Opportunities for Industry Collaboration

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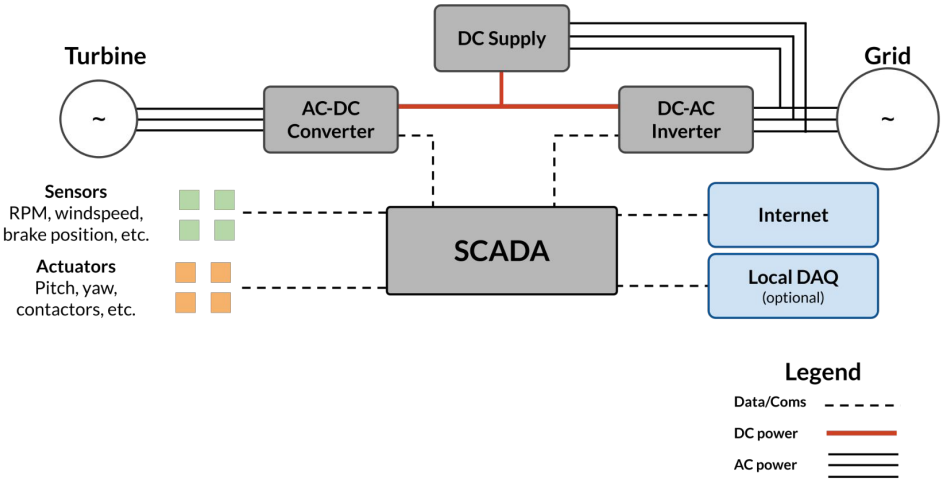
Industry Collaborations

- Common Power Conversion Systems
- Shared Early Stage Manufacturing Facility
- Distributed Wind Market Research - AgWind

Common Power Conversion Systems

- Funded by an NLR CIP, XFlow is offering to demonstrate our power conversion architecture with other turbine manufacturers
- Advantages of this approach:
  - Uses low cost, off-the-shelf, readily available components
  - Grid connection certifications (i.e. UL 1741-SB) paid for by the solar industry
  - Flexible design serves can serve a variety of power ratings and grid configurations
  - Allows for advanced turbine controls to maximize AEP
- Send XFlow a generator and we will conduct tests at no-cost
- We are working with UL to develop a package to streamline UL 6142 certification for turbine using this power conversion system.



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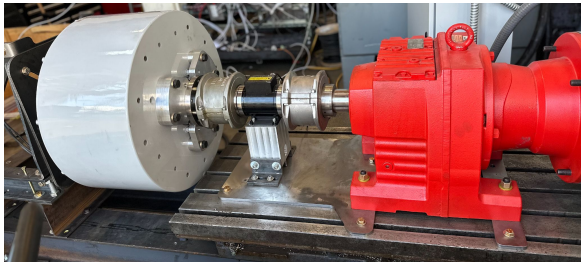
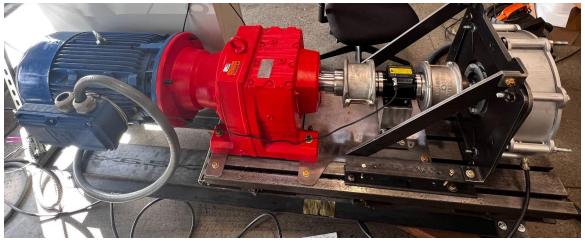
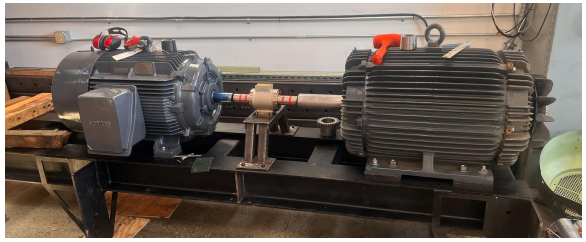
Common Power Conversion Systems

Power conversion system sizes demonstrated with OEM partners:

- 240V, split-phase tested with Sonsight Wind (3.6 kW continuous power)
- 208V, 3-phase and 480V, 3-phase tested with Bergey Windpower (21 kW continuous power)
- 480V, 3-phase tested with XFlow and Renewell (36 kW continuous power)
- 480V, 3-phase tested with Emrgy (30 kW continuous power split over four turbines)
- 480 V, 3-phase tested with Pecos (125 kW continuous power)
- **More in progress including with hybrid inverters coupled with batteries**







Photos of Bergey (left), Sonsight (middle), and Pecos (right) generators on XFlow's dynos in Seattle, WA

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Common Power Conversion Systems

Photos of an Emrgy four turbine system (left), XFlow 10.5 m diameter prototype (center), and Sonsight 3.5 kW turbine (right)

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Shared Early Stage Manufacturing Facility

- 6000 sq ft facility in Deerfield, MA
- Being set up for:
  - Manufacturing low-volumes of wind turbine rotors
  - Assembly and testing small wind turbine systems
- Major equipment to include:
  - 50’x8’x8’ temperature controlled layup, adhesives, and coatings booth
  - Two dynamometers for powertrains up to 150 kW
  - 20’x4’x12” CNC router for composite machining and making low-volume molds

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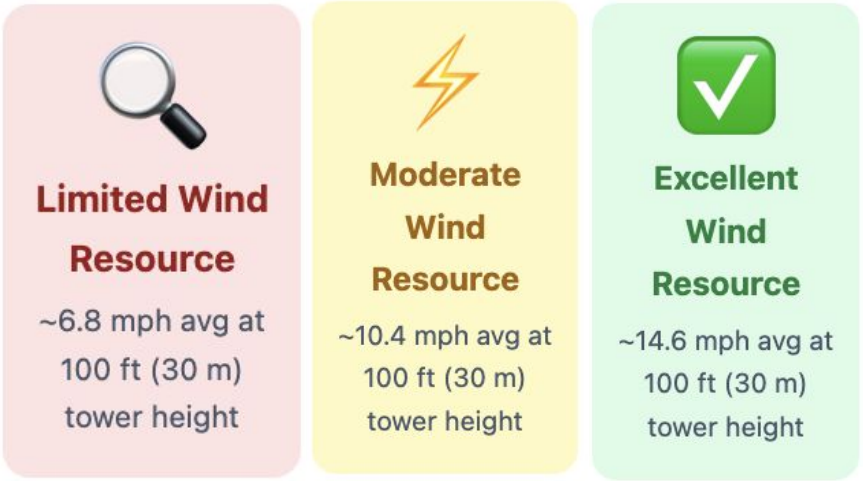
Distributed Wind Market Research - AgWind

- Simplified customer focused tool to give red/yellow/green site assessment and channel customer interest
- Full featured wind resource and cash flow analysis tool with updated features including:
  - Automatic density correction based on site altitude
  - Wind data from multiple sources which the user can choose between
  - Simple text file based method to include new turbine models in the tool
  - Cash flow analysis pulled from a Excel spreadsheet, allowing for easier verification and updates



Simple tools wind resource assessment result options

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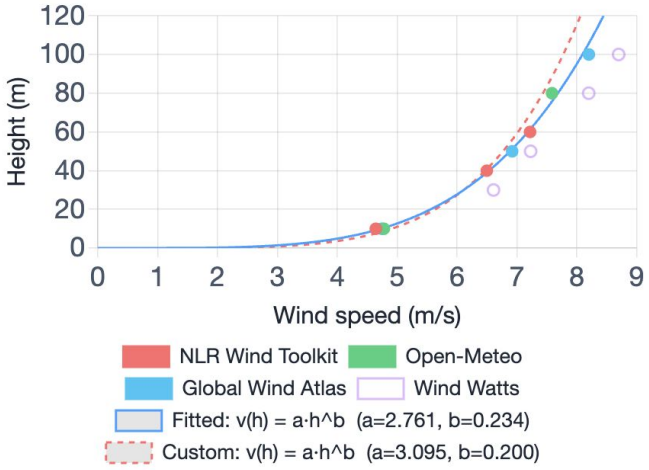
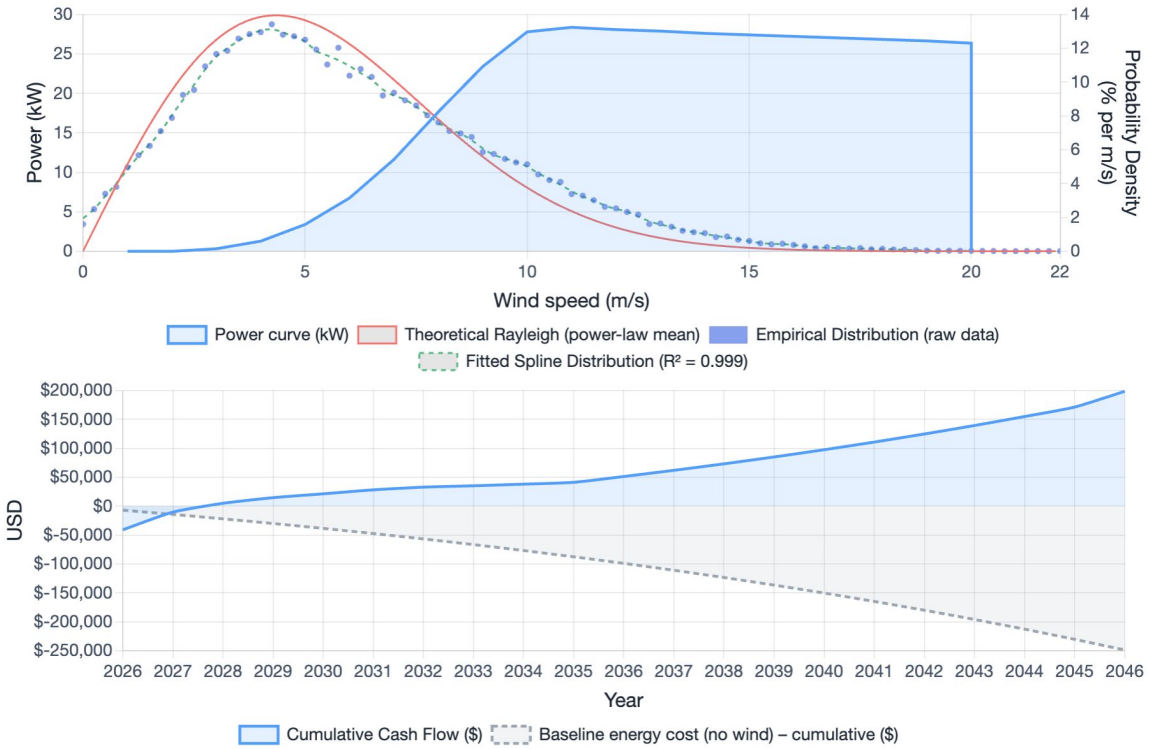
Distributed Wind Market Research - AgWind





Example outputs of the full tools wind resource assessment and cash flow analysis

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Call to Action

Looking for:

- Turbine manufacturers interested in evaluating XFlow's power conversion system with their wind turbine at no-cost
- Turbine manufacturers with new products looking for a space to produce their first turbines
- Volunteers to help with the new AgWind tools

Get in Touch!

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Thank you

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