



Book review

Wind Power. Politics and Policy. Author: Scott Victor Valentine

The breadth of Mr. Valentine's well-written book is both a strength and a weakness. He addresses the broad swath of issues that are relevant to wind energy across six countries, but cannot delve into any one issue in-depth because of the incredible range of the topics and histories. He begins with a chapter on the "Global Imperative" including a brief history of the electricity markets, the 'need for speed,' and technology developments and then follows with an overview of wind energy power systems. This second chapter addresses some of the important risks and benefits issues relating to wind power from technology developments, to economic policy, then to a very brief summary of avian mortality and public opposition. Many of the topics, however, are given only cursory treatment, environmental effects, and some are very descriptive, e.g., community engagement, without any deep insights about their complexity. The book is useful primarily for its historical overview of wind power from the political, regulatory, and policy landscapes in six informative case studies in the U.S., Canada, China, Japan, Germany, and Denmark.

These six case studies are the core of the book comprising about 200+ pages and are solid overviews of the policy drivers, including economic subsidies, and deployment results in each of these important players in the global wind industry. While the evidence is not original material, the case study chapters are well-written and based on peer reviewed studies. The case studies are descriptive, centered upon economic, political and technological factors and Valentine's interpretation of them. Policy makers and new students to wind will find value in these chapters. This review will not summarize the details of these case studies, particularly the financial subsidies and how they might have led to the percentages deployed over time. The reader is encouraged to read these case studies carefully to better understand how these 6 nations have built up their capacity over time. Highlights of Valentine's interpretation of these case studies and aspects that could use additional analysis are discussed below and link to his concluding chapters calling for additional research.

The Danish case – committing 50% contribution of wind power to electricity supply by 2020 – is a must read for any student of global wind power. All wind experts need to understand the Danish case, given that it is one of the most successful models in the world, both in terms of deployment goals and establishment of a local manufacturing base. Four factors are mentioned as particularly important to the success of Danish wind power, including " (1) successful design and employment of siting rules (2) robust financial support mechanisms (3) existence of organizations concerned with environmental protection, and (4) establishment of socially sensitive ownership " (pg. 117). These are treated at some length in the chapter.

Turning to Germany, its commitment to 80% electricity by 2050 and concomitant 2010 policies clearly show that their *Energiewinde* needs to rely on wind to meet these targets. (pgs. 129–130). The interesting history of German wind power deployment, that he calls a "progressive escalation of commitment" is summarized well. Key policy instruments are discussed (e.g., feed-in-tariffs) and the anti-nuclear movement (pg. 126) that spurred on the renewables movement, as in Denmark. The German success story is well written and the reader gets a good sense of the economic benefits as well as some of the current challenges, such as grid expansion and the costs of this new infrastructure. Valentine points, in particular, to the German characteristics of "citizen wind farms" and offshore wind in deeper waters that have led to a niche market (albeit very expensive to date) in this area of technology developments.

In his last points on the German case, Valentine mentions that Germans have a "growing proclivity toward not in my backyard (NIMBY) lawsuits and referenda" and suggests that the "path of wind power development will not be as smooth as it was in the past" (pg. 157). Perhaps these important observations are relevant to other countries as well and needs more in-depth exploration.

The China case begins with clear facts of why this market is important to track. Measured by installed capacity and annual growth, China is the world's largest wind power market. One of the key features of this historic deployment upswing has been the requirement (since 1996) that any state-sponsored wind power project must contain at least 40% locally made components. This led to a ten-fold increase in cumulative capacity with a glut of wind power suppliers. Valentine labels the China case, however, as a "gradualist approach" from the political and policy perspectives. He points out some of the key challenges of enhancing grid coverage and resiliency that "represents a vexing bottleneck." (pg. 194) Finally he links the continued developments to the strength of the global economy and uncertain commitments of the Kyoto protocol.

Finally, Valentine introduces the U.S. case by stating the dynamics are quite different, for example, by reminding us about the larger-scale electric power system—where consumption is about 20% more than all 25 European OECD nations (pg. 203). He explores the history of U.S. wind power in detail, including milestones of the Public Utilities Regulatory Policy Act (PURPA) law in 1978, the first Production Tax Credit (PTC) in 1992, and some high penetration state cases (e.g., California and Iowa). He links the rise of this renewable resource to the anti-nuclear movement in the 1970s (as in Denmark and Germany), even though the differences and nuances of these movements are not compared in any way. In addition, he states that "climate is not as influential" (pg. 217) in the U.S. policy spectrum, but quickly moves on by pointing the finger at the fossil industry without further explanation.

Valentine also expects “amplified public resistance—a challenge that needs to be effectively managed” (pg. 222). But the published literature is clear that opposition cannot be “managed or mismanaged.” On the other hand, he is exactly right to raise the link of social opposition of wind to the lessons learned in the nuclear industry. A call for more research and analysis in these areas is mentioned in the concluding chapters. The author also makes an important point about the longer term benefits of increasing natural gas capacity in the U.S. for those pessimist climate analysts. While potentially dampening wind energy diffusion in the short run and increasing carbon emissions, the added peak-load capacity may also enhance the capacity of the grid to support more wind on the wires in the long term (pg. 235).

His analysis of why offshore wind has not taken hold in the US is very brief. It does not reflect what some believe is not just a cost of energy issue, but one of repressed innovation from lack of R&D investment and political support until the last several years. He concludes with a “rosier outlook” for wind power in the US, albeit without any convincing trends identified.

As mentioned, the case studies detail very interesting political and policy histories of the 6 important nations in the global wind economy. The reviewer wishes there was more analysis of the socio-cultural and risk governance issues that play a critical role in wind power siting. Lacking public support, financial and political mechanisms are unlikely to lead to greater deployment success. And so, a deeper analysis of socio-cultural factors is needed. Valentine gets to some of these topics this in his concluding chapters, but he fails to articulate sufficiently relevant social science theories. This is clear with his use of the NIMBY terminology and his use of national polls to reflect public support. We know from the literature that NIMBY concepts do not indicate the level of public concerns underlying opposition and national polls are not indicative of local siting support.

While Valentine rightfully calls for a common framework, he falls short when it comes to developing any robust theoretical or analytical frameworks. The author does lay out the “Political SET model” in Chapter 3 – including social, economic, and technological – based upon what he describes as STEP analysis *theory* (*all three topics above with added political sphere*). The image of this model (pg. 71) is quite simplistic and lacks sufficient causality or interactions among these elements. Thus the question is whether this is really a model. What can we learn from the complex notions and dynamics of the case studies without a model or framework? Although he calls for further research in the final chapter, the reader wishes

that he was able to conduct some of these analyses herein rather than wait for his next book.

Outside of the model, the book has a lot of value for understanding wind deployments across six of the most important countries in relation to forward looking policies and commitment to energy transformation with a commercialized renewable energy such as wind power. It is important for a range of readers – beginning students or well versed professionals – in order to understand the details of these case studies with very different systems and challenges.

A major point that Valentine raises and what some of us believe is the Achilles heel of wind power—local siting challenges. He notes that. . . “social resistance to wind power may wind up being the predominant variable constraining development.” But then he goes on by “cobbling together technological, economic, and political strategies aimed at attenuating public resistance, the social-cultural boundaries that frame the upper limits of wind power capacity can likely be expanded” (pg. 349). This central challenge will need more strategic, transdisciplinary analyses, however; far beyond what can be “cobbled together.” The wind community needs a broad based analysis and there is a vast, untapped literature that is directly relevant.

In regards to stakeholder analysis, he introduces the idea of Paul Sabatier’s work (advocacy coalition theory) and later discusses the need to enhance collaboration between developers and community stakeholders. He does not, however, begin to introduce the reader to the very deep literature in these areas. Future research questions might be better framed using either theoretical constructs, such as risk governance, public perception of risk, and/or the analytic-deliberative frameworks. One vital area needing exploration that Valentine raises in his concluding chapter relates to thresholds or limits to turbine siting on the landscape and seascape in nations that already have high percentage of electricity from wind. The reader is advised to study the research questions in the final chapter, particularly important topics that need further investigation sooner rather than later.

Bonnie Ram
E-mail address: bonr@dtu.dk

31 May 2015

17 September 2015