Bringing Clean Energy Projects To Reality:
Presentation to the Global Workshop on Clean Energy Development

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WELLFORD ENERGY

Introduction to the Wellford Energy Group

- Founded in 2009
- A boutique investment bank with three principal business lines:
  - **Equity and Debt Advisory Services** for accessing private sector sources of capital
  - **Merger and Acquisition Advisory Services** or recapitalizations for companies in transition
  - **Strategic Advisory Services**, including assistance with government sources of capital
- A unique, three-pronged approach to capital raising:
  - Private capital: Team has raised billions in the equity & debt markets
  - Government funding: An unmatched track record in securing non-dilutive equity and debt from U.S. Federal and state sources
  - International focus: Experience accessing international public and private capital sources

Operating in the Nexus of Energy, Policy & Finance

- Wellford works within the nexus of **Energy, Policy and Finance.** We are domain experts in all three areas so that our clients can benefit from a integrated perspective

- Wellford Energy was founded by Harrison Wellford, the former head of the energy practice of Latham & Watkins, a global law firm, where he established the firm's Clean Technology Group. Mr. Wellford has spent 25 years in the alternative energy and political arenas as a Presidential advisor, policy analyst and advocate, a senior executive of clean tech companies, and a regulatory and project finance lawyer.

- The goal of our integrated approach is to access the lowest cost of capital available

- Our project interests include:
  - Solar Power
  - Wind Power
  - Geothermal
  - Electricity Storage Projects
  - Fossil Generation with Carbon Capture (including Coal and Natural Gas)

Case Study: The Texas Clean Energy Project

- Wellford serves as the lead financial advisor for the Texas Clean Energy Project ("TCEP"), a first-of-its-kind coal gasification plant with 90% carbon sequestration.
- As part of our role, Wellford assisted the project developer in raising over $60 million of development capital pre-financial close from a combination of strategic investors including Linde, Siemens, and Fluor, financial investors and grant funds from the U.S. Department of Energy.
- For the balance of the construction capital, we are targeting a project financial close in Q1 2013.
  - The roughly $3 billion of financing will come from a $450 million grant from the Department of Energy, senior debt from the Chinese Export-Import bank (China EXIM), and an equity syndicate comprising contractor investments and a US-based financial investor.
  - Wellford also assisted in the developer in obtaining $450M in direct grant funding from the U.S. Department of Energy and over $1 billion of tax benefits.

Key requirements for a successful clean energy project

- A skilled developer able to shepherd the project from concept to commissioning
- Bridge funding to cover the development period when cash is required for feasibility analysis, front-end engineering & design work, permitting, and the commercial and financial structuring of the project
- Projects are typically structured on a non-recourse “project finance” basis
  - Sponsor equity is supplied by both strategic and pure financial investors
  - Debt typically composes 50-80% of the total construction costs
- Equipment is sourced from high-quality technology suppliers capable of providing key performance guarantees
- Bankable supply agreements and off-take agreements
- A long-term operations and maintenance agreement with suitable guarantees

- *Governments looking to encourage clean energy development need to provide assistance to help establish or stand in for these key requirements*

Unique Characteristics of Project Financing

- When undertaking a “project finance” structure, funds for construction are raised on a *project-basis* rather than on a balance sheet-basis:
  - The project company issues equity to equity investors and the developer
  - The debt is designed to be paid only from the revenues derived from project operations; therefore the total amount of debt is limited by size and the timing of the project’s revenues.
- A project financed facility must be capable of functioning profitably as an independent economic unit *from the very beginning*
- For this reason, developers typically must tailor a project to the particular circumstances, including the various incentives available and the quality of the resources for solar and wind projects; there are few easy “off-the-shelf” solutions

- Project Finance = Physical Engineering + Financial Engineering

Features of Project Finance

- An agreement by the financially responsible parties to complete the project and make available all funds necessary for its completion
- An agreement by the sponsor that when completion occurs and operations commence the project will have sufficient cash to enable it to meet all its operating expenses and debt service requirements even if the project fails to perform
- For this reason, project financing requires careful financial engineering to allocate risks and rewards among the involved parties that is mutually acceptable.
- Required pre-conditions for a project financing to occur often include:
  - The project's output is in such strong demand that the purchasers would be willing to enter long-term purchase contracts, thus guaranteeing a source of revenue
  - The engineering, equipment supply contracts, and operations contracts have strong enough provisions that banks would be willing to advance funds to finance construction on the basis of those contracts and equity would be willing to supply capital

Projects must be *designed* to achieve project financing

- Technical Feasibility
  - Lenders and equity suppliers must be satisfied that the technological processes to be used are feasible for commercial application on the scale contemplated.
  - The project **must** generate output at its design capacity. Lenders generally require verifying opinions from independent engineering consultants before proceeding.
- Lump sum turnkey (LSTK) Engineering. Procurement, and Constructon contracts
  - This is the key protection against cost overruns. Include performance guarantees both for availability and timing of completion.
- Long-term O&M Agreement
  - Equity owners (not lenders) take the performance risk the reduction of this risk through long-term performance guarantees is vital.
  - A higher reliance on availability than efficiency

Matching Policy to Successful Project Development

Requirement for Successful Project	Policy Solution
Skilled Developer	Trainings / Research Material
Development-Stage Funding	Grant funds that cover feasibility, FEED, and permitting
Adequate Equity Investor Returns	Grant funds to reduce total costs Tax credits (investment or production) Carbon credits Revenue guarantees / cash subsidies
Adequate Amount of Project Debt	Loan guarantees to replace market shortfall Loan guarantees to cover technology risk Project completion guarantees / pinhole risk
Equipment Contractor Guarantees	Grant or loan support to suppliers
Off-take Agreements	Purchase mandates (RPSs) Revenue guarantees / cash subsidies
Operations & Maintenance Guarantees	Caps on liability

U.S. Policy Approaches to Encourage Clean Energy

- U.S. state and Federal policymakers have enacted numerous policies to support new renewable energy development
- Four policy types have been critical to the widespread development of utility-scale renewable solar and wind facilities:
  - **Direct project cash grants** to support research and development or first commercial projects
  - **Loan guarantee program**, providing guarantees and access to low-cost financing, enabling larger wind and solar energy projects
  - **Renewable portfolio standards** enacted by 29 states and the District of Columbia which have created the demand for renewable energy and have lead to long-term contracts critical to financing.
  - **Federal tax benefits** including production tax credits, the 30% investment tax credit (ITC), accelerated depreciation schedules, and the Section 1603 cash grant program available in lieu of the ITC

U.S. Incentive Programs – Grants, Loans and RPSs

- Direct Cash Grants
  - Typically $3 to 4 billion per year from Department of Energy
  - Stimulus program increased this significantly -- ~$16 billion in cash grants
- Loan Guarantee Program
  - Utility-scale projects in particular have benefited from the loan guarantee program, which provided access to capital at a lower cost and large quantity than what private markets were willing to provide.
    - $12 billion in loans to 3500 MW of solar projects
    - $1.4 billion in credit subsidy costs were paid under the American Recovery and Reinvestment Act to support these loans
- State Renewable Portfolio Standards
  - Enacted by 29 states and the District of Columbia
  - State RPSs create the critical demand for large-scale generation projects, driving investor-owned and public utilities to sign long-term power purchase agreements with developers.

U.S. Incentive Programs – Tax Benefits

- Investment Tax Credit
  - Reduces Federal income taxes for qualified owners based on capital investment in renewable energy projects
  - Typically measured as 30% of the total capital cost of the project
  - ITC realized in the year in which the plant begins commercial operation
  - Asset must be retained for five-year period
- Production Tax Credit
  - Also a tax credit, but based on actual production of the project
  - Typically measured on a $/kWh basis – currently wind is 2.2 cents/kWh
- Accelerated Depreciation & Bonus Depreciation
  - Some renewable equipment qualified for a five-year double-declining balance depreciation – allows full depreciation of the asset over five years
  - With the addition of Bonus Depreciation, 60% of the project cost can be deducted in the first year
  - The Five-Year depreciation schedule provides an additional tax benefit equal to 26% of the project cost. When combined with the 30% ITC this provides a tax benefit equal to 50-60% of the installed cost of the project

Problems with US Incentive Scheme

- Tax incentives (tax credits or accelerated depreciation) are difficult for project developers to monetize
- Most renewable energy projects and project developers do not have enough tax appetite to utilize these credits to their full potential.
- Tax credits can be “carried forward” to shelter future income, but this greatly reduces the present value of the benefit.
- Monetizing tax benefits has been estimated by NREL to create transaction costs equal to almost 9% of the value of the tax credits

Section 1603 Cash Grant in Lieu of Tax Credits

- Designed to allow companies to accept a cash payment in lieu of the ITC to the PTC
- Treasury pays a grant equal to 30% of the property placed in service
- The grant is not a reduction in taxes and therefore it does not require taxable income to offset
- Expired in 2011 but will award projects that started construction in 2009, 2010, and 2011
  - Over $10 billion in grants were given to over 22,000 projects
    - $8 billion to wind projects
    - $2 billion to solar projects
    - Resulted in a total of approximately $35 billion in energy projects
- According the the DOE's National Renewable Energy Lab 89% of the participants they surveyed viewed the program as either "extremely" or "very" important to their project development success placing a high level of importance on this program versus state incentives or RPSs
- Over 60% of developers surveyed said the projects were entirely dependent upon the cash grant

Other Approaches to Tax Equity

- Alternative financing structures have been developed to take advantage of tax credits at their highest value.
- These structures require an equity investment from a firm with sufficient tax appetite to utilize these tax credits.
- The purpose of these financing structures is:
  - To maximize the value of federal, state and local incentives
  - Allocate risk and reward among different funding sources
- Financing Structures
  - Balance Sheet Financing (not relevant for project financing)
  - Partnership flip structure
  - Leases – including a sale-leaseback
  - Utility prepay structure

Partnership Flip Structure

- Project developer partners with a tax equity investor to fully use the project's tax benefits
  - All equity partnership flip
  - Leveraged partnership flip
- The flip structure is designed to provide the tax equity investor with a pre-negotiated return in a set number of years (e.g. a 9% yield by year eight of the project).
  - After that point the annual stream of benefits flips to the sponsor
- This requires agreement on terms such as:
  - Initial equity investments
  - "Pre-flip" distribution of the project's cash revenues and tax benefits
  - "Post-flip" distribution of the project's cash revenues and tax benefits
- Requires certain legal minimum conditions
  - Developer must have at least a 1% interest in the material items of the partnership
  - Each tax equity investor much have at least a 5% interest in material items
  - The tax equity investor must bear the risk of the resource availiability.

Other Approaches

- Lease Structures
  - Sale-Leaseback
    - Project developer sells the assets for cash and signs a long-term lease with the investor
    - The developer arranges the PPA with a power purchaser which become the primary revenue stream to pay the lease payments
    - The developer is forces to pay a fixed rent regardless of performance
    - The investor receives the tax benefits of the project
  - Inverted Lease
    - Developer leases the project to a tax equity investor (reverse from above) and passes through the ITC to the tax equity investor
    - Tax equity investor (the lessee) sells the electricity to the developer
    - Tax credits and depreciation are split between the developer and investor
    - Typically the lease ends after a fixed time and the project reverts to the developer
- Utility Pre-pay
  - Utility prepays for the PPA using its own access to low-cost capital

Non-U.S. Approaches - Contract for Difference

- Program of the UK's Department of Energy & Climate Change
- Feed-in Tariff with Contract for Difference (CfD)
  - Long-term contracts to provide stable and predictable incentives for companies to invest in alternative generation
- The CfD is a new mechanism to support investment in low-carbon electricity generation.
- The CfD works by stabilizing revenues for generators at a fixed price level known as the 'strike price'.
  - Generators will receive revenue from selling their electricity into the market as usual.
  - When the market reference price is below the strike price they will also receive a top-up payment from suppliers for the additional amount.
  - Conversely if the reference price is above the strike price, the generator must pay back the difference.
- It gives greater certainty and stability of revenues by removing exposure to volatile wholesale prices, and protects consumers from paying for support when electricity prices are high.

Case Study: Texas Clean Energy Project

Requirement for Successful Project	Policy Solution
Development-Stage Funding	50% cost share from Department of Energy using proceeds
Adequate Equity Investor Returns	Grant funds to reduce total costs Investment Tax Credits ($313 million) Carbon sequestration tax credits
Adequate Amount of Project Debt	Working with a Chinese policy bank which will provide 100% of project debt is support of Chinese EPC contractor
Equipment Contractor Guarantees	No government support
Off-take Agreements	City of San Antonio seeking low-carbon sources of electricity
Operations & Maintenance Guarantees	No government support

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