

Solar Energy Generation To Benefit Triad Businesses

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Triad Business Journal

July 31, 2009

Land developers and businesses that own their buildings are set to reduce their energy costs, receive generous tax incentives and generate valuable customer goodwill by installing renewable energy generation systems in new and existing commercial buildings throughout the Triad.

Having previously served as counsel for a multinational energy company, primarily engaged in matters relating to the company's extensive renewable energy portfolio, including the construction of embedded renewable energy projects and the sale and purchase of "green" energy and associated tax credits, I have a particular interest in the opportunities that these embedded systems offer to businesses in the Triad.

In 2007, N.C. established a renewable portfolio standard, requiring the state's public utilities to meet up to 12.5% of their energy needs through renewable energy resources or energy efficiency measures by 2021, including 0.2% solar by 2018. Germany, the world's leading solar energy market, averages 2 solar sun hours per day, about the same as Anchorage, Alaska. The Triad averages 4.7 solar sun hours per day, clearly offering greater opportunities for solar energy generation.

Solar energy is the process of capturing radiation from the sun and converting it into electricity or heat. This can be achieved through a number of currently available technologies:

- Concentrating Solar Power ("CSP") - using mirrors to heat a fluid that is transferred to a steam turbine generator to produce electricity;
- Solar Thermal - using a solar collector, used to heat a fluid to heat water and produce heat; and
- Photovoltaic - using solar cells to convert light into electricity.

Cost reduction

Like many states, N.C. requires public utilities to allow "grid-tied" electric power generators to connect into the grid and sell electricity back to the utilities on either a "net metering" or "sell-all" basis. "Net metering" is limited to the maximum customer demand per individual location, with carbon offsets claimed by the utility; while the "sell-all" option is virtually unlimited, with all carbon offsets retained by the system owner.

Businesses with embedded generation typically do not rely exclusively on their own energy production to satisfy their demand, but instead enter into a "grid-tied" arrangement with a public utility. This allows the business to purchase power from the grid at night and allows the utility to resell excess power delivered into the grid. This cost-saving opportunity for businesses is timely, considering the recessionary pressures that are encouraging many Triad businesses to reduce overheads. Further, with "cap and trade" legislation expected to drive up energy prices, the opportunity to produce a portion of one's energy needs is becoming increasingly attractive.

Incentives

To encourage private investment, a variety of federal and state tax incentives, grants and loans are available for the construction and operation of solar power systems:

Federal -

- Business Energy Investment Tax Credit ("ITC") - A tax credit for up to 30% of the cost of constructing or purchasing a renewable energy system.
- Department of the Treasury Renewable Energy Grant - Introduced in February 2009, this program provides a direct grant equal to 30% of the basis of the property, which payment is excluded from the taxpayer's income for tax purposes. A business may claim either the Treasury Grant or the ITC, and not both, through the end of 2010.
- Modified Accelerated Cost-Recovery System (MACRS) and Bonus Depreciation - This program allows businesses to accelerate the depreciation of certain renewable energy systems (including solar) to a five-year depreciation timeline. An additional 50% "bonus depreciation" deduction is permitted if the project meets certain requirements.
- Tax Exemption for Energy Conservation Subsidies - Energy conservation subsidies from public utilities are nontaxable.

State -

- Renewable Energy Tax Credit - A tax credit equal to 35% of the cost of construction, purchase, or lease of an eligible renewable energy project.
- Property Tax Abatement - N.C. exempts 80% of the appraised value of photovoltaic solar energy electric systems from property tax.
- Property Tax Exemption for Active Solar Heating and Cooling Systems - Active solar heating and cooling systems cannot be assessed at a higher value than a conventional system for property tax purposes.

- N.C. GreenPower Production Incentive - A state-wide program providing subsidies for energy produced from renewable sources, available only with the "sell-all" option.
- N.C. Green Business Fund - A grant program which provides grants of up to \$100,000 to small and mid-size businesses, non-profit organizations, state agencies, and local governments.
- N.C. Energy Improvement Loan Program - Provides loans of up to \$500,000 to businesses for projects that make energy efficiency improvements or purchase renewable energy systems. Interest rates on loans range from 1-3%.

Goodwill

Regular readers of *The Business Journal* will have noticed the increase in "green" business news reported in recent months. This reflects a growth in business and consumer demand for "green" products and services. Embedded renewable energy generation offers businesses an opportunity to distinguish themselves from competitors, and tap into the increasingly valuable goodwill associated with operating a "green" business.

Considerations

Even with the incentives, because there is only limited financing available through federal and state sponsored programs, one of the most significant hurdles facing businesses is financing the initial investment (approximately \$10,000 per KW of capacity). Many traditional lenders have been reluctant to provide financing to businesses that do not satisfy traditional lending criteria based on real estate and fixed asset valuations, which have suffered in recent months. This is further exacerbated by more conservative lending practices as a result of the credit crisis, and a lack of familiarity with embedded renewable energy projects.

Robert Smith of SunPower Systems, a Triad-based company which specializes in the installation of solar power systems, has seen this first-hand, "Lending institutions have no policies in place pertaining to renewable energy and no way of assigning monetary value to power generating equipment. Traditionally, utilities tapped their own sources of investment capital and today we are asking businesses and entrepreneurs to build the next generation of sustainable energy with no financial support, aside from government tax incentives."

A variety of power purchase arrangements are offered by N.C. public utilities, supplemented by NC GreenPower, an independent, nonprofit organization which coordinates the distribution of voluntary contributions in the form of renewable energy premiums. Detailed analysis is required to determine which arrangement best suits each business, based on its projected consumption and generation cycle.

If the business installs the equipment on another party's property, a formal lease or easement will be required, granting the developer rights to construct, operate and maintain the equipment, without interference by neighboring landowners.

In addition to typical design and construction contract terms, additional provisions are necessary to address the testing and commissioning of the system, the construction of interconnection facilities, and compliance with the detailed tax incentive qualifications and minimum performance standards. Also, liquidated damages for delayed completion are critical. Eligibility for state or federal tax credits is time sensitive, and if missed, most of these tax credits cannot be reclaimed - with such loss having a long-term economic impact on the project.

Conclusion

Aggressive renewable energy portfolio standards for public utilities, generous federal and state tax incentives, the opportunity to reduce energy costs and the increasing value of consumer goodwill for "green" products and services are encouraging Triad land developers and businesses to consider installing embedded solar energy systems. There are many complex legal issues involved in the development and operation of solar energy projects and other "green" energy systems, and the negotiation of the associated commercial agreements. However, despite recent legislative efforts, for the time being, securing adequate financing remains the biggest hurdle for Triad businesses to take advantage of these opportunities.