

Analytica94, Inc.

Life Study of U.S. Terrestrial Wind Generation 2013

Are terrestrial wind power costs increasing or decreasing? Will Federal subsidies continue or dry up? Will technological improvements and better maintenance practices reduce or increase terrestrial wind power costs? Answers to these questions vary by the economic interests of those being asked. Analytica94 (“A94”) concludes that current procedures overstate annual wind power costs because they rely on understated operational life assumptions.

I. Conclusion - operational life and growth rates for U.S. terrestrial wind power investments

Using empirical analysis A94 concludes that at least one of the operational life assumptions used in an annual cost estimates should be in the 45 to 90 year range.¹ A94 also concludes it is reasonable to assume that investment in terrestrial wind energy in the U.S. will continue at an 11 percent compound rate and revenues will grow at a 16 percent compound rate, all things equal.

II. Why is it important to know the anticipated operational life?

Terrestrial wind power cost estimates typically rely on arbitrary operational life assumptions in the 20 to 30-year range.² A94 concludes that annual cost estimations using 20 to 30-year operational lives overstate the projected annual capital costs of terrestrial wind power by \$17/MWH to \$20/MWH.³ A94’s analyses suggest the actual operational life will be in the range of 45 to 90 years thus significantly reducing the annual cost estimates.⁴

Stakeholders must have reasonable annual cost estimates and operational life assumptions to make appropriate, transparent decisions concerning national infrastructure investments. Otherwise, they will not understand the most reasonable costs and revenue consequences. An understated operational life assumption produces overstated cost estimates and understated revenue estimates, notwithstanding federal subsidies.

¹ Estimates using wind turbine unit life studies with IOWA curves. Low end estimate excludes plant exposed to retirements after the oldest retirement in the sample. Upper end estimate includes all plant exposed to retirements in the sample.

² The National Renewable Energy Laboratory’s (NREL) 2011 Cost of Wind Energy Review (Review) used a levelized cost of energy (LCOE) model to estimate the relative cost of wind energy for representative project types in the United States. The LCOE relies on four basic inputs: installed capital cost, annual operating expenses (AOE), annual energy production, and the fixed charge rate; a coefficient designed to capture the costs of financing a wind project over an operational life. The U.S. Department of Energy’s (DOE) 2011 NREL study used a 8 percent nominal annual discount rate combined with three alternative operational life spans: 30, 25 and 20 years, all of which assume a “final retirement” of a terrestrial wind project at the end of these periods.

³ NREL’s Review LCOE estimate of a 20 year operational life is \$72/MWH. Using a 45 year life, the LCOE falls to \$55/MWH and using a 90 year life, the LCOE falls further to a \$52/MWH.

⁴ A94’s complete analysis is contained in a Technical Appendix to this report. A copy may be obtained by contacting Mr. Majoros (see below.)

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III. About Analytica94

OUR MISSION FOR MAIN STREET

Analytica94, Inc. ("A94") – is a non-profit organization that provides the research, economic models and training necessary to evaluate the effectiveness of economic regulation of U.S. industries to determine if it is protecting Main Street's interests. A94 is a solution, a leveling mechanism and a vehicle to fund the research, development and training required to respond effectively.

A94© Benefits:

- *Unbiased analyses* of the effectiveness of free market and regulatory cost containment points along monopoly supply chains.
- *Independent tests* of alternative mandates and policy changes.
- *Unique understanding* of the industry's and Main Street's costs, price drivers and elasticity coefficients, and
- *Proactive response* capabilities to potential legislative efforts.

For more information please visit our website at analytica94.org or contact the following person:

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