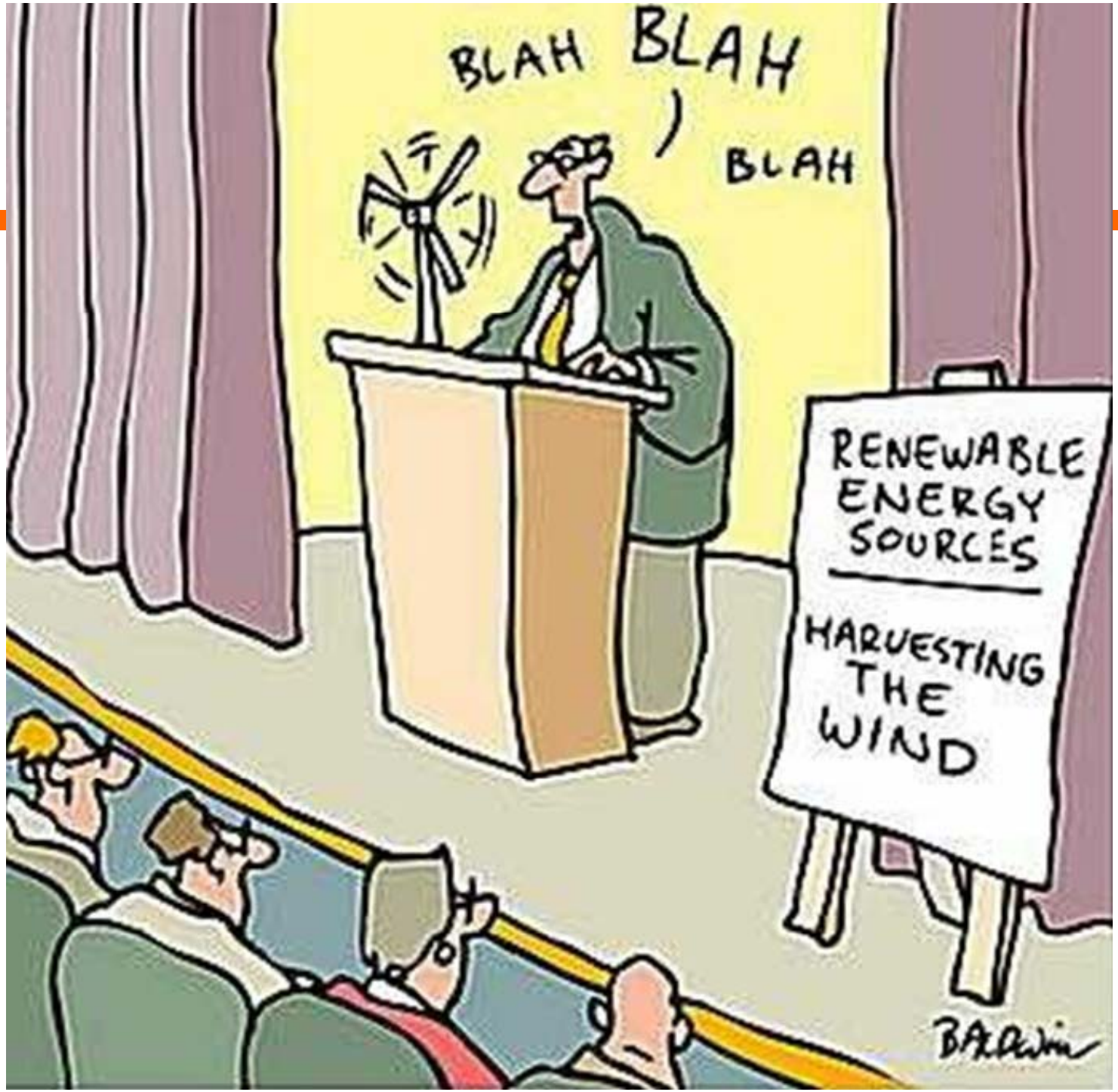
How will you be compensated?

- What are your payments for easements?
  - One-time, up-front, or periodic?
  - What unit is used?
- What are your lease payments?
  - Per turbine, per megawatt, or a “royalty?”
  - Definitions matter!
  - How will accuracy be verified?

What happens when the project ends?

- After project term is completed, will the agreement provide for:
  - disassembly and removal of equipment
  - restoration of grades and soils
  - replacing vegetation?
- What assurances are in place?

The questions that remain...


BLAH BLAH
BLAH
RENEWABLE ENERGY SOURCES
HARVESTING THE WIND
B.A. Erwin