Accessing Capital Markets for Renewable Energy Projects

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Available Capital Markets

For governments looking to finance renewable energy projects:

- Municipal bond market
  - Primary market, public offering, or other (see below)
- Notes or Bonds (have not seen COPs or other interests)
- Tax-exempt or Taxable
  - If tax-exempt, interest from tax-exempt investors, including muni bond funds.
- No equity available to governments
- Typically, no bank loans available, although private placement purchase by banks (§265(b) bank qualified bonds deduction for cost of carry, post 1986 Tax Act, under $10M issuer)

Types of Offerings

- Public Offering with an underwriter
- Limited Pubic Offering, or Private Placement

<u>Tax Considerations</u>:

- Tax-exempt Governmental Bonds v. Taxable (historically a 200bp spread)
  Capital expenditures and related soft costs
  Safe harbor management contract guidelines (Rev. Proc. 97-13)
- AMT (Qualified private activity bonds (PABs); restrictive rules including volume cap, COI limitations)
  - PABs: Sewage Facilities, Water Facilities, Solid Waste to Energy Facilities, Local District Heating and Cooling Facilities, Small Issue IDBs
- Tax Credit Bonds (clean renewable energy bonds (CREBs), qualified energy conservation bonds (QECBs))
  - Instead of current interest, bond holder receives tax credit = 70% of daily rate established by U.S. Treasury; see www.treasurydirect.gov/GA-SL/SLGS/selectQTCDate.htm)
  - CREBs: Wind Facilities, Closed-Loop Biomass Facilities, Open-Loop Biomass Facilities, Geothermal or Solar Energy Facilities, Small Irrigation Power Facilities, Landfill Gas Facilities, Trash Combustion Facilities, Marine and Hydrokinetic Renewable Energy Facilities

<u>Federal Securities Law Considerations</u>:

- Muni Market Exempt from Registration under Securities Act of 1933
- MSRB Rule 15c2-12; Back Door regulation of Official Statements (muni market offering documents), post 1975 Tower Amendment, through regulation of underwriters
- Section 3(a)(2) exemption for tax-exempt bonds v. Reg D accredited investor and “big-boy letter” for taxable securities
- Anti-Fraud provisions of Securities Exchange Act of 1934 still apply

Characteristics of Municipal Market

Risk Adverse

- GO or bankable revenue stream, preferably with rate and negative covenants
- Anti-dilution provisions (additional bond tests)
- Full project entitlements obtained

Quantifiable Risk (investment grade rating system, no "story bonds")

Sufficient Size (too small to engender interest)

Market Timing Considerations (Fed announcements)

Liquid Secondary Market for Publicly Offered Debt

TYPES OF RENEWABLE ENERGY PROJECTS

- Solar (roof, ground mount and parking canopy)
- Wind (on and offshore; small (up to 100kw) and large wind)
- Energy Efficiency (energy savings offset capital cost; ESCO or govt. model)
- Combined Heat and Power (CHP, formerly Cogen)
- Fuel Cells
- Geothermal
- Microturbines
- Energy Resiliency (Islanding and Blackstarting-backup fuel source for CHP)

Capital Stack

For Governments:

- Debt
- State Renewable Energy Certificates

For Private:

- Debt, Equity, or Mez Financing
- Investment Tax Credits (generally, 30% ITC – see chart on next page)
- MACRS (accelerated depreciation)
- State RECs
  e.g., SRECs, ORECs
  www.dsireusa.org

For Both (as applicable):

- Grants (e.g., see 71 subsidy programs available in NJ: http://programs.dsireusa.org/system/program?state=nj)
- Subsidized Loan/Loan Forgiveness (e.g., NJEIT (SRF)/NJ Energy Resilience Bank/Other Green Banks)

Other:

- NMTC (39% over 7 years; on top of ITC-Goldman Sachs NJCAP 2011 transaction)
- HUD-DR (NJ Resilience Bank)
- DOE ($47M DOE grant (25% project cost) to prospective NJ Offshore Wind developer)

Investment Tax Credit Chart

Rebate Amount:

- 30% for solar, fuel cells, small wind
- 10% for geothermal, microturbines and CHP

Summary:

Note: The Consolidated Appropriations Act, signed in December 2015, included several amendments to this credit which apply to solar technologies and PTC-eligible technologies. Notably, the expiration date for these technologies was extended, with a gradual step down of the credits between 2019 and 2022.

- The federal Business Energy Investment Tax Credit (ITC) has been amended a number of times, most recently in December 2015. The table below shows the value of the investment tax credit for each technology by year. The expiration date for solar technologies and wind is based on when construction begins. For all other technologies, the expiration date is based on when the system is placed in service (fully installed and being used for its intended purpose).

Technology	12/31/16	12/31/17	12/31/18	12/31/19	12/31/20	12/31/21	12/31/22	Future Years
PV, Solar Water Heating, Solar Space Heating/Cooling, Solar Process Heat	30%	30%	30%	30%	26%	22%	10%	10%
Hybrid Solar Lighting, Fuel Cells, Small Wind	30%	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Geothermal Heat Pumps, Microtubines, Combine Heat and Power Systems	10%	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Geothermal Electric	10%	10%	10%	10%	10%	10%	10%	10%
Large Wind	30%	24%	18%	12%	N/A	N/A	N/A	N/A

Source: http://energy.gov/savings/business-energy-investment-tax-credit-itc

Cont. Investment Tax Credit Chart

<u>Solar Technologies</u>:

- Eligible solar energy property includes equipment that uses solar energy to generate electricity, to heat or cool (or provide hot water for use in) a structure, or to provide solar process heat.
- Hybrid solar lighting systems, which use solar energy to illuminate the inside of a structure using fiber-optic distributed sunlight, are eligible.
- Passive solar systems and solar pool-heating systems are not eligible.

<u>Fuel Cells</u>:

- The credit is equal to 30% of expenditures, with no maximum credit.
- However, the credit for fuel cells is capped at $1,500 per 0.5 kilowatt ("kW") of capacity.
- Eligible property includes fuel cells with a minimum capacity of 0.5 kW that have an electricity-only generation efficiency of 30% or higher.

<u>Small Wind Turbines</u>:

- The credit is equal to 30% of expenditures, with no maximum credit for small wind turbines placed in service after December 31, 2008.
- Eligible small wind property includes wind turbines up to 100 kW in capacity. (In general, the maximum credit is $4,000 for eligible property placed in service after October 3, 2008, and before January 1, 2009. The American Recovery and Reinvestment Act of 2009 removed the $4,000 maximum credit limit for small wind turbines.)
- Small wind turbines must meet the performance and quality standards set forth by either the American Wind Energy Association Small Wind Turbine Performance and Safety Standard 9.1-2009 (AWEA), or the International Electrotechnical Commission 61400-1, 61400-12, and 61400-11 (IEC).

<u>Geothermal Systems</u>:

- The credit is equal to 10% of expenditures, with no maximum credit limit stated.
- Eligible geothermal energy property includes geothermal heat pumps and equipment used to produce, distribute or use energy derived from a geothermal deposit.
- For electricity produced by geothermal power, equipment qualifies only up to, but not including, the electric transmission stage.
- For geothermal heat pumps, this credit applies to eligible property placed in service after October 3, 2008.
- Note that the credit for geothermal property, with the exception of geothermal heat pumps, has no stated expiration date.

<u>Microturbines</u>:

- The credit is equal to 10% of expenditures, with no maximum credit limit stated (explicitly).
- The credit for microturbines is capped at $200 per kW of capacity.
- Eligible property includes microturbines up to two megawatts (MW) in capacity that have an electricity-only generation efficiency of 26% or higher.

<u>Combined Heat and Power (CHP)</u>:

- The credit is equal to 10% of expenditures, with no maximum limit stated.
- Eligible CHP property generally includes systems up to 50 MW in capacity that exceed 60% energy efficiency, subject to certain limitations and reductions for large systems.
- The efficiency requirement does not apply to CHP systems that use biomass for at least 90% of the system's energy source, but the credit may be reduced for less-efficient systems.
- This credit applies to eligible property placed in service after October 3, 2008.

<u>Production Tax Credit-Eligible Techologies</u>:

- Technologies that are eligible for the Production Tax Credit (PTC) were eligible to opt for the ITC in lieu of the PTC if construction commenced prior to January 1, 2015. As of January 1, 2015, only wind energy systems are eligible to claim the ITC in lieu of the PTC.

*In general, the original use of the equipment must begin with the taxpayer, or the system must be constructed by the taxpayer. The equipment must also meet any performance and quality standards in effect at the time the equipment is acquired. The energy property must be operational in the year in which the credit is first taken.

Source: http://energy.gov/savings/business-energy-investment-tax-credit-itc

Security for Bonds

General Obligation

- Direct GO or Service Contract for Authorities (e.g., sewage or water authorities)
- Debt Limitations and/or Voter Approval
- Procedural Requirements, State and Local
- Constitutional prohibition regarding private lending of credit
- Other Pressing Capital Concerns

Other Tax

- MA dedicated sales tax funding school district capital projects

Special Assessment

- PACE-cost of energy efficiency project assessment runs with the land
- Municipal lien trumps 1st mortgage bank liens, so issues for Fannie Mae/Freddie Mac

Revenue Bonds

- Conduit issuers and fees and procedures
- Bankable deal (cost and revenue side)
  - Known technology risk (offshore wind, demonstration project-next generation turbine)
  - Dedicated Revenue Stream, including known value of benefits
    - Tax Credits syndicated or Infusion of Cash with Tax Equity Partner in privately funded transactions
    - Forward sale of RECs
  - Tested Payment Mechanics (OREC Order)
  - Attempt to minimize all risk to construction risk

Credit Enhancement

- GO Guaranty
- Bond Insurance or Letter of Credit
- Other, e.g., NYSERDA 2013 $24.3M NYS EFC SRF AAA Guaranty

Turnkey Projects for Governments

(with no interest in accessing capital markets for their energy projects)

<u>Power Purchase Agreements (PPA)</u>:

- Electric power sold to government at PPA price below tariff
- Private developer takes Federal tax and State REC benefits, and embeds benefits, less profits, in PPA price
- Turnkey and no government debt, but no transparency in pricing or savings, and lock-up government property for 10+ years (sufficient period to allow developer to take tax benefits and amortize capital costs)
- Hidden costs in PPA terms

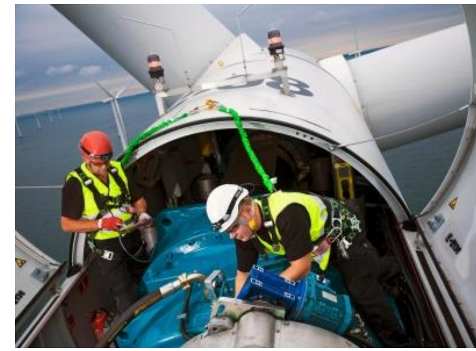
<u>Ground Lease Agreements</u>:

- e.g., Solar facility on closed municipal landfill-a second use on otherwise useless government property
- Special State incentives
- Ground lease rent

<u>Hybrid Morris Model</u>:

- Lower cost government financing
- Private owner of energy property takes Federal tax benefits and State subsidies
- Embeds additional savings in lower PPA price

QUESTIONS

Thank You!

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