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The politics of niche-regime conflicts: Distributed solar energy in the United States

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ABSTRACT

In the U.S. utilities have attempted to slow the growth of distributed generation (DG) solar by reversing policy support, and they have greater financial and political resources than the solar industry. Empirical analysis of all major cases of niche-regime conflict over net metering policies in the U.S. shows that utilities are testing a range of strategies to slow the growth of DG solar, and outcomes vary by strategy type. An additional analysis of four case studies of DG solar conflicts shows that niche organizations can partially overcome the political power of regime organizations via three mechanisms: form coalitions with political parties that support the niche technologies, gain support from countervailing industrial organizations, and form coalitions with social movements to mobilize political protests and petitions. The political opportunity structure (in this case the party in control of the state government) affects the pattern of niche-regime strategies and interactions.

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1. Introduction

Sustainability transitions (STs) require substantial changes in industrial regimes that are likely to result in resistance from the incumbent organizations. The motivations for resistance include the perceived threat to profits and organizational stability as well as concerns with the technological feasibility and societal costs associated with STs. The latter set of concerns tend to be more legitimate in the policy field, which in heavily regulated industries such as electricity exercises a strong influence on the pace of STs. This study examines the complex mixture of profits, self-preservation, technical feasibility, and societal costs that are involved in regime resistance to the growth of distributed generation (DG) solar (mostly rooftop photovoltaics) in the U.S.

DG solar is growing in many countries, and regime resistance to it is appearing elsewhere in the world (e.g., [Geels et al., 2014](#)). However, there are some specific dimensions to the issue that make the analysis of the U.S. case interesting. There has been very rapid growth of DG solar led in part by new financing arrangements and the influx of capital investments. Furthermore, political conflicts have been framed in terms of freedom of choice, a particularly salient issue in the U.S., in addition to environmental and economic benefits. Although this study is cognizant of the specificities of the industry and the country, the goal is to use the U.S. case to develop a broader contribution to the literature on regime resistance and the politics of niche-regime conflicts.

Because the growth of DG solar is dependent on regulatory policies that affect its economic feasibility, the outcome of the regime-niche relationship is highly dependent on public policy and political decisions. This case therefore provides an

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opportunity to build on research that recognizes the need to include greater attention to politics and power in the analysis of STs (Avelino and Rotmans, 2009; Geels, 2014; Justo and McCauley, 2010; Kern and Smith, 2008; Verbong and Geels, 2007). As Meadowcroft notes, the analysis of politics requires “explicit attention from those interested in understanding sustainability transitions” (2011: 73). Likewise, as Grin et al. argue, a central challenge of ST studies is to understand how “to tilt the balance of power and legitimacy between incumbent and sustainable practices” (2011: 80).

After a background section that reviews the conceptual framework and the history of solar energy policy in the U.S., political conflict will be analyzed using two strategies: an overview of DG solar across the U.S. to show how incumbent organizations test various resistance strategies to niche growth, and a detailed analysis of four cases to show how niche actors can exercise political power as well.

2. Background framework and history

2.1. Regime resistance and the “Weapons of the Niche”

The literature on STs has begun to analyze the mechanisms of political conflict and regime resistance. Elzen et al. (2011) argue that a successful ST requires not only a technically and economically feasible technology but also the alignment of these factors with political conditions such as normative pressure and regulatory openings. Research on off-shore wind energy in Norway also reveals the necessity of aligning technological readiness with political opportunities (Normann, 2015). In the case of DG solar, the technology is feasible and in many cases at or near the cost of grid-delivered electricity. Regime actors have become alarmed at the growth and have mobilized to slow it. Thus, the conflict between utilities and the DG solar industry provides good material to think through both regime resistance strategies and how niche organizations respond to regime resistance.

Because the incumbent regime organizations are large and wealthy in comparison with niche organizations, the political and economic conflict can have a “David and Goliath” quality. As Geels notes, one of the challenges of ST theory is to “shift the analytical agenda to better understand how ‘Goliath’ can be weakened, eroded and destabilized, to enhance the chances of green Davids” (Geels 2014: 37). The case of DG solar and the utilities is a good example of such unequal power. In the U.S. the utility industry spent over \$21 million in campaign donations in 2014 in comparison with the roughly \$2 million spent by the entire sector of renewable energy industries (Center for Responsive Politics, 2015). Yet, even with these Goliath advantages, the utilities have not always ended policy support for DG solar and contained its rapid growth.

The analysis that follows has two goals. The first is to understand better the strategies that regime organizations use to resist the growth of niches that are perceived to be incompatible. The transition studies literature recognizes that incumbent organizations will try to capture the policy process and turn it to their favor (e.g., Voss et al., 2009); this study shows how incumbent organizations test different approaches to influencing the policy process and how they pursue a mixed strategy of both economic investment and political influence. The second goal is to understand better the political strategies of niche organizations in response to regime resistance, in other words, to understand the “weapons of the niche,” to borrow and modify a phrase from Scott (1987). Clearly, the primary basis of support for ST niches in the policy arena is that policymakers recognize the need to address environmental sustainability issues in ways that create jobs and enhance competitiveness. However, when powerful industrial regimes attempt to defend their business-as-usual models, political consensus for this justification for STs can break down. In such circumstances, what are the political strategies available to niche organizations and their coalitions?

Previous research has suggested that countervailing industrial power is one lever that niche organizations can deploy. Firms from the technology and financial sectors have invested in DG solar, and donors from the sectors have made significant campaign expenditures in related state-level policy disputes over carbon regulation and renewable energy (Hess, 2014). However, in the case of DG solar conflicts, the primary countervailing power of these firms has been investment rather than political support. Thus, this study examines two additional levers of power for niches in the political field: alliances with political parties and social movements.

With respect to political parties, the ideal for the niche actors is to have political consensus in support of the ST so that the niche-regime relationship is not aligned with party differences. However, in some countries regime organizations have formed strong alliances with political conservatives to reduce regulatory support for ST niche development. This pattern is especially prominent in the U.S., Canada, and Australia, but it can also be found to some degree in non-Anglophone countries such as Germany (Hoppmann et al., 2014). When support for the ST becomes politically polarized, the relationship between political parties becomes aligned with conflicts among advocacy coalitions. These coalitions connect deep core beliefs that are associated with right and left political ideologies with more specific and malleable disputes over policy directions and implementation (Sabatier and Weible, 2007). However, party control of the state shifts for a wide range of reasons, and thus regime coalitions can face situations where their political allies are not in power. In the U.S., opportunities for continued support of ST electricity policies tend to be largely in states controlled by the Democratic Party (Coley and Hess, 2012; Hess and Mai, 2015).

The second form of niche power involves contentious politics (McAdam et al., 2001). Whereas advocacy coalitions and party alliances function within institutionalized politics, social movement coalitions can draw on an expanded repertoire of action that includes protest. It is difficult to measure the effects of protest events on legislative and regulatory bodies, but the events do bring media attention to the issue and put pressure on regulatory bodies to develop policies that are not

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