SWCC Organizational Survey Summary

With 90 respondents representing an overall 32% response rate, a survey of small wind stakeholders conducted in August 2006 reinforced the strong interest and pressing need for small wind turbine certification and its role in building consumer confidence.

Of the manufacturers who responded, 89% affirmed that certification is important to their business, with 33% indicating it is critical, essential or even 'required' to reach the mainstream. A total of 27 suppliers targeting the North American market are expected to submit applications to certify 30-70 turbines in the first few years of SWCC operation. The lower estimate is a subtotal of the number of applications indicated by 10 established industry members.

Of the state and utility incentive program managers who responded, 11 indicated that they plan to require certification for small wind turbines to be eligible for funding, 4 others are considering such requirements, and 7 indicated that certification could help expand their programs to include small wind turbines. And out of 23 states and utilities with existing requirements for small wind turbines, 12 indicated that they expect to use certification to supplement or replace these procedures.

Respondents in all sectors consider Annual Energy Output ratings to be the most important, followed by durability and sound ratings. Several respondents expressed interest in certifying complete power curves. Although the limitations of Rated Power labels were noted by some, others pointed out that these values are important for simplified administration of incentive programs as well as utility interconnection.

Most of the manufacturers noted that costs of R&D, testing and certification will affect the timing of their applications. Out of 20 company responses, 45% indicated plans to implement upgrades to key system components that could affect power curve and sound within the next 12 months; an additional 45% indicated such upgrades might be possible within the next 2 years. The need for a cost-effective process to address turbine modifications was a recurring theme throughout the survey responses.

Notably, 43% of suppliers have already completed or initiated testing to the IEC Standard specifications, and an additional 26% expect to conduct IEC testing. Of the 10 established industry members described above, 7 have completed or are undertaking IEC testing. Although most manufacturers are prepared to undertake testing for SWCC certification, 5 do not have plans for SWCC testing, and many cited factors affecting the timing of testing including cost and funding availability, the date of SWCC program implementation, when states will require certification for incentive programs, when their R&D is completed, and whether SWCC certification will be accepted worldwide.

Other concerns expressed include the risk that the certification process may become a barrier to market entry; SWCC should not dilute or contradict existing IEEE and UL standards; liability is too high to certify long-term durability, but SWCC should stipulate it will not certify turbines that do not survive through the duration test period; funding from manufacturers to support SWCC's launch may be seen as a conflict of interest; testing by manufacturers may not provide reliable results; sound should be measured near tower base; and that the SWCC's scope should increase to include towers, installers, lightning protection, high wind survival, remanufactured equipment, and larger turbine sizes.

Rankings of Most Important Small Wind Turbine Certification Ratings by Respondent Sector*

Ratings	Manufacturers	Govt & Utilities	Testers	Retailers	Total
Annual Energy Output	15	17	10	11	**53**
Durability	12	14	8	10	**44**
Sound	12	12	8	10	**42**
Rated Power	8	14	4	6	**32**
Safety / Tower Design	2		1	1	**4**
Grid Interactive Rating		1	1		**2**
Lightning Protection	1				**1**
Power Quality			1		**1**
Cold Weather / Icing				1	**1**

**Some respondents weighted their priorities, while others did not. Noted above are the total times that respondents listed a certain rating as at least moderately important.*

SWCC Survey Respondents by Sector

MANUFACTURERS	Affiliation
Robert Preus	Abundant Renewable Energy
Paul Pynn	Atlantic Orient Canada, Inc
Christian Marte	AeroJoule(R) of WindJoule
Bil Becker	Aerotecture International, Inc.
Oloff Smyth	African Windpower
Mike Bergey	Bergey Windpower Co.
Glen Dahlbacka	Berkeley Lab
Matt Tritt	DC Power Systems
Lawrence H. Mott	Earth Turbines, Inc.
David Blittersdorf	Earth Turbines, Inc.
Dale Jones	Enertech, Inc.
Charles Newcomb	Entegrity Wind Systems Inc.
Thomas Schulthess	Eoltec
guy nouri	lightthought
Mike Hess	Mariah-Power
Ralph Belden	owner/designer
Daniel R. Roy	Owner: Fortis America LLC
William Bryce	Pine Ridge Products
Doug Selsam	Researcher / New manufacturer
Jay M. Yeager	Sales Engineer - Southwest Windpower
Andy Kruse	Southwest Windpower
Al Paulissen	Wenvor Technologies inc.
Kevin Wolf	Wind Harvest International
Richard Halstead	wind-sail
David J Laino	Windward Engineering
Johan de Leeuw	Wind Energy Solutions Canada

GOVERNMENT & UTILITIES	Affiliation
Ray T. Williamson	Arizona Corporation Commission
John Hingtgen	Cal. Energy Commission
Megan Graham	Casper College
James White	Chelan PUD (WA)
Alan Cowan	Energy Trust of Oregon
Darroll Clark	Franklin PUD
Craig Tate	Holy Cross Energy
Keith Kutz	Iowa Energy Center
Jim Ploger	Kansas Energy Office
Judy Packwood	Klickitat PUD
michael mayhew	maine state energy program
Mike Taylor	MN State Energy Office
Georgia Brensdal	Montana Department of Environemental Quality
Kathi Montgomery	MT Dept Environmental Quality
Jon Abe	MTC
Peter Konesky	Nevada State Office of Energy
Jennifer Harvey	NYSERDA
Angela Crooks	OEMC (CO state energy office)
Tom Maves	Ohio Energy Office
Roger Warehime	Owatonna Public Utilities (MN)
Kerry Campbell	PA DEP
J. Friederichs	PUD #1 Ferry County (WA)
Andy Hemstreet	Puget Sound Energy
Bob Leker	State Energy Office, NC
Maria Tome	State of Hawaii
Pam Groce	Texas State Energy Conservation Office
Tom Hansen	Tucson Electric Power
Robert Ide	Vermont Department of Public Service
Tim Stearns	WA Community, Trade, and Econ. Development
Carl Siegrist	We Energies

TEST FACILITIES & CONSULTANTS	
Tim Olsen	Advanced Energy Systems, LLC
Ken Starcher	Alternative Energy Institute
Brent Summerville	Appalacian State
Mark Bastasch	CH2M HILL
John Bosche	Chinook Wind
Marty Wilde	Coyote Energy
Brad Cochran	CPP
Svend de Bruyn	Detronics Limited
Mark Young	Global Energy Concepts
Michael Klemen	myself
Jeroen van Dam	NREL
Ed Kennell	Our Wind Coop
Anne Forbes	WEICan
Karen Kinch	WEICan
Axel Albers	Windguard NA

RETAILERS & ADVOCATES	Affiliation
Buddy Fritz	Conergy Inc.
Paul Migliore	Consultant
Matthew Tritt	DCPower Systems
Matthew Bennett	Dovetail Solar & Wind
Richard J. Cooney	Earth Scientific National LLC.
Bruce Hatchett	Energy Options
Mo. Siddiqui	International Marketing Manager - Proven Energy Ltd
Jean-Paul Pinard	JP Pinard Consulting Engineer
David Birch	Lakeshore Power Systems
John Maissan	Leading Edge Projects Inc.
Tron Melzl	Magnetek AE
Michael Laabs	MREA
Roy Butler	Retailer, installer
Neal Mock	Solar Wind Works
Tom Rentz	Sun Wind Concepts
Eric Stevens	The Whole Idea
David Cooke	TRUE-NORTH Power Systems
Andrew Stern	Wind weenie
Brian Antonich	Windustry

Survey Respondents as of 9/20/06:	**90**	
Manufacturers & Suppliers:	26	
RE Program Managers & Utilities:	30	
Testing Facilities & Consultants:	15	
Retailers & Advocates:	19	
Total Recipients:	~280	*See spreadsheet for details*
	32%	Overall response rate

Summaries of Survey Responses by Sector

Responses from Manufacturers & Turbine Suppliers

**In the case of two answers from a manufacturer, the senior staff member's answer is counted.*

1. How critical do you feel certification is for your business? Which ratings - sound, annual energy output, rated power, durability - are most important to you? In what timeframe?

Out of 18* responses:

16 answered that certification is useful or important; 6 of these indicated it is critical, essential, or "required"
2 answered that certification was not critical

Out of 22 responses:

15 noted Annual Energy Output as important**
12 noted Durability as important
12 noted Sound as important
8 noted Rated Power as important
2 responded that a Rated Power rating is not important.
2 noted Safety as important
1 noted power curves with tangential site data as important

**Some respondents weighted their priorities, while others did not. Noted above are the total times that the respondents listed a certain rating as at least moderately important.

2. What turbines do you currently sell in the U.S.? in Canada? in other countries?

16 responded that they currently sell turbines in the US and Canada
7 responded that they do not currently sell turbines in the US and Canada
2 responded that they plan to sell turbines in the US and Canada in the short term

3. What new turbines do you expect to sell in the U.S. and/or Canada in the next 2 years? 3 years? Variety

4. How many models of turbines would you submit for certification within the next 12 months?

Out of 20 Manufacturers & Suppliers:

4 expected to submit 0 turbines**
7 expected to submit 1 turbine
5 expected to submit 2 turbines
2 expected to submit 3 turbines
1 expected to submit 4 turbines

For a total of 27 turbines submitted for certification within 12 months.
**One respondent gave a range of 0-2 turbines, resulting in a range of 27-29 total turbines submitted.

5. How many models of (additional) turbines would you submit for certification within the next 18 months?

Out of 20** Manufacturers & Suppliers:

11 expected to submit 0 additional turbines
15 expected to submit 1 additional turbine
1 expected to submit 2 additional turbines

For a total of 17 additional turbines submitted for certification within 12-18 months.
** Tally includes estimates for two established industry members that did not respond to survey.

6. How many models of (additional) turbines would you submit for certification within the next 2 years?

Out of 20** Manufacturers & Suppliers:

8 expected to submit 0 additional turbines
13 expected to submit 1 additional turbine
5 expected to submit 2 additional turbines
1 expected to submit 3 additional turbines

For a total of 26 additional turbines submitted for certification within 18-24 months.
** Tally includes estimates for two additional established industry members that did not respond to survey.

Adding together all turbines expected to be submitted within 24 months, a total of 70-72 different turbine models are expected to be submitted for certification; 30 of these are from 10 established industry members who responded to the survey and 29-31 of these are from 10 manufacturers in R&D stages.

7. What factors will affect the timing of your applications?
Out of 22 responses:
8 listed time and cost of R&D
7 listed the cost of certification
4 listed market demands
2 listed test facility availability
1 listed scope and time required for testing
1 listed the transparency of the certification process

8. What size turbines would you seek to have certified? (swept area and rated kW)
Out of 18 responses indicating kW rating:
23 models less than 10 kW
11 models between 10-49 kW
4 models between 50-65 kW
1 model 75 kW
1 model 200 kW

9. What types of towers and blades will you offer for each model?
Out of 12 responses indicating tower type:
10 guyed tilt-up tubular
5 free standing lattice
4 guyed lattice
2 freestanding tubular/monopole

Several manufacturers use a variety of tower designs; most indicated standard composite multi-blade designs.

10. Do you plan to implement any upgrades to key system components that could affect power curve and sound of one or more of the turbine designs within the next 12 months?
Out of 20 responses:*
Yes: 9
Possibly: 8
No: 3

11. Do you plan to implement any upgrades to key system components that could affect power curve and sound of one or more of the turbine designs within the next 18 months?
Out of 20 responses:*
Yes: 10
Possibly: 7
No: 3

12. Do you plan to implement any upgrades to key system components that could affect power curve and sound of one or more of the turbine designs within the next 2 years?
Out of 20 responses:*
Yes: 11
Possibly: 7
No: 2

13. Have you completed or do you plan to undertake testing to the IEC Standard specifications? For which models?

Out of 23 responses:*
Complete or underway: 10 (43%), including 4 of the 10 established industry members subtotaled above (40%)
Future: 6 (26%), including 3 of the 10 established industry members subtotaled above (30%)
No: 7 (30%), including 3 of the 10 established industry members subtotaled above (30%)

14. When do you plan to undertake testing for SWCC Certification?

Out of 20 responses:
5 have not made plans to conduct testing for SWCC Certification.

For other respondents, factors affecting timing of testing included:
-Cost of testing (funding availability)
-Date of SWCC program implementation
-When states require certification for incentive programs
-When R&D is completed
-Whether rest of world will accept SWCC certification.

Most respondents did not give a concrete timeline (i.e. number of months).

15. What is your preferred testing location? What criteria will you use to determine this? Do you plan to use an accredited laboratory?

Out of 23 responses:
8 noted NWTC/NREL (35%)
6 noted factory or private sites
2 noted North Carolina State site
2 noted Utah sites
2 noted WEI Canada
2 noted sites in Europe (Scotland & Netherlands)
1 noted Mt. Copper, Quebec
1 noted Chicago
1 noted LBL
1 noted a site in New York

Not all respondents indicated their criteria for selection, but a few specified their desire to use a site with reliable wind resources that allow rapid power curve and sound testing any time of the year. The three that indicated a preference for testing near their factories cited cost considerations. Four indicated their desire to use an accredited facility for independent verification, however several others indicated that accredited labs would be too slow and costly.

16. What do you think are the most compelling reasons to convince funders to help cover expenses to launch this program?

Sample comments from respondents:
-To eliminate the burden of each state agency running their own qualification program and to eliminate the burden on the manufacturers of qualifying for several programs.

-Expand the market with quality products, not inferior knock-offs.

-Contribute to efforts for energy independence and a clean environment.

-The basic principal starts with consumer protection. Every State, and many other institutions wants to ensure that private enterprise offers solid value, and consumers get what they pay for. This will reduce hassle, poor projects, hazardous sites. States may also have incentive programs that need safeguards to ensure the publics money is being well spent. Third party funding can help ensure the process is clean, that manufacturers have no way to influence results.

17. What uses do you anticipate for the certification label?

Sample comments from respondents:
-Qualify for government subsidies/state rebate programs
-Marketing/Sales
-Advertising, promotion, and qualification for subsidies

-Improvement of product and company image in the market place

18. Can you offer cost-sharing to help launch the SWCC?
Out of 21 responses:
Yes/In-kind: 5
Possibly: 2

19. Any additional feedback?
Selected comments from respondents:

- Concern with manufacturer's role in funding SWCC: It is understandable that SWCC will be funded primarily by companies are already in production; as such they will have a high degree of influence on the decisions made by SWCC. These current players have economic motivation to 'stack the deck' in their favor. It is quite unlikely that SWCC could resist such pressure if the primary source of funding is from the industry players. So there is a real risk that instead of assisting new products in reaching the marketplace, SWCC could become a barrier.
- Measuring Sound: I understand that the proposal is to report or measure sound levels 60 meters from the turbine hub. While this measurement may be of value to a customer considering a larger turbine located in an open field, it is not useful when considering a smaller turbine which will be located in closer proximity to dwellings. For example, the buyer of a very small unit (500 watt), to be mounted to a building, boat or RV would certainly like to know the sound levels a good deal closer than 60 meters. I propose an additional measurement be added that would allow the buyer to obtain useful information. Perhaps a measurement within 5 meters of the base of the mounting structure, or a measurement on the mounting structure itself.
- Other areas of certification: It is a very serious mistake not to include certification of: a) tower design b) lightning protection. Tower design appears simple by nature of its components such as bolts and angle irons, but this is highly deceptive as the actual engineering can be as complex or more as any other major component, including the wind turbine itself. This is a predictable source of failures and issues and should be addressed at this time and not wait for a series of incidents that will stain the industry's reputation. When a small wind turbine is installed on a property, by nature of the beast it will often be the highest structure on the property. Although this does not guarantee in itself a lightning strike, it seriously increases the probability of such a damaging event. The small wind turbine industry has little or no standards in this area at this time and this must be resolved. Some small wind turbine manufacturers have no protection at all, and most have inadequate protection. This is a complex area, and like the tower issue mentioned above, this is a predictable source of incidents, and loss. If a house, barn or other building is burnt or destroyed by a lightning strike fed from a small wind turbine to the building, it will more than ruin someone's day. The public has a habit of painting with the same wide brush all those in the same industry following such incidents. Let's address these issues now, and not wait for serious incidents and someone to correct the situation for us.
- Liability in regards to durability: I am concerned about the liability issues pertaining to SWCC when it comes to the reliability and durability testing. Though I can understand the importance of reliability certification, to put our name on it is extremely risky. So much so that I or anyone from our company would not be on the board if this was to be implemented. That is unless we find some sure fire way of isolating ourselves from the risk. You can build the toughest meanest wind generator and still have failures. If that machine fails in an unusual incident and the customer is some sue happy person, we are all in trouble. My opinion, keep the certification testing to performance and sound. The reliability will fall out in the data. If they cannot keep a machine in the field for however many months during the duration test, then it won't be certified anyway.
- Risk of certification: If the certified turbines fail etc, all turbines that are so certified will be harmed.
- Include process for turbine modifications: Another factor that will impact the SWCC - when/what level does a turbine design change trigger retesting/certification? Many manufacturers are refining, reducing costs, new vendors...
- Unsure of standards: It would be helpful if the present draft or agreed standards were sent out. We don't know what testing needs to be performed, nor do we know the 'costs' of such certification. It's hard to answer these questions without knowing the rules of the game (if they were even agreed on yet).

Responses from Government and Utility Renewable Energy Program Managers

1. If small wind turbines aren't already eligible for your consumer-sited incentives, would certification ratings help you expand your program?
Out of 18 responses:
Yes: 7
No/Probably Not: 5
N/A: 6

2. How critical do you feel small wind turbine certification is for your agency? Which ratings -- sound, annual energy output, rated power, durability -- are most important to you? In what timeframe?
Out of 30 responses:
22 answered that certification is important; 4 of these indicated it is critical or very useful.
17 noted Annual Energy Output as important.*
14 noted Durability as important.
14 noted Rated Power as important.
12 noted Sound as important.
1 noted Safety as important.
1 responded that ratings are unimportant.

*Some respondents weighted their priorities, while others did not. Noted above are the total times that the respondents listed a certain rating as at least moderately important.

3. What uses do you anticipate for the small wind turbine certification label?
Out of 28 responses:
12 cited consumer education, protection, and aid in decision-making process
6 cited potential use with incentive requirements
2 cited potential use with interconnection requirements
1 cited potential use with RPS qualifications
1 cited potential increase in Rural Electric Co-ops acceptance of small wind
1 cited potential increase in diversity of small wind applications

4. Do you plan to require certification for small wind turbines to be eligible for funding?
Out of 26 responses:
Yes: 11
Possibly: 4
No/Not at this time: 11

5. Will this supplement or replace any existing requirements you have for small wind turbines?
Out of 29 responses:
Yes: 11
Maybe: 1
No: 9
No existing requirements: 5
N/A: 1

6. Do you face any timing issues related to your funding cycle that would affect the release of certification results (or vice versa)?
Out of 29 responses:
Yes: 3 (curriculum development with fixed deadlines; fiscal year funding cycle)
No: 25
N/A: 1

7. What other certification programs do you utilize for funding decisions (eg Energy Star)? How are those programs funded?

Out of 26 responses:
14 noted Energy Star
4 noted LEED
3 noted SRCC
3 noted NABCEP
3 noted none
1 noted each of the following: UL, Bright Way, EPA certification, n/a

None of the responses answered the question of how the programs are funded.

8. What 'lessons learned' can you offer the SWCC?

Selection of the comments made in answer to this question:
-Keep it simple
-Look at SRCC
-Key to success is to have working demonstration projects
-Certification is all about consumer protection
-Be sure that SWCC does not dilute or otherwise contradict existing distributed generation standards including IEEE 1547 (15 kV), IEEE 519 (harmonics), and UL 1741 (inverter testing).
-Standards don't replace expertise in installation and maintenance
-Both Annual Energy Output and Rated Power are needed to support up-front and production based incentives
-Emphasize well-trained installers and rigorous commissioning inspections

9. Can you offer cost-sharing to help launch the SWCC? (Please note we are looking for cash matches of at least $25,000 per year.)

Out of 27 responses:
Already have made commitment: 4
Yes: 1
Possibly: 4
No: 18

10. Any additional feedback?

A few comments:
-Keep in mind need to be able to handle turbine upgrades and improvements within certification process
-Certification is important for building customer confidence
-Allow refurbished turbines to be certified
-A few thank-you's and best-of-lucks

Responses from Testing Facilities & Consultants

1. How critical do you feel certification is for your organization? Which ratings -- sound, annual energy output, rated power, durability -- are most important to you? In what timeframe?

Out of 14 responses:

8 responded that certification was important or valuable for the industry and customers

10 responded that Annual Energy Output was important
8 responded that Durability was important
8 responded that Sound was important
4 responded that Rated Power was important
1 responded that Rated Power was meaningless
1 responded that Safety was important
1 responded that power quality was important

2. What testing and reporting services do you offer or plan to offer?

Out of 15 responses:

9 plan to offer complete testing services
1 responded for each of the following categories: test site, power curve validation, AEO validation, durability testing, sound analysis, sound and power performance testing, none.
1 responded that their site was not good for testing

3. What experience does your facility have with small wind or other testing, certification, and labeling programs? What 'lessons learned' can you offer the SWCC?

Select comments from responses:

-Tests should include a large amount of 'normal' days, not just 'strong wind' days.

-Standards leave a lot room for interpretation, yielding very different results. Allowing manufacturers to measure themselves will only increase that interpretation.

-Document everything and put turbines on tallest feasible tower.

-No test has ever gone as planned, no prototype has ever lasted in its first configuration; no turbine can run unattended forever. Reliability is much more important to the industry than performance.

-Engaging test institutes to review the SWCC standards during the development process is recommended.

-The SWCC needs to make sure (for the consumer's sake) that high wind conditions are seriously considered and reported.

- WindGuard is now building a big wind tunnel for aerodynamic optimizations and sound investigations (completion in 2006, large testing area, wind speeds up to 100m/s). This wind tunnel is offered to wind turbine manufacturers for use. We have performed load measurements and vibration analysis at a large number of machines.

4. How long do you anticipate it will take to complete testing at your site (eg which months of the year typically have sufficient wind speeds to collect all required data points)?

Out of 14 responses:*

3 estimated 6 months to 1 year
2 estimate 1 year
1 responded for each of the following timelines: December-March, February-May, August-February, September-May

* Clear answers not given by all respondents.

5. Can you offer cost-sharing to help launch the SWCC? (Please note we are looking for cash matches of at least $25,000 per year.)

Out of 14 respondents:
Yes: 1
In-kind: 3
Unsure/Possibly: 4
No: 6

6. Any additional feedback?

Selected comments from respondents:

-Sound: While trying to make sound less technical, suggest following general IEC format - provide sound power level data based on hub height wind speeds in addition to any sound pressure level data at a typical reference distance (30 to 100 meters).

- Improved product: SWCC has a hard job, to make a plan that mfrs' can follow, alone or in cooperation with a test facility, the target is to get an improved product to market. This will allow consumers and state agencies to have greater confidence in the suitability of a particular wind product for their area. And like the comparative numbers for mileage on autos, will give some basis for comparison that is above the mfr's best hopes and is reviewable to make sure it was produced correctly.

- Holding manufacturers accountable: Certification will be a very good thing. Consumers need quality information if this industry is going to get out of its infancy. I hope that the standards are not minimized and the SWCC is enabled to call manufacturers 'on the carpet'. There are items that were proposed in the standards that were dropped in the drafts that will make it more difficult for consumers to evaluate equipment more suited for their sites. I hope that adequate information is made available to the consumer beyond the basic requirements of the draft standards.

Responses from Retailers and Advocates

1. How critical do you feel certification is for your business? Which ratings -- sound, annual energy output, rated power, durability -- are most important to you? In what time frame?
Out of 19 responses:
9 responded that certification was important or very critical
4 responded that certification would be helpful, but was not critical
1 responded that certification was not necessary

11 valued Annual Energy Output as important
10 valued Durability ratings as important
10 valued Sound ratings as important
6 valued Rated Power as important
1 valued cold temperature/conditions as important
1 valued power curves as important

2. What turbines do you currently sell/install in the U.S.? in Canada? in other countries?
Responses included: Southwest Windpower, Bergey, Kestrel, Lakota, Abundant Renewable Energy, Aeromax (Aeromag), Lagerway, Vestas, AEI, Proven, Jacobs, Sun Wind, Mag-wind.

3. What new turbines do you expect to sell/install in the U.S. and/or Canada in the next 2 years?
See Question 2.

4. What new turbines do you expect to sell/install in the U.S. and/or Canada in the next 3 years?
See Question 2.

5. What new turbines do you expect to sell/install OUTSIDE of the U.S. and Canada in the next 3 years?
See Question 2.

6.Which turbine models do you think are most important to be certified within the next 12 months?
General response: all small wind.

7. Which turbine models do you think are most important to be certified within the next 18 months?
General response: all small wind.

8. Which turbine models do you think are most important to be certified within the next 2 years?
General response: all small wind.

9. Which turbine models do you think are most important to be certified within the next 3 years?
General response: all small wind.

10. What do you think are the most compelling reasons to convince funders to help cover expenses to launch this program?
Selected comments from respondents:
-Certification is a means by which to gauge performance and durability of machines. Very important when installing devices in the field.

- Will help develop specific criteria for sound, reliability, production, etc that will serve as a metric for determining what machines are best for different applications.

- Most small turbine manufacturers are smallish enterprises with limited resources. Many smaller companies have technologies that would benefit the market as a whole and really need the assistance

- Climate change, help reduce fossil fuel use.

- Most incentive programs will move towards requiring that only certified turbines be incentives. At this time, small wind is only cost-effective with incentives, therefore the future of small wind hangs in the balance. Certification will help weed out the junk, increase reliability and efficiency, increase sales and make the small wind industry more profitable overall.

- It is vital in order for manufacturers to spend marketing budgets on an international market. We want to be able to say our turbine is worth this because we are better at this than company x - look at the certified ratings

-Enable the public to make well informed decisions.

11. What uses do you anticipate for the certification label?

Selected comments from respondents:

-Sales, marketing, customer information, comparisons
- To raise the level of confidence among our dealers and the buying public.
-Ease of comparing equipment (no longer need to determine how much derating of manufacturer's specs is necessary.
-Possibly not of much use to customers, similar to the ISO standards.

12. Can you offer cost-sharing to help launch the SWCC?

Out of 13 responses:

Yes: 1
Possibly: 2
No: 10
N/A: 1

13. Any additional feedback?

Selected comments from respondents:

- Make sure it's independent of manufacturers
- This is a good idea and I would appreciate learning more about the direction it's heading.
- It would be good to have separate certifications: 1) product only, 2) based on the finished installation, which would mean an inspection and a site specific certification 3) based on education installers, 4) based on wind consulting training/experience, like AEE has done with the CEM (Certified Energy Manager) certification process.
- It's a worthwhile effort. Just make sure that somehow or other it is self funding. People might be willing to volunteer their time and money once, but 'going back to the well' will be difficult.
- Its great that the US is taking steps towards this, positive moves like this will encourage companies outside of the US like Proven Energy, to look at the US and Canada as a focus market.
- Publish the standards/tests in a freely available form so that anyone can read them. Don't sequester them in a pay-per-view data bank like the professional standards organizations do.
- I believe such a program (as outlined) could encourage a more rapid pace of development and deployment for small wind systems. I do believe however, that a program that is costly to inventors and small manufacturers could 'slow down' innovation and deployment of new energy technology. The government and collective industry should be encouraging rapid diversification rather than allowing or promoting monopolization or becoming a stumbling block in the way of new energy development.