

(Grant Number: EE00160)

State Title: Volunteer State Solar Initiative

1. Market (choose one):

<input type="checkbox"/> Buildings	<input type="checkbox"/> Industry
<input checked="" type="checkbox"/> Electric Power and Renewable Energy	<input type="checkbox"/> Policy, Planning, and Energy Security
<input type="checkbox"/> Energy Education	<input type="checkbox"/> Transportation

2. State: Tennessee

3. Program Year: 2010 Date Start: 5/01/09 Date End: 3/31/12

4. Topics Involved in the Overall Program Market (choose all that apply):

<input type="checkbox"/> Agriculture	<input type="checkbox"/> Federal, state, and local facilities	<input checked="" type="checkbox"/> Procurement of efficient products **
<input type="checkbox"/> Alternative fuels	<input type="checkbox"/> Federal Energy Management Program	<input checked="" type="checkbox"/> Public information
<input type="checkbox"/> Appliance efficiency and standards	<input checked="" type="checkbox"/> Financing energy programs	<input type="checkbox"/> Rating and labeling
<input type="checkbox"/> Bioenergy and biobased products	<input type="checkbox"/> Fuel cells	<input type="checkbox"/> Rebuild America
<input type="checkbox"/> Biomass power	<input checked="" type="checkbox"/> General energy efficiency for industry	<input type="checkbox"/> Residential buildings
<input type="checkbox"/> Building America	<input type="checkbox"/> Geothermal	<input type="checkbox"/> Right turn on red **
<input type="checkbox"/> Carpools, vanpools, and ridesharing **	<input checked="" type="checkbox"/> Green power programs	<input type="checkbox"/> Schools
<input type="checkbox"/> Clean Cities	<input type="checkbox"/> Heavy vehicles and trucks	<input checked="" type="checkbox"/> Solar power
<input checked="" type="checkbox"/> Climate change planning	<input type="checkbox"/> Home energy ratings	<input checked="" type="checkbox"/> State energy strategic plans
<input type="checkbox"/> Combined heat and power	<input type="checkbox"/> Hydrogen	<input type="checkbox"/> Telecommuting
<input checked="" type="checkbox"/> Commercial buildings	<input type="checkbox"/> Hydropower	<input type="checkbox"/> Thermal **
<input checked="" type="checkbox"/> Curriculum development	<input checked="" type="checkbox"/> Industrial processing	<input type="checkbox"/> Traffic signals
<input checked="" type="checkbox"/> Demand reduction	<input type="checkbox"/> Industries of the future	<input checked="" type="checkbox"/> Transmission and infrastructure reliability
<input checked="" type="checkbox"/> Distributed energy generation	<input type="checkbox"/> Lighting **	<input type="checkbox"/> Transportation alternatives
<input checked="" type="checkbox"/> Energy and environment	<input type="checkbox"/> Low-income weatherization	<input type="checkbox"/> Waste management and recycling
<input type="checkbox"/> Energy building codes	<input checked="" type="checkbox"/> Manufacturing	<input type="checkbox"/> Water systems
<input type="checkbox"/> Energy consumption and price statistics	<input checked="" type="checkbox"/> Motors and other industrial systems	<input type="checkbox"/> Wind energy
<input type="checkbox"/> Energy emergency planning	<input type="checkbox"/> Performance contracting	
<input type="checkbox"/> ENERGY STAR	<input checked="" type="checkbox"/> Policy and energy legislation	

5. Estimated Annual Energy Savings: 0 MBtus

6. Description (executive summary of goals and objectives)*

INTRODUCTION

Contained in this application is a request for approval of State Energy Program (SEP) funds under the American Recovery and Reinvestment Act (ARRA) to support a comprehensive solar energy and economic development program focusing on job creation, education, renewable power production, and scientific efforts to reduce the cost and increase the efficiency of solar energy. We believe the targeted use of these federal resources has the potential to enhance the unique economic and renewable-energy activities already underway in our state, accelerate the market transformation that is occurring nationally, and address President Obama's short-term goals in economic stimulus and long-term objectives in expanding renewable energy production and use, both in Tennessee and nationwide.

BACKGROUND

As a prelude to our request, allow us to share recent developments that have established Tennessee as a leader in promoting cleaner and more efficient energy use leading up to enactment of the ARRA. Over the past two years, under the leadership of Governor Phil Bredesen and the Tennessee General Assembly, our state has made major strides in encouraging energy efficiency and conservation and promoting renewable energy. Perhaps most notably in the efficiency category, the state in 2008 established the Energy Efficient Schools Initiative (EESI) using approximately \$90 million in excess proceeds from our state's lottery program to fund energy-efficient retrofits of public school buildings across Tennessee. The first round of EESI grants is currently being awarded to all school districts across the state under this forward-looking program.

Concurrent with efforts to improve energy conservation in our schools, Governor Bredesen established the Governor's Task Force on Energy Policy to explore additional statewide strategies, including: Advancing efforts by state government to lead by example in retrofitting its largest buildings with more energy efficient equipment and appliances and purchasing more fuel efficient vehicles in its fleet; formally designating the clean-energy technology sector as eligible for our state's emerging industry tax credit; and, in the interest of promoting statewide energy efficiency, establishing a residential building code in areas of the state where no minimum standards exist. Legislation is currently before the General Assembly to accomplish these goals and more.

It is important to note that the State of Tennessee's investments in energy efficiency are ongoing. Currently, we are examining options for programming up to \$38 million held in our petroleum violation escrow (PVE) accounts to undertake additional allowable energy related activities, such as the provision of low-interest loans for small- and medium-sized commercial and industrial firms seeking to make energy efficiency improvements in their facilities. Our detailed plans for use of these resources will be included in Tennessee's upcoming application for regular SEP formula funds and in the state's PVE annual report. The General Assembly has authorized the Energy Policy Office to program remaining funds in our PVE accounts as part of the state budget for the 2009-10 fiscal year, which began July 1, 2009.

Additionally, the state has focused significant resources in promoting cleaner and independent sources of energy in the transportation sector. In 2007, we invested approximately \$70 million to establish the Tennessee Biofuels Initiative between the University of Tennessee (UT) and Oak Ridge National Laboratory (ORNL). The resulting activities led to a partnership between DuPont Danisco Cellulosic Ethanol, LLC, and Genera Energy, LLC, representing the UT Research Foundation. Last October, the partnership began developing a pilot-scale cellulosic ethanol biorefinery and research and development facility. The state's investments successfully leveraged a \$135-million investment by the U.S. Department of Energy (DOE) to create a Bioenergy Research Center at ORNL. More recently, we began exploring opportunities to accelerate the development of electric vehicles, including those that will be produced by Nissan, which in 2008 completed the relocation of its North American headquarters to Middle Tennessee. The General Assembly approved Governor Bredesen's request to appropriate approximately \$5 million from our PVE accounts to participate in a DOE-approved multistate electric vehicle project led by Electric Transportation Engineering Corp., based in Phoenix, Ariz., and Nissan North America, based in Franklin, Tenn. The ARRA-funded project, announced in August, is being described as the largest deployment of electric vehicles and infrastructure ever undertaken.

Finally, Tennessee is committed to growing the clean energy technology sector of the state's economy. A June 10, 2009, report by the Pew Charitable Trusts found that Tennessee is one of only three states in the country — including Colorado and Oregon — that enjoy a large and fast-growing clean energy economy. Tennessee's economic development strategy has generated notable success in recruiting renewable-energy firms, marked by billion-dollar investments in our state by two of the solar industry's largest suppliers. Within the past year, Hemlock Semiconductor and Wacker Chemie AG, both producers of polycrystalline silicon, a key precursor element in photovoltaic solar panels, announced plans to bring thousands of jobs to Tennessee as the U.S. solar market expands. Hemlock Semiconductor will construct its production facility in Middle Tennessee and Wacker Chemie will open a production site in Southeast Tennessee. Their arrival in the Volunteer State is in part attributable to an innovative green-energy tax credit approved by the General Assembly last year. The companies' decisions, we believe, reflect a confidence in Tennessee's commitment to making further investments that encourage the development of solar energy. We also believe current conditions in the solar industry hold the potential for future growth in our state.

Looking ahead, the State of Tennessee's challenge is to leverage and build on the current momentum created by activities and investments already underway in our state in energy efficiency and conservation and renewable energy. In considering options for use of ARRA funds, we saw two fundamental paths: Augment existing substantial programs and seed smaller new initiatives, both of which are expected to occur using funds held in our PVE accounts; or pursue the targeted use of additional federal resources to advance our state's existing renewable energy and economic development strategy, which aligns with the President's key short- and long-term economic stimulus and renewable energy goals. We believe the latter option is the best approach.

PROPOSAL

Guided by the increasingly bright prospects of continued growth in the solar industry in Tennessee, we are proposing to use the state's SEP funds under ARRA to build on our current efforts by establishing a comprehensive solar energy and economic development program focusing on job creation, education, renewable power production, and technology commercialization efforts to reduce the cost and increase the efficiency of solar energy, which in part will encourage energy efficiency and conservation by supplanting the use of electricity generated by fossil fuels. Our proposed use of ARRA funds is part of a broader strategy to stimulate short-term economic activity, position Tennessee to support expansion of the solar industry, and help accelerate the national market transformation in a manner that will create jobs and ensure a clean energy future.

Specifically, Tennessee's proposed solar initiative consists of two integrated projects: The Tennessee Solar Institute at UT and ORNL; and the West Tennessee Solar Farm near Brownsville, a five-megawatt multi-acre power generation facility. Short-term, the projects will go hand-in-hand in creating or supporting jobs in construction, manufacturing and installation, and scientific efforts to reduce the cost and increase the efficiency of solar energy. Long-term, the combined investments are designed to strengthen Tennessee's position as a national energy research hub and emerging force in the U.S. solar industry. Each project is described below in detail.

TENNESSEE SOLAR INSTITUTE

The Tennessee Solar Institute at UT and ORNL is a new initiative that will serve as a center for excellence to spur accelerated growth in Tennessee's burgeoning solar industry and a crossroads for a wide range of solar-related activities in the Volunteer State. Among other purposes, it will bring together scientists, engineers and technical experts with business leaders, policymakers, and industry workers to help speed the deployment and of solar photovoltaic (PV) technology. It will be a home for regional and state initiatives that foster the creation of new businesses. By establishing strategic industry partnerships across the solar value chain, the Institute will provide technical assistance and workforce development to solar industry firms, assist in technology commercialization, help improve facilities and manufacturing processes, and undertake other efforts to help grow the solar industry in Tennessee.

A wide range of activities will be conducted as part of the Institute's overall mission through UT and ORNL. For the purposes of expending SEP-ARRA funds, the State of Tennessee proposes using the Institute to administer or coordinate two specific activities deemed allowable under DOE regulations and SEP-ARRA guidelines: "Solar Innovation Grants" and "Solar Installation Grants," which are described below. The net result of these activities will encourage energy efficiency and conservation by supplanting the use of electricity generated by fossil fuels.

SOLAR INNOVATION GRANTS

To encourage growth in Tennessee's solar industry, the State of Tennessee proposes using a portion of its SEP-ARRA funds to establish a "Solar Innovation Grants" program for qualifying Tennessee solar industry firms seeking technical assistance, facility or process improvements, workforce development and other support allowable under DOE regulations and SEP-ARRA guidelines. This proposal will accelerate market transformation toward renewable energy and fits within SEP-ARRA goals and objectives because it encourages energy efficiency and conservation and supplants the use of electricity generated by fossil fuels. Solar Innovation Grants will be administered by the Tennessee Solar Institute at UT and ORNL under a contract with the Department of Economic and Community Development (ECD).

Activities eligible for Solar Innovation Grants will include:

- **Technical Assistance:** Qualifying solar industry firms or firms engaged in solar-related business activities may access grants to support use of the following technology commercialization services: conducting energy assessments or audits; launching energy efficiency/renewable energy (EE/RE) benefit promotional and marketing activities or campaigns; engaging in, responding to or leveraging funding opportunities for EE/RE measure projects; and conducting feasibility studies to facilitate access to capital and credit for EE/RE measure projects. The Tennessee Solar Institute will issue a Request for Proposals for Technical Assistance Innovation Grants on behalf of ECD. ECD estimates ten (10) \$100,000 Technical Assistance Innovation Grants will be awarded.

- **Facilities and Equipment Improvements:** Qualifying firms may access grants in order to implement, expand, upgrade or demonstrate EE/RE products, equipment and materials for use in their operations. Specifically, grants will be used to employ EE/RE measures by purchasing and installing equipment. Results will be measured by capturing baseline data and measuring EE/RE progress or variance from the baseline in areas such as oil displacement, efficiency improvements and energy conservation. The Tennessee Solar Institute will issue a Request for Proposals for Facilities and Equipment Improvement Innovation Grants on behalf of ECD. ECD estimates ten (10) \$500,000 Facilities and Equipment Improvement Innovation Grants will be awarded.
- **Renewable Energy Products:** Qualifying firms may access grants in order to acquire, upgrade or demonstrate renewable energy products, equipment and materials for use in their operations, provided that any energy-generation demonstration must be small scale. “Small scale” is defined as appropriately sized units on existing rooftops and parking shade structures, or 60kW systems or smaller installed on the ground within the boundaries of an existing facility. The Tennessee Solar Institute will issue a Request for Proposals for Renewable Energy Product Innovation Grants on behalf of ECD. ECD estimates that ten (10) \$150,000 Renewable Energy Product Innovation Grants will be awarded.
- **Process Improvements:** Qualifying firms may access grants in order to make production, manufacturing, assembly or distribution processes be less energy-intensive by conducting industrial energy audits and through the purchase and installation of energy efficient and renewable energy equipment and materials, including reasonable design costs. The Tennessee Solar Institute will issue a Request for Proposals for Process Improvement Innovation Grants on behalf of ECD. ECD estimates that ten (10) \$500,000 Process Improvement Innovation Grants will be awarded.
- **Technology Improvements:** Qualifying firms may access grants in order to interact with resources that can analyze existing techniques or technologies in the interest of speeding the improvement and deployment of commercially available EE/RE techniques and technologies. SEP-ARRA funds will cover travel, conference, database research and other ancillary costs, to facilitate such interactions. The Tennessee Solar Institute will issue a Request for Proposals for Technology Improvement Grants on behalf of ECD. ECD estimates that ten (10) \$100,000 Technology Improvement Innovation Grants will be awarded.
- **Workforce Development:** Qualifying firms may access grants in order to conduct education and training activities for their employees related to the sale, installation, and maintenance of solar systems and equipment. Examples of possible activities include training for solar PV installers and technicians and other certification approved by the North American Board of Certified Energy Practitioners (NABCEP). In certain instances, SEP-ARRA funds may be used to host meetings and conferences and cover costs such as material purchases, space rentals, travel expenses and instructor fees. NEPA categorical exclusions are expected in loan and grant programs for “training programs.” Contemplated activities will fall within this general scope. A detailed scope of intended training objectives will be developed post-award. The Tennessee Solar Institute will issue a Request for Proposals for Workforce Development Innovation grants on behalf of ECD. ECD estimates that twenty (20) \$50,000 grants Workforce Development Innovation grants will be awarded.

SOLAR INSTALLATION GRANTS

To speed the deployment of solar energy, the State of Tennessee proposes using a portion of its SEP-ARRA funds to establish a “Solar Installation Grants” program for qualifying Tennessee businesses to help fund the purchase and installation of small-scale solar PV systems. This proposal fits within SEP-ARRA goals and objectives because it encourages energy efficiency and conservation and supplants the use of electricity generated by fossil fuels. Solar Installation Grants will be administered through the State’s existing Tennessee Clean Energy Technology Grant Program (TN-CET) in partnership with the Tennessee Solar Institute. Installation Grants will be small scale. “Small scale” will be defined as appropriately sized units on existing rooftops and parking shade structures, or 60kW systems or smaller installed on the ground within the boundaries of an existing facility.

Guidelines for Solar Installation Grants will include:

- **Eligible Participants:** For-profit retail, industrial or commercial businesses licensed to do business in Tennessee. Farms are eligible provided that at least 51% of income is generated from farming operations.
- **Eligible Systems:** Small-scale solar PV systems installed either on or adjacent to buildings located in Tennessee and used by the applicant for retail, commercial and/or industrial purposes. Installation Grants will be small scale. “Small scale” will be defined as appropriately sized units on existing rooftops and parking shade structures, or 60kW systems or smaller installed on the ground within the boundaries of an existing facility.
- **Maximum Award:** Forty percent (40%) of an installed system’s cost, up to a maximum of \$75,000. Businesses with multiple locations can apply for grants in up to three locations.
- **Other Requirements:** Grants will be paid on a reimbursement basis after certifications of completion and support documentation have been provided. Systems and installations must meet applicable local building codes and have required permits. Contractors or installers must be licensed, bonded and insured, and preferably certified by NABCEP.

Institute activities such as those described above will speed the deployment of and accelerate advances in energy efficiency and renewable energy initiatives. More broadly, the Institute’s efforts will result in a heightened understanding and acceptance of solar energy across the state, region and nation. The Institute will attract additional solar-industry investment in Tennessee. As the Institute develops, the State may identify additional activities allowable under DOE regulations and SEP-ARRA guidelines. As additional activities are identified, the State may request funding consideration under revised plans.

WEST TENNESSEE SOLAR FARM

The West Tennessee Solar Farm near Brownsville is envisioned as a five-megawatt multi-acre power generation facility located on a piece of property in Haywood County, Tennessee, adjacent to Interstate 40. The Farm will be comprised of approximately 22,300 panels and demonstrate a range of commercially available solar techniques and technologies. These will likely include: traditional stationary solar photovoltaic (PV) technology, solar tracking technology, thin-film solar technology, and energy storage technology. The State intends to contract the development, installation and management of the Farm — specifically, the power-generation system — to the University of Tennessee (UT) and/or Genera Energy, LLC, of Knoxville, Tennessee, at UT-affiliated firm that has established a track record of success in developing the state’s bioenergy programs. Under a preliminary agreement, power generated by the Farm will be purchased at a renewable energy price by the Tennessee Valley Authority (TVA), a federally owned utility that is the nation’s largest public power company. Proceeds from power sales will be reinvested in the site for maintenance, expansion and improvement. All program income will be handled in accordance with 10 CFR § 600.124. When the power purchase agreement is finalized, the Tennessee Department of Economic and Community Development (ECD) will submit a plan that details how program income will be used for planned maintenance, expansion and improvement of the Farm. Any expansion of the Farm funded through revenue generated by the power purchase agreement will be limited to commercially available technology. The Solar Farm as currently planned is approximately one mile from an independent industrial megasite also planned for the County. The State of Tennessee’s FY2009-10 budget includes state funds for the purchase of the land associated with both the industrial megasite and the Solar Farm. There is no link between the power or revenue generated at the Solar Farm with the megasite.

The Solar Farm’s purpose and goals align directly with the principles of the Recovery Act, DOE Objectives, and goals of the State Energy Program as outlined in Section 4.2 of the SEP-ARRA Guidance. Specifically: Demonstrate the zero-carbon production of electricity on a highly visible and significant scale that will create jobs, educate the public on the benefits of solar energy, encourage future renewable energy interest and investments across Tennessee and throughout the region, reduce GHG emissions, and increase renewable energy generation. The five-megawatt Farm will be one of the largest solar installations in the Southeastern U.S. — a region that is heavily dependent on carbon-emitting sources for power generation. The Farm will demonstrate that solar technology can be used effectively, with no adverse environmental impact, to generate electricity from sources that produce no GHG emissions.

The Solar Farm will be a model for utilities seeking to diversify energy generation portfolios in order to comply with new laws, rules or regulations. The Farm will reduce GHG emissions by up to 15 million tons of CO₂ equivalents annually and generate 6 million to 8 million kWh of renewable energy annually. Under a preliminary agreement, power generated by the Farm will be purchased at a renewable energy price by TVA. TVA will purchase the power through an interconnection agreement with a local distributor, Chickasaw Electric Cooperative. From an economic-development standpoint, the Farm will serve as a showcase for Tennessee-made solar products and components, such as panels assembled by Sharp Solar Energy Solutions Group, which operates a nearby manufacturing facility in Memphis, and glass produced by AGC Flat Glass, which has a longstanding manufacturing presence in Northeast Tennessee. Additionally, the Farm will include materials produced by more recent entrants to the Volunteer State, including Hemlock Semiconductor and Wacker Chemie. Product orders will represent a boost in short-term production for manufacturers such as Sharp and AGC Flat Glass, and result in downstream economic activity associated with installation. Through strategic partnerships, the Farm will demonstrate other products and components made by firms with a presence in Tennessee and the region. Additionally, the Solar Farm may assist in the Solar Institute's technology commercialization efforts by demonstrating improved solar PV technologies and other commercially available technologies that may improve efficiency related to the grid.

Finally, the Solar Farm will have a significant public education mission that will allow citizens and students to gain firsthand exposure to solar energy production in order to better understand its benefits. Each year, more than 9.7 million vehicles will pass by the Farm on the existing Interstate 40 corridor in West Tennessee. Public education activities will occur at a proposed state-funded Education and Welcome Center that will be located directly on I-40, adjacent to the Farm. SEP-ARRA funds will be used to support educational activities at the Farm site and inside the Education and Welcome Center. SEP-ARRA funds will not be used to support construction or land purchase. The Education and Welcome Center will be developed in coordination with the Tennessee Department of Transportation (TDOT) as a pull-through interstate welcome center, resulting in minimal traffic disruption in the immediate area and eliminating the need for local access roads into the site. TDOT or another state entity will coordinate and execute the land acquisition using state funds. Based on a preliminary environment site assessment, there do not appear to be critical environmental issues at the subject site. There is no presence of threatened and endangered species, wetlands, or cultural resources that would be significantly impacted by installation activities. No significant issues are expected with regards to air quality, water or land use, socioeconomics, or environmental justice.

CONCLUSION

Together, we believe the integrated projects constitute a comprehensive solar energy and economic development program that will move Tennessee's economy forward and produce both short-term and long-term economic benefits. The proposal is a natural extension of Tennessee's overall energy strategy, which includes a broad variety of energy efficiency and conservation and renewable energy investments and activities already underway. Perhaps most important, as stated, our experience gives us confidence that the targeted use of additional federal resources will promote the President's dual objectives to stimulate the U.S. economy and strengthen America's clean energy future.

7. Program Year Milestones*

Milestone		Planned (Number)
	Solar Institute	
1	Institute staffing and management plan; start-up equipment purchase	0-3 months
2	Drafting and release of RFPs for Year 1 Innovation and Installation grants	3-6 months
3	Develop and manage strategic partnerships to support technical assistance commercialization and other activities	3-36 months
4	Develop and maintain database of experts in key technology and services	3-36 months
5	Conduct NABCEP-certified workforce development training sessions	3-36 months
6	Year 1 Innovation and Installation grant awards	6-9 months
7	Drafting and release of RFPs for Year 2 Innovation and Installation grants	9-12 months
8	Year 1 Annual Report	12 months
9	Organize regional solar industry summit	12 months
10	Year 2 Innovation and Installation grant awards	12-15 months
11	Drafting and release of RFPs for Year 3 Innovation and Installation grants	18-21 months
12	Year 3 Innovation and Installation grant awards	21-24 months
13	Year 2 Annual Report	24 months
14	Year 3 Annual Report	36 months
	Solar Farm	
1	General staffing and Project management plan; Completion of detailed Project definition and conceptual overview of Project with design and construction work plan and initial budget; A-level Project schedule; formation of Advisory Committee; non-binding term sheets with principal strategic partners site selection; initiate environmental assessment; identify permitting requirements and schedules	0-3 mos
2	Selection of design firm, site engineering firm; exhibit A-level engineering and design of Solar Farm, detailed budget and schedule; site acquisition	3-5 mos
3	Complete design and engineering; submit permit applications and other regulatory; qualification of general contractors and solar contractors; qualification of solar products vendors (Tennessee and supplemental); issue RFP to bidders; select firm(s) and negotiate contracts	3-7 mos
4	Continue permitting and other regulatory; order long lead items; rough grading of site; engineering and design of grid connectivity; issue bid packages for grid equipment and installation	7-10 mos
5	Install, commission and operate Solar Farm; issue installation and procurement contracts for connectivity to the power grid	10-16 mos
6	Operate and maintain Solar Farm; integrate testing and modifications in approved Institute Projects; detailed work plan, schedule and budget for continued operations beyond ARRA funding timeline	16-36 mos

*Please use additional pages if more space is needed.

**Mandatory requirement

8. Standard Metrics (required):**

JOB METRICS	Planned
Jobs Created/Retained	434
TOTAL JOBS	434

The West Tennessee Solar Farm will result in an estimated 165 jobs, based on a University of California, Berkeley, analysis of renewable energy job creation (which found 20 manufacturing and 13 installation job-years are supported for 1-megawatt of solar generation). Solar Installation grants, administered by the Tennessee Solar Institute in support of distributed generation activities, will result in an estimated 92 jobs based on the same analysis. The Institute itself will employ 19 through SEP-ARRA.

Additionally, Solar Innovation grants administered by the Solar Institute will result in significant economic benefits through activities such as energy efficiency/renewable energy (EE/RE) upgrades, technical assistance, technology commercialization and workforce training. For example, based on estimated benefits calculations under DOE’s Energy Efficiency Conservation Block Grant program, every \$92,000 invested in efficiency activities results in one job created. Using this conservative rule of thumb, we estimate that Solar Innovation grants will result in at least 158 jobs and likely more.

NOTE: Not counted in the jobs created/retained estimate are positions that will be associated with the state-funded development of the UT-ORNL Joint Institute for Advanced Materials, where the Tennessee Solar Institute will be located, or the state-funded development of the Education and Welcome center on Interstate 40 at the West Tennessee Solar Farm.

9. Specific Metric Activity (required):**

Metric Activity: Renewable Energy Generated

SPECIFIC METRICS	Planned
Annual renewable energy generated (kWh) Solar Farm	6 – 8 million kWh
Annual renewable energy generated (kWh) Solar Installation Grants	3.4 – 4.5 million kWh
Annual Volunteer State Solar Initiative total renewable energy generated	9.4 – 12.5 million kWh
Annual GHG reductions (pounds of CO2) Solar Farm	13 – 15.million
Annual GHG reductions (pounds of CO2) Solar Installation Grants	7.3 – 8.4 million
Annual Volunteer State Solar Initiative total GHG reductions (pounds of CO2)	20.3 – 23.4 million
Annual revenue generated from power sales at solar farm	\$900,000 – \$1,050,000

10. User Specified Metrics (optional): *

METRICS	Planned
Solar panels manufactured (Solar Farm and Ins	34,800
Solar panels installed	34,800
Strategic partnerships established	10 - 15
K-12 students educated	232,400
Solar Farm interstate visibility impressions	9.7 million

11. Program Year Funds by Source *

	Planned
a. SEP grant (all funds in the approved budget)	
SEP ARRA	\$ 62,482,000
	\$
Market Budget Total	\$ 62,482,000
b. Leveraged funds anticipated (outside approved budget)	
State funding previously allocated for the construction of the Tennessee Solar Institute	\$10,000,000
Private funding in support of solar installation grants	\$13,500,000

**Please use additional pages if more space is needed.*

***Mandatory requirement*