The Impact of the Credit Market Crisis and Other Factors on Wind Energy Development

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Background

American Wind Energy Association Statistics

U.S. Newly Installed Wind Energy Capacity

2007	5,249 MW
2008	7,500 MW
2009	Less Than 2008

Domestically Made Components In U.S. Wind Turbines

2005	30%
2008	50%

Estimated 9,000 manufacturing jobs created as a result of recent new or expanded manufacturing facilities.

Background

- Capital-intensive procurement and construction
  - Turbine procurement
  - Plant construction
  - Interconnection facilities
- Project development driven by federal production tax credit
  - Many developers have historically been small companies or subsidiaries of large foreign energy companies
- Result
  - Turbine supply financing
  - Tax equity investor financing
  - Non-recourse or partial recourse project financing
  - For spot market “merchant” plants, hedging of offtake price through a contract for differences (price swap)

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Background

- Project lenders, investors and hedge counterparties that developers seek:
  - Banks (many European) and Investment Banks, as lenders or hedge counterparties
  - Insurance Companies, Pension Funds and Investment Banks, as tax equity
  - Utilities, as strategic joint venture partners
- About 20 – 25 active lenders, loans often syndicated (minimum deal typically exceeds $100 million)
- About 20 – 25 active tax equity investors

Background

+ Due to the Credit Market Crisis:
  - Many of the above investors and lenders have suffered liquidity problems (utilities to a much lesser extent due to stabile customer base)
  - Emergency Economic Stabilization Act of 2008 extended the wind energy production tax credit (currently approximately 2 cent/kilowatt hour produced during first ten years after commercial operation date), but only for projects in service by Dec. 31, 2009

Results of the Credit Market Crisis

- Short Term:
  - Complete shutdown of lending for turbine loans, project loans and tax equity investment – no further deal origination since September and none expected through end of 2008
  - Limited market for hedging counterparties; exposure limits are being re-evaluated
  - Volatility may prevent hedge counterparties from posting collateral in a timely manner in response to frequent capital calls (example - Lehman Brothers, WaMu have defaulted)
  - Smaller developers, lacking liquidity to fund project development, are selling to larger, better-capitalized companies – European developers and possibly more utilities

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Results of the Credit Market Crisis

+ When credit markets eventually recover, expect:
  - Fewer players and greater perceived market risk to result in higher spreads (loans typically priced over LIBOR or comparable U.S. Treasury), possibly 200 – 300 basis points higher*
  - Lenders to require higher debt services coverage ratios*
  - Higher lending rates to result in higher required returns for equity players. Where tax equity historically sought an unlevered IRR of 6 - 7%, an 8 - 9% unlevered IRR may be necessary
  - Lower loan-to-value ratios (higher equity contributions). For example, turbine loans historically were 60 - 70% of the purchase price, but in the future may be lower due to the perceived increased risks, cost of capital, and the potential for falling turbine prices*

* Based on projections of some bankers and finance lawyers

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Results of the Credit Market Crisis

+ When credit markets eventually recover, expect (continued):
  - Turbine payment terms from the OEMs to be more front-loaded than in the past (i.e., manufacturers have historically required 10% – 30% of the purchase price to be paid upon issuance of a “notice to proceed”; in the future this may be higher)
  - Possibly an increase in utility equity participation, either through joint ventures by non-regulated affiliates or through “build and transfer” agreements that have been prevalent particularly in the Midwestern states
  - Higher costs of capital may result in fewer projects expected to achieve the developer’s required target return thresholds, which would result in fewer projects being built

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The Good News?

- A stronger U.S. dollar and increased U.S. parts production, if sustained, could result in less foreign exchange risk and relatively lower, more stable turbine prices
- Lower demand may result in lower turbine prices (per MW) or better warranty terms
- Increased utility ownership under a “build and transfer” model and the resulting inclusion in utility rate base may reduce the level of equity return requirements, somewhat offsetting higher costs of capital discussed above
- New technology (e.g., turbine design that eliminates gear boxes), may result in lower project O&M costs, leading to improved equity returns
- Gradual receptiveness to off-shore wind turbines in U.S. may result in increased demand (example, Delaware)

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The Good News?

- Potential for Additional Government Stimulus:
  - Extend the PTC on a multi-year basis
  - Government subsidy/tax incentives for construction of additional transmission capacity
  - Federal Renewable Portfolio Standard
  - Clean Renewable Energy Bonds for governmental issuers (Emergency Economic Stabilization Act of 2008 extended CREBs to December 2009; proceeds must be used within 5 years of bond issuance)
  - Growing interest in state and local government ownership of wind energy facilities
    - Example: a recent amendment to Illinois law found at 220 ILCS 5/16-107.5 (P.A. 95-0805, effective Aug. 12, 2008) allows many local government bodies to form consortiums to own and operate wind energy facilities and benefit from "net aggregate metering"

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