A New Solar Narrative: The Unfinished Business of Universal Solar

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Abstract: The promise of universal solar service, delivered through the grid, is arguably the critical unfinished business of our industry. The climate, health, cost, and equity benefits of a grid that is powered by renewables—predominantly solar—and supported by wind, energy storage and load flexibility are urgently needed. The modern grid can deliver on this promise, including the integration of solar on both sides of the meter. Yet an outdated solar narrative continues to pit solar solutions against one another. It also emphasizes some American values, like independence and personal gain, to the detriment of other values aligned with broader and more equitable benefits. Here, we explore how a unified solar narrative, set on a new technical and social frontier and emphasizing cultural values from ingenuity and convenience to freedom of choice, to the commitment to leave no one behind could support the goal of universal solar and help to disarm the resurgence of U.S. fossil-fueled energy dominance.

Keywords: grid modernization, solar, integration, equity, marketing, messaging

1. Introduction

The concept of universal service is at the heart of the utility regulatory compact. Monopoly utilities receive exclusive service territories and what regulators deem a reasonable return on investment. In turn, they accept oversight and agree to provide safe, reliable, and equitable access to service for all. While far from perfect, this compact redefined U.S. public welfare and opportunity in the last century. In 2007, we proposed to extend this compact to make clean, affordable solar energy universally accessible as a significant part of utility resource portfolios (Cliburn and Robertson, 2007). Utility solar was new, but the climate imperative was looming, along with options for high-value PV design and integration with wind, load flexibility, and customer-side solar options. We highlighted inequities in solar policies and practices of the day, concluding that utility “solar for all” was a necessary and achievable goal.

Yet divisions over how to deliver solar and optimize its social benefits have existed among solar proponents almost since solar’s inception. Today, proponents and skeptics alike may selectively back options on the distribution versus transmission scale, or choose singular strategies among load flexibility options, virtual power plants (VPPs), microgrids, and rooftop solar options. Significant numbers of solar proponents have never fully embraced solar as one unified set of solutions. Meanwhile, the public receives outdated and conflicting information. This is especially apparent when

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large-scale solar that is proposed to beat the climate clock, manage costs, and serve rising energy demand meets *"I'm for solar, but…"* opposition (Cliburn, 2024).

It has been eight years since a Department of Energy Quadrennial Energy Review focused on the emerging, bi-directional power grid that would orchestrate renewables, storage, microgrids, local solar and equipment on both sides of the meter to enable "flexibility, higher system efficiency, reduced energy consumption, and increased consumer options and value" (U.S. DOE, 2017) The modern grid itself embodies a unified solar narrative. Yet a recent study of public awareness found that most Americans do not know the smart grid is happening or that it relies on inter-dependent technologies (SECC, 2024). This is alarming at a time when support for solar is slipping (Pew, 2025) and federal policies seek to revive fossil-fuel systems and defund or mischaracterize clean energy options on every scale (Politico, 2025).

2. Research

We reviewed the literature to explore public perceptions and impacts of existing solar narratives. This includes the recognition that the public "perceives big and small solar as separate things." (Nilson and Stedman, 2021) We also considered risk perception for centralized battery systems and gaps in understanding grid functions, as well as the rise of misinformation on the web and social media (Cliburn, 2024). We noted that robust public processes may improve outcomes for large-scale solar permitting—but not without frequent exceptions (Nilson, Rand, Hoen, and Elmallah, 2024). This suggests that influencing solar decisions requires better messaging as well as better processes.

We also pursued a search for cultural themes historically associated in the U.S. with solar PV, both from our work in the PV field since the 1980s and as documented in the *Solar Today* archive. Examples of familiar themes from the old solar narrative include national energy independence (now practically irrelevant), self-reliance, taking back your power, solar as a must-run resource; intermittent and unreliable (in contrast to variable) power, payback, premium, subsidized, local, negative load, and "energy of the future." Distrust in utilities, big tech, and government are common and complex themes. Community is a common theme, but seldom cast in relation to the grid. Finally, we examined rhetorical and social-science studies of how energy messaging (content and delivery) that is aligned with specific cultural values and myths can affect successful adoption of energy choices, both on a personal or national scale (Malone et al, 2017).

3. Results

This research encourages development of a new, unified solar narrative, plainly told in the context of a solar dominant, interconnected regional and local grid. This could serve

solar proponents and a diverse citizenry, including a message that universal utility-delivered solar is within reach today. In this smart grid based narrative, solar “counts” from the regional scale to the rooftop, as do other resources, storage, smart appliances, and services in a fully orchestrated system. Work co-authored with Richard and Marc Perez exemplifies the powerful synergy in such a system (Pierro, M., et al, 2024). The flexibility of a modern grid anticipates the eventual retirement of most, if not all, fossil fuels. It is also notable that highly distributed, more personal solutions (e.g., rooftop solar, microgrids, low-energy building design) also may flourish in this narrative. Grid-based universal solar is just an early chapter of the story.

We are unable to test this new narrative fully, though it draws on relevant data and research. A few steps are needed before widely introducing (and thus testing) it: 1) Dialog within the solar community to build out the narrative along the lines of America's enduring, though imperfect myth of the frontier (Cliburn & Robertson, 2007; Grandin, G., 2019; Hernandez et al, 2019). The solar story resonates with archetypes of both the pathfinder and the wagon train—the latter bringing to mind (in a more generous rendition) the norm of “leaving no one behind.” In practice, archetypes and elements of the narrative would be expressed in real-world case studies, featuring heroes and heroines that gently recall underlying cultural themes. 2) Layer in resonance with current U.S. cultural trends, especially findings (Frameworks, 2024) that a large segment of Americans today shares a mindset that is attuned to systems—how they work and how they affect collective as well as personal outcomes. The modern grid is by definition a system, like railroads, highways, and the internet, yet it is still emerging as a promising project on the socio-technical frontier.

Finally, a narrative is not a movement, but it can support a movement. Current threats to achieving solar and grid benefits have spurred efforts to address regulatory and market gaps that impede success for universal solar, as well as for a range of local and customer-side choices. Leading voices have included the Smart Electric Power Alliance, Gridwise Alliance, Solar Energy Industries Association, Smart Energy Consumers Collaborative, and a new coalition, Common Charge, which recognizes large- and small-scale solar imperatives, but favors distributed energy. The American Solar Energy Society may find a unique place in this effort, too, bringing the need for an updated unified solar narrative to its “big tent” and to all the multi-leveled relationships it represents.

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