

South Jersey Solar Integration & Installation Training Center

**Gloucester County Workforce Investment Board
24 June 2009**

Joseph Scarpa, LEED AP, EcoBroker

Green Paradigm Realty LLC

www.GreenParadigmInstitute.com

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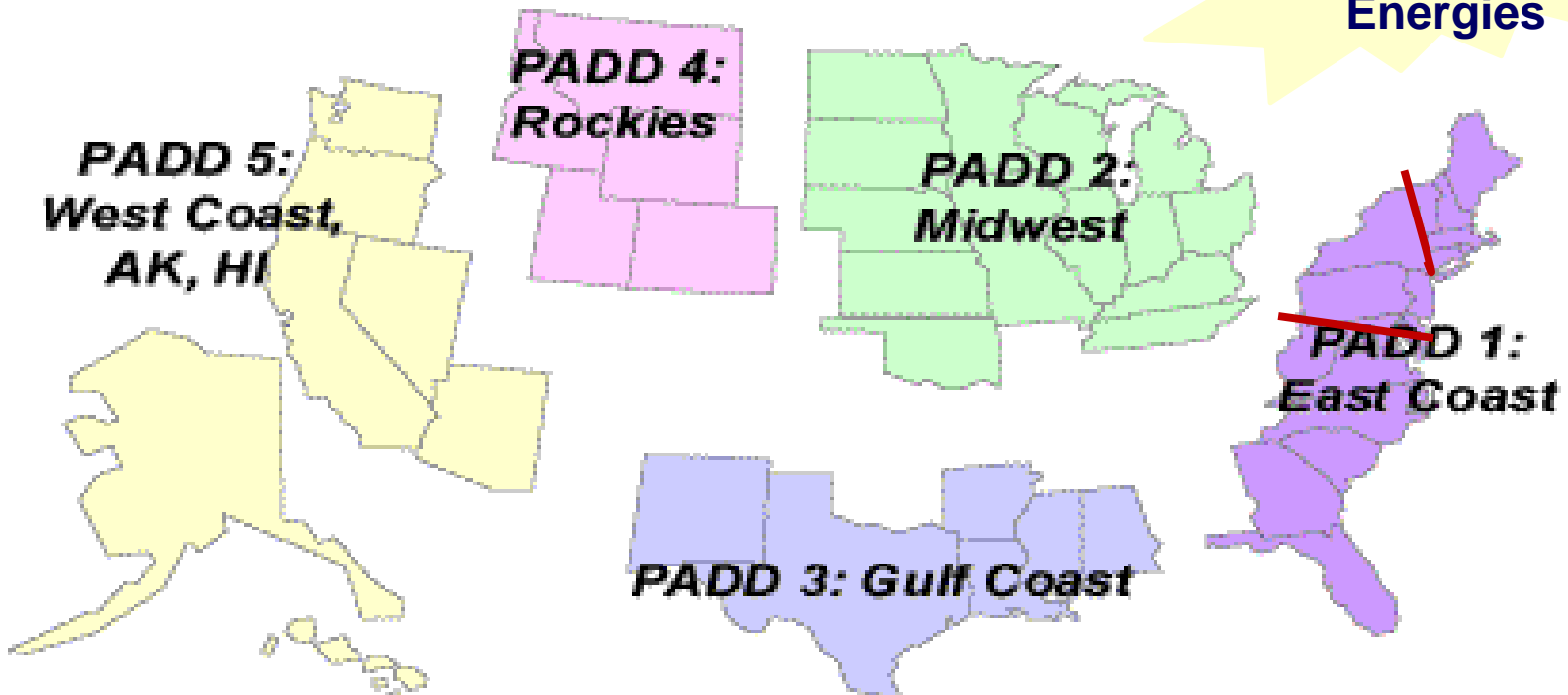
Problem Definition & Analysis

- Energy / Climate Change - Challenge
- Distributed Generation is part of solution
- 20% of rooftops support solar electricity
- Increased demand for installs imminent
- Uncertainty as to skilled workforce
- Regional competitive posture

Green Jobs Act - 2007

Petroleum Administration
for Defense Districts

ARRA
\$500 Million
Renewable
Energies



Subdistrict IA (New England): Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont.

Subdistrict IB (Central Atlantic): Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania.

Subdistrict IC (Lower Atlantic): Florida, Georgia, North Carolina, South Carolina, Virginia, West Virginia.

Greening Occupations and Careers

- Architecture
- Automation Controls
- Builder (Commercial)
- Builder (Residential)
- Building Engineering
- Building Owner / Landlord
- Building Owner / Occupant
- Building Products
- Civil Engineering
- Cleaning Products
- Code Official
- Commissioning
- Construction Management
- Development
- Electrical Engineering
- Energy Auditing
- Facility Management
- Furniture
- General Contracting
- Insulation
- Interior Design
- Landscape Architecture
- Legal
- Mechanical Engineering
- Planning
- Plumbing
- Plumbing Engineering
- Property Management
- Real Estate
- Roofing
- Solar Photovoltaic Installers*
- Specifications Writer
- Structural Engineering
- Tenant (Commercial)
- Tenant (Residential)
- Weatherization
- Wind Turbine Service Technicians*

* Bureau of Labor Statistics – Addition to Standard Occupational Classification 2010 Manual



SOUTHERN ENERGY EFFICIENCY CENTER

Building Energy Solutions for the South

Pilot High-Performance Buildings Technology Application Center



Primary funding: US Department of Energy Building Technologies Program
Administration: National Energy Technology Laboratory.

Source: www.SouthernBuildings.org



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Job Openings



Zero Energy Homes

Homes that produce as much energy as they use over the course of a year are called "zero energy homes." See what is needed to create them and how you can learn even more about these ultimate green homes.



Source: www.fsec.ucf.edu



TSEC
The Solar Energy Consortium

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The Solar Energy Consortium (TSEC)
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Kingston, NY
12401
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(845) 336-0100

The Solar Energy Consortium (TSEC)

Industry-led 501(c)(3) mobilizing the resources of New York State.

Source: <http://thesolarec.org/>

Energy Frontier Research Centers

Institution	Location	State	EFRC Name	EFRC Director	EFRC Objective
Brookhaven National Laboratory	Upton	NY	Center for Emergent Superconductivity	Davis, J.C. Seamus	By understanding the fundamental physics of superconductivity , discover new high-temperature superconductors and improve the performance of known superconductors.
Columbia University*	New York	NY	Re-Defining Photovoltaic Efficiency Through Molecule-Scale Control	Yardley, James	Develop the enabling science needed to realize breakthroughs in the efficient conversion of sunlight into electricity in nanometer sized thin films .
Cornell University*	Ithaca	NY	Nanostructured Interfaces for Energy Generation, Conversion, and Storage	Abruna, Hector	Understand and control the nature, structure, and dynamics of reactions at electrodes in fuel cells, batteries, solar photovoltaics, and catalysts.
General Electric Global Research	Niskayuna	NY	Center for Electrocatalysis, Transport Phenomena and Materials for Innovative Energy Storage	Soloveichik, Grigorii	Explore the fundamental chemistry needed for an entirely new approach to energy storage that combines the best properties of a fuel cell and a flow battery .
State University of New York, Stony Brook	Stony Brook	NY	Northeastern Chemical Energy Storage Center (NOCESC)	Grey, Clare P.	Understand how fundamental chemical reactions occur at electrodes and use that knowledge to tailor new electrodes to improve the performance of existing batteries or to design entirely new ones.

* Funded under the *American Recovery and Reinvestment Act of 2009*

- **46 EFRCs: 31 university-led; 12 national labs; 2 non-profits; 1 private**
- **Criterion – Job Creation ... Competitive Posture of USA**
- **Partner with a university ... or GE!**



Certifications & Ratings



www.bpi.org



www.natresnet.org





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Source: www.bpi.org | www.njcleanenergy.com



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NABCEP® PV Entry Level Certificate of Knowledge Exam

105 Approved Providers

0 in Delaware

3 in Maryland

0 in New Jersey

0 in Pennsylvania

Source: www.nabcep.org





5-day Entry Level Solar PV Installation and Design Course - \$2350

July 20th 2009 - July 25th 2009

August 17th 2009 - August 22nd 2009

September 21st 2009 - September 26th 2009

October 19th 2009 - October 24th 2009

[ENROLL NOW](#)

4-day Solar PV Installation and Design Course for Electricians - \$1950

July 27th 2009 - July 31st 2009

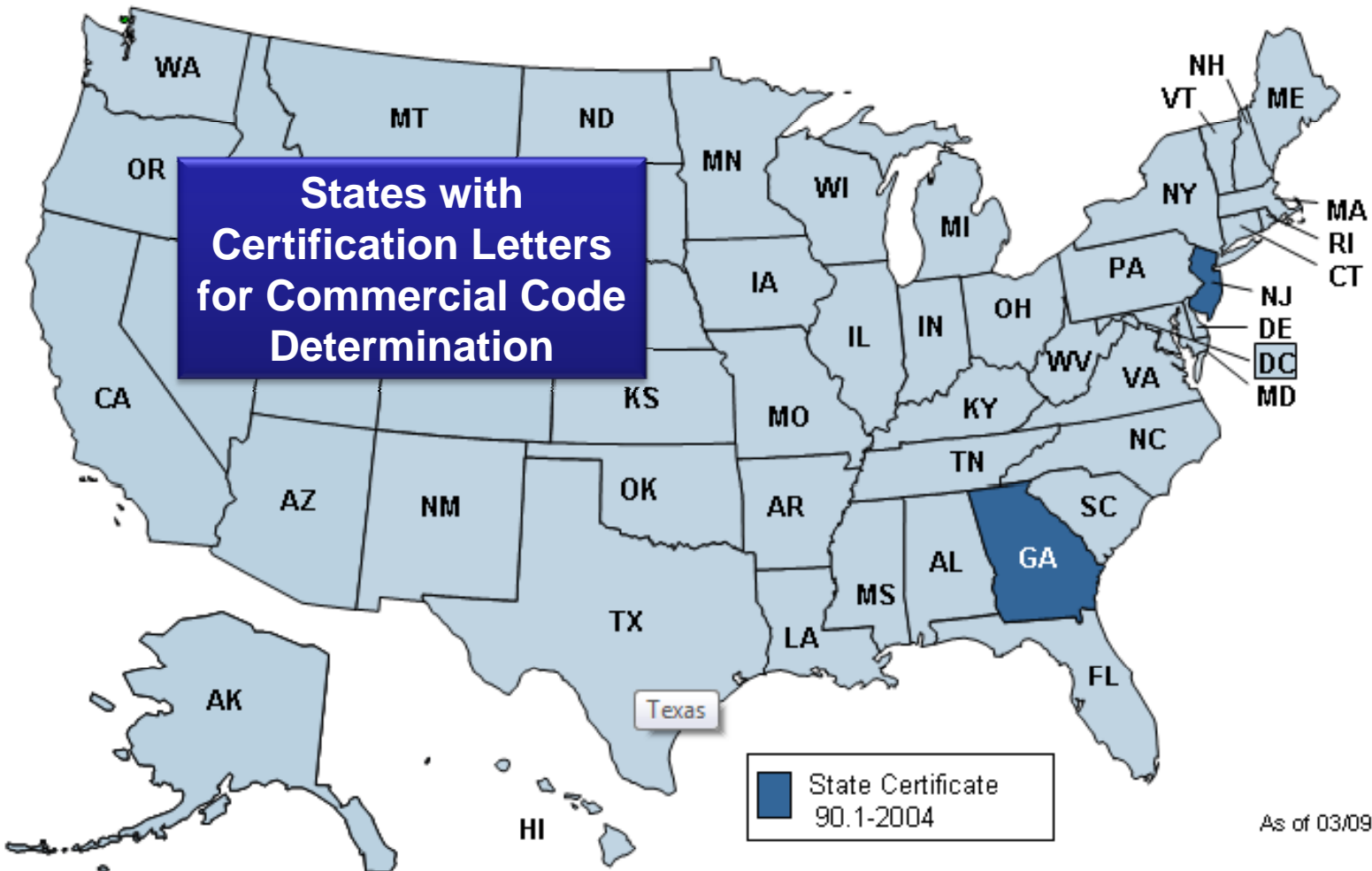
August 24th 2009 - August 28th 2009

September 28th 2009 - October 1st 2009

October 26th 2009 - October 30th 2009

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Building Energy Codes



U.S. Department of Energy
Energy Efficiency and Renewable Energy

www.EnergyCodes.gov



Building Energy Codes Program

Regional Greenhouse Gas Initiative (RGGI)



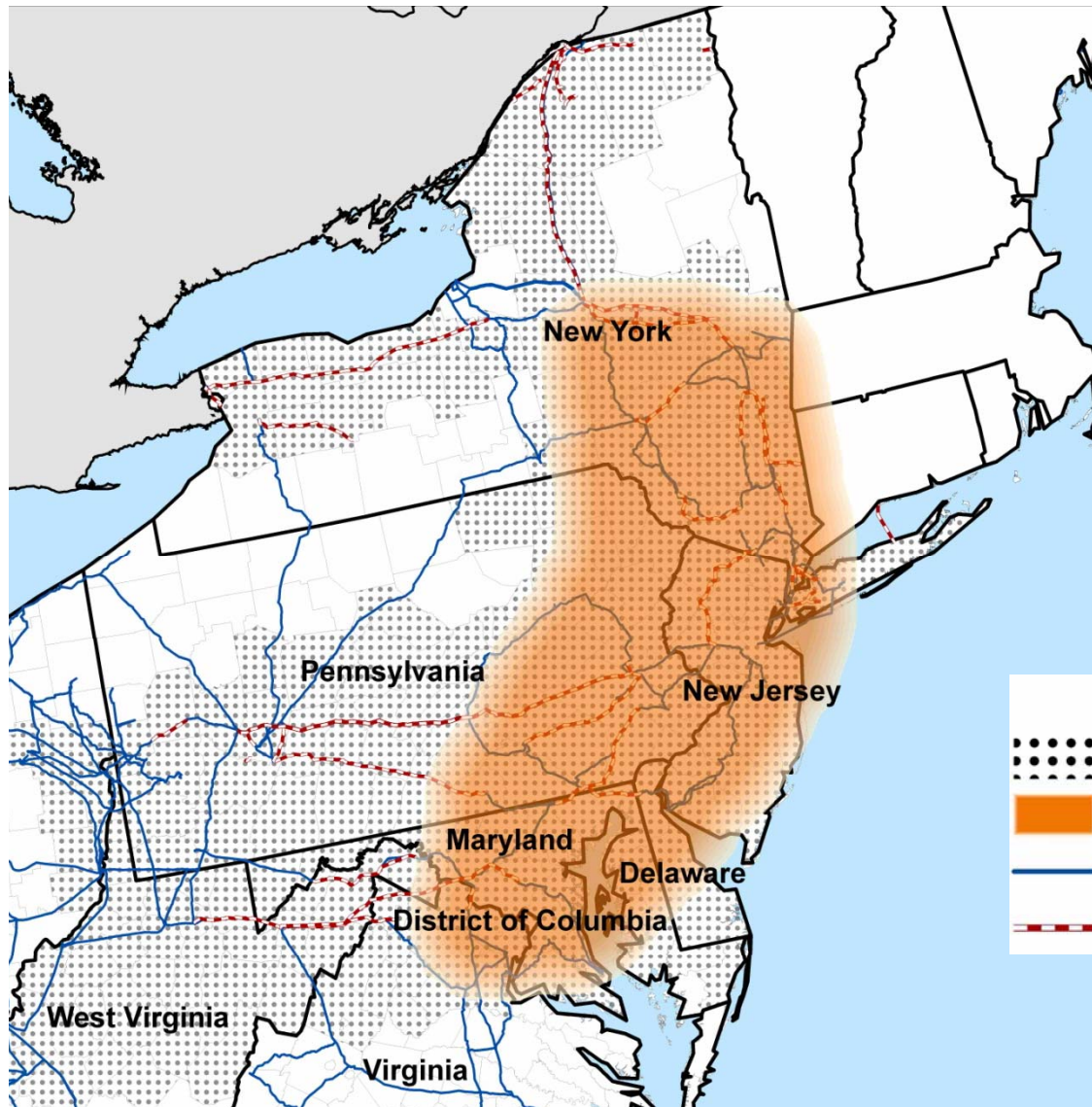
RGGI Inc.



www.rggi.org

Auction 1	25 Sep 2008
Auction 2	17 Dec 2008
Auction 3	18 Mar 2009
Auction 4	17 Jun 2009
Auction 5	09 Sep 2009
Auction 6	02 Dec 2009

National Interest Electric Transmission Corridors



www.nietc.anl.gov

Legend

- Mid-Atlantic Area National Corridor
- Critical Congestion Area
- 345kV and Above Transmission Lines
- Historically Congested Transmission Lines

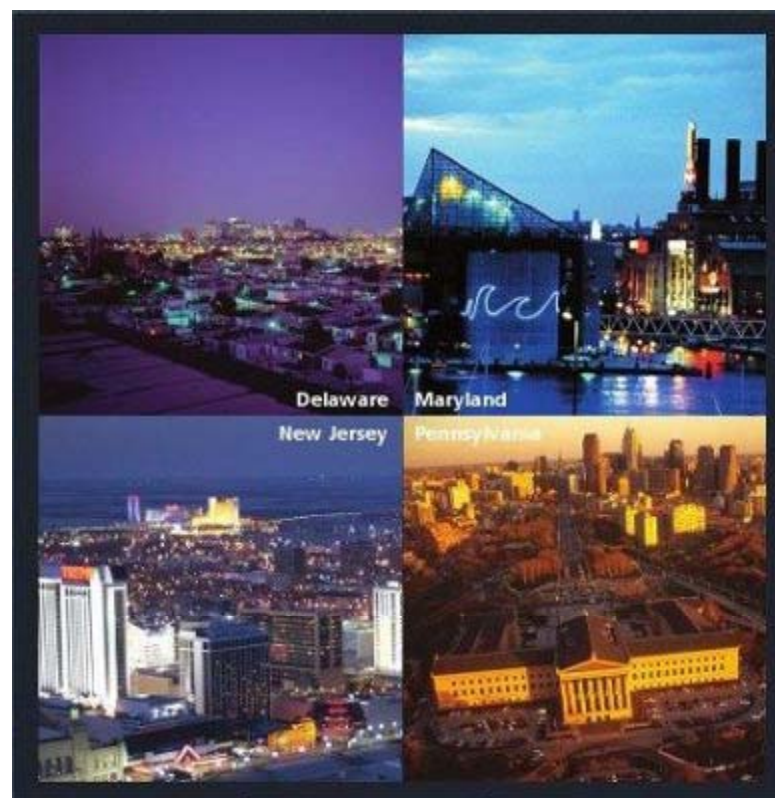
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Next Steps – Exploratory

- **Gloucester County Workforce Investment Board – June 24**
- **GREEN School & University Free Virtual Conference & Expo – June 24 - <http://asumag.com/GreenVirtualConferenceOverview.html>**
- **Urban Land Institute – Urban Marketplace – Philadelphia PA – June 25 - <http://philadelphia.uli.org/>**
- **NJ Consumer Fraud Act and Green Professionals – Pedricktown NJ – July 1 – <http://www.GreenParadigmInstitute.com/>**
- **University of Delaware – 3rd Annual Conference on Energy and Sustainability – Aug 9-12 - <http://www.conference.solarigert.org/>**
- **Salem Community College – A.A.S. Sustainable Energy Technology 8 Sep – <http://www.salemcc.edu/>**
- **Mid-Atlantic Business to Business Green Forum – Baltimore MD – 26-27 Oct - <http://www.b2bgreenforum.com/>**

2010 ... 2020 ... and Beyond

Lighting Facts™	
LED Product	
Light Output (Lumens)	840
Watts	9
Lumens per Watt (Efficacy)	93
Color Accuracy	87
Color Rendering Index (CRI)	
Light Color 3100 (Warm White) Correlated Color Temperature (CCT)	
Warm White Bright White Daylight 2600K 3200K 4500K 6500K	
Visit www.lighting-facts.com for the Label Reference Guide. <small>All results are according to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting. Brand X, 181796D-1796428954RQHT1234H3</small>	

Credit: www.lighting-facts.com



Credit: www.segway.com/puma/



Credit: www.newageenergy.net



Credit: www.nei.org/keyissues/newnuclearplants



Credit: www.dnr.state.md.us



Credit: PowerElectronics



Credit: www.udel.edu/V2G/conventional.html



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... and is archived and available at

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