

Solar P.V. Rooftops Super Charged by 50% LED Lighting Savings

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Energy Tax Savers' analysts look at the EAct tax opportunities for solar P.V. rooftops when combined with LED lighting.

Warehouse and industrial building owners with rooftop solar from New Jersey to California are moving quickly to capture large \$1.20 to \$1.80 per square foot EAct tax savings for installing long life, low wattage LED lighting. These LED lighting installations super charge rooftop solar P.V. results by increasing net electricity production. These LED projects need to be completed by December 31, 2013 to qualify for large tax savings.

EAct Tax Savings Opportunity

Pursuant to Code Sec. 179D, as enacted by the Energy Policy Act of 2005 (EAct)¹, properties that make qualifying energy-reducing investments in new or existing locations can obtain immediate tax deductions of up to \$1.80 per square foot.

If the building project does not qualify for the maximum EAct \$1.80 per square foot immediate tax deduction, there are tax deductions of up to \$0.60 per square foot for each of the three major building subsystems - lighting; heating, ventilating and air conditioning (HVAC); and the building envelope. The building envelope comprises of every item on the building's exterior perimeter that touches the outside world including roof, walls, insulation, doors, windows and foundation.

Solar P.V. Tax Credits

Commercial solar P.V. system installations are eligible for 30% tax credits

and five year MARCS tax depreciation. If installed on or before December 31, 2016, credit is available. It is important to note that 50% of the credit is added back to depreciable basis.

How Warehouse and Industrial Building LED Lighting & Rooftop Solar P.V. Integrate

LED lighting technology has now developed so that it is suitable for warehouse and industrial applications. Most solar P.V. is installed on large, flat roof warehouse and industrial buildings. In typical non-air conditioned warehouses and industrial buildings, lighting is the largest energy user.

Before the LED lighting installation, a warehouse is typically lit at the ASHRAE 2004 standard of 0.80 watts per square foot level. When approved, existing solar P.V. installations were economically justified based on the amount of electricity generated by the P.V. system, and in particular, the excess electricity generation above current building needs.

Post a new warehouse LED lighting installation, the new wattage is typically at 0.40 watts per square foot, which is 50% of the pre LED conversion wattage level. This means that the LED lighting super charges the excess electricity production which often can be sold into the electric grid. The large EAct tax savings level will range from \$1.20 per square foot to \$1.80 per square foot, depending on the final watts

per square foot achieved by the lighting system.

Warehouse and Industrial Building EAct Benefits at \$1.20 and \$1.80 per square foot:

Total Square Footage	Total \$ 1.20 Per Square	Total Benefit at \$ 1.80 Per Square Foot
50,000	\$ 60,000	\$ 90,000
100,000	\$ 120,000	\$ 180,000
250,000	\$ 300,000	\$ 450,000
500,000	\$ 600,000	\$ 900,000
750,000	\$ 900,000	\$ 1,350,000
1,000,000	\$ 1,200,000	\$ 1,800,000

Enhancing a Previous Asset Economic Return

It is a rare opportunity to greatly enhance the economic return from a previous capital investment while getting large tax incentive for doing so. When helping the building owner evaluate the LED lighting upgrade decision, the tax adviser should combine the EAct tax savings, the added payments from the added electricity sales to the grid (if available), and utility rebates which are often available for LED installations.

Tax Planning for New Rooftop Solar Installations

Warehouse and industrial building owners considering a new rooftop solar P.V. investment should complete the LED lighting installation before EAct expires on December 31, 2013. The solar installation will have to be completed on or before December 31, 2016 to qualify for the 30 percent credit and the 5 year accelerated depreciation. Solar roof top P.V. utility interconnect approvals are required in many jurisdictions can take up to two years

so it may be necessary to obtain investment approvals by the end of 2013 and early 2014 to obtain desired tax incentives.

Conclusion

Multiple LED lighting manufacturers now have LED lighting technologies suitable for warehouses and industrial buildings. All property owners interested in obtaining tax incentives for LED lighting upgrades should act by December 31, 2013.

Warehouse and Industrial buildings with existing solar P.V. generation systems may be able to obtain large additional economic benefits for the material increase in electricity generation.

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¹ Energy Policy Act of 2005 (P.L. 109-58).