SMART Wind Manufacturing Forum

Developing a Consensus-Based
Sustainable Manufacturing, Advanced Research & Technology
Roadmap for Distributed Wind

September 30, 2015 Sacramento, CA

















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SMART Wind Roadmap Contents

Foreword: Roadmap to Reach 30 GW by 2030 Vision

Executive Summary

Chapter 1: Introduction *Rationale on importance of document*

- Chapter 2: State of Distributed Wind Turbine Industry & Market Opportunities

 Baselines & benchmarks, growth potential, project's market impact-LCOE goal
- **Chapter 3: SMART Wind Consortium Overview** *Domestic content, subgroups, participants*
- Chapter 4: Distributed Wind Turbine Technology, Manufacturing Opportunities & Actions

 Technology & manufacturing barriers & actions, soft cost barriers & opportunities, summary of prioritized actions
- Chapter 5: Research and Partnering Opportunities & Actions U.S. DOC, DOE, Research & Testing Laboratories, Universities & Technical Colleges, State Agencies
- Chapter 6: Action Plan to Address Industry Barriers
 Increase global sales, OEM profitability, US manufacturing & jobs
- Chapter 7: Strategy Summary and Conclusions

 Key recommendations, next steps, DWEA Sustainability Plan

References, Appendices Baseline & benchmark info, agendas, Consortium directory









Key Roadmap discussion items

Aggregated Bill of Materials (% Cost by Subgroup)

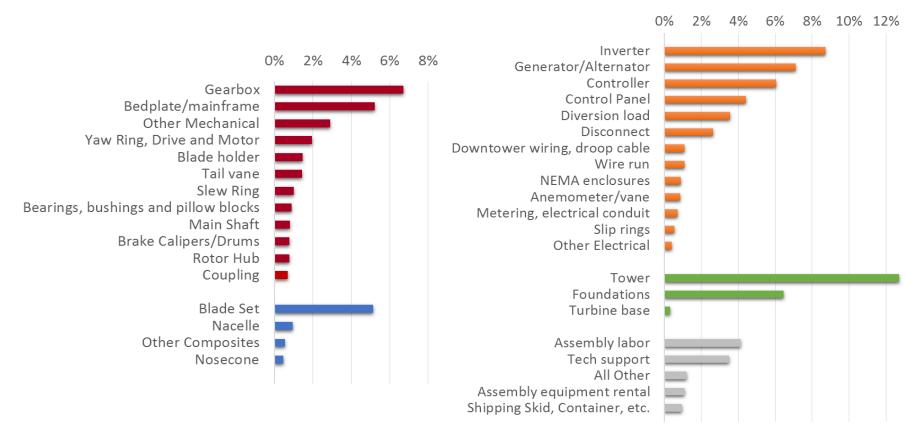


Figure 2-3. Aggregated BOM for SMART Wind OEMs









U.S. distributed wind global supply chain

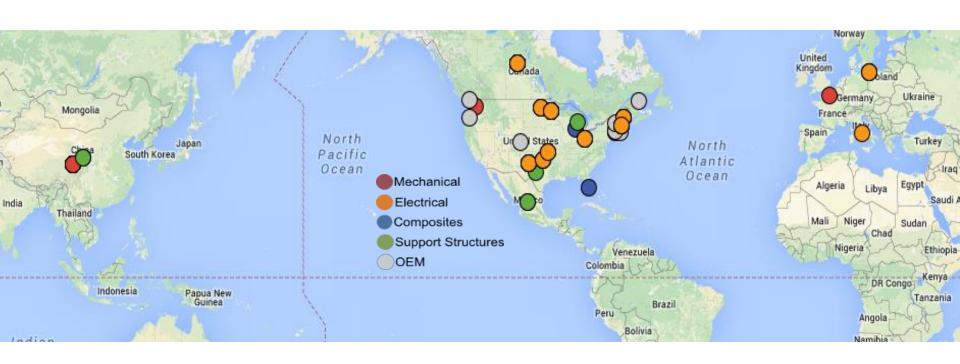


Figure 2-5. Known locations of component suppliers

Key Benchmark: Cost Reduction Targets

DWEA 2025 targets: \$3.20-\$4.50/Watt installed, >35% avg capacity factors, LCOEs of 7¢-10¢ per kWh

SMART Wind's impact:
Substantially reduce LCOE of
within next 5-10 years,
achieving parity with
U.S. retail electricity grid rates
in more markets

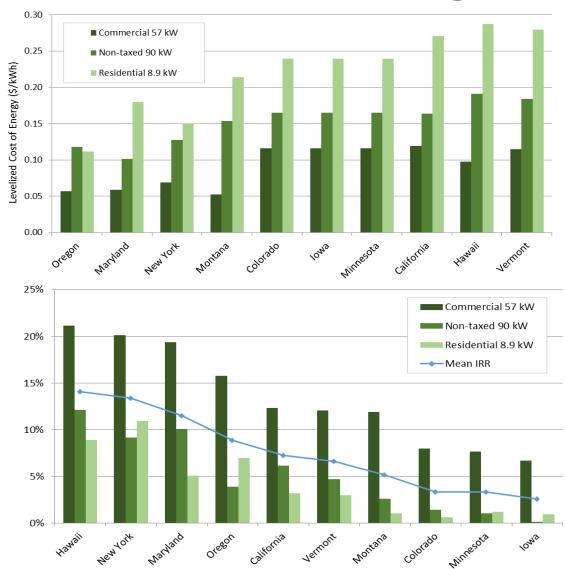


Figure 2-7. LCOE and IRR selected DW Policy Tool baseline results as of Fall 2015

Next Steps: Sustaining SMART Wind Collaboration



Feb

June

Subgroup Meetings Consortium Launch; Mechanical Systems; Composites; Electrical (face-to-face) Systems; Support Structures 2-4x per year **OEM Steering Group & Subgroup Virtual Meetings Sustainability Plan, Commitment Letters & Board Resolutions (deliverables)** Annual January DWEA Board Retreats: Strategic Planning October Annual Membership Appeals **SMART Wind Technology Roadmap Development and Implementation** Consortium subgroup vision and goals, **Develop Draft Roadmap** (Ch 1-5) needs and opportunities **Develop Detailed TOC** Finalize Roadmap (Ch 6 & Actions) **OEM Steering Group Review** Manufacturing Forum of TOC Rank action plans & opportunities **Review & Online Prioritization** Final comments due **Roadmap Production &** Dissemination Develop near-term and mid-term strategies and actions to Final Report to NIST increase cost competitiveness and productivity; decrease installation costs while maintaining safety **Roadmap Implementation & Updates** 2015 2017+ 2016

Oct

June

Oct

Feb









SMART Wind Consortium Virtual Meetings

Mark your calendar for upcoming monthly SMART Wind virtual meetings Next in series: 2:30 pm ET Wednesday, October 28

- Past, Present & Future Blade Design (Oct 28, 2015)
- Tower & Foundation Design (Nov 18, 2015)

PAST

- Condition/Health Monitoring (Jan 2015)
- Rare Earth Magnets in Distributed Wind (April 2015)

- Composite Materials & Process Opportunities (July 2015)
- Inverters & Variable Frequency Drives (August 2015)
- ➤ Reducing Installation Costs (May 2015)
- PEIC & SMART Wind Collaboration (June 2015)

Final **SMART Wind Manufacturing Roadmap & Next Steps** meeting in conjunction with Distributed Wind 2016 Feb 23-25 in Washington, DC

Register at <u>www.distributedwind.org/smart-wind-consortium</u>













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