BAKER DONELSON

SOLAR INDUSTRY BRIEFING:
WHAT'S NEXT ON THE HORIZON FOR THE SOLAR INDUSTRY

MATERIALS

Tuesday, November 9, 2010
2:30 - 5:00 p.m.



BAKER DONELSON
BEARMAN, CALDWELL & BERKOWITZ, PC

EXPAND YOUR EXPECTATIONS℠

Solar Industry Briefing:

What's Next on the Horizon for the Solar Industry

Featured Speakers and Agenda:

2:30 p.m. Sign in and Networking

3:00 p.m. Solar Industry Briefing
Scott D. Carey, Host and Nashville Managing Shareholder
Welcome and Introductions

Kelly Frey, *Shareholder*
The future of Renewable Energy Certificates (RECs), including the RECs market, logistics of trading RECs, valuing RECs for financial projections and how to garner investors. In addition, how RECs impact the financing of solar installations.

Jim Schmidt, *Senior Public Policy Advisor*
What to expect during the transition of Tennessee's new administration, insights into the legislative process and structure of the Department of Revenue and the Department of Economic and Community Development.

Stacey S. Patterson, *Ph.D., Director of Research Programs, University of Tennessee*
A look at the future of the Tennessee Solar Institute.

4:30 p.m. Question and Answer Session and Wrap-Up

BAKER DONELSON SOLAR INITIATIVE

Baker Donelson's Solar Initiative is a multi-disciplinary group of attorneys and advisors who assist clients with issues in the solar industry. We help researchers turn ideas in renewable energy into viable businesses and work with investors to fund and leverage early mid-stage solar companies. We assist manufacturers of solar energy components in taking advantage of tax incentives and the unique state-level infrastructure found within the Firm's geographic footprint to provide a competitive advantage within the industry on an international level. We work with utility-scale and dedicated production facilities across the full spectrum of real property, financing, tax, incentives, regulatory compliance, permitting, power-grid interconnection/transmission and power purchase negotiations, and construction issues involved in any significant solar project. Our attorneys work with large energy consumers, including traditional companies adding a solar energy component in their expansions as a hedge against market fluctuations in both availability and costs related to fossil fuel-based energy, as well as new solar companies that need the additional/excess electrical capacity available within our Firm's geographic footprint to power production of their alternative energy products. Clients know it's not what we do, but how we do it, that matters most. By understanding your business, we are able to anticipate your needs and help you make smarter decisions.

Representative Matters in the Solar Industry

- Outside general counsel to a solar panel installation company serving both the residential and commercial sectors.
- Patent advisor with respect to such inventions as a portable solar generator and a solar site evaluation apparatus.
- Trademark advisor to Sunlight Direct based in Oak Ridge.
- Represented a company in a successful capital raise of several million dollars to fund research and development of solar panels.
- Experience representing companies in alternative energy fields, including the solar industry, regarding the negotiation and implementation of government contracts
- Legal advisor to a number of entrepreneurs in the stages of forming and building solar-related businesses.

continued on back



The Baker Donelson Solar Initiative team includes the following individuals:

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Future Baker Donelson Solar Initiative Program Topics:

- Public Funding and Government Incentives for the Solar Industry: How to Get Them and Potential Issues
- Real Estate Issues Facing the Solar Industry
- The Patent Process and IP Issues of Special Interest to the Solar Community

RECs - Impact on Solar Industry

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What is a REC (and why should I care)?

TVA Nomenclature:

- Renewable energy credit
- Tradable renewable credit
- Green tag

Tradable, non-tangible energy commodity certifying generation of 1MWh of electricity from renewable energy resources

A separate asset/cash-flow than the sale of electricity generated by the renewable energy resource

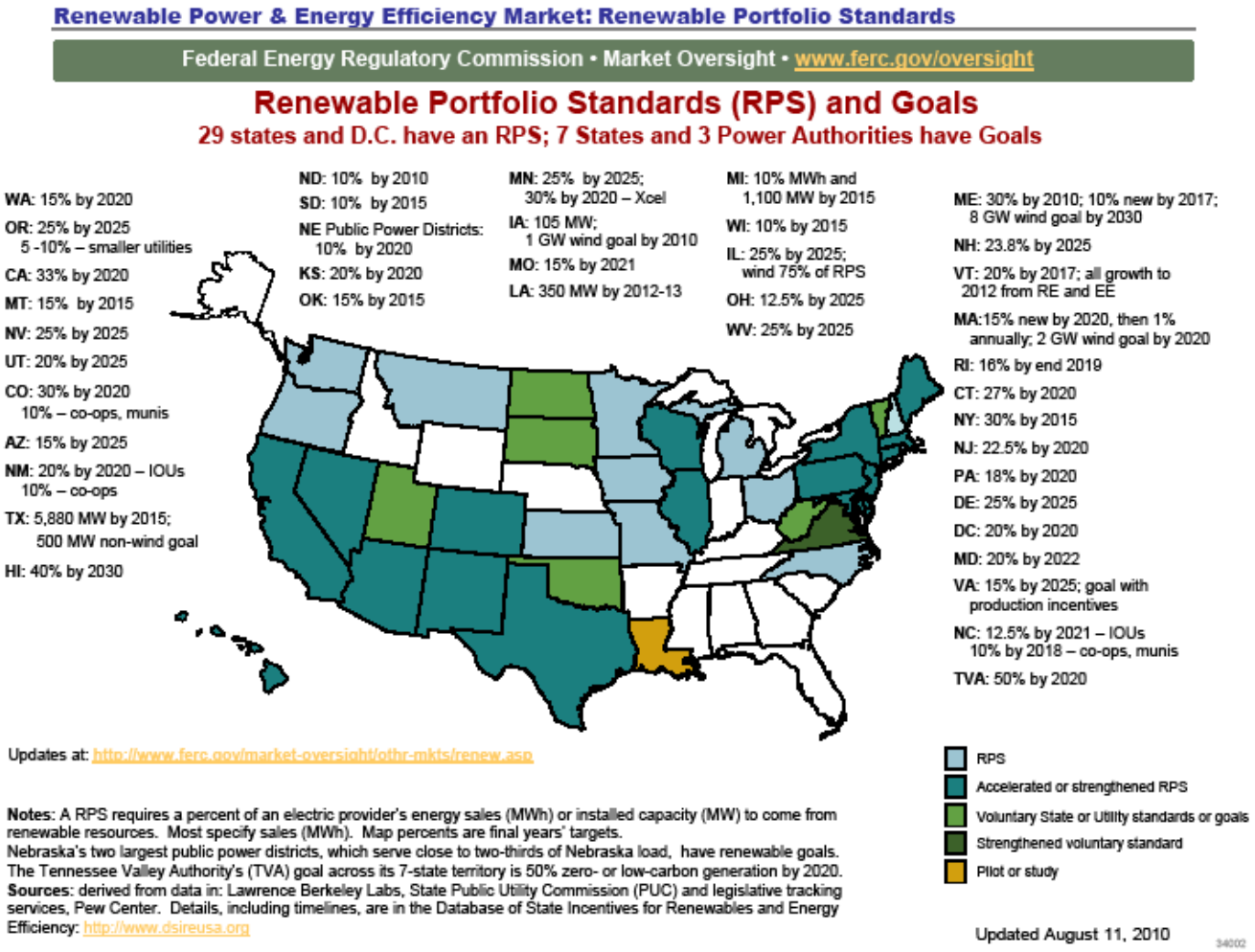
What is a REC (and why should I care)?

Types of Renewables that Qualify for RECs:

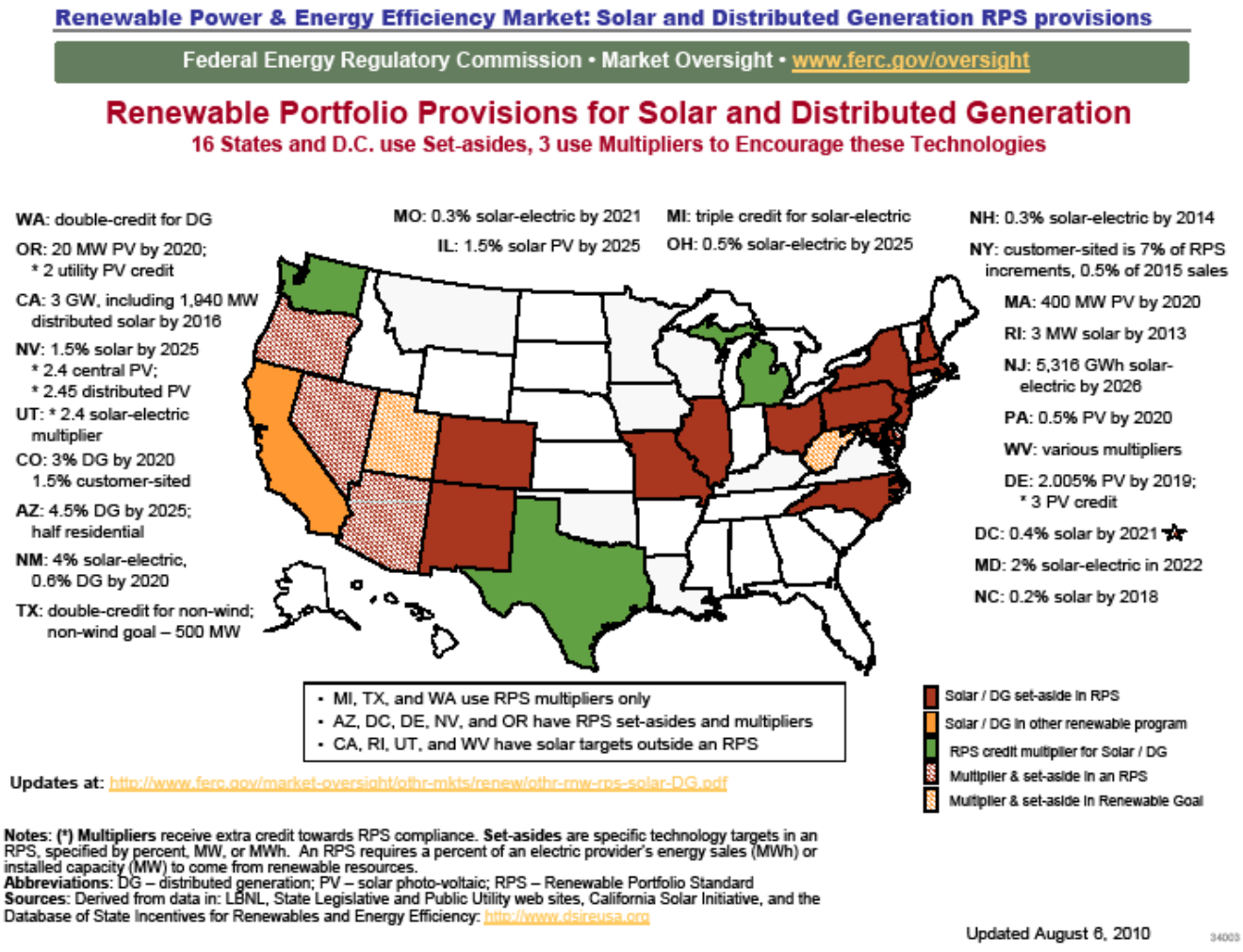
- Solar
- Wind
- Geothermal
- Low impact hydro (run-of-the-river facilities)
- Biomass, biofuels and landfill to gas
- Fuel cells (hydrogen powered, other than fossil fuels)
- In some states, combined heat and power systems

SOLAR IS SPECIAL = SRECs

What is a REC (and why should I care)?



What is a REC (and why should I care)?

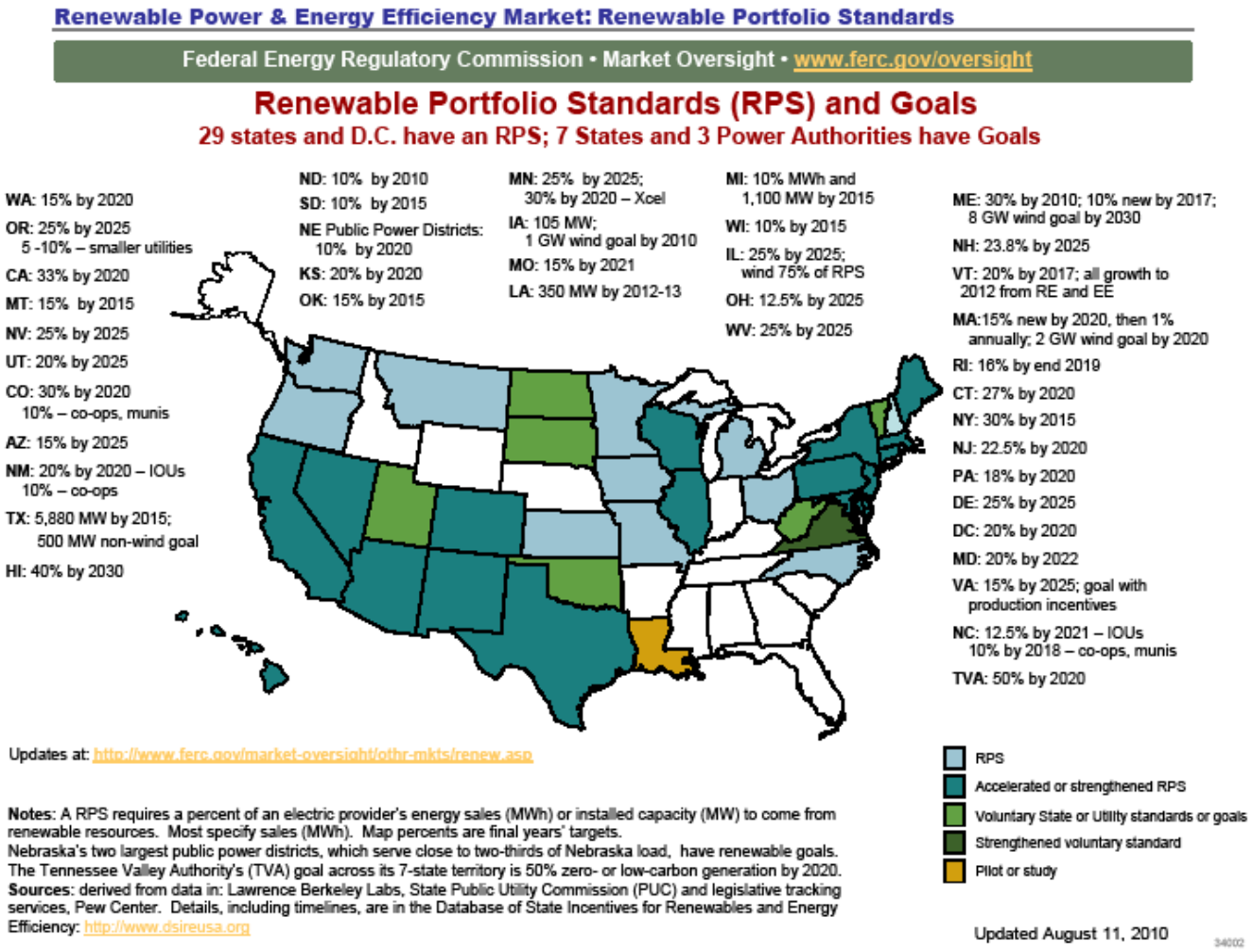


What is a REC (and why should I care)?

October SREC Prices (per MWh)

District of Columbia	$290.00
Delaware (2010)	$200.00
Delaware (2011)	$255.00
Massachusetts	No sale
Maryland (2009)	$320.00
Maryland (2010)	$320.00
New Jersey (2010)	$640.00
New Jersey (2011)	$640.00
Ohio	$290.00
Pennsylvania (2010)	$200.00
Pennsylvania (2011)	$249.99

What is a REC (and why should I care in the TVA area)?



What is a REC (and why should I care in the TVA area)?

TVA Generation Partners Program (0.5kW to 200kW systems):

- 10-year contracts
- $0.12 premium above retail for solar

BUT

16. I agree that all rights to any renewable energy credits (including tradable renewable credits or green tags) or other associated benefits of energy generated from the renewable nature of my Qualifying System are transferred to Distributor under this agreement and understand that Distributor, in turn, will transfer all such rights to TVA.

What is a REC (and why should I care in the TVA area)?

Renewable Standard Offer (201kW to 20MW systems):

- 10-, 15-, 20-year contracts
- Peak Demand Pricing (from $0.0561 to $0.1596/kWh)

BUT

Section 4.3 Environmental Attributes. RECs and other Environmental Attributes cannot be owned by or credited to more than one entity. In accordance with and subject to the terms and conditions of this Agreement, commencing on the Initial Delivery Date and continuing through the end of the Term, Seller shall transfer to TVA, and TVA shall receive from Seller, any and all right, title and interest in and to Environmental Attributes and associated RECs, as applicable, equal to the amount of Energy Output that is generated by the Project. As such, Seller shall not make claims with respect to the renewable energy sold to TVA except to note its sale to TVA. All Environmental Attributes (including all RECs pertaining thereto, if applicable) associated with Energy Output made available by Seller during such Month shall be delivered by Seller to TVA in accordance with Article VII. In the case of combustion or co-firing resources, the Environmental Attributes associated with the percentage of the Project that utilizes Qualified Biomass for electrical generation shall pass to TVA pursuant to this Section 4.3.

What is a REC (and why should I care in the TVA area)?

- RECs are “baked into” TVA prices paid to solar production facilities under the two most common TVA solar power purchase agreements.

- RECs become part of TVA portfolio to hold or trade.

- Maximum cost paid by TVA to solar production facility is roughly equivalent to what SREC can be sold for on open market.

What is a REC (and why should I care in the TVA area)?

Oct. 6, 2010 comment by Tom Kilgore, CEO of TVA:

- Future for TVA is “one-third nuclear, one-third coal, one-third natural gas” [and apparently] “5% from solar and wind”

105% solution or is solar just an after-thought?

TVA’s Integrated Resources Plan – comment period through November 15

- No new TVA-owned wind or solar
- Buy 1380 MW of wind energy from out-of-state: 7 contracts from 2008 RFP (Illinois, Iowa, Kansas, North Dakota and South Dakota)

What is a REC (and why should I care in the TVA area)?

Call to Action!

- TVA's Integrated Resources Plan – comment period through November 15 - *do nothing, get nothing*

- Economic Arguments for increasing TVA Solar programs:

  - Current price paid by TVA for Solar = Value of SRECs on open market (a no/low cost option for TVA)

  - 50-100 MW of solar in-state v. 1380 MW out-of-state wind purchases doesn't help Tennessee's economy (we just send Tennessee dollars to the Midwest for their economic development programs)

The Republican Tidal Wave of 2010; What To Expect in 2011

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Governor-Elect Bill Haslam

- Won big with 65% of the vote over Mike McWherter
- Clearly will have a mandate to govern with
- Faces a huge budget problem and possible $200+ million hole to fill with the expiration of stimulus dollars
- Will rely on Bredesen's four-year budget plan and current F&A staff to help start budget proposal

Transition Team

- Members will be named over coming weeks

- Expect appointments from campaign staff, fundraisers, business leaders, elected officials and confidants

Their Task:

1. Find the best people for department commissioners and other executive level appointed positions
   - Will be announced over next 2 ½ months
   - Will look for geographic coverage and diversity in appointments - but look to East Tennessee
2. Assist in preparation and planning for assuming power
3. Inaugural - January 15th
4. Develop a game plan for their first Legislative Session

Tennessee General Assembly: An Even More Republican Senate

- 20-13 split to Republicans (previously 19-14)
- Surprise upset of Sen. Doug Jackson (D-Dickson) by Jim Summerville (R)
- Lt. Governor Ron Ramsey of Blountville will remain Speaker/Lt. Gov.
- Perhaps some shift in committee chairs and committee assignments (appointed by Speaker)
- New election for Republican Caucus Chair (Congresswoman-elect Diane Black)
- Senate Republican Caucus will meet on December 9th

Tennessee General Assembly: A Whole New Republican House!

Tennessee House of Representatives:

- Huge upsets and defeats of 12 incumbent rural Democrats
- New balance of power 64-34-1 (previously 51-47-1)
- Much more conservative House

Dennis Ferguson (Harriman)	Eddie Yokely (Greeneville)
Jim Hackworth (Oak Ridge)	Les Winningham (Huntsville)
George Fraley (Winchester)	Henry Fincher (Cookeville)
Stratton Bone (Lebanon) *Agriculture Committee Chairman	Kent Coleman (Murfreesboro) *Judiciary Committee Chairman
Ty Cobb (Columbia)	Butch Borchert (Camden)
Mark Maddox (Dresden)	Judy Barker (Union City)

Tennessee House of Representatives

New leadership team will be selected at December 8th Republican Caucus Meeting.

Caucus will elect a nominee for Speaker (appoints committees and chairs):

- Glen Casada of College Grove (conservative Caucus Chairman)
- Beth Harwell of Nashville (moderate Commerce Chair)
- Harry Brooks of Knoxville (moderate Education Chair)

Caucus will elect:

- Majority Leader
  - Gerald McCormick of Chattanooga
  - Jon Lundberg of Bristol
- Caucus Chairman
  - Debra Maggart of Hendersonville

New General Assembly Challenges

- Develop a working relationship between new administration and new legislature
- Balance the political dynamic of moderates vs. conservatives
- New leadership on important matters of budget and agenda for the session
- New members' learning curve (3 new Senators; 21 new Representatives)
- Major budget deficit expected
- Redistricting for Tennessee House, Tennessee Senate and Congressional seats

Considerations for the Solar Industry

- Bredesen and Kisber spearheaded the effort to support the industry through state financial commitments to Solar Farm and Solar Institute, but Republicans were more skeptical

- Top-level and some mid-level management staffing in Economic and Community Development, Revenue and other departments are likely to change

- State budget constraints may restrict additional state investments

- Major state investments/incentives in Solar Institute at UT, West Tennessee Solar Farm, Hemlock Semiconductor, Confluence Solar and Wacker Chemie make it hard not to continue to support the industry

Suggestions

- Get to know your local legislators - grassroots are powerful
- Educate the legislative leadership and new administration officials on your investments and economic impact
- Develop partnerships with other business groups with like interests
- Hire a lobbyist ☺

Volunteer State Solar Initiative

Stacey S. Patterson, Ph.D.
Director of Research Partnerships
University of Tennessee

November 9, 2010

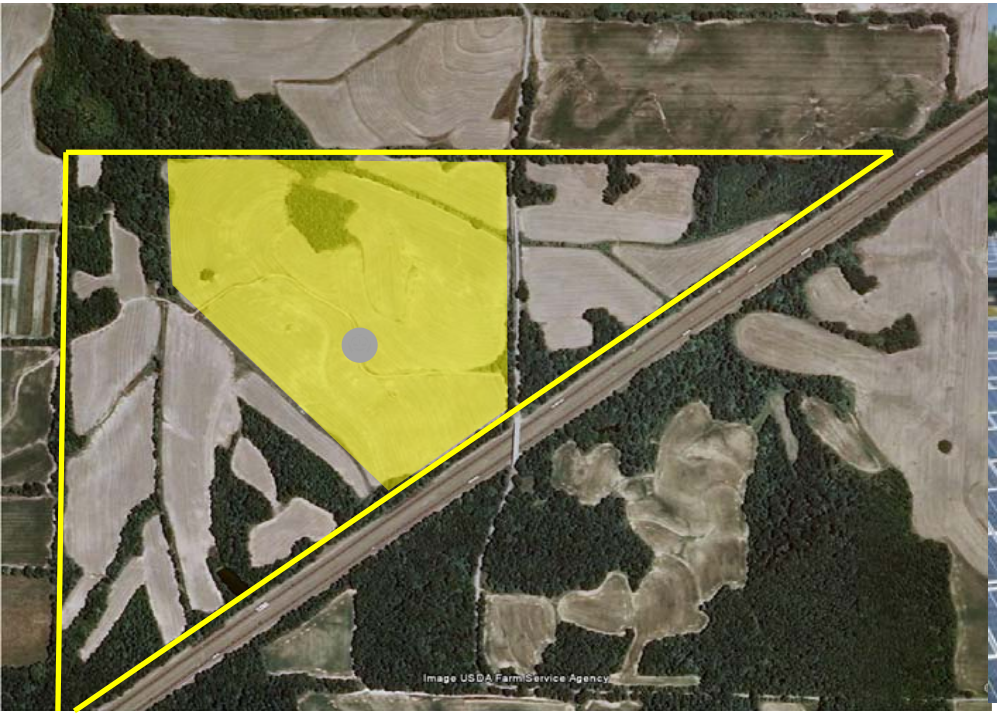
Volunteer State Solar Initiative

- $62.5 million ARRA funds
  - DOE grant to ECD, State Energy Program
- Two related projects:
  - West Tennessee Solar Farm near Brownsville ($31 M)
  - Tennessee Solar Institute – Solar Opportunity Funds ($29.2 M)
- Designed to leverage existing solar base, support recent solar recruits, and attract new solar investments

West Tennessee Solar Farm Objectives

- Utility-scale solar power production
  - 5 megawatts, one of largest in Southeast
  - Fixed mount, multicrystalline or monocrystalline photovoltaic panels
- Connect to TVA power grid through local distributor
- Educate the public concerning solar energy
  - Re-invest revenue from power sales in array expansion, improvements, education programs
  - Integrate with TDOT Interstate Education & Welcome Center to be co-located with Solar Farm
- Future demonstration of emerging technologies, materials
  - Faster commercialization of Solar Institute innovation

Solar Farm Concept



Expect fixed mount solar panels and small scale demonstration of next generation technologies

FOR ILLUSTRATIVE PURPOSES ONLY

Preliminary Solar Array Layout

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www.delorme.com

Scale 1 : 5,600
1" = 466.7 ft
Data Zoom 15-2

Legend
- Solar Panels, Proposed
- Access Road
- Site Boundary
- Site Clearing
- Site clearing
- Solar Panels, Future
- Reserved for TDOT

SIGNALENERGY
WIND | SOLAR | BIOMASS

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Chattanooga, TN 37421
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Fax (423) 643-2040
www.signal-energy.com

DATE	PROJECT MANAGER	CHECKED BY
September 29, 2010	G. Pawson	M. Mackenzie
SHEET TITLE	APPROVED BY	DRAWING BY
8147—UTRF West Tennessee Solar Site Layout Drawing	J. Bell	E. Joki
	PROJECT NUMBER	DRAWING NUMBER
	8147	S-100

Solar Farm Project Schedule

- **June, 2010**
  - Award Contract for Design/Build of Solar Array /Utility System Impact Study
- **September, 2010**
  - Conduct System Impact Study for Utility Connection
  - Initiate Subcontract Activities
  - Education and Welcome Center Program Planning
- **October, 2010**
  - Public Hearing for Environmental Assessment
- **November, 2010 - May, 2011 (Post-FONSI)**
  - Issue RFP for Design/Build Utility Upgrade
  - Award Contract for Utility Upgrade
  - Site Preparation
  - Equipment Procurement and Receipt
  - Array Installation
  - Utility System Improvement Installation
  - Array Commissioning and Startup
- **Spring, 2011 Education and Welcome Center Construction (TDOT)**

UNIVERSITY OF TENNESSEE RESEARCH FOUNDATION

TENNESSEE

Tennessee Solar Institute

Solar Installation Grant Program

Goal: Speed the deployment of solar energy in TN

- $9M available funding
- Reimbursement based on installed capacity
- Open to any Tennessee for-profit or 501(c)3 company

- **Eligible Systems**
  - Rooftop solar systems on existing structures can have a nameplate capacity of 1 kW or greater up to 200 kW (appropriately sized for the building)
  - Ground- mounted systems adjacent to existing structures must have a nameplate capacity <60 kW

Harrison Dairy – Loudon County
October 15, 2010

Solar Installation Grant Program

- Program opened June 21st
- As of November 5th, $9M in approved grants (108)
  - 92 Notices to Proceed issued
  - 27 projects started
- ~5.8 MW of capacity
- ~$32.9M total system cost
- System sizes range from 4.2 – 200.0 kW
- All Congressional districts are represented

Autumn Acres – Cumberland County
October 6, 2010

TENNESSEE SOLAR INSTITUTE

Solar Innovation Grants Program

Goal: To encourage growth of Tennessee's solar industry

- Technical Assistance
- Facilities and Equipment Improvements
- Renewable Energy Products
- Process Improvements
- Technology Improvements
- Workforce Development

Richland Animal Clinic – Davidson County
October 6, 2010

Solar Innovation Grant Program

- Timeline
  - RFP released August 24, 2010
  - Proposals due September 24
  - Merit Reviews started October 1
  - Anticipated Notice of Awards – early November
- Proposals
  - 89 eligible
    - ~$15.7M in funds requested
    - $33.6M in total project costs
    - All 9 Congressional districts represented
  - 24 ineligible
- Review process is nearing completion

Industry Assistance and Workforce Development

- Develop and manage partnerships to support commercialization
- Create and maintain a database of industry resources and contacts
- Conduct partnering retreats, meetings and seminars
- Provide “on the ground” assistance to industry
- Conduct industry needs assessment for workforce needs
- Provide workforce development training opportunities
  - Planning for three 5-day NABCEP training courses (September – November 2010)
- Coordinate engineers, scientists and manufacturers in solving specific technical problems and improving cost effectiveness

Toll Free: 1-866-SOLAR90
1-865-974-4705
E-mail: solar@tennessee.edu
Website: http://solar.tennessee.edu

Tennessee Solar Institute

TN Solar Conversion and Storage Using Outreach, Research and Education (TN-SCORE)

- Creating a “culture of collaboration”
  - Creation of network nodes
  - Integration of individual researchers, institutions and organizations
- Plans for better development of a well prepared, STEM-enabled workforce
- Programs to sustain competitive research across the state
- Contribution to state economic development priorities




TN-SCORE research theme

- Alternative Energy Technologies: emphasis on solar
  - **Thrust 1:** Advanced Solar Conversion and Innovation (Barry Bruce:UTK, Kane Jennings:VU)
  - **Thrust 2:** Components and Devices for Energy Storage and Conversion (Tom Zawodzinski:UTK, Cynthia Rice-York:TTU)
  - **Thrust 3:** Nanostructures for Enhancing Energy Efficiency (Sandra Rosenthal:VU, Nate Smith:MTSU)

Statewide programs offered

- Research Stimulation Awards – available to new faculty (hired within the past five years) at non-research institutions (>$40M federal research)
- Support for M.S. students at TSU/Fisk to enter into a BRIDGE program to Ph.D. at UTK or Vanderbilt
- “Meetings-in-Miniature” - *promote natural intrastate collaboration and partnering beyond the timeline and scope of the proposal*
- Grants for networking/cyberinfrastructure enhancements
- K-12 outreach

Workforce development offerings

- Corporate summer internship opportunities
- Summer research experience for undergraduate students or rising freshman
- Summer mini-sabbaticals for faculty at 2-year community colleges or 4-year undergraduate institutions
- Summer mini-sabbaticals for faculty at Tennessee high schools
- Thrust leaders will visit high school classrooms
- Yearlong undergraduate training program
- Council for Undergraduate Research workshop




TN-SCORE impact

- Proposal specifically ...
  - Builds on Tennessee's strengths
  - Leverages state investments
  - Aligns with recent industry recruitment success
  - Addresses identified barriers
- Award will allow for a large statewide research collaboration - build the foundations and relationships needed to enhance success
- Identified metrics will be monitored to measure outcomes/success