

## **Energy Tax Planning for Tennessee's Seismic Shifts from Coal to Cleantech**

By Charles R. Goulding and Charles G. Goulding

On April 14, 2011 Tennessee's TVA announced a monumental shift from coal fired electric utility plants to Cleantech. To prepare for this conversion, Tennessee industrial and warehouse industrial property owners should be utilizing Section 179 D EPAct tax incentives to get their buildings in fiscal and physical shape for solar P.V. This article 1) presents the tax opportunities, 2) provides the details of the recent TVA announcement, and 3) describes the Cleantech opportunity with the large Memphis and Nashville warehouse and industrial building sector.

### **The Section 179D EPAct Tax Opportunities**

Pursuant to Section 179D of EPAct and its underlying ASHRAE (American Society of Heating Refrigeration and Air Conditioning) building energy code, commercial buildings are eligible for energy efficiency tax deductions of up to \$1.80 per square foot. If a building's energy reducing investment doesn't qualify for the full \$1.80 per square foot deduction, then deductions are available for any of the three major sub-systems, including:

1. Lighting
2. HVAC (Heating, Ventilation and Air Conditioning).
3. The building envelope.

Each component can qualify for up to 60 cents per square foot in EPAct tax deductions. The building envelope is anything on the perimeter of the building that touches the outside world including roof, walls, windows, doors, the foundation and related insulation layers.

## **Alternative Energy Tax Credits and Grants**

There are multiple 30% or 10% tax credits available for a variety of alternative energy measures with varying credit termination dates. For example, the 30% solar tax credit and 30% fuel cell credit expires January 1st 2017 and the 10% Combined Power tax credit also expires January 1st, 2014. The 30% closed loop and open loop biomass credit expires January 1st, 2014.

All alternative measures that are eligible for the 30% and 10% tax credits are also eligible for equivalent cash grants for the three years starting January 1st 2009 and ending December 31st 2011.

## **The EPA's National Enforcement Initiative**

The EPA's National Enforcement Initiative has sought to increase compliance with the Clean Air Act. To date, 22 settlements have been reached within the coal-fired plants sector, the most recent of which occurred with the Tennessee Valley Authority. This agreement in many ways represents the most sweeping changes to pollution reduction and energy efficiency in the United States.

Highlights of the agreement include the following:

The TVA has agreed to fund \$350 million for environmental projects. Of this money, \$240 million will go toward TVA-run energy efficiency projects with another \$60 million to be divided amongst Tennessee and neighboring states.

TVA-run projects will include a Smart Energy Communities project that will focus on energy efficiency in low-income communities, retrofitting housing with cost-effective energy-efficient technologies. TVA will also dedicate \$40 million of its funding to hybrid electric charging stations and \$8 million to a clean diesel and electric vehicle project for public transportation systems.

The TVA has also agreed to invest \$3 to \$5 billion on new and upgraded pollution controls, which the EPA estimates will prevent 3,000 premature deaths, 2,000 heart attacks and 21,000 cases of asthma each year, an annual savings of \$27 billion.

Finally, the TVA also agreed to close 18 of its oldest coal-fired power plants and retrofit eleven others for reduced air emissions. Here is a table of the plants which are closing:

**Tennessee Valley Authority  
Coal Fired Plant Closures**

Plant, Town	Number of Plants
Johnsonville, New Johnsonville	10
Windows Creek Fossil, North Alabama	6
John Sevier, Rogersville	2

For the eleven plants which must be retrofitted, nitrogen oxide emissions must be reduced by 48,000 tons per year (69%) and sulfur dioxide by 208,000 tons per year (67%).

**Electric Cars**

Planning departments in Memphis and nearby towns are identifying locations for 71 Level II charging stations for electric cars. Such planning is part of the six-state EV project, deploying electric car charge infrastructure with help from the DOE and will dovetail nicely with the TVA's funding.

Tennessee's involvement in the initiative is of particular benefit to Memphis-based Nissan. Owners of the Nissan Leaf will receive residential charges for their cars as part of the EV project.

## **Additive Cleantech Investment**

In May, Tennessee Governor Phil Bredesen called for further investment in the green sector. Bredesen's initiative would use \$62.5 million in federal stimulus funds to launch the two-part Volunteer State Solar Initiative. The first part would fund science and industry that result in cheaper and more efficient uses of energy statewide.

The second part of the proposal is the West Tennessee Solar Farm near Brownsville, which would generate five megawatts of electricity and serve as a model for further solar-related investments and research

This proposal suggests that Tennessee's commitment to the green sector may not simply be a reaction to increased federal compliance efforts.

## **Tennessee Warehouse Solar Tax Planning**

Solar P.V. rooftop systems are used to generate electricity at warehouses. Warehouses typically make ideal solar installation candidates since they often have large, unobstructed flat roofs. Large roofs enable large P.V. systems that generate more electricity. Solar P.V. installations are entitled to 30% tax credit or now for the first time a 30% grant<sup>1</sup>. When using either the credit or the grant, normally five year MACRS tax depreciation is available. For the period September 9 through December 31st, 2011 100% bonus tax depreciation is available. For 2010, 50% bonus depreciation is available. Often tax equity partners will be willing to make the investment for a rooftop warehouse solar installation and enter into a power purchase agreement where the warehouse operator post-installation will purchase its electricity at an agreed price for a fixed period of time, usually 15 to 20 years. The tax equity partner will use a combination of the power

---

<sup>1</sup> See Charles Goulding, Jacob Goldman and Taylor Goulding, *Tax Planning for the 21<sup>st</sup> Solar Century*, Corp. Bus. Tax'n Monthly, February 2009, at 23.

purchase agreement annual revenue, the tax credit or grant, utility rebates if available, green tag emission payments (called renewable energy certificates or REC's) and net metering electricity payments for selling the excess power back to the grid to generate an acceptable economic return. With a power purchase agreement, a warehouse is essentially renting its roof as an alternate energy electrical generator.

**Large Memphis Warehouse Concentration Suitable for Solar**

The Memphis area has one of the largest warehouse concentrations in the country. The area is very popular for large distribution centers because it is centrally located and is world re known as the headquarters and major operations center for Federal Express.

The EPAct tax deduction opportunities for the 135 million square foot Memphis warehouse market is presented below:

**Memphis Warehouse Market Potential EPAct 179D Tax Deductions**

<b>Property</b>	<b>Total Square Footage</b>	<b>Lighting Minimum Deduction</b>	<b>Lighting Maximum Deduction</b>	<b>HVAC Maximum Deduction</b>	<b>Building Envelope Maximum Deduction</b>	<b>Total</b>
Memphis, TN	135,000,000	\$ 40,500,000	\$ 81,000,000	\$ 81,000,000	\$ 81,000,000	<b>\$ 243,000,000</b>

**Large Nashville Warehouse Concentration Suitable for Solar**

Also centrally located, Nashville has very large warehouse concentration that is very suitable for solar.

The EPAct tax deduction opportunities for the 158,328,984 square foot Nashville warehouse and industrial submarket is presented below:

## Nashville Warehouse and Industrial Submarket Potential EAct 179D Tax Deductions

Submarket	Total Square Footage	Lighting Minimum Deduction	Lighting Maximum Deduction	HVAC Maximum Deduction	Building Envelope Maximum Deduction	Total
East	25,675,765	\$ 7,702,730	\$ 15,405,459	\$ 15,405,459	\$ 15,405,459	\$ 46,216,377
IBD	17,872,944	\$ 5,361,883	\$ 10,723,766	\$ 10,723,766	\$ 10,723,766	\$ 32,171,299
North	39,702,440	\$ 11,910,732	\$ 23,821,464	\$ 23,821,464	\$ 23,821,464	\$ 71,464,392
Southeast	50,853,792	\$ 15,256,138	\$ 30,512,275	\$ 30,512,275	\$ 30,512,275	\$ 91,536,826
Southwest	13,692,448	\$ 4,107,734	\$ 8,215,469	\$ 8,215,469	\$ 8,215,469	\$ 24,646,406
West	10,531,595	\$ 3,159,479	\$ 6,318,957	\$ 6,318,957	\$ 6,318,957	\$ 18,956,871
<b>Totals:</b>	<b>158,328,984</b>	<b>\$ 47,498,695</b>	<b>\$ 94,997,390</b>	<b>\$ 94,997,390</b>	<b>\$ 94,997,390</b>	<b>\$ 284,992,171</b>

### Conclusion

The seismic shift in Tennessee from coal to Cleantech is truly remarkable.

With one of the nation's largest warehouse and industrial building portfolios, the state is particularly well situated for large scale solar P.V. installation. Understanding the large tax incentives available for support in the coal-to-Cleantech conversion should act to accelerate this desirable result.

---

**Charles R. Goulding** Attorney/CPA is the President of [Energy Tax Savers Inc., The EAct 179D Experts](#), an interdisciplinary tax and engineering firm that specializes in the energy-efficient aspects of buildings.

**Charles G. Goulding** is an Analyst with [Energy Tax Savers Inc., The EAct 179D Experts](#)