Business Overview

In the end there will be just two kinds of companies... those that disrupt their markets and those who do not survive the assault.

- Richard D' Aveni

Dixon Thayer
CEO

Renewable Energy Summit
June 14, 2010
Bismarck, N.D.

Southwest Windpower
Renewable Energy Made Simple

DISTRIBUTED ENERGY vs. CENTRALIZED

Distributed Energy

Point of Use Applications
No major distribution network required
Power from lower wind resources

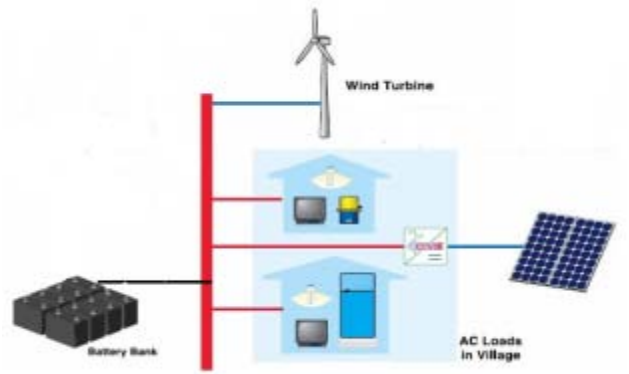
Centralized Energy

Generate power on a “mass” scale
Major distribution network required
High wind sites
Remote location installations

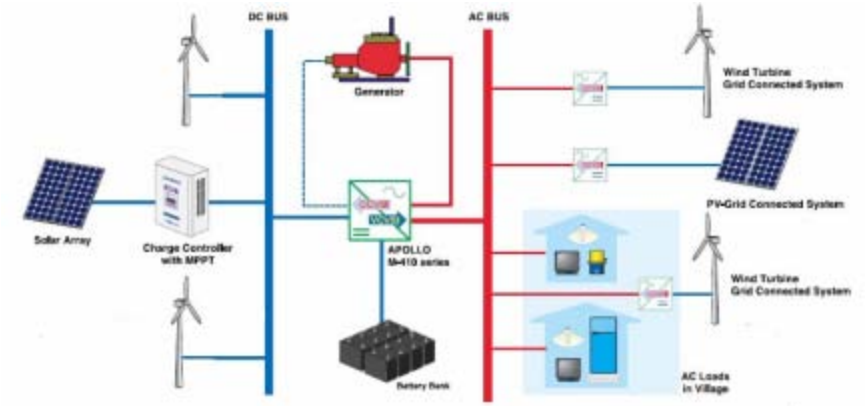
↳ People and businesses typically don’t live in high wind locations

Southwest Windpower
Renewable Energy Made Simple

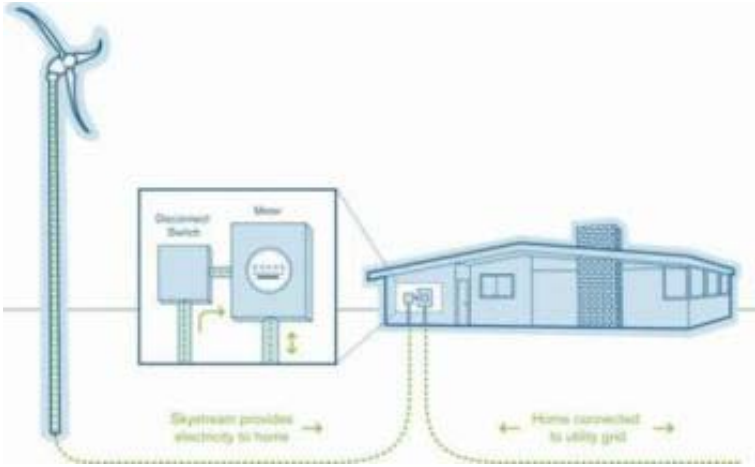
How Distributed Wind Systems are Used



Remote Stand-alone system



Micro-Grid for Village Electrification



Grid Connected Homes and Businesses

On-Grid Residential Applications

One Skystream will typically reduce a home's grid consumption by 20-90% depending on the wind speed and typical energy consumption. Currently, the installed cost of a Skystream on a 33' mono-pole tower ranges from $15-20,000.

New Hampshire

Idaho

Nevada

Commercial Applications – On Grid

The company has recently installed its first pilot projects that combine existing needs such as a street light within the tower. This drives the installed cost down by an additional 40-60%

Hybrid Street Lighting

Parking Lot Integration

Utility Power Pole Integration

Micro-Grid and Industrial Applications

With the ever increasing cost of diesel, countries and corporations are turning to renewables, specifically small wind systems, in order to offset their consumption of petroleum. Small wind is easily adaptable to current existing systems

Diesel/wind
hybrid systems

Remote Monitoring
(offshore platforms,
railroads, etc.)

Remote Telecom Electrification

HIGH GROWTH MARKET SEGMENTS:

Residential Grid Tie

13+ million homes are viable candidates for small wind
Requirements: ½ acre lot, wind resource, zoning

TAX CREDIT ELIGIBLE*

Commercial Grid Tie

10+ million Commercial sites are viable candidates
Requirements: ½ acre lot, wind resource, zoning

TAX CREDIT ELIGIBLE*

~$1Billion Market Size By 2015

MARKET SEGMENTS	APPLICATIONS
OFF-GRID	
Telecom	Battery Charging
Marine / Boating	
Rural Electrification	
Street Lighting	
Off-Shore Platforms	
Remote Homes	
Military	
GRID-TIE	
Residential	Direct Power Grid Tie
Commercial	
Island Electrification	
Agricultural	
University	
Healthcare	
Hospitality	
Government	

Micro Grid

Developing Country
Remote villages, rural, island electrification

Battery Charging

Remote Power for Worldwide Applications
Remote homes, rural electrification, sailing, Telecom

Distributed Wind Economics

- Assuming:
  - Average annual kWh consumption / yr 11,040kWh (920 kWh / Mo)
  - Utility rates @ $0.11 / kWh (national average) with 3% annual escalation
  - **Skystream 4.7** installed in a “good” wind location of 6 m/s (13 mph)
  - Installed cost of $19,500 with two service visits over 20 years
- Then:
  - With Federal ITC
    - IRR: 3.49%
  - With Federal ITC & State Rebate
    - IRR: 7.73%
  - Derived Cost of Energy (COE)
    - No Incentives: $0.119
    - Federal ITC Only: $0.083
    - Federal ITC & State: $0.050

	SOLAR		WIND	
CONCENTRATED	Total Installed	432 MW**	Total Installed MW	34,863 MW***
	Share of Total	21%	Share of Total	99%
		Utility rates		Utility rates
	COE	$0.16 kWh*	COE	$0.4-.6 kWh
DISTRIBUTED	Total Installed(US)	1653 MW**	Total Installed MW (US)	100MW****
	Share of Total	79%	Share of Total	1%
		Retail rates		Retail rates
	COE	$0.27 kWh**	COE (ind. avg.)	$0.18-.25 kWh
			COE Skystream4.7	$0.05- .10 kWh
			Variable by average annual wind speed	

Sources:
*Sandia National Labs, **Solar Energy Institute of America, ***American Wind Energy Association
****Department of Energy Windpowering America

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Purchasing Key Drivers & Key Barriers

Reasons For Purchasing Distributed Wind Systems

- As in all other discretionary investments, wind turbine purchasing decisions are more complex than a simple "days to payback" Most people acquire clean energy solutions based on some combination of some or all of the following reasons:

1. **Energy independence**
   a. Reduced dependency on the local utility
   b. Reduced reliance on foreign oil
   c. Mitigation of future utility rate increases
2. **Reduced annual energy bill / cost**
3. **Reducing Carbon Footprint / environmentalism**
   1. Reduced depletion of fossil fuels
   2. Reduced carbon emissions / footprint (environmental)
   3. Visibly demonstrate to others a commitment / contribution to energy independence & environmentalism
4. **Desire to be an "early adopter"**
5. **Financial ROI / "payback"**
6. **Cool cause (rebuilding the grid 1 home at a time)**
7. **Need for remote / off-grid power**

Reasons for NOT Purchasing Distributed Wind Systems

1. **Lack of awareness or access**
   a. Of the possible solutions / process
   b. Of who to contact & how to go about it
   c. Ease of installation
2. **Can't afford it**
3. **Misinformation**
   a. Incomplete "payback" value proposition
   b. Not enough clarity between options
      - HAWT vs. VAWT
      - Wind Vs. Solar
   c. Potential downsides / risks
      - Degree of technology maturity
      - "Bird killers", etc.
   d. Industry "techno-speak"
   e. Negative feedback from disenchanted early adopters
      - Poor turbine performance (vs. spec)
      - Poor wind resources
      - Unaligned expectations
4. **Zoning restrictions**

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Southwest Windpower Overview

- Founded in 1987
- World's largest producer of 400-3000 watt wind generators
- Recognized as the leader in the small wind industry
- 15,000+ turbines manufactured annually
- Over 160,000 turbines shipped and installed worldwide
- Sales representation in over 80 Countries worldwide
- Installations in 120 countries worldwide

Flagstaff, AZ Mfg. Facility

Ningbo, China

Cologne, Germany

Southwest Windpower

Innovation & Technology Leadership

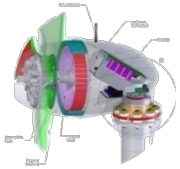
Air™

The 1st commercially viable micro-scale turbine; more than 140,000 AIR's have been produced over the last 12 years, capturing 50% of the "off grid" market share

Skystream™ 3.7

The 1st commercially viable small turbine capable of producing electricity for less than **$0.12/kWh** (USD); 40% more efficient than others in its class; the industry benchmark

Skystream™ 4.7



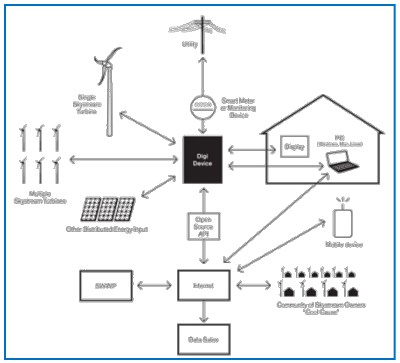
Available October 2010
The best just got much better
Generates 60% more energy than 3.7
Cost of energy **under $0.10kWh**

Skyview™ 1.0

1st remote monitoring & control systems

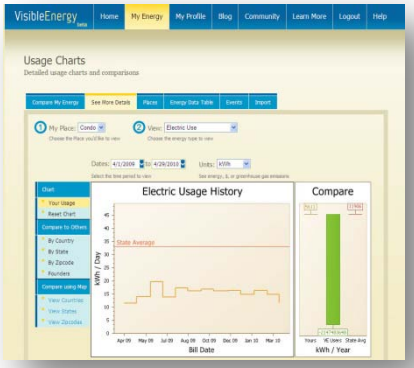
Smart Grid

Skyview™ 2.0
October 2010



Smart Home

Skyview™ 3.0
January 2011



"Purchase reinforcement" & "Behavior Δ" reporting
For those already demonstrating a willingness to Δ

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Awards and Recognition

- 2009 President's "E" Award for Export Excellence /Office of the President
- 2009 Small Wind Advocate of the Year (Andy Kruse)
  American Wind Energy Association
- 2009 Award for Exporter of the Year /Small Business Administration
- 2008 Small Manufacturer of the Year / Arizona Manufacturers Council
- 2007 Top 10 Green Building Product / Sustainable Industries
- 2006 Best of What's New Award from Popular Science

Policy Accomplishments

Southwest Windpower is on the forefront of political change within the small wind industry.

- Involved Internationally and locally on Federal, State and City level to influence policy, regulation and certification
  - 30% Federal Tax Credit for Small Wind (until 2016)
  - AZ Distributed Renewable Portfolio Standard (aprox $3,000 Rebate

Skystream 3.7 at the U.S. Botanic Gardens, Washington, DC

High Visibility Support

President Obama learning about Skystream in Ohio

Governor Arnold Schwarzenegger at Energy Fair in California

Skystream 3.7 at George H. Bush home in Maine

"We should provide targeted support to the most innovative small businesses … with the greatest potential to export new goods and products all over the world. A lot of these companies like ***Southwest Windpower*** are the foundation on which we can rebuild our economy to compete in the 21st century. "

- President Barak Obama, Weekly Address 2/6/2010