



U.S. Department of Energy
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Solar America Board for Codes and Standards

Larry Sherwood, Project Administrator, Solar ABCs
Andrew Rosenthal, New Mexico State University

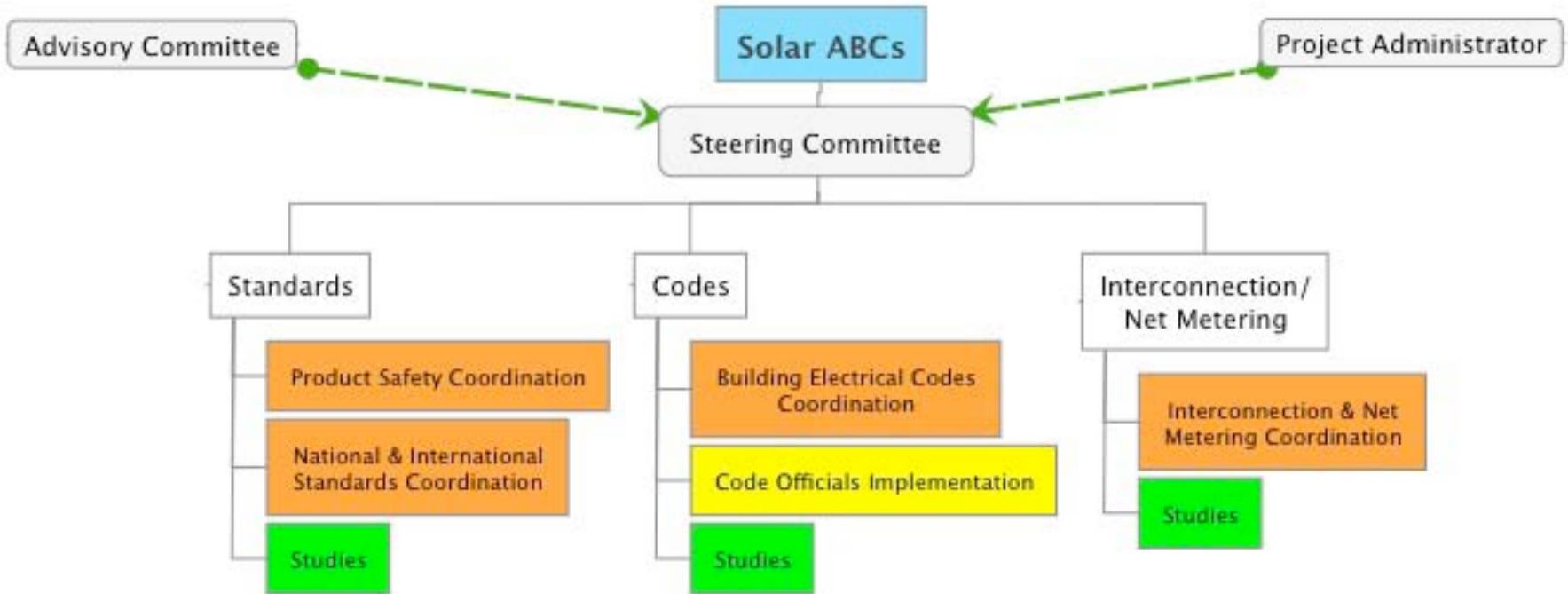
DOE Solar Energy Technologies Program Peer Review
March 9-10, 2009





- The Solar America Board for Codes and Standards (Solar ABCs) is a collaborative effort among experts to formally gather and prioritize input from the broad spectrum of solar photovoltaic stakeholders including policy makers, manufacturers, installers, and consumers resulting in coordinated recommendations to codes and standards making bodies for existing and new solar technologies. The U.S. Department of Energy funds Solar ABCs as part of its commitment to facilitate wide-spread adoption of safe, reliable, and cost-effective solar technologies.







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Solar ABCs Steering Committee



NREL



FLORIDA SOLAR ENERGY CENTER
A RESEARCH INSTITUTE OF THE UNIVERSITY OF CENTRAL FLORIDA



SHERWOOD ASSOCIATES





- Chair: Nick Chaset, California Public Utilities Commission
- Jim Baak, Vote Solar (also representing SEPA)
- Suzanne Borek, New Jersey Department of Community Affairs
- Adam Detrick, SunPower Corp.
- Mark Dougherty, Long Island Power Authority
- Smita Gupta, California Energy Commission
- Edwin Iracki, DuPont
- Tom McCalmont, ReGrid Power
- Rhone Resch, Solar Energy Industries Association
- Peter Varadi, Consultant
- Donald Warfield, BP Solar





- Engage Stakeholders
- Publish Study Reports
- Conduct Gap Analysis





- *Comparison of the Four Leading Small Generator Interconnection Procedures*
- *Utility External Disconnect Switch: Practical, Legal, and Technical Reasons to Eliminate the Requirement*
- *A Comprehensive Review of Solar Access Law in the United State: Suggested Standards for a Model Statute and Ordinance*



- *Impact of Advanced Metering Infrastructure on Small Distributed Generation*
- *Expedited Permitting for PV Systems*
- *High Wind Loads and Model Codes for PV Arrays*
- *Crystalline Silicon Terrestrial Photovoltaic Cells – Supply Chain Prequalification Specification*
- **Begin Study on Module Nameplate Ratings**



- Engage Stakeholders in Standard and Code Development
 - International Electrotechnical Commission (revitalized U.S. Technical Advisory Group)
 - Underwriters Laboratory
 - National Electrical Code
 - Recommendation on PV module rating tolerance





- Engage Stakeholders
 - Annual Solar ABCs Stakeholder Meeting
 - Conducted 12 Panel Stakeholder Meetings
 - Advisory Committee
 - Quarterly Newsletter
 - Solar ABCs web site
 - Over 600 stakeholders involved
- Responding to the needs identified by Stakeholders keeps Solar ABCs relevant





- **Problem:** California is increasing fire rating requirements for roofs to Class A in many areas. Does a Class C rated PV module mounted on a Class A roof change the roof rating?
- **Solution:** Reprogrammed Statement of Work. UL is conducting research to answer the question. Should have results in the summer.



- **Problem:** Utility external disconnect switch is redundant, fails to provide the protection that is its justification, and adds unnecessary cost to a PV system.
- **Solution:** Solar ABCs prepared a report: Utility External Disconnect Switch: Practical, Legal, and Technical Reasons to Eliminate the Requirement
- **Result:** Report is being used by utility commissions as they consider the issue.



- **Problem:** United States PV Stakeholders do not have access to IEC standard-writing process
- **Solution:** Schedule meetings of the U.S. Technical Advisory Group to IEC to provide U.S. stakeholder input.
- **Result:** Fall 2008 Meeting was the first USTAG meeting in 10 years and has created a good communication channel.





- Stakeholders suggested topics (over 100 received)
- Topics organized, refined, combined
- Advisory Committee discussed and prioritized
- Steering Committee meeting
 - Topics prioritized
 - Detailed activity suggestions for high priority topics





- Standardization of module power rating
- System Energy Performance Standard
- Standards to certify the accuracy of inverter meters
- Accelerated life testing for safety, reliability and durability of modules and the components used in modules
- PV Module frame grounding issues
- Roof-top PV module-specific fire research, testing and ratings systems
- National Fire Safety Guidelines for roof-top PV systems
- Revise building codes to address PV specifically
- Review and suggest updates to FERC interconnection screens
- Rate Impact of Net Metering.



- Removing long-standing barriers and concerns such as grounding and fire safety issues
- Coordinating of resources and expertise to develop consensus on important topics
- Engaging stakeholders helps codes and standards enable new technologies
- Conducting stakeholder meetings and responding to concerns keeps Solar ABCs relevant.





- Engage Stakeholders
- Publish new Study Reports
- Participate in development of international and national standards
- Begin new activities to respond to high priority gap topics
- Communicate results
- Fire safety research

