Competitiveness Improvement Project (CIP)

Bret Barker
Advisor for Distributed Wind
U.S. Department of Energy

Small Wind Conference | April 11, 2017

Overview – CIP 101

Challenge:

- Distributed wind is not cost-competitive (enough) with other sources of generation
- Deployment of untested technologies are limiting consumer confidence
- Time and cost requirements of R&D are high, especially for small businesses

Approach:

- NREL of behalf of DOE uses competitive process to award cost shared contracts and technical support for next generation technology development and turbine testing

Goal:

- Distributed wind cost of energy competitive with other distributed generation tech
- Increase the number of certified small and medium wind turbine designs

Outcome:

- Provide more cost-competitive energy choices to Americans
- Sustain U.S. manufacturing leadership in global small wind markets

Objectives & History

Increased Energy Production

CIP *system optimization* awardee Northern Power Systems of Barre, Vermont, achieved a 15% energy production increase for the NPS-100 100-kilowatt turbine by increasing blade length and improving blade aerodynamics.

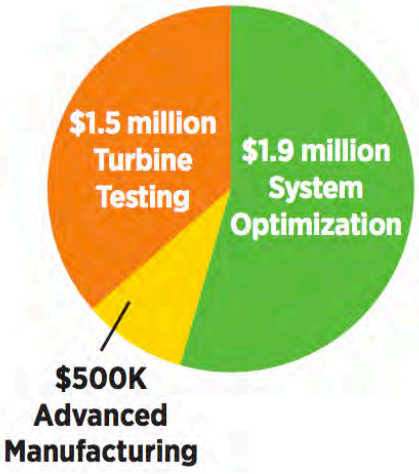
Reduced Hardware Costs

CIP *advanced manufacturing* awardee Pika Energy of Westbrook, Maine, reduced blade costs by approximately 90% by developing an innovative tooling and cooling strategy to produce blades using injection-molded plastic.

Certified Turbine Performance & Safety

Four CIP *turbine certification* awardees are testing their turbine designs to national standards. Turbine certification requires third-party verified testing for safety, function, performance, and durability to national standards.

As of May 2016, DOE and NREL awarded 16 subcontracts to nine manufacturers, totaling $3.9 million of investment across three topic areas



Endurance Windpower (Seattle, WA)

Northern Power Systems (Barre, VT)

Bergey Windpower (Norman, OK)

Pika Energy (Westbrook, ME)

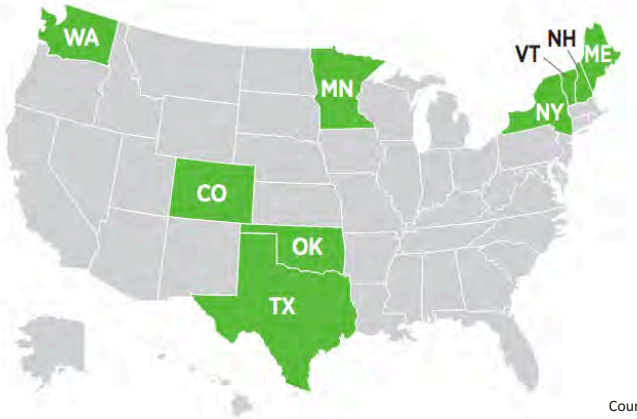
Primus Windpower (Lakewood, CO)

Ventera Wind (Duluth, MN)

Urban Green Energy (NYC)

Intergrid (Temple, NH)

Wetzel Engineering (Round Rock, TX)



Courtesy of NREL

Round 5 is Open!

Topic	Max Award	Cost Share %	Cost Share $	Total Project Value $
Component Improvement & Overall System Optimization	$350,000	20%	$87,500	$437,500
Manufacturing Process Upgrades	$500,000	50%	$500,000	$1,000,000
Certification Testing (<200m2 RSA)	$150,000	20%	$37,500	$187,500
Type Certification (>200m2 and <100m2 RSA)	$450,000	20%	$112,500	$562,500
Prototype Testing	$150,000	20%	$37,500	$187,500

Key Dates

- Request For Proposal (RFP) released: April 11, 2017
- Technical questions due: April 18, 2017
- Responses to technical questions: April 25, 2017
- **Proposals due: May 9, 2017**

RFP Links

Component Improvement & Overall System Optimization
https://www.fbo.gov/spg/DOE/NREL/NR/RGZ-7-70164/listing.html

Manufacturing Process Upgrades
https://www.fbo.gov/spg/DOE/NREL/NR/RGZ-7-70165/listing.html

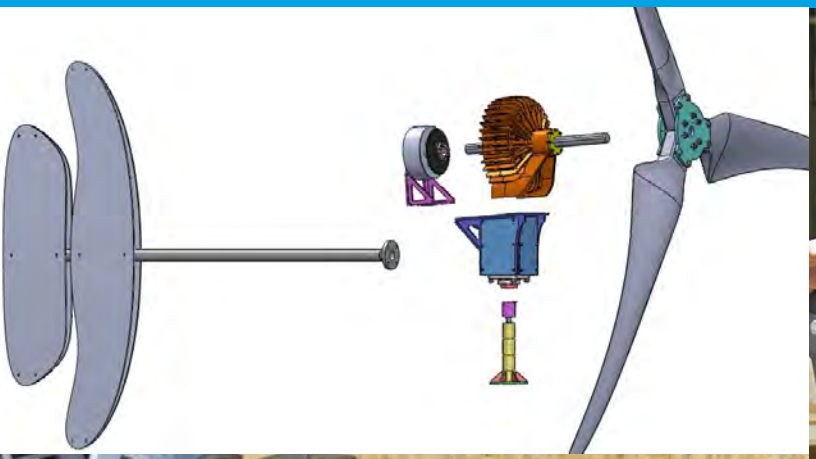
Certification Testing (<200m2 RSA)
https://www.fbo.gov/spg/DOE/NREL/NR/RGZ-7-70166/listing.html

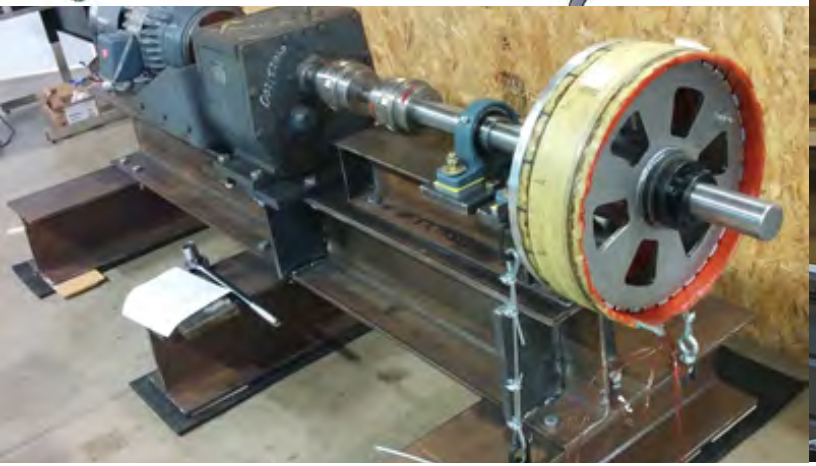
Type Certification >200m2 and 1000m2 RSA)
https://www.fbo.gov/spg/DOE/NREL/NR/RGZ-7-70204/listing.html

Prototype Testing
https://www.fbo.gov/spg/DOE/NREL/NR/RGZ-7-70167/listing.html

Round 5 is Open!

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy





Please consider applying!