



## Solar in South Carolina: Great for business

### Introduction

Business and property owners across South Carolina can accrue bottom-line benefits by adopting solar power. The case for investing in solar in South Carolina is stronger than ever following the recent extension of the federal solar energy investment tax credit (ITC) to 2021<sup>1</sup> (30% through 2019, sliding scale to 10% in 2022 and beyond) and the state's solar energy tax credit, which provides another 25% tax credit based on the purchase and installation costs, along with a five-year depreciation schedule.<sup>2</sup>

This topical report will illustrate the benefits of considering solar as a long-term strategy for managing business costs, contributing positively to the environment via a reduction in greenhouse-gas emissions, and an excellent return on investment.

All business and property owners should seek guidance from a tax professional as to the specific benefits and solar-energy incentives available to them.

The first solar cell was invented in 1941, but the technology has not achieved widespread usage for a variety of reasons. Deterrents have included high equipment costs, a previous lack of adequate tax incentives to stimulate production, regulatory hurdles and, as importantly, potential disruption to utilities and their delivery models. Causes of the disruption include falling costs of distributed generation and other distributed energy resources; a greater focus on development of new technologies; increasing customer, regulatory, and political interest in energy demand management; government programs to incentivize selected technologies; the declining price of natural gas; slowing economic growth trends; and rising electricity prices in certain areas of the country.<sup>3</sup>

Recent advances in solar technology and mass production are driving costs down and, with tax credits like those in South Carolina and other incentives, solar is becoming a more cost-effective solution.

1. U.S. Department of Energy, "Residential Renewable Tax Credit," [Online database].

2. Clean Energy Authority, "South Carolina Rebates and Incentives Summary," [Online database].

3. Edison Electric Institute, "Disruptive Challenges: Financial Implications and Strategic Responses to a Changing Retail Electric Business," p. 1.

### Various incentives available

With the adoption of federal and state tax incentives as well as regulatory changes that call for reduced greenhouse-gas emissions and energy consumption, less coal consumption and replacement of aging power plants, utilities face increasing pressure to include alternative energy sources in their production portfolios.

**Greentech Media** estimates that the ITC extension will increase yearly U.S. solar installations by 54%, and result in a 20-gigawatt annual solar market across the country by 2020. The ITC will also foster a 73% increase in utility-scale deployments and \$40 billion in incremental investment by 2020.<sup>4</sup>

Meanwhile, many states, including South Carolina, and utilities have adopted “net metering,” third-party solar equipment-purchase financing models and other incentives.

Net metering is one of the most popular incentives. As defined by the **U.S. Department of Energy** and **Solar Energy Industries Association**, net metering is a billing mechanism that enables solar energy system owners to export excess electricity back to the local grid. The system owners then receive credits for the power that they add to the local grid. For example, if a residential or business customer has a photovoltaic (PV) system on the roof, the system may generate more electricity during daylight hours than the building uses. In some states, if the home or business is net-metered, the electricity meter will run backwards to provide a credit that offsets the cost of electricity that the building uses at night. Utility customers are only billed for the “net” amount of energy used. Net metering is required by law in most states, including South Carolina, but state policies vary widely and some states have revised their laws, or may do so in the future. In South Carolina, net metering is only used to offset utility costs while the power is generated. Under existing state rules, users can not sell excess power back to the local grid.

Homeowners with solar service provided by **South Carolina Electric & Gas (SCE&G)** have been able to take advantage of discounts on the price per kilowatt-hour (kWh).<sup>5</sup> Such discounts are known as performance-based incentives (PBIs). SCE&G has offered PBIs in a bid to reach a goal of nine megawatts (MW) of



solar production capacity – the total amount of solar power in its system. SCE&G offered a discount of \$0.04 per kWh on the first 2.5MW that was reserved and \$0.03 per kWh on the second 2.5MW. With capacity reached in both cases, those offers have closed and a discount of \$0.02 per kWh will be offered until 7.5MW of capacity is achieved. If the effort is successful, a discount of \$0.01 per kWh will be made available for the remaining 1.5MW.

In the case of South Carolina commercial property owners, net metering does not allow businesses to receive a PBI but depreciation helps them to recover their costs in a timely manner. Commercial and industrial users are able to take advantage of other incentives under the state’s Distributed Energy Resource Program, allowing them to pay much lower rates based on actual kilowatts used. As a result, South Carolina’s commercial and industrial solar users are able to recover their equipment installation costs much sooner than they would through net metering.<sup>6</sup>

South Carolina, next to California, has one of the most durable net-metering laws in the country. In South Carolina, net metering is guaranteed to customers of utilities with more than 100,000 customers. However, South Carolina’s electric co-operatives and state-owned agency **Santee Cooper** are not required to offer net metering and, in some cases, solar customers may face a monthly solar net metering fee.<sup>7</sup>

It is important to note that SCE&G allows a PBI to be assigned to a customer’s equipment lessor or installer.

4. Mike Munsell, “Investment tax credit would increase U.S. solar installations 54% through 2020,” *Greentech Media*, Dec. 16, 2015. Web.

5. A kilowatt-hour is a unit of energy equivalent to one kilowatt of power expended for one hour of time. A kilowatt equals 1,000 watts of electrical power.

6. South Carolina Electric and Gas. “Solar for Your Home. [Online database].

7. David Slade, “As solar power spreads, SCE&G’s best incentive for homeowners is already gone,” *The Post and Courier*, [Charleston, S.C.]



Incentives are being offered throughout the country as utilities' business models face enormous challenges which will, in most cases, accelerate traditional power cost increases, further supporting the case for solar adoption by users.<sup>8</sup> U.S. President Barack Obama introduced new regulations, known as the Clean Power Plan,<sup>9</sup> which are designed to reduce emissions by about 30% by 2030. But in an unprecedented move in February 2016, the U.S. Supreme Court stayed the regulations until the plan's opponents could have their case heard.

The Supreme Court case was complicated by the death of Justice Antonin Scalia, after he had voted against the plan in a 5-4 vote, and a related case in the District of Columbia Circuit Court of Appeals. The Supreme Court case, coupled with Scalia's death, likely made clean power a presidential election issue as several states await an outcome before launching their clean power programs under the plan.

Despite the recently created uncertainty, it is evident that states will continue to face pressure to make renewable energy sources more

accessible and increase their solar power incentives for utilities and, ultimately, commercial property owners and occupiers. Also, it is reasonable to surmise that state governments may be encouraged to offer solar power incentives as part of the federal government's effort to meet the country's obligations under the Paris Agreement, the United Nations' climate accord signed in December 2015, which aims to limit global warming to well below 2 degrees Celsius.

In the meantime, most states have renewable portfolio standards (RPS), policies which call for utilities to generate a specified percentage of their production from renewable sources.<sup>10</sup> Pending legal decisions or new legislation to the contrary, these standards will require that utilities encourage and adopt alternatives to fossil fuels, reduce demand, or be subject to various penalties, which differ in strength.<sup>11</sup>

South Carolina's RPS requires that 2% of electricity being generated by renewable sources must be in place by 2021.<sup>12</sup>

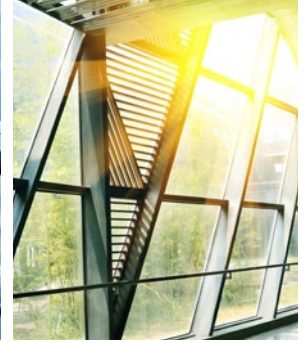
8. Solar Energy Industries Association, "Solar Market Insight 2015 Q3," [Online database].

9. U.S. Department of Energy, "Fact Sheet: Overview of the Clean Power Plan," undated, p. 1.

10. U.S. Energy Information Administration, "Today in Energy," Feb. 3, 2012.

11. Cory, K.S. and Swezey, B.G., U.S. Department of Energy National Renewable Energy Laboratory, "Renewable Portfolio Standards in the States, Balancing Goals and Implementation Strategies," p. 2.

12. U.S. Department of Energy, Database of State Incentives for Renewables & Efficiency (DSIRE), "Distributed Energy Program Overview" [Online database, South Carolina section].



### Utilities and business launching partnerships

SCE&G has already begun partnering with business to create large-scale solar farms to further diversify their power portfolios through both utility and customer-scale installations. Commencing in mid-2016, SCE&G will give customers, including renters, the option of buying a portion of a solar farm without having to install solar panels on their property. SCE&G describes its solar farms as centralized facilities with individual panels available for purchase by customers who receive net-metering credits on their electricity bill for the power produced. According to SCE&G, customers will be able to purchase panels on a solar farm and receive a corresponding pro rata share of energy output through a monthly bill credit. Participants will pay a rate of \$0.10 per kWh for 20 years. SCE&G says the cost per panel will be comparable with the cost of installing rooftop solar.

The first such utility-scale installation, a 500-kilowatt project developed by SCE&G and the **InterTech Group**, was commissioned in December 2015 in North Charleston, SC. This project and the **Boeing Company's** solar installation on the roof of the firm's main 787 Dreamliner assembly plant, which generates 2,600 kilowatts of electricity, make North Charleston the leader in the state, accounting for 30% of the South Carolina total. Currently, 11.5 megawatts are installed statewide.<sup>13</sup>

The Great Recession, concerns about climate change, lifestyle preferences and various other factors have also caused consumers to become more conscious of their power usage. There are indications that new habits have been formed and will remain.

These changes in attitude are creating demand for more efficient electrical devices. Homes and buildings are better constructed and, therefore, reducing demand for electricity. However, despite reduced demand, the cost structure for infrastructure delivery continues to rise. A fixed production cost, generally regardless of demand, increases the kWh cost to the consumer each and every year. The costs of building electrical capacity continue to rise due to regulatory requirements and increased construction expenses. Hence, as those costs are passed on to the consumer through rate increases, solar savings go up accordingly.

The U.S. government ranks as one of the largest energy consumers in the world.<sup>14</sup> Between 2016 and 2025, federal mandates for reduced energy usage and increased efficiency will lower demand.<sup>15</sup> According to the U.S. Energy Information Administration, residential and commercial property uses account for 41% of the country's energy consumption, based on 2014 figures, the latest which are available.<sup>16</sup> And, according to the **American Council for an Energy-Efficient Economy**, commercial buildings account for 19% of the energy consumed in the U.S. Office and retail buildings, educational and health-care buildings, and lodging use more than two-thirds of that energy, while more than half of the energy used by commercial buildings goes into heating and lighting – uses that can be served by solar.<sup>17</sup>

13. David Wren, "InterTech Group, SCE&G partnership helps North Charleston lead state in solar energy," *The Post and Courier*, [Charleston, S.C.], Jan. 21, 2016.

14. U.S. Energy Information Administration, "Today in Energy," Feb. 4, 2015.

15. U.S. Department of Energy, *Energy Goals and Standards for Federal Government* [Online Database].

16. U.S. Energy Information Administration, "Frequently Asked Questions," [Online database].

17. American Council for an Energy-Efficient Economy, "Commercial Property," [Online database].

Companies and their shareholders are being forced to consider their impact on the environment as well as shareholder returns and the costs of doing business. South Carolina's combined federal and state solar power incentives have reached the point where businesses can now consider investing in renewable energy to help their communities and themselves as costs have come down, tax incentives are up, and systems are in place to reward the effort.

Avison Young's Charleston, SC office is an example of a building with a photovoltaic roof that generates solar power.



Source: Avison Young

## Example of Benefits

While all business and property owners need to determine their level of comfort with the investment, benefits and limitations, the example below illustrates the return and costs associated with a small-scale solar installation for a multi-tenant office building.

### Example:

Annual Solar Energy Produced	66,453 kWh
Annual Production Payments (est.)	\$11,962
<b>Total System Price</b>	<b>\$139,653.37</b>

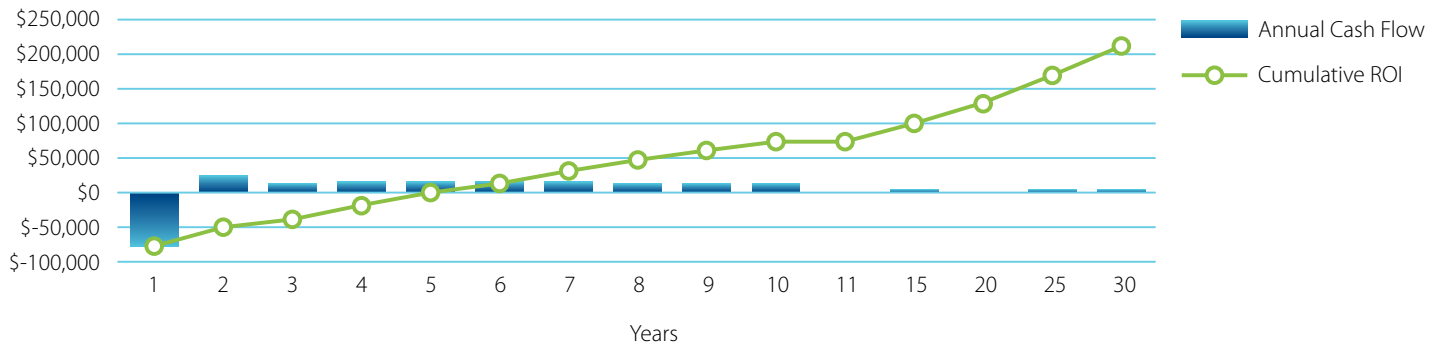
### Tax Credits and Incentives\*

Credit Amount	Dollar Amount for this system	Restrictions
30% Federal Tax Credit	\$41,896.01	Tax credit may be used all at once or over several years, subject to tax liability.
25% SC Tax Credit	\$34,913.34	\$3,500 per year limit, up to 10 years. Limited to 50% of South Carolina tax liability.
Federal Tax on State Credit	\$(10,474.00)	30%
Accelerated Depreciation	\$35,611.61	30% (Applies only to commercial property. Depends on individual corporate tax situation. Credit covers a five-year depreciation schedule.)
<b>Final System Cost After Tax Credits &amp; Incentives</b>	<b>\$37,706.41</b>	

\* Please consult your accountant for any tax-related details and limitations.

In the example above, based on data provided by **Alder Energy Systems**, one can deduce that the system payback, notwithstanding the time duration for the South Carolina tax credits, based on federal tax credit and production purchase, is approximately three years. Given that the South Carolina tax credit has an annual limit, a user should consider signing a 10-year purchase contract. If production is consistent, more than \$119,000 of electrical production would be purchased in the 10-year period. A net savings of \$81,914 would result. Based on current technology, a solar panel has a lifespan of 25 to 30 years. Hence, one should consider the potential return during that period of time.

## Annual Cash Flow & Cumulative ROI



Source: Alder Energy Systems



## Conclusion

Use of solar production is good for retail, office and industrial real estate users in South Carolina, regardless of whether the properties are owner-occupied or leased, as the tax benefits accruing to the owner of the equipment are clear. The persons or businesses paying the utility bill also receive the monthly benefit of reduced electricity bills by consuming the power they produce using their solar power system. One should expect that landlords and tenants will find ways to partner to get mutual benefits from this investment in solar power.

The world, including the U.S., is poised to make renewables a larger source of power generation as traditional technologies are disrupted due to billions of dollars of capital required to maintain and produce power using existing energy infrastructure. Energy providers are partnering with consumers to create more sustainable and affordable solar power sources. Solar investment in South Carolina has never been more affordable and practical than it is today.



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