

THE WALL STREET JOURNAL.

The Experts: What Renewable Energy Source Has the Most Promise?

April 17, 2013

Jerry Taylor: The Best Prediction: Who Knows?

The prospect of economically competitive renewable energy is like the horizon; it continues to recede even as we march double-time toward it.

Proponents argue—correctly—that production costs in the electricity sector have declined markedly over time. But, alas, so have the costs of gas-fired electricity, renewables' main competitor for new plant orders. The revolution in hydraulic fracturing suggests that renewables are unlikely to win the race against gas in the foreseeable future. Wind energy would seem to be the most commercially viable renewable energy source at present, but even so, it's not competitive with gas. Solar energy is even less competitive either on a utility-scale or at the point of use.

In the transportation sector, we see something similar; corn ethanol—the main renewable in play—has become less expensive to produce over time but, alas, it is still substantially more expensive than conventional gasoline in wholesale markets. Last week, for instance, gasoline was selling for an average of \$2.76 per gallon in U.S. wholesale markets. To get the same energy content that a gallon of gasoline will get you, one would have to pay \$4.06 for ethanol in those same markets.

But past is not necessarily prologue. Technological innovations are possible and scientists and engineers tell plausible stories about how any number of R&D projects currently under way could radically change the economics of renewable power. Of course, we've heard these stories for years, but past failures to achieve breakthroughs don't necessarily guarantee future failures.

Which renewable has the best chance of breaking through? No one really knows because no one can reliably predict which of the many ambitious R&D projects—if any—has the best chance of success. And no one can confidently predict what will happen to conventional energy prices...the other important factor in this equation. Confident predictions have been offered in the past but, as Vaclav Smil demonstrates in his excellent book "Energy at the Crossroads" (MIT Press, 2005), those predictions have been, without exception, not worth the paper they've been printed on.

All we can say for certain is that the government has no better crystal ball than the private sector so the former should not be second-guessing investments made by the latter.

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