

Solar Panels, Tax Incentives and Your House

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United States: Solar Panels, Tax Incentives And Your House

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During the summer of 2008, gas prices went through the roof and the United States refocused on renewable energy. It is common knowledge that Americans say they desire energy independence from foreign nations and say they want environmentally sound renewable energy sources. To that end, the Bush Administration sponsored legislation late in 2008 that encouraged and enhanced tax credits and incentives for the implementation of alternative energy sources in homes and businesses. *Energy Improvement and Extension Act of 2008*, Pub.L. No. 110-343, div. B, 122 Stat. 3807 (codified in scattered sections of 26 U.S.C.). More recently, one of the cornerstones of President Obama's Stimulus Plan promotes the development and use of renewable and alternative energy sources. *American Recovery and Reinvestment Act of 2009*, Pub.L. 111-5, 123 Stat. ("ARRA"). State governments also have enacted legislation to mandate renewable portfolio standards (RPS's) and many states have created incentives to encourage funding of efficient and environmentally friendly improvements. As a result of both federal and state actions, there is a maze of rules, regulations and tax credits which may overlap. This article discusses the federal and state income and other tax credits available for various types of energy efficient improvements, with the primary focus on tax credits available to residential homeowners using power generated by solar energy. Comparisons are made using families located in Canton, Michigan; Tallahassee, Florida and Raleigh, North Carolina to demonstrate the various ways that states are providing tax incentives in addition to the federal tax incentives. For example, some states provide tax rebates, some provide property tax credits for improvements and others promote the use of utility companies to provide the incentives for the generation of alternative energy.

Advantages of Photovoltaic Solar Power For Residential Use

The use of a photovoltaic ("PV") system to convert sunlight into electricity by the attachment of solar panels on a residence or residential property, at a "grass roots" level, has many advantages. First, sunlight is produced free of charge, although not on a predictable basis (particularly in Michigan). Nonetheless, the solar energy production occurs during the daylight hours when peak energy demand occurs. Solar power not used by a particular residence can be cheaply and quickly transferred into the power grid through local interconnection devices which limit the need for huge capital expenditures for energy transmission to end users. Localized solar power has an advantage in contrast to commercial wind power solutions, where the transmission of power to the end user is an issue. One of the less attractive aspects of residential solar power is that most residential systems would still require a homeowner to remain on the utility's electricity grid and, thus, stand-alone capability is highly unlikely in many areas of the United States. Also, the installation of solar panels requires a personal capital expenditure on a residence rather than an expenditure funded by the government or public utilities. Another consideration is that the installation of solar panels may add both to a home's value and to a home's maintenance and repair costs, complicate roof repairs and increase insurance costs. When the benefits and burdens are weighed, it does appear that encouraging the residential usage of solar panels to produce electricity provides a net benefit both to the homeowner and the utility which should reduce the usage of fossil fuels as energy sources.

The hypothetical family in this article is a nuclear family with two adults and two children within a household income of \$120,000. Their marginal federal income tax rate is 28% and they own a primary

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residence worth \$300,000 subject to a mortgage balance of \$180,000. The family desires to add value to their home and produce solar power by the addition of solar panels or structures containing solar panels at a cost of \$40,000. The proposed system would contain an approximate surface area of 300 square feet of solar panels and would generate three (3) kilowatts of power. A system of this size would likely supplement power generated from other sources and would still require connection to a power grid, but could produce 50% to 75% of a family's power usage.

I. The Federal Residential Energy Efficient Property Tax Credit.

In 2008, Congress enacted multiple legislative Acts comprehensively called the Emergency Economic Stabilization Energy, Extenders and AMT Relief Acts of 2008 ("the 2008 Economic Stabilization Act"). *Emergency Economic Stabilization Energy Extenders and AMT Relief Acts of 2008*, Pub.L. No. 110-343, 122 Stat. 3807. One of the Acts included in the 2008 Economic Stabilization Act was a separate Act called "The Energy Improvement and Extension Act of 2008" ("the 2008 Energy Act") enacted on October 3, 2008. The major component of the 2008 Energy Act, as it relates to solar power, is the long-term extension and beneficial modification of the Residential Energy Efficient Property Tax Credit.

The Residential Energy Efficient Property Credit ("REEP") was scheduled to expire at the end of 2008. The 2008 Energy Act extended the REEP credit through the end of calendar year 2016 and this provision was unchanged by the ARRA. Of greater importance is the removal of the cap on the available credit and the expansion of the REEP. Prior to the 2008 Energy Act, an individual homeowner was allowed an annual credit for the purchase of "residential energy efficient property" equal to the sum of 30% of the amount paid for a "qualified solar energy property" with a maximum credit of only \$2,000. For tax years beginning after December 31, 2008, the 2008 Energy Act removes the \$2,000 limitation on the credit allowed in a tax year for "qualified solar electric property expenditures;" so now the 30% credit is unlimited. The elimination of the cap on the credit for "qualified solar electric property" in the 2008 Energy Act provides one of the largest incentives for the addition of qualified solar energy property to a residence. The ARRA also increased the thirty (30%) percent credit to all eligible technologies (except fuel cells) placed in service after 2008.

For example, prior to the 2008 Energy Act, a family that spent \$40,000 on qualified solar electric property improvements received only a \$2,000 credit against their Federal income tax liability. Now, with the cap on the annual limit lifted, that same homeowner can obtain a credit in the amount of \$12,000 against her tax bill based upon a \$40,000 expenditure. This is a tax credit and not a deduction. A deduction of \$12,000 lowers taxable income by \$12,000 and produces tax savings of only \$3,360 at the 28% bracket. In contrast, a \$12,000 credit is a dollar-for-dollar credit against tax a homeowner would otherwise pay and is nearly four times more valuable.

What expenses qualify for the Federal REEP Credit? The Internal Revenue Code § 25D(d)(2) defines the term "Qualified Solar Electric Property Expenditure" as "an expenditure for property which uses solar energy to generate electricity for use in a dwelling unit located in the United States and used as a residence by the taxpayer." *I.R.C. § 25 (2006)*. The term Qualified Solar Electric Property Expenditures also include costs incurred for solar panels and other property installed as a roof or a portion of a roof. This includes the acquisition of solar panels used in PV systems. Further, Internal Revenue Code § 25D(e)(1) defines "Qualified Solar Electric Property" as labor costs properly allocable to on-site preparation, assembly, or original installation of the panels on the property and for the piping or wiring used to interconnect the property to the home.

It is also noteworthy that for the purposes of this particular tax incentive, the residence does not have to

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be a primary residence; rather, qualifying improvements can be made to a vacation home and other dwelling units such as mobile homes, manufactured homes and even certain houseboats. Internal Revenue Code § 25D(d)(2) discussing "Qualified Solar Electric Property," refers to a dwelling unit used as a "residence". In contrast, Internal Revenue Code § 25D(d)(3) related to "Qualified Fuel Cell Property Expenditures," contains more limited language only allowing the fuel cell credit for a dwelling unit used as a "principal residence". Clearly Congress intended the Solar Energy Tax Credits for solar property expenses to apply more expansively than the fuel cell expenditures. There are even specific Internal Revenue Code sections permitting the pro rata allocation of REEP credits to owners of cooperative housing corporations and condominium associations. See I.R.C. § 25D(e)(5) (cooperatives) and I.R.C. § 25D(e)(6) (Condominiums). The Act also eliminated the impact of the provision which previously denied the credit for property purchased or financed by subsidized energy financing [as defined in I.R.C. § 48(a)(4)(c) (2006)]. See I.R.C. § 48(a)(4)(d). Thus, even if the government creates a financing program for residential solar panels, the REEP credit should be available.

If a taxpayer claims the REEP credit, the taxpayer is required to reduce the basis of his home by any amount of tax credits allowed. This is presumably designed to subject a homeowner to potential tax in the future to offset the immediate tax benefits received. However, there does not seem to be any negative effect to reducing the basis of a primary residence because, currently, the Internal Revenue Code does not provide for recapture in the event one sells a primary residence and fits within the exclusion of gain on the sale of a principal residence under I.R.C. § 121 (2006). The sale of second homes and vacation properties could be negatively affected by the reduction in basis because I.R.C. § 121 applies to and excludes recognition of gain upon the sale of qualified personal residences only, not to second homes.

Residential energy tax credits should be claimed on IRS Form 5695. On the tax form, a homeowner can also claim federal tax credits for other qualified energy efficient improvements such as insulation, exterior windows (including certain storm windows and skylights), exterior doors (including certain storm doors), certain qualified metal roofs designed to reduce heat gain of a home, certain efficient heat pumps, water heaters, air conditioners, furnaces and fans. Also, there is a qualified solar water heating property tax credit if one's solar powered system is designed to heat the water in the home in the permitted manner.

II. The Interplay of State and Local Tax Credits Related to Solar Power and Renewable Energy Sources

A. State of Florida Solar Energy Tax Incentives. The State of Florida currently has a very successful solar energy system incentives program created in 2006 by the Florida Renewable Energy Technologies and Energy Efficiency Act. *Florida Renewable Energy Technologies and Energy Efficient Act*, Fla. Stat. §377.801 et seq. (2008). This initial program was structured as a four-year program and permits any household or business that installs a "qualified solar energy system" between July 1, 2006, and June 30, 2010, to obtain a rebate of a portion of the purchase price of the system. The maximum allowable rebate for a solar photovoltaic system installed in a residential structure is \$20,000. A commercial structure can obtain a rebate of up to \$100,000. Initially, a qualifying solar energy system must be one of the following types of systems:

- a. A "solar photovoltaic system" that produces at least two kilowatts; or
- b. A "solar thermal system" that provides at least 50% of a building's hot water consumption;
or
- c. A "solar thermal pool heater".

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A solar photovoltaic system qualifies for a rebate if:

- a. The system is installed by a state-licensed master electrician, electrical contractor or solar contractor.
- b. The system complies with the state interconnection standards as provided by the Commission.
- c. The system complies with all applicable building codes as defined by the local jurisdictional authority.

It is presumed that the system proposed above in the hypothetical qualifies as a "solar photovoltaic system" in Florida.

The rebate amount for a solar photovoltaic system is set at \$4 per watt based upon the total wattage rating of the system. The total wattage rating of the system is determined by the National Renewable Energy Laboratory Solar Calculator. The application for a rebate must be made within 120 days after the purchase of the solar energy equipment. In our original example, the family installed a solar photovoltaic 3 kilowatt system which would then generate a proposed rebate under the Florida program in the amount of \$12,000.

This rebate program has been so popular that the State of Florida has fully expended its budget on an annual basis through the 2008-2009 year and applications received and approved are placed on a waiting list for funding and future use. It should be noted that the State of Florida does not have state income tax, this program is a rebate rather than a tax credit making it even more valuable to Floridians.

In addition to the rebate, in June 2008, Florida passed a real estate property tax exemption, "Renewable Energy Property Tax Exemption for Residential Property," to provide property tax relief to those who install approved energy efficient improvements. *Renewable Energy Property Tax Extension*, Fla. Stat. §196.175 (2008). Normally, a municipality is permitted to tax real property located in its jurisdiction at its fair market value, including improvements made. This new exemption allows the property owner to exclude the value of the renewable energy improvements, including the amount of the cost of the device, and the installation cost. The exemption does not include the cost of removing or improving other existing property in the course of the installation. This real property tax exemption means that a homeowner will not be taxed on the increased value of his property due to the installation of these qualified renewable energy improvements for a period of ten years after the improvement is placed in service.

This new Florida statute defines a "renewable energy source device" as any equipment which, when installed in connection with a dwelling unit or other structure, collects, transmits, stores, or uses solar energy, wind energy, or energy derived from geothermal deposits." This list includes: "solar energy collectors; storage tanks and other storage systems, excluding swimming pools used as storage tanks; rockbeds; thermostats and other control devices; heat exchange devices; pumps and fans; roof ponds; freestanding thermal containers; pipes, ducts, refrigerant handling systems, and other equipment used to interconnect such systems [however, conventional backup systems of any type are not included in this definition]; windmills; wind-driven generators; power conditioning and storage devices that use wind energy to generate electricity or mechanical forms of energy; pipes and other equipment used to transmit hot geothermal water to a dwelling or structure from a geothermal deposit."

In addition to the Florida incentives to homeowners for the production of energy from solar power and the property tax exemption, the state also has a sales tax exemption. Thus, the purchase of a "solar energy system" is exempt from Florida's 6% sales tax. *Florida Statute § 212.08*. This sales tax exemption covers the equipment and hardware that are used for collecting, transferring, converting, storing or using

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incidental solar energy for water heating, space heating and cooling or other applications. On a \$40,000 purchase, this sales tax exemption would result in an additional \$2,400 saving.

The City of Tallahassee Utility System also offers loans direct to consumers to acquire energy-saving measures, including photovoltaic systems and solar water heating systems. Under the program, a homeowner can borrow up to \$20,000 for a PV system at a 5% interest rate direct from the City. While this loan would not cover the entire cost of the proposed photovoltaic system, both the rate and amount show that the City is serious about promoting the acquisition of solar energy systems for homeowners.

In summary, the State of Florida, likely due to its warmer weather and higher use of air-conditioning, has among the most progressive state funded incentives for the production and usage of solar power in personal residences.

B. State of North Carolina Solar Energy Tax Credits. The State of North Carolina has a personal tax credit called the "Renewable Energy Tax Credit," a credit against the State of North Carolina Income Tax. *Renewable Energy Tax Credit*, N.C. Gen. Stat. §105-129.14 et seq. The maximum permissible tax credit is 35% of the cost of eligible renewable energy property constructed, purchased or leased by a taxpayer and placed in service in North Carolina during the year. The maximum permissible tax credit for a photovoltaic solar system (and wind energy system for residential use) is \$10,500 per installation. The allowable credit may not exceed 50% of the taxpayer's liability in a year and the credit may be carried forward for five years if not fully absorbed in the initial years. Thus, if our sample homeowner installed a \$40,000 photovoltaic solar system in her home, the potential tax credit would initially be calculated at 35% of \$40,000 which results in a \$14,000 tax credit. However, because of the limitation at \$10,500, she would be permitted to claim \$10,500 as a State of North Carolina tax credit.

Because the North Carolina marginal state income tax rate is 7.75% for income over \$60,000, the North Carolina family in our example would owe up to \$9,300 in state income tax in a given year. Due to the 50% limitation of a taxpayer's liability on the annual allowable credit for the Renewable Energy Tax Credit, the family could receive a credit of \$4,650 for 2 years and \$1,200 for the third year until they received the entire \$10,500 tax credit benefit. As noted above, this is particularly beneficial because it is a credit against income taxes otherwise owed and is thus more valuable than a deduction of an equal amount.

In August, 2008, North Carolina enacted a real estate property tax exemption equal to 80% of the appraised value attributed to the addition of a photovoltaic solar energy system to a residence. *Property Classified and Excluded from the Tax Base N. C. Stat § 105.275(45)*. As compared to Florida, a homeowner in North Carolina would see a slight increase to her property tax increase due to the improvements to the residence made by the installation of a solar photovoltaic energy electric system rather than a full increase. The definition in the North Carolina property tax abatement for a solar energy electric system is "[a]ll equipment used directly and exclusively for the conversion of solar energy to electricity." *Id.*

In summary, the State of North Carolina also has significant incentives for homeowners to add renewable energy property to their home.

C. State of Michigan Solar Tax Credits.

The State of Michigan has taken a different approach to creating the financial incentives to generate renewable power. In October, 2008, Michigan enacted a statewide net metering program for renewable

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energy systems. *Clean, Renewable, and Efficient Energy Act*, M.C.L. §§460.1001 – 1195 (2008). The rules discussing this legislation were to be developed within 180 days of the October 6, 2008 effective date. On March 28, 2009 the Michigan Public Service Commission ("MPSC") issued an order approving "net metering" regulations; however, this was an interim step to the issuance of final rules and interconnection standards. On May 26, 2009, the MPSC issued an order formally adopting revised net metering rules. Mich. Admin. Code R460.601 – 656 (2009). The net metering practice will be divided into two categories for residential customers. For customers who generate 20 kilowatts or less, a "modified" net metering concept will occur where "net excess generation during a billing period may be carried to the next billing period at either the monthly average real time marginal price or the utilities retail rate". Customers who generate more than 20 kilowatts will be eligible for true net metering in the sense that the power they generate and the power they use will offset in real time. In any given month, the customer will be charged only with net usage and, if the customer generates electricity in excess of usage, he would receive a credit back from the utility company. Thus, Michigan's current contemplated proposal provides incentives through the utility companies and not the tax system.

Michigan does have a limited renewable energy rebate for PV systems that are rack mounted or building integrated and rated at 20 kilowatts or less. However, the \$3 per kilowatt rebate is currently only available to those customers who receive utility service through Wisconsin Public Power in the Upper Peninsula.

It is somewhat ironic that states with a lower amount of sun have lower rebates and incentives for qualified solar energy improvements. If Michigan intends to increase its solar usage, it would likely have to provide greater incentives than Florida because the likelihood of economic recapture in Michigan is less than in Florida.

In summary, hopefully Michigan will, in the near future, become a leader in promoting residential solar energy tax credits. At present, Michigan has not enacted any particular state funded incentive to encourage homeowners to purchase solar panels for their homes.

III. Other Potential Financing Sources and Alternatives to Tax Credits

A. Home Equity. Because many qualified solar energy improvements are actually improvements to homes or to real property, there is a high likelihood that homeowners will be able to obtain home equity financing or other qualified financing secured by the value of the improvements. The separate structure proposed in this article is similar to a garage, shed or other home improvements, which add value to a home and which would qualify the taxpayer for deductible interest as qualified home equity indebtedness, under *IRC § 163(H)(3)(A)(ii)*.

B. Financing By Utilities. It has also been discussed that states, such as Michigan, have not yet integrated their tax rebate and incentive programs to fund solar energy in anticipation that the utility systems will provide financing for residential solar systems. The argument is that as the date for the renewable portfolio standards gets closer, the utilities will be required to purchase power from third parties and homeowners in order to meet the state-mandated standards. In order for there to be sufficient production of solar power available for the utility to purchase, the utility will also be required to subsidize the acquisition of PV systems so as to solidify the source of energy it must produce or acquire. The expansion of improvements subsidized by utilities will definitely enhance and accelerate the development of qualified solar power for residential use in Michigan.

In fact, in September, 2009, DTE Energy announced the first phase of a program called "SolarCurrents" for residential and commercial uses which combines an element of partial reimbursement for the

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acquisition and installation of solar energy systems in the amount of \$2.4 per DC watt with a production rebate in the amount of \$.11 (11 cents) per kW. The acquisition of the three (3) kilowatt system proposed for the family in this article would create a payment of \$7,200 from DTE Energy plus the production credits in the future.

DTE Energy is treating the upfront rebate as a prepayment for Renewal Energy Certificates (RECs) and the production incentive as payment for marginal increases in renewable source energy as RECs. In other words, DTE Energy is paying customers to produce renewable energy and purchasing the RECs to satisfy its RPS requirement.

C. Leasing and Power Purchase Agreements. In addition, to utility-funded financing, new third-party players are entering various markets and offering residential homeowners the opportunity to lease solar panels and solar energy systems with the resulting RECs belonging to the leasing company rather than the homeowner. These companies are also offering alternative arrangements where the homeowner owns the system and enters into power purchasing agreements for a fixed period of time. A long-term power purchase agreement helps to ensure a market for the energy produced.

Conclusion

The use of residential solar power appears to be a "win-win" for homeowners, utility companies and the environment. As improvements continue to be made to photovoltaic and new types of panels, heating systems, transmission systems and storage systems, the use of solar power by homeowners should increase even in areas without optimal sunshine. The tax incentive programs should result in greater sales of equipment relating to the production of solar energy and, in turn, result in more improvements and less cost per unit, not unlike that which has been experienced relating to computers and other electronic equipment.

The content of this article is intended to provide a general guide to the subject matter. Specialist advice should be sought about your specific circumstances.