Bridging Troubled Water: Clean Energy 50 Years After *The Greening of America*

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2020 marked the fiftieth anniversary of *The Greening of America* by Yale law professor Charles Reich[1] and allows for its reassessment. Did Reich accurately predict the development of a new consciousness for America? Reich argued that Consciousness I (Con I) dominated late eighteenth and early nineteenth century thinking and was best seen as an Emersonian vision of individualism[2] in which "the American dream is still possible, and that success is determined by character, morality, hard work, and self-denial."[3] Consciousness II (Con II) followed the Industrial Revolution and created the Corporate State in which the accumulation and concentration of corporate and financial power was supported by government initiatives and policies.[4] "Throughout all of Consciousness II runs the theme that society will function best if it is planned, organized, rationalized, administered."[5] Con II gave society organizational man, the military-industrial complex, and an alienation from self.[6] Con II also greatly circumscribed what was possible for an individual to achieve because too many possibilities were limited by the "Corporate State."[7] In short, too much flowed to too few.

The antidote to individual alienation and constrained possibilities was to be found in a new consciousness, Consciousness III (Con III), which "comes into being the moment the individual frees himself from automatic acceptance of the imperatives of society and the false consciousness which society imposes."[8] Reich found signs of the developing consciousness in America's youth of the late 1960s, the youth that embraced the mantra of

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1. CHARLES A. REICH, THE GREENING OF AMERICA (1970).
2. *See* RALPH WALDO EMERSON, *Self-Reliance*, *in* EMERSON: ESSAYS & LECTURES 257, 257–82 (Library of Am. ed. 1983) (1841).
3. REICH, *supra* note 1, at 25.
4. *Id.* at 59–85.
5. *Id.* at 70.
6. *See id.* at 129–156.
7. *See id.* at 87–128.
8. *Id.* at 225.

sex, drugs, and rock and roll.[9] To Reich, bellbottom jeans, acid rock, and marijuana were evidence that individual liberation could, he hoped, spread into the broader culture.[10]

On this reading of *Greening*, one cannot be faulted for criticizing the book as utopian fantasy and as a misreading of what was actually going on even during those eventful years. Bellbottoms and tie-dyes were not expressions of individualism, they were the uniforms of the day. Acid rock was not an opening into a new consciousness any more than blues, punk, atonal, or fusion. Similarly, marijuana was not a religious experience, it was a social way to have fun. And, perhaps the most egregious misread of society was that the Corporate State was not dissipating, it was just getting started. A new economics, perhaps most notably championed by Chicago economist Milton Friedman, was based on the singular focus on business profits, not any social good that a corporation might stumble upon.[11] Friedman's free market religion joined forces with a purported political philosophy called neoliberalism.[12] Friedman was not alone in his thinking. At the same time, the Right had a plan crafted by soon-to-be U.S. Supreme Court Justice Lewis Powell.[13]

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9. *See id.* at 152, 242–50, 258–60.

10. *See id.* at 217–63.

11. Milton Friedman, *A Friedman Doctrine—The Social Responsibility of Business Is to Increase Its Profits*, N.Y. TIMES (Sept. 13, 1970), https://www.nytimes.com/1970/09/13/archives/a-friedman-doctrine-the-social-responsibility-of-business-is-to.html [https://perma.cc/KNQ6-QWNK]. Friedman's jeremiad is captured in his first paragraph:

> The businessmen believe that they are defending free enterprise when they declaim that business is not concerned 'merely' with profit but also with promoting desirable 'social' ends; that business has a 'social conscience' and takes seriously its responsibilities for providing employment, eliminating discrimination, avoiding pollution and whatever else may be the catchwords of the contemporary crop of reformers. In fact they are—or would be if they or anyone else took them seriously—preaching pure and unadulterated socialism. Businessmen who talk this way are unwitting puppets of the intellectual forces that have been undermining the basis of a free society these past decades.

Id.

12. *See, e.g.*, DAVID HARVEY, A BRIEF HISTORY OF NEOLIBERALISM 22 (2005); WENDY BROWN, UNDOING THE DEMOS: NEOLIBERALISM'S STEALTH REVOLUTION 28 (2015); WENDY BROWN, IN THE RUINS OF NEOLIBERALISM: THE RISE OF ANTIDEMOCRATIC POLITICS IN THE WEST 65–67 (2019); NANCY MACLEAN, DEMOCRACY IN CHAINS: THE DEEP HISTORY OF THE RADICAL RIGHT'S STEALTH PLAN FOR AMERICA 93–96 (2017).

13. *See* Memorandum from Lewis F. Powell, Jr. to Eugene B. Sydnor, Jr., Chairman, Educ. Comm., U.S. Chamber of Com. (Aug. 23, 1971), https://scholarlycommons.law.wlu.edu/powellmemo/1/ [https://perma.cc/L67F-W8QC]; *see also* THOMAS O. MCGARITY, FREEDOM TO HARM: THE LASTING LEGACY OF THE LAISSEZ FAIRE REVIVAL 41–56 (2013); JANE MAYER, DARK MONEY: THE HIDDEN HISTORY OF THE BILLIONAIRES BEHIND THE RISE OF THE RADICAL RIGHT 72–76 (2016); Michael J. Klarman, *Foreword: The Degradation of American Democracy—and the Cour*t, 134 HARV. L. REV. 1, 138–39 (2020); KURT ANDERSEN, EVIL GENIUSES: THE UNMAKING OF AMERICA: A RECENT HISTORY 56–72 (2020).

Friedman's economics, the Powell plan, neoliberalism, and the complementary emerging Law and Economics Movement[14] all centered on two simple ideas: "free markets" were good and government interference was not. It seems, then, that Reich got things wrong. The Corporate State was not withering away, it was gaining economic force and political power.

Yet, perhaps, we should not be so eager to dismiss Reich's dream of a new consciousness as mere fantasy. After all, fifty years later, jeans are worn on casual Fridays, marijuana is big business and relies on big names such as a former Speaker of the U.S. House of Representatives to finance the burgeoning industry,[15] and not only does rock evolve, the music of the Sixties nostalgically reminds of the soundtracks of our youth and it is a musical taste that we have passed down to our kids. Indeed, as argued below, maybe even the Corporate State can adapt to, if not adopt, Con III. Perhaps Reich was on point after all.

Charles Reich was an important intellect. Before joining the Yale Law faculty, he was the Editor-in-Chief of the Yale Law Journal, clerked for Justice Hugo Black, and worked for the white-shoe firms of Cravath, Swaine & Moore in New York and Arnold & Porter in D.C.[16] His scholarship, especially his article, *The New Property*,[17] was pathbreaking and continues to inform how we think about property today.

Instead of finding *Greening* mistaken and quixotic, perhaps we can look for and find it hopeful and insightful. In this Article, I argue that the book has relevance and insight with particular reference to a general understanding of the environment and a more particular understanding of the ongoing clean energy transition. Part I places *Greening* in the political context of the times and argues that Reich was onto something. He understood that the Corporate State could not continue to destroy the environment—that things had to change. Part II explains the environmental ideas contained in *Greening* as a prelude to a more developed discussion of the clean energy transition. Part III describes the U.S. energy profile fifty years ago as an introduction to a more detailed discussion of the current situation of electric utilities, which are necessary and central parts of the transition. Today, traditional utilities exhibit signs of schizophrenia. On the one hand, as described in Part IV, they adhere to

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14. *See* MAYER, *supra* note 13, at 107–10.

15. *See, e.g.*, Daniel Victor, *John Boehner's Marijuana Reversal: 'My Thinking on Cannabis Has Evolved'*, N.Y. TIMES (Apr. 11, 2018), https://www.nytimes.com/2018/04/11/us/politics/boehner-cannabis-marijuana.html [https://perma.cc/S3RZ-T2D5].

16. Michael I. Swygert, *Charles A. Reich, The Greening of America*, 5 VAL. U. L. REV. 692, 693–94 (1971).

17. Charles A. Reich, *The New Property*, 73 YALE L.J. 733 (1964).

the old Con II model of the electric industry. Then, Part V discusses how some utilities are experiments with a Con III approach to the energy future. In Part VI, the article closes with an analysis of how the clean energy transition is fully compatible with a conception of Con III. Reich did predict such a future; it just took over fifty years to see it emerge.

I. *GREENING* IN CONTEXT

1970 was a turbulent year, not as turbulent as 1968, but turbulent, nonetheless. Like any year, the normal happenings occurred. The Baltimore Orioles won the World Series against the Cincinnati Reds;[18] the Kansas City Chiefs defeated the Minnesota Vikings in Super Bowl IV;[19] and Academy Awards were given to *Midnight Cowboy* for Best Picture, John Wayne as Best Actor for *True Grit*, and Maggie Smith as Best Actress for *The Prime of Miss Jean Brodie*.[20]

The Flip Wilson Show and *Marcus Welby, M.D.* topped the list of TV shows and pop songs went from anodyne pop to new rock to protest songs.[21] Starting at number five, the top songs were: *War* by Edwin Starr; *Raindrops Keep Fallin' on My Head* by B.J. Thomas; *American Woman/No Sugar Tonight* by The Guess Who; *(They Long To Be) Close to You* by the Carpenters; with *Bridge Over Troubled Water* by Simon & Garfunkel topping the charts.[22]

On the political front, things were less than normal. From an environmental point of view, the year started auspiciously enough with Republican President Richard Nixon signing the National Environmental Policy Act on January 1 and later signing an extension of the Clean Air Act into law.[23] Today, when 2016 Republican presidential candidates denied climate change and the Trump administration continued to do so with devastating effect,[24] being pro-environment will ban one from the

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18. *MLB World Series Winners*, ESPN, http://www.espn.com/mlb/worldseries/history/winners [https://perma.cc/5RH4-9Y8Y] (last visited Mar. 5, 2021).

19. *NFL History—Super Bowl Winners*, ESPN, http://www.espn.com/nfl/superbowl/history/winners [https://perma.cc/BUY5-DJT2] (last visited Mar. 5, 2021).

20. *The 42nd Academy Awards | 1970*, OSCARS.ORG, https://www.oscars.org/oscars/ceremonies/1970 [https://perma.cc/3SS6-Q5AD] (last visited Mar. 5, 2021).

21. *1970–71 TV Ratings*, TV RATINGS GUIDE, http://www.thetvratingsguide.com/1991/08/1970-71-tv-ratings.html [https://perma.cc/5ZLG-CCPT] (last visited Mar. 5, 2021).

22. *Year-End Charts: Hot 100 Songs: 1970*, BILLBOARD, https://www.billboard.com/charts/year-end/1970/hot-100-songs [https://perma.cc/54WQ-BFNN] (last visited Mar. 5, 2021).

23. Kit Oldham, *President Richard Nixon Signs Senator Henry Jackson's National Environmental Policy Act into Law on January 1, 1970*, HIST. LINK (Nov. 13, 2003), https://www.historylink.org/File/5615 [https://perma.cc/TC7R-DA8T].

24. *See, e.g.*, Nadja Popovich & Brad Plumer, *What Trump's Environmental Rollbacks Mean*

Republican party. Nixon's environmental bent is hard to square with his intentionally racist "law and order" campaign of two years previous.[25] It has also been argued that favoring the environment was a sop to white middle-class voters and, therefore, consistent with his law and order message.[26] Regardless, the environmental movement was strengthened with the passage of those laws, with others soon to follow.[27]

Aside from the environment, the political atmosphere was more than troubling. On April 28, 1970, President Nixon ordered U.S. troops to invade Cambodia and protests followed.[28] On May 4, Ohio Governor Jim Rhodes directed the National Guard onto the Kent State campus where they fired on demonstrators, killing four students and wounding nine others.[29] Widespread protests, not all peaceful, followed as campuses across the country shut down.[30] The political polarization that was becoming evident in the 1968 election,[31] was on full display in New York City on May 8. Following the Cambodian invasion and the Kent State killings, student anti-war protests multiplied, and, on that day, what started with 1,000 peaceful protesters evolved into a full-blown melee.[32] Hundreds of construction workers confronted the protesters with each side trading taunts with the other.[33] "Peace Now" versus "[America,] love it or leave it" being the more polite chants hurled between the groups.[34] As

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for Global Warming, N.Y. TIMES (Sept. 17, 2020), https://www.nytimes.com/interactive/2020/09/17/climate/emissions-trump-rollbacks-deregulation.html [https://perma.cc/JY95-USZ7].

25. *See, e.g.*, Klarman, *supra* note 13, at 111; RICK PERLSTEIN, NIXONLAND: THE RISE OF A PRESIDENT AND THE FRACTURING OF AMERICA 236–37, 334 (2008).

26. *See* JEDEDIAH PURDY, THIS LAND IS OUR LAND: THE STRUGGLE FOR A NEW COMMONWEALTH 119–23 (2019).

27. *See, e.g.*, Environmental Quality Improvement Act of 1970, 42 U.S.C. §§ 4371–75; Federal Water Pollution Control Act (Clean Water Act), 33 U.S.C. §§ 1251–1388; Endangered Species Act of 1973 (ESA), 16 U.S.C. §§ 1531–44; Occupational Safety and Health Act of 1970 (OSHA), 29 U.S.C. §§ 651–78; Safe Drinking Water Act (SDWA), Pub. L. No. 93-523, 88 Stat. 1660 (codified in scattered sections of 42 U.S.C.).

28. Andrew Glass, *Nixon Authorizes Invasion of Cambodia, April 28, 1970*, POLITICO (Apr. 28, 2015, 12:04 AM), https://www.politico.com/story/2015/04/this-day-in-politics-april-28-1970-117377 [https://perma.cc/M5DM-JUDB].

29. *Kent State Shooting*, HISTORY.COM (May 1, 2020), https://www.history.com/topics/vietnam-war/kent-state-shooting [https://perma.cc/3FU4-T62V].

30. Steve Early, *Fifty Years Ago This Spring, Millions of Students Struck to End the War in Vietnam*, JACOBIN (Apr. 24, 2020), https://www.jacobinmag.com/2020/04/kent-state-shooting-vietnam-war-protest-student-organizing#:~:text=In%20May%201970%2C%20an%20estimated,rest%20of%20the%20spring%20semester [https://perma.cc/RZ4N-V26K].

31. KEVIN P. PHILLIPS, THE EMERGING REPUBLICAN MAJORITY 39, 42 (1969); *see* also DAVID PAUL KUHN, THE HARDHAT RIOT: NIXON, NEW YORK CITY AND THE DAWN OF THE WHITE WORKING-CLASS REVOLUTION 37–56 (2020).

32. *See* KUHN, *supra* note 31, at 135–53.

33. *Id.* at 140–42.

34. *Id.* at 141.

construction workers confronted the protesters, the demonstrations spread throughout lower Manhattan. Eventually, there were at least 20,000 demonstrators and onlookers as 1,000 constructions workers joined the fray.[35] The police, ostensibly there to preserve order, sat aside and let the "hard hats" beat students and onlookers.[36] Police stood by "laughing and smiling and . . . amiably chatting together and with construction workers,"[37] because, as one policeman said, "[w]e're with them."[38]

On May 10, an anti-war march brought over 100,000 protesters to Washington.[39] And five days later, on May 14, local and state police fired on students at Jackson State College killing two and injuring twelve.[40] Under these circumstances *Greening* was published at the end of that tempestuous year.

II. A QUICK TOUR THROUGH *GREENING*

Greening opens with a keen awareness of the tumult of the times and with a warning—the revolution is coming.[41] Americans were dissatisfied along several fronts. They were dissatisfied with the war in Vietnam, with persistent racism and poverty, and with noticeable environmental destruction, such as the Cuyahoga River burning[42] and photographs of birds soaked with oil after the Santa Barbara spill.[43]

More deeply, Americans, Reich argued, were troubled by a lack of

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35. *See id.* at 135–216.

36. *Id*. at 194.

37. *Id*.

38. *Id*. at 160.

39. *Id*. at 223–27.

40. Whitney Blair Wyckoff, *Jackson State: A Tragedy Widely Forgotten*, NPR (May 3, 2010, 12:00 AM), https://www.npr.org/templates/story/story.php?storyId=126426361 [https://perma.cc/N8F4-532Q].

41. REICH, *supra* note 1, at 4.

42. The Cuyahoga River runs through industrial Northeast Ohio and through Cleveland into Lake Erie. It caught fire several times, most noticeably on June 22, 1969, and has been credited with spurring the enactment of the Federal Water Pollution Control Act (Clean Water Act), 33 U.S.C. §§ 1251–1388. *See* Jonathan H. Adler, *Fables of the Cuyahoga: Reconstructing a History of Environmental Protection*, 14 FORDHAM ENV'T L.J. 89, 94–98 (2002) (describing the Cuyahoga River fire as myth, although a powerful and enduring one); David Stradling & Richard Stradling, *Perceptions of the Burning River: Deindustrialization and Cleveland's Cuyahoga River*, 13 ENV'T HIST. 515, 518–20 (2008); Cheryl Hogue, *Marking 50 Years Since the Cuyahoga River Fire, Which Sparked US Environmental Action*, CHEM. & ENG'G NEWS (June 17, 2019), https://cen.acs.org/environment/pollution/Marking-50-years-since-Cuyahoga/97/i24 [https://perma.cc/XJE7-2S63].

43. *See, e.g.*, Jon Hamilton, *How California's Worst Oil Spill Turned Beaches Black and the Nation Green*, NPR (Jan. 28, 2019, 5:29 AM), https://www.npr.org/2019/01/28/688219307/how-californias-worst-oil-spill-turned-beaches-black-and-the-nation-green [https://perma.cc/4NYW-PLBL].

satisfaction at work, a loss of community, and even more deeply a loss of self and a decline in democracy.[44] Most troubling was that the malaise went undiagnosed. It was difficult to pin a cause on these anxieties, especially at a time when the memories of rising incomes, technological innovations, and a promising future were still warm. Yet, Reich did unmask a culprit. American dissatisfactions were directly connected to a "false consciousness" about the social condition and the very structure of society. He writes:

> Thus a true definition of the American crisis would say this: we no longer understand the system under which we live, hence the structure has become obsolete and we have become powerless; in turn, the system has been permitted to assume unchallenged power to dominate our lives, and now rumbles along, unguided and therefore indifferent to human ends.[45]

For Reich, the false consciousness was based on combination of "obsolete structure, monopoly capitalism, [and] mindless technology."[46] A new consciousness was called for and it was being born. First, though, a deeper dive into the then current understanding of society was needed.

In brief, Americans needed to first understand the nineteenth century, Emersonian, Whitmanesque view of the individual as a person who had control over her life, as a person who could profitably work for himself, and who could fashion a life in a peaceful community for themselves and their children. This was the world of Consciousness I.[47] To the extent that power existed, it was diffuse and could be exercised by individuals. That all changed by mid-century. The Industrial Revolution not only added new technologies and products to existing markets, but it also changed the way markets operated, how business was conducted, how business was financed, and, more significantly, where the worker fit into this new industrial/financial structure.[48]

An economic revolution came along with the Industrial Revolution and changed the way Americans lived.[49] Increasingly rare was the individual the master or mistress of his or her own domain. Instead, the industrial and economic revolutions changed the nature of work as the relationship between employer and employee, between master and servant, became hierarchical, highly organized, and subject to scientific

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44. REICH, *supra* note 1, at 6–9.

45. *Id.* at 14.

46. *Id.* at 13.

47. *Id.* at 22–24.

48. *See* E.J. HOBSBAWM, THE AGE OF CAPITAL: 1848–1875, at 29–47, 208–29 (1975); JOHN KENNETH GALBRAITH, THE NEW INDUSTRIAL STATE 4–10 (1967).

49. *See* E.J. HOBSBAWM, THE AGE OF REVOLUTION: EUROPE 1789–1848, at 168–81 (1962).

technique leaving less and less discretion to the worker. Instead of self-satisfaction, the worker worked for the business, for the corporation toward the end of profit and for an expanding economy.[50]

These changes engendered a loss of civic republicanism in which the common good was an agreed upon value. In its place, the nineteenth century individual was transformed into the emerging twentieth century technocrat and into a corporate cog. The first Gilded Age exalted business and the economy over the individual. By way of example, Lochnerism protected freedom of contract for the employer but not for the employee.[51] Liberals and Progressives tell the tale that the federal government was responsive to the calls for reform brought about by the new industrial age. Statutes such as the Meat Inspection Act[52] and the Food and Drug Act[53] were responsive to the muckraking stories of corporate abuses in those industries, and the government set up administrative agencies to monitor those activities. Further, Teddy Roosevelt's assault on the trusts helped check the concentrations of corporate power.[54] Indeed, Progressive reforms were later passed on to TR's cousin Franklin Delano Roosevelt and his New Deal.

For Reich, though, these reforms, particularly those of the New Deal, only entrenched a corporate consciousness, Consciousness II (Con II), into American society.[55] The New Deal did not reform capitalism, it saved it, and in doing so, established a more solid bond between government and business.[56] Corporate America exercised not only private power but also private power with the helping and encouraging hand of government.[57] Government and markets were not at loggerheads; they were swimming in the same direction in the same capitalist stream.[58] Simply consider public utilities. At the end of the nineteenth century, Samuel Insull negotiated a "grand bargain" between city government and private enterprise.[59] His privately owned utility would have its rates set by government at a reasonable rate, a rate sufficient for it to cover all of its

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50. REICH, *supra* note 1, at 32–35.

51. *See* Lochner v. New York, 198 U.S. 45 (1905), *abrogated by* W. Coast Hotel Co. v. Parrish, 300 U.S. 379 (1937); Cass R. Sunstein, Lochner*'s Legacy*, 87 COLUM. L. REV. 873, 877–80 (1987).

52. Federal Meat Inspection Act of 1906, 21 U.S.C. §§ 601–95.

53. Pure Food and Drug Act of 1906, Pub. L. No. 59-384, 34 Stat. 768 (1906) (repealed 1938).

54. *See, e.g.*, Andrew Glass, *Theodore Roosevelt Assails Monopolies, Dec. 3, 1901*, POLITICO (Dec. 3, 2018, 12:00 AM), https://www.politico.com/story/2018/12/03/this-day-in-politics-december-3-1027800 [https://perma.cc/EJ3B-W5PY].

55. REICH, *supra* note 1, at 60.

56. *Id.* at 58.

57. *Id.* at 51–54.

58. *See id.*

59. SAMUEL INSULL, CENTRAL-STATION ELECTRIC SERVICE 45 (William E. Keily ed., 1915).

costs and earn a reasonable rate of return by way of cost-of-service ratemaking (COS).[60] The New Deal further solidified the position of gas and electric utilities with the passage of the Federal Power and Natural Gas Acts.[61] These laws gave the federal government control over the interstate sales of electricity and natural gas and did so by granting licenses to favored utilities.[62] Through licensing, market entry was limited, competition was constrained, and the utilities grew larger. New Deal "reforms," for Reich, did transform the way business was conducted in America but for the direct benefit of the corporate classes. "The final tragedy of the [New Deal] reform movement is that the power it created was amalgamated with the private power already in existence . . . ."[63]

With the "failure" of New Deal reforms, America was in the grasp of Con II—the Corporate State. While the Corporate State has various manifestations, Reich argues that it is "relentlessly single-minded; it has only one value, the value of technology-organization-efficiency-growth-progress."[64] This single-mindedness comes with consequences. In fact, "[o]nly such single-valued mindlessness would cut the last redwoods, pollute the most beautiful beaches, invent machines to injure and destroy plant and human life."[65] Thus, the Corporate State is manifest by a fossil-fueled energy economy; an economy in great need of transition, as this symposium asserts. For Reich, the situation is made more insidious because of the complicity of government in the affairs of the corporate-financial structure that moves by its own laws and in one direction—economic growth. "The corporate state is an immensely powerful machine, ordered, legalistic, rational, yet utterly out of human control, wholly and perfectly indifferent to any human values" including the "destruction of [the] environment."[66]

Again, consider the structure of most of the energy sector. Commercial nuclear power would not exist but for the statutes that gave it

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60. *Id.*; *see also* Richard D. Cudahy & William D. Henderson, *From Insull to Enron: Corporate (Re)Regulation After the Rise and Fall of Two Energy Icons*, 26 ENERGY L.J. 35, 91 (2005).

61. *See* 16 U.S.C. §§ 791–828c; 15 U.S.C. §§ 717–717z.

62. *See* Adam Vann, *The Legal Framework of the Federal Power Act*, CONG. RSCH. SERV. (Jan. 22, 2020), https://crsreports.congress.gov/product/pdf/IF/IF11411 [https://perma.cc/S9VX-EFB7].

63. Reich, *supra* note 1, at 58.

64. *Id.* at 90.

65. *Id.* at 90–91.

66. *Id.* at 88.

birth[67] and sustain it.[68] The electric and natural gas industries may not have nationalized as soon as they did without statutory support. The coal industry may not have been able to sell its product as cheaply without the failures to enforce mine safety[69] and miner health laws.[70] Nor would we have as much cheap oil and gas if spills and blowouts were adequately monitored and safety laws enforced.[71] The regulatory state, ostensibly intended to advance the common good, instead advances the Corporate State as it "prevents unruly competition, limits entry into a field, and . . . rationalizes and stabilizes industry"[72] accompanied by environmental exploitation.[73] As a consequence, the Corporate State privatizes profits and socializes costs.[74]

If we are blinded by false consciousness and firmly in the grip of the Corporate State, then how do we emerge? How do we change? How do we develop a new consciousness?

Reich spots the developing new consciousness through the sixties' movements. The movements for racial justice, the alleviation of poverty, consumer awareness, women's rights, and environmental sensitivity as well as in the Anti-war movement itself. Americans became aware of inequalities in wealth and income, inadequate public services, defective products, and the stifling of individual fulfillment.[75] This awareness was based on "[t]he premise of self and of values based on human life [that would lead] directly to a radical critique of society."[76] That critique, in turn, would lead to Consciousness III (Con III) as exemplified by the youth movement and its penchant for new clothes, new music, a new sense of

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67. The Atomic Energy Act (AEA) of 1954, 42 U.S.C. §§ 2011–2021, 2022–2286i, 2296a–2297h-13 (permitting private ownership of nuclear power plants). According to congressional testimony, there would be no commercial nuclear power industry without it. JOSEPH P. TOMAIN, NUCLEAR POWER TRANSFORMATION 6–10 (1987).

68. Similarly, the Price-Anderson Act sustained the industry by limiting the liability of electric utilities IOUs in the event of a nuclear catastrophe. *See* 42 U.S.C. § 2210.

69. *See, e.g.*, *Mine Disaster Investigations Since 2000*, U.S. DEP'T OF LAB., https://www.msha.gov/data-reports/mine-disaster-investigations-2000 [https://perma.cc/KNT2-UT3J] (last visited Mar. 5, 2021).

70. *See, e.g.*, Dave Jamieson, *Obama Labor Department Tightens Black Lung Rules Decades in the Making*, HuffPost (Apr. 23, 2014, 10:46 AM), https://www.huffingtonpost.com/2014/04/23/black-lung-msha-reforms_n_5198423.html?ncid=engmodushpmg00000006 [https://perma.cc/N5AX-6CMA].

71. *See, e.g.*, U.S. CHEM. SAFETY & HAZARD INVESTIGATION BD., INVESTIGATION REP. VOL. 2: EXPLOSION & FIRE AT THE MACONDO WELL 81–92 (2014); NAT'L COMM'N ON THE BP DEEPWATER HORIZON OIL SPILL & OFFSHORE DRILLING, DEEP WATER: THE GULF OIL DISASTER AND THE FUTURE OF OFFSHORE DRILLING 55–85 (2011).

72. Reich, *supra* note 1, at 119.

73. *See id.* at 171–75.

74. *See id.* at 159–60.

75. *See id.* at 229–30.

76. *Id.* at 229.

community, a willingness to experiment with drugs, and a newfound respect for nature.[77] Con III was, at its core, liberating, enabling Americans to address the ills listed above and in so doing, "the individual frees himself from automatic acceptance of the imperatives of society and the false consciousness which society imposes."[78]

These efforts at individual liberation would, according to Reich, spread to the wider culture as the "organization man"[79] is rejected along with the rejection of Corporate State authority over individual lives.[80] Empowered, Americans, under the inspiration of the youth movement, can tackle social problems and pursue social justice. The values inherent in Con III are powerful enough, so goes the argument, that the legal structure can change and thus reinforce the new consciousness. As an example of a change in consciousness leading to a change in law, Reich points to the case of Storm King Mountain in which a federal court required a consideration of the environmental consequences in a Federal Power Commission licensing proceeding for a pumped storage project.[81]

Con III thus displaces Con II and a new society with a new more humane culture, escapes the Corporate State. The problem is: can we rely on such promises? Do individuals have such capabilities? Is the youth movement together with the other sixties' movements sustainable? Or will society revert back to the norm as wealth and corporate power dominate the game of politics and with it the game of law?[82] *The Greening of America* and its desire for Con III may seem fanciful in its utopian aspirations, but it is not wrong.

III. ENERGY LAW & POLICY FIFTY YEARS AGO

Fifty years ago, U.S. energy policy hewed to the dominant model[83] that has existed throughout the twentieth century and into the twenty-first. Coal was King, nuclear power plants were under construction, domestic oil was being produced at peak levels, energy production and consumption were increasing, electricity prices were declining, and imports and exports

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77. *See id.* at 234–63.

78. *Id*. at 225.

79. *Id*. at 272–78 (referencing dissatisfied white- and blue-collar workers).

80. *See id.* at 278–92.

81. *Id.* at 337–39; Scenic Hudson Pres. Conf. v. Fed. Power Comm'n, 354 F.2d 608, 624–25 (2d Cir. 1965).

82. *See* KATHARINA PISTOR, THE CODE OF CAPITAL: HOW THE LAW CREATES WEALTH AND INEQUALITY 9–22 (2019); THOMAS PIKETTY, CAPITAL AND IDEOLOGY 683–716 (Arthur Goldhammer trans., 2020).

83. *See generally* Joseph P. Tomain, *The Dominant Model of United States Energy Policy*, 61 U. COLO. L. REV. 355 (1990) (discussing the United States energy industry).

were relatively flat.[84] All told, fossil fuels and nuclear power were responsible for roughly 95% of the U.S. energy profile.[85] Other than hydropower, renewable resources such as solar and wind were not even counted in the mix. Further, the U.S. energy system, and the general economy, were well-served by large-scale, capital-intensive energy producers operating on a national, and, in the case of oil, international scale.[86] And, on top of all of that, energy policy was bipartisan and, in fact, was largely a non-issue politically.[87]

Indeed, energy producers, consumers, and regulators were generally sanguine about our energy future. Simply, it would look much like the past. That view, unfortunately, was both myopic and mistaken. In 1970, coal was about to meet environmental challenges; nuclear plant expansion was about to reach a hard stop; domestic oil production peaked; electricity prices were about to increase; exports were about to decline; and increasing oil imports put the country in a vulnerable position, as the energy crises of that decade demonstrated.[88] As far as energy policy was concerned, the primary objective was energy independence, especially independence from Mid-East oil.[89]

In short, things were about to change in the energy sector. However, given the vast scope and scale of the energy industry and its entrenched regulators, change would be neither swift nor smooth. In fact, the topic of this Symposium, the clean energy transition, is a testament to the difficulty of replacing a century old paradigm with a new one. To do so effectively, three elements were needed. An energy transition could occur only if there was a convergence among innovative energy technologies, innovative and new business models, and innovative approaches to energy regulation. Today, the United States is experiencing innovation along each dimension as we look to a cleaner future.

Regarding the clean energy transition, federal projections are mixed. The takeaways from the Energy Information Administration's latest *Annual Energy Outlook* are that in the reference case for 2050: (1)

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84. *See id.* at 368–69.

85. *See November 2020 Monthly Energy Review*, U.S. ENERGY INFO. ADMIN. 4–5 (Nov. 24, 2020), https://www.eia.gov/totalenergy/data/monthly/archive/00352011.pdf [https://perma.cc/B3H2-GMZG].

86. *See* DANIEL YERGIN, THE PRIZE: THE EPIC QUEST FOR OIL, MONEY, AND POWER 589–92 (1991).

87. Kate Richard, *Environmentalism's Less-Partisan Past*, YALE PROGRAM ON CLIMATE CHANGE COMMC'N (Oct. 23, 2017), https://climatecommunication.yale.edu/news-events/environmentalisms-less-partisan-past/ [https://perma.cc/7KL2-23QT].

88. *See* JOSEPH P. TOMAIN, ENDING DIRTY ENERGY POLICY: PRELUDE TO CLIMATE CHANGE 24–26 (2011).

89. *Id.*

domestic consumption grows more slowly than production through 2050 with the consequence that the United States continues to be a fossil fuel exporting country; (2) in the electricity sector, renewables remain the fastest growing source of electricity as a direct result of the declining costs for solar and wind power; (3) with slow demand for electricity, both coal-fired and nuclear generating capacity is projected to decline; and (4) carbon dioxide emissions are projected to grow modestly during the 2030s driven by increases in energy demand in transportation and industry.[90] Carbon dioxide emissions are also projected to remain 4% lower than 2019 levels.[91] In short, EIA projections show some support for a clean energy transition but not for an aggressive one.[92]

Other studies indicate the viability of an aggressive clean energy transition. It has been reported that forty-seven states can meet 100% of their electricity needs with in-state renewable resources.[93] Different states would draw on different resources; some would rely more heavily on wind, others on solar, and still others on hydropower.[94] Similarly, a University of California at Berkeley study finds that by 2035 the United States can achieve an energy system that is 90% carbon free, with lower electric rates and high levels of reliability.[95] And yet another study concludes that: "Our analysis shows that 100% clean electricity from the combination of solar, wind, and batteries (SWB) is both physically possible and economically affordable across the entire continental United States as well as the overwhelming majority of other populated regions of the world by 2030."[96]

These goals can be achieved because of significantly declining solar, wind, and battery costs as renewable resources and energy efficiency are becoming more and more cost competitive with traditional, fossil fuel resources. A further study from Stanford argues that the United States and

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90. *Annual Energy Outlook 2020 with Projections to 2050*, U.S. ENERGY INFO. ADMIN. 3 (2020), https://www.eia.gov/outlooks/aeo/pdf/AEO2020%20Full%20Report.pdf [https://perma.cc/2GGE-ZRUA].

91. *Id.*

92. *Id.*

93. Maria McCoy & John Farrell, *Energy Self-Reliant States 2020*, INST. FOR LOCAL SELF-RELIANCE 10 (2020), https://cdn.ilsr.org/wp-content/uploads/2020/09/report-ESRS-2020-ilsr.pdf [https://perma.cc/6LWP-43CE].

94. *Id.* at 5–9.

95. *2035: The Report: Plummeting Solar, Wind, and Battery Costs Can Accelerate Our Clean Electricity Future*, GOLDMAN SCH. OF PUB. POL'Y, U.C. BERKLEY 20–21 (June 2020), https://www.2035report.com/wp-content/uploads/2020/06/2035-Report.pdf [https://perma.cc/B82T-AAKZ].

96. Adam Dorr & Tony Seba, *Rethinking Energy 2020–2030: 100% Solar, Wind, and Batteries is Just the Beginning*, RETHINKX 7 (Oct. 2020), https://static1.squarespace.com/static/585c3439be65942f022bbf9b/t/5f96dc32289db279491b5687/1603722339961/Rethinking+Energy+2020-2030.pdf [https://perma.cc/CU6Y-3XPM].

142 other countries can reach 100% renewable energy by 2050 while improving grid stability, lowering costs, as well as providing clean energy jobs and health benefits.[97]

A more ambitious plan is to achieve net-zero emissions by 2050. The basic idea behind net-zero emissions is to reduce manmade emissions from fossil fuels to as close to zero as possible. This can be accomplished by decarbonization efforts such as emissions targets and by renewal efforts such as restoring forests or directly capturing emissions such as through carbon capture, use, and sequestration (CCUS).[98] A recent study from Princeton, for example, models five pathways to achieving that goal.[99] In addition to CCUS, by 2050, investments must be made in energy efficiency, clean electricity, the development of zero carbon fuels and enhanced land sinks, i.e. forest management and environmentally sensitive agricultural practices.[100] Each of the proposals will generate a net increase in energy sector employment with significant reductions in air pollution.[101] The study estimates that the cost of such efforts will be at least $2.5 trillion over the next decade.[102] Nevertheless, that amount is comparable to or lower than current annual energy spending as a percentage of GDP.[103]

To date, eighteen states have established 100% clean or renewable energy goals[104] and private corporations, including utilities, have announced zero emissions targets.[105] At the same time, however, there is neither an overall plan for the United States to achieve those goals nor are

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97. Mark Z. Jacobson, Mark A. Delucchi, Mary A. Cameron, Stephen J. Coughlin, Catherine A. Hay, Indu Priya Manogaran, Yanbo Shu & Anna-Katharina von Krauland, *Impacts of Green New Deal Energy Plans on Grid Stability, Costs, Jobs, Health, and Climate in 143 Countries*, 1 ONE EARTH 449, 450 (2019).

98. *See* Kelly Levin, David Rich, Katie Ross, Taryn Fransen & Cynthia Elliott, *Designing and Communicating Net-Zero Targets* 12, 15 (World Res. Inst., Working Paper, July 2020), https://files.wri.org/s3fs-public/designing-communicating-net-zero-targets.pdf [https://perma.cc/7DSA-5VMQ].

99. *See* Eric Larson, Chris Greig, Jesse Jenkins, Erin Mayfield, Andrew Pascale, Chuan Zhang, Joshua Drossman, Robert Williams, Steve Pacala, Robert Socolow, Ejeong Baik, Rich Birdsey, Rick Duke, Ryan Jones, Ben Haley, Emily Leslie, Keith Paustian & Amy Swan, *Net-Zero America: Potential Pathways, Infrastructure, and Impacts*, PRINCETON U. 30–33 (Dec. 15, 2020), https://environmenthalfcentury.princeton.edu/sites/g/files/toruqf331/files/2020-12/Princeton_NZA_Interim_Report_15_Dec_2020_FINAL.pdf [https://perma.cc/3XGB-K2QP].

100. *Id.*

101. *Id.* at 293.

102. *Id.* at 140.

103. *Id.* at 33.

104. Noah Garcia, *Top 10 Utility Regulation Trends of 2020*, GREENTECH MEDIA (Dec. 31, 2020), https://www.greentechmedia.com/amp/article/top-10-utility-regulation-trends-of-2020 [https://perma.cc/6UZ4-L7XP].

105. Stanley Porter, Marlene Motyka, Jim Thomson, Christine LaCroix, Kate Hardin & Carolyn Amon, *Utility Decarbonization Strategies: Renew, Reshape, and Refuel to Zero*, DELOITTE INSIGHTS (Sept. 21, 2020), https://www2.deloitte.com/us/en/insights/industry/power-and-utilities/utility-decarbonization-strategies.html [https://perma.cc/WX84-25J4].

there any federal initiatives to do so.[106] Nevertheless, four developments increasingly support a clean energy transition.

First, the current status and the future for renewable resources and energy efficiency is positive. In the last five years, global wind and solar power electricity has doubled. In the first half of 2020, renewable energy comprised 22.2% of all U.S. electricity, which constitutes a growing trend.[107] The Federal Energy Regulatory Commission (FERC) also reports that solar, wind, biomass, geothermal, and hydropower dominated U.S. electric generating capacity during the same period.[108] In other words, green energy made up nearly 58% of new capacity with natural gas making up nearly 43%.[109] "There were no new additions of oil, nuclear, or geothermal" reported during that time.[110]

The second indicator favoring the clean transition is the decline in fossil fuel use. Energy producers are beginning to close their coal-fired power plants.[111] Similarly, due to a surfeit of shale oil and shale gas, shale producers are finding it increasingly difficult to earn profits and some are filing for bankruptcy.[112] A third data point is that clean energy producers are growing in market value, surpassing such fossil fuel giants as ExxonMobil.[113] As examples, two energy storage companies are valued

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106. John Deutch, *Is Net Zero Carbon 2050 Possible?*, 4 JOULE 2237, 2239 (2020).

107. Zachary Shahan, *Renewable Energy = 22.2% of US Electricity in 1st Half of 2020*, CLEANTECHNICA (Sept. 12, 2020), https://cleantechnica.com/2020/09/12/renewable-energy-22-2-of-us-electricity-in-1st-half-of-2020-charts/ [https://perma.cc/4JUE-YKBW].

108. Michelle Lewis, *Green Energy Leads New US Generating Capacity in 2020*, ELECTREK (Aug. 25, 2020, 12:30 PM), https://electrek.co/2020/08/25/green-energy-new-us-generating-capacity-2020/ [https://perma.cc/U83P-6B8X].

109. *Id.*

110. *Id.*; FED. ENERGY REGUL. COMM'N, OFFICE OF ENERGY PROJECTS, ENERGY INFRASTRUCTURE UPDATE FOR JUNE 2020 3–7 (2020), https://cms.ferc.gov/sites/default/files/2020-08/JuneMIR%202020.pdf [https://perma.cc/H3NW-LUZS].

111. Mark Williams, *American Electric Power to Close Texas Coal Plant, Not Use Coal Any More in Another*, COLUMBUS DISPATCH (Nov. 6, 2020, 5:37 PM), https://www.dispatch.com/story/business/2020/11/05/aep-continues-move-away-coal-fired-power-plants/6179197002/ [https://perma.cc/NU8L-72ZV]; Michael Hawthorne, *Texas Company to Close All of Its Illinois Coal-Fired Power Plants, Another Sign the Transition to Clean Energy is Accelerating*, CHI. TRIB. (Sept. 30, 2020, 5:00 AM), https://www.chicagotribune.com/news/environment/ct-more-illinois-coal-plants-closing-20200930-bl2saewbzvha3f52r42fcni53y-story.html [https://perma.cc/874P-Q9HK].

112. Josh Owens, *Yet Another Shale Producer Files for Bankruptcy*, OILPRICE (Oct. 1, 2020, 3:30 PM), https://oilprice.com/Latest-Energy-News/World-News/Yet-Another-Shale-Producer-Files-For-Bankruptcy.html [https://perma.cc/XJ9U-GZW6]; Wolf Richter, *The Great American Shale Oil & Gas Massacre: Bankruptcies, Defaulted Debts, Worthless Shares, Collapsed Prices of Oil & Gas*, WOLF ST. (July 10, 2020), https://wolfstreet.com/2020/07/10/the-great-american-shale-oil-gas-massacre-bankruptcies-defaulted-debts-worthless-shares-collapsed-prices-of-oil-and-natural-gas/ [https://perma.cc/SS4Z-NWG4]; DANIEL YERGIN, THE NEW MAP: ENERGY, CLIMATE, AND THE CLASH OF NATIONS 276–77 (2020).

113. Johnna Crider, *Another Win for Clean Energy: NextEra Surpasses ExxonMobil in Market Cap*, CLEANTECHNICA (Oct. 5, 2020), https://cleantechnica.com/2020/10/05/another-win-for-clean-energy-nextera-surpasses-exxonmobil-in-market-cap/ [https://perma.cc/SZD8-WWUN].

at at least $1 billion each.[114] And even heavy industrial plants such as steel producers are turning to clean energy for their future needs.[115] In short, we find fossil fuel consumption on the decline and coal companies reducing their coal holdings, another sign of decline.[116] As a social comment, the philanthropic institution that oil built, the Rockefeller Foundation, has announced its decision to divest its $5 billion fossil fuel holdings.[117]

The third driver is technological innovation, particularly innovation generated through government research and development efforts. Although most R&D is performed by the Department of Energy, several states are actively engaged in funding clean technologies to increase energy efficiency such as through improved energy storage[118] or through basic energy audits and funding local community clean energy initiatives.[119] Federal R&D is responsible for funding a wide range of energy technologies, from storage through advanced nuclear reactors[120]

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114. Jonathan Shieber, *Fluence, the Energy Storage Systems Developer, Is Now Worth Over $1 Billion After QIA Investment*, TECH CRUNCH (Dec. 30, 2020, 1:28 PM), https://techcrunch.com/2020/12/30/fluence-the-energy-storage-systems-developer-is-now-worth-over-1-billion-after-qia-investment/ [https://perma.cc/4YS9-ZVCT]; Chris Bryant, *Stanford Scientists Create a Billionaire Factory*, YAHOO! FIN. (Dec. 29, 2020), https://finance.yahoo.com/news/stanford-scientists-create-billionaire-factory-080020831.html [https://perma.cc/Z7QK-VRFP] (discussing a battery company valued at $43 billion).

115. Tim Sylvia, *Another Big Steel Producer Turns to Solar Power*, PV MAG. (Nov. 18, 2020), https://pv-magazine-usa.com/2020/11/18/another-big-steel-producer-turns-to-solar-power/ [https://perma.cc/EEE2-ZVYM].

116. Michael J. Coren, *Even Coal Companies Are Now Divesting from Coal*, QUARTZ (Oct. 1, 2020), https://qz.com/1911300/coal-companies-are-now-divesting-from-coal/ [https://perma.cc/MX7P-87VQ].

117. *The Rockefeller Foundation Commits to Divesting from Fossil Fuels*, ROCKEFELLER FOUND. (Dec. 18, 2020), https://www.rockefellerfoundation.org/news/the-rockefeller-foundation-commits-to-divesting-from-fossil-fuels/ [https://perma.cc/J54A-C7BD].

118. *See, e.g.*, Robert Rapier, *Why Vanadium Flow Batteries May Be the Future of Utility-Scale Energy Storage*, FORBES (Oct. 24, 2020, 6:00 AM), https://www.forbes.com/sites/rrapier/2020/10/24/why-vanadium-flow-batteries-may-be-the-future-of-utility-scale-energy-storage/?sh=89457d723056 [https://perma.cc/2QM3-ZPK3]; Ivan Penn, *Its Electric Grid Under Strain, California Turns to Batteries*, N.Y. TIMES (Sept. 3, 2020), https://www.nytimes.com/2020/09/03/business/energy-environment/california-electricity-blackout-battery.html [https://perma.cc/B4JS-934M]; Jeff McMahon, *Steven Chu: Long-Term Energy Storage Solution Has Been Here All Along*, FORBES (June 24, 2020, 12:00 AM), https://www.forbes.com/sites/jeffmcmahon/2020/06/24/steven-chu-long-term-energy-storage-solution-has-been-here-all-along/?sh=1ea063386607 [https://perma.cc/WWF8-FEKJ].

119. *See, e.g.*, *Find a Program*, N.Y. STATE ENERGY RSCH. & DEV. AUTH., https://www.nyserda.ny.gov/All-Programs [https://perma.cc/J4GZ-V6NB] (last visited Mar. 6, 2021) (listing several programs designed to help New York residents reduce their environmental impact and support clean energy).

120. *See, e.g.*, James Conca, *America Steps Forward to Expand Nuclear Power*, FORBES (Oct. 21, 2020, 9:39 AM), https://www.forbes.com/sites/jamesconca/2020/10/21/america-steps-forward-to-expand-nuclear-power/?sh=6de1cf6272be [https://perma.cc/UEK4-LW7Z]; Adrian Cho, *Department*

and nuclear fusion research.[121] Clean technologies will lead the transition to a decarbonized society[122] even in the industrial sector.[123] A recent analysis from Harvard's Belfer Center emphasizes the need for and role of private sector energy technology companies in spurring innovations so that low-carbon technologies can be deployed at scale.[124] Today, financial advisors are issuing buy orders for clean energy.[125]

The Department of Energy (DOE) runs seventeen national laboratories that are dispersed throughout the United States and operate under a variety of configurations.[126] Historically, most of the research conducted by these laboratories was for defense purposes.[127] Today, defense is still the primary focus for many of these labs; however, energy

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of Energy Picks Two Advanced Nuclear Reactors for Demonstration Projects, SCI. MAG. (Oct. 16, 2020, 12:40 PM), https://www.sciencemag.org/news/2020/10/department-energy-picks-two-advanced-nuclear-reactors-demonstration-projects [https://perma.cc/6PNZ-DTDD]; Associated Press, *U.S. Awards $1.4 Billion for Nuclear Reactors Built by Oregon Company*, OREGONIAN (Oct. 19, 2020), https://www.oregonlive.com/business/2020/10/us-awards-14-billion-for-nuclear-reactors-built-by-oregon-company.html [https://perma.cc/5QRG-8GPZ].

121. *See, e.g.*, *Department of Energy Announces $50 Million for Fusion R&D*, U.S. DEP'T OF ENERGY (Feb. 13, 2020), https://www.energy.gov/articles/department-energy-announces-50-million-fusion-energy-rd [https://perma.cc/AC42-3S7Z]; *see also* Jason Deign, *MIT Validates Science Behind New Nuclear Fusion Reactor Design*, GREENTECH MEDIA (Oct. 20, 2020), https://www.greentechmedia.com/articles/read/mit-validates-science-behind-proposed-cfs-fusion-reactor [https://perma.cc/M7DC-G3MX]; Charles Q. Choi, *Nuclear Fusion Reactor Could Be Here as Soon as 2025*, LIVE SCI. (Oct. 1, 2020), https://www.livescience.com/nuclear-fusion-reactor-sparc-2025.html [https://perma.cc/EJ5E-34A3].

122. *See* Simon Flowers, *Future Energy: The Technologies Shaping the Energy Transition*, WOOD MACKENZIE 3–14 (2020), https://www.woodmac.com/news/the-edge/future-energy-from-the-edge/ [https://perma.cc/X6VE-A6TC]; Henry Fountain, *Compact Nuclear Fusion Is 'Very Likely to Work,' Studies Suggest*, N.Y. TIMES (Sept. 29, 2020), https://www.nytimes.com/2020/09/29/climate/nuclear-fusion-reactor.html?auth=login-google [https://perma.cc/KL2Z-NX69].

123. Chantal Beck, Stephen Hall & Eveline Speelman, *Meeting Big Oil's Decarbonization Challenge*, MCKINSEY Q.: REIMAGINING INDUS. OPERATIONS 5–7 (May 2020), https://www.mckinsey.com/~/media/McKinsey/Business%20Functions/Sustainability/Our%20Insights/Reimagining%20industrial%20operations/Reimagining-industrial-operations-final.pdf [https://perma.cc/D29U-862R].

124. Nicola De Blasio, Shankar Krishnamoorthy, Zul Kapadia, Abigail Mayer, Johanna Schiele & Rees Sweeney-Taylor, *Deploying Energy Innovations at Scale for a Low-Carbon Economy*, BELFER CTR. (Sept. 2020), https://www.belfercenter.org/sites/default/files/2020-09/engie/DeployingEnergyInnovation.pdf [https://perma.cc/4F9P-GEY8]. The paper also emphasizes that private sector innovation strategies must be complemented with: (1) innovative policy and regulatory frameworks, (2) enabling infrastructure, (3) customer input, and (4) new business and public agency partnerships. *Id.* at 4.

125. *See, e.g.*, Veronika Henze, *Energy Transition Investment Hit $500 Billion in 2020—For First Time*, BLOOMBERGNEF (Jan. 19, 2021), https://about.bnef.com/blog/energy-transition-investment-hit-500-billion-in-2020-for-first-time/ [https://perma.cc/7RE5-89GW].

126. Amitai Y. Bin-Nun, Gabriel Chan, Laura Diaz Anadon, Venkatesh Narayanamurti & Sarah Jane Maxted, *The Department of Energy National Laboratories*, BELFER CTR. 5 (Nov. 2017), https://www.belfercenter.org/sites/default/files/files/publication/enrp-stpp-lab-report-final-1.pdf [https://perma.cc/2Z9H-2YLD].

127. *Id.* at 22–23.

innovation is attracting increased government funding.[128]

The key DOE R&D arm is the Advanced Research Projects Agency—Energy (ARPA-E), modeled after the Department of Defense's Defense Advanced Research Projects Agency (DARPA). Since inception, "ARPA-E has provided approximately $2.6 billion in R&D funding for more than 1,000 potentially transformational energy technology projects" by funding small businesses, universities, large corporations, and federal research and development centers as well as nonprofit organizations.[129] ARPA-E operates two significant initiatives.

Energy Innovation Hubs bring together top scientists and engineers from the academy, industry, and government to overcome known barriers to technological innovation and to reduce the time from laboratory innovation to technological development then to commercialization. By way of example, the Joint Center for Energy Storage Research (JCESR) is dedicated to improving energy storage with the goal of having 25% of all electricity consumed in the United States generated from solar and wind by 2025.[130] The United States also operates forty-six Energy Frontier Research Centers (EFRCs) that also consist of partnerships among universities, national laboratories, nonprofit organizations, and for-profit firms.[131] EFRCs have success funding solar panels, lithium batteries, LED lighting, wind turbines, smart grid technologies, appliances, transportation, carbon capture, and innovative nuclear energy technologies.[132]

The final driver, private investment, goes hand-in-hand with government R&D. Government R&D investment occurs along a continuum from basic science and technology through marketing and commercialization. Importantly, along that continuum government and the private sector play different roles. Initially, at the basic science and technology stage, government is heavily, and most often exclusively involved precisely because the private sector does not want to take on the financial risk of failure. By way of example, private pharmaceutical companies are not developing COVID vaccines on their own—they need government backing. Similarly, Elon Musk's Space X initially depended

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128. *Id.*

129. *Our Impact*, ARPA-E, https://arpa-e.energy.gov/about/our-impact [https://perma.cc/5V8C-G36E] (last visited Mar. 15, 2021).

130. *Issue Brief: Energy Storage*, ENV'T & ENERGY STUDY INST. 4 (Aug. 2013), https://www.issuelab.org/resources/15637/15637.pdf [https://perma.cc/FB7Y-YMC9].

131. *DOE Awards $377 Million in Funding for 46 Energy Frontier Research Centers*, U.S. DEP'T OF ENERGY (Aug. 6, 2009), https://www.energy.gov/articles/doe-awards-377-million-funding-46-energy-frontier-research-centers [https://perma.cc/6LGD-PBQG].

132. *From Lab to Market: Examples of Clean Energy R&D*, U.S. DEP'T OF ENERGY, https://www.energy.gov/R%26D [https://perma.cc/78MZ-E2ZB] (last visited Mar. 6, 2021).

on government contracts for its financing before it was able to raise significant private capital.[133]

Along the innovation continuum, government finances basic science and technology research and finances the demonstration projects needed to take a concept off the drawing boards and into the world. At the other end of the continuum, as the innovation has demonstrated its viability, government exits and private sector corporations take over the marketing and commercialization of new technologies and they reap the financial rewards.[134] Again by way of example, Defense Advanced Research Projects Agency (DARPA) developed the technologies for the Internet, as well as GPS systems, and search algorithms, yet Google, eBay, Amazon, Microsoft and any number of other familiar corporate names have the managerial experience, expertise, and profit incentives to literally capitalize on those government innovations. In short, "[a]s an innovation approaches deployment and investment prospects begin to rise, it is typical for private sector involvement to increase and public sector involvement to decrease."[135]

The private sector is eager for clean energy investments. Despite the COVID crisis, the share of global investment in clean energy for the first half of 2020 increased, continuing a years' long trend.[136] These investments are paying off as renewable energy produced more electric power than coal-fired plants in 2020;[137] the private sector, including Bill Gates and Big Oil, are investing in nuclear fusion[138] and small nuclear

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133. *See* Jacob Silverman, *Elon Musk's Big Government Grift*, NEW REPUBLIC (Dec. 9, 2020), https://newrepublic.com/article/160500/elon-musks-big-government-grift [https://perma.cc/68T5-CUKA].

134. *See generally* De Blasio et al., *supra* note 124 (discussing lessons learned from the private sector in transitioning to a low-carbon future).

135. Albert C. Lin, Lessons from the Past for Assessing Energy Technologies for the Future, 61 UCLA L. REV. 1814, 1819 (2014).

136. *World Energy Investment 2020*, INT'L ENERGY AGENCY 16–17 (May 2020), https://webstore.iea.org/download/ direct/3003 [https://perma.cc/SB8C-RE4X].

137. Patricia Hutchins, *U.S. Electricity Generation from Renewables Surpassed Coal in April*, U.S. ENERGY INFO. ADMIN. (Jan. 2, 2020), https://www.eia.gov/todayinenergy/detail.php?id=42336 [https://perma.cc/7KJY-DHGL]; Oliver Milman, *Renewables Surpass Coal in US Energy Generation for First Time in 130 Years*, GUARDIAN (June 3, 2020, 6:15 AM), https://www.theguardian.com/environment/2020/jun/03/renewables-surpass-coal-us-energy-generation-130-years [https://perma.cc/U2CN-ECNY]; Steve Hanley, *Renewables Provide 100% New US Electricity Capacity in April, Oil Companies Shedding Jobs, Investment Community Remains Oblivious*, CLEANTECHNICA (June 9, 2020), https://cleantechnica.com/2020/06/09/renewables-provide-all-new-us-electricity-capacity-in-april-oil-companies-shedding-jobs-but-investment-community-remains-oblivious/ [https://perma.cc/G5VY-E8MX].

138. Jonathan Shieber, *With $84 Million in New Cash, Commonwealth Fusion Is on Track for a Demonstration Fusion Reactor by 2025*, TECHCRUNCH (May 26, 2020, 8:14 PM), https://techcrunch.com/2020/05/26/with-84-million-in-new-cash-commonwealth-fusion-is-on-track-

reactors that can store power and help balance the grid;[139] solar and wind dominate the new generation;[140] and as renewable stocks outperform fossil fuels, financial advisors are recommending buy orders for renewables.[141]

Clearly, we are in the midst of an energy transition,[142] and yet, to date, both the industry and its regulators have been pulled in two directions. The path of least resistance is to hew to the traditional model as described above. This path may appear to be less costly now; it will not be so in the near future. The smarter path is to transition to a clean energy economy. The electric sector, as described in the next two sections, is caught going in both directions. Electric utilities are following the traditional model with the help and support of federal and state regulators. At the same time, utilities and their regulators are experimenting with new business models and new regulations to capture the advantages of clean energy technologies. Can the industry fully engage a Con III agenda? In the next

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for-a-demonstration-fusion-reactor-by-2025/ [https://perma.cc/3K8G-ZDFE]; Charles Kennedy, *Will America Win the Race for Nuclear Fusion?*, OILPRICE (June 1, 2020, 5:00 PM), https://oilprice.com/Alternative-Energy/Nuclear-Power/Will-America-Win-The-Race-For-Nuclear-Fusion.html [https://perma.cc/AZC4-U999]; Andrew Lee, *Bill Gates-Backed Nuclear Fusion Pioneer: 'We Can Fill the Gaps Left by Wind and Solar'*, RECHARGE (Oct. 7, 2020, 7:55 PM), https://www.rechargenews.com/transition/bill-gates-backed-nuclear-fusion-pioneer-we-can-fill-the-gaps-left-by-wind-and-solar/2-1-887576 [https://perma.cc/3FPR-E9D6]; Andrew Lee, *Oil Giant Joins Bill Gates-Backed Nuclear Fusion Plan for 'Game-Changing Zero-Carbon Energy'*, RECHARGE (May 29, 2020, 5:58 PM), https://www.rechargenews.com/transition/oil-giant-joins-bill-gates-backed-nuclear-fusion-plan-for-game-changing-zero-carbon-energy/2-1-817056 [https://perma.cc/JKR7-8R8E]; Choi, *supra* note 121.

139. Timothy Gardner, *Bill Gates' Nuclear Venture Plans Reactor to Complement Solar, Wind Power Boom*, REUTERS (Aug. 27, 2020, 2:08 PM), https://www.reuters.com/article/us-usa-nuclearpower-terrapower-idUKKBN25N2U8?edition-redirect=uk [https://perma.cc/CS2W-7N97].

140. Ivan Penn, *The Next Energy Battle: Renewables vs. Natural Gas*, N.Y. TIMES (July 6, 2020), https://www.nytimes.com/2020/07/06/business/energy-environment/renewable-energy-natural-gas.html?auth=login-google [https://perma.cc/4LT4-LGCL].

141. *See* Frank Holmes, *Time to Overweight Renewable Energy*, FORBES (June 11, 2020, 4:24 PM), https://www.forbes.com/sites/greatspeculations/2020/06/11/time-to-overweight-renewable-energy/?sh=13b9e0261a3b [https://perma.cc/3UUH-AKR8]; Pippa Stevens, *Alternative Energy Stocks Are on a Tear and There's More Upside Ahead, Says JPMorgan*, CNBC (Oct. 25, 2020, 6:39 AM), https://www.cnbc.com/2020/10/23/alternative-energy-stocks-are-on-a-tear-and-theres-more-upside-ahead-says-jpmorgan.html [https://perma.cc/2KNU-FF7Z]; Stanley Reed, *With Much of the World's Economy Slowed Down, Green Energy Powers On*, N.Y. TIMES (June 30, 2020), https://www.nytimes.com/2020/06/30/business/renewable-energy.html [https://perma.cc/44GC-TWAR]; Alex Kimani, *Why 2021 Will Be a Banner Year for Renewable Energy in the U.S.*, OILPRICE (Nov. 18, 2020, 2:00 PM), https://oilprice.com/Energy/Energy-General/Why-2021-Will-Be-A-Banner-Year-For-Renewable-Energy-In-The-US.html [https://perma.cc/X3SP-7R3X]; Christopher Flavelle, *Climate Change Poses 'Systemic Threat' to the Economy, Big Investors Warn*, N.Y. TIMES (July 21, 2020), https://www.nytimes.com/2020/07/21/climate/investors-climate-threat-regulators.html [https://perma.cc/E6DU-4UDH]; Maxx Chatsko, *The Next Big Obstacle in Renewable Energy Is a Big Opportunity for Investors*, MOTLEY FOOL (June 3, 2020, 8:11 AM), https://www.fool.com/investing/2020/06/03/the-next-big-obstacle-in-renewable-energy-is-a-big.aspx [https://perma.cc/7P9K-DJUE].

142. *See* THOMAS O. MCGARITY, POLLUTION, POLITICS, AND POWER: THE STRUGGLE FOR SUSTAINABLE ELECTRICITY 288–302, 325–68 (2019).

section, the article examines the persistence of the traditional energy paradigm for regulators and regulatees. The following Part describes the movement to a Con III clean energy transition.

IV. THE PERSISTENCE OF THE CON II IN THE ELECTRIC INDUSTRY

The hallmark of Con II is the intentional interrelatedness of the private sector and government in the guise of the Corporate State. The investor-owned utility (IOU) is a paradigm example of Con II. While the IOU could have operated in the private sector without government support, that support was crucial to its rapid and productive development. The IOU has been, and still largely is, entrenched in society. For over a century, the IOU has dominated the electricity industry even in the face of its declining value and in the face of new necessities, climate change being the most pronounced. IOU dominance is rooted in the understandable propensity to protect and recover its sunk costs as well as its reliance on a path dependency that believes that what worked yesterday, will work today, and what works today, will work tomorrow. In short, there is an IOU culture that inhabits the utility business and inhabits its state and federal regulators. There is, simply, a reluctance to change from one consciousness to another, a reluctance to change from Con II to Con III.

Nevertheless, change is a comin' as the IOUs and their regulators are caught in a schizophrenia about their futures. That change is explained in this section by first looking at the persistence of IOU culture and the evidence of its reluctance to change. The next section points to signs that both the industry and its regulators are exploring a new energy industry culture, one that is more attuned to a clean energy transition.

A. The Behavior of IOUs

The electricity industry has sunk billions of dollars of capital investment in plant and equipment and has done so in reliance on a regulatory scheme, primarily through cost-of-service (COS) ratemaking, that has rewarded IOUs for that investment.[143] Over half a century ago, economists warned that COS ratemaking would result in overbuilding plants.[144] And so it did. Starting roughly in the mid-1960s, plants were overbuilt, excess capacity was constructed, and, in the early 1970s, prices

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143. *See, e.g.*, SIDNEY A. SHAPIRO & JOSEPH P. TOMAIN, REGULATORY LAW AND POLICY: CASES AND MATERIALS 197–205 (4th ed. 2020).

144. *See* Harvey Averch & Leland L. Johnson, *Behavior of the Firm Under Regulatory Constraint*, 52 AM. ECON. REV. 1052, 1062–63 (1962).

began to rise[145] as IOUs were able to recoup their excess costs through the COS rate formula.

COS ratemaking, in effect, makes ratepayers the guarantors of IOU investments. Even during the nuclear power meltdown in the 1970s and 1980s, billions of dollars due to cost overruns, plant cancellations, and conversions of nuclear plants to coal plants were imposed on ratepayers.[146] Today, the award for COS chutzpah must go to Pacific Gas & Electric.

In January 2019, California's largest electric utility, Pacific Gas & Electric (PG&E), filed for bankruptcy claiming liabilities of over $51 billion.[147] The utility argued that its financial position had destabilized due to a heavy debt load as well as wildfire-related liabilities.[148] California regulators, though, argued that the utility's debt problem was of their own making.[149] PG&E did not maintain an adequate and resilient infrastructure, resulting in devastating wildfires in 2018.

The wildfires were responsible for the complete destruction of California towns and villages, destroying over 19,000 homes and killing eighty-six people.[150] Damages have been estimated to exceed $30 billion and the utility entered into a $13.5 billion settlement with wildfire victims.[151] On top of the civil liabilities, the utility also pled guilty to eighty-four criminal charges of involuntary manslaughter that resulted in the maximum fine of $3.49 million.[152]

This disaster has been termed "the first climate change bankruptcy" in the world.[153] The human loss is incalculable. Despite admissions of

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145. *November 2020 Monthly Energy Review*, *supra* note 85, at 16; LEONARD S. HYMAN, ANDREW S. HYMAN & ROBERT C. HYMAN, AMERICA'S ELECTRIC UTILITIES: PAST, PRESENT AND FUTURE 163–78 (8th ed. 2005).

146. *See* TOMAIN, NUCLEAR POWER TRANSFORMATION, *supra* note 67, at 136.

147. George Avalos, *PG&E Pleads Guilty to Criminal Charges in Fatal 2018 Camp Fire in Butte County*, MERCURY NEWS (Mar. 23, 2020, 3:15 PM), https://www.mercurynews.com/2020/03/23/pge-pleads-guilty-criminal-charges-fatal-2018-camp-fire-butte-county-wildfire/ [https://perma.cc/YA5X-WAHD].

148. J.D. Morris, *Fire Victims Seek Assurances on PG&E's $13.5 Billion Bankruptcy Deal*, S.F. CHRON. (Apr. 6, 2020, 6:57 PM), https://www.sfchronicle.com/business/article/PG-E-Fire-victims-shouldn-t-vote-on-bankruptcy-15182078.php [https://perma.cc/EWS9-TSNA].

149. *Id.*

150. Vanessa Romo, *PG&E Pleads Guilty On 2018 California Camp Fire: 'Our Equipment Started That Fire'*, NPR (June 16, 2020, 11:09 PM), https://www.npr.org/2020/06/16/879008760/pg-e-pleads-guilty-on-2018-california-camp-fire-our-equipment-started-that-fire [https://perma.cc/TBW2-TW8P].

151. Morris, *supra* note 148.

152. Avalos, *PG&E Pleads Guilty to Criminal Charges in Fatal 2018 Camp Fire in Butte County*, supra note 147.

153. John J. MacWilliams, Sarah La Monaca & James Kobus, *PG&E: Market and Policy Perspectives on the First Climate Change Bankruptcy*, COLUM. UNIV. CTR. ON GLOB. ENERGY POL'Y 8 (Aug. 15, 2019), https://www.energypolicy.columbia.edu/research/report/pge-market-and-policy-perspectives-first-climate-change-bankruptcy [https://perma.cc/Y7VC-DB8X].

criminal and civil liability, PG&E attempted, in COS fashion, to finance future wildfire liabilities by establishing a $3 billion fund through a surcharge on ratepayers.[154] That gambit was rejected by the California legislature.[155] Nevertheless, the utility will be able to bill customers for upgrades intended to protect against future wildfire damages.[156]

COS ratemaking encouraged over builds, which increased electricity rates. Consumers, particularly large industrial purchasers, were more than wary of price rises and sought regulatory relief. With the passage of the National Energy Act of 1978, regulators began experimenting with new rate designs to make electricity rates more responsive to market conditions and to move away from COS ratemaking.[157] We are still experimenting with rate reforms although many utilities still cling to COS for financial protection.[158] Even though IOUs are trying to reform, as discussed in the next section, their addiction to protected rates and traditional regulation continues. So too do IOU efforts to subvert clean energy technological and regulatory innovations.

We can start with rooftop solar as an example of a technological and regulatory innovation being fought by IOUs. Rooftop solar is a distributed energy resource (DER). Instead of acting as a large, centralized power source, DERs are smaller scale and closer to end users. The homeowner who installs solar panels on their rooftop is a DER. The advantages of DER are that they: (1) are more geared to the end users' needs; (2) reduce the need for high-voltage transmission and the need for local distribution lines; and (3) reduce the need for traditional IOU large plant construction.[159] In short, DERs compete with IOUs.

Nevertheless, the advantages of DERs are very attractive to regulators and they encourage their deployment. Today, as permitted by the Energy Policy Act of 2005,[160] over 40 states have some form of net metering program in which a DER owner can either sell self-generated electric back

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154. George Avalos, *Legislative Plan to Raise PG&E Monthly Bills to Fight Wildfires Is Killed in Sacramento*, MERCURY NEWS (Sept. 1, 2020, 10:38 AM), https://www.mercurynews.com/2020/09/01/pge-legislative-scheme-monthly-utility-bill-for-wildfire/ [https://perma.cc/RUL6-C4PZ].

155. *Id.*

156. George Avalos, *PG&E Bills to Rise Amid Electricity Upgrades to Combat Wildfires*, MERCURY NEWS (Jan. 1, 2021, 11:57 AM), https://www.mercurynews.com/2020/12/31/pge-bills-rise-january-2021-electricity-system-upgrades-gas-wildfire/ [https://perma.cc/8EC3-JBRZ].

157. SHAPIRO & TOMAIN, *supra* note 143, at 211–16; *see also* Public Utility Regulatory Policies Act of 1978 (PURPA), 16 U.S.C. §§ 2601–45. PURPA was upheld in FERC v. Mississippi, 456 U.S. 742, 769–70 (1982).

158. JOSEPH P. TOMAIN, CLEAN POWER POLITICS: THE DEMOCRATIZATION OF ENERGY 168 (2017).

159. *See id.* at 131–56.

160. Energy Policy Act of 2005, 16 U.S.C. § 2621(d).

to the local IOU or receive a credit on their electricity bill.[161]

IOUs did not embrace the competition.[162] Instead, they argued that DERs violated their service territories[163] and that DERs' proliferation was IOUs' death spiral because they were taking away utility customers.[164] However, just as Mark Twain once quipped, the reports of their death were greatly exaggerated.[165] IOUs continue to generate the vast majority of US electricity,[166] yet they continue to fight net metering.[167]

IOUs have been doing business for over a century and their large-scale business methods are hard to abandon. Even as electric utilities switch from coal to natural gas, and as utilities recognize the need to decarbonize, some IOUs remain resistant to moving away from fossil fuels and resistant to clean renewable energy. Further, even though the U.S. Energy Information Administration reports that solar and wind will add more new power generation than even natural gas,[168] IOUs plan on investing billions of dollars in new natural gas generation projects as some projections

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161. *See, e.g.*, *Programs*, DATABASE OF STATE INCENTIVES FOR RENEWABLES & EFFICIENCY, https://programs.dsireusa.org/system/program [https://perma.cc/VMA5-6UKX] (last visited Mar. 7, 2021).

162. Richard L. Revesz & Burcin Unel, *Managing the Future of the Electricity Grid: Distributed Generation and Net Metering*, 41 HARV. ENV'T L. REV. 43, 56–57 (2017).

163. *See, e.g.*, SZ Enters., LLC v. Iowa Utils. Bd., 850 N.W.2d 441, 444 (Iowa 2014) (rejecting IOU argument that third party financing rooftop solar violated their service territory).

164. *See, e.g.*, David B. Raskin, *The Regulatory Challenge of Distributed Generation*, 4 HARV. BUS. L. REV. ONLINE 38, 40–41 (2013); Peter Kind, *Disruptive Challenges: Financial Implications and Strategic Responses to a Changing Retail Electric Business*, EDISON ELEC. INST. 3–4 (Jan. 2013), https://www.ourenergypolicy.org/wp-content/uploads/2013/09/disruptivechallenges-1.pdf [https://perma.cc/CV59-5QZE].

165. *See, e.g.*, Kenneth W. Costello & Ross C. Hemphill, *Electric Utilities' 'Death Spiral': Hyperbole or Reality?*, 27 ELEC. J. 7, 8 (2014) (showing how utilities and their regulators took action to avoid financial decline); Elisabeth Graffy & Steven Kihm, *Does Disruptive Competition Mean A Death Spiral for Electric Utilities?*, 35 ENERGY L.J. 1, 44 (2014) (arguing that utilities are not in a certain death spiral due to their ability to adapt to rapidly changing conditions).

166. *See What Is U.S. Electricity Generation by Energy Source?*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/tools/faqs/faq.php?id=427&t=3#:~:text=In%202019%2C%20about%204%2C127%20billion,facilities%20in%20the%20United%20States [https://perma.cc/K5W7-THUL] (last visited Mar. 7, 2021).

167. Eric Wesoff, *Morning Brief: Utilities Battle Net Metering in Michigan, Indiana and California, Gas Industry Battles Electrification Everywhere*, PV MAG. (Aug. 31, 2020), https://pv-magazine-usa.com/2020/08/31/morning-brief-utilities-battle-net-metering-in-michigan-and-indiana-gas-industry-fights-electrification/ [https://perma.cc/8GFQ-TGRH]; Michelle Lewis, *Florida Utilities Want to Gut Solar. Here's Why*, ELECTREK (Sept. 16, 2020, 12:24 PM), https://electrek.co/2020/09/16/florida-utilities-want-to-gut-solar-heres-why/ [https://perma.cc/6BEE-KS9T]; Sanya Carley & Lincoln L. Davies, *Nevada's New Metering Experience: The Making of a Policy Eclipse?*, BROOKINGS MOUNTAIN W. 3–7 (Nov. 2016), https://digitalscholarship.unlv.edu/cgi/viewcontent.cgi?article=1042&context=brookings_pubs [https://perma.cc/Q7EH-S9DR].

168. Suparna Ray, *New Electric Generating Capacity in 2020 Will Come Primarily from Wind and Solar*, U.S. ENERGY INFO. ADMIN. (Jan. 14, 2020), https://www.eia.gov/todayinenergy/detail.php?id=42495 [https://perma.cc/6UZC-8XCM].

indicate an increasing reliance on that fossil fuel resource.[169] By way of example, a recent study of three IOUs concluded that even after announcing decarbonization goals and coal plant retirements, instead of moving aggressively into renewable resources, these IOUs undertook minimal actions to decarbonize, that none of them would reach their 2050 greenhouse gas reduction goals, their planned investments of natural gas plants will outlast the climate commitments, and that the companies are undertaking actions to discourage competition from renewable resources.[170]

In addition to using regular legal processes to change laws in their favor, IOUs have also resorted to extralegal methods. The most notorious example may well be a $60 million bribery scheme by FirstEnergy in Ohio that resulted in the arrest of legislators and the resignation of the Ohio Public Utilities Commission Chair.[171] The $60 million was intended to pass legislation that would have two favorable effects on the utility. First, there would be a subsidy for coal and nuclear plants and, second, subsidies for renewable resources would be reduced.[172] Both measures, it should be noted, would raise electricity rates to consumers.[173] The legislation passed into law. Since the bribery was revealed there have been calls for its repeal but as of this writing the repeal has been unsuccessful.[174]

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169. Alexandra Tempus, *Electric Utilities Called Out for Slow-Walking Switch from Natural Gas to Clean Renewable Energy*, SALON (June 6, 2020, 2:02 AM), https://www.salon.com/2020/06/05/electric-utilities-called-out-for-slow-walking-switch-from-natural-gas-to-clean-renewable-energy_partner/ [https://perma.cc/3CED-7WPL].

170. Bruce Biewald, Devi Glick, Jamie Hall, Caitlin Odom, Cheryl Roberto & Rachel Wilson, *Investing in Failure: How Large Power Companies Are Undermining Their Decarbonization Targets*, SYNAPSE ENERGY ECON. 8–35 (Mar. 9, 2020), https://static1.squarespace.com/static/5d4df99c531b6d0001b48264/t/5e640e8147d5f50a1ec2e717/ 1583615623480/Investing-in-Failure-20-005.pdf [https://perma.cc/7HVH-MLUD].

171. Brendan O'Brien & Timothy Gardner, *Ohio House Speaker, 4 Others Charged in $60 Million Nuclear Bailout Bribery Case*, REUTERS (July 21, 2020, 12:31 PM), https://www.reuters.com/article/us-ohio-corruption/ohio-house-speaker-4-others-charged-in-60-million-nuclear-bailout-bribery-case-idUSKCN24M2KI [https://perma.cc/AH4W-8EX5]; John Funk, *Ohio PUC Chairman Samuel Randazzo Abruptly Resigns Four Days after FBI Searched His Home*, UTIL. DIVE (Nov. 21, 2020), https://www.utilitydive.com/news/ohio-puc-chairman-samuel-randazzo-abruptly-resigns-four-days-after-fbi-sear/589494/ [https://perma.cc/5LYE-RXGZ]; Mark Gillispie & Julie Carr Smyth, *Governor Was Warned of Would-Be Regulator's Ties to Utility*, AP NEWS (Dec. 10, 2020), https://apnews.com/article/ohio-columbus-utilities-mike-dewine-only-on-ap-c054437202859db6d046087845b99126 [https://perma.cc/J7A7-G8SS].

172. John Funk, *Top Ohio Lawmaker Charged with Accepting $61M Bribe in Scheme to Pass Nuclear Bailout*, UTIL. DIVE (July 21, 2020), https://www.utilitydive.com/news/top-ohio-lawmaker-charged-with-accepting-61m-bribe-in-scheme-to-pass-nucle/582055/ [https://perma.cc/FQ2E-Z3L4].

173. *Id.*

174. Thomas Suddes, Opinion, *HB 6 Stall Reveals How Ohio Politics Is Really Just About Maintaining the Status Quo: Thomas Suddes*, CLEVELAND.COM (Nov. 22, 2020), https://www.cleveland.com/opinion/2020/11/hb-6-stall-reveals-how-ohio-politics-is-really-just-abou

Bribery, though, takes many forms. Some bribery occurs with direct cash payments to politicians or their campaigns. Softer, but no less illegal forms of bribery, consist of charitable contributions used to influence policy, deceptively promote referenda, provide jobs and arrange vendor contracts with elected officials, and outright lies and deceptions regarding the costs of new nuclear plants among other transgressions.[175]

B. The Behavior of Regulators

The energy industry in general, and the electric industry in particular, do not operate autonomously in unregulated markets. Instead, both are highly regulated and, consequently, the policy preferences of their regulators affect individual firm behavior. To the extent that utilities continued to support a traditional energy path, they were aided and abetted by state and federal regulators. This subsection discusses how federal regulators continue to adhere to the old model and, consequently, slow down the clean energy transition. To start, here is a brief overview of the Trump administration's energy and environmental agenda. Quite simply, the administration has done what it could to forestall the transition.

Both on the campaign trail and in the early days of its administration, the Trump team announced that it would withdraw from the Paris Climate agreement, reverse Obama's Clean Power Plan, and do what it could to ignore climate change, even to the point of removing the phrase from government websites.[176] The administration even stepped into the work of its own national laboratories to squelch studies that could accelerate the connection of solar and wind power to the national grid and thus reduce carbon emissions.[177] Ironically, the administration failed to gut its climate change assessment that warned about the high cost of ignoring climate change.[178] Further, the administration has literally given away public

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t-maintaining-the-status-quo-thomas-suddes.html [https://perma.cc/9E37-QVRA]; Jessie Balmert, *Ohio Lawmakers Do Nothing on Scandal-Tainted House Bill 6*, CIN. ENQUIRER (Dec. 22, 2020, 8:49 PM), https://www.cincinnati.com/story/news/politics/2020/12/22/ohio-lawmakers-do-nothing-scandal-tainted-house-bill-6/4005784001/ [https://perma.cc/EY28-7RC9].

175. *See* Matt Kasper, *FirstEnergy Scandal Is Latest Example of Utility Corruption, Deceit*, ENERGY & POL'Y INST. (July 23, 2020), https://www.energyandpolicy.org/utility-corruption/ [https://perma.cc/SH54-RFVK].

176. James Rainey, *The Trump Administration Scrubs Climate Change Info from Websites. These Two Have Survived*., NBC NEWS (July 17, 2018, 3:29 AM), https://www.nbcnews.com/news/us-news/two-government-websites-climate-change-survive-trump-era-n891806 [https://perma.cc/KY68-T4ZY].

177. Peter Fairley, *How a Plan to Save the Power System Disappeared*, ATL. (Aug. 20, 2020), https://www.theatlantic.com/politics/archive/2020/08/how-trump-appointees-short-circuited-grid-modernization/615433/ [https://perma.cc/SW2C-LN8H].

178. U.S. GLOB. CHANGE RSCH. PROGRAM, CLIMATE SCIENCE SPECIAL REPORT: FOURTH NAT'L

lands to fossil fuel developers by awarding non-competitive leases,[179] by undercharging for royalties,[180] and by opening up sensitive ecologies such as the Alaskan Arctic National Wildlife Refuge to fossil fuel exploration.[181] Adding insult to injury, oil and gas companies were slated to receive nearly $6 billion in COVID financial relief.[182]

Notoriously, the administration had attempted to reverse over 100 EPA rules.[183] Fortunately, when challenged in court, most of those efforts were overturned.[184] Nevertheless, the environmental reversals have caused damage including an estimated increase of 1.8 billion metric tons of greenhouse gases in the atmosphere by 2035;[185] prolonging the life of coal plants that would otherwise be retired;[186] and greatly discounting the social cost of carbon,[187] all in the service of climate denial.

CLIMATE ASSESSMENT, 10–11 (2017), https://science2017.globalchange.gov/downloads/CSSR2017_FullReport.pdf [https://perma.cc/4DKT-69KC]; Christopher Flavelle, *How Trump Tried, But Largely Failed, to Derail America's Top Climate Report*, N.Y. TIMES (Jan. 1, 2021), https://www.nytimes.com/2021/01/01/climate/trump-national-climate-assessment.html [https://perma.cc/2ALD-FBJ7].

179. Kate Kelly, Jenny Rowland-Shea & Nicole Gentile, *Backroom Deals: The Hidden World of Noncompetitive Oil and Gas Leasing*, CTR. FOR AM. PROGRESS (May 23, 2019, 12:01 AM), https://www.americanprogress.org/issues/green/reports/2019/05/23/470140/backroom-deals/ [https://perma.cc/6SJA-KZV9].

180. Tom Udall & Charles Grassley, Opinion, *Oil and Gas Companies Keep Taking from Taxpayers. And Taking.*, N.Y. TIMES (Dec. 2, 2020), https://www.nytimes.com/2020/12/02/opinion/oil-gas-companies-public-land.html [https://perma.cc/N4ME-L7HJ].

181. Juliet Eilperin, *Trump Officials Rush to Auction Off Rights to Arctic National Wildlife Refuge Before Biden Can Block It*, WASH. POST (Nov. 16, 2020, 10:29 AM), https://www.washingtonpost.com/climate-environment/2020/11/16/arctic-refuge-drilling-trump/ [https://perma.cc/RXZ6-YD2T].

182. Sarah Bloom Raskin, Opinion, *Why Is the Fed Spending So Much Money on a Dying Industry?*, N.Y. TIMES (May 28, 2020), https://www.nytimes.com/2020/05/28/opinion/fed-fossil-fuels.html [https://perma.cc/M83L-B9WP].

183. Nadja Popovich, Livia Albeck-Ripka & Kendra Pierre-Louis, *The Trump Administration Rolled Back More Than 100 Environmental Rules. Here's the Full List.*, N.Y. TIMES (Jan. 20, 2021), https://www.nytimes.com/interactive/2020/climate/trump-environment-rollbacks-list.html [https://perma.cc/6X67-MWPR].

184. *Three Years Battling the Trump Administration's Attacks on Our Health and Environment*, EARTH JUST. (Jan. 17, 2020), https://earthjustice.org/features/inside-trump-administration-public-health-environment [https://perma.cc/3LHS-3UHF]; *Roundup: Trump-Era Agency Policy in the Courts*, N.Y.U. INST. FOR POL'Y INTEGRITY, https://policyintegrity.org/trump-court-roundup [https://perma.cc/LE4J-RWH5] (last visited Mar. 7, 2021).

185. Hannah Pitt, Kate Larsen & Maggie Young, *The Undoing of US Climate Policy: The Emissions Impact of Trump-Era Rollbacks*, RHODIUM GRP. (Sept. 17, 2020), https://rhg.com/research/the-rollback-of-us-climate-policy/ [https://perma.cc/5HUA-8DHM].

186. *See* John Timmer, *EPA Issues New Rules on Coal Plant Pollution*, ARS TECHNICA (Sept. 1, 2020, 6:13 PM), https://arstechnica.com/science/2020/09/epa-issues-new-rules-on-coal-plant-pollution/ [https://perma.cc/G58F-DF9Z].

187. Lisa Friedman, *G.A.O.: Trump Boosts Deregulation by Undervaluing Cost of Climate Change*, N.Y. TIMES (July 14, 2020), https://www.nytimes.com/2020/07/14/climate/trump-climate-change-carbon-cost.html [https://perma.cc/EJU6-SEA7].

As a direct consequence of ignoring science,[188] reversing environmental protections, and hamstringing agencies, the administration created such a hostile environment that over 1,500 scientists have left government service[189] and over 85% of the top science jobs in the administration went unfilled.[190] Combined, these efforts, and others, have taken the federal government out of a leadership role for an energy transition by literally reversing course.

Against this background, the key federal energy regulator, FERC, must continue to oversee the interstate natural gas and electricity industries. The electricity industry has been changing dramatically for decades, largely driven by PURPA. PURPA's architects were aware of the prevailing imperative push for energy independence. They were also aware of practices in the electricity industry that were incompatible with that imperative. More particularly, high-priced electricity was partially the result of COS ratemaking, especially volumetric rates and the pro-consumption incentive provided by declining block rate designs. The industry had overbuilt, electricity was becoming increasingly costly even before the meltdown of the nuclear industry after the incident at TMI, and old ways of doing business were being questioned. If the industry had overbuilt, then economic logic tells us that cheaper electricity should be available. And it was. PURPA, then, can be understood in at least two ways. First, as part of the energy independence movement. Second, and more importantly, it was a response to the market and regulatory failure of the traditional way of regulating the electric industry.

In response to that failure, PURPA (1) encouraged states to move away from declining block ratemaking because it encouraged consumption; (2) promoted marginal cost pricing because it was more

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188. *See, e.g.*, Sean Reilly, Kelsey Brugger, Maxine Joselow & Ariel Wittenberg, *EPA Science Advisers Slammed the Agency for Ignoring Science. Here Is What They Said*, SCI. MAG. (Jan. 2, 2020, 2:50 PM), https://www.sciencemag.org/news/2020/01/epa-science-advisers-slammed-agency-ignoring-science-here-what-they-said [https://perma.cc/8SR9-VGMG]; Gretchen Goldman, *The EPA Is Set to Ignore Science and Risk Your Health on Particulate Pollution: Your Voice Needed*, UNION OF CONCERNED SCIENTISTS (May 14, 2020, 12:12 PM), https://blog.ucsusa.org/gretchen-goldman/the-epa-is-set-to-ignore-science-and-risk-your-health-on-particulate-pollution-your-voice-needed [https://perma.cc/8P5D-J8RL]; Coral Davenport & Lisa Friedman, *Science Panel Staffed with Trump Appointees Says E.P.A. Rollbacks Lack Scientific Rigor*, N.Y. TIMES (Dec. 31, 2019), https://www.nytimes.com/2019/12/31/climate/epa-science-panel-trump.html [https://perma.cc/FJ32-RSKM].

189. Lisa Winter, *Science Positions Increasingly Abandoned Under Trump*, SCIENTIST (Jan. 24, 2020), https://www.the-scientist.com/news-opinion/science-positions-increasingly-abandoned-under-trump-67008 [https://perma.cc/V6KP-P8F8].

190. Chris Mooney, *85 Percent of the Top Science Jobs in Trump's Government Don't Even Have a Nominee*, WASH. POST (June 6, 2017, 9:31 AM), https://www.washingtonpost.com/news/energy-environment/wp/2017/06/06/trump-has-filled-just-15-percent-of-the-governments-top-science-jobs/ [https://perma.cc/V286-Z4FW].

efficient and generated more accurate price signals;[191] (3) encouraged integrated resource planning; and (4) stimulated independent power production by promoting co-generation and small power generation (called QFs) as generation alternatives to traditional vertically-integrated IOUs. To the surprise of many, there were more willing investors than anticipated who invested in and constructed QFs, sometimes derisively referred to as "PURPA machines."[192] PURPA machines were possible as technological improvements were made in gas-fired generation, which was cleaner, more efficient, and cheaper to build units.[193] It turned out that the electricity industry was more competitive than once assumed and PURPA opened the door to that competition.

PURPA not only discovered competition in the electric industry, it encouraged and effectively subsidized it, and it imposed the subsidy on traditional IOUs, thus forcing them to rethink their business models. In this sense, PURPA gave birth to the utility of the future as discussed in the next Part.

In addition to QFs, the Energy Policy Act of 1992 facilitated the development of a more competitive environment by creating a category of exempt wholesale generators (EWGs) (also known as independent power producers) that were exempt from the now defunct Public Utility Holding Company Act of 1935.[194] Relief from regulatory oversight both reduced regulatory costs and encouraged market entry of non-traditional generators. As a result, the electricity sector saw the introduction of several new competitors: QFs, EWGs, merchant generators, and independent power producers. Simply, more actors meant more competition, more consumer choice and, hopefully, lower prices. IOUs were no longer the only game in town; they had cheaper competitors.

Given increased competition, traditional IOUs feared the loss of market share and in 2019 FERC revisited PURPA with the intent of its modernization. From the IOU perspective, PURPA had accomplished its goals and needed to be revised. IOUs argued that: (1) non-utility generator, QFs and EWGs, "gamed the system" and needed to be checked; (2) renewable energy prices had not benefitted consumers; and (3) market forces should play more of a role in setting energy prices. FERC Order

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191. Federal intrusion into state PUC ratemaking was upheld as constitutional in FERC v. Mississippi, 456 U.S. 742, 769–70 (1982).

192. LINCOLN L. DAVIES & JOSEPH P. TOMAIN, ENERGY LAW IN THE UNITED STATES OF AMERICA 73 (2015).

193. *Id.*

194. 15 U.S.C. §§ 79b(a)(3), 79-z5a(e) (repealed 2005); *see also* Jeffrey D. Watkiss & Douglas W. Smith, *The Energy Policy Act of 1992—A Watershed for Competition in the Wholesale Market*, 10 YALE J. ON REGUL. 447, 467 nn.85–86 (1993).

No. 872[195] addressed these concerns and largely supported the IOU position[196] to the detriment of renewable resource facilities.[197] PURPA modernization, then, continued the old ways and supported the dominant energy model.

There are, however, three big lessons to be learned from PURPA. First, the electricity industry is more competitive than previously believed. Second and relatedly, traditional utility regulation had run its course. And third and also related, the traditional IOU business model has served its purpose. The traditional model helped the industry to expand in scale and scope. Scale-wise, utilities became larger and more technologically sophisticated, especially with nuclear power, until those technologies reached their plateau. As a matter of scope, the industry not only expanded nationwide, but it also provided universal service even to the most remote outposts in the country.

In addition to its PURPA modernization, FERC continues to adhere to traditional forms of regulations that advantage incumbents to the disadvantage of new entrants such as renewable resources and energy efficiency. Professor Joshua Macey identifies three regulations that he labels "zombie energy laws" that have outlived their useful lives yet continue to support incumbent IOU by (1) continuing to protect cost recovery of vertically-integrated IOUs; (2) favoring incumbents, and not renewable resource owners, in certificate of public convenience and necessity proceedings; and (3) restrictively using the filed rate doctrine in a way that prevents efficient rates from quickly taking effect.[198] And in another analysis, (4) FERC regulations continuing the use of COS that effectively subsidizes incumbents.[199] The application of these zombie

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195. Qualifying Facility Rates and Requirements, Implementation Issues Under the Public Utility Regulatory Policies Act of 1978, 85 Fed. Reg. 86656 (Dec. 30, 2020) (to be codified at 18 C.F.R. pt. 292).

196. Shortly after Order No. 872, another order on the PURPA proposal solidified this position. *See* Jean Haggerty, *FERC Adopts Big Utilities' Narrative in PURPA Ruling*, PV MAG. (Sept. 17, 2020), https://pv-magazine-usa.com/2020/09/17/ferc-adopts-big-utilities-narrative-in-purpa-ruling/ [https://perma.cc/U7CT-2H6P].

197. Mike Brown, *What Does the Overhaul of PURPA Mean for Solar Power?*, PV MAG. (July 23, 2020), https://pv-magazine-usa.com/2020/07/23/what-does-the-overhaul-of-purpa-mean-for-solar-power/ [https://perma.cc/6S8D-P3FV]; Catherine Morehouse, *A Blow to Small Solar, a Win for States and Utilities? Regulators, Analysts Assess FERC's PURPA Rule*, UTIL. DIVE (July 30, 2020), https://www.utilitydive.com/news/a-blow-to-small-solar-a-win-for-states-and-utilities-regulators-analysts/582467/ [https://perma.cc/ZF3W-662C]; Catherine Morehouse, *FERC Finalizes PURPA Overhaul in Move Glick Says "Discourages" Small Solar Development*, UTIL. DIVE (July 17, 2020), https://www.utilitydive.com/news/ferc-finalizes-purpa-overhaul-in-move-glick-says-discourages-small-solar/581784/ [https://perma.cc/Y7RG-XNSK].

198. Joshua C. Macey, *Zombie Energy Laws*, 73 VAND. L. REV. 1077, 1079–82 (2020).

199. Joshua C. Macey & Jackson Salovarra, *Rate Regulation Redux*, 168 U. PA. L. REV. 1181, 1246 (2020).

regulations insulated incumbents from the type of competition generated by PURPA. As Macey writes, FERC's rules have "allowed utilities to [operate] . . . in a manner that ensures that generators owned by vertically integrated utilities continue to operate despite being unable to compete with alternative electricity providers."[200] As a consequence of favoring fossil fuel incumbents, one study finds that "uneconomic dispatch of coal-fired generators owned by vertically integrated utilities has cost ratepayers $3.5 billion between 2015 and 2017."[201] Following the old rules has costly environmental consequences and slows the clean transition.[202]

The most significant change in the regulated electric industry over the last 40 years has been the shift from the delivery of electricity from IOUs whose rates were set by state regulators, to an electricity system that is regulated by FERC on a regional basis. Today, two-thirds of the electric load is managed by independent system operators (ISOs), or regional transmission organizations (RTOs).[203] In addition to creating a new set of energy federalism questions,[204] the regional operation of the system also favors fossil fuel companies over clean energy goals. Regional transmission organizations are largely run by incumbents and disfavor clean energy producers by slow walking the integration of variable resources onto the grid; not fully incorporating demand response into wholesale markets; and discriminating against energy storage and distributed energy resources.[205]

With IOUs and FERC, old ways die hard and neither abandoned the hard path. As described in the next section, FERC, as well as IOUs, have not been intractable. Instead, both are attempting to change their old ways of doing business.

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200. Macey, *Zombie Energy Laws*, *supra* note 198, at 1106.

201. *Id.* at 1110.

202. *See* Garcia, *supra* note 104.

203. *About 60% of the U.S. Electric Power Supply Is Managed by RTOs*, U.S. ENERGY INFO. ADMIN. (Apr. 4, 2011), https://www.eia.gov/todayinenergy/detail.php?id=790 [https://perma.cc/3TQ7-VLDZ]; Lucy Davis-Hup, Emerson Johnston, Mridhu Khanna & Sudhanshu Mathur, *Independent System Operators (ISOs) & Carbon Pricing: An Explainer*, CLIMATE XCHANGE, https://climate-xchange.org/independent-system-operators-isos-carbon-pricing-an-explainer/#top [https://perma.cc/TF53-PEB8] (last visited Mar. 7, 2021).

204. *See, e.g.*, DAVIES & TOMAIN, *supra* note 192, at 66–71.

205. *See* Shelley Welton, *Rethinking Grid Governance for the Climate Change Era*, 109 CALIF. L. REV. 209, 241–52 (2021).

V. THE ELECTRIC INDUSTRY MOVES TOWARD CON III

A. Regulating the Utility of the Future

FERC has been moving in two directions.[206] The last section noted how the agency favors incumbent, traditional utilities. Nevertheless, FERC is trying to meet the energy future with regulations that open the electricity market to more competition, allow for the integration of new energy sources into the grid, and promote energy storage as a critical component of the sector. FERC is also trying to avoid getting locked into the old paradigm. By way of example, when Trump Energy Secretary Rick Perry proposed subsidies for coal and nuclear plants,[207] FERC rejected the proposal because, in its opinion, the plan was inconsistent with FERC's duty under the Federal Power Act to set rates that are just, reasonable, and non-discriminatory.[208] Perry argued that coal and nuclear power were necessary for a reliable and resilient electric system.[209] FERC rejected those arguments and saw the proposal as an unneeded and inefficient bailout for coal and nuclear firms.[210] FERC was well aware that the system must be both reliable and resilient (as well as secure), and while rejecting Perry's subsidy proposal it opened a new rulemaking proceeding to examine those issues.[211]

On the positive side of the ledger, FERC has adopted new rules for energy storage, including hybrid storage, to participate in the regional wholesale markets.[212] The storage rule was expanded in another rulemaking to incorporate distributed energy resources such as rooftop solar, behind-the-meter batteries, and electric vehicles into those

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206. Garcia, *supra* note 104.

207. Brad Plumer, *Rick Perry's Plan to Rescue Struggling Coal and Nuclear Plants Is Rejected*, N.Y. TIMES (Jan. 8, 2018), https://www.nytimes.com/2018/01/08/climate/trump-coal-nuclear.html [https://perma.cc/Z7XP-NBSK].

208. Order Terminating Rulemaking Proceeding, Initiating New Proceeding, and Establishing Additional Procedures, 162 FERC ¶ 61,012, ¶¶ 14–16 (Jan. 8, 2018); *see also* 16 U.S.C. § 824e(a).

209. Plumer, *supra* note 207.

210. *See* Jeff St. John, *FERC Rejects Energy Secretary Rick Perry's Coal and Nuclear Energy Market Bailout Plan*, GREENTECH MEDIA (Jan. 8, 2018), https://www.greentechmedia.com/articles/read/ferc-rejects-does-coal-and-nuclear-bailout-plan [https://perma.cc/HGS5-P3HW]; Tom DiChristopher, *Regulators Reject Energy Secretary Rick Perry's Plan to Subsidize Coal and Nuclear Plants*, CNBC (Jan. 8, 2018, 4:21 PM), https://www.cnbc.com/2018/01/08/regulators-reject-rick-perrys-plan-to-prop-up-coal-and-nuclear-plants.html [https://perma.cc/W9HW-V3SY].

211. 162 FERC ¶ 61,012, ¶¶ 17–20.

212. Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators, Order No. 841, 162 FERC ¶ 61,127 (Feb. 15, 2018) (codified at 18 C.F.R. § 35.28). This order was upheld in Nat'l Ass'n Reg. Util. Comm'rs v. FERC, 964 F.3d 1177, 1190 (D.C. Cir. 2020).

wholesale markets.[213] Recently, FERC passed a rule that would allow fuel cells to qualify for QF status under PURPA.[214] According to then FERC Chair, Republican Neil Chatterjee, the storage order may be "one of the single most significant . . . actions taken by a government agency to address carbon mitigation and the transition to a clean energy future."[215] Regarding the order on distributed energy resources, Chatterjee said that the order is consistent with changes in electricity markets and that it "will help us increase competition and efficiencies in our markets. It will enhance grid flexibility and reliability attributes. And it will stimulate the kind of innovation that's needed to keep pace with our ever-evolving energy demand."[216] These FERC initiatives underscore the importance of this energy agency. FERC now and in the future will not be limited to simply regulating wholesale, interstate transactions. Instead, FERC must manage complex regional electricity markets, pay closer attention to the effects of those markets on consumers, and more aggressively address carbon reduction.[217]

FERC is well aware of its role in the clean energy transition, as acknowledged by Chatterjee. Unfortunately, such candor about the clean transition can be costly. When Chatterjee acknowledged that FERC had jurisdiction over carbon pricing within wholesale markets,[218] he was quickly rewarded by the Trump administration by being removed as FERC Chair, regardless of the fact that he was not offering any proposed rules at

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213. Participation of Distributed Energy Resource Aggregation in Markets Operated by Regional Transmission Organizations and Independent System Operators, Order No. 2222, 172 FERC ¶ 61,247, ¶ 1 n.1 (Sept. 17, 2020) (codified at 18 C.F.R. § 35.28).

214. Fuel Cell Thermal Energy Output Bloom Energy Corporation, Order No. 874, 173 FERC ¶ 61,226, ¶¶ 11–17 (Dec. 17, 2020) (to be codified at 18 C.F.R. pt. 292).

215. Catherine Morehouse, *DC Circuit Upholds Landmark FERC Storage Order, Rejecting Claims It Violates State Authority*, UTIL. DIVE (July 13, 2020), https://www.utilitydive.com/news/dc-circuit-upholds-landmark-ferc-storage-order-rejecting-claims-it-violate/581436/ [https://perma.cc/X534-D2YE]; *see also* Andy Colthorpe, *'Watershed Moment in Energy Transformation': Industry Reacts to FERC Order 841 Ruling*, ENERGY STORAGE NEWS (July 20, 2020, 8:17 AM), https://www.energy-storage.news/news/watershed-moment-in-energy-transformation-industry-reacts-to-ferc-order-841 [https://perma.cc/RJ5R-Q2B3].

216. Jeff St. John, *'Game-Changer' FERC Order Opens Up Wholesale Grid Markets to Distributed Energy Resources*, GREENTECH MEDIA (Sept. 17, 2020), https://www.greentechmedia.com/articles/read/ferc-orders-grid-operators-to-open-wholesalemarkets-to-distributed-energy-resources [https://perma.cc/HC26-NE89].

217. Carl Pechman, *Rethinking FERC*, NRRI INSIGHTS 4–5 (Dec. 2020), https://pubs.naruc.org/pub/AD5E9A90-155D-0A36-3112-7C54DE40AE98 [https://perma.cc/3N62-29BD].

218. Catherine Morehouse, *FERC Confirms Carbon Pricing Jurisdiction in Wholesale Markets, Chatterjee 'Encourages' Proposals*, UTIL. DIVE (Oct. 16, 2020), https://www.utilitydive.com/news/ferc-confirms-carbon-pricing-jurisdiction-in-wholesale-markets-chatterjee/587147/ [https://perma.cc/7TX5-QMWC].

the time.[219]

What the law taketh, the law giveth. While Trump removed the FERC Chair and appointed a new one, President Joe Biden returned the favor and appointed Democrat Richard Glick as the new Chair.[220] Glick has been open to clean energy initiatives such as the ones discussed above including carbon pricing, grid expansion and improvement, grid resilience in light of the impacts of climate change, and grid security.[221]

In the energy sector, regulators are only half of the clean energy transition. On the private side, utilities must do their part, as next discussed.

B. The Utility of the Future

Today's utility, as it transforms itself into the utility of the future, faces an industry unlike that of fifty years ago. Then, most electricity was delivered by vertically-integrated IOUs, which means that a single firm would generate, transmit, and distribute electricity to end users. If that utility sold electricity across state lines, then those wholesale sales would be subject to federal jurisdiction while all other activities such as licenses to construct and operate a plant, siting of transmission lines, and setting retail rates were done by state public utility commissions. In contrast, today, it is more likely than not that the IOU has either divested or functionally unbundled generation from its other services; is likely to be regulated by state, federal, and regional regulators; and operates in two different markets. Today's utility is likely to sell electricity for immediate or near immediate use in an energy market and it will sell electricity in a futures market also known as a capacity market regulated by the regional transmission organizations under FERC supervision.

Today's utilities must deal with a new set of laws. Under renewable portfolio standards, utilities must purchase a certain amount of non-fossil

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219. Rebecca Beitsch, *Former FERC Chair Chatterjee on Demotion by Trump: 'I Don't Give a F@&!'*, HILL (Nov. 7, 2020, 12:08 PM), https://thehill.com/policy/energy-environment/524932-former-ferc-chair-chatterjee-on-demotion-by-trump-i-dont-give-a-f [https://perma.cc/7EAP-U77Z].

220. Joseph Tomain, *Biden Named Richard Glick as Chair of the Federal Energy Regulatory Commission. What's Next for the Agency?*, CPRBLOG (Jan. 22, 2021), http://progressivereform.org/cpr-blog/biden-named-richard-glick-chair-federal-energy-regulatory-commission-whats-next-agency/ [https://perma.cc/H8HD-G9PW].

221. Jeff St. John, *The Top Priorities of FERC's Most Likely New Chairman Under Biden*, GREENTECH MEDIA (Nov. 18, 2020), https://www.greentechmedia.com/articles/read/the-top-priorities-of-fercs-most-likely-new-chairman-under-a-biden-administration [https://perma.cc/EY8S-R3VJ]; Catherine Morehouse, *Glick Vows to Prioritize Transmission, Reassess Capacity Markets if Named FERC Chair*, UTIL. DIVE (Nov. 18, 2020), https://www.utilitydive.com/news/glick-vows-to-prioritize-transmission-reassess-capacity-markets-if-named-f/589252/ [https://perma.cc/R74K-4JN8].

fuel electricity from outside providers; under net metering laws they must allow consumers to enter the electricity market; and as clean energy laws and standards are passed, electricity generators must also comply with higher environmental goals.

In addition to regulatory complexity, today's electric firm faces increased competition not only from non-utility generators, independent power producers, and merchant generators, but from their own customers who have become self-generators that can trade in electricity markets as well. Today's firm must also manage a more varied energy mix. In addition to fossil fuels and nuclear power, electricity can be generated from variable resources such as solar and wind. Further utilities must stand ready to pay consumers for not using electricity through demand response programs.

Local distribution companies (LDCs), formerly known as your local utility, still retain obligations to customers. LDCs must provide electricity to all consumers in its service territory. Additionally, LDC's must provide reliable, resilient, and secure electricity to stay in business.

These changes in law, policy, and regulation require traditional IOUs to reconsider and redesign their business models. The utility of the future, as it is developing today, will not resemble the utility of the past. In the past, the local utility simply sold electricity. In the future, the local utility must get out of the electricity business and into the energy business. In addition to traditional electricity sales, the utility of the future will offer customers an array of products from "green energy" to energy audits and offer energy-saving products such as LED lighting. It will also purchase their excess electricity, and other energy services such as storage. The new utility may even transform itself into a "virtual utility" that instead of operating physical plant and equipment, will manage contracts to purchase and sell electricity; it will be an energy services provider.[222] By way of example, Swell Energy has "announced plans to finance the construction of four virtual power plants . . . representing over 200 MWh of distributed energy storage paired with 100 MW of solar PV capacity."[223] Combined,

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222. Debora Coll-Mayor, Rodrigo Picos & Eugeni García-Moreno, *State of the Art of the Virtual Utility: The Smart Distributed Generation Network*, 28 INT'L J. ENERGY RSCH. 65, 66 (2004). The authors describe the virtual utility as a "network of technology and infrastructure management . . . linking together seldom-used standby and emergency generators at hospitals, universities, manufacturers, office towers and other end-users which, therefore, allows utilities to draw additional power from these on-site sources as needed." *Id.* (internal citation omitted).

223. Swell Energy Announces Capital Partnership to Deploy Portfolio of Virtual Power Plants Comprised of 14,000 Distributed Energy Storage Systems, BUS. WIRE (Dec. 10, 2020, 2:57 PM), https://www.businesswire.com/news/home/20201210006029/en/Swell-Energy-Announces-Capital-Partnership-to-Deploy-Portfolio-of-Virtual-Power-Plants-Comprised-of-14000-Distributed-Energy-Storage-Systems [https://perma.cc/BD24-73VS].

the plans can serve hundreds of thousands of homes.[224]

The central claim about the utility of the future is not that traditional large-scale utility firms will disappear. Instead, the claim is that the electricity industry is unlikely to see a revival of traditional IOU's. In addition to increased competition, briefly consider three industry trends. First, renewable resources and energy efficiency are not only cost competitive, they have an increasing share of the energy mix.[225] Second, although demand is predicted to stay relatively flat, consumers are using electricity in different ways including charging vehicles, increasing storage, self-generation, and responding to demand response regulations.[226] And, third, information and communication technologies (ICT), as well as behind-the-meter technologies such as home displays, programmable thermostats, and energy saving appliances, will radically reconfigure the traditional delivery of electricity by allowing two-way information flows so that producers and consumers will have near real time price information with which to make production and consumption choices.[227]

"One way of conceptualizing the new utility model is that a utility's primary business will be to focus on distribution and customer service rather than maintain a singular focus on generation and the electricity sales."[228] MIT's *Utility of the Future* study[229] recognizes changes in the industry and the drivers behind those changes on both the supply and demand sides. Among other findings, the study notes that price regulation must be improved so that electricity prices reflect all costs and charges at the time of metering, and electricity prices can no longer be based on the COS model.[230] Second, new business models may involve cost sharing between utilities and customers, reward utilities for costs savings, and encourage innovation investments.[231] And third, wholesale market designs must better integrate distributed resources and storage.[232]

The utility of the future must consider competing pathways as revenue sources. The utility can continue to divest generation or transmission and

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224. *See id.*

225. *January 2021 Monthly Energy Review*, U.S. ENERGY INFO. ADMIN. 4 (Jan. 26, 2021), https://www.eia.gov/totalenergy/data/monthly/archive/00352101.pdf [https://perma.cc/RF5T-KX85].

226. TOMAIN, CLEAN POWER POLITICS, *supra* note 158, at 198.

227. *Id.* at 141–43, 197–200.

228. *Id.* at 142.

229. MASS. INST. TECH. ENERGY INITIATIVE, UTILITY OF THE FUTURE (2016), http://energy.mit.edu/wp-content/uploads/2016/12/Utility-of-the-Future-Full-Report.pdf [https://perma.cc/H7S7-ZWUQ].

230. *Id.* at 86–96.

231. *Id.* at 157–72.

232. *Id.* at 68–69.

create independent business entities for each of those functions. Or the utility of the future can continue to provide regulated electricity services while another part of its business will provide unregulated energy services such as providing consumers with more efficient technologies. The utility of the future could expand its business enterprises by acquiring competitors such as solar providers, using their special expertise in managing the electricity system, and constructing and managing large-scale energy projects such as utility scale solar and wind projects and micro grids. Or the utility of the future may consider providing electricity and energy services to more discreet sets of consumers, such as large-scale residential developments, military bases, or other discrete and segmented consumer groups.[233]

Although there is no single model for the utility of the future to operate in this new environment, there are three examples to consider. The utility of the future can be a "wires only" entity that divests its generation assets and manages the transmission and/or distribution of electricity to consumers.[234] Or the utility of the future can be a "smart integrator" that operates the local power grid through its mastery of ICT systems with a mandate to bring innovative technologies into the system.[235] The final model currently being discussed is the "electric services operator" (ESO). The ESO closely resembles a traditional IOU.[236] It will "preserve and extend core capabilities of generating and delivering electricity, identify new technologies, and explore a variety of new business opportunities."[237] The ESO may maintain a vertically-integrated structure, however, "but regulation will shift from rewarding increased sales to rewarding increased performance."[238] One way of accomplishing that goal is to replace COS with performance-based rates designed to contain expenses, promote customer service, and attract investments in distributed energy resources as a way to integrate new resources and improve the system as a whole.[239]

It is notable that states such as Maryland,[240] Minnesota,[241] New

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233. TOMAIN, CLEAN POWER POLITICS, *supra* note 158, at 144–45.

234. *Id*. at 147–49.

235. *Id*. at 149–51.

236. *Id*. at 151.

237. *Id*.

238. *Id*.

239. *See* Garcia, *supra* note 104.

240. *Our Campaigns*, ENERGY FUTURE COAL., http://energyfuturecoalition.org/our-campaigns/utility-modernization/ [https://perma.cc/Z6RP-9HZT] (last visited Mar. 7, 2021).

241. Jennifer Christensen & Rolf Nordstrom, *e21 Initiative, Phase I Report: Charting a Path of a 21st Century Energy System in Minnesota* 8–11 (2014), https://www.mncee.org/getattachment/Policy/e21-Initiative/e21_Initiative_Phase_I_Report_2014.pdf.aspx [https://perma.cc/JL56-2Y56].

York,[242] and Ohio[243] are rethinking their electric systems and in each study, the traditional electric utility plays a central, but modernized, role. Utilities have been performing well for over a century. They have the managerial experience and competence to not only construct and manage large systems, but they are also familiar with the regulatory environment and can add value to new electricity systems. They must, however, be open to technological and regulatory innovation as well as to the new business models just discussed. These new models, in turn, may increase financial risk to the utilities that compete in unregulated markets. Additionally, they must be open to decarbonization and other strategies to address climate change challenges.[244]

Indeed, utilities are developing new business models, by announcing net-zero goals,[245] entering into contracts with solar providers, creating virtual power plants,[246] segregating their nuclear programs,[247] and closing coal-fired plants.[248] Other energy firms are developing large-scale battery storage programs[249] that utilities can easily operate. In fact, traditional utilities are now designing models in which some of their business is regulated and other parts of their business compete in unregulated

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242. *See, e.g.*, *REV Initiatives*, N.Y. STATE, https://www.ny.gov/reforming-energy-vision/learn-more [https://perma.cc/D7UJ-GXLC] (last visited Mar. 7, 2021).

243. *Power Forward: A Roadmap to Ohio's Electricity Future*, OHIO PUB. UTILS. COMM'N 10–13 (2018), https://puco.ohio.gov/wps/wcm/connect/gov/38550a6d-78f5-4a9d-96e4-d2693f0920de/PUCO+Roadmap.pdf?MOD=AJPERES&CONVERT_TO=url&CACHEID=ROOTWORKSPACE.Z18_M1HGGIK0N0JO00QO9DDDDM3000-38550a6d-78f5-4a9d-96e4-d2693f0920de-nawqRqj [https://perma.cc/3NH6-RJJ4].

244. *See* Porter et al., *supra* note 105.

245. Dan Gearino, *Inside Clean Energy: Net Zero by 2050 Has Quickly Become the New Normal for the Largest U.S. Utilities*, INSIDE CLIMATE NEWS (Oct. 1, 2020), https://insideclimatenews.org/news/01102020/inside-clean-energy-net-zero-2050-utilities/ [https://perma.cc/FKH8-N569].

246. Tim Sylvia & Eric Wesoff, *Monday Brief: Knoxville Utility to Go 20% Solar by 2023, Sunrun and SoCal Edison Agree to Virtual Power Plant*, PV MAG. (Nov. 23, 2020), https://pv-magazine-usa.com/2020/11/23/monday-brief-knoxville-utility-to-go-20-solar-by-2023-sunrun-andsocal-edison-agree-to-virtual-power-plant/ [https://perma.cc/H5KL-4TL8].

247. Jeff St. John, *Exelon May Split Its Utilities from Nuclear, Generation Business*, GREENTECH MEDIA (Nov. 4, 2020), https://www.greentechmedia.com/articles/read/exelon-confirms-its-exploring-splitting-utilities-from-nuclear-generation-business [https://perma.cc/532Y-HDX9]; *see also* Adrian Cho, *Several U.S. Utilities Back Out of Deal to Build Novel Nuclear Power Plant*, SCI. MAG. (Nov. 4, 2020, 1:10 PM), https://www.sciencemag.org/news/2020/11/several-us-utilities-back-out-deal-build-novel-nuclear-power-plant?utm_source=newsfromscience%3Dflipboard%3Dflipboard2480583 [https://perma.cc/55TA-QVP3].

248. Michael Hawthorne, *Texas Company to Close All of Its Illinois Coal-Fired Power Plants, Another Sign the Global Transition to Clean Energy is Accelerating*, CHI. TRIB. (Sept. 30, 2020, 5:00 AM), https://www.chicagotribune.com/news/environment/ct-more-illinois-coal-plants-closing-20200930-bl2saewbzvha3f52r42fcni53y-story.html [https://perma.cc/NA22-GGD7].

249. L.M. Sixel, *Texas to Get 15 Utility-Scale Battery Storage Sites*, HOUS. CHRON. (June 10, 2020), https://www.houstonchronicle.com/business/energy/article/Texas-to-get-15-utility-scale-battery-storage-15328684.php [https://perma.cc/9BQF-57UX].

markets.[250]

VI. A NEW CLEAN ENERGY CONSCIOUSNESS

As discussed in the last two Parts, the IOU is both the symbol of Con II and a symbol that Con III is emerging. This Part discusses four developments that evince a new consciousness about the energy sector that coalesce around the clean energy transition. Two developments, first the merging of energy, the environment, and the economy and, second, environmental justice, have been ongoing for several decades and today their impacts are more widely recognized. The remaining two developments, energy democracy and a just transition, are more recent but are consistent with and committed to a clean transition culture.

A. Merging Energy, Environment and Economy

The discipline of energy law and policy contains three anomalies. First, there is the historic anomaly of environmental law preceding energy law. Environmental law had its predecessors, including a variety of conservation laws reaching back into the nineteenth century with the creation of Yellowstone National Park in 1872.[251] It became most visible with the passage of the National Environmental Policy Act of 1969.[252] Energy law, as a discipline, followed. The 1973 Arab Oil Embargo was the wakeup call the United States needed to seriously assess not only its energy portfolio, but the structure of energy laws that supported it. Then, although energy law is based on previous areas of law, most notably public utility regulation, oil and gas law, and natural resources law, it emerged as a recognized discipline with the passage of President Carter's National Energy Act of 1978.[253]

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250. *See* Eric Rosenbaum, *The Utility That Beat Big Oil to a Climate Model It Needs for the Future*, CNBC (Nov. 2, 2020, 11:11 AM), https://www.cnbc.com/2020/11/02/the-utility-that-beat-big-oil-to-climate-model-it-needs-for-future-.html [https://perma.cc/7KLW-RMJE].

251. *Birth of a National Park*, NAT'L PARK SERV. (last updated Mar. 5, 2020), https://www.nps.gov/yell/learn/historyculture/yellowstoneestablishment.htm [https://perma.cc/T7UL-MYYU].

252. National Environmental Policy Act of 1970, 42 U.S.C. §§ 4321–4370d.

253. The National Energy Act is comprised of five separate pieces of legislation. *See* Public Utilities Regulatory Policies Act of 1978, Pub. L. No. 95-617, 92 Stat. 3117; Energy Tax Act of 1978, Pub. L. No. 95-618, 92 Stat. 3174; National Energy Conservation Policy Act of 1978, Pub. L. No. 95-619, 92 Stat. 3206; Power Plant and Industrial Fuel Use Act of 1978, Pub. L. No. 95-620, 92 Stat. 3289; National Gas Policy Act of 1978, Pub. L. No. 95-621, 92 Stat. 3350. The Act was intended to consolidate energy regulations in one agency, the Department of Energy, and to coordinate energy policies for the intended purpose of achieving energy independence. The goals of coordination and consolidation were not achieved. Joseph P. Tomain, *Institutionalized Conflicts Between Law and Policy*, 22 HOUS. L. REV. 661, 678 (1985).

The historic anomaly is directly related to the second. Since the 1970s, and to a large extent today, energy law and policy operate separately from environmental law and policy. In other words, energy and the environment are not coordinated, and they operate and are regulated mostly independently from each other.

Briefly consider the development of both regulatory regimes. In the energy sector, different agencies or departments, pursuant to specific statutes, are tasked with the responsibility of overseeing individual resources such as coal, oil, gas, electricity, hydropower, nuclear power, and, more recently, renewable resources and energy efficiency. Similarly, the environment is regulated by different agencies and departments, again pursuant to specific statutes, directed to separately address pollution regarding air, water, and land as well as the protection of species and habitats. Further complicating matters, public and private lands and resources are also treated differently. Exacerbating the divide between energy and the environment, these two regulatory regimes developed their own vocabularies, their own aspirations, and their own ways of looking at the world.

Now consider environmental law and policy. Our respect for nature as a constituent of our national identity has long roots going back to the Founding. Simply reflect on the fight between Hamilton and Jefferson. Hamilton's Federalist argument for a mercantile America was countered by Jefferson's Anti-Federalist visions of an agrarian America. Emerson and other transcendentalists viewed nature as consistent with and supportive of a democratic America, as later seen in the nineteenth century when the conservation movement was born and flourished.[254]

As environmental laws developed in the twentieth century, environmentalists and environmental regulators were concerned about conservation and protection of their specific interests. "Air, land, water, and endangered species, as examples, were each governed by particular legislation under the control of specified administrative agencies."[255] During the early years of the environmental regulation, there was little or no "discussion of economic trade-offs between the need for energy and the protection of the environment or of cost-benefit analyses of environmental laws."[256]

Now briefly consider energy. It was the task of the energy industry

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254. *See, e.g.*, JEDEDIAH PURDY, AFTER NATURE: A POLITICS FOR THE ANTHROPOCENE 117–18 (2015); PURDY: THIS LAND IS OUR LAND, *supra* note 26, at 115–16; DOUGLAS BRINKLEY, THE WILDERNESS WARRIOR: THEODORE ROOSEVELT AND THE CRUSADE FOR AMERICA 13–21 (2010).

255. TOMAIN, ENDING DIRTY ENERGY POLICY, *supra* note 88, at 51.

256. *Id.*

and its regulators to encourage the extraction, development, production, and distribution of energy as widely as possible as inputs for manufacturing or transportation or residential comforts such as heating, lighting, and cooling. Further, these objectives supported what Amory Lovins identified as the hard energy path.[257] The U.S. energy sector was large-scale; capital intensive; concentrated and centralized; and the distribution system was national in scope and dominated by fossil fuels and nuclear power.[258] The key driver for energy law and policy was economic growth.[259] Environmental laws simply added an unwanted layer of costs and, according to energy advocates, imposed unnecessary regulatory burdens. Further, absent from the language of energy was any awareness of the social costs of pollution because economic growth was the *sine qua non* of energy policy.

The energy-economy link just noted is the third anomaly. The belief that there is a positive correlation between economic growth and energy production and consumption is incorrect for two reasons, one of which directly contradicts basic economics and the other directly contradicts the facts. The contradiction of basic economics is that the economic growth argument ignores the negative externalities of pollution. If social costs are ignored, then energy products will be underpriced and overconsumed thus generating more social harms. This scenario, of course, is the scenario in which we live. There is no effective federal carbon price mechanism operating.[260] The factual contradiction is that the country has continued to enjoy increased energy efficiency at lower cost for over fifty years.[261] Nevertheless, the belief persists, especially in the Trump administration

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257. AMORY B. LOVINS, SOFT ENERGY PATHS: TOWARD A DURABLE PEACE 26–28 (1977).

258. *Id.*

259. *See id.*

260. *See, e.g.*, Victor Flatt, *Federal Carbon Pricing Is Closer Than You Think*, FORBES (Sept. 26, 2019, 11:52 AM), https://www.forbes.com/sites/uhenergy/2019/09/26/federal-carbon-pricing-is-closer-than-you-think/#2328e1a356a8 [https://perma.cc/3ACY-DDP4]. At the federal level, agencies have set carbon prices for assessment purposes but have not imposed those prices on products. *See The Social Cost of Carbon: Estimating the Benefits of Reducing Greenhouse Gas Emissions*, EPA, https://19january2017snapshot.epa.gov/climatechange/social-cost-carbon_.html [https://perma.cc/TF7G-PJYU] (last visited Mar. 7, 2021); *see also* Sidney Villanueva & Kelsey Bagot, *FERC Holds a Technical Conference on Carbon Pricing in Organized Markets*, LEXBLOG (Oct. 8, 2020), https://www.lexblog.com/2020/10/08/ferc-holds-a-technical-conference-on-carbon-pricing-in-organized-markets/ [https://perma.cc/VN8T-G6WZ]; *Carbon Pricing in Wholesale Energy Markets: Conference Brief*, N.Y.U. INST. FOR POL'Y INTEGRITY & DUKE NICHOLAS INST. FOR ENV'T POL'Y SOLS. (Mar. 3, 2020), https://nicholasinstitute.duke.edu/sites/default/files/publications/Carbon_Pricing_in_Wholesale_Energy_Markets_Conference_Brief.pdf [https://perma.cc/8ZDG-S28E].

261. *See September 2020 Monthly Energy Review*, U.S. ENERGY INFO. ADMIN.,16–19 (Sept. 24, 2020), https://www.eia.gov/totalenergy/data/monthly/archive/00352009.pdf [https://perma.cc/C885-2FQ4].

that attempted to eliminate over 100 environmental laws[262] as costly job-killers while simultaneously promoting the dying coal industry as well as oil and gas explorations on public lands.[263]

The good news is that these anomalies are gradually disappearing. The last Part, for example, identified ways in which traditional utilities are moving away from hard path fossil fuels to renewable resources and energy efficiency. Electricity is increasingly produced from decentralized power instead of traditional IOUs. According to the EPA "[t]he United States has more than 12 million distributed generation units, which is about one-sixth of the capacity of the nation's existing centralized power plants."[264] The soft energy path is up and running. More importantly, that path produces reliable energy, protects the environment, creates jobs, and makes positive contributions to the general economy thus easily merging energy, environment, and economy.

Further evidence of the merger is that the intellectual culture surrounding the transition accepts the merger. Energy scholarship, for example, does not treat energy and the environment as separate from each other and does not see environmental protection as anathema to economic health. Instead, today's energy law scholars address the clean transition as a necessary part of the energy future.[265] Additionally, policy think tanks also view the merger as a necessary step for a healthy economic future,[266] as do research centers and institutes.[267] Today, it seems that every university has a program in energy and the environment or on sustainability.

This intellectual climate has also affected the way that industry does

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262. *See, e.g.*, Popovich et al., *supra* note 183; Emma Newburger, *Trump Will Roll Back More Environmental Regulations If Reelected, Says EPA Chief*, CNBC (Sept. 3, 2020, 10:45 AM), https://www.cnbc.com/2020/09/03/epa-chief-trump-will-roll-back-more-environmental-rules-if-reelected.html [https://perma.cc/5HGE-T948].

263. *See, e.g.*, Kelly et al., *supra* note 179.

264. *Distributed Generation of Electricity and Its Environmental Impacts*, EPA, https://19january2017snapshot.epa.gov/energy/distributed-generation-electricity-and-its-environmental-impacts_.html [https://perma.cc/NH2B-N2EX] (last visited Mar. 7, 2021).

265. A basic theme of the two leading energy law and policy casebooks, and the name of one of them, is the merger of energy, environment, and economics. *See generally* LINCOLN L. DAVIES, ALEXANDRA B. KLASS, HARI M. OSOFSKY, JOSEPH P. TOMAIN & ELIZABETH J. WILSON, ENERGY LAW AND POLICY (2d ed. 2018); JOEL B. EISEN, EMILY HAMMOND, JIM ROSSI, DAVID B. SPENCE & HANNAH J. WISEMAN, ENERGY, ECONOMICS, AND THE ENVIRONMENT (5th ed. 2019).

266. *See, e.g.*, *Energy and Environment*, CTR. FOR AM. PROGRESS, https://www.americanprogress.org/issues/green/view/ [https://perma.cc/943Q-ZYPJ] (last visited Mar. 7, 2021); *Environment & Energy*, CTR. FOR PROGRESSIVE REFORM, http://progressivereform.org/lists/environment-energy/ [https://perma.cc/6ACR-DA9D] (last visited Mar. 7, 2021).

267. *See, e.g.*, DUKE NICHOLAS INST. FOR ENV'T POL'Y SOLS., https://nicholasinstitute.duke.edu/ [https://perma.cc/4UXD-Q6A6] (last visited Mar. 7, 2021); ROCKY MOUNTAIN INST., https://rmi.org/ [https://perma.cc/H44S-8SJS] (last visited Mar. 7, 2021).

business. Climate Action, for example, founded in 2007, brings together major donors, government actors, NGOs, and over 1,000 private sector companies for the purposes of facilitating a clean energy transition, meeting the objectives of the Paris Climate Agreement, and fulfilling the UN's sustainable development goals.[268]

As noted above, the United States has always had a commitment to conservation which later developed into a broader environmental ethic. Regarding the merger of energy, environment, and economics, as exemplifying a new Con III approach to energy and environmental law and policy, we might date the emergence of this new consciousness with the 1987 publication of the United Nations' Brundtland Commission report that identified sustainable development as the necessary goal for a healthy future. Sustainable development is defined as "meet[ing] the needs and aspirations of the present without compromising the ability to meet those of the future."[269] As a supplement to the report, the UN also published a set of seventeen Sustainable Development Goals to achieve the ends of ending poverty "with strategies that build economic growth and address a range of social needs including education, health, social protection, and job opportunities, while tackling climate change and environmental protection."[270]

In addition to a call for sustainable development, environmental advocates, later joined by clean energy advocates, began articulating a new vision for the energy/environmental future under labels such as environmental justice, climate justice,[271] clean energy justice,[272] energy democracy, and a just transition. Each of the movements has its particular

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268. *About Us*, CLIMATE ACTION, https://www.climateaction.org/about-us [https://perma.cc/GGS7-YNBX] (last visited Mar. 7, 2021).

269. WORLD COMM'N ON ENV'T AND DEV., OUR COMMON FUTURE Ch. 1 ¶ 49 (1987) (also known as the Bruntland Commission Report); *see also* David R. Hodas, *Sustainable Development and the Marrakech Accords*, *in* THE LAW OF ENERGY FOR SUSTAINABLE DEVELOPMENT 56, 56 (Adrian J. Bradbrook, Rosemary Lyster, Richard L. Ottinger & Wang Xi eds., 2005); *United Nations Development Programme: World Energy Assessment*, *in* COMPENDIUM OF SUSTAINABLE ENERGY LAWS 1, 2 (Richard L. Ottinger, Nicholas Robinson & Victor Tafur eds., 2005).

270. *17 Goals to Transform Our World*, UNITED NATIONS, https://www.un.org/sustainabledevelopment/ [https://perma.cc/BKF8-ME63] (last visited Mar. 7, 2021).

271. *See, e.g.*, Shalanda H. Baker, William W. Buzbee, Alejandro E. Camacho, Daniel Farber, Robert L. Fischman, Victor Flatt, Robert L. Glicksman, Alice Kaswan, Alexandra B. Klass, Christine A. Klein, Sarah Krakoff, Joel A. Mintz, Uma Outka, Dave Owen, Daniel J. Rohlf, Karen Sokol, Joseph Tomain, Hannah J. Wiseman & Sandra B. Zellmer, *Climate, Energy, Justice: The Policy Path to a Just Transition for an Energy-Hungry America*, CTR. FOR PROGRESSIVE REFORM 46 (Oct. 2020), https://cpr-assets.s3.amazonaws.com/documents/Climate-Energy-Justice-Oct2020.pdf [https://perma.cc/X326-GCZU]; *see also* Eric A. Posner & Cass R. Sunstein, *Climate Change Justice*, 96 GEO. L.J. 1565 (2008).

272. *See, e.g.*, Shelley Welton & Joel Eisen, *Clean Energy Justice: Charting an Emerging Agenda*, 43 HARV. ENV'T L. REV. 307 (2019).

goals and yet they share common elements. Each is committed to decarbonization and, in turn, decarbonization is a commitment to move away from fossil fuels to a greater use of renewable resources and energy efficiency; embraces a clean energy transition in the process; combats climate change challenges; and protects and preserves the environment with a view toward social justice. This section will review the special attributes of environmental justice, energy democracy, and the just transition as emblematic of the new consciousness.

B. Environmental Justice

Environmental justice has been defined as:

> [A] social movement . . . that is focused on fairness in the distribution of environmental benefits and burdens . . . . [I]t is concerned with both the fair treatment and the significant involvement of poor, racialized and indigenous communities in environmental policy and natural resource development decisions that have typically resulted in those communities bearing more than their 'fair share' of environmental harms.[273]

This definition captures the key components and normative values of the movement. In essence, environmental justice is grounded in the actual harms visited on marginalized peoples and emphasizes the necessity of their participation in the decisions and decision-making processes that directly and negatively impact their lives. As such, the environmental justice movement is distinguishable from the broader conception of environmental law as will be described below. Additionally, environmental justice encompasses not only procedural justice in the form of democratic participation; it also emphasizes distributive justice so that harms and benefits are fairly allocated and are not visited on those in the least position to protect themselves.[274]

The history of the movement can be traced back to Warren County, North Carolina in 1982, and this galvanizing event demonstrates the central aspects of the definition given above. North Carolina decided that Warren County would be the dumping ground for 6,000 truckloads of soil

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273. Dayna Nadine Scott, *Environmental Justice*, *in* 1 THE SAGE ENCYCLOPEDIA OF ACTION RESEARCH 299, 299 (David Coghlan & Mary Brydon-Miller eds., 2014). The U.S. Environmental Protection Agency defines environmental justice as: "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies." *Environmental Justice*, EPA, https://www.epa.gov/environmentaljustice [https://perma.cc/LY3R-RHJJ] (last visited Mar. 7, 2021).

274. *See* Alice Kaswan, *Environmental Justice: Bridging the Gap Between Environmental Laws and "Justice"*, 47 AM. U. L. REV. 221, 228–42 (1997).

containing toxic PCBs.[275] The county was over 60% Black and had one of the state's highest poverty rates.[276]

Starting September of that year, trucks began disposing the contaminated soil in a hazardous waste landfill in the town of Afton.[277] Local residents were concerned about PCB's leaching into their drinking water and met the trucks with their bodies.[278] Several weeks of nonviolent protests followed, with the arrest of more than 500 people.[279] Clearly inspired by the civil rights movement, the residents put their lives in jeopardy in an unsuccessful effort to stop the dumping of toxic waste.[280]

Nevertheless, their bravery drew national attention and resonated with many communities who suffered the same or similar fates. For some, most notably Professor Robert Bullard, this was not a simple environmental dispute. Instead, North Carolina was a clear example of environmental racism.[281] Racially unfair distributions of environmental harms did not go unnoticed. In 1983, the U.S. Government Accounting Office recognized the racial disparities in siting hazardous waste facilities.[282] Later, an important study by the United Church of Christ (UCC) found that "[r]ace proved to be the most significant among variables tested in association with the location of commercial hazardous waste facilities. This represented a consistent national pattern."[283] This form of racial discrimination identified during the Reagan administration was not abated. Twenty years later, the UCC found that "racial disparities in the distribution of commercial hazardous wastes are greater than previously reported."[284] Further, the report found that "people of color make up the

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275. Renee Skelton & Vernice Miller, *The Environmental Justice Movement*, NAT. RES. DEF. COUNCIL (Mar. 17, 2016), https://www.nrdc.org/stories/environmental-justice-movement [https://perma.cc/NZA5-BVLG].

276. *A Movement Is Born: Environmental Justice and the UCC*, UNITED CHURCH OF CHRIST, https://www.ucc.org/a_movement_is_born_environmental_justice_and_the_ucc [https://perma.cc/EM39-F5N4] (last visited Mar. 7, 2021).

277. Skelton & Miller, *supra* note 275.

278. *Id.*

279. *Id.*

280. *Id.*

281. *See, e.g.*, ROBERT D. BULLARD, DUMPING IN DIXIE: RACE, CLASS, AND ENVIRONMENTAL QUALITY 35–38 (1990); LUKE W. COLE & SHEILA R. FOSTER, FROM THE GROUND UP: ENVIRONMENTAL RACISM AND THE RISE OF THE ENVIRONMENTAL JUSTICE MOVEMENT 20–21 (2001); Charles Lee, *Beyond Toxic Wastes and Race*, *in* CONFRONTING ENVIRONMENTAL RACISM: VOICES FROM THE GRASSROOTS 41, 43 (Robert D. Bullard ed., 1993).

282. U.S. GEN. ACCT. OFF., SITING OF HAZARDOUS WASTE LANDFILLS AND THEIR CORRELATION WITH RACIAL AND ECONOMIC STATUS OF SURROUNDING COMMUNITIES 1–3 (1983).

283. UNITED CHURCH OF CHRIST, TOXIC WASTES AND RACE IN THE UNITED STATES xiii (1987), https://www.nrc.gov/docs/ML1310/ML13109A339.pdf [https://perma.cc/UY2Z-DXAK].

284. ROBERT D. BULLARD, PAUL MOHAI, ROBIN SAHA & BEVERLY WRIGHT, TOXIC WASTES AND RACE AT TWENTY 1987–2007, at 152 (2007), https://www.nrdc.org/sites/default/files/toxic-wastes-and-race-at-twenty-1987-2007.pdf [https://perma.cc/VK9Q-5GJK].

majority of those living in host neighborhoods within 3 kilometers [1.8 miles] of the nation's hazardous waste facilities."[285] Unsurprisingly, the Trump administration did not advance the cause of environmental justice. Instead, it has reversed course through budget cuts, deregulation, reduced enforcement, and simply ignoring the environmental justice agenda.[286]

Environmental justice has established some foothold in the administration of U.S. environmental laws. The Environmental Protection Agency, for example, established the Office of Environmental Justice in 1992 and it issues an annual progress report.[287] Then in 1994, the Clinton administration promulgated Executive Order 12,898 stating that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States . . . ."[288] The Executive Order is supported by a guidance memorandum issued by the Council for Environmental Quality.[289] Unfortunately, the effectiveness of these efforts have gone wanting. Environmental justice is an aspiration yet to be achieved.[290]

A large roadblock to achieving environmental justice, perhaps ironically, is the structure of modern environmental law itself. Environmental problems involve complex issues of science, economics, and law, not to mention evolving and changing political preferences. To address such large issues Congress has responded with complex legislation and through the National Environmental Policy Act, which directs federal agencies to consider the environmental effects of various decisions.[291] In turn, the agencies generally focus on overall improvements to air and water quality, as examples, instead of assessing the direct effects on particular peoples or communities. These efforts are

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285. *Id.*

286. *See* Uma Outka & Elizabeth Kronk Warner, *Reversing Course on Environmental Justice under the Trump Administration*, 54 WAKE FOREST L. REV. 393, 393–96 (2019).

287. *See Environmental Justice Timeline*, ALA. CTR. FOR RURAL ENTER., https://www.arcgis.com/apps/Cascade/index.html?appid=b3ab68df37ff4ec3b8bdd156929174aa [https://perma.cc/5NPU-CM2Z] (last visited Mar. 7, 2021).

288. Exec. Order No. 12,898, 59 Fed. Reg. 7629, 7629 (Feb. 11, 1994).

289. *See* COUNCIL ON ENV'T QUALITY, ENVIRONMENTAL JUSTICE: GUIDANCE UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT (1997), https://www.epa.gov/sites/production/files/2015-02/documents/ej_guidance_nepa_ceq1297.pdf [https://perma.cc/QR7X-EKQT].

290. *See* Elizabeth Ann Glass Geltman, Gunwant Gill & Miriam Jovanovic, *Beyond Baby Steps: An Empirical Study of the Impact of Environmental Justice: Executive Order 12898*, 39 FAM. & CMTY. HEALTH 143, 149 (2016). In their 2016 study, the authors found that "environmental justice concerns are simply not well reflected in federal agency rulemaking . . . ." *Id.*

291. *See* 42 U.S.C. § 4332(C).

distinguished from those focused on by environmental justice advocates, which are site-specific and grassroots. Environmental justice is about protecting people more than the overall effects on the environment.

Professor Kaswan has forcefully noted the several reasons for the failure of environmental justice to gain significant traction in contrast with mainstream environmentalism. First, environmental justice advocates have less influence in policy circles than either industry or traditional environmental groups.[292] The decentralized, grassroots nature of environmental justice often means that only limited resources are available. Second, mainstream environmentalism has tended to focus on overall benefits outweighing overall costs, market-based solutions, and the preservation of economic growth as important goals.[293] These goals contrast with those of the environmental justice movement that eschews utilitarianism for the protection of citizens and communities first before costs are counted.[294] Third, even local siting decisions must conform to whether or not overall pollution is reduced as opposed to the consequences of that pollution on an identified community.[295] Perhaps, for example, it would be better not to site a facility in a particular community rather than to assure that the facility satisfies extant environmental standards. As Professor Kaswan notes, "permitting agencies focus largely on compliance with technology-based standards and generalized plans, not immediate and cumulative impacts."[296]

Also, environmental lawyers tend to be repeat players. Environmental lawyers know the agencies and the staffs within them; they know their fellow advocates as well as their adversaries; they have a deep understanding of the substance of procedures of environmental law, and past experiences give them familiarity with all of the above. Contrast one-off grassroots environmental litigants who, while they may draw upon the experience of the aforementioned lawyers, nevertheless, have a more directed concern about immediate relief rather than grand schemes such as "preserving the environment." Similarly, not only may the objectives differ between mainstream environmentalists and environmental justice advocates, strategies and goals may differ, too.

There is a long history of elitism in the nation's environmental ethics. The idea of wilderness and national parks paid no attention to whether or not a majority of citizens could enjoy those comforts. Sometimes referred

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292. Alice Kaswan, *Environmental Justice and Environmental Law*, 24 FORDHAM ENV'T L. REV. 149, 157–59 (2013).

293. *See id.*

294. *Id.*

295. *Id.* at 158.

296. *Id.* at 159.

to as "playgrounds for the rich," the idea of preserving land for sports fishing, hiking, or even photography was a preserve of the privileged not open to the common woman or man.[297]

Mainstream environmentalism reflects that elitism. Where mainstream environmentalists focus on science, fancy economic analyses, and other policy wonkish technical aspects of environmental law, often environmental justice cases have a pointed political agenda that focuses specifically on distributional issues and more generally on giving voice and participation to those who lack access to the legal and political processes of mainstream environmentalism. Cost-benefit analysis and environmental trading schemes are two cases in point. If the cost-benefit analysis of a particular policy shows that benefits outweigh costs overall, then such a policy will receive legal imprimatur regardless of the specific harmful effects on individual citizens or communities. Similarly, trading schemes for environmental pollution[298] may reduce overall pollution in an area but will leave the polluting factories *in situ* harming the very communities that may have complained about pollution in the first instance.[299]

Consequently, "mainstream environmental groups generally do not focus on environmental problems specific to poor and minority groups, or on the distributional implications of environmental policies."[300] This disparity between small diffuse groups and concentrated interests plays out exactly as public choice theory tells us. Yet another way of conceiving the disparity between environmental law and environmental justice is that the former tends to be elitist looking for grand solutions while the latter seeks relief from impending harms or actual immediate suffering. In short, "[i]mproving overall environmental conditions has not resolved environmental problems in disadvantaged communities."[301]

Although the environmental justice movement may have not achieved the gains it had hoped for and, in recent years may have stalled, it remains deeply instructive for the clean energy transition. As noted above, no longer can we responsibly treat energy and the environment separately. The merger between energy economics and the environment is more

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297. *See, e.g.*, Kaswan, *Environmental Justice: Bridging the Gap*, *supra* note 274, at 257–65; PURDY, THIS LAND IS OUR LAND, *supra* note 26, at 137–38; PURDY, AFTER NATURE, *supra* note 254, at 122; Jedediah Purdy, *The Long Environmental Justice Movement*, 44 ECOLOGY L.Q. 809, 850 (2018).

298. *See, e.g.*, Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc., 467 U.S. 837 (1984); *see also* Kaswan, *Environmental Justice and Environmental Law*, *supra* note 292, at 160.

299. *See, e.g.*, Richard J. Lazarus, *The Meaning and Promotion of Environmental Justice*, 5 MD. J. CONTEMP. LEGAL ISSUES 1, 5 (1994).

300. Kaswan, *Environmental Justice: Bridging the Gap*, *supra* note 274, at 266.

301. Kaswan, Environmental Justice and Environmental Law, *supra* note 292, at 160.

pronounced in the face of the challenges of climate change. What the environmental justice movement teaches is that it is necessary to integrate environmental, economic, social, and political considerations to confront the combined energy and environmental challenges embedded in a clean energy transition. These concerns are consistent with the goals of sustainable development, the aspirations of the Green New Deal,[302] and the desire for a more equitable economy and greater democratic participation in our polity.

C. Energy Democracy

As climate change appears to precipitate more frequent and more intense natural disasters like Hurricane Katrina, Superstorm Sandy, the typhoon that devastated Fukushima, and recurring and fatal California wildfires, they all share one consequence. Energy systems are taken down at enormous cost in economic loss and disrupted lives. Once the central energy system goes down it is game over for millions of people. "The principal reason for high economic and social costs is that the centralized structure of electricity generation and distribution guarantees concentrated losses when these events occur."[303]

By considering an alternative to the dominant large-scale, centralized energy model and stressing decentralization, energy democracy is a response to future energy challenges of not only climate change but choices about our energy mix, the types of energy services that consumers demand, and even the structure of energy generation and delivery systems. Professor Shelley Welton identifies three dimensions of energy democracy—consumer choice, local control, and "access to process."[304] In no small part, energy democracy brings an element of procedural justice to the clean energy transition by expanding local and consumer participation in energy decision-making. In large part, advocates of energy democracy are proposing an alternative to the traditional hard energy path dependent upon fossil fuels and nuclear power. As new and distributed energy resources proliferate and as competition in the energy sector increases, the hard path is being reshaped.[305] The new path is decentralized and open to increased consumer participation. Evidence of decentralization has occurred during the disasters mentioned above as microgrids and portable generators were called into use to provide backup

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302. Recognizing the Duty of the Federal Government to Create a Green New Deal, H.R. 109, 116th Cong. (2019).

303. TOMAIN, CLEAN POWER POLITICS, *supra* note 158, at 193.

304. Shelley Welton, *Grasping for Energy Democracy*, 116 MICH. L. REV. 581, 585 (2018).

305. *See* LOVINS, *supra* note 257, at 28–31.

power because of the failure of traditional utilities.

The traditional energy paradigm is supported by an institutionalized regulatory structure. Consequently, both industry and government are heavily invested in the hard path, path dependency reinforces that commitment, and change will not come rapidly in the short term. Nevertheless, the clean energy transition is moving forward, and energy democracy is an essential part of that movement. Drivers of the movement include new, smaller-scale technologies, increasing private investment in clean energy, greater consumer awareness, and greater consumer inputs to energy choices. A two-way electric grid, for example, provides better cost information for both producers and consumers so that near real-time pricing can inform both production and consumption decisions.[306] Additionally, both industry and its regulators are changing focus with an eye on the energy transition. The utility of the future envisions new and more participatory business models with the support of government R&D that looks to a cleaner future.[307]

There are various elements of energy democracy. In some instances, for example 350.org[308] and voluntary carbon reduction efforts such as the Net Zero Initiative,[309] energy and environmental concerns are joined. Another significant driver towards energy democracy is the reality that consumer choices expand. Through net metering projects consumers can produce and sell energy back to the grid. Through demand response programs consumers can reduce their consumption and, in some instances, get paid for that reduction. Through distributed energy resources, even down to the purchase of energy efficient appliances, consumers affect the amount of energy purchased from the local utility and bring their energy decision making right into their homes. And, as energy storage systems, such as electric vehicle charging proliferate, consumers can play a role as

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306. Glen Andersen, *Modernizing the Electric Grid: State Role and Policy Options*, NAT'L CONF. STATE LEGISLATURES (Dec. 2, 2019), https://www.ncsl.org/research/energy/modernizing-the-electric-grid-state-role-and-policy-options.aspx [https://perma.cc/N22J-2KNJ].

307. *See, e.g.*, N.Y. DEP'T OF PUB. SERV., REFORMING THE ENERGY VISION 8–11 (2014); *see also REV Initiatives*, *supra* note 242. *See generally* TOMAIN, CLEAN POWER POLITICS, *supra* note 158.

308. *About*, 350, https://350.org/about/ [https://perma.cc/X8UW-5AN8] (last visited Mar. 7, 2021).

309. *The Project*, NET ZERO INITIATIVE, http://www.netzero-initiative.com/en/initiative/projet [https://perma.cc/UY5F-2BDT] (last visited Mar. 7, 2021); *see also* Press Release, Science Based Targets Initiative, UN Global Compact & We Mean Business, *Over 150 Global Corporations Urge World Leaders for Net-Zero Recovery from COVID-19*, SCI. BASED TARGETS (July 9, 2020), https://sciencebasedtargets.org/news/over-150-global-corporations-urge-world-leaders-for-net-zero-recovery-from-covid-19 [https://perma.cc/W6UN-TCAS]; Blake Morgan, *101 Companies Committed to Reducing Their Carbon Footprint*, Forbes (Aug. 26, 2019, 4:32 PM), https://www.forbes.com/sites/blakemorgan/2019/08/26/101-companies-committed-to-reducing-their-carbon-footprint/?sh=4f2656c4260b [https://perma.cc/U72J-JTQP].

storage units and balancing authorities. Indeed, as Professor Welton notes:

> The evolving regulatory and technical landscape has empowered a host of new potential participants in the electricity grid—including you, me, and every other electricity consumer in the nation—exponentially expanding the number of players with an economic stake in the future shape of the system.[310]

Increased democratic participation can give voice to consumers, shape public policy among different stakeholders, generate a variety of approaches, solutions, options, and alternatives during the transition. In short, a "more democratic clean power paradigm affects the production and delivery of energy, its consumption and control, its regulation and enforcement, and energy planning and governance."[311]

At the local level, citizen groups can form an aggregation to negotiate with the local utility, to construct a microgrid,[312] design a "virtual utility,"[313] or to create a solar community[314] as examples of greater democratic participation in energy decision-making. These initiatives also promote decentralization. Decentralization, in turn, can increase grid reliability, improve cyber security, reduce congestion, reduce the costs of long-distance transmission, reduce the need for more centralized transmission and distribution facilities, increase efficiency, and expand the number of energy sources used to produce electricity. Through demand-side management programs, consumers can capitalize on smarter energy decisions.[315] In other words, energy democracy can inform energy policymaking in ways unavailable under the traditional path.

A decentralized, small-scale, labor-intensive, energy transition should empower localities to have more control over energy policy. Additionally, localized energy decision-making can incorporate other issues such as environmental concerns, land use decisions, and facility siting that will have a more direct impact on the citizens of an area than if those decisions were made in FERC hearing rooms in Washington D.C. Such a path

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310. Welton, *Grasping*, *supra* note 304, at 601.

311. TOMAIN, CLEAN POWER POLITICS, *supra* note 158, at 204.

312. Benjamin Kroposki, Andrey Bernstein, Jennifer King & Fei Ding, *Tomorrow's Power Grid Will Be Autonomous*, IEEE SPECTRUM (Nov. 23, 2020, 10:00 AM), https://spectrum.ieee.org/energy/the-smarter-grid/tomorrows-power-grid-will-be-autonomous [https://perma.cc/7DJC-QGY6]; Akshat Rathi, *The Little-Known Clean Energy Revolution*, BLOOMBERG QUINT (Aug. 25, 2020, 5:48 PM), https://www.bloombergquint.com/business/clean-electricity-mini-grids-can-help-world-s-poorest-access-energy [https://perma.cc/2J6P-P3QB] (discussing the rise of "mini-grids").

313. Coll-Mayor et al., *supra* note 222, at 66.

314. *See, e.g.*, CITIZENS FOR RESPONSIBLE SOLAR, https://www.citizensforresponsiblesolar.org [https://perma.cc/LK5K-FLAK] (last visited Mar. 7, 2021).

315. TOMAIN, CLEAN POWER POLITICS, *supra* note 158, at 205.

should also stimulate local jobs, innovation, and investment. To the extent that local initiatives can be multiplied throughout the country, "local and state governments can serve as 'policy laboratories' that engage in regulatory experimentation, which should promote efficiency gains through competition . . . ."[316] Local communities have local knowledge that can "develop best practices for the local use and distribution of energy . . . and search for cooperative solutions with and among other layers of government."[317]

Further, local energy regulation should reduce collective action problems in which large narrowly focused interests such as IOU's have an upper hand in decision making. Local political action should be less costly in terms of organizing, lobbying, and enabling public participation. The number of free riders should be reduced because local participation is less costly. Local issues should be more sharply refined because of the immediate needs of local residents, which "should help local businesses deploy energy innovations."[318] At a deeper, more normative level, greater democratic participation can generate a set of environmental/clean energy values for setting future goals.[319]

It is often said that climate change and decarbonization of the environment are such large, "super-wicked" problems that citizen participation withers in the face of such scientific, technological, and socio-political complexities.[320] In response, Professor Shelley Welton argues that we must switch away from the complexities to the realities.[321] The effects of power outages due to natural disasters, the siting of energy facilities such as local wind farms or energy storage systems, the desire for control over energy costs, and the possibility of constructing small modular nuclear units are realties[322] as the cost of constructing conventional nuclear plants remains high and not cost effective.[323] They

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316. *Id.* at 211.

317. *Id.*

318. *Id.* at 212.

319. *See* Jedediah Purdy, *The Politics of Nature: Climate Change, Environmental Law, and Democracy*, 119 YALE L.J. 1122, 1135–37 (2010).

320. Richard J. Lazarus, *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, 94 CORNELL L. REV. 1153, 1159–61 (2009); *see also* Robert R.M. Verchick, *Culture, Cognition, and Climate*, 2016 U. ILL. L. REV. 969, 973–75 (2016).

321. *See generally* Shelley Welton, *Decarbonization in Democracy*, 67 UCLA L. REV. 56 (2020).

322. Scott K. Johnson, *NuScale's Small Nuclear Reactor Is First to Get US Safety Approval*, ARS TECHNICA (Sept. 1, 2020, 12:43 PM), https://arstechnica.com/science/2020/09/first-modular-nuclear-reactor-design-certified-in-the-us/ [https://perma.cc/V8QU-ERBZ].

323. Johnna Crider, *Nuclear Energy—The High Cost of a Dying Industry*, CleanTechnica (Oct. 6, 2020), https://cleantechnica.com/2020/10/06/nuclear-energy-the-high-cost-of-a-dying-industry/ [https://perma.cc/RAS8-2Z5L]; Nancy W. Stauffer, *Building Nuclear Power Plants: Why Do Costs*

are also local issues which lend themselves to more democratic participation, or, in Welton's analysis, to "citizen empowerment."[324] Central to a shift away from technocratic solutions is the recognition that federal responses such as a reinvigorated Clean Power Plan, or international responses such as the Paris Climate Agreement, while necessary and desirable, are incomplete and should not obscure local solutions and local participation.[325]

Although citizen empowerment is plagued by an energy system that is over a century old and dominated by incumbent players, there is movement afoot. States that have begun to examine their energy distribution systems, for example, emphasize the role of citizen participation.[326] This participation can occur, for example, as public utility commissions and their regulated utilities plan for the future through a state's requirements for integrated resource plans.[327] More aggressively, citizen participation can be enhanced through local energy initiatives such as municipalization, community choice aggregation, community solar projects, microgrids, and the like.[328] These local initiatives effectively move decision-making and political power down from the state level to the local level, can increase consumer choices such as the ability to purchase renewable or green energy, can help shape energy planning including the resource mix, and can address non-energy issues such as job creation.[329] Local energy is not a pipedream. Instead, it is becoming an increasingly important dimension of energy/environmental decision-making as even recognized by the U.S. Environmental Protection

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Exceed Projections?, MIT ENERGY INITIATIVE (Nov. 25, 2020), http://energy.mit.edu/news/building-nuclear-power-plants/ [https://perma.cc/DTF7-VD2M]; Daria Iurshina, Nikita Karpov, Marie Kirkegaard & Evgeny Semenov, *Why Nuclear Power Plants Cost so Much—And What Can Be Done About It*, BULL. ATOMIC SCIENTISTS (June 20, 2019), https://thebulletin.org/2019/06/why-nuclear-power-plants-cost-so-much-and-what-can-be-done-about-it/ [https://perma.cc/D7JM-74WR]; David L. Chandler, *Study Identifies Reasons for Soaring Nuclear Plant Cost Overruns in the U.S.*, MIT NEWS (Nov. 18, 2020), https://news.mit.edu/2020/reasons-nuclear-overruns-1118 [https://perma.cc/6FXK-AVBE].

324. Welton, *Decarbonization*, *supra* note 321, at 65–67.

325. *Id.* at 78–80; *see also* Garrick B. Pursley & Hannah J. Wiseman, *Local Energy*, 60 EMORY L.J. 877, 956–57 (2011); Hannah J. Wiseman, *Urban Energy*, 40 FORDHAM URB. L.J. 1793, 1830–33 (2013); Uma Outka, *Cities and the Low-Carbon Grid*, 46 ENV'T L. 105, 155–56 (2016); Sarah Krakoff, *Planetarian Identity Formation and the Relocalization of Environmental Law*, 64 FLA. L. REV. 87, 106–107 (2012).

326. *See* TOMAIN, CLEAN POWER POLITICS, *supra* note 158, at 209–13.

327. Rachel Wilson & Bruce Biewald, *Best Practices in Electric Utility Integrated Resource Planning*, SYNAPSE ENERGY ECONS. 16–25 (2013), https://www.raponline.org/wp-content/uploads/2016/05/rapsynapse-wilsonbiewald-bestpracticesinirp-2013-jun-21.pdf [https://perma.cc/79Y3-EDCX]; *see also* Welton, *Decarbonization*, *supra* note 321, at 101–03.

328. Welton, *Decarbonization*, *supra* note 321, at 107–12.

329. *Id*. at 112–15.

Agency.[330]

D. Just Transition

Of the three movements discussed, the just transition may have the broadest applications both geographically and thematically. It also bears a close resemblance to the Green New Deal. Starting as a labor movement in the 1980s to protect workers from job displacement, for example with the closing of a coal mine, the just transition also worked to promote green jobs.[331] Recently, two scholars broadened the definition to encompass other similar actions: the concept of justice transition "could have the potential for uniting climate, energy and environmental (CEE) justice to provide a more comprehensive framework for analyzing and ultimately promoting fairness and equity throughout the transition away from fossil fuels."[332] In this way, the disciplines of sustainability, environmental justice, climate justice, and energy justice coalesce grounded with the concept of equity and distributive justice. Further, Harvard Professor Sheila Jasanoff has written that a just transition requires a new way of looking at economic development, technological change, and social justice.[333]

The United Nations has likewise a broad definition of a just transition:

> The transition towards inclusive and low-carbon economies must be just

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330. *See, e.g.*, *Public Participation Guide: Introduction to the Guide*, EPA, https://www.epa.gov/international-cooperation/public-participation-guide-introduction-guide [https://perma.cc/X6DQ-9EQF] (last visited Mar. 7, 2021).

331. *Just Transition: A Framework for Change*, CLIMATE JUST. ALL., https://climatejusticealliance.org/just-transition/ [https://perma.cc/8QCN-A7M4] (last visited Mar. 7, 2021).

332. Darren McCauley & Raphael Heffron, *Just Transition: Integrating Climate, Energy and Environmental Justice*, 119 ENERGY POL'Y 1, 1 (2018); *see also* Raphael J. Heffron & Darren McCauley, *What is the 'Just Transition'?*, 88 GEOFORUM 74, 74 (2018).

333. *See* Sheila Jasanoff, *Just Transitions: A Humble Approach to Global Energy Futures*, 35 ENERGY RSCH. & SOC. SCI. 11 (2018). In this article Professor Jasanoff argues that a new conceptual framework, built around the concept of humility, is necessary to fully understand the transition.

> From the abundant literature on technological disasters and failures, as well as from studies of risk and policy-relevant science, we can extract four focal points around which the social and human sciences of the energy transition can develop new technologies of humility. They are *framing*, *vulnerability*, *distribution*, and *learning*. Together, these provide a scaffolding for the ethical questions we should be asking about the global energy future: What alternative ways can our questions be posed? Who is most likely to be hurt? Who loses and who wins? How can we know better? On all of these dimensions, the more inclusive politics proposed above will improve our capacity for analysis and reflection.

Id. at 13.

> and fair, maximizing opportunities for economic prosperity, social justice, rights and social protection for all, leaving no one behind. For this reason, the Paris Agreement stated the imperative of just transition as essential elements of climate action.[334]

The core idea is to broaden the scope and reach of research into climate change so that human rights on a global scale are part of any decarbonization strategy. In this way, the just transition extends the scope of climate justice. Simply consider that the United States, with a little more than 4% of the world's population, produces and consumes about 20% of global energy with the consequent release of 15% of the world's carbon emissions, second only to China's 27%.[335] In other words, two countries are grossly disproportionately warming the world with devastating consequences. Ice caps are melting, ocean acidity is increasing, habitats are being destroyed, storms are more frequent and more intense, and forest fires have threatened communities and caused fatalities. These are obvious facts; however, it is important to recognize the necessity of the assigning responsibility. If we believe that the polluter pays, then polluters owe debts to the world as a matter of a just transition.

A just transition, then, is a long-term strategy to a cleaner energy economy. It is a necessary strategy to combat climate change and it should be guided by a theory of justice. There are, then, three normative claims made for the just transition. First, climate change is the largest market failure in history.[336] Second, because it is a market failure, public policy and government intervention is necessary to address that failure and move toward a cleaner future.[337] Third, and most importantly for the just transition, the social and economic costs and benefits involved with climate change and transitional policies must be equitably distributed.[338] This is a matter of distributive justice. Professor Ann Eisenberg adds a

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334. U.N. Secretariat, *Just Transition of the Workforce, and the Creation of Decent Work and Quality Jobs*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE 17 (Oct. 26, 2016) [hereinafter U.N. Paper].

335. Sean Fleming, *This Infographic Shows CO2 Emissions All Around the World*, WORLD ECON. F. (Sept. 25, 2019), https://www.weforum.org/agenda/2019/09/global-carbon-dioxide-emissions-chart-of-day/ [https://perma.cc/7U53-6KMU]; *Frequently Asked Questions (FAQs)*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/tools/faqs/faq.php?id=87&t=1 [https://perma.cc/TD5U-53EE] (last visited Mar. 7, 2021).

336. NICHOLAS STERN, A BLUEPRINT FOR A SAFER PLANET: HOW TO MANAGE CLIMATE CHANGE AND CREATE A NEW ERA OF PROGRESS AND PROSPERITY 11–13 (2009); *see also* WILLIAM NORDHAUS, THE CLIMATE CASINO: RISK, UNCERTAINTY, AND ECONOMICS FOR A WARMING WORLD 79–82 (2013).

337. *See generally* SHAPIRO & TOMAIN, *supra* note 143 (the need for government regulation in the face of market failures); DAVIES ET AL., ENERGY LAW AND POLICY, *supra* note 265 (the need for government regulations to correct energy market failures).

338. David J. Doorey, *Just Transitions Law: Putting Labour Law to Work on Climate Change*, 30.2 J. ENV'T L. & PRAC. 201, 234 (2017).

fourth normative consideration: "the needs of the workers and communities that have developed dependency relationships with high-carbon industries, often with substantial past and present socioeconomic costs, should specifically factor into calculating the equitable distribution of harms and benefits in the transition to a decarbonized economy."[339] The idea of linking labor issues to environmental ones is not a foreign concept. The specific motivation behind such legislation as the Surface Mining Control and Reclamation Act[340] and the Black Lung Benefits Act[341] was to protect workers injured by coal mine operations. This linkage of the harms of fossil fuel production and development must be extended throughout the energy sector as environmental harms are addressed.

The just transition draws from sustainability as well as the other justice movements noted above while placing significant emphasis on the role of law and legal policy in shaping economies toward a cleaner energy future, paying particular attention not only to distributive costs and benefits of the transition, but also promoting the voice of workers, communities, and other stakeholders that are normally left out of energy and environmental law and policy discussions.[342] Examples of such policies would include providing incentives for sustainable industries through fiscal and tax policies; financial incentives for sound environmental practices; training opportunities for workers transitioning into new fields; increased investments for public works; employment programs particularly linked to eradicating poverty while preserving ecosystems; trade and investment policies geared towards a clean future; robust clean energy R&D; and a full development of public infrastructure from local transportation through the smart grid.[343]

Additionally, scholars at the Center for Progressive Reform recommend federal legislation that provides funding, resources, and data collection for communities and individuals who are most vulnerable to the transition.[344] Such funding would include data collection and community planning with a focus on economic growth, services, and infrastructure.[345]

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339. Ann M. Eisenberg, *Just Transitions*, 92 S. CAL. L. REV. 273, 291 (2019).

340. Surface Mining Control and Reclamation Act of 1977, 30 U.S.C. §§ 1201–1328.

341. Black Lung Benefits Act of 1972, 30 U.S.C. §§ 901–45.

342. Doorey, *supra* note 338, at 231; *see also Principles of Climate Justice*, Mary Robinson Found.: Climate Just., https://www.mrfcj.org/pdf/Principles-of-Climate-Justice.pdf [https://perma.cc/2TB6-GADY] (last visited Mar. 7, 2021).

343. *See, e.g.*, *Guidelines for a Just Transition Towards Environmentally Sustainable Economies and Societies for All*, INT'L LABOUR ORG. 6–17 (2015), https://www.ilo.org/wcmsp5/groups/public/—-ed_emp/—-emp_ent/documents/publication/wcms_432859.pdf [https://perma.cc/UT8T-TVXS]; U.N. Paper, *supra* note 334, at 15–21.

344. Baker et al., *supra* note 271, at 34–56.

345. *Id.*

More particularly, the recommendations include funding for workers who have lost jobs due to the clean transition; public lands protections from fossil fuel development; and the setting of national net zero energy goals.[346]

Just transition initiatives are not simply ideas that are batted back and forth in scholarly papers. They are being presented more frequently in legislation, and the Roosevelt Project at the Massachusetts Institute of Technology has taken a multidisciplinary approach to quantitatively assessing the challenges posed by the transition to deep decarbonization.[347] The project also looks for opportunities for public-private interventions as well as stakeholder participation to "accelerate and facilitate the transition."[348] To date, the project has published a series of working papers that address such topics as the Green New Deal, workforce development, the effects of the transition on manufacturing, the distributed effects of climate policy, and building a clean energy infrastructure during a period of decarbonization.[349]

At the federal level proposed legislation has been introduced to create clean energy jobs,[350] set net zero emissions goals,[351] pass a Climate Crisis Action Plan to grow the economy, generate clean energy jobs, protect the health of all families, protect vulnerable communities such as the farming community, and protect America's land and waters.[352]

The title of this Symposium poses a question: What will the next decade bring to the clean energy transition? This paper was given October 2020 and at that time, the only answer was one given in the best law school tradition: "It depends." Of course, the future of the transition depended upon the outcome of the 2020 election. Today the direction of the clean energy transition is much clearer than it was then. With a Democratic president, a slight Democratic majority in the House and an evenly divided Senate which tilts Democratic, the federal government will take a more prominent role in the transition; it is a Biden administration priority.

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346. *Id.*

347. *See The Roosevelt Project*, MASS. INST. TECH. CTR. FOR ENERGY & ENV'T POL'Y RSCH., http://ceepr.mit.edu/roosevelt-project/publications [https://perma.cc/D6SC-QQXW] (last visited Mar. 7, 2021).

348. *Id.*

349. *Id.*

350. Clean Economy Jobs & Innovation Act, H.R. 4447, 116th Cong. (2020).

351. *See* Press Release, House Select Comm. on the Climate Crisis, Select Committee Democrats Release 'Solving the Climate Crisis', a Congressional Roadmap for Ambitious Climate Action (June 30, 2020), https://climatecrisis.house.gov/news/press-releases/climate-plan-press-release [https://perma.cc/MXB7-JAGR].

352. *Id.*

President-elect Biden published a Day One Fact Sheet.[353] The first priority, of course, was addressing the continuing COVID-19 pandemic including financial relief for families, workers, and students.[354] Tackling climate change and advancing environmental justice were the next listed priorities.[355] These policy goals were followed by swift action through Executive Orders and nominations. The Biden Administration cancelled the Keystone XL pipeline and rejoined the Paris Climate Agreement,[356] promised to rollback Trump's environmental actions[357] that threatened public health and the environment, committed to restoring science to decision-making, promised to protect public lands including the Artic National Wildlife Refuge, and planned to revise vehicle economy and emission standards.[358] Additionally, the administration established the Interagency Working Group on the Social Cost of Greenhouse Gases, an office focusing on matters including environmental justice and intergenerational equity.[359]

Although less headline grabbing, but no less important for the clean transition, other Executive Orders are directed to regulatory processes. First, the new administration issued an Executive Order to repeal all of Trump's anti-regulatory orders such as those that attempted to reduce regulations by considering only the costs of regulation without accounting for benefits.[360] Second, the administration is intent on modernizing regulatory review by focusing on how the regulatory process can "promote public health and safety, economic growth, social welfare, racial justice, environmental stewardship, human dignity, equity, and the interests of

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353. *Fact Sheet: President-elect Biden's Day One Executive Actions Deliver Relief for Families Across America Amid Converging Crises*, WHITE HOUSE (Jan. 20, 2021), https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/20/fact-sheet-president-elect-bidens-day-one-executive-actions-deliver-relief-for-families-across-america-amid-converging-crises/ [https://perma.cc/NNT4-REXX].

354. *Id.*

355. *Id.*

356. *Paris Climate Agreement*, WHITE HOUSE (Jan. 20, 2021), https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/20/paris-climate-agreement/ [https://perma.cc/EH95-KR5W]; *see also* Coral Davenport & Lisa Friedman, *Biden Cancels Keystone XL Pipeline and Rejoins Paris Climate Agreement*, N.Y. TIMES (Jan. 20, 2021), https://www.nytimes.com/2021/01/20/climate/biden-paris-climate-agreement.html [https://perma.cc/WLE7-WYEZ].

357. Coral Davenport, *Restoring Environmental Rules Rolled Back by Trump Could Take Years*, N.Y. TIMES (Jan. 22, 2021), https://www.nytimes.com/2021/01/22/climate/biden-environment.html [https://perma.cc/E6B2-6G23].

358. *Id.*

359. Exec. Order No. 13990, 86 Fed. Reg. 7037 (Jan. 20, 2021).

360. Exec. Order No. 13992, 86 Fed. Reg. 7049 (Jan. 20, 2021).

future generations."[361]

Appointments and nominations are intended to advance each of President Biden's energy goals, environmental goals, and regulatory goals.

As one of his first acts of office, President Biden announced the composition of an aggressive climate team made up of Washington veterans.[362] Former Secretary of State John Kerry will be the "climate czar," with a seat on the National Security Council.[363] Former EPA Administrator Gina McCarthy will serve as the first National Climate Advisor, which is intended to ensure that the climate crisis is addressed throughout the government.[364] McCarthy with be assisted by her deputy climate advisor Ali Zaidi, who worked on the climate action plan and the Paris Climate Agreement during the Obama administration.[365]

This team will coordinate the activities of other nominees and appointees and will complement a range of appointments including former Federal Reserve Chair and incoming Treasury Secretary Janet Yellen, who has long recognized that climate change is a threat to the economy and the financial system and also argues that carbon pricing is not enough to stem the crisis.[366]

Further examples include Sharon Block, who has been named as associate administrator of the Office of Information and Regulatory Affairs (OIRA) with the charge of expediting revocation of Trump administration rules harmful to workers and overseeing the OIRA's modernization.[367] Richard Glick has been named Chairman of the Federal Energy Regulatory Commission (FERC), with a likely agenda to reform electricity transmission, lower barriers to clean energy resources in electricity markets, consider the social costs of carbon in those markets,

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361. *Modernizing Regulatory Review*, WHITE HOUSE (Jan. 20, 2021), https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/modernizing-regulatory-review/?s=03 [https://perma.cc/DD9C-S9GE].

362. Louise Boyle, *Meet Biden's Climate Crisis Army*, INDEP. (Jan. 18, 2021, 8:25 PM), https://www.independent.co.uk/environment/climate-change/biden-climate-change-hires-white-house-b1788976.html [https://perma.cc/39UL-QB6F].

363. *Id.*

364. *Id.*

365. *Id.*

366. *See id.*; GRP. OF THIRTY, MAINSTREAMING THE TRANSITION TO A NET-ZERO ECONOMY 6–7 (2020), https://group30.org/images/uploads/publications/G30_Mainstreaming_the_Transition_to_a_Net- Zero_Economy_2.pdf [https://perma.cc/XHL5-4J2S] (Secretary Yellen served as co-chair of the Steering Committee of Working Group on Climate Change and Finance of the Group of Thirty).

367. Ben Penn & Courtney Rozen, *Sharon Block, Union Ally, Named to White House Regulatory Post*, BLOOMBERG L. (Jan. 21, 2021, 2:55 PM), https://news.bloomberglaw.com/safety/sharon-block-union-ally-named-to-white-house-regulatory-post [https://perma.cc/U3SG-QS5Z].

and assess environmental justice impacts of FERC decision-making.[368] Michael Regan now heads the Environmental Protection Agency (EPA).[369] "Regan [was] the secretary of the North Carolina Department of Environmental Quality, and his past experience includes earlier stints at EPA and the Environmental Defense Fund."[370] Regan's agenda will include: A review of the Trump administration's environmental rollbacks; advancing environmental justice and protecting vulnerable communities; recommitting the agency to addressing the climate crisis; and rebuilding the agency staff, including its science positions.[371]

Additional administration personnel with energy/environmental portfolios include former Governor Janet Granholm, who now leads the Department of Energy and is expected to promote clean energy job creation, restore energy efficiency initiatives canceled by the Trump administration, and prioritize electric vehicles and charging infrastructure.[372] Brenda Mallory is set to lead the Council on Environmental Quality (CEQ), which can reverse Trump's efforts to curtail the reach of the National Environmental Policy Act, renew CEQ's environmental justice goals, and more aggressively address climate change through a more thorough assessment of climate impacts in all NEPA reviews, reinvigorating climate adaptation planning, and renewing CEQ's environmental justice vision.[373]

The Department of Interior is now headed by New Mexico Representative Deb Haaland, the first Native American to head a cabinet

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368. Tomain, *Biden Named Richard Glick as Chair of the Federal Energy Regulatory Commission*, *supra* note 220; Catherine Morehouse, *Glick Named FERC Chair, Promises 'Significant Progress' on Energy Transition*, UTIL. DIVE (Jan. 21, 2021), https://www.utilitydive.com/news/glick-named-chair-of-ferc-promises-significant-progress-on-energy-transi/593721/ [https://perma.cc/BGS8-P6P8]; Jeff St. John, *President Biden Names Richard Glick as FERC Chair*, GREENTECH MEDIA (Jan. 21, 2021), https://www.greentechmedia.com/articles/read/biden-names-richard-glick-as-ferc-chair [https://perma.cc/XC6Y-7DNZ].

369. Victor Flatt & Joel Mintz, *Trump Damaged the EPA. Here's How Michael Regan Can Rebuild It and Advance Equitable Environmental Protections*, CPRBLOG (Dec. 18, 2020), http://progressivereform.org/cpr-blog/trump-damaged-epa-heres-how-michael-regan-can-rebuild-it/ [https://perma.cc/K2KR-2LXV]; Lisa Friedman, *Senate Confirms Biden's Pick to Lead E.P.A.*, N.Y. TIMES (Mar. 10, 2021), https://www.nytimes.com/2021/03/10/climate/michael-s-regan-epa-biden.html [https://perma.cc/5NFU-899X].

370. *Id.*

371. *Id.*

372. Hannah Wiseman, *Jennifer Granholm and the Energy Department Can Usher in a Just Transition to Clean Energy. Here's How*, CPRBLOG (Dec. 17, 2020), http://progressivereform.org/cpr-blog/jennifer-granholm-and-energy-department-can-usher-just-transition-clean-energy-heres-how/ [https://perma.cc/BC4E-QQ6S].

373. Jeff Turrentine, *Biden's Choice for the Council on Environmental Quality: Brenda Mallory*, NAT. RES. DEF. COUNCIL (Dec. 22, 2020), https://www.nrdc.org/stories/bidens-choice-council-environmental-quality-brenda-mallory [https://perma.cc/NGC7-22XV].

level department.[374] Haaland's priorities will include greater protections for public lands, more climate adaptation planning, restricting offshore lease for oil and gas exploration, and protecting public lands from environmental damage.[375] In this last regard, the Department of Energy announced that Shalanda Baker will serve as Deputy Director for Energy Justice.[376] This new position extends earlier federal efforts at environmental justice by examining the costs and benefits of energy decision making on vulnerable communities.[377]

In the first days of the Biden administration, the conversation about energy and the environment has changed significantly and has changed in a direction that is consistent with the values of Con III. Instead of weakening environmental laws and treating environmental laws as independent of energy law and policy as well as anathema to it, the Biden administration recognizes the necessary coexistence between energy and the environment. Instead of promoting the traditional fossil fuel paradigm, the administration recognizes the importance of renewable resources. Instead of denying the existence of climate change, the Biden administration embraces the necessity of confronting it head on. And, instead of favoring well-entrenched incumbent fossil fuel interests, the Biden administration recognizes that social justice requires that vulnerable peoples and communities should not bear the burdens and suffer the pollution harms of energy and environmental decisions. The Biden administration's energy/environment agenda is a dramatic departure from how the federal government has treated energy and environment in the past. Today, the country is poised to have the federal government join other state and local efforts and take a lead role in the clean energy transition.

CONCLUSION

There are signs that Con III is affecting our energy/environmental system. It is no longer reasonable to consider energy and the environment separately from each other; energy, environment, and economy are

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374. Robert Glicksman, *Biden Nominated Deb Haaland to Lead the Department of Interior. Here are Five Top Priorities for the Agency*, CPRBLOG (Dec. 17, 2020), http://progressivereform.org/cpr-blog/biden-nominated-deb-haaland-lead-department-interior-herear e-five-top-priorities-agency/ [https://perma.cc/QR22-S98J].

375. *Id.*

376. *Department of Energy Announces New Senior Leaders*, U.S. DEP'T OF ENERGY (Jan. 21, 2021), https://www.energy.gov/articles/department-energy-announces-new-senior-leaders [https://perma.cc/X9FY-6N7Q]; *see also* SHALANDA H. BAKER, REVOLUTIONARY POWER: AN ACTIVIST'S GUIDE TO THE ENERGY TRANSITION 8–11 (2021).

377. *See* Exec. Order No. 12,898, 59 Fed. Reg. 7629, 7629 (Feb. 11, 1994).

integrated parts of the same system. They are part of the same physical reality. From exploration and production through processing and transportation and then through consumption and disposal of the natural resources that we use to produce energy, there are environmental consequences. And those consequences are costly. In light of climate change, those consequences may be existential.

In addition to the merger of energy, environment, and economy, the movements discussed above evince a new consciousness. Energy justice, energy democracy, and the just transition share similarities. They addressed climate change, they provide alternatives to the traditional hard energy path, they favor decentralization, and they favor increased choice. At the same time, each movement has its particular strengths. Energy justice looks to the racial and local consequences of energy and environmental decision-making. Energy democracy stresses the importance of local participation as a matter of democratic principle. And the just transition looks to matters of distributive justice. These are radically different ways of looking at our energy/environmental system and they are necessary to further the current energy transition and provide for a clean future.

Reich's vision for a Consciousness III that abandons the Corporate State in favor of increasingly liberated individuals may well be a fantasy that is not to be realized. The Corporate State is too enduring. Indeed, the corporate state is playing an important role in the transition. However, his critique of the power and persistence of the Corporate State was spot on. As a society, we have been well aware of the problems of a warming planet for decades. Today, literally in every daily newsfeed, there are stories about how both the public and private sectors are taking noticeable steps to address those problems. The clean energy transition as embodied in setting net zero emission goals, decentralizing energy decision-making, moving away from fossil fuels and relying on clean, renewable resources and economic efficiency, and paying closer attention to the effects of energy/environmental decisions on the lives of people are all evidence that the old ways of doing energy business and setting energy policies must change and that we must adopt a new consciousness about the interrelatedness of energy and the environment to do so.