Advancing Wind Power in Illinois Conference 2011

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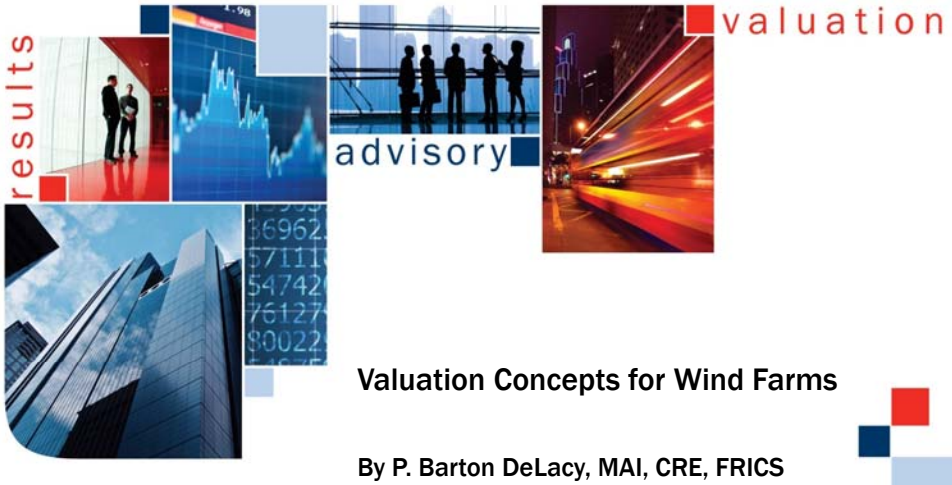
DeLacy, Cushman & Wakefield

Large Wind
Development, Economics & Finance
Breakout Session

Friday, July 22, 2011, 1:30 PM



Valuation Concepts for Wind Farms

By P. Barton DeLacy, MAI, CRE, FRICS

Friday, July 22, 2011

CUSHMAN & WAKEFIELD
VALUATION & ADVISORY

AGENDA

- INTRODUCTION
- C&W ENERGY GROUP OVERVIEW
- WHEN DO WIND FARMS GET VALUED?
- DEFINITIONS
- VALUATION TOOLS
- SOME IMPLICATIONS/ DISCUSSION

Introduction

Cushman & Wakefield Valuation and Advisory Energy Group

- C&W Valuation & Advisory provides clients with global platform
  - Over 100 designated MAI appraisers serving all major US markets
  - International valuation staff in Europe, the Americas and Asia
  - 24 Specialty Practices – including the Energy Group
- The Energy Group values both thermal and renewable power generating facilities
- Services include:
  - Collateral valuations
  - Impact studies
  - Property tax assessment
  - Adaptive Re-use studies
  - Valuation for Financial Reporting

Introduction

When is Wind Farm Valuation Required?

- When is Wind Farm Valuation Required?
  - Refinancing of Debt
  - For Collateral
  - Mergers & Acquisitions
  - Financial Reporting
  - Property Tax Appeals
  - Liquidation/ Dissolution of Partnership
  - Bankruptcy

Valuation Concepts

Definitions, Asset Classes

- Value definitions may vary- depending on purpose
  - Market Value: typically implies real estate only
  - Fair Value: nuanced accounting definition
  - Value in use: for special purpose properties
  - Enterprise Value: includes all asset classes including intangibles
  - Assessed value: basis for ad valorem taxes
- Real Estate is an incidental component in valuing a utility-scale power plant or wind farm
- Turbines are fixtures, but can be considered personal property
- Project value ultimately depends on what is paid for the electricity generated

Valuation Concepts

Valuation Components

- Valuation Components:
  - Land Value: consider permit process, location and HBU
  - Availability of the resource, proximity to the grid
  - Capital Costs: Structures, equipment, infrastructure
  - Applicability of tax incentives or credits to offset capital costs
  - Purchase Power Agreement (PPA): long term agreement to acquire all power generated at fixed price
  - Discount Rate

- Valuation Methods:
  - Discounted Cash Flow (DCF)
  - Cost Approach
- DCF is income approach, models performance of PPA
  - PPA generates revenue based on agreed power price in kW hours
  - Key variables:
    - Operating expenses including PILOTs, royalties, leases
    - Net Capacity Factor: efficiency measure
    - Discount Rate: reflects relative risk

- PPA Variables:

OUTPUT CALCULATIONS FOR POWER PURCHASE AGREEMENT		
A.	Number of Turbines	100.00
B.	Turbine Rating (Nameplate MW)	2.00
C.	Rating (A x B)	200.00
D.	Average Daily Hours of Operation	24.00
E.	Days in Year	365.00
F.	Net Capacity Factor	30.0%
G.	Production Capacity in MW Hours (C x D x E x F)	525,600
H.	% Loss to Conversion AC to DC	5.00%
J.	Curtailment	6.50%
K.	Net Production in MW Hours (G-(H+J))	465,156

- Cost Approach components:
  - Entitled Land (if owned)
  - Installed turbines (all in with infrastructure, transformers, etc.)
  - Soft costs (financing, profit)
  - Less: Project Finance Incentives (economic obsolescence?):
    - ITC
    - PTC
  - Less: Physical Depreciation
  - Less: Functional Obsolescence (the inverse of the NCF?)

- Implications of the Cost Approach
  - Property tax assessment practices
  - Accelerated Depreciation recovery
  - Comparative analyses with competing renewable or thermal power producing platforms
  - Public policy
- Conclusion: valuation of wind farms ultimately needs transactional market data for validation
  - Subsidy free development
  - Policy consensus on carbon
  - Stable resource allocation and pricing