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Renewable Energy Project Finance

Will Solar Projects Need Tax Equity in the Future? Yes, but Baby Steps Toward Securitization Improve the Situation

Submitted by Michael Mendelsohn on Wed, 04/18/2012 - 9:00am

I've written in various places about the need for tax equity to finance renewable energy projects—particularly solar. I was under the assumption that tax equity may be a thing of the past. Now, I'm not so sure. You may know that the investment tax credit (ITC) declines from 30% to 10% of eligible capital costs in 2017. In addition, at the end of 2012, the current 50% "bonus" depreciation expires, further alleviating the need for tax equity. While those circumstances lessen the need for tax equity, they likely don't eliminate it.

So, how much tax equity will be needed after the tax benefits shift? The analysis in Table 1 attempts to answer that question by calculating the value of tax benefits under the current and future incentive structures for a $100 solar project. The value of the tax benefits is about $52 under the current incentive levels, or 52% of the initial project costs. In 2017, after the ITC and depreciation benefits revert to their former levels, the value of the tax benefits drop to $35, or 35% of the initial project costs.

In developing the analysis, I assume a 35% tax rate and a 10% internal rate of return (IRR) requirement (i.e., the discount rate that sets the net present value (NPV) to $0). The tax benefits represent the combined value of the ITC and the depreciation schedule known as the five-year Modified Accelerated Cost Recovery System (MACRS). See note [1] in the reference section for an explanation of the depreciation benefits in the analysis.

Table 1. Value of Current and Future Tax Benefits

Year	0	1	2	3	4	5	6
Project Cost	$100						
Tax Rate	$35						
IRR Target	10%						
Current Tax Equity Requirement							
ITC		30%					
ITC Value		$30					
Depreciable Basis		$85					
5-Yr. MACRS + Bonus Schedule		60.0%	16.0%	9.6%	5.8%	5.8%	2.9%
Depr. Value (schedule × basis × tax rate)		$18	$5	$3	$2	$2	$1
Total Tax Benefit (depr. value + ITC)		$48	$5	$3	$2	$2	$1
Tax Equity Inv. that Earns 10% IRR on Tax Benefits	**($52)**						
Future Tax Equity Requirement							
ITC		10%					
ITC Value		$10					
Depreciable Basis		$95					
5-Yr. MACRS + Bonus Schedule		20.0%	32.0%	19.2	11.5%	11.5%	5.8%
Depr. Value (schedule × basis × tax rate)		$7	$11	$6	$4	$4	$2
Total Tax Benefit (depr. value + ITC)		$17	$11	$6	$4	$4	$2
Tax Equity Inv. that Earns 10% IRR on Tax Benefits	**($35)**						

At 35% of initial project costs, the value of the tax benefits—even after they decline—may be too large to absorb within the project or cost-effectively carry forward. To compete in the market, solar developers may need to monetize the tax benefits via a third-party investment known as tax equity. Until now, tax equity has been in short supply.

The reason this is important is the industry is looking ahead for new asset classes to finance renewable energy projects such as securitization, long-term debt instruments, real estate investment trusts (REITs), and master limited partnerships (MLPs). These instruments, which each effectively pool investments and sell off tradable securities, hold the promise of accessing vast swaths of as-yet untapped capital. By creating a liquid, tradable ownership share, or security, these asset classes reduce risk and enable investment by casual investors or money managers who are not necessarily experts in renewable energy (think pension funds).

Unfortunately, use of these mechanisms may be hindered if tax equity capital is needed to monetize the tax benefits. The tax benefits are critical to lowering the cost of energy from a renewable project but unfortunately may not flow to the owners of the new asset classes

mentioned. For example, the tax credits cannot be easily transferred to passive investors such as owners of stocks or other securities. Therein lies the rub—new asset classes such as securitization offer the potential to tap low-cost capital, but traditional support mechanisms such as tax credits and accelerated depreciation may complicate the pathway.

However, accessing tax equity may be getting easier, through baby steps, along the path towards securitization and other asset class application. First, Clean Power Finance (CPF) is a financing entity that effectively pool projects to a size necessary to access tax equity [2]. CPF offers a suite of software tools to evaluate system design and project economics. Developers that use CPF's tools may also qualify for project financing. Financing qualification relies on passing certain due diligence requirements regarding installation practices and project evaluation. According to CPF, their partnership enables developers to tap tax equity and debt investment pooled by the firm. CPF investors include Kleiner Perkins and Google, among others.

Second, SolarCity has been developing an asset-backed securitization of its project portfolio [3]. The company was targeting "early 2012," although no public information has been made this year as of this publication date. The financing facility would securitize the stream of projected customer payments and could be sold to a wide array of investors. Although, this move represents the pooling of one developer's portfolio, enabling market investment in a securitized product could ease the way for smaller, regional players who don't have the capability to raise such capital on their own.

References / Notes:

[1] Table 1 goes out six years, as "five-year" MACRS actually carries into year six of the project (using "half-year" convention, the benefit assumes the project starts at the mid-point of year one). The value of the depreciation schedule in Table 1 is represented by the allowed annual deduction × the tax rate × the "depreciable basis." The depreciable basis, per IRS code, is calculated as the eligible project costs less one-half the ITC value. When the ITC is 30%, or $30 in our example, the depreciable basis equals $85 [i.e., $100 − ($30/2)]. When the ITC declines to 10%, or $10, the depreciable basis will increase to $95 [i.e., $100 − ($10/2)]. Importantly, this negates some of the reduction in the ITC.

[2] Trabish, H. (7 February 2012). "Clean Power Finance Moves Big Numbers Into PV With Vivint Solar Deal." Greentech Media. Accessed March 12, 2012.

[3] Granger, A. (23 September 2011). "Solar ABS Gets Recharged." Securitization Intelligence. Accessed March 23, 2012.

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