



# NAIOP Education Series – Financing Renewable Energy and Clean Tech

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## Renewable Energy Project Finance

- Historic reliance on production tax credit and other tax driven investment programs has had modest success
- Traditional bank lending approach has been impeded by credit crises
- Stimulus programs have promoted growth in renewable energy investment – cash in lieu of ITC and loan guarantees
- States have acted to promote renewable energy, e.g. California Self Generation Incentive Program and multiple state finance authorities



## Renewable Energy Project Finance (cont'd.)

- The tax exempt bond market is relatively healthy and is a source of leverage for renewable projects
- Bond financing particularly useful for publicly owned facilities
- The conventional project finance taxable fixed income capital market is slowly recovering



## Renewable Energy Project Finance (cont'd.)

- Third party private credit enhancement remains limited
- Credit concerns continue to drive the structure
- Power Purchase Agreements with quality off-takers essential
- Bankruptcy remote project entities important
- Refinancing risk from shorter term financing



# 1

# RENEWABLE ENERGY PROJECT FINANCING METHODS

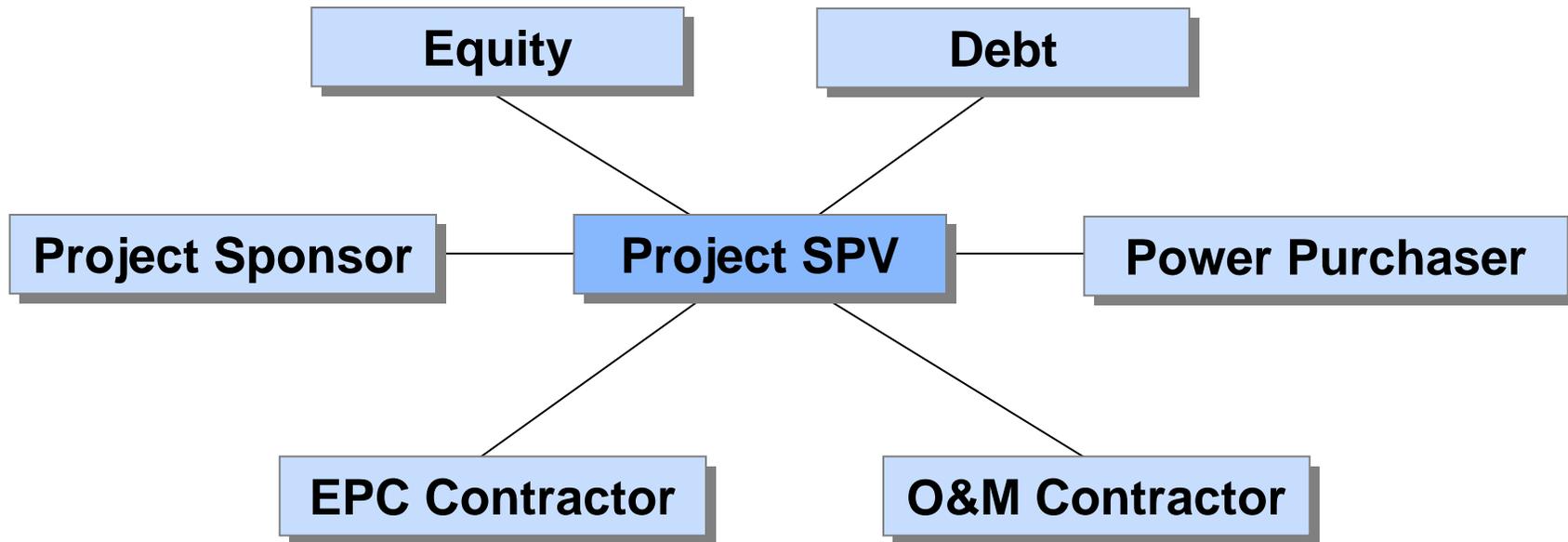


# Financing Structures

- SPV as project owner
- Non-consolidation with other entities
- Loan to value issues
- Cash flow coverage of debt service
- Construction risk
- Operational and maintenance risk
- Capitalized reserve funds



# Structural Diagram





## Tax Motivated Equity Investment

- Traditionally, federal tax incentives important
- The forms of these tax credits are the Renewable Electricity Production Tax Credit (“PTC”) and the Business Energy Investment Tax Credit (“ITC”)
- Developers partnered with a tax credit-motivated equity investor in order to improve the deal economics
- Value of these credits is substantially diminished with the credit crisis



## Production Tax Credit (“PTC”)

- Production Tax Credit is a 2.1¢/kWh (or 1.0¢/kWh for some technologies) tax credit based on the amount of electricity produced and sold by the taxpayer from qualified energy facilities
- Credit is paid annually for 10 years
- Most renewable energy project developers do not have sufficient tax-liabilities to utilize the tax credits



## Investment Tax Credit

- ITC is a tax credit equal to 30% of the qualified project costs for certain qualified renewable energy projects
- Monetized value of credit is paid upfront by a tax motivated equity investor



## Ownership Structures

- For a PTC eligible project, tax investor owns (almost entirely) the project for 10 years to capture 99% of the PTC and accelerated depreciation benefits
  - After year 10, project “flips” and developer owns 95% of project for the rest of the PPA term
  - Tax motivated equity investor must remain in project, albeit at 5% stake, for entire project
- Similar structure for ITC project, except tax credit-motivated investor is majority owner for only 5 years, instead of 10



## Tax Equity Less Valuable

- Tax Equity market severely reduced – majority of players either do not exist any more or have no tax appetite (Lehman Brothers, Wachovia, Morgan Stanley, Merrill Lynch, Bank of America, Citigroup)
- Appear to be 5–8 players remaining; with some on sidelines indicating that they are looking at participating
- Yields have increased from 5–7% to 8–12%, affecting the decision to sell or keep credits



## Changes to PTC & ITC in ARRA

- The American Recovery and Reinvestment Act of 2009 (ARRA) contained several changes to the PTC and ITC, most notably:
  1. Extended “placed in service” date to December 31, 2012, for wind projects and December 31, 2013, for other Section 45 facilities
  2. Election of ITC instead of PTC
  3. PTC/ITC can now be used with tax-exempt bonds without “double dipping” haircuts of the past
  4. Direct Treasury Grants to Project Owner available in lieu of ITC



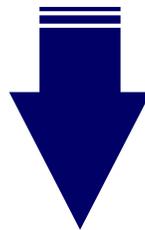
## Grants in Lieu of PTC or ITC

- Department of Treasury will issue grants of up to 30% of the cost of “qualified facilities,” which include all facilities eligible for ITC or PTC
- The grant program functions like the ITC program, i.e. tax recapture period if project sold sooner than 5 years, same eligible equipment



## Production Tax Credit

- The value of the PTC has been reduced
  - ITC = now available for all types of renewable energy facilities
  - ITC Grant is paid upon project completion
  - Receiving the PTC over 10 years carries more economic risk to project



**MORE PROJECTS ARE UTILIZING ITC OVER PTC**



## Grants in Lieu of PTC or ITC (cont'd.)

- **Availability restricted to:**
  - **Facilities placed in service by December 31, 2010; and**
  - **Facilities that initiate construction in 2009 or 2010 and are completed by the “credit termination date,” which ranges from January 1, 2013 to January 1, 2017, depending on the type of facility**
- **Grant will be paid once the facility is operating commercially so construction loan may be necessary**
- **Extension of Grants in Lieu of ITC a major issue**



## Grants in Lieu of PTC or ITC (cont'd.)

- Borrower can use Grant to payoff construction loan/equity investors and can be pledged or assigned to a lender
- Grant is not subject to federal tax but may be subject to state tax
- No capped amount of availability, unlimited amount of grants can be given out by the government
- A project with an equity investor who has received funds from state or local government pensions is ineligible for a grant
- Grant application available at:  
[www.treasury.gov/recovery/1603.shtml](http://www.treasury.gov/recovery/1603.shtml)



## Monetizing the ITC Grant

- Source of construction period financing
- Developer issues a Grant Anticipation Note (GAN)
  - Assigns the ITC Grant to a GAN investor
  - I-banker places ITC Grant with a GAN investor
  - GAN investor takes construction risk and provides funding for the 30% ITC grant to renewable developer for construction
  - Typical construction covenants required: GMAX, experienced contractor, performance and payment bond, security interest in financed improvements
  - Current rates for 18 month construction period approximately 5-6%



# 2

## TAX CREDIT & OTHER BONDS



# Clean Renewable Energy Bonds (“CREBs”)

Created in the Federal Energy Policy Act of 2005, Clean Renewable Energy Bonds provide an interest-free financing mechanism for public entities to construct renewable energy projects

## Qualified Issuers

- States or US territories
- District of Columbia
- Indian tribal governments
- Certain political subdivisions
- Cooperative electric companies
- Public power providers

## Qualified Projects

- Wind
- Closed-loop biomass
- Open-loop biomass
- Geothermal
- Small irrigation
- Hydropower
- Landfill gas
- Marine renewable
- Trash combustion facilities



# Recovery Zone Bonds

- The American Recovery and Reinvestment Tax Act of 2009 authorized \$25 billion in “Recovery Zone Bonds” to stimulate economic recovery in “recovery zones”
  - The Federal government will allocate the bonds to the states according to each state’s decrease in employment as compared to the national decrease in employment

There are two types of “Recovery Zone Bonds:”

## Recovery Zone Economic Development Bonds

- Total allocation of \$10 billion
- Taxable Governmental Bonds
- Can be issued by Governmental entities
- Issuer received credit from Federal Government for 45% of interest expense

## Recovery Zone Facility Bonds

- Total allocation of \$15 billion
- Tax-exempt financing for projects that traditionally have not had tax-exempt funding available
- Cannot finance “bad projects” – i.e. gambling facilities, golf courses, liquor stores, etc.

- Potentially could be used to finance renewable energy project



## Tax Exempt Private Activity Bonds

- Waste Recovery tax exempt bonds eligible for some types of renewable projects, e.g. land fill methane gas, dairy anaerobic digester, and possibly waste wood
- Subject to State by State Private Activity Bond Cap
- Does permit a privately owned project to be financed with low cost tax exempt bonds
- Can use private activity bonds and ITC grant – okay to double dip these federal incentives
- Only the waste recovery capital expenditures can be tax exempt bond financed now; except for ARRA Private Facility Bonds



## BioFuels Energy

- San Diego Waste Water Biogas to Energy Project
- Fuel Cells – UCSD and City of San Diego – PPA
- Solid Waste disposal PABs – not an ARRA deal
- Double Tax-Exempt
- New Market Tax Credits
- California Self Generation Incentive Program
- Federal Cash in lieu of ITC



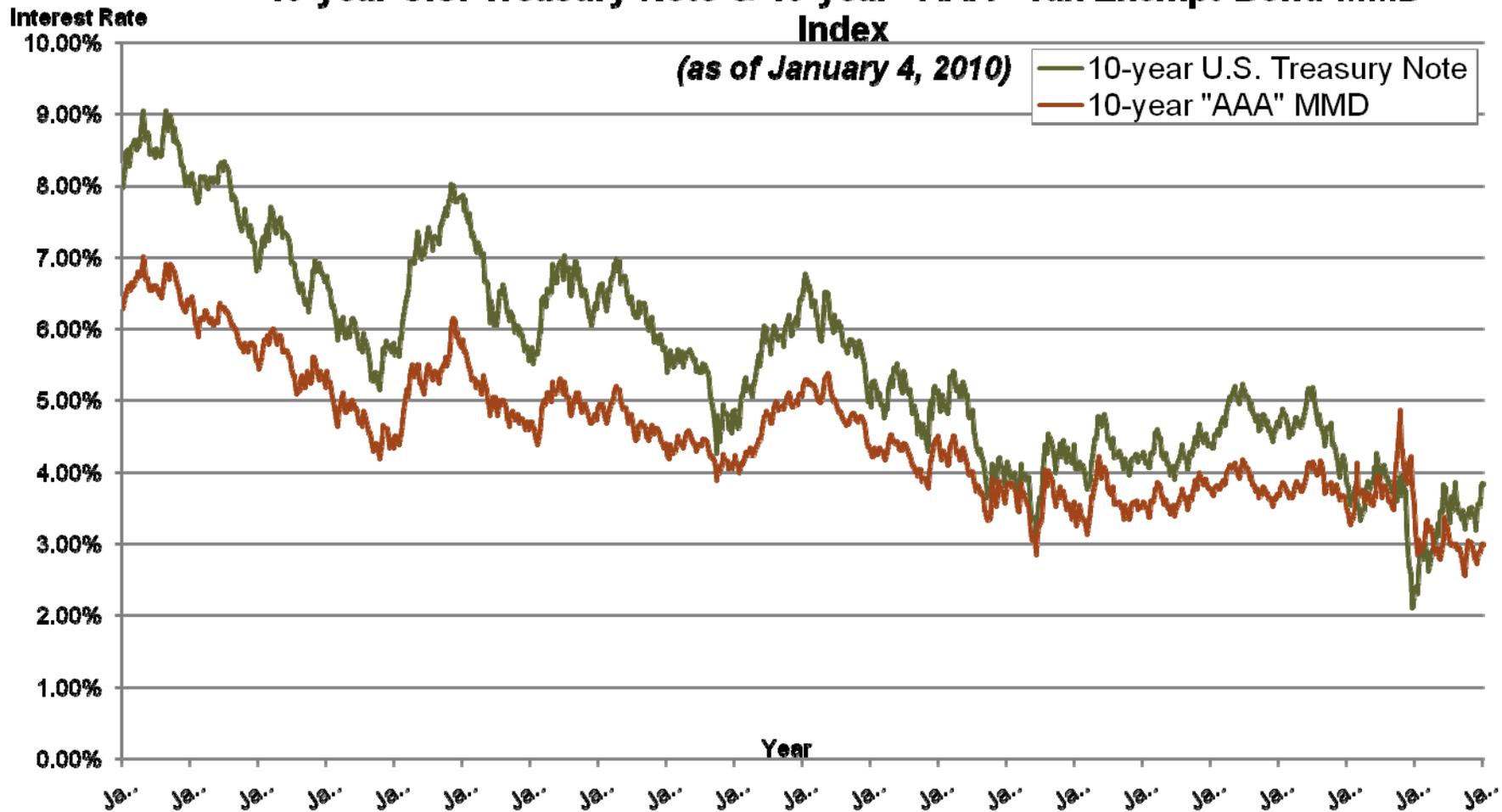
## SunEdison Recovery Zone Bonds

- Solar Energy Project for 23 Irvine California Schools – PPA
- Double Tax-Exempt – ARRA Qualified
- Non-recourse financing by SPV
- Federal Grant In Lieu of ITC for equity
- California Solar Initiative Subsidy - \$0.22 per kWh for five years



# Tax Exempt Private Activity Bonds (cont'd.)

**10-year U.S. Treasury Note & 10-year "AAA" Tax Exempt Bond MMD Index**





## Taxable Financing – Edison Mission Energy

- Taxable bonds can finance renewable projects that do not qualify for tax-exempt bonds relying only on power off-taker revenues
- The New Mexico Renewable Energy Transmission Authority – issuer of a \$65 million transmission financing: Finances transmission expenditures associated with a 100 MW wind project in New Mexico
  - Bonds secured only by power revenues from Arizona Public Service, no state or EME guarantee
  - 15 year amortization
  - Debt Service Reserve Fund



## Taxable Financing – Edison Mission Energy (cont'd.)

- Taxable offering to Qualified Institutional Buyers (QIBs) (Bonds are state tax-exempt): wide range of bank, insurance companies and other QIBs expected to purchase bonds
- Bonds priced based on a spread to treasuries swap curve



# 3

# DEPARTMENT OF ENERGY LOAN GUARANTEE PROGRAM



## Department of Energy (“DOE”) Loan Guarantee

- Section 1703 loan guarantees for energy efficiency, renewable energy and advanced transmission and distribution
- Required to be “New or Improved Tech”
- Emphasis on pre-commercialization
- Applicant required to pay credit subsidy cost



## Dept. of Energy (“DOE”) Loan Guarantee (cont’d.)

- Section 1705 Loan Guarantee – rapid deployment of renewable energy and transmission projects
- Federal funding for credit scoring cost – significant improvement in economics of the program



## Credit Scoring Costs

- OMB determination of budget effect of guarantee
- Present value cost - size of commitment, likelihood of default and other factors
- Required under Section 1703 to be paid by project proponent
- Cost in addition to equity and un-guaranteed portion



## ARRA Funding for Section 1705 CSC

- Congressional appropriation of \$5.9 billion
- Available for certain renewable energy, electric transmission and leading edge biofuels projects
- Projects must commence construction by September 30, 2011
- Must meet all other Section 1705 requirements



## DOE Loan Guarantee Program Post ARRA (cont'd.)

- Only Section 1705 provides federal funds for credit scoring cost
- Current DOE Announcement re: loan guarantee programs includes allocation of \$2.5 billion of CSC funding for qualifying projects
- If a transmission project cannot commence construction by 9/30/11, must use 1703



## Potential Problems with a DOE Loan Guarantee

- DOE requires a first priority lien on all of the project assets
  - They will agree to share proceeds of a foreclosure with other lenders
- National Environmental Policy Act (“NEPA”) – DOE has to be comfortable with environmental impact of the project
- DOE will only guarantee 80% of loan which itself must be no more than 80% of project costs
- Prevailing wage rules & Buy America steel
- Rating requirement of “BB” for loans over \$25 million



# 4

# THE FUTURE OF RENEWABLE ENERGY FINANCE



## Transmission Boards

- Transmission accessibility is key to the future of large scale renewable energy
- More than ten states have created entities to promote the development of renewable energy transmission financing
- Colorado Clean Energy Development Authority (“CEDA”) – Established by the legislature in 2007 to help facilitate the development of Colorado renewable energy and renewable energy transmission



## Transmission Boards (cont'd.)

- Wyoming Infrastructure Authority (“WIA”) – Established in 2004, has financed one transmission project
- New Mexico Renewable Energy Transmission Authority (“NM RETA”) – Established in 2007, NM RETA focuses on electric system transmission infrastructure planning, financing and implementation
  - At least 30% of a NM RETA transmission project’s energy must come from renewable sources



## Challenges to Renewable Energy Finance

1. Project financing, in particular construction lending and permanent loans, still difficult and expensive
2. Pricing of renewable energy given lower fossil fuel pricing is harder
3. Credit market sensitivity to increased project risk... lender credit spreads increasing for less credit-worthy projects



## Challenges to Renewable Energy Finance (cont'd.)

4. Tax appetites for equity investors have been significantly reduced and new federal incentives untested
5. Traditional project finance solutions being developed
6. Institutional buyers willing to provide longer term financing if project economics strong



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