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Gone with the Wind – A Fresh Look at Wind Energy

Annual Review of Global Energy Issues

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May 19, 2009

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A Very Short History of Wind Project Development

Annual Review of Global Energy Issues

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May 19, 2009

How to Fund a Wind Project?

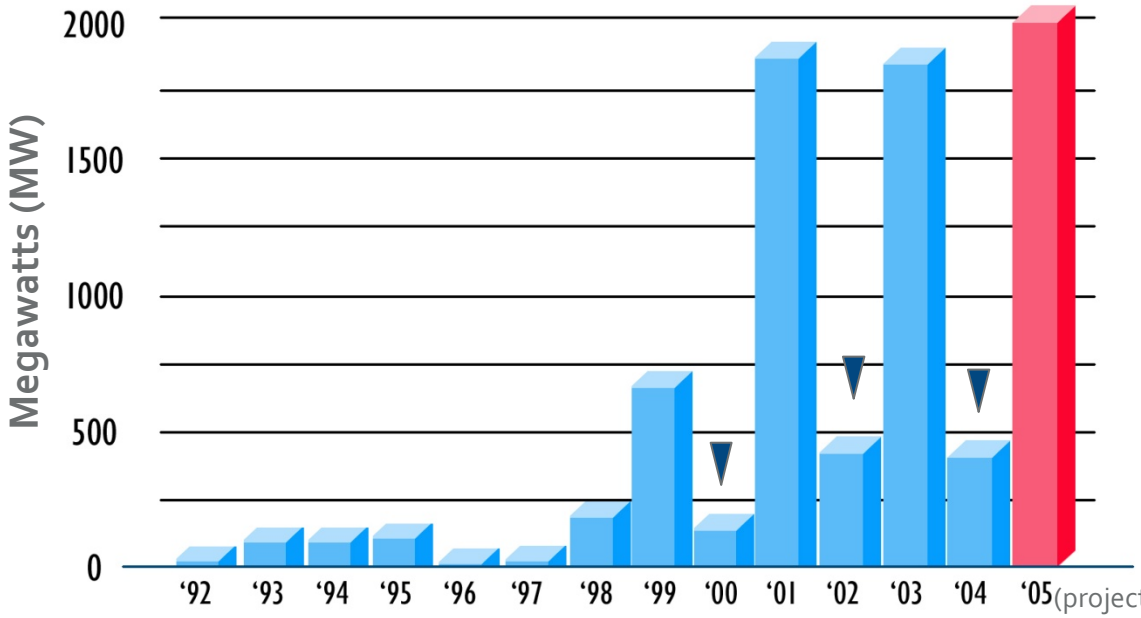
- Early Days –
  - Tinkerers, Pioneers, Zealots & True Believers
  - Limited Partnerships – Doctors & Lawyers & Upfront Write-offs
  - Semi-abandoned, poorly designed wind farms
  - SO2 & SO4 Power Contracts – the “Cliff”
  - General Hostility from Utilities

How to Fund a Wind Project?

- A Second Phase –
  - Consolidation of ownership
  - Relocating turbines & rationalizing operations
  - New Debt & Equity
  - 100 kW turbine was standard – new, larger turbines began to appear, but growing pains, too

How to Fund a Wind Project?

- The advent of the PTC – good, but…



Expirations of the federal production tax credit (1999, 2001, 2003) cause spikes in those years and drops in new installations in following years (2000, 2002, 2004)

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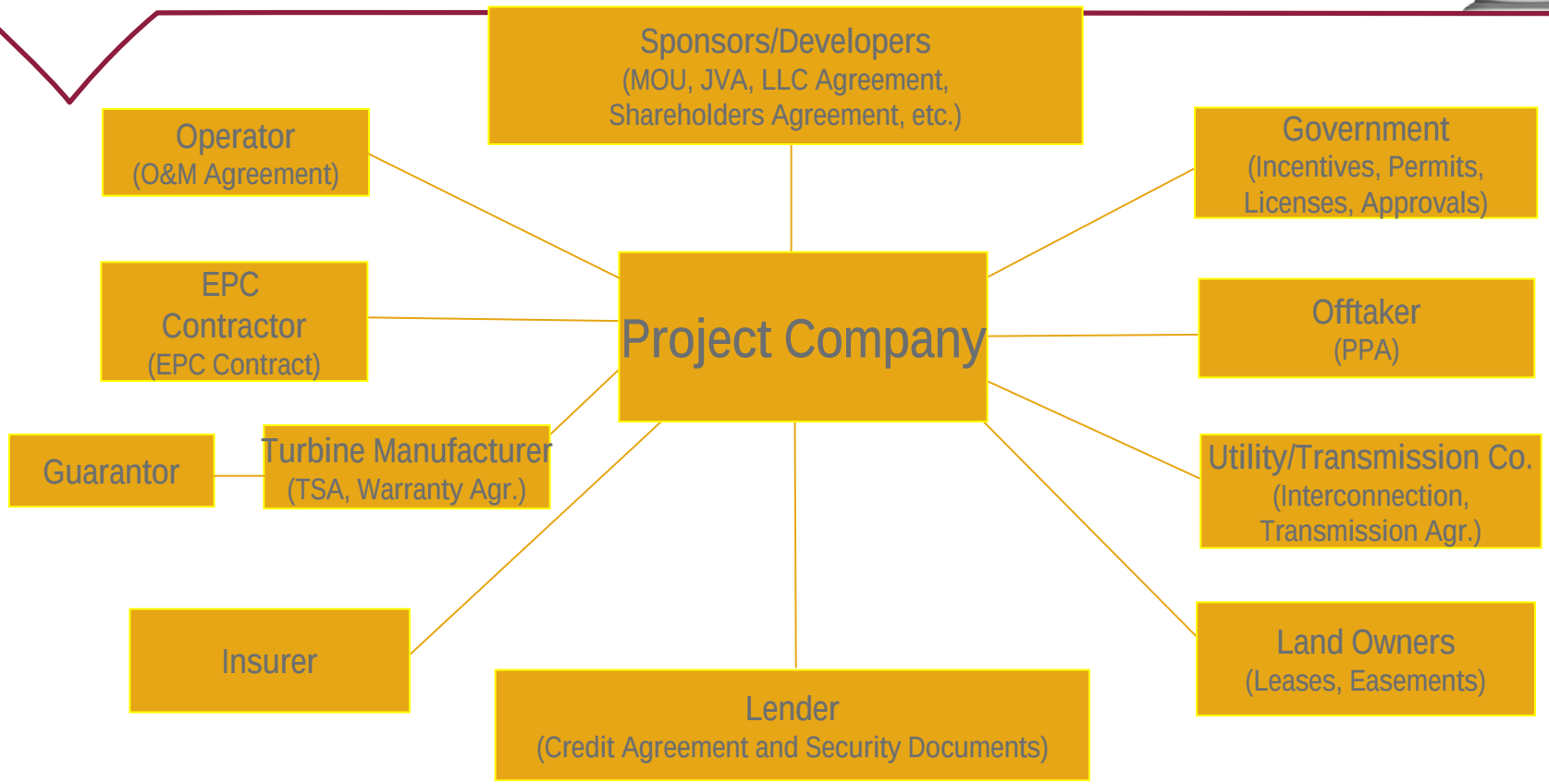
How to Fund a Wind Project?

- A third phase –
  - Institutional investors
  - European Utilities
  - Power / Energy Companies
    - E.g. – Zond / Enron / GE
  - Scaling up - 1.5 mW or more turbines

What Now?



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Debt Financing for U.S. Wind Projects in 2009

Annual Review of Global Energy Issues

May 2009

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Pre-Credit Crunch: How Did Wind Projects Get Financed?

- U.S. federal support for renewables historically in form of tax credits and accelerated depreciation
- Monetization of tax credits mostly by banks and insurance companies could account for up to 65% of project cost
- Five common financing structures (pre-credit crunch) for utility scale IPP projects:
  1. On-Balance Sheet Corporate Financing
  2. PAPS
  3. PAYGO
  4. Leveraged
  5. Back Leveraged

Pre-Credit Crunch: How Did Wind Projects Get Financed? (cont'd)

- Most projects funded with tax equity but without project level debt. Why, when debt is cheaper capital?
  - Perceived simplicity of non-levered structures versus complexity of debt
  - Standardization and speed of PTC deals ; with frequent PTC expirations needed to get in-service quickly to meet deadline
  - Leverage introduces default risk, loss of control = tax equity concern

Pre-Credit Crunch: How Did Renewable Projects Get Financed? (cont'd)

- Debt profile of levered projects (pre-credit crunch):
  - Up to 15 year term debt available (depending on term of PPA and credit of off-taker)
  - Margins around 125 bps, plus or minus, some rising in steps every few years

Impact of Credit Crunch on Debt Financing of Wind Projects

- Debt Market frozen in late 2008
- Slow in early 2009, but some "quality" projects can get financing
  - Post-credit crunch, what is "quality"?
  - Financing terms for "quality" projects? Much less borrower friendly.

ARRA Expands DOE Loan Guarantee Program

- Original loan guarantee program: under the Energy Policy Act of 2005, DOE to make Loan Guarantees for projects in U.S. that:
  - avoid, reduce or sequester air pollutants or anthropogenic emissions of greenhouse gasses AND employ "New or Significantly Improved Technology" that is not a "Commercial Technology"
    - New or Significantly Improved Technology
    - Commercial Technology
    - Known as "Section 1703" Eligible Projects

ARRA Expands DOE Loan Guarantee Program (cont'd)

- Expansion of scope of program: in ARRA, additional loan guarantees authorized for projects in US that are:
  - renewable energy systems that generate electric or thermal energy
  - facilities that manufacture related components
  - electric transmission systems or
  - leading edge biofuels (pilot or demonstration) projects
  - Known as "Section 1705" Eligible Projects

ARRA Expands DOE Loan Guarantee Program (cont'd)

- Approximately $6 billion appropriated to pay "Credit Subsidy Costs" of the guarantees
  - Credit Subsidy Costs cover potential default claim payments
  - Self-pay approach for Section 1703 projects
  - Can support $60 billion to $120 billion worth of guaranteed financing

ARRA Expands DOE Loan Guarantee Program (cont'd)

- Section 1705 Eligible Projects
  - Must "commence construction" by 9/30/2011
  - Construction workers must be paid federal "prevailing wages" in compliance with Davis-Bacon
  - Both "commercial" and "innovative" projects may apply under Section 1705

ARRA Expands DOE Loan Guarantee Program (cont'd)

- Implementing rules for 1705 not yet issued, but many requirements of the rules applicable to Section 1703 projects are expected to apply:
  - Guarantee limited to 80% of "Project Cost"
  - Borrower must make a "significant" equity contribution
  - DOE must determine there is a reasonable prospect of repayment of the Guaranteed Obligations and any other project debt

ARRA Expands DOE Loan Guarantee Program (cont'd)

- DOE may only guarantee 100% of loan obligations if loan is funded by the Federal Financing Bank
  - Maximum loan guarantee on loans other than if funded by FFB (Ex: Project Cost of $100M) = $100M x .8 x .99
  - Can 1705 projects access FFB?
  - FFB rate reportly expected to be 22 bps above Treasuries with a maturity roughly equal to average life of the guaranteed loan
- "Stripping"

ARRA Expands DOE Loan Guarantee Program (cont'd)

- Maturity of guaranteed loan may not exceed lesser of 30 years or 90% of estimated projected useful life
- Credit Rating Requirement
- Collateral and Enforcement Issues
  - Guaranteed loan cannot be subordinate to any other debt, must have 1st lien on all project assets and 1st lien on any other collateral pledged for any project debt
  - DOE and holders of any non-guaranteed portion of a Guaranteed Obligation can arrange to share collateral proceeds pari passu, but DOE controls decision making following default

ARRA Expands DOE Loan Guarantee Program (cont'd)

- Process and fees
  1. DOE issues a solicitation (sector specific, subject to deadlines)
  2. Responsive applications submitted; first fee (filing fee in amount specified in solicitation) payable with application
  3. Applications evaluated and if approved, DOE offers term sheet to applicant
  4. Applicant may negotiate term sheet
  5. If term sheet agreed, DOE issues conditional commitment; second fee payable on issuance or commencement of negotiation of a term sheet (covers DOE costs through closing of Loan Guarantee Agreement)
  6. Subject to satisfaction of conditions, Loan Guaranty Agreement executed; Credit Subsidy Cost payable and third fee payable to cover DOE administrative costs during construction and administrative phases

ARRA Expands DOE Loan Guarantee Program (cont'd)

- Rulemaking Process
  - Interim or final rule on Section 1705 under discussion
  - Rules for Section 1703 projects also to be adjusted
- Changes Announced by Secretary Chu or under Discussion
  - Rolling admissions
  - Credit Subsidy Cost and application fees = financeable "Project Cost"
  - Fees payable up-front deferred until closing; Credit Subsidy Cost payable over life of loan
  - Credit Rating threshold to $50M
  - Collateral can be shared pari passu among all lenders
  - Any unguaranteed portion of a loan may be "stripped"

ARRA Expands DOE Loan Guarantee Program (cont'd)

- Changes under Discussion (cont'd)
  - DOE discretion around scope of collateral package
  - Section 1705 to be evaluated by private sector?
    - Private lenders, not borrowers, to apply only after due diligence complete; due diligence shared with DOE
    - Risk-sharing by private lenders [10% to 40% non-guaranteed?]

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Utilities and Wind Power in 2009

Annual Review of Global Energy Issues

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Utilities and Wind Power – Special Considerations

- More than 25 States have enacted renewable portfolio standards ("RPS")
- Additional states are planning on implementing RPS
- Existing RPS programs are beginning to require higher and higher percentages of renewable resources as the programs age

Utilities and Wind Power – Special Considerations

- Utilities are issuing RFPs for renewable resources to meet their RPS obligations under their state programs
- Utilities are considering multiple methods to acquire renewable resources
  - Power Purchase Agreements
  - Joint Development with Experienced Developers
  - Build and Transfer at COD
  - Site Acquisitions
  - Self Build
- Based on current technologies and economics, in many regions of the country wind is expected to be the predominant renewable resource

Utilities and Wind Power – Special Considerations -- Major Risk Issues

- Project Development/Project Viability
  - How to pick the winning developers
  - Contingent planning if developers fail
  - How to manage these challenges against fixed regulatory requirements to attain certain percentages of renewable resources

Utilities and Wind Power – Special Considerations -- Major Risk Issues

- Renewable Resource Risk
  - How to integrate intermittent resource
  - Calibrating minimum supply and maximum offtake
  - Remedies for supplier failure
    - Calibrating security and LD requirements to size of project and size of developer
    - Step in or take over rights?

Utilities and Wind Power – Special Considerations -- Major Risk Issues

- Credit Support/LDs and Related
- Staging credit support at various stages of the project life cycle
- High credit requirements and heavy credit support will reduce available pool of suppliers
- Low credit support may expose utility to risks that may result in non-compliance with RPS requirement or non-recovery of costs

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Energy Tax Planning—Taking Advantage of New Federal Tax Benefits

May 19, 2009

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Outline of Topics

- Overview of Incentives
- Pre-Recovery Act Incentives
  - Section 45 Production Tax Credit (PTC) – wind and other resources
  - Section 48 Investment Tax Credit (ITC) – solar and other resources
- Recovery Act Changes
  - PTC Extension
  - ITC Election
  - Grants
  - Bonus Depreciation
  - Other Tax Incentives
- Structuring Alternatives
  - Flip/PAPS
  - PAYG
  - Prepayment
  - Sale-Leaseback
  - Lease Pass-Through

Overview of Incentives

Role of Incentives in Renewable Energy Projects

- Federal Tax Benefits
  - Production Tax Credit (PTC)
  - Investment Tax Credit (ITC)
  - Accelerated Depreciation
  - Bonus Depreciation
- Grants and Other Incentives
  - Treasury Grant Program
  - Department of Energy Loan Guarantee Program
- Renewable Energy Credits (RECs)
- State and Local Tax Benefits
  - Production Tax Credit
  - Investment Tax Credit
  - Property Tax Abatements and Payments in Lieu of Taxes (PILOTs)

Need for Syndication in Renewable Energy Projects

- Tax benefits have been the most significant financial incentive in the development of renewable energy projects
- Tax benefits generally are allowed to the project's owner and can not be sold separately
- Most project developers either –
  - Do not have the federal tax base to efficiently absorb the tax benefits, or
  - Need to monetize the value of the tax benefits to finance the cost of developing the project
- Thus, developers generally seek "tax equity financing"

Tax Equity Investor Profile

- Type of Investor
  - Commercial Banks
  - Investment Banks
  - Insurance Companies
  - Large Corporations
  - Syndicators

Number of active investors has dropped from approximately 20 in 2007 to less than 10 in 2009

- Reasons for Investment
  - Tax credits offset income taxes on a dollar-for-dollar basis without adversely affecting financial reporting
    - ITC benefits are readily calculable based on investment
    - PTC benefits can be projected by making assumptions regarding equipment and wind risk
  - Attractive risk-adjusted after-tax yields
  - "Green" mandate

Tax Equity Investor Profile (cont'd)

- Passive Role
  - Developers desire to retain control over assets, and tax equity investors typically are not interested in managing assets.
    - Tax equity investors are interested in obtaining an after-tax internal rate of return ("ATIRR").
    - Tax equity investors typically have limited voting or consent rights for certain major decisions, but otherwise do not have voting or consent rights.
- Limited Investment Period
  - Interest typically "flips" down once the target ATIRR is achieved.
  - Structure is designed so that, based on most likely financial projections, the ATIRR is achieved (and thus the flip point occurs) at the end of the tax credit period.
    - 10-year production period for wind PTC
  - Following flip point, the developer typically has call option on tax equity investor's interest.

Recovery Act: Election of ITC in Lieu of PTC

Resource	Credit Rate	Placed in Service Deadline
Wind	30%	Dec. 31, 2012
Closed-loop biomass	30%	Dec. 31, 2013
Open-loop biomass		
Geothermal (Section 45)		
Municipal solid waste		
Qualified hydropower		
Marine		
Hydrokinetic renewable energy		
Solar	30%	Dec. 31, 2016
Geothermal (Section 48)	10%	
Fuel cell ($1,500 per .5 kw limit)	30%	Dec. 31, 2016
Microturbine ($200 per kw limit)	10%	Dec. 31, 2016
Small wind	30%	Dec. 31, 2016
Combined heat and power systems	10%	Dec. 31, 2016

Common Transaction Structures

- Partnership Flip/Pre-Tax After-Tax Partnership Structure (PAPs)
- Pay-As-You-Go (PAYG) Structure
- Prepayment Structure
- Sale-Leaseback Structure
- Lease Pass-Through Structure

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