



Financing U.S. Wind Projects Post-Recession

February 2010

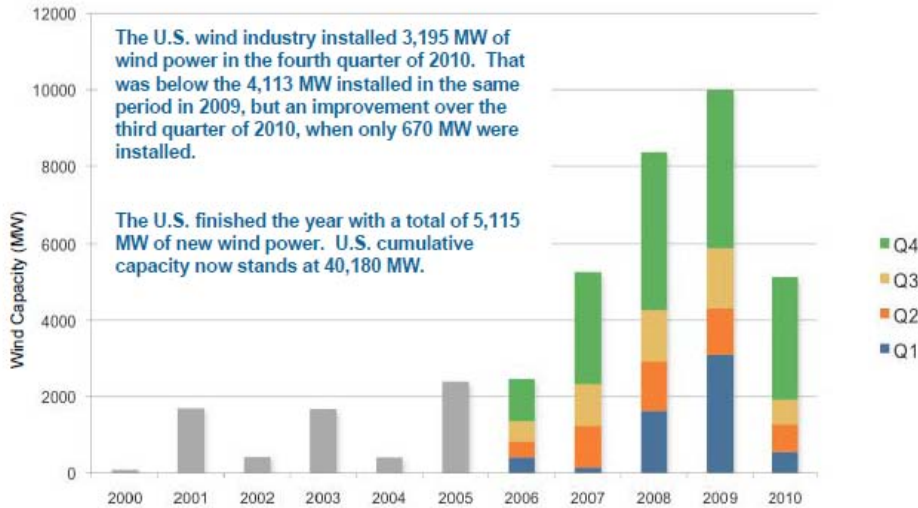
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Financing Wind in a Post-Recession Environment

- ✓ **Understanding the past and projected growth in U.S. wind**
- ✓ **Federal renewable energy policy and its implications for U.S. wind**
- ✓ **U.S. Capital markets & their effects on the U.S. wind industry**
- ✓ **Optimizing project economics through production hedging strategies**

State of U.S. Wind Market

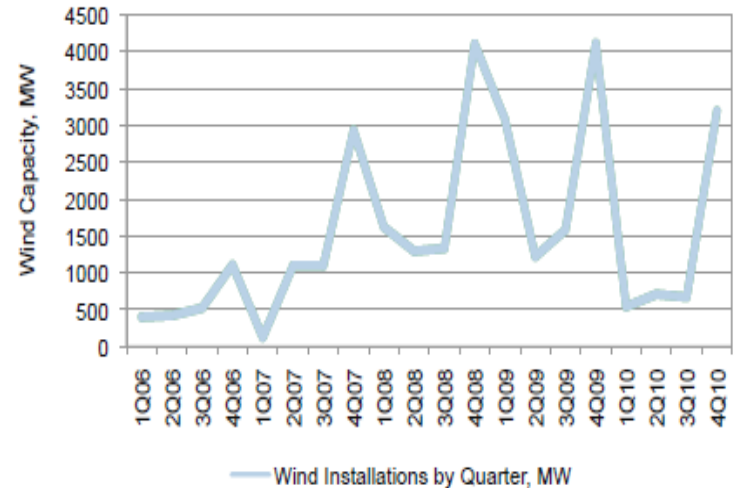
U.S. Wind Installations by Year, Quarter (2000-2010)



Source: AWEA

- 2010 installed capacity was less than 2007 and was driven primarily by the fall-out in both the commodities markets (natural gas & electricity prices) and financial markets

U.S. Wind Installations by Quarter (Q1'06-Q4'10)



Source: AWEA

- Q4 installations significantly greater than others due to extensions of PTCs/ITCs/Grants and other federal incentives typically signed into law in Q3/Q4 of those years

Projected U.S. Wind Installations

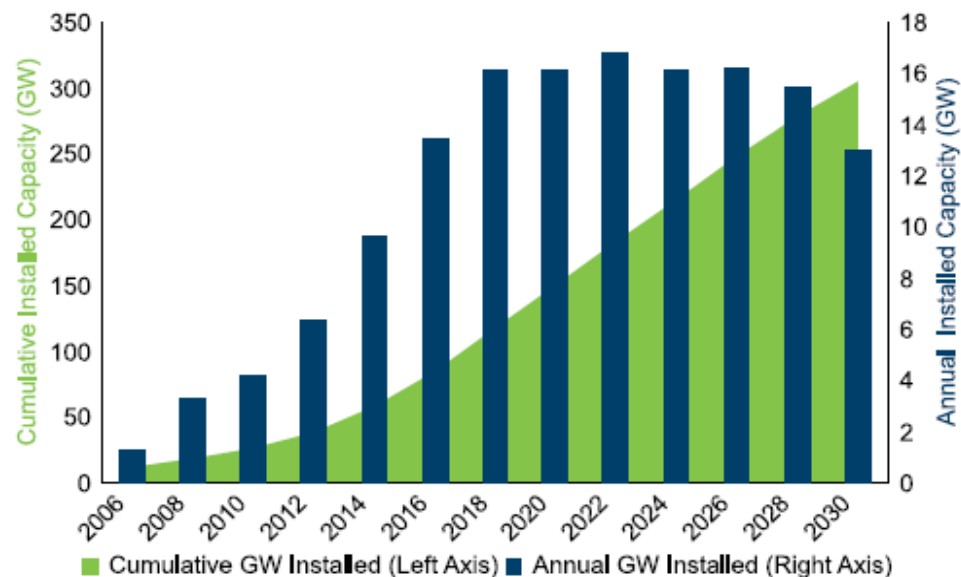
Potential Market Demand

- Chart shows required installations to meet 20% by 2030 of installed wind as a % of total installed U.S. generating capacity
- Capacity growth reflects a 13% CAGR
- Assuming average installed costs of \$2,000/kW, the industry would require about \$520 billion of investment over the next 20 years

Requirements to Meet Demand

- Consistent Federal/State renewable policy mandates
- Technology innovation (cost & production)
- Expanded liquidity in the financial markets for intermittent power generation resources (MLPs? Hedging?)

Annual & Cumulative Installed Capacity (2006-2030)



Source: AWEA

ARRA 2009 + 2010 Tax Extenders Bill

Select ARRA 2009 Provisions Affecting Renewable Energy	
Provision	ARRA 2009 Provision Summary
Extends the PTC In-Service Deadline	Extends the PTC through 2012 for wind, and through 2013 for closed- and open-loop biomass, geothermal, landfill gas, municipal solid waste, qualified hydroelectric, and marine and hydrokinetic facilities. In 2008, the inflated PTC stood at \$21/MWh for wind, geothermal, and closed-loop biomass, and \$10/MWh for other eligible technologies.
Provides Option to Elect the ITC in Lieu of the PTC	Allows PTC-qualified facilities installed in 2009-13 (2009-12 in the case of wind) to elect a 30% ITC in lieu of the PTC. If the ITC is chosen, the election is irrevocable and requires the depreciable basis of the property to be reduced by one-half the amount of the ITC.
Provides Option to Elect a Cash Grant in Lieu of the ITC	Creates a new program, administered by the Treasury, to provide grants covering up to 30% of the cost basis of qualified renewable energy projects that are placed in service in 2009-10, or that commence construction during 2009-10 and are placed in service prior to 2013 for wind, 2017 for solar, and 2014 for other qualified technologies. Applications must be submitted by October 1, 2011, and the Treasury is required to make payments within 60 days after an application is received or the project is placed in service, whichever is later. The grant is excluded from gross income and the depreciable basis of the property must be reduced by one-half of the grant amount.
Removes ITC Subsidized Energy Financing Penalty	Allows projects that elect the ITC to also utilize "subsidized energy financing" (e.g., tax-exempt bonds or low-interest loan programs) without suffering a corresponding tax credit basis reduction. This provision also applies to the new grant option described above.
Extends 50% Bonus Depreciation	Extends 50% bonus depreciation (i.e., the ability to write off 50% of the depreciable basis in the first year, with the remaining basis depreciated as normal according to the applicable schedules) to qualified renewable energy projects acquired and placed in service in 2009.
Extends Loss Carryback Period	Extends the carryback of net operating losses from 2 to 5 years for small businesses (i.e., those with average annual gross receipts of \$15 million or less over the most recent 3-year period). This carryback extension can only be applied to a single tax year, which must either begin or end in 2008.
Removes ITC Dollar Caps	Eliminates the maximum dollar caps on residential small wind, solar hot water, and geothermal heat pump ITCs (so now at the full 30%). Also eliminates the dollar cap on the commercial small wind 30% ITC. Credits may be claimed against the AMT.
Expands Loan Guarantee Program	Expands existing loan guarantee program to cover commercial (rather than just "innovative non-commercial") projects. Appropriates \$6 billion to reduce or eliminate the cost of providing the guarantee; this amount could support \$60-\$100 billion in loans, depending on the risk profiles of the underlying projects.
Adds Funding for Clean Renewable Energy Bonds	Adds \$1.6 billion in new CREBs for eligible technologies owned by governmental or tribal entities, as well as municipal utilities and cooperatives. With \$800 million of new CREB funding previously added in October 2008, combined new CREB funding totals \$2.4 billion.

Source: NREL

- **Cash grant extended through 12/31/2011**
- **Bonus depreciation revised to 100% for assets placed in service after Sept 30, 2010**

PTC vs. ITC

		Total Installed Project Cost (\$/kW)										
		\$1,500	\$1,600	\$1,700	\$1,800	\$1,900	\$2,000	\$2,100	\$2,200	\$2,300	\$2,400	\$2,500
Net Capacity Factor (%)	25%	-3.7%	-2.0%	-0.6%	0.7%	1.8%	2.8%	3.7%	4.6%	5.3%	6.0%	6.7%
	26%	-4.7%	-3.0%	-1.5%	-0.2%	1.0%	2.0%	3.0%	3.9%	4.7%	5.4%	6.1%
	27%	-5.7%	-4.0%	-2.4%	-1.1%	0.2%	1.3%	2.3%	3.2%	4.0%	4.7%	5.4%
	28%	-6.8%	-4.9%	-3.4%	-1.9%	-0.7%	0.5%	1.5%	2.5%	3.3%	4.1%	4.8%
	29%	-7.8%	-5.9%	-4.3%	-2.8%	-1.5%	-0.3%	0.8%	1.8%	2.6%	3.5%	4.2%
	30%	-8.8%	-6.9%	-5.2%	-3.7%	-2.3%	-1.1%	0.0%	1.0%	2.0%	2.8%	3.6%
	31%	-9.9%	-7.9%	-6.1%	-4.5%	-3.1%	-1.8%	-0.7%	0.3%	1.3%	2.2%	3.0%
	32%	-10.9%	-8.9%	-7.0%	-5.4%	-3.9%	-2.6%	-1.4%	-0.4%	0.6%	1.5%	2.3%
	33%	-11.9%	-9.8%	-7.9%	-6.2%	-4.7%	-3.4%	-2.2%	-1.1%	-0.1%	0.9%	1.7%
	34%	-13.0%	-10.8%	-8.8%	-7.1%	-5.6%	-4.2%	-2.9%	-1.8%	-0.7%	0.2%	1.1%
	35%	-14.0%	-11.7%	-9.7%	-8.0%	-6.4%	-4.9%	-3.7%	-2.5%	-1.4%	-0.4%	0.5%
	36%	-15.0%	-12.7%	-10.7%	-8.8%	-7.2%	-5.7%	-4.4%	-3.2%	-2.1%	-1.1%	-0.1%
	37%	-16.1%	-13.7%	-11.6%	-9.7%	-8.0%	-6.5%	-5.1%	-3.9%	-2.8%	-1.7%	-0.8%
	38%	-17.1%	-14.6%	-12.5%	-10.6%	-8.8%	-7.3%	-5.9%	-4.6%	-3.4%	-2.4%	-1.4%
	39%	-18.1%	-15.6%	-13.4%	-11.4%	-9.6%	-8.1%	-6.6%	-5.3%	-4.1%	-3.0%	-2.0%
	40%	-19.2%	-16.6%	-14.3%	-12.3%	-10.5%	-8.8%	-7.3%	-6.0%	-4.8%	-3.7%	-2.6%
	41%	-20.2%	-17.6%	-15.2%	-13.1%	-11.3%	-9.6%	-8.1%	-6.7%	-5.5%	-4.3%	-3.2%
	42%	-21.2%	-18.5%	-16.1%	-14.0%	-12.1%	-10.4%	-8.8%	-7.4%	-6.1%	-4.9%	-3.9%
	43%	-22.3%	-19.5%	-17.0%	-14.9%	-12.9%	-11.2%	-9.6%	-8.1%	-6.8%	-5.6%	-4.5%
	44%	-23.3%	-20.5%	-18.0%	-15.7%	-13.7%	-11.9%	-10.3%	-8.8%	-7.5%	-6.2%	-5.1%
45%	-24.3%	-21.4%	-18.9%	-16.6%	-14.5%	-12.7%	-11.0%	-9.5%	-8.2%	-6.9%	-5.7%	

Source: NREL

		Total Installed Project Cost (\$/kW)										
		\$1,500	\$1,600	\$1,700	\$1,800	\$1,900	\$2,000	\$2,100	\$2,200	\$2,300	\$2,400	\$2,500
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	33%	-5.4%	-3.7%	-2.2%	-0.9%	0.3%	1.4%	2.3%	3.2%	4.0%	4.7%	5.4%
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	42%	-12.7%	-10.6%	-8.7%	-7.0%	-5.5%	-4.2%	-2.9%	-1.8%	-0.8%	0.1%	1.0%
	43%	-13.6%	-11.4%	-9.4%	-7.7%	-6.2%	-4.8%	-3.5%	-2.4%	-1.3%	-0.4%	0.5%
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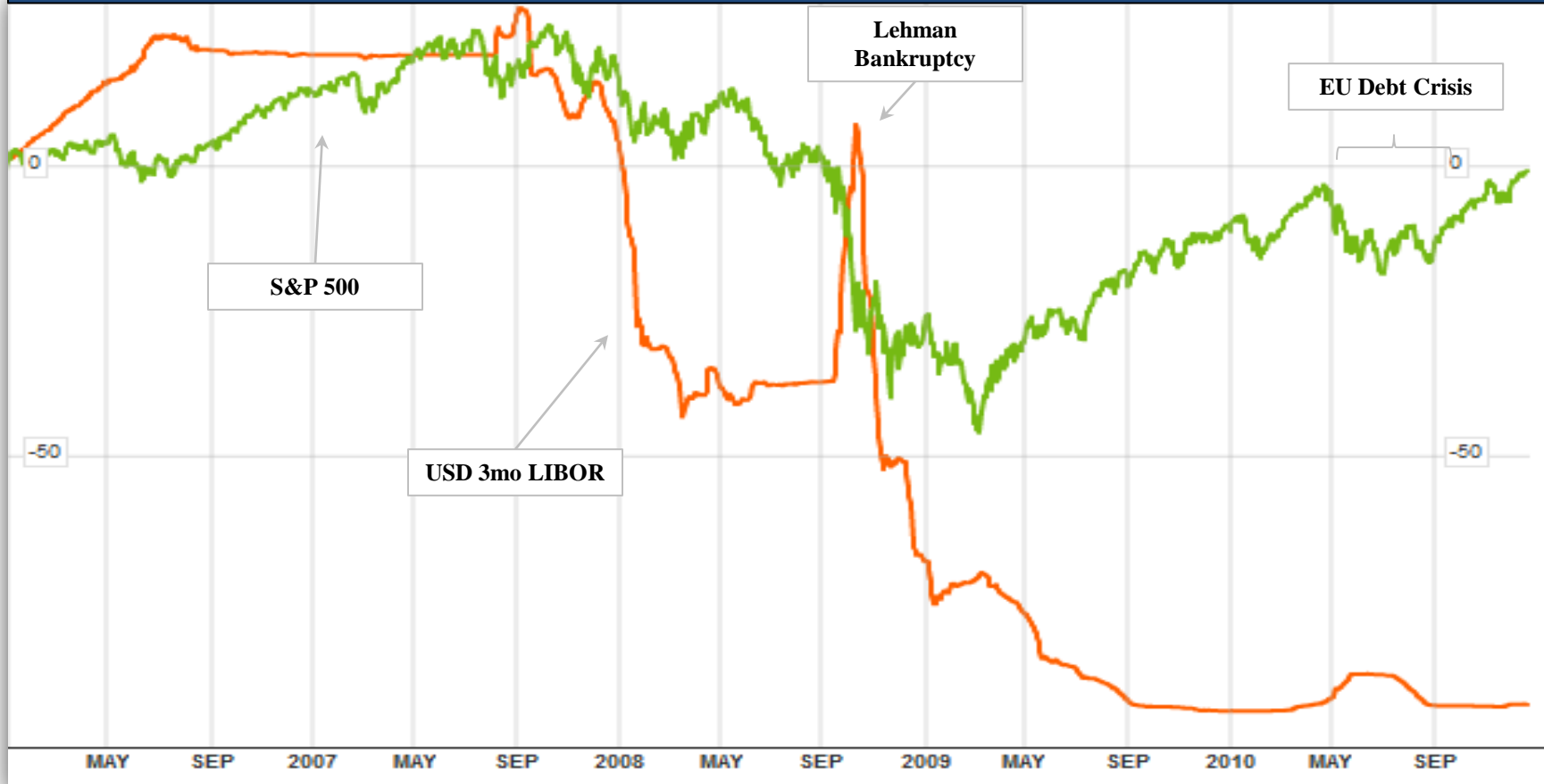
Source: NREL

- Both tables show the positive impact of the ITC/Grant to project NPV or negative impact of the ITC/Grant to the project NPV when compared to the PTC
- At a 5% discount rate, the election of the PTC is two-thirds better for most projects than the ITC/Grant
- The PTC value proposition is adversely affected by a higher discount rate and/or a lower capacity factor
- At a 10% discount rate, the election of the PTC vs. ITC/Grant is a more difficult choice for wind generators as future PTC value becomes more heavily discounted
- Furthermore, investors in larger projects might benefit more from an ITC/Grant as their investment exposure is more rapidly reduced & potentially less tax equity is required (Grant only)

Capital Market Trends

Debt and equity capital markets have stabilized relative to recession-era volatility. Benchmark rates remain favorable for leveraging equity.

% Change in S&P 500 and US\$3mo. LIBOR



Source: Bloomberg

Production Hedging Strategies

Production Hedging: Structure Overview



Production Hedging Impacts: Case Study

Impact	Base Case	Hedged Case	
EBITDA / Gross Revenue Margin	70%	68%	} Negative Impact to Margin
Pre-tax Unlevered IRR	8.7%	8.2%	
Leverage* (sized @ 1.0x P99 DSCR)	35%	43%	} Positive Impact to ROE
Sponsor Return	Lower	Higher	

- ✓ **Make sure you understand the most appropriate subsidy/incentive program for your project and the timeline necessary to achieve such subsidy/incentive**
- ✓ **Have an understanding of the capital markets early on (debt, equity & tax equity)**
- ✓ **Look for ways to maximize operational performance of your project, including insurance to guarantee higher P99 production**

Management Bios / Contact




Charles R. Brettell
Partner

Charles R. “Bob” Brettell is a Co-Founder & Partner of Energy Asset Advisors, LLC (EAA).

A 14-year veteran of the energy industry, Mr. Brettell’s experience includes the management of due diligence, financial close, transition & merger integration activities for acquisitions valued at over \$4 billion and involving over 500 people. Mr. Brettell has also provided interim executive management, including daily oversight of asset management, legal, finance, government relations, human resources, tax and accounting, for independent power producers, private equity firms & hedge funds.

Mr. Brettell holds a Bachelor’s degree in History from the University of Maryland, a joint JD / MBA (Finance) degree from the University of Kansas, and a Master of Laws (Taxation) degree from the University of Missouri – Kansas City.



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Mr. Elrod is a Co-Founder & Partner of Energy Asset Advisors, LLC.

Mr. Elrod’s experience is in both alternative and conventional power mergers and acquisitions and project financings in the U.S. and Canada. During his career, Mr. Elrod has worked on transactions totaling in excess of US\$ 10 billion. Prior to joining EAA, Mr. Elrod worked for a Houston-based alternative energy company, focusing on solar, wind and biomass origination and M&A efforts as well as playing a senior role in the company’s capital raise. Before coming to Houston, Mr. Elrod was with GE Energy Financial Services in Stamford, Connecticut, where he worked on buy-side transactions in the U.S. conventional and renewable power sectors.

Mr. Elrod holds a Bachelor’s degree in History from Yale University and speaks Mandarin Chinese & Spanish.



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