

Milestones of the “WISE EDUCATION”

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Background



- **Residential wind and solar energy demo System "WISE"** sponsored by Maryland Energy Administration (MEA)
- **Community info meetings and small business partnerships** developed over the last two years
- **Renewable Energy Symposium and Expo** hosted at FSU on September 14-15, 2006
- **FSU WISE Certified Education Program** sponsored by Appalachian Regional Commission (ARC): 10/1/07 - 9/30/08
- **North American Board of Certified Energy Practitioners (NABCEP)** approves FSU as entry level courses and certification tests
- Congressman Roscoe Bartlett secured \$738,000 federal funding to build "**Sustainable Energy Research Facility (SERF)**" at FSU
- SERF project started on September 1st, 2008. When finished, SERF will house the **FSU Renewable Energy Center** for education, outreach, and research programs

WISE Built by 100% Local Workforce



Why We Needed WISE Education

- Increase the availability of qualified workers in rural areas
- Help healthy development of small business in residential wind and solar development
- Educate the community about wind and solar energy

NABCEP Entry Level PV Certification Objectives

1. PV Markets and Applications
2. Safety
3. Basics Electricity
4. Basics Solar Energy
5. Fundamentals PV Module
6. Fundamentals System Components
7. PV System Sizing
8. PV System Electrical Design
9. PV System Mechanical Design
10. Performance Analysis and Troubleshooting

Structure of the WISE Education Program

Two Workshops:

- Design, Installation, and Maintenance of Residential PV Generation Systems
- Design, Installation, and Maintenance of Residential Wind Generation Systems

Each workshop consists of two parts:

- **8-week online course** (2-3 class hour equivalent per week)
- **3-days on-site, hands-on training** (24 class hours)

Online Curriculum

Week	PV	Wind
1	Electricity Basics	Electricity Basics
2	PV Markets and Applications	Wind Energy Markets and Applications
3	Solar Energy Fundamentals	Wind Energy Fundamentals
4	PV Module Fundamentals	Wind Turbine Fundamentals
5	System Components	System Components
6	System Sizing	System Sizing
7	PV Generation System Design	Wind Generation System Electrical and Mechanical Design
8	Safety Basics, OSHA Requirements	Safety Basics, OSHA Requirements

On-site Training



Site visit and PV and wind resource assessment

PV products, characteristics, and applications

Residential wind turbine characteristics and assembly

Installation of a grid-tie PV system

Installation of a battery backup wind generation system

Electrical inspection of residential generation systems

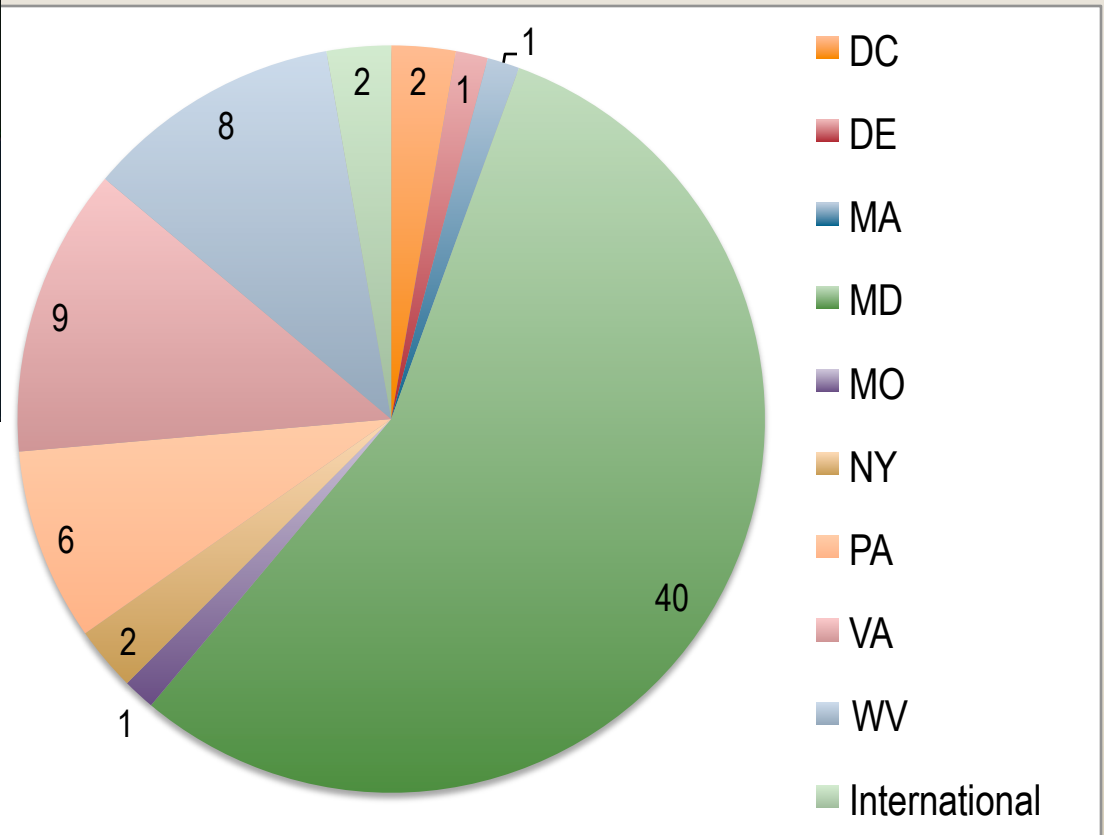
Policies, regulations, and incentives



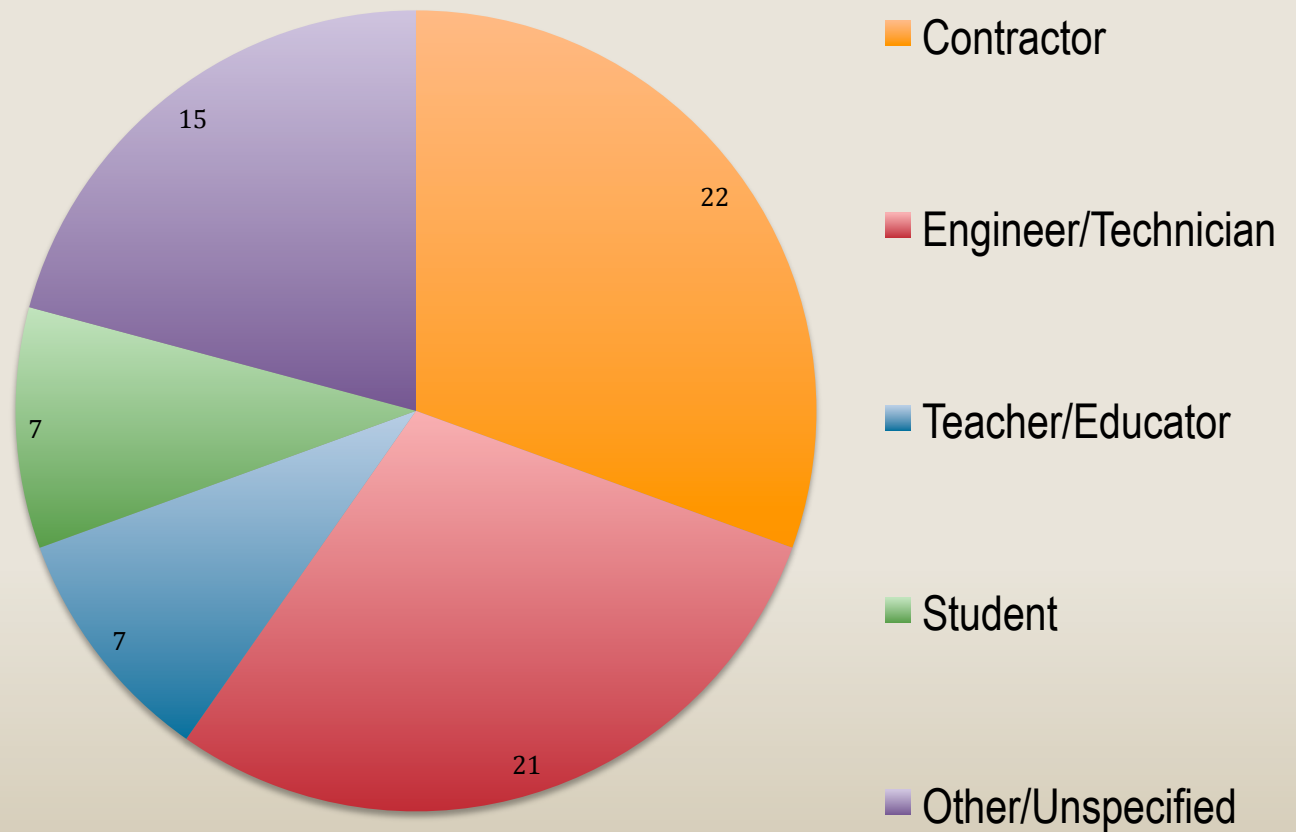
First Two Sessions

- Spring 08: 31 students enrolled
 - Online: March 31 – May 23
 - Hands-on: May 29 – June 1st
- Fall 08: 41 students enrolled
 - Online: October 13 – December 5th
 - Hands-on: December 12 – 14
- Many request for Spring 09

Geographic Diversity



Enrollment by Occupation



For More Info

- Visit

<http://www.frostburg.edu/renewable>

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Thank you!

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