

## **WIND ENERGY FOR AGRICULTURE**

George Stricker

### **Farms of the past**

- Symbol of water pumping windmills
- Open lands and useful or harmful winds
- Understanding of and dependence on the weather
- Resourceful farm mechanics and inventors

### **Planning needed for a wind energy installation on a farm**

- Statement of purpose(s)
  - Save on electrical bill
  - Earn money – royalty from wind turbine lease
  - Make a green statement
  - Interested in the concept
  - Grew up with a windmill on the farm
- Wind speed data – the free “fuel”
  - Your own anemometer or weather station
  - Wind data sources
- Energy need (load) analysis
  - What you can learn from your electric bill
- Economic Analysis
  - Revenue and expense
  - Payback period
- Funding
  - Loan or cash
  - Government subsidies and incentives
- Site
  - Topography, trees, buildings
  - Other obstructions (center pivot sprinklers, roads, easements, etc.)
- Permit (probably not needed for own use on Ag zoned land)
  - As “appurtenant” farm structure
  - Conditional Use Permit for windfarm
- Interconnection Agreement with your utility
  - Net metering
  - Location of power lines, substations, etc.
- Storage batteries (maybe – for standalone systems)
- Turbine selection
  - Bergey, Jacobs, John Deere, Skystream, Northern Power, or other
- Installer
  - Or do-it-yourself
- The Internet as a tool and information resource
  - AWEA, NREL, NOAA, Airports, NWS and much more

**Farms of the future**

Ag school curriculum

Energy for the farm

“Windfarms” for utility power