



## **Renewable Energy Market Conditions and the 1705 Loan Guarantee Program**

*The US Partnership for Renewable Energy Finance (US PREF) has prepared the following brief summary of changes in the marketplace for renewable energy finance as a result of the financial crisis, and a discussion of the importance of the 1705 loan guarantee program, with considerations for possible alternatives in operating the 1705 program.*

### **Abstract**

Reduced taxable income for corporations have resulted in tax credit incentives being largely ineffective in today's economic environment. Additionally, the tightening of the credit markets has limited the availability of debt funding and increased borrowing costs to rates unattractive to project sponsors. These barriers are currently preventing private sector investment needed to reach U.S. goals for expansion of renewable energy. The comparison below, between 2006 and 2009 financing environments, highlights these challenges and shows how the 1705 loan guarantee program, if implemented well, can address some of them.

However, there are two self-imposed stipulations that may impair a successful 1705 implementation:

1. Requiring 20% of total debt raised to be placed into today's challenged credit markets
2. The DOE can only be 80% of the loan

What's at stake and dependent on a successful implementation of the 1705 program:

1. 18,000MW's of wind, solar, biomass, and geothermal projects thru 2011
2. Construction Jobs: approximately 101,250 direct and 84,600 indirect; Permanent Jobs: approximately 6,750 full-time, 56,250 part-time; Total Jobs: approximately 250,000
3. CO<sub>2</sub> emissions: 33 million tons of CO<sub>2</sub> per year avoided.

**Typical Financing Structure in 2006:** Historically, project-level debt has come in the form of tax equity and back leverage. Back leverage is term debt (raised in the capital and private placement markets) secured by the assets of the project and is sized based on the project's projected cash flows.

Historically, this financing structure was predominantly utilized by independent developers, who were responsible for a significant share of new renewable energy construction at the time. Independent developers, unlike domestic and foreign utilities and exploration and production companies, lack large balance sheets, investment grade parents and taxable income. This has historically driven developers to utilize project-level financing, including the use of tax equity. Investment grade balance sheet players with taxable income were able to either mimic this approach or finance their developments on their own balance sheets and utilize their taxable income to monetize the tax attributes and MACRS depreciation.

Independent developers are the most important players in solar, geothermal, and biomass power development but their role in wind development has declined sharply in recent years, largely because many independents, lacking capital to build projects, sold their projects to better-capitalized firms or sold their entire companies to large European utilities. The European utilities have investment-grade balance sheets

and large amounts of cash but lack US tax capacity. These players raised tax equity from US institutions but did not use project-level debt or project back leverage because they could borrow more cheaply on their balance sheets.

2006 Debt Instruments

- Tax Equity
- Back Leverage

Function

- Monetization of PTC/ITC and MACRS depreciation<sup>i</sup>
- Leverage project cash flows

Markets

- Large financial institutions
- Capital and private placement markets

**Typical Financing Structure in 2009:** Given the current state of the credit markets, banks and other renewable energy lenders are unable to provide the same level of financing to the industry. Despite no changes in the project-level cash flows, lenders are now sizing their tranches on much more stringent terms, depressing the overall level of financing. As seen on the next page, a hypothetical wind farm's "Financeable" EBITDA<sup>ii</sup> (as determined by banks/lenders) is currently down over 50% from 2006 levels. In today's market, tax equity has been replaced with the ITC grant. Further, unless an ITC grant partnership<sup>iii</sup> can be achieved, where the MACRS depreciation is monetized, the benefit of the MACRS depreciation tax shield is instead carried forward to offset prospective taxable income.

This current financing structure is the only alternative for independent developers, resulting in a problematic situation. While this approach can also be utilized by investment grade, large balance sheet players, given the current state of the markets, these players are likely to utilize their own investment grade balance sheets and taxable income first.

The Section 1705 loan guarantee program was authorized by the American Renewable and Reinvestment Act (ARRA) and is designed to support renewable energy systems, electricity transmission, and leading biofuels production. It is an extension of the 1703 loan guarantee program in which credit subsidy costs are paid by an appropriation in ARRA and construction begins before September 30, 2011.

The Financial Institutions Partnership Program (FIPP) is collaboration between DOE and lenders to expedite the loan guarantee program. FIPP participants are pre-qualified commercial lenders (PQL) that will apply to DOE for eligible loans and hold the unguaranteed portion. DOE will rely heavily on PQL due diligence to manage government risk and accelerate applications.

2009 Debt Instruments

- DOE Guaranteed Debt
- Financial Institution Partnership Program ("FIPP") Unguaranteed Debt

Function

- Monetization of ITC
- Leverage project cash flows
- Leverage project cash flows

Markets

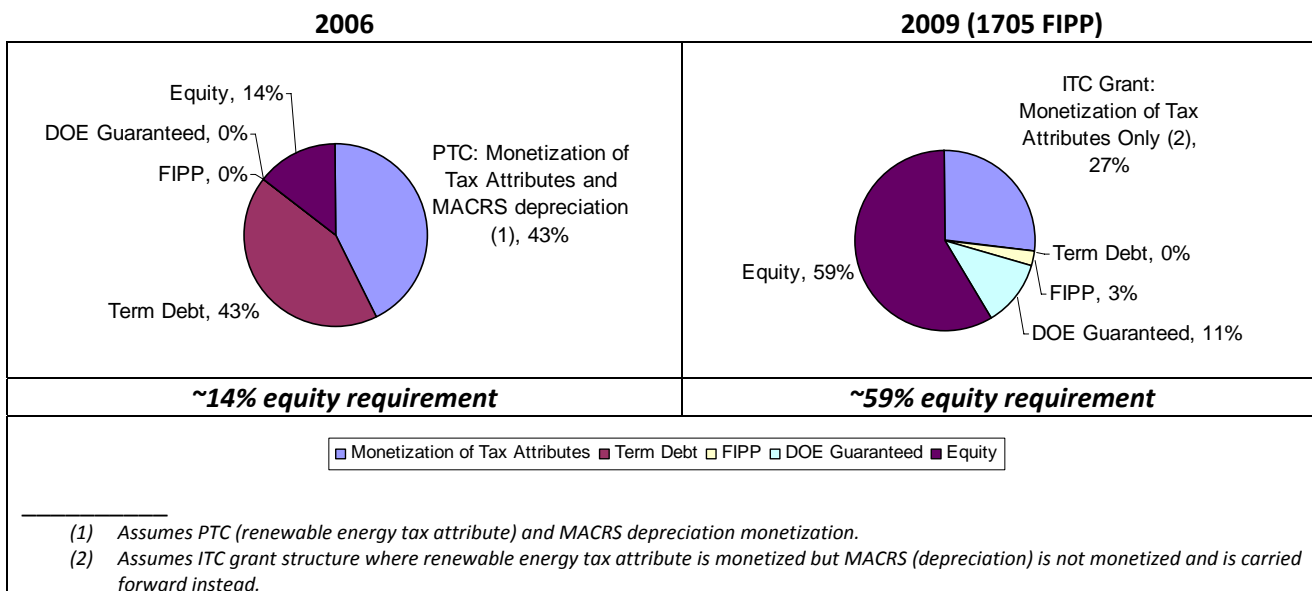
- Treasury
- Agency market or Federal Financing Bank
- Capital and private placement markets

**HYPOTHETICAL WIND FARM**

<b>2009 vs. 2006 Financing Market Differences:</b>	<b>Average Annual Financial Projections: 2011-2019 (\$ in 000's)</b>				
	2006	2009	% Diff		
<ul style="list-style-type: none"> <li>• Current market demands sizing project-level debt based on P99<sup>1</sup> wind and no credit for unhedged power vs. P90 wind with partial credit for unhedged power</li> <li>• No credit for unhedged renewable energy certificates ("RECs") vs. historic 50-60% credit for unhedged RECs</li> <li>• No refinancing risk assumed by lender at maturity currently (0% principal at maturity) vs. historic 40% principal balance outstanding at maturity</li> <li>• ~0.7% higher debt interest rate coupon today vs. historic</li> </ul>	Revenue	18,437	18,437	0.0%	
	EBITDA (1)	13,677	13,677	0.0%	
	Financeable EBITDA (2)	7,407	3,496	(52.8%)	
	% of Total EBITDA	54.2%	25.6%	-	
	<b>Resulting Leverage (based on 1.0x debt service coverage)</b>		<b>Cost of Debt</b>		
	2006	2009	2006	2009	
	Monetization of Tax Attributes	68,500	43,470	7.5%	13.0%
	Term Debt	69,300	0	5.5%	--
	FIPP	0	4,600	--	8.5%
	DOE Guaranteed	0	18,400	--	5.5%
	<b>Total</b>	<b>137,800</b>	<b>66,470</b>		
	% leverage	86%	41%		
	Equity	23,200	94,530		
	<b>Total</b>	<b>161,000</b>	<b>161,000</b>		

(1) Total EBITDA at P50 Wind  
 (2) Financeable EBITDA at P90 '06 and P99 '09 wind also reflects other financing market conditions identified on the left

**2009 Renewable Project Finance Using 1705 FIPP:** The current depressed levels of financing obtainable in the market have greatly increased the cash equity need for renewable project developers. As seen from the illustrations below, the same hypothetical wind farm (based on financeable EBITDA above) would only be able to obtain 41% leverage today given the anticipated 1705 FIPP's reliance on the market and the anticipated stipulation that the DOE portion of the loan can only be 80% of the project-level debt. This would require a 59% equity contribution, creating additional liquidity burdens on project developers and likely destroying the project's returns and thus its viability. The hypothetical wind farm example illustrates why the universe of financeable projects has narrowed significantly and that this phenomenon will significantly hamper the industry's growth.



<sup>1</sup> P99 is a reference to the level of wind power assumed over the life of the project. P99 is a statistical reference that means if wind at the site were simulated in 100 trials, the level of wind assumed would occur in 99 of the trials. In other words, it is essentially the most conservative measure of wind power over the life of a project. P90 assumes those wind conditions only 90% of the time.

**Conclusion**

The 1705 program is critical to achieving the Administration's goals of doubling renewable generation over the next three years, reducing the CO<sub>2</sub> emissions from our electricity generating fleet, moving towards energy independence, and generating significant job growth.

1705 Legislation provides a guarantee for up to 80% of a renewable project's cost. However, there are two self-imposed stipulations that jeopardize the program's potential effectiveness.

The first self-imposed stipulation of the 1705 solicitation is likely going to require 20% of the DOE's LGP to be placed in today's turbulent credit market without the benefit of the guarantee. The problem with this approach is the current debt market is challenged and is unlikely to provide the entire 20%. The unguaranteed amount raised will determine the total size of the DOE loan as the second self-imposed stipulation of the 1705 program will likely require that the DOE provide no more than 80% of the entire debt facility. Therefore, anticipating the market doesn't provide the entire 20% that isn't guaranteed and the DOE holds its funding of the loan to only 80%, most developers will not be able to raise 80% of the project's cost provided under the legislation.

Independent developers have historically been important players in renewable energy development, and while investment grade large balance sheet players may be less affected, a well-implemented 1705 program is critical to the prospective success of the independent developer.

The 1705 program was created to protect the financing of renewable projects from today's challenging credit market in order to achieve the aforementioned goals of the Administration. However, these two self-imposed stipulations make the 1705 program 100% *contingent on* today's challenging credit market and will likely lead to an extremely disappointing result.

According to renewable trade associations, there are approximately 18,000 megawatts ("MWs") of renewable energy projects in the pipeline that can take advantage of the 1705 program prior to its expiration. The development and building of this amount of renewable generation translates into approximately 101,250 direct and another 84,600 indirect jobs during construction. On a permanent basis, there are approximately 6,750 full-time jobs and 56,250 part-time jobs at risk. In short, there are approximately 250,000 renewable energy jobs that may not materialize during this period of high-unemployment if renewable energy projects are unable to arrange adequate financing. Further, the construction of an incremental 18,000 MWs of renewable generation would eliminate 33 million tons of CO<sub>2</sub> per year from being emitted into the atmosphere.

**ABOUT US PREF**

The objective of the US Partnership for Renewable Energy Finance (US PREF) is to unlock private capital flows to new, large-scale and distributed renewable energy projects in the United States. To achieve this objective, a balanced and credible group of highly experienced renewable energy financiers from financial institutions, investors, professional services firms, utilities and others, working with leading non-government organizations, have convened as US PREF. US PREF, founded in 2009 with support from the consulting firm Green Order, is a program of the American Council On Renewable Energy (ACORE), a Washington, DC - based 501 (c)(3) non-profit organization whose mission is to bring renewable energy into the mainstream of the US economy and lifestyle through research, education, convening, and communications.

---

<sup>i</sup> MACRS (Modified Accelerated Cost Recovery System) – a system for accounting for depreciation of an asset on an accelerated basis. The value of the asset is considered depreciated, or lost, for tax purposes, over a period of time much shorter than the actual life of the asset, e.g. 5 years instead of 30 years, reducing the tax liability of the asset in its earlier years, and increasing the financial returns for investors in the asset.

<sup>ii</sup> Financeable EBITDA – the Earnings of a project Before Interest, Taxes, Depreciation, and Amortization that a bank will consider in defining the terms of the a loan for a project. The higher the EBITDA, the better the terms the project should be able to expect from a lender.

<sup>iii</sup> ITC grant partnership – where a financial institution finances the ITC grant in advance of its receipt either during or before construction and monetizes the MACRS depreciation.