COMMERCIAL GUIDE TO THE FEDERAL INVESTMENT TAX CREDIT FOR SOLAR PV

Disclaimer: This factsheet provides an overview and does not constitute professional tax advice or other professional financial guidance. It should not be used as the only source of information when making purchasing decisions, investment decisions, or tax decisions, or when executing other binding agreements.

OVERVIEW

- → The solar investment tax credit (ITC) is a tax credit that can be claimed on federal corporate income taxes for 30% of the cost of a solar photovoltaic (PV) system that is placed in service during the tax year.[1] (Other types of renewable energy are also eligible for the ITC but are beyond the scope of this factsheet.)
- → A solar PV system must commence construction on or before December 31, 2019, to claim the 30% ITC—the tax credit will decrease to 26% for systems commencing construction in 2020, 22% for systems commencing construction in 2021, and 10% for systems commencing construction in 2022 and thereafter.[2]
- → For solar PV systems installed on or after October 4, 2008, there is no maximum amount that can be claimed through the ITC, and it may be used to offset either income taxes or alternative minimum taxes.
- → Typically, a solar PV system eligible for the ITC can also use an accelerated depreciation corporate deduction.

ELIGIBILE PROJECTS

To be eligible for the 30% business ITC, the solar PV system must be:

- ☑ Commencing construction between January 1, 2006, and December 31, 2019[3]
- ☑ Used by someone subject to U.S. income taxes (i.e., cannot be used by a tax-exempt entity like a charity)
- ☑ Located in the U.S. (but not U.S. territories unless owned by a U.S. corporation or citizen)
- ☑ New and not previously used equipment
- ☑ Not used to generate energy for heating a swimming pool

ELIGIBLE EXPENSES

The ITC is calculated by multiplying 30% by the "tax basis," which is the amount invested in eligible property. Eligible property includes the following expenses related to a solar PV system:

- ☑ Solar PV panels, solar curtain walls, and sales and use taxes on the equipment
- ☑ Installation costs and racking
- ☑ Step-up transformers, circuit breakers, and surge arrestors
- ☑ Energy storage devices,[4] power conditioning equipment, and transfer equipment

OTHER INCENTIVES & THE ITC

For current information on incentives, including incentive-specific contact information, visit the Database of State Incentives for Renewables and Efficiency (DSIRE) website at www.dsireusa.org.

ELECTRIC UTILITY AND STATE GOVERNMENT REBATES

Under most circumstances, solar PV system rebates provided by a utility or state government are considered taxable income and do not affect the tax basis when calculating the ITC. For example, if the tax basis is $1,000,000 for a PV system installed at a retail business and the state government gives a one-time rebate of $100,000, the ITC is calculated as follows:

$$0.3 * \$1{,}000{,}000 = \$300{,}000$$

One exception is if the rebate is provided by a utility to a customer for the purchase or installation of any "energy conservation measure," including solar PV, at a residence.[5] When this is the case, the utility rebate is subtracted from the tax basis, reducing the amount of the ITC claimed; however, the rebate is not considered taxable income. For example, if the tax basis is $1,000,000 for a PV system installed at an apartment complex and the utility gave a one-time rebate of $100,000, the ITC is now:

$$0.3 * (\$1{,}000{,}000 - \$100{,}000) = \$270{,}000$$

OTHER INCENTIVES

The following are some examples of incentives and policies associated with a solar PV system that will not typically reduce the tax basis related to the ITC (but some may be considered taxable income):

- ☑ Revenue from the sale of renewable energy credits or other environmental attributes associated with the electricity generated by the solar PV system[6]
- ☑ Payments for a state performance-based incentive
- ☑ State and local income tax credits
- ☑ State and local property tax exemptions on the equipment
- ☑ Taxable state or nonprofit grants
- ☑ Loan guarantees
- ☑ Tax-exempt and subsidized energy financing (in 2009 or after)
- ☑ Depreciation deductions (see below)

ACCELERATED DEPRECIATION & THE DEPRECIATION BONUS

ACCELERATED DEPRECIATION

A taxpayer that claims the commercial ITC for a solar PV system placed in service can typically also take advantage of accelerated depreciation (aka the Modified Accelerated Cost-Recovery System, or MACRS) to reduce overall cost of a PV installation. To calculate income on which federal corporate taxes are owed, a business takes the difference between its revenues and expenses, plus or minus any adjustments to income. Because depreciation is considered an expense, having a larger amount to depreciate during the tax year results in a smaller overall tax liability. Note, whereas the ITC is a tax *credit*—a dollar-for-dollar reduction in taxes owed—depreciation is a *deduction*, meaning it only reduces a business's taxes by the depreciation amount multiplied by the business's tax rate (see below for an example).

When the commercial ITC is claimed, accelerated depreciation rules allow 85% of the tax basis to be depreciated over a 5-year period (where any unused depreciation can be carried back 2 years and forward 20 years) on a 200% declining-balance basis.[7] This means that the 85% of solar PV system costs that a business can depreciate are *not* spread out evenly across the 5-year depreciation period; instead, the business is allowed to deduct a larger portion of this amount in earlier years, giving it the benefit of a greater immediate reduction in federal tax liability.

DEPRECIATION BONUS

A business with a solar PV system placed in service between January 1, 2008, and September 8, 2010, or between January 1, 2012, and December 31, 2017, can elect to claim a 50% depreciation bonus. Systems placed in service between September 9, 2010, and December 31, 2011, can elect to claim a 100% depreciation bonus. Systems placed in service during 2018 can elect to claim a 40% bonus depreciation, and systems placed in service during 2019 can elect to claim a 30% bonus depreciation.

EXAMPLE CALCULATION

A generic example can help illustrate how each incentive could be calculated and applied at a business. Consider a business that places in service a $1,000,000 solar PV system in 2014 and uses the calendar year as its tax year. What is the net effect of claiming the ITC, bonus depreciation, and accelerated depreciation on its 2014 tax liability?

ITC CALCULATION

As calculated above, when the tax basis is $1,000,000, the 30% ITC reduces tax liability by $300,000.

BONUS DEPRECIATION CALCULATION

Since the business is claiming the ITC, its depreciable basis for the system is 85% of the tax basis:

$$0.85 * \$1{,}000{,}000 = \$850{,}000$$

To calculate the bonus depreciation for 2014, the business multiplies 50% by the depreciable basis:

$$0.5 * \$850{,}000 = \$425{,}000$$

ACCELERATED DEPRECIATION CALCULATION

The business uses accelerated depreciation to determine what amount of depreciation it will deduct in each year from 2014 to 2018. Assuming this 5-year recovery period, a half-year convention,[8] and a 200% declining balance method, IRS Publication 946 Table A-1 provides the depreciation rate as 20% for year 1. The business calculates its accelerated depreciation deduction by taking the difference between the original depreciable basis and the amount claimed for the bonus depreciation and multiplying by the depreciation rate:

$$0.20 * (\$850{,}000 - \$425{,}000) = \$85{,}000$$

TOTAL IMPACT ON TAX LIABILITY

Assuming the business has a federal tax rate of 35%, the net impact from depreciation deductions is calculated as:

$$0.35 * (\$425{,}000 + \$85{,}000) = \$178{,}500$$

Therefore, the total reduced tax liability for 2014 from depreciation deductions and the ITC is:

$$\$300{,}000 + \$178{,}500 = \$478{,}500$$

The business will continue to claim accelerated depreciation deductions for tax years 2015, 2016, 2017, and 2018—but the specific depreciation rate will vary by year.[9]

UNUSED TAX CREDITS

CARRYBACK AND CARRYFORWARD RULES

Unused tax credits related to the commercial ITC may be carried back 1 year and forward 20 years. After 20 years, one-half of any unused credit can be deducted, with the remaining amount expiring.

TAX EQUITY FINANCING

When a business developing a solar project does not have a large tax liability, tax equity financing may be an option to take full advantage of federal tax benefits. The business can partner with a tax equity investor who has a relatively large tax appetite and can make use of the tax benefits. There are three commonly used models, although the specific arrangements can be quite complicated.

- → **Sale-leasebacks**: The developer sells the solar system to a tax equity investor who leases the system back to the developer.
- → **Partnership flips**: A partnership is formed between the developer and investor and the economic returns "flip" from the investor to the developer after the investor makes use of the tax benefits.
- → **Inverted leases**: The developer leases the system to the investor, structuring the agreement in a way that allows the investor to use the tax benefits.

OTHER ISSUES

TAX-EXEMPT ENTITIES

If the solar PV system is used by a tax-exempt entity like a school, municipal utility, government agency, or charity, then the ITC may not be claimed.

In some states, a tax-exempt entity can indirectly benefit from federal tax benefits related to solar by entering into a **third-party ownership (TPO)** arrangement. Specifically, a tax-exempt entity can agree to purchase the electricity produced by a solar PV system owned and installed by a solar company (who claims the associated federal tax benefits) for an agreed-upon number of years at a set price. This type of TPO arrangement is called a **power purchase agreement (PPA)**. As of March 2015, 24 states and Washington, DC authorize this type of PPA, five states prohibit them, and their legal status is unclear in the rest.[10] Notably, the ITC cannot be claimed if a tax-exempt entity simply **leases** the solar equipment, which is another common type of TPO arrangement used in the residential and commercial sectors.

FINANCING

Eligible solar PV equipment purchased through debt financing qualifies for the ITC. However, individuals (including partnerships or limited liability companies), S corporations, and closely-held C corporations financing a solar PV project by borrowing on a nonrecourse basis face additional rules that may delay claiming the ITC. Borrowing on a "nonrecourse basis" means the borrower is not personally liable to repay the loan, and the lender primarily relies on the solar PV project as collateral. In general, the portion of the solar PV project paid through nonrecourse financing is not immediately included when calculating the ITC (although several exceptions exist); instead, in future tax years the taxpayer can claim the ITC on the portion of the loan principal (but not the interest) as it is repaid.

STRUCTURES AND BUILDING INTEGRATED PV (BIPV)

Structures holding the solar PV system may be eligible for the ITC if the solar PV system is designed primarily with the goal of electricity generation and other uses of the structure are merely incidental.[11] While structural components typically do not qualify, the IRS noted an exception for components "so specifically engineered that it is in essence part of the machinery or equipment with which it functions."[12]

A NOTE ON RECAPTURE RULES

While the ITC can be claimed in full for the year in which the solar PV system is placed in service, the business claiming the ITC must retain ownership of the system until the sixth year of the system's operation or the business will be required to pay back a portion of the tax credit. Since the ITC "vests" at a rate of 20% per year over five years, any "unvested" portion is recaptured (i.e., repaid to the IRS) if something happens during the five years that would have made the project ineligible for the ITC in the first place. For example, if the business claims the ITC and then sells the system a year later after it has only vested 20%, it will have to repay 80% of the amount it claimed from the ITC to the IRS.

CLAIMING THE ITC

To claim the ITC, a taxpayer must fill out and attach IRS Form 3468 to their tax return. Instructions for filling out the form are available at http://www.irs.gov/pub/irs-pdf/i3468.pdf.

MORE INFORMATION

ASK QUESTIONS

→ Internal Revenue Service, located at 1111 Constitution Avenue, N.W., Washington, DC 20224, and available by phone at (800) 829-1040.

FIND RESOURCES

→ *The federal statute*: 26 U.S.C. § 48 at www.gpo.gov

→ *Updated information on the current status of the ITC*: Database of State Incentives for Renewables and Efficiency entry on "Business Investment Tax Credit (ITC)" at www.dsireusa.org

→ *Additional information, guides, and factsheets*: Solar Energy Industries Association at www.seia.org

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About the NC Clean Energy Technology Center
The N.C. Clean Energy Technology Center is a UNC System-chartered Public Service Center administered by the College of Engineering at North Carolina State University.

Its mission is to advance a sustainable energy economy by educating, demonstrating and providing support for clean energy technologies, practices, and policies. The Center provides service to the businesses and citizens of North Carolina and beyond relating to the development and adoption of clean energy technologies. Through its programs and activities, including the SunShot Solar Outreach Partnership, the Center envisions and seeks to promote the development and use clean energy in ways that stimulate a sustainable economy while reducing dependence on foreign sources of energy, and mitigating the environmental impacts of fossil fuel use.

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ENDNOTES

[1] 26 U.S.C. § 48.
[2] Consolidated Appropriations Act, 2016 (H.R. 2029). Retrieved from https://www.gpo.gov/fdsys/pkg/BILLS-114hr2029enr/pdf/BILLS-114hr2029enr.pdf
[3] Martin, K. (2013, September 9). *Guide to federal tax incentives for solar energy* (7.0 ed.). Retrieved from www.seia.org
[4] Additional considerations apply when the energy storage device is also used to store energy generated from a source other than the solar PV system. For more information, see Internal Revenue Service. (2013, February 22). IRS private letter ruling 121432-12. Retrieved from http://www.irs.gov/pub/irs-wd/1308005.pdf
[5] 26 U.S.C. § 136.
[6] Internal Revenue Service. (2010, September 3). IRS private letter ruling 201035003. Retrieved from http://www.irs.gov/pub/irs-wd/1035003.pdf
[7] 26 U.S.C. § 168.
[8] A half-year convention is a tax principle that treats equipment as if it was installed in the middle of the tax year (regardless of when it was actually installed), allowing half a year's depreciation for the first tax year.
[9] Internal Revenue Service. (2015). *How to depreciate property*. (IRS Publication 946, Cat. No. 13081F). Retrieved from http://www.irs.gov/pub/irs-pdf/p946.pdf
[10] Database of State Incentives for Renewables and Efficiency. (2014). Third-party solar PV power purchase agreements. Retrieved from http://www.dsireusa.org/documents/summarymaps/3rd_Party_PPA_Map.pdf
[11] Solar Outreach Partnership Blog. (2015, January 21). Excerpts from "ask an expert"—tax edition. Retrieved from http://solaroutreach.org/blog/#.VOuByvnF-So
[12] Internal Revenue Service. (2010, October 29). IRS private letter ruling 201043023. Retrieved from http://www.irs.gov/pub/irs-wd/1043023.pdf