



ELSEVIER

Contents lists available at ScienceDirect

Futures

journal homepage: www.elsevier.com/locate/futures

Narrative futures and the governance of energy transitions



Clark A. Miller^{*}, Jason O'Leary, Elisabeth Graffy, Ellen B. Stechel, Gary Dirks

Arizona State University, United States

ARTICLE INFO

Article history:

Available online 20 December 2014

Keywords:

Energy
Narrative
Deliberation
Scenario
Community
Futures

ABSTRACT

Today's societies confront an enormous challenge with regard to governing complex energy systems change. We argue that futures approaches based on narrative strategies that encourage individual and collective storytelling and meaning construction offer a valuable tool for enhancing societal capacity to meet this and similar governance challenges. We report on a two-day scenario planning exercise that sought to implement and test these ideas. The exercise involved a diverse group of professionals in both energy and non-energy fields, with a question focused on the narrative construction and deliberation of scenarios about Arizona's energy future in 2050.

© 2014 Elsevier Ltd. All rights reserved.

1. Introduction

Today's societies confront significant challenges with regard to legacy energy systems. These systems have deep societal significance, are entrenched in diverse social, economic, and political arrangements, and have evolved considerable complexity over many decades. They also need to undergo significant change. Interdependent physical and social infrastructure systems are increasingly vulnerable to the threat of climate change and need to be adapted to create greater resilience (Wilbanks, Bilello, Schmalzer, & Scott, 2012). Energy systems that depend on fossil fuels are rapidly altering the Earth's climate and must be fundamentally transformed to reduce global carbon emissions to sustainable levels (IEA, 2014b). Economic systems are increasingly driving disparity in incomes and wealth towards problematic levels that threaten core notions of equity and justice (Piketty, 2014).

Few communities worldwide currently have the capacity to confront these challenges and govern the transformation of complex legacy systems towards improved long-term outcomes. A growing body of scholarship demonstrates that futures research and practice have the potential to be important tools for enhancing this capacity (Robinson, 2003; VanWynsberghe, Moore, Tansey, & Carmichael, 2003). Futures methods can help facilitate effective strategic planning in the face of deep future uncertainties (Schwartz, 1992); they can motivate organizations to imagine and undertake transformative change (Brown, 2008; Emery & Purser, 1996); and they can contribute to the development of visions of desirable futures and to planning and assessing robust, analytically informed pathways for communities to progress towards these goals (Robinson, 1988). These and other forms of insight and inspiration that can be drawn from well-conducted futures exercises have the potential to help create a portfolio of capabilities that could help communities address the challenges they confront in managing transitions towards new energy futures.

Building on this scholarship, we argue that narrative is particularly salient in the development and application of futures approaches for tackling the problem of governing complex systems change. Our reasoning is partly theoretical, furthering

^{*} Corresponding author. Tel.: +1 4807278787.

E-mail address: clark.miller@asu.edu (C.A. Miller).

the work of recent studies that tie narrative strategies to both the problem of building social capacity for governing complex systems (Paschen & Ison, 2014) and to the development of new and innovative futures methods (Jarva, 2014). We also draw on insights from a collective experiment we conducted at the *Emerge* event at Arizona State University that explored the use of narrative methods in developing future scenarios of energy development. We use the term “experiment” here not in the strict scientific sense of a carefully controlled observational study but rather in the more general sense of exploration and empirical testing associated with action research in public deliberative spaces (Graffy, 2008). Our goal in conducting this exercise was to probe the potential value that narrative approaches might bring to thinking about the future of complex systems and to prototype potential tactics for using these methods in a domain like energy where more narrowly technical discourses and analytics have dominated research and policy but where social, economic, and political dynamics are likely to be increasingly significant in the context of complex systems transitions (Graffy & Kihm, 2014; Graffy, 2011a; Miller & Richter, 2014; Miller, Iles, & Jones, 2013; Miller, Richter, & O’Leary, 2015). *Emerge* offered a unique opportunity to test out our capacity to facilitate this new kind of conversation about energy in a convivial, supportive environment.

2. Energy systems change, futures research, and the importance of narrative

Over the next several decades, communities in the United States and across the globe face stark uncertainties and choices about how to produce, convert, and use energy in new ways, about whose voices will matter in shaping complex socio-energy transitions; and about who will benefit and lose from the resulting outcomes. Energy systems – the largest human enterprise on the globe – are in the midst of widespread transformation. Rising concerns about climate risks and dwindling supplies of conventional oil and gas have led businesses and governments to pursue myriad technological, economic, and regulatory innovations in energy systems, sometimes in diametrically opposite directions. Powerful beneficiaries of existing systems and those who seek benefit from new opportunities compete for influence. Major initiatives focus on unconventional fossil fuels production (including tar sands, hydraulic fracturing, and heavy crude), renewable electricity generation (primarily wind and solar energy projects, at a variety of scales), alternative fuels, energy efficiency, new models for nuclear energy, such as small modular reactors, and electrification of vehicles. These innovations promise to fundamentally alter the technologies, economics, and physical and social geographies of energy systems, reshaping not only where and how useful energy forms get generated and consumed but also the kinds of lived realities experienced by the people who inhabit future communities. Yet, the specific directions and outcomes of changes to energy systems remain deeply unclear, globally and in specific localities, even as to whether energy futures will be low or high in net carbon emissions.

In the context of large-scale systems transitions, in which organizations and communities confront stark uncertainties and complex choices, efforts to examine what the future may hold have the potential to carry weight and provide value. At Shell, for example, pioneering work that began in the 1960s on scenario planning methods helped the company anticipate and respond effectively to the new uncertainties created by the Arab oil embargoes of the 1970s (Shell, 2014a). Today, not surprisingly, energy futures work is widespread, with key reports commanding global attention, as communities at all scales seek to make sense of how new technologies and the threat of climate change may alter the energy systems of tomorrow. Major reports include Shell’s New Lens scenarios (Shell, 2014b), the *World Energy Outlook* (IEA, 2014b), and various technology roadmaps by the International Atomic Energy Agency (IEA, 2013; IEA, 2014a), as well as national energy strategy exercises, such as *America’s Energy Future*, by the US National Academy of Engineering (National Academy of Engineering, 2008).

As important as these efforts are in energy policy and planning, they fall short in two key ways. First, as has been noted elsewhere, the futures depicted in these reports are remarkably devoid of people (Miller, Richter, & O’Leary, 2015). The Shell scenarios, developed as they are with regard to anticipating the global macro trends that will shape energy futures, are the most expressive of these documents with regard to the people who will inhabit tomorrow’s energy systems – yet they remain ten-thousand-foot flyovers, at best. The others barely reference people at all. Instead, they tell only the futures of technologies and fuels. Second, these efforts to engage the future are both produced by and oriented towards experts, whether in energy policy or the energy industry. They rarely engage a broader array of either participants in their production or, meaningfully, audiences in their use. This is not surprising. The energy sector has a long track record of technocratic decision-making, with limited opportunities for broader public engagement, often portraying energy choices to the public as relatively simple choices amongst fuels and technologies (Laird, 2013), rather than more comprehensive choices among competing socio-technological arrangements (Miller, Iles, & Jones, 2013). This reductionist view is exacerbated by administrative and regulatory processes that emphasize narrowly technological and economic formulations of energy policy to the neglect of the health, environmental, security, and justice dimensions of energy systems change (Graffy, 2011a).

In this article, we propose a narrative approach to energy futures as a potential means to strengthen effective public engagement and deliberation (Miller & Moore, 2011; Moore, 2013). Effective engagement of diverse participants from a range of backgrounds and with diverse levels and kinds of knowledge about energy systems can significantly enhance the ability of deliberative systems to fully incorporate the social, economic, environmental, and political implications of energy change into energy choices (Dryzek, 2010; Graffy, 2012). This is especially important in the context of large-scale energy transitions, where the non-technological and non-economic dimensions of energy policy may be particularly significant and where communities confront important limits in pursuing effective engagement other than via protest strategies. Emerging risks and social dislocations drive public concern (Miller, 2012). Social protests abound, surrounding every major form of proposed future energy development, including proposals to continue the status quo (Devine-Wright, 2011). Even so,

Download English Version:

<https://daneshyari.com/en/article/1015458>

Download Persian Version:

<https://daneshyari.com/article/1015458>

[Daneshyari.com](https://daneshyari.com)