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## UNITING ENERGY AND ENVIRONMENTAL LAW: FOCUS ON INNOVATION, CREATIVITY, AND ECONOMICS

INARA SCOTT\*

In a time of deep partisan divide, Americans are surprisingly united on one thing: They like renewables and alternative energy. According to a March 2018 Gallup Poll, 73% of those surveyed believe alternative energy sources should be prioritized over oil and gas to solve the nation's energy problems, and 79% would like to see the U.S. put more emphasis on producing domestic energy from solar.<sup>1</sup> A 2016 Pew Poll found 89% favored expanding solar panel farms and 83% favored expanding wind turbine farms.<sup>2</sup> In contrast, 41 percent favor expanding coal mining, and 42 percent favor expanding fracking.<sup>3</sup> Although support for clean energy does come more heavily from the Democratic side of the aisle,<sup>4</sup> support for renewables jumps party lines. In a poll of individuals who voted for President Donald Trump, 75% “support ‘action to accelerate the

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1. Gallup, *Energy*, ANALYTICS & ADVICE ABOUT EVERYTHING THAT MATTERS, <https://news.gallup.com/poll/2167/energy.aspx> (last visited, Sept. 28, 2018).

2. Cary Funk and Brian Kennedy, *Public Opinion on Renewables and Other Energy Sources*, PEW RESEARCH CENTER (October 4, 2016), <http://www.pewinternet.org/2016/10/04/public-opinion-on-renewables-and-other-energy-sources/>.

3. *Id.*

4. *Id.*

deployment and use of clean energy’—including solar, wind, energy efficiency, and community renewable projects.”<sup>5</sup>

Americans don’t just want a little bit of solar or renewables here and there. They want a lot. In fact, polls conducted by the Edison Electric Institute suggest that 70% of people surveyed support moving toward 100% renewables in the near future.<sup>6</sup> In California, 72% expressed support for SB100,<sup>7</sup> the legislation to move the state to 100% zero-carbon electric generation by 2045.<sup>8</sup> Here’s the craziest part of all: People are even willing (at least when answering poll questions) to pay more—up to 30% more<sup>9</sup>—for renewable power.<sup>10</sup>

In contrast, Americans are much more divided on environmental regulations, and, frankly, environmentalists. Only 59% believe environmental regulations and laws are worth the cost.<sup>11</sup> A study of public perception of environmentalists found terms used to describe environmentalists were “overwhelmingly negative.”<sup>12</sup> Another study found that while environmentalists were perceived as being positively associated

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5. Stephen Lacey, *New Survey Shows That Renewable Energy Polls Extremely Well Among Trump Voters*, GREENTECH MEDIA (Dec. 1, 2016), <https://www.greentechmedia.com/articles/read/new-survey-shows-renewable-energy-polls-ridiculously-well-among-trump-voter#gs.maWWKIo>.

6. See David Roberts, *Utilities Have a Problem: The Public Wants 100% Renewable Energy, and Quick*, VOX (Oct. 11, 2018), <https://www.vox.com/energy-and-environment/2018/9/14/17853884/utilities-renewable-energy-100-percent-public-opinion>.

7. Kris Holt, *California lawmakers pass bill to phase out fossil fuels by 2045*, ENGADGET (Aug. 30, 2018), <https://www.engadget.com/2018/08/30/california-renewable-clean-energy-fossil-fuels-2045/> (last visited Oct. 30, 2018).

8. S.B. 100, 2018 Reg. Sess. (Cal. 2018) (text available at [https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=201720180SB100](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB100)).

9. See David Roberts, *Utilities Have a Problem: The Public Wants 100% Renewable Energy, and Quick*, VOX (Oct. 11, 2018), <https://www.vox.com/energy-and-environment/2018/9/14/17853884/utilities-renewable-energy-100-percent-public-opinion>.

10. See Paul Nastu, *67% Of Consumers Willing To Pay More For Green Power*, ENVIRONMENTAL LEADER (Dec. 13, 2007), <https://www.environmentalleader.com/2007/12/67-of-consumers-willing-to-pay-more-for-green-power>; Justin Gillis, *Willing to Pay (A Little) More for Green Energy*, N.Y. TIMES (May 14, 2012), <https://green.blogs.nytimes.com/2012/05/14/willing-to-pay-a-little-for-clean-energy/> (willingness to pay up to 13% more for renewables).

11. *Global Warming and Environmental Regulation, Personal Environmentalism*, PEW RESEARCH CENTER (Oct. 5, 2017), <http://www.people-press.org/2017/10/05/7-global-warming-and-environmental-regulation-personal-environmentalism/>.

12. Tom Jacobs, *Environmentalism? Perhaps. Environmentalists? Ewww!* PACIFIC STANDARD (Sept. 25, 2013), <https://psmag.com/environment/feminism-maybe-feminists-ewww-66918>.

with bringing about positive environmental change, they were also considered to be “aggressive in their behaviors and stubborn in their beliefs.”<sup>13</sup> The trend line for environmentalism is on a downward slide. By 2016, only 42% of Americans identified as environmentalists, down from 78% in 1991.<sup>14</sup> In addition, “when considering trade-offs between protecting the environment and promoting economic growth, Americans are less inclined to prioritize the environment today (56% to 37%) than they were in 1991 (71% to 20%).”<sup>15</sup>

The contrast between support for environmental regulations and environmentalism is striking. In the minds of many, it seems, one does not need to be an environmentalist to support a 100% renewable energy target, or to be willing to pay more for 100% renewable energy. But where does this divide come from, and what can we learn from it?

There has long been a divide between energy and environmental law.<sup>16</sup> The heart of the divide may lie in the historical roots of these legal traditions: energy law developed to achieve beneficial *economic* outcomes, while environmental law has traditionally focused on *social* goals.<sup>17</sup> This difference is plainly evinced when comparing the charge for public utility commissions (PUCs), the regulatory bodies for electric utilities, with the charge of the Environmental Protection Agency (EPA). PUCs developed with a regulatory goal of ensuring that consumers of electric utilities were only charged “‘just and reasonable’ rates.”<sup>18</sup> These agencies have historically understood their authority to be limited to ensuring that rates stay low and that utility programs provide short-term, economic benefits to

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13. Anna Klas et al., *Not All Environmentalists Are Like That...”: Unpacking the Negative and Positive Beliefs and Perceptions of Environmentalists*, ENVIRONMENTAL COMMUNICATION (2018), (citing to abstract) (available for download at <https://www.tandfonline.com/doi/abs/10.1080/17524032.2018.1488755>).

14. Jeffrey M. Jones, *Americans’ Identification as “Environmentalists” Down to 42%*, GALLUP (Apr. 22, 2016), <https://news.gallup.com/poll/190916/americans-identification-environmentalists-down.aspx>.

15. *Id.*

16. See generally Jody Freeman, *The Uncomfortable Convergence of Energy and Environmental Law*, 41 HARV. ENVTL. L. REV. 339, (2017); Lincoln Davies, *Alternative Energy and the Energy-Environment Disconnect*, 46 IDAHO L. REV. 473, 475-91 (2010) (describing primary differences between energy and environmental law).

17. See Inara Scott, *Teaching an Old Dog New Tricks: Adapting Public Utility Commissions to Meet Twenty-First Century Climate Challenges*, 38 HARV. ENVTL. L. REV. 371, 390-391 (2014).

18. *Id.* at 378.

customers.<sup>19</sup> The mission of the EPA, on the other hand, is to “protect human health and the environment.”<sup>20</sup> Significant legal battles have been fought over the ability of the agency to consider costs *at all* when applying seminal legislation such as the Clean Air Act.<sup>21</sup> Most notably, in *Whitman v. American Trucking Association*, the Court held that the EPA was precluded from considering costs when setting national ambient air quality standards (NAAQS) under the Clean Air Act.<sup>22</sup> Although many environmental regulations now require some kind of cost-benefit analysis, keeping costs low has not been a traditional policy priority of environmental law.<sup>23</sup>

The popularity of renewable and clean energy is not surprising when you consider that these resources represent a unique convergence of economic and policy benefits. First of all, in the minds of many around the world, renewables represent jobs.<sup>24</sup> In the United States, jobs in the solar industry have increased 123% since 2010,<sup>25</sup> increasing 24.5 percent from 2016 to

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19. *Id.* at 391-400 (arguing that PUCs believe they are precluded from considering social, environmental, or other long-term benefits to customers unless explicitly identified in legislation).

20. *Our Mission and What We Do*. U.S. ENVTL. PROT. AGENCY (February 7, 2018), <https://www.epa.gov/aboutepa/our-mission-and-what-we-do> (last visited Mar. 9, 2017).

21. Daniel A. Farber, *Taking Costs into Account: Mapping the Boundaries of Judicial and Agency Discretion*, 40 HARV. ENVTL. L. REV. 87, 100-106 (2016).

22. 531 U.S. 457, 471 (2001).

23. Costs have been a key concern for the Trump Administration, which has made or attempted to make changes to long-standing environmental rules and regulations based on concerns over the cost and burdens of such regulations to industry and to consumers. Michael Greshko et al., *A Running List of How President Trump Is Changing Environmental Policy*, NAT. GEO. (Sept. 21, 2018), <https://news.nationalgeographic.com/2017/03/how-trump-is-changing-science-environment/>. Critics of these changes have offered evidence that the cost of the programs are in fact outweighed by health impacts or other costs to taxpayers such as lost revenues from oil and gas royalties. *Id.*; see also Lisa Friedman, *Cost of New E.P.A. Coal Rules: Up to 1,400 More Deaths a Year*, N.Y. TIMES (Aug. 21, 2018), <https://www.nytimes.com/2018/08/21/climate/epa-coal-pollution-deaths.html> (noting that EPA’s own analysis of its replacement for the Clean Power Plan suggests it would result in “1,400 premature deaths annually by 2030 [and] up to 15,000 new cases of upper respiratory problems, a rise in bronchitis, and tens of thousands of missed school days”).

24. See Mike Scott, *Clean Energy Sector Employs More Than 10 Million for the First Time*, FORBES (May 8, 2018), <https://www.forbes.com/sites/mikescott/2018/05/08/clean-energy-sector-employs-more-than-10-million-for-the-first-time/>.

25. Jeff Nesbit, *Clean Energy is Seeing Monumental Job Growth*, U.S. NEWS & WORLD REP., (Mar. 15, 2017), <https://www.usnews.com/news/at-the-edge/articles/2017-03-15/clean-energy-is-seeing-explosive-job-growth-dont-let-budget-kill-it>.

2017 alone.<sup>26</sup> A Bloomberg analysis of the U.S. Bureau of Labor Statistics's biennial employment projections suggests jobs for solar panel installers and wind turbine technicians will grow by triple digits over the next decade, doubling the rate of growth of any other occupation.<sup>27</sup> Rosy new numbers seem to appear all the time, tying development of renewable energy to new jobs and new tax bases for local communities.<sup>28</sup> Meanwhile, the cost of renewable energy continues a sharp decline, with current projections suggesting solar power will be the cheapest resource worldwide by 2025.<sup>29</sup> It is already the cheapest source of new electric generation in many communities across the United States, even without cost subsidies.<sup>30</sup> The cost of wind energy fell almost 60% from 2009 to 2015.<sup>31</sup> That's all on the economics side. On the environmental side, it is well-established that developing low or zero-carbon energy resources will be essential for decarbonizing the United States' economy and mitigating the most punishing effects of climate change.<sup>32</sup>

The question, then, is how to avoid having the negative connotations of the environmental movement and environmental law detract from the economic *and* environmental promise of clean energy. Recent legislative efforts suggest two key principles to employ: first, avoid black and white, narrowly-defined goals that do not allow for creativity and technological

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26. *Clean Energy is Building a New American Workforce*, ENVIRONMENTAL DEFENSE FUND, <https://www.edf.org/energy/clean-energy-jobs> (last visited Oct. 30, 2018).

27. Karen Hao, *Renewable Energy is Creating US Jobs Twice as Fast as Any Other Industry*, QUARTZ (Oct. 26, 2017), <https://qz.com/1111998/renewable-energy-is-creating-us-jobs-twice-as-fast-as-any-other-industry/>.

28. Amy Fischbach, *Continued Growth of Renewables to Create New Jobs in the United States*, T&D WORLD (Aug. 13, 2018), <https://www.tdworld.com/renewables/continued-growth-renewables-create-new-jobs-united-states>.

29. Jess Shankleman & Chris Martin, *Solar Could Beat Coal to Become the Cheapest Power on Earth*, BLOOMBERG (Jan. 2, 2017), <https://www.bloomberg.com/news/articles/2017-01-03/for-cheapest-power-on-earth-look-skyward-as-coal-falls-to-solar>.

30. Michael O'Boyle & Silvio Marcacci, *Wind and Solar Costs Continue to Drop Below Fossil Fuels. What Barriers Remain for a Low-Carbon Grid?* UTILITY DIVE (Mar. 21, 2018), <https://www.utilitydive.com/news/wind-and-solar-costs-continue-to-drop-below-fossil-fuels-what-barriers-rem/519671/>.

31. Scott Nyquist, *Lower Oil Prices but More Renewables: What's Going On?*, MCKINSEY & COMPANY (June 2015), <http://www.mckinsey.com/industries/oil-and-gas/our-insights/lower-oil-prices-but-more-renewables-whats-going-on>.

32. See generally Granger Morgan et al., *The U.S. Electric Power Sector and Climate Change Mitigation*, PEW CENTER ON GLOBAL CLIMATE CHANGE (June 2005) (available at <https://www.c2es.org/site/assets/uploads/2005/06/us-electric-power-sector-and-climate-change-mitigation.pdf>).

innovation. Second, pair economic and environmental goals together to ensure environmental policy does not overshadow economic imperatives.

To illustrate how these principles can be employed, consider SB100, potentially the most consequential piece of environmental legislation in recent history.<sup>33</sup> The language of the legislation is key: “It is the policy of the state that eligible renewable energy resources and *zero-carbon resources* supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045.”<sup>34</sup> This phrase “zero-carbon resources” is not defined or even explained, other than obliquely in a subsequent statement: “The achievement of this policy for California shall not increase carbon emissions elsewhere in the western grid and shall not allow resource shuffling.”<sup>35</sup> Presumably, a zero-carbon resource could include a fossil fuel plant that uses a form of carbon capture and storage to get to net zero-carbon production. But the undefined term leaves open the possibility of other solutions, and raises other questions. Does carbon capture and storage have to be a feature of the generating facility itself? Could an entirely separate direct air capture facility that grabs carbon from the air and turns it into some useful byproduct (including gasoline or diesel fuel)<sup>36</sup> be paired with some low carbon non-renewable resource like bioenergy to achieve a zero-carbon standard? Could the zero-carbon standard allow for carbon offsets? What about pairing energy efficiency with other low carbon projects?

Setting a goal of “zero-carbon” rather than “100% eligible renewable resources” allows for technological creativity and the development of new resources and ideas. It also allows for the economically-focused to get together with the environmentally-minded. As a recent study by Nestor Sepulveda and colleagues demonstrates, the cost of deep decarbonization can more than double if low-carbon resources are not allowed in the

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33. California has the world’s fifth largest economy, making its efforts toward decarbonization both essential and of enormous consequence. *California Now Has the World’s 5th Largest Economy*, MONEYWATCH (May 4, 2018), <https://www.cbsnews.com/news/california-now-has-the-worlds-5th-largest-economy/>.

34. S.B. 100, 2018 Reg. Sess. (Cal. 2018) (text available at [https://leginfo.ca.gov/faces/billTextClient.xhtml?bill\\_id=201720180SB100](https://leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB100)) (emphasis added)..

35. *Id.*

36. Costs associated with such programs have decreased. *E.g.* Robert F. Service, *Cost Plunges for Capturing Carbon Dioxide from the Air*, SCIENCE (June 7, 2018), <http://www.sciencemag.org/news/2018/06/cost-plunges-capturing-carbon-dioxide-air>.

resource mix.<sup>37</sup> This creates room for creativity and innovation which may save billions. At the same time, this could achieve the precise deep decarbonization that the environmental community wants.

Another example of creative pairing of economic and environmental goals is the Illinois Future Energy Jobs Act (FEJA) of 2016.<sup>38</sup> The most controversial piece of this “grand bargain” legislation was the creation of a subsidy program to keep two of Exelon’s nuclear power plants operational.<sup>39</sup> While a financial benefit to the utility, this subsidy also ensured the financial viability of a source of low carbon electric generation in the state that otherwise would likely have been retired.<sup>40</sup> Meanwhile, FEJA also required state utilities to increase efficiency, and revised the state’s renewable portfolio standard in a way that added a significant amount of new solar and wind projects to be developed in the state, bringing with them clean energy *and* new jobs.<sup>41</sup> Importantly, FEJA also provided for low income solar energy programs and job training.<sup>42</sup>

These two recent legislative successes demonstrate how to build on the popularity of renewable energy to unite energy policy and environmental goals. Decarbonization is essential to avoiding a “Hothouse Earth”<sup>43</sup> scenario that could bring catastrophic upheaval to communities across the globe. By employing creative, broadly-worded goals that allow for

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37. Nestor A. Sepulveda et al., *The Role of Firm Low-Carbon Electricity Resources in Deep Decarbonization of Power Generation*, 2 *JOULE* 1, 5-6 (2018) (available for download at <https://www.sciencedirect.com/science/article/pii/S2542435118303866?via%3DIihub>).

38. *The Future Energy Jobs Act (FEJA) is Now in Effect!* FUTURE ENERGY JOBS ACT, <http://www.futureenergyjobsact.com/> (last visited Sept 26, 2018).

39. Peter Maloney, *Illinois Energy Law Revives Renewables While Aiding Nuclear*, *UTILITY DIVE* (April 30, 2018), <https://www.utilitydive.com/news/illinois-energy-law-revives-renewables-while-aiding-nuclear/522195/>.

40. *Id.*

41. *Id.*; see also Mark Burger, *Illinois Solar Program Continues to Develop, Solar Job Numbers Begin to Grow*, *PV MAGAZINE* (Aug. 8, 2018), <https://pv-magazine-usa.com/2018/08/08/illinois-solar-program-continues-to-develop-solar-job-numbers-begin-to-grow/>.

42. Peter Maloney, *Why Exelon’s Mammoth Illinois Energy Bill Could Set a Precedent for Other States*, *UTILITY DIVE* (Dec. 12, 2016), <https://www.utilitydive.com/news/why-exelons-mammoth-illinois-energy-bill-could-set-a-precedent-for-other-s/432089/>; Laura Goldberg, *IL Low-Income Energy Programs Expand While Federal Cuts Loom*, *NRDC* (Dec. 7, 2017), <https://www.nrdc.org/experts/laura-goldberg/il-low-income-energy-programs-expand-while-federal-cuts-loom>.

43. Will Steffen et al., *Trajectories of the Earth System in the Anthropocene*, *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA* (Aug. 14, 2018), <http://www.pnas.org/content/early/2018/08/07/1810141115>.



technological innovation, we can drastically lower the cost of decarbonization while still moving toward a zero-carbon future. As the same time, by working on multi-party deals that pair jobs, economic development, and efficiency with protection of key low carbon resources, states like Illinois have managed to find win-win solutions for parties that otherwise find themselves in opposition. It is possible to pair economic growth and smart energy policy with environmental policy. Indeed, this is the true challenge of our era.