

Tax Equity 101: Structures

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Introduction

The three main pillars of competitiveness in the solar industry are the ability to acquire customers at low cost, install inexpensively, and achieve low cost of capital. To realize a low cost of capital, solar developers must often partner with so-called “tax equity” investors due to the structure of federal solar incentives. This paper summarizes the main financial arrangements used for such financing: sale-leasebacks, partnership flips, and inverted leases (which are also called lease pass-throughs).

The examples in the paper are from solar, but many of the same principles apply to the wind industry as well.

Federal Incentives for Solar

There are three federal incentives for businesses that invest in solar systems:

1. Investment Tax Credit (“ITC”) – Purchasers can take a tax credit equal to 30% of their basis in a new solar system.
2. Bonus Depreciation – Business owners of solar systems put in place before the end of 2017 are eligible to depreciate 50% of their basis in the first year.
3. Accelerated MACRS Depreciation – Businesses can depreciate solar systems using a 5-year schedule even though the useful life of a solar system is 30-35 years.

These benefits have value because they reduce the amount of taxes a business would otherwise pay. For example, suppose a business would owe the government \$1 million in income taxes in the absence of any solar investment, but it now invests \$600,000 in solar systems. It takes a tax credit—that is, a direct reduction of its taxes—of \$180,000. It also claims bonus depreciation of \$255,000 and accelerated MACRS depreciation of \$51,000 in the first year.¹ If its tax rate is 35%, this reduces its tax burden by another \$107,000. The business has reduced its taxes in the first year by \$287,000, or nearly half of its solar investment. This reduction in the taxes the business would otherwise owe is effectively the federal government’s subsidy of solar.

Of course, in order to take direct advantage of these incentives a business must have a tax liability to begin with. Many solar dealers and developers do not have sufficient such liabilities; to use the incentives they partner with tax equity investors as described below.

Future Changes

Under current law, bonus depreciation will phase out as follows: 40% in 2018, 30% in 2019, 0% in 2020 and beyond. The ITC will also decrease over time: 26% in 2020, 22% in 2021, 10% thereafter.

¹ According to IRS rules, the business must reduce its basis in the equipment by 50% of the ITC, so the starting depreciable basis would be \$600,000 - 50% * \$180,000, or \$510,000.

Past Incentives

The American Recovery and Reinvestment Act of 2009 allowed companies to take a cash grant of 30% of their basis in a solar system from the U.S. Treasury in lieu of the ITC. These grants are often referred to as “Section 1603” grants after the section of the law that created them. They expired at the end of 2011.

Cost Basis and Fair Market Value

One critical consideration in determining the value of the ITC and depreciation benefits is how much one can claim as the basis against which one is claiming the benefits—the larger the basis, the larger the tax benefit. A company’s basis is generally the amount of its investment in the property. When a project is sold by a dealer or developer to an unrelated third party, the new owner’s basis is clear—it is what it paid for the system.

However, when there is no sale between independent parties—as is the case when a developer contributes or sells the system to a joint venture that it owns a part of—the Treasury and IRS rely on the concept of Fair Market Value (“FMV”). They define FMV as “the price at which property would change hands between a buyer and a seller, neither having to buy or sell, and both having reasonable knowledge of all necessary facts.”

The government will accept FMV calculated in any of three approaches: cost, market, or income.² The cost approach may include the cost of equipment, engineering, permitting, and installation. It may also include overhead related to the above. It may also include a reasonable profit, which Treasury defines as 10-20 percent, and a developer fee of 3-20 percent. (The developer fee should not be considered as covering developer costs that are not eligible to be included in basis, such as marketing or the cost of arranging financing, but rather as compensation for the capital put at risk before it knew there was going to be a sale.)

The market approach is based on the sale of comparable properties. In other words, the price that similar systems in similar locations have sold for between unrelated parties.

Finally, the income approach uses the discounted value of future cash flows of the project. Treasury is least comfortable with this approach because it relies on assumptions that are difficult to verify or that require a lot of judgment. For example: the appropriate discount rate (we have seen developers use everything from 6-10%), the terminal value of the systems, and future rates of inflation and taxes. Although Treasury is uncomfortable with the income method, we understand the IRS uses this approach internally.

FMV is a critical issue because (presumably) everyone wants to comply with the law but everyone also has an incentive to claim the highest FMV possible. This is not to be taken lightly: the Departments of Treasury and Justice have issued subpoenas to a number of companies in the industry investigating the possible misrepresentation of FMV for 1603 grants. However, companies

² A Treasury summary of these three approaches is available at [http://www.treasury.gov/initiatives/recovery/Documents/N%20Evaluating Cost Basis for Solar PV Properties%20final.pdf](http://www.treasury.gov/initiatives/recovery/Documents/N%20Evaluating%20Cost%20Basis%20for%20Solar%20PV%20Properties%20final.pdf).

that are conservative will receive fewer tax benefits than those that are more aggressive but still follow the law.

Tax Equity

Unfortunately, many businesses that invest in solar systems do not have significant tax liability. While an individual company that buys its own solar system might be able to use tax incentives efficiently, no business we know of that specializes in the installation or financing of solar systems for others has enough tax liability to be able to use all the federal tax benefits itself.

As a result, these businesses often seek tax-equity investors—investors who can use the tax benefits—as partners. The arrangements used are complex and the number of parties that have been willing to invest in tax equity has been limited. As a result, both the administrative costs (in terms of legal and accounting fees) and financing cost (in terms of rate of return required by tax equity investors) are high. As of this writing, tax equity investors require 7.5-9.5% for unleveraged projects. This is the after-tax return to the tax equity investor, net of its tax benefits. The cash return to the tax investor and cost of capital seen by the developer are lower.

In addition, most tax equity investors will only join in funds intended to finance at least \$75-100 million within one year, which is more capital than most developers can deploy.

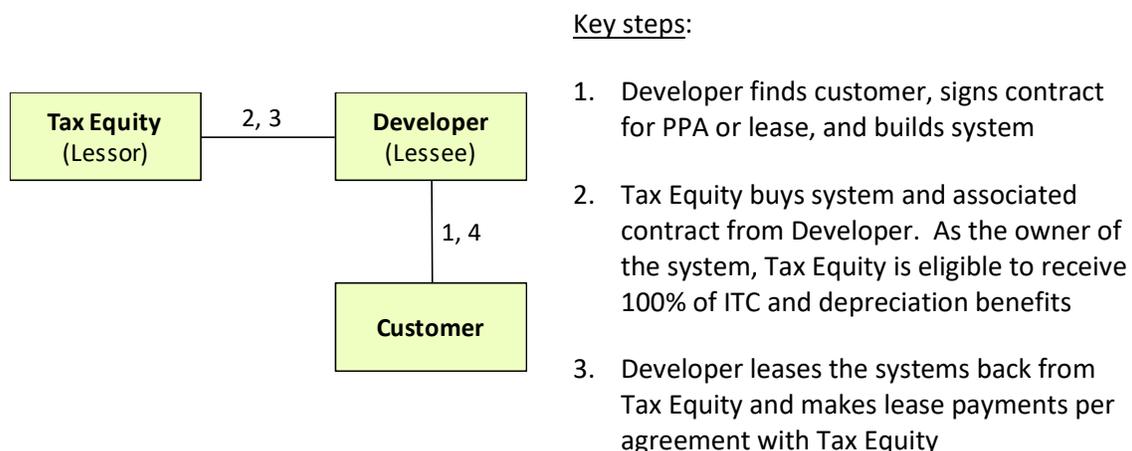
Three Tax Equity Structures

The market uses three main structures used for tax equity investments: sale-leasebacks, partnership flips, and inverted leases (also sometimes called lease pass-throughs).

Sale-Leasebacks

The sale-leaseback is the most straightforward of the structures (see Figure 1):

Figure 1 – Illustrative Sale-Leaseback Structure



Key steps:

1. Developer finds customer, signs contract for PPA or lease, and builds system
2. Tax Equity buys system and associated contract from Developer. As the owner of the system, Tax Equity is eligible to receive 100% of ITC and depreciation benefits
3. Developer leases the systems back from Tax Equity and makes lease payments per agreement with Tax Equity

4. Customer pays Developer monthly

Sale-leasebacks have the following advantages and disadvantages for developers:

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| <ul style="list-style-type: none"> + Simplest of all the structures + Allows transfer of 100% of tax benefits to Tax Equity + Minimal financing capital required from Developer (~20% of FMV in the form of a rental prepayment) + Structure can be put in place up to 90 days after assets are placed in service + Basis for ITC and depreciation is transaction price between Developer and Tax Equity, which may be higher than Developer's cost | <ul style="list-style-type: none"> – Cost of capital from tax equity investors may be higher than from other sources. Because Tax Equity is providing most of the financing capital in this structure, it may not be efficient – Developer must meet fixed rent schedule for its lease of the assets; if projects underperform and Developer does not meet rent payments, there can be negative consequences – If Developer wants to own the assets in the long term, it has to repurchase them from the Tax Equity at FMV at the end of the lease – Lease must be structured so FMV at end of lease is at least 20% of initial value |
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Partnership Flips

In partnership flips, the developer (also referred to as “the sponsor” because it sponsors and manages the project) and tax equity investor form a joint venture partnership and the allocation of profits, cash, and tax benefits “flips” between the parties one or more times during the life of the partnership. These flips allow the sponsor to invest alongside Tax Equity so it retains a residual interest in the systems after their installations, and they allow the transfer of most (typically 99%) of the tax benefits to the tax equity investor. They also allow the sponsor to regain 100% ownership of the assets at reasonable cost after all the tax benefits have been used by the tax investor.

The partnerships are organized as limited liability companies so there are no income taxes at the partnership level; taxes are paid by the investors on their own corporate tax returns. The vast majority (usually, but not always, 99%) of the profits, losses, and investment tax credits from the partnership flow to the Tax Equity for the first several years, after which these attributes “flip” and the sponsor gets the majority of them (usually, but not always, 95%).

The flip is designed to happen as early as the end of year five or as late as year nine, and is supposed to coincide with a time when Tax Equity will have received a certain target rate of return, net of all tax benefits and cash it is distributed. The flip cannot happen before the end of year five or the government will recapture a portion of the ITC.

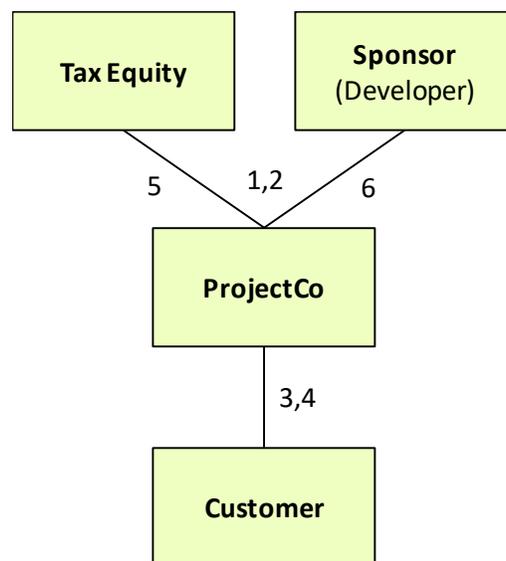
Profit Share Does Not Equal Cash Share

One important concept to understand when dealing with partnership flips is that the cash generated by the partnership can be distributed to the partners in a completely different ratio than the tax profit or loss. For example, while the tax equity investor may get 99% of the tax profit or loss before the flip—and it is usually a loss, which is what reduces its net corporate tax payments—it usually gets a minority of the cash generated from lease payments and other sources. Most of the cash goes to the sponsor.

Buyout Option

The sponsor usually has the right to purchase Tax Equity's position after the flip. The buyout price is usually the greater of fair market value at the time of the buyout or the amount that would give the tax equity investor its required rate of return. In any event, because after the flip Tax Equity only gets a small minority of cash distributions, the buyout price is quite reasonable (compared with the price in a sale-leaseback).

Figure 2 – Illustrative Partnership Flip Structure



Key steps:

1. Sponsor provides capital to ProjectCo (usually ~60%)
2. Tax Equity provides remaining capital (usually ~40%) to ProjectCo
3. ProjectCo build project(s) (or has them built)
4. Customer makes PPA payments
5. ProjectCo distributes most of ITC and tax profit (or loss) to Tax Equity (99%), plus enough cash to get it to its target IRR at the flip
6. Fund distributes remaining ITC and tax profit (or loss) to Sponsor (1%), plus all remaining cash

Partnership flips have their own set of advantages and disadvantages:

- + Very well understood structure used for years in wind energy deals
- + Most common structure used in solar
- + Sponsor can buy out the tax equity investor after flip at reasonable cost
- + Often no fixed payment, so if projects underperform worst case for Sponsor is usually a delay in the flip
- Requires Sponsor to invest some of its own capital, which it may not have or desire to use
- Less than 100% of tax benefits are transferred to Tax Equity. If Sponsor cannot use some ITC or depreciation, this may be inefficient
- Partnership must be in place and funded prior to assets being placed in service
- High legal and accounting costs

Yield-Based Flips

There are two major sub-types of the partnership flip. The so-called yield-based flip is the most popular. Tax Equity gets the vast majority of the tax benefits plus enough cash to get its required after-tax IRR at an expected target flip date. If the assets underperform, the flip is delayed until Tax Equity gets its agreed return.

Fixed Flips

Some banks, including especially U.S. Bank, do flips in a slightly different way. In this “fixed flip” model, Tax Equity gets a fixed preferred return of about 2-3% of their investment up to the flip in addition to the tax benefits. The flip happens at the end of year 5 or 6 irrespective of whether Tax Equity received its target return. (The 2-3% preferred return plus the tax benefits will yield the target return with high probability.) Fixed flips make sense if tax rates are stable; we expect they will become less popular going forward, given all the talk in Washington about possible changes to tax rates.

Debt

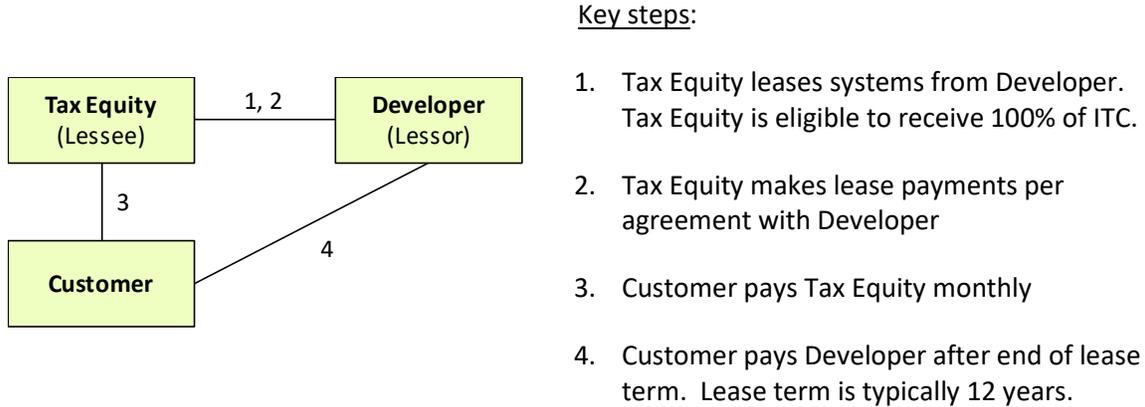
It is possible for ProjectCo to use debt. This is not shown in the Figure 2 for simplicity. Using debt at the project level is rare.

For more information on partnership flips, see our more detailed article on their mechanics and accounting, [Tax Equity 201: Partnership Flips](#).

Inverted Leases

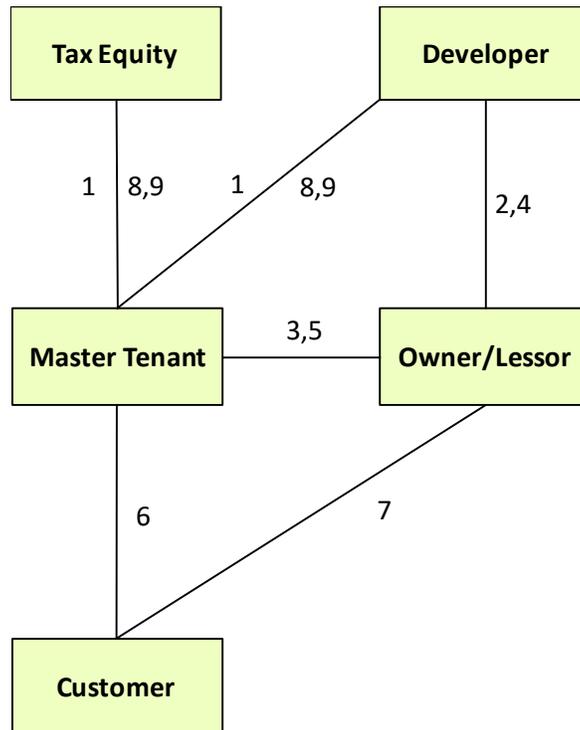
There are two types of inverted leases: “simple” (or “clean”) inverted leases and “partnership” inverted leases. A simple inverted lease involves Tax Equity leasing solar systems from the developer. See Figure 3:

Figure 3 – Illustrative Simple Inverted Lease Structure



A partnership inverted lease structure involves two partnership entities. First, the developer and tax equity investor fund a “master tenant”. Tax Equity provides almost all of the funds and owns 99% of the master tenant. Next, the developer and master tenant fund an “owner/lessor” to own and lease the systems to the master tenant. The developer typically owns 51% of the owner/lessor. Some developers prefer this structure because it allows them to keep half the depreciation tax benefits.

Figure 4 – Illustrative Partnership Inverted Lease Structure



Key steps:

1. Developer and Tax Equity make capital contributions to Master Tenant so they own 1% and 99%, respectively

2. Developer contributes solar system or makes a capital contribution to Owner/Lessor so that it owns 51%
3. Master Tenant makes capital contribution to Owner/Lessor so it owns 49%
4. Owner/Lessor makes capital contribution to Developer
5. Owner/Lessor leases system to Master Tenant. Owner/Lessor also makes election to pass through ITC benefits to Master Tenant.
6. Master Tenant sub-leases to Customer. Customer makes monthly payments to Master Tenant, which “passes through” a portion of them to Owner/Lessor.
7. Customer pays Owner/Lessor after end of lease term
8. Developer and Tax Equity take 1% and 99% of ITC, respectively, in proportion to their ownership of Master Tenant
9. Developer and Tax Equity Investor take 51% and 49% of taxable income/loss (including depreciation benefits), in proportion to their ownership of Owner/Lessor

The advantages and disadvantages of inverted leases include:

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| <ul style="list-style-type: none">+ Allows Developer to keep some depreciation benefits (may not be ideal for all developers)+ Lessee (Tax Equity or Master Tenant) can claim FMV based on appraised value for purposes of ITC; it has no insight into cost since it is merely a lessee | <ul style="list-style-type: none">– Tax Equity receives fewer tax benefits than in other structures– No tax laws directly govern inverted leases, so highest tax structuring risk– Relatively small number of tax equity investors will do inverted leases for tax equity (they were more common for financing of 1603 grants) |
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Conclusion

Understanding and modeling tax equity investment funds is difficult. If you choose to build your own financial model of a tax equity investment, here are the main elements your model should include:

1. What is the cost of installation, including a reasonable profit?
2. How many systems will be installed during the life of the fund (which is typically less than a year)? How much total funding will be required?
3. How much of this funding will tax equity provide? How much must be provided by the developer? By debt?

4. How much revenue will the financed systems generate? From lease or PPA payments? From state grants or rebates? From the sale of renewable energy credits the systems generate over time? How will these revenues increase (or not) over the life of the assets?
5. What proportion of customers will fail to pay their bills?
6. What will be the salvage value of the systems at the end of the lease or PPA term?
7. What will the operating expenses for the systems / fund be? For operations and maintenance? For billing and collections? For fund management, accounting, and legal filings? How will this escalate (or not) over the life of the leases? How will these expenses change over the life of the leases?
8. How should the systems be depreciated for book and tax purposes?
9. What setup expenses will each party incur to get the investment fund off the ground?
10. How should the profits (losses), investment tax credits, and cash of the partnership be divided among the owners so as to give them their required rates of return while complying with potentially complex partnership tax law?
11. Given all the assumptions above, what are the IRRs for the tax equity investor and developer?

Woodlawn has developed Microsoft Excel models for each structure; they are available at our [web store](#).

Woodlawn would also be happy to answer any questions you might have about tax equity structuring and investments. Please feel free to contact [us](#).