

that *World Bank Group Interactions with Environmentalists* is an interesting and important book that deserves attention from scholars and policymakers interested in the World Bank, sustainable development, and theories of international organizations.

Vasi, Ion Bogdan. 2011. *Winds of Change: The Environmental Movement and the Global Development of the Wind Energy Industry*. New York: Oxford University Press.

Reviewed by Michael M. Gunter, Jr.
Rollins College

Ion Vasi's *Winds of Change* stands out in at least two respects among an increasingly diverse array of works concerning climate change. It is a welcome addition to the literature for its concentration on the wind industry as a viable alternative to the fossil fuels that provide 90 percent of world energy consumption today. Even more importantly, it painstakingly explains how this wind industry developed unevenly across the globe over the last four decades, outlining the crucial role environmental movements played in the social construction of climate change as an environmental problem.

Vasi asserts that his work's most important theoretical contribution is to "bring social movements into the study of market formation and industry growth" (p. 191). Indeed, emphasis on technological innovation or the role of markets dominates earlier works on development of the wind industry. Those that focus on technological innovation argue global growth is explained by decreasing costs traced to improvements in technology, and that cross-national variation stems from contrasting technological approaches. Analyses that concentrate on market forces contend the adoption of specific energy policies and supply of wind turbine components, as well as deregulation of electric utilities, shape wind energy price and, thus, market penetration.

Yet such approaches tell only part of the story. Innovations may fail to diffuse widely not because they are poorly developed, but simply because they are *perceived* as undesirable. His discussion of "blue-blooded" NIMBY opposition to the Cape Wind project off Nantucket over the last decade is a case in point. Inversely, "fruit and nut" Californians welcoming an immature and unreliable wind industry to their state in the early 1980s further supports this argument. Something else, then, must be shaping these perceptions.

Similarly, market forces themselves cannot explain the differentiation between feed-in tariff successes in Germany and Denmark and limited initiatives in France and Sweden. Again, something else is at work. Vasi asserts that social movements are this missing link, and identifies three key pathways that environmental activists exploit to influence the wind industry. Activists may interact with government policymakers, energy sector actors such as those running utilities, and the general public. Influencing international agreements (such as Kyoto) is a fourth potential pathway, but this approach receives scant attention in his work.

After an introduction, the first chapter provides the big picture and runs a 143-country dataset through multivariate regression analysis, identifying the main factors influencing strength of national wind energy industries. Vasi finds that industry grows fastest in countries with a strong environmental movement, but cautions that the impact of this environmental movement is “mediated by the presence of political allies and availability of high quality wind” (p. 51).

Subsequent chapters delve deeper into the qualitative role of the environmental movement, relying on interviews with environmental activists, energy policymakers, and wind power engineers in six countries across five years, as well as thirty years of newspaper and journal publications. Vasi highlights environmentalist influence on policymakers with in depth examinations of Feed-in Tariffs and Renewable Portfolio Standards. Proper homage is paid to the legacy of anti-nuclear movements as the first wave of environmental activism in the 1970s in countries like Germany and Denmark as well as a second wave of activism surrounding opposition to acid rain. These movements then evolve into pro-renewable and wind energy campaigns when conditions such as a viable Green Party in Germany emerge, in sharp contrast with countries such as the United Kingdom and the United States where substantive national policies have yet to form. Later chapters that discuss efforts to target consumers and business are drier than one would expect and rely too much on lengthy quotes from interview subjects without sufficient discussion of powerful themes that emerge from them, such as human health connections to environmental policy shifts and the legacy of Rachel Carson.

Winds of Change is a valuable addition to literature about the environmental movement and wind industry as well as that on general climate change politics. Vasi may argue too forcefully for the successes of the wind industry initially, particularly with only three countries (Denmark, Spain, and Germany) producing more than 5 percent of their electricity from wind today. Yet he quickly qualifies the analysis, comparing this rapid early growth with the inability of wind, to date, to reach its full potential. He adeptly notes a role for activists pressuring from the outside through boycotts and protests as well as from the inside by working to tap into both corporate and consumer financial interests. And he deftly points to frustrations, particularly in the United States with a strong fossil fuel industry lobby and a mainstream media whose allegiance to balance in reporting actually leads to bias by “systematically including the opinions of a small minority of global warming dissenters” (p. 109).

Further work should follow Vasi’s lead and focus on perceptions and misconceptions. As Vasi recounts, the Stone Age did not end for want of stone; it ended because bronze and iron were *perceived* as better substitutes. As a socially constructed problem, climate change and its roots in dependence on fossil fuels require similar shifts in perception. This work on the role environmental movements play in developing the wind energy sector offers a potent blueprint along these lines.