Frank J. Guarini Center on  
Environmental and Land Use Law

New Energy Finance: Fact Sheet

*Federal Architecture for Incentivizing Renewable Energy*

November 2013

A

ccording to the National Renewable Energy Laboratory, wind and photovoltaic resources will require over $65 billion in capital investment in 2020 to meet the Department of Energy’s national wind and solar deployment targets. This represents roughly a doubling of 2012 capital investment. [[1]](#endnote-1)

Since the *Energy Policy Act of 1992*, the U.S. federal government has relied on a Production Tax Credit (PTC) to encourage private capital investment in renewable energy. The American Recovery and Reinvestment Act of 2009 expanded an Investment Tax Credit (ITC) for renewable energy. Those tax credits, however, have significant limitations and are scheduled to expire in 2014 and 2017 respectively.

*New Energy Finance*, a project of the Guarini Center for Environmental and Land Use Law, asks how revisions to federal financial incentives could lower the cost of capital investment for renewable energy development.

Tax Credits

The primary federal financial incentives for renewable energy are the PTC and ITC. The PTC, first established in 1992, has been extended, lapsed, and been renewed. The credit is valued at 1.5¢/kWh in 1993 dollars (indexed for inflation, so 2.3¢/kWh) for wind, closed-loop biomass, and geothermal energy and half that rate (1.1¢/kWh) for open-loop biomass, landfill gas, municipal solid waste, qualified hydroelectric, and marine and hydrokinetic energy. The credit generally lasts for 10 years after the facility is placed in to service. The PTC is authorized through December 31, 2013.[[2]](#endnote-2)

The ITC, under 26 USC § 48, is a corporate tax credit for renewable energy installations. Solar (electricity and hot water), fuel cells, and small wind turbines are all eligible for a credit equal to 30% of expenditures with no maximum credit. Geothermal systems, microturbines, and combined heat and power are eligible for a 10% credit. This credit expires on December 31, 2016 at which time the ITC for solar energy will drop to 10% and expires completely for most other renewable energy systems.[[3]](#endnote-3)

Tax credits have their limitations. First, tax credits – and accelerated depreciation opportunities – are only attractive to investors with tax liability, requiring elaborate project structures to attract tax equity investors and transfer the tax credit benefits to them.[[4]](#endnote-4) Second, investors must “own” the projects for the duration of the tax credit benefit period, tying up capital in an illiquid investment for up to ten years.[[5]](#endnote-5) Finally, uncertainty over expiration or renewal of these credits hampers investment in renewable energy.

New Finance Mechanisms for Renewables

*Master Limited Partnerships (MLPs)*

The first Master Limited Partnership (MLP) was launched by Apache Oil Company in 1981.[[6]](#endnote-6) The current MLP structure was established through *Tax Reform Act of 1986* and the *Revenue Act of 1987*, which required that 90% of MLP revenues come from natural resources activities.[[7]](#endnote-7) Congressional action on MLPs was motivated, in part, by the energy crisis of the 1970s.[[8]](#endnote-8) MLPs are taxed like partnerships: there are no entity-level taxes and only partners’ dividends are taxed. Unlike C Corporations, there is no double taxation, however MLPs are still securitized and tradable on public markets like stocks.[[9]](#endnote-9) Because MLPs are publicly traded, investors can enter and exit MLPs relatively easily.[[10]](#endnote-10)

MLPs have at least two primary advantages over existing renewable energy tax credits: they would eliminate the costs of policy uncertainty in tax credits by making a change to the tax code that would be effectively permanent and they would give renewable energy projects access to a broader range of investors, thereby increasing competition, reducing transaction costs, and lowering the cost of capital. MLPs have attracted a wide range of investors: 65% retail, 27% institutional, and 8% foreign and have consistently performed well.[[11]](#endnote-11)

Energy projects represent an estimated 83 percent of current MLP market capitalization.[[12]](#endnote-12)

MLPs are currently restricted under the Internal Revenue Code (IRC) to projects with “depletable” resources like oil, natural gas, coal, timber, and other minerals[[13]](#endnote-13) Bipartisan legislation has been introduced to change this.

*Real Estate Investment Trusts (REITs):*

Real Estate Investment Trusts (REITs) were originally created under the *Real Estate Investment Trust Act of 1960* to encourage investment in the real estate market for the development of housing, apartment, shopping centers, and office buildings as well as factories and hotels by proving investors the same benefits as stocks.[[14]](#endnote-14) REITs are publicly traded as liquid stocks but are composed of fixed real estate assets that produce regular revenues. REITs pass revenues directly on to investors and, like MLPs, are not taxed at the corporate level.[[15]](#endnote-15)

Recent IRS “private letter rulings” have cleared the way for investments in gas pipelines and terminals, power transmission, railroad tracks, cell towers, and even LED-lit billboards to qualify for inclusion in REITs.[[16]](#endnote-16) And while IRS rules are currently ambiguous as to whether renewable energy projects, such as residential solar, qualify,[[17]](#endnote-17) many believe that the IRS could clarify this issue with a “revenue ruling” affirming renewable energy projects’ eligibility.

*Asset Backed Securities (ABSs):*

Securitization involves no additional direct federal incentives for renewable energy project finance, but could nonetheless drive down the cost of capital and expand the capital base for renewable energy projects. Securitization turns fixed financial assets into tradable, liquid investment products by standardizing and pooling assets so that smaller ownership shares can be easily procured, traded, and priced. [[18]](#endnote-18) This practice is common with mortgages, auto loans, credit card debt, student loans, and many other fixed assets.[[19]](#endnote-19)



Source: Wells Fargo, MLP Primer – Fourth Edition, p. 8

Renewable energy projects must scale, become more standardized, and produce a wider and longer range of data on their performance for renewable energy-based Asset Backed Securities (ABSs) to proliferate.[[20]](#endnote-20) Currently, the lack of historical, publicly available data necessary to accurately gauge the risks involved in Renewable Energy projects, such as customer default rates, operation and maintenance costs, and system production reliability, is a major hindrance to securitization. Similarly, the lack of homogeneity in renewable energy transactions greatly increases the structuring costs and due diligence requirements for each investment.[[21]](#endnote-21) The first solar asset backed security was rated in November 2013, will be available to select institutional investors, and is expected to yield around 4.8%.[[22]](#endnote-22)

*YieldCos:*

YieldCos are entities that own revenue-generating infrastructure assets that are organized as C Corporations and made available on public markets.[[23]](#endnote-23) Unlike MLPs and REITs, YieldCos are not bound by rules regarding revenue distribution to investors and require no policy changes either by the executive or the legislative branch. However, YieldCos also lack their entity-level tax exemptions. As C Corporations, YieldCos can take advantage of tax credits where investments with tax liability are packaged with those that receive these tax benefits.[[24]](#endnote-24) YieldCos can also use excess depreciation to shelter earnings from the underlying projects, often for a meaningful share of the asset’s expected life, allowing a YieldCo to go for an extended period without any income taxes at the entity level.[[25]](#endnote-25) The main advantage of YieldCos is that they are designed to be publicly traded and therefore can be easily bought or sold, opening up investment in renewable energy to a wider range of liquid investors.

*Fiscal Impacts of Renewable Energy Incentives:*

* From 2005-2009, the U.S. Government spent an estimated $96.3 billion on roughly 60 types of energy subsidies.
* According to the Congressional Research Service, the PTC will cost $9.1 billion in revenues for the period 2011-2015, while the ITC will cost $2.5 billion for that period.
* More than $300 billion has been invested in clean energy in the US since 2004 with $35 billion invested in 2012.[[26]](#endnote-26)
* Allowing oil and gas companies to expense exploration and development costs up to $4.4 billion.
* The tax credit for blending alternative fuels was $11.8 billion over this period.[[27]](#endnote-27)

Frank J. Guarini Center on Environmental and Land Use Law

The Guarini Center, named for the Hon. Frank J. Guarini ’50 (L.L.M.’55), a former member of Congress who advanced progressive environmental legislation, works to advance policy-relevant inquiry and writing, and develop and implement innovative market and regulatory solutions for environmental, climate and energy issues at the city, state, national, and global level.

1. Mendelsohn, Michael and Feldman, David. Financing U.S. Renewable Energy Projects Through Public Capital Vehicles: Qualitative and Quantitative Benefits. National Renewable Energy Laboratory. April 2013. [↑](#endnote-ref-1)
2. DSIRE. Renewable Energy Production Tax Credit (PTC). Available at: <http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=US13F&re=1&ee=1> [↑](#endnote-ref-2)
3. DSIRE, note ii. [↑](#endnote-ref-3)
4. Lubber, Mindy. The New Alphabet of Renewable Energy Investing: MLPs and REITs. Forbes. April 24, 2013. Available at: <http://www.forbes.com/sites/mindylubber/2013/04/24/the-new-alphabet-of-renewable-energy-investing-mlps-and-reits/> [↑](#endnote-ref-4)
5. Brookings Institute. Invest But Reform: Smarter Finance for Cleaner Energy, Open Up Master Limited Partnerships (MLPs) and Real Estate Investment Trusts (REITs) to Renewable Energy Investment. Felix Mormann, Dan Reicher. November, 2012. [↑](#endnote-ref-5)
6. National Association of Publicly Traded Partnerships. Master Limited Partnerships 101: Understanding MLPs. Available at: <http://www.naptp.org/documentlinks/Investor_Relations/MLP_101.pdf> [↑](#endnote-ref-6)
7. Reale, Anthony. Master Limited Partnerships – Understanding an Evolving Asset Class. J.P.Morgan. Available at: <https://www.jpmorgan.com/tss/General/Master_Limited_Partnerships_Understanding_an_Evolving_Asset_Class/1320477769983> [↑](#endnote-ref-7)
8. Freed, Josh and Stevens, Mae. A Small Tax Change, Big Clean Energy Results. Third Way. December, 2011. Available at: <http://content.thirdway.org/publications/475/Third_Way_Idea_Brief_-_A_Small_Tax_Change_Big_Clean_Energy_Results.pdf> [↑](#endnote-ref-8)
9. The Pew Charitable Trusts. Expanding Investment Opportunities for Clean Energy: Master Limited Partnerships and Real Estate Investment Trusts. March 27, 2013. Available at: <http://www.pewenvironment.org/news-room/fact-sheets/expanding-investment-opportunities-for-clean-energy-master-limited-partnerships-and-real-estate-investment-trusts-85899463493> [↑](#endnote-ref-9)
10. Freed, note viii. [↑](#endnote-ref-10)
11. Wells Fargo. MLP Primer – Fourth Edition. November 19, 2010, p. 12 [↑](#endnote-ref-11)
12. Lubber, note iv [↑](#endnote-ref-12)
13. Bullock, W. Bruce, Weinstein, Bernard L., Johnson, Ben. Leveling the Playing Field: The Case for Master Limited Partnerships for Renewables. May 2012. (<http://awea.files.cms-plus.com/FileDownloads/pdfs/MLP%20White%20Paper%20Final.pdf> [↑](#endnote-ref-13)
14. Environmental and Energy Study Institute. New Approaches in Renewable Energy Finance: Master Limited Partnerships, Real Estate Investment Trusts, and Crowdfunding. October 2012. Available at: <http://www.eesi.org/issue-brief-new-approaches-renewable-energy-finance-24-oct-2012> [↑](#endnote-ref-14)
15. Pew, note ix [↑](#endnote-ref-15)
16. Brookings, note v. [↑](#endnote-ref-16)
17. Lubber, note iv [↑](#endnote-ref-17)
18. Mendelsohn, note i. [↑](#endnote-ref-18)
19. Mendelsohn, note i. [↑](#endnote-ref-19)
20. Mendelsohn, note i. [↑](#endnote-ref-20)
21. Mendelsohn, note i. [↑](#endnote-ref-21)
22. Cardwell, Diane. Bonds Backed by Solar Power Payments Get Nod. New York Times. November 14, 2013. Available at <http://www.nytimes.com/2013/11/15/business/energy-environment/bonds-backed-by-solar-power-payments-get-nod.html> [↑](#endnote-ref-22)
23. Anich, Alex. The Emerging YieldCo Lanscape. Karbone. October 24, 2013. Available at <http://www.renewableenergyworld.com/rea/blog/post/print/2013/10/the-emerging-yieldco-landscape>. [↑](#endnote-ref-23)
24. Seif, Dan and Torbert, Roy. A Rock that Churns out Cash: Solar YieldCos. Rocky Mountain Institute, July 17, 2013. Available at <http://blog.rmi.org/blog_2013_07_17_a_rock_that_churns_out_cash_solar_yieldcos> [↑](#endnote-ref-24)
25. Martin, Keith. Drive to Reduce the Cost of Capital. Chadbourne & Park LLP. April 2013. Available at <http://www.chadbourne.com/files/Publication/8bb4b80b-a3dc-4aef-83ee-971235712593/Presentation/PublicationAttachment/cbe94b1a-656d-402d-9b7c-a075dcbcc09e/DrivetoReduceCost_Apr13.pdf> [↑](#endnote-ref-25)
26. U.S. Partnership for Renewable Energy Finance. Renewable Energy Finance and Market Overview. March 2013. Available at: <http://www.uspref.org/images/docs/Clean-Energy-Policy-DrivingPrivateCapitalInvestment.pdf> [↑](#endnote-ref-26)
27. Sherlock, Molly F. and Crandall-Hollick, Margot L. Energy Tax Policy: Issues in the 112th Congress. Congressional Research Service. May 28, 2012. Available at: <http://www.fas.org/sgp/crs/misc/R41769.pdf> [↑](#endnote-ref-27)