“If you need a tool and don’t buy it, eventually you will have paid for the tool and won’t have it”

—Henry Ford
Who is Inerjy?

Laboratory Automation

Factory Automation
How do we create more jobs?

• Manufacturing customer base has moved to China
• US has appetite for renewable energy
• Renewable Energy equipment is something like factory automation
Florida’s Renewable Options

• Solar: PV, CPV, CSP
• Wind
• Biomass & Biofuels
• Ocean Current
• Osmotic Energy
Other Renewable Sources

• Geothermal
• Tidal
• Hydro (traditional)
• Wave
Why Wind Power?

• $18B and 85,000 jobs in the US in 2009
• Clean, Carbon-Free energy
• More built in ’09 than Natural Gas, Coal, or ANY other power source
• 60% domestic content in 2010
Even better... Distributed Wind Power

An Analysis of the Technical and Economic Potential for Mid-Scale Distributed Wind

December 2007 – October 31, 2008

R. Kwartin, A. Wolfrum, K. Granfield, A. Kagel, and A. Appleton
ICF International
Fairfax, Virginia
NREL Report—Results

Winners:
250kW: ~70,000
500kW: ~200,000
Distributed Wind Examples
Distributed Generation offers many advantages
Turbine Design 101

Two overriding design rules:

1. Use the right airfoils in the right proportions

2. Shed load!
Three key objectives:

EcoVert 250
Three key objectives:

1. Quiet
Three key objectives:

1. Quiet
2. Not Loud
Three key objectives:

1. Quiet
2. Not Loud
3. Silent
Has this been done before?
Development Status
What do these two vehicles have in common?
What do these two vehicles have in common?

USA 1960

Belgium 1943

NH₃ Fueled
References

- American Wind Energy Association 2010 Report
- Navigant Consulting Florida Renewable Energy Potential Assessment
- Florida Power & Light Wind Results from the St. Lucie Project Site
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- US EIA
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