The Realities of Consumer-Owned Wind Power
For Rural Electric Co-operatives

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WINDPOWER 2006
Pittsburgh, June 4-8, 2006
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The Market for Small Wind Turbines is in Rural America

• Better access to good wind resources
• Zoning is less often a barrier
• Larger parcels provide adequate space for wind turbine installations
• Most of rural America receives electric service from rural electric cooperatives
  – 864 distribution co-ops serve 39 million people in 47 states
Consumer-Owned Wind Power

The relationship between wind turbine owners and their cooperatives is crucial for the future of small wind power!

Our Focus → consumer-owned wind power

– Wind turbine(s) connected on the consumer’s side of the electric meter
– Reduces consumption of utility electricity
– Excess energy may be exported and sold
– Consumers with energy-based tariffs
– Single-phase electric service, typically < 25 kW
Meter Configuration For Net Billing

Net energy is recorded instantaneously as either a purchase or a sale.
Meter Configuration For Net Metering

Cumulative net energy is recorded.
The account is settled either monthly or annually.
Net Metering for Wind

Only 22 states have net metering for all rural customers.
Wind Interconnection Dispute in Iowa

• Sweckers and Midland Electric Cooperative
  – 8 years of litigation
  – Interconnection fees? Determination of avoided cost? Avoided cost or net metering?
  – Iowa Public Utility Board
  – Federal Energy Regulatory Commission (FERC)
  – Iowa Supreme Court
• FERC ruling in February 2006 backed away from the net metering enforcement action of June 2005
  – Provisions of EPAct 2005 are changing the scene, outcome is uncertain for net metering
Understanding the Co-ops

• Pinched Finances
  – Smaller rural population means declining loads
  – Reduced ability to pay for facility fixed costs
• Price Signals Are Confusing
  – Tariffs for consumers are kWh-based
    ➔ perception that electricity is a variable cost
  – Coop operating costs may be 50% fixed costs
• Load Match (~ 20% capacity credit)
• Culture of Fairness
  – “member economic participation”
• Net Metering - It’s about the money!
Declining Rural Populations

Geographic Distribution of Depopulation

No. of Counties by Type
- Growing: 2,362
- Declining: 547
- Accelerated Declining: 232

Typical Utility Infrastructure Investment Per Customer

- Electric power distribution: $3,000
- Telephone: $1,600
- Natural gas distribution: $1,100
- Cable television: $750

Utility customers per mile of distribution line:
- Investor-Owned: 35
- Publicly Owned: 47
- Cooperatives: 7

Data from South Dakota (S. Wegman)

Source: 2004 EIA, RUS Data, CFC NRECA Strategic Analysis • Last Updated: January 2006
Times Are Changing

• Member preferences turning to renewable energy
• Price of electricity is going up
• Opportunity for rural economic development
  – Wind is an untapped resource
• Wind power is a hedge for an uncertain future:
Co-ops and Consumer-Owned Wind Power

• Options
  1. Avoided cost interconnections
  2. Net metering interconnections
  3. Green power generation
     • Co-ops aggregate and sell the green power?
  4. Co-op support services for wind power
     • Sales, leasing, financing, installation, maintenance
  5. Place value on environmental and/or risk-reduction attributes
  6. Consumer-owned wind power to drive local economic development
Conclusions

• The market for consumer-owned wind power is in rural America where…
• Net metering is not widely available
• There is a disconnect between co-op and consumer perceptions
• Co-ops have significant fixed costs & are resistant to reduced revenues from consumers
• Benefits of consumer-owned wind power are not being given monetary value
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