Northern
POWER SYSTEMS

Northern Power Systems

NECA Annual Renewable Energy Conference

February 16, 2011

Direct.

About Northern Power Systems

- **Launched in 2008 to commercialize and further develop proven, differentiated wind turbine technology**
  - Financed with over $100MM raised from Rockport Capital, Allen & Company and BeCapital, among others
  - Headquartered in Barre, VT
    - Manufacturing in Barre, VT, Saginaw, MI and San Diego, CA
    - Engineering centers in Barre, VT and Cambridge, MA
    - Commercial and Corporate offices in Cambridge, MA and Zurich, Switzerland

- **Experienced management team drawn from leading technology companies:**
  - McKinsey
  - Siemens
  - General Electric
  - Vestas
  - A123 Systems

- **Northern Power® 100 wind turbine commercially available, launching utility-scale wind turbine, mid-size wind turbine in development**

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Key Differentiating Technologies – Permanent Magnet Generator, Direct Drive Powertrain

- Research grants from NASA, NSF and DOE
- 1998: Northern Power 100 Proof of Concept, Direct Drive
- 2006: new nacelle/turbine design, mainstream broader market
- 2007: PM/DD generator, improved nacelle/turbine design
- Utility-scale wind turbine prototype being tested at NREL
- 450kW turbine under development

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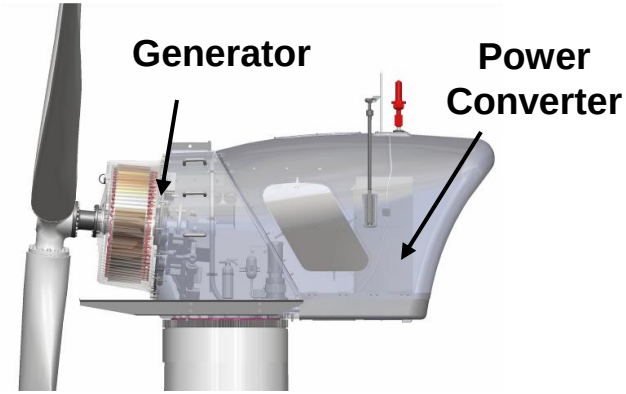
Northern Power's Direct Drive Platform ...



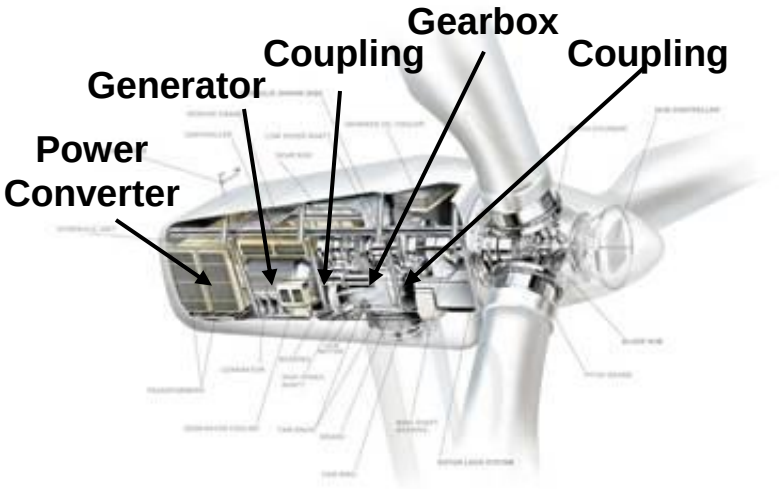
Permanent Magnet-Direct Drive

- Simple & highly reliable
- Low risk of failure
- Superior economics

Value Proposition

- Safe
- Profitable
- Reliable
- Quiet

Northern Power Direct Drive (circa 2008 design)



Traditional Gear Drive

- 20+ year old technology
- Very complex
- Downtime and maintenance costs are significant

Value Proposition

- Only suitable for large wind farms located away from population centers with professional service technicians

Conventional Geared Drive (20 year old technology)

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Northern Power® 100 Product Overview

- 100 kW rated power
- 37m tower; 156 foot tip height
- Advanced permanent magnet direct drive technology
  - No gearbox
  - Higher density magnetic flux
  - Proprietary power conversion technology
- Increased energy capture at low wind
- Quiet operation
- Reduced O&M cost

- Typical Community Wind application
  - Local power
  - Behind the meter interconnect
  - Retail utility rates displaced

New England Tech Automotive
Warwick, Rhode Island

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Over 200 Northern Power 100s Sold to Date Globally – 15 Installed in New England

Corporate

- Light Industrial
- Retail
- Warehouses
- Data Centers
- Hospitals
- Resorts and Hotels
- Agri-business

Public

- Schools and Universities
- Recreational facilities
- Municipalities
- Waste water treatment facilities
- Remote Villages

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