



Federal Tax Incentives for Solar Energy Investments

There are two federal tax incentives available to commercial entities to encourage private investment in solar energy equipment and systems: (1) an investment tax credit and (2) an accelerated depreciation allowance. Interested businesses should consult the federal tax code and/or a certified public accountant or tax attorney to determine exact eligibility and provisions of the incentives described below.

Summary

Investment Tax Credit: A 10% federal investment tax credit is available for certain solar energy equipment and systems. This credit, otherwise known as the Business Energy Tax Credit, has been permanently incorporated as part of the tax code with the passage of the Energy Policy Act of 1992.

Accelerated Depreciation: The federal government offers a 5-year accelerated depreciation option (MACRS) for certain solar energy equipment and systems and a potential 50% depreciation benefit in the first year for certain qualified equipment. A section 179 expense deduction may also be available.

Qualified Solar Energy Equipment & Systems

What Solar Energy Equipment is Eligible?

Eligible solar energy property is defined as equipment that uses solar energy to generate electricity, to heat or cool or, provide hot water for use in, a structure, or to provide solar process heat.

Solar energy property that qualifies for these tax provisions includes:

- Equipment that uses solar energy to generate electricity, such as photovoltaics, including storage devices, power conditioning equipment, transfer equipment, and related components and equipment up to (but not including) the stage that transmits or uses electricity.
- Equipment that uses solar energy to produce thermal energy (for space or water heating, for example) such as liquid solar thermal collectors, including storage devices, transfer equipment, and related components and equipment up to (but not including) the stage that distributes or uses the thermal energy.
- “Dual-use equipment” (equipment that uses both solar and non-solar energy, such as pipes and hot water tanks) only if its use of energy from non-solar sources does not exceed 25% of its total energy input in an annual measuring period, and only to the extent of its basis or cost allocable to its use of solar energy.

In addition, the eligible solar energy property must be:

- Completely installed and operational in the year in which the credit is first taken.
- Constructed, reconstructed, or erected by (or at the request of) the taxpayer.
- Originally used by the taxpayer, if acquired by the taxpayer.
- In conformance with any performance or quality standards prescribed by regulation.
- Subject to depreciation or amortization.

What Does NOT Qualify as Eligible Solar Energy Property?

Solar energy property eligible for these tax provisions does not include:

- Public utility property.
- The material and components of "Passive Solar Systems" (i.e., systems based on the use of conductive, convective, or radiant heat transfer) even if combined with "Active Solar Systems" (i.e., systems based on the use of mechanically forced energy transfer),
- Equipment used for most swimming pools (consult your tax advisor), and
- Equipment that uses solar energy to generate steam at high temperatures for use in industrial or commercial processes.

10% Investment Tax Credit

Who is Eligible for the Investment Tax Credit?

Any commercial entity which invests in or purchases qualified solar energy property can take, on its income tax return, the credit of up to 10% of the investment or purchase and installation amount. This credit should not be confused with the residential solar energy tax credit that expired in 1985. The credit cannot be claimed for property used mainly outside the United States, used by governmental units and foreign persons and entities, or used by a tax-exempt organization (unless the property is used mainly in an unrelated trade or business).

How Do I Calculate the Investment Tax Credit?

The tax credit is equal to the total installed system cost less any and all cash incentives multiplied by 10%. The following formula demonstrates how to calculate the tax credit:

$$\text{Tax Credit} = [(\text{Total Installed System Cost}) - (\text{Any and All Cash Incentives})] \times 0.10$$

Are There Cases When the Full 10% Credit Cannot Be Taken?

Yes. If the solar energy property is financed in whole or in part by subsidized energy financing or by tax-exempt, private-activity bonds; the credit may be taken only on the portion of the investment or purchase that is not subsidized. For example if, for a \$100,000 investment (otherwise known as the cost or basis) \$20,000 is allocable to subsidized financing (e.g., the San Diego SELFGEN Incentive Program) or tax-exempt private activity bonds, the credit would amount to 10% of \$80,000. In addition, the cost or basis of property for investment credit purposes may be limited if you borrow against the property and are protected against loss, or if you borrow money from a person who is related, or who has other than a creditor's interest in the business activity. In these cases, the cost or basis must be reduced by the amount of this "nonqualified nonrecourse financing" as of the close of the tax year in which the property is placed in service.

Are There Limitations on the Amount of the Credit?

In any one year you may not take any tax credit that exceeds the total tax owed or reduces total tax liability below the tentative minimum tax. The allowable tax credit for any one year is also limited to \$25,000 plus 25% of the total tax remaining after the credit is taken. For example, if you are allowed the full 10% credit (\$50,000) for an investment of \$500,000, and you owe \$100,000 in taxes, you may take \$25,000 plus 25% of the remaining \$75,000 (\$18,750), which equals \$43,750. Credit that is not allowable in one year may be carried back or over to other tax years (See below).

Does the Credit Have to be Used in the Year the Purchase or Investment is Made?

No. If you cannot use part or all of the credit because of tax liability limitations, you may carry any excess back to the preceding year. If you have an unused credit after carry back, it may be carried forward to each of the 20 years after the year of the credit until the credit is used in full.

Are There Special Tax Forms Needed to Take the Credit?

Yes. You will need Form 3468 (Investment Credit), and you may need form 3800 (General Business Credit).

Accelerated Depreciation

The federal government offers a 5-year accelerated depreciation. Property placed in service after September 10, 2001 and before January 1, 2005 may qualify for additional, first year "bonus depreciation" of 30% or 50%. The cost basis is reduced by the "bonus depreciation" to arrive at the remaining depreciable basis.

Who is Eligible to Take 5-year Accelerated Depreciation for Solar Equipment?

Any commercial entity that invests in or purchases qualified solar energy property may use the accelerated depreciation schedule. The accelerated depreciation schedule cannot be claimed for property used mainly outside the United States, used by governmental units and foreign persons and entities, or used by a tax-exempt organization (unless the property is used mainly in an unrelated trade or business). Consult with a tax professional regarding possible Alternative Minimum Tax implications.

Who is Eligible for the Special Bonus Depreciation Benefit?

Under the Job Creation and Worker Assistance Act of 2002, any commercial entity that invests in or purchases solar water heater and photovoltaic equipment is eligible for the special depreciation. Equipment must be purchased after September 10, 2001 and before September 11, 2004, and placed in service before January 1, 2005. Qualifying purchases are eligible to take an additional 30% depreciation in the first year. Under the Jobs and Growth Reconciliation Tax Act of 2003, property placed in service after May 5, 2003 and before 2005 is eligible for a 50% bonus depreciation in the first year.

Is the Special 50% Depreciation In Addition to the MACRS Year 1 Depreciation?

Yes, but the depreciable basis of the equipment is reduced by the 50% bonus depreciation in calculating the remaining depreciation deductions.

What is the Actual Deduction Schedule?

The Modified Accelerated Cost Recovery System (MACRS) 5-year depreciation schedule uses a 200 percent declining balance method. Without this legal provision for solar equipment, depreciation for such equipment would be taken over the standard 20-year period.

Half Year Convention

Year 1	20.00%
Year 2	32.00%
Year 3	19.20%
Year 4	11.52%
Year 5	11.52%
Year 6	5.76%

How Do I Calculate the Accelerated Depreciation?

Step 1 - Determine Depreciable Basis

The basis for depreciation is the installed cost of the solar energy system LESS any and all cash incentives. The following example shows first year depreciation deduction for a project with an

installed cost of \$270,000 and a \$135,000 SELFGEN rebate.

$$\text{Depreciable Basis} = [(\text{Total Installed System Cost}) - (\text{Any and All Cash Incentives})]$$

$$\$135,000 = [\$270,000 - \$135,000 (\text{SELFGEN Rebate})]$$

Taxpayers, who take advantage of the Federal Commercial Investment Tax Credit and accelerated depreciation, must reduce the depreciable basis by 50% of the federal tax credit. The result is that the depreciable basis is equal to 95% of the total system cost less all cash incentives.

$$\text{Depreciable Basis} = [(\text{Total Installed System Cost}) - (\text{Any and All Cash Incentives})] \times 0.95$$

$$\$128,250 = [\$270,000 - \$135,000 (\text{SELFGEN Rebate})] \times 0.95$$

Step 2 - Calculate First Year Bonus Depreciation

Once you have established the basis for depreciation, multiply the basis by 50%.

$$\text{Bonus Depreciation} = \text{Depreciable Basis} \times 50\%$$

$$\$64,125 = \$128,250 \times 0.50$$

Step 3 - Calculate Remaining First Year MACRS Depreciation

Subtract the 50% bonus depreciation from the originally calculated depreciable basis and multiply the result by the first year MACRS rate of 20%.

$$\text{First Year MACRS Depreciation} = [\text{Depreciable Basis} - \text{Bonus Depreciation}] \times \text{MACRS Rate}$$

$$= [\$128,250 - \$64,125] \times .20$$

$$\$12,825 = \$64,125 \times .20$$

Step 4 - Calculate Total First Year Depreciation

Add the bonus depreciation to the first year MACRS depreciation to arrive at the total depreciation deduction allowed in the first year.

$$\text{Total First Year Depreciation Deduction} = \text{Bonus Depreciation} + \text{First Year MACRS Depreciation}$$

$$\$76,950 = \$64,125 + \$12,825$$

Depreciation Deductions			
Year	Depreciable Basis	% Deduction	Depreciation Deduction
1			\$76,950
2	\$64,125	32.00%	\$20,520
3	\$64,125	19.20%	\$12,312
4	\$64,125	11.52%	\$ 7,387
5	\$64,125	11.52%	\$ 7,387
6	\$64,125	5.76%	\$ 3,694
Totals			\$128,250

Sample Tax Incentives Calculations

The following example shows how the tax credit and accelerated depreciation would be calculated in combination with the California 15% Income Tax Credit and the San Diego SELFGEN Incentive Program. Please note that these do not factor in the time value of money. Tax rates may vary.

Total Project Size	30 Kilowatts
Total Project Cost for Solar Equipment Installation	\$270,000

Sample Calculation

Total Project Size 30 Kilowatts AC

Total Installed Cost	\$270,000
San Diego SELFGEN Program	
Rebate = lesser of \$4.50 per watt or 50% of installed cost	
$\$135,000 = \$4.50 \times 30,000 \text{ watts}$	
$\$135,000 = \$270,000 \times 50\%$	
	<u>-\$135,000</u>
Initial Cost	\$135,000
7.5% State Solar Energy Tax Credit	
(See separate San Diego Regional Energy Office	
"State Tax Incentive for Solar Electric and Wind Energy Investments")	
Credit = Installed cost less all cash incentives	
$(\$270,000 - \$135,000) \times 7.5\%$	
	-\$ 10,125
Federal 10% Investment Tax Credit (businesses only)	
Credit = Installed cost less all cash incentives	
$(\$270,000 - \$135,000) \times 10\%$	
	<u>-\$ 13,500</u>
	\$111,375
Federal Depreciation Savings ($\$128,250 \times 34\%$ tax rate)	-\$ 43,605
State Depreciation Savings ($\$114,750 \times 8\%$ tax rate)	-\$ 9,990
Final After Tax Cost (after final depreciation deduction)	\$ 57,780

(See detailed breakout of all rebates, credits and depreciation for commercial customers on following page)

Sample Net Cost by Year Calculations

The following example shows how the tax credit and accelerated depreciation would be calculated in combination with the California 15% Income Tax Credit, the San Diego SELFGEN Incentive Program and energy savings to show net cost of the system by year. Please note that these do not factor in the time value of money. Tax rates may vary.

Total Project Size 30 Kilowatts AC (33kW DC)
 Total Project Cost for Solar Equipment Installation \$270,000

Sample Calculation:

Yr.	Total System Cost	SELFGEN 50% Rebate	10% Federal Tax Credit	7.5% State Tax Credit	Federal Depreciation Savings	State Depreciation Savings ¹	Estimated Energy Savings	Net System Cost
1	(\$270,000)	\$135,000	\$13,500	\$10,125	\$26,163	\$1,998	\$6,138	(\$77,076)
2					\$6,977	\$3,197	\$6,077	(\$60,826)
3					\$4,186	\$1,918	\$6,016	(\$48,706)
4					\$2,512	\$1,151	\$5,956	(\$39,088)
5					\$2,512	\$1,151	\$5,896	(\$29,529)
6					\$1,256	\$575	\$5,837	(\$21,861)
7							\$5,779	(\$16,082)
8							\$5,721	(\$10,361)
9							\$5,664	(\$4,697)
10			Break even in year 10				\$5,607	

1 Assumes non-corporate business. Corporate businesses cannot use the state MACRS depreciation schedule.

2 Based on an annual PV output of 1,5500 kw-h/kw at an electricity rate of \$.12. Savings calculations are based on a 33kW DC with 1% module degradation.

3 Assumes .34 Federal Tax Rate

4 Assumes .08 State Tax Rate

More Information on Solar Electric Power Generation

For more information about solar energy applications, please see the SDREO Solar Website at www.sdenergy.org or contact the San Diego Regional Energy Office:

San Diego Regional Energy Office

8520 Tech Way – Suite 110

San Diego, CA 92123

858-244-1177

www.sdenergy.org

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