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# DOE Solar Energy Technologies Program Peer Review

**Technical Track: Market Transformation**

**Project Name: State & Stakeholder Outreach**

**Principal Investigator: Jane M. Weissman**

**Presenter: Jason B. Keyes**

**Interstate Renewable Energy Council**

**Denver, Colorado**

**March 9-10, 2009**



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# State & Stakeholder Outreach

- Performing Organization: Interstate Renewable Energy Council
- Award # DE-FG36-05NT42401
- Key Technical Contact: Jane M. Weissman, 781-461-8167,  
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# **IREC has consistently steered its activities towards three outcomes**

1. Reduced costs
2. Elimination of barriers and constraints to deployment
3. Increased public acceptance



# IREC's Solar Outreach Framework

- Easy hook-up to the grid
- Ensuring quality installations
- Better understanding of key issues



# Core Centers of Activities

- Interconnection & net metering
- Workforce development
- Getting the right information to the right people



# IREC Team

- **Legal:** Jason Keyes, Kevin Fox, Joseph Wiedman
- **Technical:** Keith McAllister, Michael Sheehan, Laurel Varnado, Maureen Quinlan, Rusty Haynes
- **Workforce Development:** Dr. Jerry Ventre, Dr. Barbara Martin, Jane Weissman
- **Communications & Coordination:** Larry Sherwood, Jane Pulaski, Jane Weissman
- **PI** = Jane Weissman



# Net Metering-Accomplishments

- **Arizona**: Participated in net metering (NEM) rulemaking. Prior to IREC's participation, Arizona had no statewide NEM rules. IREC succeeded in getting rules adopted with no enrollment cap, a facility cap of 125% of connected load, and allowance for third-party financing.
- **Florida**: Participated in NEM rulemaking. Prior to IREC's participation, Florida had no statewide NEM rules. IREC succeeded in getting statewide rules with no enrollment cap, a 2 MW facility cap, and excess generation rollover for full year.
- **Kentucky**: Assisted local NEM rulemaking participants to achieve good fees and timelines in implementation of new NEM law with 30 kW cap.



## Net Metering *con't*

- **Oregon**: Participated in rulemaking on third party financing issues and succeeded in ensuring that solar service providers will not be regulated as public utilities and their customers will be able to participate in net metering.
- **Nevada**: Participated in rulemaking that recently concluded with a decision allowing third-party financing of solar systems and net metering of systems that are under third-party ownership.
- **Texas**: Participated in NEM proceedings at the Electric Reliability Council of Texas (ERCOT) and the Public Utility Commission of Texas (PUCT). IREC was successful at ERCOT in establishing solar profiles for customers with PV. Unfortunately, we were not able to get traction at the PUCT for making NEM mandatory for all retail electric providers.



# Interconnection-Accomplishments

- **Florida**: Participated in interconnection (IC) rulemaking in state that had not previously adopted a statewide IC standard. Succeeded in adoption of statewide standard that includes very simplified procedures for systems under 100 kW.
- **Illinois**: Participated in IC rulemaking in state that had not previously adopted a statewide IC standard. Succeeded in adopting best in nation IC standard in *Freeing the Grid* including no insurance for < 1 MW and special procedure for non-exporting systems.
- **New Mexico**: Participated in IC rulemaking in state that had not previously adopted a statewide IC standard. Succeeded in adopting solid IC procedure that includes no insurance for systems < 250 kW and simplified IC procedures for systems up to 2 MW.
- **North Carolina**: Participated in IC rulemaking in state that had relatively poor IC standard. Succeeded in adopting federal IC standard with minimal insurance and no disconnect switch requirement.



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# Training Needs

- Local and accessible training
- Curriculum development including both content and instructional design
- Assistance for instructors
- Training for building officials involved with code enforcement



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# Four-Prong Strategy to meet needs

- Introductory Workshops
- Faculty Development Workshops
- Best Practices Guidelines
- Code Official Training



# Workforce Development Accomplishments

- Introductory Workshops - For schools that are interested in starting photovoltaic training classes. IREC encourages training is based on industry-set learning objectives and standards
- Four Workshops held since July 08: 120 people trained representing 86 educational providers



## *Con't...*

- Faculty Development Workshops - For instructors who are already well versed in photovoltaic systems. Provides interested faculty not only with a set of curriculum materials, but also with expert instruction on how best to use these materials to successfully develop high quality courses
- Three Workshops held since Sept 08: 75 people trained representing ~ 50 educational providers



# ***Best Practices & Recommended Guidelines for Training***

26 page document covering:

- Section 1 – *Guidelines for Training*
- Section 2 – *The Task (Job) Analysis*
- Section 3 – *Types of Educational Programs*
- Section 4 – *Essential Steps of Designing a Training Course*
- Section 5 – *A Checklist for Assessing Learning Outcomes*
- Section 6 – *Certification & Accreditation*
- Section 7 – *Equipment Recommendations for Training*
- Section 8 – *Resources & Text Books*

Available at [www.irecusa.org](http://www.irecusa.org)



# Code Official Workshops

- PV Workshops
  - Six held last FY
  - Six are planned for spring 09
  - Bill Brooks instructor
- Solar Thermal Workshops
  - Material under development.
  - Four are planned starting in February
  - Mark Thornbloom instructor



# Communication

- Bi-weekly State & Stakeholder newsletter – 3,500 subscribers
- Monthly *Connecting to the Grid* newsletter – 3,600 subscribers
- Model Rules for Net Metering & Interconnection
- Net Metering & Interconnection State Tables & Maps
- Other communication tools including...



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# Phone Seminars

- January 22, 2008. **Utility Rate Design**
- March 11, 2008. **State Solar Policy Trends**
- April 30, 2008. **Fire Safety Guidelines for PV Systems**
- June 12, 2008. **Solar Power Purchase Agreements**
- August 21, 2008. **“How will Smart Grid and AMI Impact Solar?”**
- September 30, 2008. **Interconnection & Net Metering**
- November 12, 2008. **Update of the National Electrical Code**
- January 26, 2009. **Utilities and the Solar Tax Credit**
- February 26, 2009. **Recession and the Solar Market**



- *U.S. Solar Market Trends 2007*



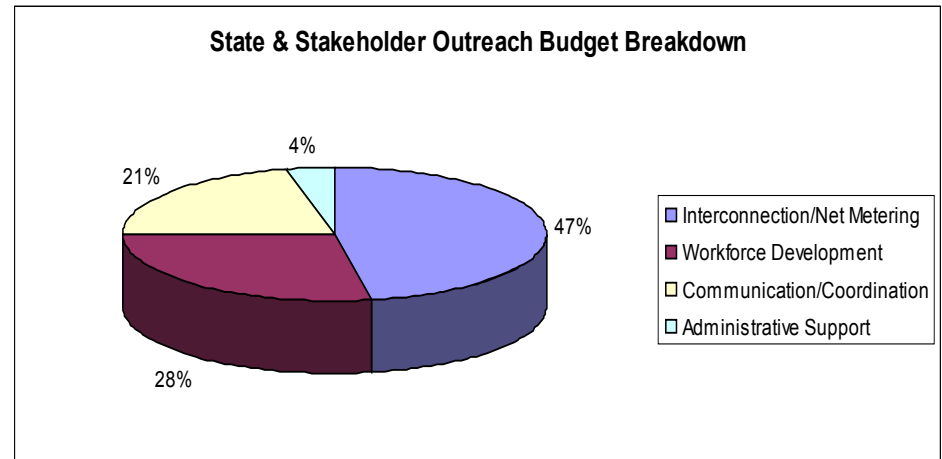
**On-Line Training Directory** sorted by state





# August 08 – August 09 Budget

- \$1.5 Million to cover eight activity areas and 49 tasks
- Burn rate of approximately \$90K/month though it varies depending on state rulemaking schedule and timing of workshops
- Cost share state regulatory work with the Energy Foundation and workforce development projects with NYSERDA.





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# Relevance of Net Metering & Interconnection Projects

- A kilowatt hour credit for each kilowatt hour delivered is an attractive incentive for potential customer-generators and reasonably values on-site renewable energy
- Net metering saves on installation costs by avoiding an otherwise required second meter
- Simplified interconnection rules can save money by avoiding the need for an expensive interconnection study for every system installed
- Elimination of extraneous interconnection equipment or insurance can save hundreds/thousands of dollars per system
- Applications that are processed in a timely manner can prevent customers from walking away while waiting for hook-up



# Relevance of Workforce Development Project

- Develops local accessible training based on industry need
- Promotes that training courses lead to defined workplace knowledge, skills, and abilities
- Promotes that training addresses issues of safety and codes
- Improves quality of services and consumer acceptance
- Reduces “call-back” service calls



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# Looking Forward

- Continue legal and technical assistance and participation in state net metering and interconnection rule making
- Look at impact of rate design, FIT, community net metering, Smart Grid, integration of distributed energy storage and other emerging issues on state and federal policies
- Promote high-quality solar energy training throughout the U.S.
- Continue to update, expand and enhance the local training capability of faculty and instructors
- Work with new players on training issues and “green” jobs
- Continue newsletters, web site, phone seminars and other reports bringing new and relevant information to states and stakeholders