The Wind Does Not Always Blow Freely- The Economics of Industrial Wind Energy

February, 2007 by Hugh T. Kemper, Londonderry (VT)

Summary:
For those who think developers' feverish promotion of wind energy is about saving the planet, think again. The old adage follow the money explains their zeal much more than do its purported benefits. Worse, the enormous investment returns available to wind developers for an unreliable energy source that offers negligible emissions benefits stem largely from federal and state subsidies paid for by taxpayers and rate payers. Go figure.

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To put these enormous returns in perspective, let's compare the returns currently available to a hypothetical Massachusetts' developer of industrial wind energy with the average performance of companies comprising the Standard & Poor 500 (S&P 500). A Massachusetts' developer has available not only the two key federal subsidies- the Production Tax Credit and Double Declining Depreciation- but also a flourishing Renewable Energy Credits (REC) market resulting from its legislated Renewable Portfolio Standards (RPS).

This comparison is summarized in the chart below.

The highest average annual return on equity over the past ten years for the companies comprising the S&P 500 was 17.9%. Our hypothetical Massachusetts wind energy developer, however, can expect, conservatively, an annualized return of 47% over twenty years or 2.6x greater than the best performing year for S&P 500 companies.(1) The chart also shows clearly the critical importance of current subsidies to developers' returns. Even developers without access to a flourishing REC market can expect to perform quite well, i.e. a 29% annualized return. Without all three subsidies, the expected return changes dramatically- the annualized yield drops to 5% or below the worse performing year (@ 7.4%) for S&P 500 companies.

Standard & Poor 500 10 Year Average Return on Equity (source: StockVal)	High 17.9%	Median 14.4%	Low 7.4%	
20 Years Wind Developers' Annualized Return	47%	29%	12%	5%
Renewable Energy Credits	Yes	No	No	No

Production Tax Credit	Yes	Yes	No	No
Double Declining Depreciation	Yes	Yes	Yes	No

The message here is quite simple- with the subsidies the developers develop; without them they don't.

Why these subsidies are available- at taxpayer and rate payer expense- for an unreliable energy source that provides negligible emissions benefits boggles the mind.

Wind's inherent flaw as an energy source- its intermittency- is indisputable. Wind energy simply does not obviate the need to maintain existing sources of reliable energy or the need to expand these sources as our demand for energy increases. Nor does wind reduce emissions for the simple reason that wind must be 'backstopped' by immediately available and dependable energy sources to ensure an electricity grid's stability and reliability.

I've always felt that if there were more sailors in Vermont the whole issue of wind energy would be moot. Go figure.

Endnote (1):
The key financial assumptions for our hypothetical Massachusetts developer of industrial wind energy include: (a) a project financed with 30% equity and 70% debt @ 8.5% p.a. interest cost; (b) a capital cost of $1.68 million per net MW of installed nameplate capacity; (c) an average annual Capacity Factor of 30%; (d) fixed annual operations/maintenance costs of $27,590 per MW of nameplate capacity; (e) a federal/state tax rate of 44.5%; (f) a REC value per MWh of slightly in excess of $50 during the plant's initial 5 years thereafter declining to approximately $25 per MWh; and (g) a Production Tax Credit, currently $19 MWh, increasing over 10 years @ an annual inflation rate of 2%.

Web link: http://www.vermonttiger.com/content/energy/index.h...
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