

# Who the ADVANCE Act Leaves Behind: The Neglected Needs of Nuclear Closure Communities

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*Across the United States, small communities host nuclear power plants within their borders, welcoming the plants as a source of tax revenue and employment. Then one day, whether due to expiring licenses or external factors, the nuclear plants shut down. In the wake of the shutdown, nuclear closure communities experience economic hardships as they are forced to cut their budgets and increase residents' taxes to make up for this significant loss of revenue. The ADVANCE Act, a recent piece of federal legislation that aimed to facilitate development of new nuclear power plants by streamlining the permitting process for next-generation reactors, could have eased these economic hardships. In its original draft, the ADVANCE Act contained a provision that would have funded economic development for and community engagement with nuclear closure communities. But in the final version of the ADVANCE Act that was signed into law on July 9, 2024, the nuclear closure communities provision was gone.*

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*The ADVANCE Act was a recent installment in a pattern of federal legislation that fails to address nuclear closure communities' needs. This Note examines past failed federal legislation to investigate why the ADVANCE Act may have lost its nuclear closure communities provision. This Note also discusses why nuclear closure communities deserve support, drawing parallels between the economic devastation that nuclear closure communities experience and the similar circumstances coal communities face in the aftermath of their respective power plants' closures. Finally, this Note considers how shortcomings of past support programs can inform improvements for future nuclear closure community funding programs. Recommendations for future programs include permanent and noncompetitive federal grant programs, robust state support, and community advisory boards with oversight authority over the decommissioning process.*

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## INTRODUCTION

On February 19, 1997, a pump broke at Zion Nuclear Power Station in Zion, Illinois.<sup>1</sup> Attempting to bring Unit 1 of the reactor to a low power level so that the pump could be repaired, the control room operator mistakenly inserted the control rods too far into the reactor's core and quickly withdrew them, ignoring proper procedures for a controlled return to power.<sup>2</sup> The operator ultimately shut down Unit 1 a few minutes later when it became apparent that the pump needed more time to repair.<sup>3</sup> Despite glaring safety violations, the control rod incident did not pose any imminent risk to human health.<sup>4</sup> The Nuclear Regulatory Commission (NRC) fined Commonwealth Edison, the owner of Zion Nuclear Power Station, \$330,000 for violations of NRC requirements.<sup>5</sup> Unit 2 was also shut down at the time of Unit 1's incident, so the entire plant remained inactive for months as Commonwealth Edison completed programs to improve plant management and make necessary modifications to safety systems.<sup>6</sup> Finally, on January 15, 1998, eleven months after the plant was first shut down, Commonwealth Edison announced it would permanently close the entire facility, citing cost concerns.<sup>7</sup>

But for the residents of Zion, the story was far from over. Zion Nuclear Power Station's operating license had been set to expire in 2013, and residents were "totally blindsided" by a closure that came fifteen years early.<sup>8</sup> The nuclear plant provided 1,200 jobs and \$19 million in annual taxes to the nearby city.<sup>9</sup>

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1. *Information Notice No. 97-62: Unrecognized Reactivity Addition During Plant Shutdown*, U.S. NUCLEAR REGUL. COMM'N, <https://www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/1997/in97062.html> (last updated Mar. 9, 2021).

2. *Id.*

3. Dave Lochbaum, *Fission Stories #79: Crossing the Line at Zion*, UNION OF CONCERNED SCIENTISTS (Feb. 14, 2012), <https://blog.ucsusa.org/dlochbaum/fission-stories-79-crossing-the-line-at-zion>.

4. *Information Notice No. 97-62: Unrecognized Reactivity Addition During Plant Shutdown*, *supra* note 1.

5. *NRC Staff Proposes \$330,000 Fine Against Commonwealth Edison for Violations of NRC Requirements at Zion Nuclear Station*, U.S. NUCLEAR REGUL. COMM'N, <https://www.nrc.gov/reading-rm/doc-collections/news/1997/97-079iii.html> (last updated Mar. 24, 2021).

6. *Id.*; *NRC Staff Issues Letters to Commonwealth Edison Co. on Actions to Be Taken Prior to Startup of Zion and LaSalle Nuclear Plants*, U.S. NUCLEAR REGUL. COMM'N, <https://www.nrc.gov/reading-rm/doc-collections/news/1997/97-039iii.html> (last updated Mar. 24, 2021) (noting Unit 2 shut down for refueling in September of 1996).

7. Specific cost concerns included high operating costs and an inability to compete in a deregulated electricity market. *ComEd Decides to Close Zion*, NUCLEAR ENG'G INT'L (Feb. 1, 1998), <https://www.neimagazine.com/news/comed-decides-to-close-zion/?cf-view&cf-closed>.

8. *A Legislative Hearing to Examine S. 2373, The American Nuclear Infrastructure Act of 2021, and S. 1290, The STRANDED Act of 2021: Hearing Before the Comm. on Env't and Pub. Works*, 117th Cong. 10 (2022) (statement of David Knabel, Dir. of Accts. and Fin., City of Zion, Ill.) [hereinafter *Hearing to Examine S. 2373 and S. 1290*].

9. Emily Previti, *When Nuclear Plants Close, There's a Ripple Effect. Ask Zion, Ill.*, STATEIMPACT PA. (Mar. 26, 2019), <https://stateimpact.npr.org/pennsylvania/2019/03/26/in-illinois-the>

Zion's residents were left to bear the burden of that \$19 million shortfall, and their property taxes skyrocketed by 50 percent in the immediate aftermath of the plant's closure.<sup>10</sup> As of 2018, Zion's property taxes remained at 4.3 percent, more than triple the national average.<sup>11</sup> While taxes increased, property values decreased.<sup>12</sup> This drew in large investor groups that bought up single-family homes to create rental properties, sometimes buying forty or fifty homes at a time.<sup>13</sup> Former plant employees also left town to pursue jobs at nuclear plants in other states, worsening the housing crisis.<sup>14</sup> When Zion's housing crisis was at its worst, rental properties accounted for 60 percent of housing units in the city.<sup>15</sup> On top of the economic devastation and housing crisis that the city faced, Zion is still home to about two million pounds of nuclear waste from the power plant.<sup>16</sup> The stored waste prevents redevelopment of the valuable lakefront property on which the waste casks are stored, deterring much-needed commercial development in the town.<sup>17</sup> Suffering so much hardship with little hope for improvement, it is easy for Zion's residents to feel like "nobody cares."<sup>18</sup>

Zion, Illinois is just one example of a nuclear closure community's experience in the United States. Nuclear closure communities are communities, often small towns or cities, that are located close to a nuclear power plant that has shut down or announced that it will shut down. While open, the nuclear power plant becomes a major component of these communities, contributing significant revenue and employment to the community's residents. And when a shutdown announcement comes, community members' lives are forever changed. Whether the shutdown comes suddenly, as in Zion, or with advanced warning, the community cannot escape the impacts of the plant's decommissioning.

A recent piece of federal legislation could have helped alleviate some of the adverse effects that nuclear closure communities experience. The

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town-of-zion-is-still-trying-to-recover-from-a-nuclear-plant-closure (local jobs); Kari Lydersen, *We are Scarred: Nuclear Communities Sidelined in Just Transition Debate, Even as Industry Subsidies Flow*, CANARY MEDIA (Nov. 8, 2022), <https://www.canarymedia.com/articles/enn/we-are-scarred-nuclear-communities-sidelined-in-just-transition-debate-even-as-nuclear-industry-subsidies-flow> (tax revenue).

10. Lydersen, *supra* note 9.

11. *Analysis: Zion Pays Property Taxes more than Three Times National Average*, LAKE CNTY. GAZETTE (Aug. 16, 2018), <https://lakecountygazette.com/stories/511534263-analysis-zion-pays-property-taxes-more-than-three-times-national-average>.

12. *Hearing to Examine S. 2373 and S. 1290*, *supra* note 8, at 10 (statement of David Knabel, Dir. of Accts. and Fin., City of Zion, Ill.).

13. *Id.*

14. Lydersen, *supra* note 9.

15. *Hearing to Examine S. 2373 and S. 1290*, *supra* note 8, at 10 (statement of David Knabel, Dir. of Accts. and Fin., City of Zion, Ill.); *see also infra* Part III.A (discussing the impacts of a high percentage of rental units on a community).

16. Lydersen, *supra* note 9.

17. *Id.*

18. Previti, *supra* note 9.

ADVANCE Act was signed into law on July 9, 2024, aiming to facilitate the development of new nuclear reactors in the United States by improving the timeliness, cost, and efficiency of the permitting process.<sup>19</sup> In its original form, the ADVANCE Act contained a provision that allocated federal funds to support economic development and community engagement in nuclear closure communities.<sup>20</sup> However, this section was ultimately removed from the final version of the ADVANCE Act.<sup>21</sup> In failing to include the nuclear closure communities provision in the final version of the ADVANCE Act, Congress missed an opportunity to support communities like Zion.

As the United States works to meet its climate goals by reducing fossil fuel use and expanding renewable energy development, there have been increasing calls to ensure that the energy transition is equitable.<sup>22</sup> In a just energy transition, the shift to clean energy will support disadvantaged communities that have been disproportionately impacted by the effects of climate change.<sup>23</sup> One focus of the just energy transition is to ensure that coal communities are adequately supported when coal power plants are shut down as fossil fuels are phased out.<sup>24</sup> Recognizing the painful history that coal communities have endured, as well as the economic crises caused by the shutdown of their primary industry, both state and federal governments have directed support to these communities and workers through the energy transition.<sup>25</sup> Nuclear power, however, does not fit as

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19. See *SIGNED: Bipartisan ADVANCE Act to Boost Nuclear Energy Now Law*, U.S. SENATE COMM. ON ENV'T & PUB. WORKS (July 9, 2024), <https://www.epw.senate.gov/public/index.cfm/2024/7/signed-bipartisan-advance-act-to-boost-nuclear-energy-now-law>.

20. ADVANCE Act of 2023, S. 1111, 118th Cong. § 601 (2023).

21. See ADVANCE Act of 2024, Pub. L. No. 118-67, div. B, 138 Stat. 1448 (2024) (containing no nuclear closure communities provision).

22. See, e.g., Ann M. Eisenberg, *Just Transitions*, 92 S. CAL. L. REV. 273, 275 (2019) (“In response to this concern, many call for a ‘just transition’ to a low-carbon future.”); Uma Outka, *Fairness in the Low-Carbon Shift: Learning from Environmental Justice*, 82 BROOK. L. REV. 789, 789 (2017) (“Today, as climate change drives a shift in the energy sector away from fossil fuels and toward low-carbon resources, calls for ‘energy justice’ and ‘climate justice’ expand the movement’s conceptual reach in the modern context.”); J. Mijin Cha, *A Just Transition: Why Transitioning Workers into a New Clean Energy Economy Should Be at the Center of Climate Change Policies*, 29 FORDHAM ENV'T L. REV. 196, 198 (2017) (“Attention and resources must be focused on helping these workers and communities adapt to a clean energy in a way that is fair and just, otherwise known as *just transition*.”).

23. See, e.g., Katie Constantine, *What is a Just Energy Transition?*, OXFAM (Dec. 11, 2023), <https://www.oxfamamerica.org/explore/stories/what-is-a-just-energy-transition>; Eisenberg, *supra* note 22, at 275; Outka, *supra* note 22, at 791-93; Mijin Cha, *supra* note 22, at 198.

24. See Eisenberg, *supra* note 22, at 300-08 (discussing coal communities as a case study for equitable transition principles); Mijin Cha, *supra* note 22, at 198-99 (asserting that an “affirmative duty” exists to support coal communities in the energy transition); Outka, *supra* note 22, at 817-18 (discussing federal efforts to support coal communities and noting that there is “more to do” to help coal communities); see also Patrick McGinley, *Collateral Damage: Turning a Blind Eye to Environmental and Social Injustice in the Coalfields*, 19 J. ENV'T L. & SUSTAINABILITY L. 305, 401-05 (2013) (discussing the “war on coal” as the United States transitions to clean energy and criticizing the Obama administration for its “failure to meaningfully engage on the issue of coalfield communities’ economic future”).

25. See, e.g., *Coal Communities Commitment*, U.S. ECON. DEV. ADMIN., <https://www.eda.gov/funding/programs/american-rescue-plan/coal-communities-commitment> (last

neatly into the just energy transition conversation. Unlike coal, nuclear energy is considered a clean energy source, meaning that nuclear power plants are not forced to shut down as the United States transitions away from fossil fuels.<sup>26</sup> Because the hardships nuclear closure communities face are not the direct result of the clean energy transition, the principles that underpin transition relief for coal communities are not always directly applied to nuclear closure communities' need for support.<sup>27</sup> As a result, nuclear closure communities are often left out of the just energy transition conversation. But nuclear plants still shut down, often due to high costs and an inability to compete with other renewable energy sources, leaving nearby communities without support.<sup>28</sup>

This Note examines how, upon a nuclear plant's shutdown, nuclear closure communities experience similar hardships as coal communities. It articulates that comparatively little attention has been given to the experiences of nuclear closure communities despite recognition that they are deserving of support, and it identifies how the recent ADVANCE Act became another example in an unfortunate pattern of federal legislation that has failed to support these communities. This Note highlights the hardships that these communities have endured along with the inadequacy of past support efforts. In doing so, this Note emphasizes the need to more effectively support nuclear closure communities and provides recommendations on how to improve federal and state support for these communities.

Part I introduces the landscape of nuclear energy in the United States, noting how persistent cost issues in the development of new nuclear reactor technology set the stage for the ADVANCE Act's passage. Next, Part II analyzes the legislative history of the ADVANCE Act, investigating how the nuclear closure communities provision was dropped from the bill and examining past failed federal legislation attempting to support nuclear closure communities. Part III emphasizes the reasons that nuclear closure communities are deserving of federal support. It analyzes the impacts to a community throughout decommissioning and draws parallels between coal communities and nuclear closure communities. Finally, Part IV identifies the shortcomings of existing federal and state support to nuclear closure communities and provides

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visited Dec. 5, 2024) (federal funding program for coal communities); *Assistance to Coal Communities (ACC)*, U.S. ECON. DEV. ADMIN., <https://www.eda.gov/coal> (last visited Dec. 5, 2024) (federal funding program for coal communities); *The Office of Just Transition*, COLO. DEP'T OF LAB. AND EMP., <https://cdle.colorado.gov/the-office-of-just-transition> (last visited Dec. 5, 2024) (Colorado state office devoted to assisting coal communities and coal workers).

26. See *3 Reasons Why Nuclear is Clean and Sustainable*, U.S. DEP'T OF ENERGY (Mar. 31, 2021), <https://www.energy.gov/ne/articles/3-reasons-why-nuclear-clean-and-sustainable>.

27. See *infra* Part III.B (discussing how many justifications underpinning support for coal communities, including past government exploitation and forced plant closures, do not apply as neatly to nuclear closure communities).

28. See Mark Morey, *U.S. Nuclear Electricity Generation Continues to Decline as More Reactors Retire*, U.S. ENERGY INFO. ADMIN. (Apr. 8, 2022), <https://www.eia.gov/todayinenergy/detail.php?id=51978>.

recommendations to make this support more effective. The Note then concludes with a case study of Indian Point Energy Center, the most recent nuclear power center decommissioned in the United States, examining the shortcomings of the support nearby communities received and considering how this Note's recommendations could have improved that support. Although the ADVANCE Act was the most recent instance in a broader pattern of failures to support nuclear closure communities, this Note employs lessons learned from these failures to envision how future programs can meaningfully engage and support these communities.

### I. NUCLEAR ENERGY IN THE UNITED STATES AND THE ADVANCE ACT

Nuclear power has provided about 20 percent of electricity in the United States annually since 1990, with fifty-four nuclear power plants currently operating across the country.<sup>29</sup> Nuclear energy is a reliable clean energy source as reactors operate at full capacity over 92 percent of the time, generally only pausing operations to refuel.<sup>30</sup> Nuclear reactors are also resistant to weather events and temperature swings that can affect other renewable energy sources.<sup>31</sup> Because of this reliability, nuclear energy advocates believe that nuclear power is a crucial element of decarbonization efforts.<sup>32</sup> And as electricity demand steadily increases, nuclear power provides a means to meet this demand.<sup>33</sup> Concerns about public safety, national security, nuclear proliferation, and nuclear waste storage create opposition to the industry, particularly among environmental advocacy groups.<sup>34</sup> However, nuclear power enjoys relatively

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29. *Nuclear Explained*, U.S. ENERGY INFO. ADMIN., <https://www.eia.gov/energyexplained/nuclear/nuclear-power-plants.php> (last updated Aug. 21, 2023); *How Many Nuclear Power Plants are in the United States, and Where are They Located?*, U.S. ENERGY INFO. ADMIN., <https://www.eia.gov/tools/faqs/faq.php?id=207&t=21> (last updated May 8, 2024).

30. Lucas Johnson, *When it Comes to Reliability, Look No Further than Nuclear*, NUCLEAR ENERGY INST. (Feb. 1, 2024), <https://www.nei.org/news/2024/for-reliability-look-no-further-than-nuclear>.

31. *Id.*

32. *See Clean Energy*, NUCLEAR ENERGY INST., <https://www.nei.org/advantages/climate> (last visited Dec. 7, 2024); Richard Rhodes, *Why Nuclear Power Must Be Part of the Energy Solution*, YALE ENV'T 360 (July 19, 2018), <https://e360.yale.edu/features/why-nuclear-power-must-be-part-of-the-energy-solution-environmentalists-climate>.

33. *Global Electricity Demand Set to Rise Strongly this Year and Next, Reflecting its Expanding Role in Energy Systems Around the World*, INT'L ENERGY AGENCY (July 19, 2024), <https://www.iea.org/news/global-electricity-demand-set-to-rise-strongly-this-year-and-next-reflecting-its-expanding-role-in-energy-systems-around-the-world> (discussing increases and sources of global energy demand); *Infrastructure*, NUCLEAR ENERGY INST. <https://www.nei.org/advantages/infrastructure> (last visited Dec. 7, 2024) (discussing nuclear power's large generation capacity).

34. *See, e.g., Nuclear Power is Dirty, Dangerous and Expensive. Say No to New Nukes.*, GREENPEACE, <https://www.greenpeace.org/usa/climate/issues/nuclear> (last visited Dec. 8, 2024); *10 Reasons to Oppose Nuclear Energy*, GREEN AM., <https://greenamerica.org/fight-dirty-energy/amazon-build-cleaner-cloud/10-reasons-oppose-nuclear-energy> (last visited Dec. 8, 2024); *see also Advantages and Challenges of Nuclear Energy*, U.S. DEP'T OF ENERGY (June 11, 2024), <https://www.energy.gov/ne/articles/advantages-and-challenges-nuclear-energy> (explaining factors contributing to opposition of nuclear energy in the United States).

broad popular support across the United States and strong bipartisan support in Congress.<sup>35</sup>

Despite bipartisan support and optimism about nuclear energy's role in the clean energy transition, major hurdles still hinder new nuclear reactor implementation. The nuclear energy industry is plagued by economic issues, with new projects consistently facing cost overruns.<sup>36</sup> Nuclear reactors are significantly costlier to build and operate than natural gas and renewable energy sources including solar, wind, and geothermal.<sup>37</sup> The lengthy permitting process for new reactors also results in long lead times and construction delays that impede new projects.<sup>38</sup> Only three new reactors have been constructed in the United States since the 1990s.<sup>39</sup> The construction of two of those reactors at Plant Vogtle in Georgia ran into "significant construction delays and cost overruns," completing construction in April 2024 at a cost of \$30 billion, seven years later and \$16 billion more expensive than originally planned.<sup>40</sup> In November 2023, NuScale Power announced that it had cancelled its highly anticipated Carbon Free Power Project, which planned to build several small modular reactors (SMRs) in Idaho, after "substantial cost overruns and delays" frustrated the project.<sup>41</sup> SMRs are an advanced reactor design that are smaller than traditional large reactors and offer cost and siting benefits due to the size, and the Carbon Free Power Project would have been the first SMR deployed in the United States.<sup>42</sup>

Recognizing the hurdles that new nuclear reactors face, Senator Shelley Capito introduced the ADVANCE Act in March 2023.<sup>43</sup> The ADVANCE Act

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35. See Rebecca Leppert & Brian Kennedy, *Majority of Americans Support More Nuclear Power in the Country*, PEW RSCH. CTR. (Aug. 5, 2024), <https://www.pewresearch.org/short-reads/2024/08/05/majority-of-americans-support-more-nuclear-power-in-the-country>.

36. Jim Hopf, *How Can Nuclear Construction Costs Be Reduced?*, AM. NUCLEAR SOC'Y (Jan. 24, 2013), <https://www.ans.org/news/article-1247/how-can-nuclear-construction-costs-be-reduced>.

37. MARK HOLT, CONG. RSCH. SERV., R42853, NUCLEAR ENERGY: OVERVIEW OF CONGRESSIONAL ISSUES 3 (Oct. 20, 2021).

38. *Advantages and Challenges of Nuclear Energy*, *supra* note 34.

39. *Plant Vogtle Unit 4 Begins Commercial Operation*, U.S. ENERGY INFO. ADMIN. (May 1, 2024), <https://www.eia.gov/todayinenergy/detail.php?id=61963> (showing that Watts Bar Unit 2, Plant Vogtle Unit 3, and Plant Vogtle Unit 4 are the only three reactors constructed in the United States since the 1990s).

40. *Id.*; Jeff Amy, *Georgia Nuclear Plant's Cost Now Forecast to Top \$30 Billion*, AP NEWS (May 8, 2022), <https://apnews.com/article/business-environment-united-states-georgia-atlanta-7555f8d73c46f0e5513c15d391409aa3>.

41. Zach Bright, *NuScale Cancels First-of-a-Kind Nuclear Project as Costs Surge*, E&E NEWS (Nov. 9, 2023), <https://www.eenews.net/articles/nuscale-cancels-first-of-a-kind-nuclear-project-as-costs-surge>.

42. *Id.*; Joanne Liou, *What are Small Modular Reactors (SMRs)?*, INT'L ATOMIC ENERGY AGENCY (Sept. 13, 2023), <https://www.iaea.org/newscenter/news/what-are-small-modular-reactors-smrs> (discussing that small modular reactors can save cost and time and provide more flexibility in siting locations due to their smaller size and lower power output).

43. *Carper, Capito, Whitehouse Introduce Bipartisan Nuclear Energy Bill, the ADVANCE Act*, U.S. SENATE COMM. ON ENV'T & PUB. WORKS (Apr. 3, 2024), <https://www.epw.senate.gov/public/>

aimed to “facilitate the development of the next generation of advanced nuclear reactors” by improving the review process for new reactors.<sup>44</sup> After being incorporated into the Fire Grants and Safety Act of 2024, which passed with strong bipartisan support in Congress, the ADVANCE Act was signed into law on July 9, 2024.<sup>45</sup> ADVANCE Act provisions include efforts to support new nuclear reactor technology development and deployment by reducing regulatory costs for plant owners, directing the Nuclear Regulatory Commission (NRC) to streamline the licensing process for new reactors at former fossil fuel power plant sites, establishing a monetary prize incentive for successful deployment of advanced reactor technology, and expediting procedures for combined reactor license applications.<sup>46</sup> Provisions also aim to enhance NRC efficiency by empowering the NRC to improve its workforce and mandating that the NRC establish a more timely and predictable licensing structure.<sup>47</sup>

However, not all provisions found in the original version of the ADVANCE Act were present in the final ADVANCE Act. One such provision was section 601 of the original draft: “Nuclear closure communities.”<sup>48</sup> Nuclear closure communities were defined in section 601 as communities that had been “impacted” by the closure of a nuclear power plant.<sup>49</sup> Section 601 directed the Department of Commerce’s Economic Development Administration (EDA) to establish a grant program to fund nuclear closure communities in two ways: first, to “assist with economic development,” and second, to “fund community

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index.cfm/2023/4/carper-capito-whitehouse-introduce-bipartisan-nuclear-energy-bill-the-advance-act; ADVANCE Act of 2023, S. 1111, 118th Cong. (2023).

44. Carper, Capito, Whitehouse Introduce Bipartisan Nuclear Energy Bill, the ADVANCE Act, *supra* note 43.

45. See *SIGNED: Bipartisan ADVANCE Act to Boost Nuclear Energy Now Law*, *supra* note 19. The ADVANCE Act passed with 393 votes in the House of Representatives and eighty-eight votes in the Senate. *Roll Call 194 Bill Number: S. 870*, OFF. OF THE CLERK, U.S. HOUSE OF REPRESENTATIVES (May 8, 2024), <https://clerk.house.gov/Votes/2024194>; *Roll Call Vote 118th Congress - 2nd Session*, U.S. SENATE, [https://www.senate.gov/legislative/LIS/roll\\_call\\_votes/vote1182/vote\\_118\\_2\\_00200.htm](https://www.senate.gov/legislative/LIS/roll_call_votes/vote1182/vote_118_2_00200.htm) (last visited Dec. 8, 2024). The Fire Grants and Safety Act reauthorized the U.S. Fire Administration and two funding programs for firefighters in addition to incorporating the ADVANCE Act. *Kean’s Fire Grants and Safety Act Becomes Law*, CONGRESSMAN TOM KEAN, JR. (July 9, 2024), <https://kean.house.gov/media/press-releases/keans-fire-grants-and-safety-act-becomes-law>.

46. ADVANCE Act of 2024, Pub. L. No. 118-67, div. B, §§ 201-02, 206-07, 138 Stat. 1448,1457-64 (2024); see also *SIGNED: Bipartisan ADVANCE Act to Boost Nuclear Energy Now Law*, *supra* note 19; Brian Martucci, *Bipartisan Nuclear Bill Heads to Biden’s Desk as Some Analysts Question Potential Safety Impacts*, UTIL. DIVE (June 24, 2024), <https://www.utilitydive.com/news/advance-act-nuclear-bill/719629>.

47. ADVANCE Act of 2024 §§ 502, 505; see also *SIGNED: Bipartisan ADVANCE Act to Boost Nuclear Energy Now Law*, *supra* note 19; *ADVANCE Act (Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy Act of 2024)*, U.S. NUCLEAR REGUL. COMM’N, <https://www.nrc.gov/about-nrc/governing-laws/advance-act.html> (last updated Nov. 25, 2024).

48. ADVANCE Act of 2023, S. 1111, 118th Cong. § 601 (2023).

49. Section 601 defined nuclear closure communities as communities impacted by a plant that (1) is not co-located alongside an operating nuclear plant, (2) is at a site with spent nuclear fuel, and (3) has either ceased operations or provided written notice to the NRC that it will cease operations as of the enactment of the ADVANCE Act. *Id.* § 601(a)(5).

advisory boards” in these communities.<sup>50</sup> The provision authorized \$35 million to fund economic development annually from 2023 to 2028, and \$5 million to fund community advisory boards annually from 2023 to 2025.<sup>51</sup>

The ADVANCE Act came at a critical time for nuclear power in the United States. As of June 2025, forty-one nuclear reactors have permanently shut down in the United States, the most shutdowns of any country.<sup>52</sup> Furthermore, twenty-three reactors at eighteen nuclear plant sites are currently in stages of decommissioning.<sup>53</sup> Although Three Mile Island and Palisades Nuclear Plant have recently announced plans to restart their reactors, many reactors currently undergoing decommissioning are too far along in the decommissioning process to be viable physical and economic candidates for restarts.<sup>54</sup> While the ADVANCE Act seeks to facilitate the development of new nuclear reactors across the United States, the Act’s failure to support nuclear closure communities poses real issues both presently and in the future. All nuclear plants are eventually decommissioned, whether due to a planned shutdown at the end of

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50. *Id.* § 601(b); *see also infra* Part IV.A (discussing the community advisory board funding provision in the ADVANCE Act in more detail).

51. S.1111 § 601(e).

52. *Number of Permanent Nuclear Reactor Shutdowns Worldwide as of June 2025, by Country*, STATISTA, <https://www.statista.com/statistics/513639/number-of-permanent-nuclear-reactor-shutdowns-worldwide> (last updated June 10, 2025).

53. *Locations of Power Reactor Sites Undergoing Decommissioning*, U.S. NUCLEAR REGUL. COMM’N, <https://www.nrc.gov/info-finder/decommissioning/power-reactor/index.html> (last updated Aug. 7, 2025).

54. The recent trend in restarting decommissioned reactors is largely driven by Big Tech companies looking to nuclear power to quickly provide “dispatchable low carbon energy” that will meet the significant energy demands of artificial intelligence. *See, e.g.*, Eduardo Garcia, *US Eyes 7% More Nuclear Power Through Restarts, Upgrades*, REUTERS, <https://www.reuters.com/business/energy/us-eyes-7-more-nuclear-power-through-restarts-upgrades-2025-08-07> (last updated Aug. 7, 2025). However, even for tech companies “willing to pay a premium” to utilize decommissioned nuclear reactors, practical constraints may limit whether reactors can actually be restarted. *See id.*; *see also* Jessica Holdman, *SC Nuclear Reboot Sees Interest from Big Tech, Large Utilities*, S.C. DAILY GAZETTE (Mar. 31, 2025), <https://scdailygazette.com/2025/03/31/sc-nuclear-reboot-sees-interest-from-big-tech-large-utilities> (noting that while there is interest among “[l]arge utility companies and technology giants” to restart V.C. Summer nuclear plant in South Carolina, the “scope of work necessary” to restart the reactor has already deterred “several” interested parties). Many reactors in the decommissioning process are already being deconstructed and would require significant work to rebuild plant components and remedy maintenance issues, making a restart uneconomical. For example, Indian Point Energy Center in New York has been deconstructed to the extent that a restart is likely not feasible. *See* Brian Martucci, *With Palisades and Three Mile Island Units Set to Restart, Could More Retired Reactors Follow?*, UTIL. DIVE (Oct. 22, 2024), <https://www.utilitydive.com/news/palisades-three-mile-island-duane-arnold-nuclear-reactor-restart-holtec-nextera-constellation-nrc/730393>. Even the (thus far) successful reboots of Three Mile Island and Palisades Nuclear Plant have faced significant challenges throughout the restart process. *See* Laila Kearney, *Three Mile Island Nuclear Plant Gears Up for Big Tech Reboot*, REUTERS (Oct. 22, 2024), <https://www.reuters.com/business/energy/three-mile-island-nuclear-plant-gears-up-big-tech-reboot-2024-10-22> (discussing the extensive construction work required for the Three Mile Island plant restart); Nina Misuraca Ignaczak, *In the News: What’s Going On with the Palisades Nuclear Plant?*, PLANET DETROIT (Oct. 9, 2024), <https://planetdetroit.org/2024/10/palisades-nuclear-plant-restart> (discussing the “significant regulatory and technical hurdles” ahead for the Palisades plant restart).

the plant's design lifetime or a premature shutdown following political and regulatory pressures.<sup>55</sup> And in passing the ADVANCE Act, the United States aims to build more nuclear power plants that will need to be decommissioned sometime in the future. With each new nuclear power plant constructed, another community may become economically dependent on that plant and need support when the plant is decommissioned.

## II. FAILURES TO SUPPORT NUCLEAR CLOSURE COMMUNITIES IN FEDERAL LEGISLATION

The previous Part introduced the potential for the decommissioning of nuclear plants to affect many communities across the country. Yet past federal legislation, including the final version of the ADVANCE Act, has consistently failed to support nuclear closure communities despite recognition among lawmakers that these communities deserve aid. This Part will examine nuclear closure communities' presence in federal legislation. First, this Part tracks the nuclear closure communities provision from its inclusion in the original draft of the ADVANCE Act to its absence in the bill's final passage. Second, this Part digs into unsuccessful bills prior to the ADVANCE Act that included language supporting nuclear closure communities. Examining the reason the previous bills failed provides insight into why the nuclear closure communities provision may have dropped out of the ADVANCE Act.

### A. Nuclear Closure Communities in the ADVANCE Act's Legislative History

The ADVANCE Act was not passed on its own. Instead, provisions of the ADVANCE Act were incorporated into the Fire Grants and Safety Act after a winding history in Congress.<sup>56</sup> Senator Shelley Capito first introduced the ADVANCE Act in the Senate on March 30, 2023.<sup>57</sup> At the time of its introduction, the ADVANCE Act contained section 601: "Nuclear closure communities."<sup>58</sup> Section 601 would have allocated funding to "assist with economic development" and "fund community advisory boards" in nuclear closure communities.<sup>59</sup> After its introduction to the Senate, the Senate Committee on Environment and Public Works prepared a report on the ADVANCE Act to recommend its passage.<sup>60</sup> This report recognized that nuclear closure communities "face a number of negative economic impacts and economic development challenges" because of their proximity to nuclear power

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55. *Decommissioning Nuclear Facilities*, WORLD NUCLEAR ASS'N, <https://world-nuclear.org/information-library/nuclear-fuel-cycle/nuclear-waste/decommissioning-nuclear-facilities> (last updated May 3, 2022) (identifying plant design lifetimes, safety incidents, and political or regulatory decisions as reasons for nuclear power plants shutting down).

56. See ADVANCE Act of 2024, Pub. L. No. 118-67, div. B, 138 Stat. 1448 (2024).

57. ADVANCE Act of 2023, S. 1111, 118th Cong. (2023).

58. *Id.* § 601.

59. *Id.* § 601(b).

60. S. REP. NO. 118-182, at 1 (2024).

plants.<sup>61</sup> The ADVANCE Act would provide much-needed funding to these communities to help remedy the economic harm they suffer in the aftermath of a nuclear plant's closure, including loss of tax revenue and jobs.<sup>62</sup> The report also called attention to the fact that nuclear closure communities have been forced to "bear the responsibility" of holding spent nuclear waste.<sup>63</sup> The Committee's decision to include this discussion about nuclear closure communities in its report suggests that its members gave weight to the hardships these communities face.

However, the ADVANCE Act never made it further in Congress as a standalone bill. Instead, in July 2023, the Senate proposed including the ADVANCE Act in the National Defense Authorization Act (NDAA) for Fiscal Year 2024.<sup>64</sup> This version of the ADVANCE Act still included the provision on nuclear closure communities, with the same language used in the original bill.<sup>65</sup> In the conference committee for the NDAA, the Senate ultimately agreed to remove the ADVANCE Act from the bill, as there was "no similar provision" in the House of Representatives version of the bill.<sup>66</sup> The NDAA was signed into law in December 2023 without the ADVANCE Act included within it.<sup>67</sup>

After failing to be included in the NDAA, the ADVANCE Act was next incorporated into the Fire Grants and Safety Act, passing in the House in May 2024.<sup>68</sup> In this incorporated version, the nuclear closure communities section was removed in its entirety.<sup>69</sup> The removal did not go unnoticed: Senator Ed Markey, voicing his opposition to the bill, argued that the new version of the Act "puts communities on the back burner" and chooses "corporate profits over community cleanup" by excluding the "much needed" support for nuclear

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61. *Id.* at 3.

62. *See id.* at 14.

63. *Id.* at 3, 14.

64. National Defense Authorization Act for Fiscal Year 2024, S. 2226, 118th Cong. § 8141 (2023).

65. *Id.* § 8141(x).

66. H.R. REP. NO. 118-301, at 1384 (2023). A conference committee convenes when the Senate and House have passed two different versions of a bill and need to reconcile their versions to pass a bill with the same language. *Frequently Asked Questions about Committees*, U.S. SENATE, [https://www.senate.gov/committees/committees\\_faq.htm](https://www.senate.gov/committees/committees_faq.htm) (last visited Apr. 20, 2025).

67. National Defense Authorization Act for Fiscal Year 2024, Pub. L. No. 118-31, 137 Stat. 136 (2023).

68. S. 870, Engrossed Amendment House, div. B, 118th Cong. (May 8, 2024); *Roll Call 194 Bill Number: S. 870*, *supra* note 45 (passing with 393 votes in the House). Solid bipartisan support for the Fire Grants and Safety Act likely made it a "strong vehicle" to "shepherd" the ADVANCE Act into law. *See* Amy C. Roma & Stephanie Fishman, *ADVANCE Act's Comprehensive Nuclear Legislation Shows Progress on the Hill*, HOGAN LOVELLS (May 13, 2024), <https://www.hoganlovells.com/en/publications/advance-acts-comprehensive-nuclear-legislation-shows-progress-on-the-hill>; *Senate Passes Nuclear ADVANCE Act; Bill Heads to Biden*, NUCLEAR NEWSWIRE (June 19, 2024), <https://www.ans.org/news/article-6131/senate-passes-nuclear-advance-act-bill-heads-to-biden> (noting that the Fire Grants and Safety Act was a "nearly bulletproof vehicle" to get the ADVANCE Act voted on).

69. *See* S. 870, Engrossed Amendment House (May 8, 2024) (containing no nuclear closure communities provision).

closure communities.<sup>70</sup> But this version of the ADVANCE Act forged ahead, becoming law on July 9, 2024.<sup>71</sup>

### B. Nuclear Closure Communities in Past Federal Legislation

Prior to the ADVANCE Act's introduction, several past pieces of federal legislation attempted to support nuclear closure communities.<sup>72</sup> Despite acknowledging the need to support communities, these bills all failed to become law, demonstrating how Congress has consistently failed to send federal aid to nuclear closure communities.

Former Representative Adam Kinzinger introduced the Preserving Existing Nuclear Energy Generation Act in December 2020.<sup>73</sup> This bill aimed to “save nuclear plants that are on the chopping block” by providing financial credits to keep the plants open.<sup>74</sup> The bill also contained a provision to fund nuclear closure communities in three ways: sending financial assistance to local governments with revenue shortfalls, assisting with economic development, and funding community advisory boards.<sup>75</sup> Speaking at a House Committee on Energy and Commerce hearing on his bill, Representative Kinzinger noted how lost revenue from closed nuclear plants would “make it extremely difficult to pay for high-quality schools, hospitals, emergency personnel and other critical services.”<sup>76</sup> Providing federal support to nuclear closure communities would “soften the blow” of a plant's closure by addressing budget and critical service issues and improving economic development.<sup>77</sup> Representative Kinzinger's bill failed to advance past referral to House committees and never saw a vote.<sup>78</sup> The following

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70. 170 CONG. REC. S4129 (daily ed. June 18, 2024) (statement of Sen. Ed Markey).

71. *Press Release: Bill Signed: S. 870*, WHITE HOUSE (July 9, 2024), <https://bidenwhitehouse.archives.gov/briefing-room/presidential-actions/2024/07/09/press-release-bill-signed-s-870>; ADVANCE Act of 2024, Pub. L. No. 118-67, div. B, 138 Stat. 1448 (2024).

72. The bills examined in this Part were selected by searching for past legislation that attempted to establish support programs for nuclear closure communities both by funding economic development through direct grants and fostering community engagement by funding community advisory boards. While additional bills exist that have endeavored to compensate communities hosting stranded nuclear waste, these bills were not selected for inclusion in this Part as they focus primarily on stranded nuclear waste, which is only one of the many issues that federal support for nuclear closure communities should address. See *infra* note 98 (identifying the STRANDED Act and additional bills that introduced compensation programs for communities hosting stranded nuclear waste).

73. Preserving Existing Nuclear Energy Generation Act, H.R. 9015, 116th Cong. (2020).

74. *Kinzinger Fighting for Nuclear Energy Communities*, LEGISTORM (Dec. 18, 2020), [https://www.legistorm.com/stormfeed/view\\_rss/1694427/member/2749/title/kinzinger-fighting-for-nuclear-energy-communities.html](https://www.legistorm.com/stormfeed/view_rss/1694427/member/2749/title/kinzinger-fighting-for-nuclear-energy-communities.html).

75. H.R. 9015 § 3.

76. *Generating Equity: Deploying a Just and Clean Energy Future, Virtual Hearing Before the Subcomm. on Energy of the Comm. on Energy and Com.*, 117th Cong. 72 (2021) [hereinafter *Generating Equity*].

77. *Id.*

78. *All Actions: H.R.9015 — 116th Congress (2019-2020)*, CONGRESS.GOV, <https://www.congress.gov/bill/116th-congress/house-bill/9015/all-actions> (last visited Dec. 9, 2024).

year, Representative Kinzinger's reintroduced bill with the same nuclear closure communities provision also failed to advance.<sup>79</sup>

In November 2020, Senator Bernie Sanders introduced the Nuclear Plant Decommissioning Act of 2020.<sup>80</sup> This bill aimed to meaningfully involve local communities in the decommissioning process of nearby nuclear plants.<sup>81</sup> One provision allocated funds to the federal Research and National Technical Assistance program to promote innovation and job growth in nuclear closure communities and to the federal Economic Adjustment Assistance program to implement public works and infrastructure projects in these communities.<sup>82</sup> Another provision compensated communities hosting stranded nuclear waste through a noncompetitive grant program.<sup>83</sup> The bill also would have established both short-term funding for community advisory boards (CABs) from NRC grants and long-term funding from plant licensee fees.<sup>84</sup> Then-Representative Peter Welch introduced an identical bill in the House of Representatives.<sup>85</sup> Neither bill progressed further than introduction and referral to committees, and no similar bill has been introduced in subsequent Congresses.<sup>86</sup> Although no hearings were held, a point of opposition to the bill was likely the source of funding. The bill's CAB funding provision in particular, which allocated funding from plant licensee fees to a long-term CAB fund, would have been "carefully scrutinized" by Congress.<sup>87</sup> Any funding from nuclear plant owners would likely

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79. Preserving Existing Nuclear Energy Generation Act, H.R. 4960, 117th Cong. § 3 (2021); *All Actions: H.R.4960 — 117th Congress (2021-2022)*, CONGRESS.GOV, <https://www.congress.gov/bill/117th-congress/house-bill/4960/all-actions> (last visited Dec. 9, 2024).

80. Nuclear Plant Decommissioning Act of 2020, S. 4890, 116th Cong. (2020).

81. *Nuclear Plant Decommissioning Act of 2020*, BERNIE SANDERS, U.S. SENATOR FOR VT., <https://www.sanders.senate.gov/wp-content/uploads/one-pager-nda-2020.pdf> (last visited Dec. 9, 2024).

82. S. 4890 § 4; *see also Research and National Technical Assistance (RNTA)*, U.S. ECON. DEV. ADMIN., <https://www.eda.gov/funding/programs/research-and-national-technical-assistance> (last visited Feb. 23, 2025) (describing how the Research and National Technical Assistance funding program's technical assistance provides communities with data, tools, and research to promote growth); *Economic Adjustment Assistance*, U.S. ECON. DEV. ADMIN., <https://www.eda.gov/funding/programs/economic-adjustment-assistance> (last visited Feb. 23, 2025) (describing how the Economic Adjustment Assistance program assists communities with planning and implementation of public works and infrastructure projects).

83. S. 4890 § 5. Stranded nuclear waste is the spent nuclear fuel byproduct of nuclear power plants that communities are stuck hosting within their borders while the federal government solves the highly contentious issue of permanent nuclear waste storage. *See infra* Part III.A (discussing how nuclear closure communities are stuck hosting nuclear waste while the United States struggles to find a permanent waste storage solution).

84. S. 4890 § 3.

85. Nuclear Plant Decommissioning Act of 2020, H.R. 8277, 116th Cong. (2020).

86. *All Actions: S.4890 — 116th Congress (2019-2020)*, CONGRESS.GOV, <https://www.congress.gov/bill/116th-congress/senate-bill/4890/all-actions> (last visited Feb. 23, 2025); *All Actions: H.R.8277 — 116th Congress (2019-2020)*, CONGRESS.GOV, <https://www.congress.gov/bill/116th-congress/house-bill/8277/all-actions> (last visited Feb. 23, 2025).

87. *See* Paul M. Bessette & Scott D. Clausen, *Proposed Bill Would Provide Grants to Local Communities and Change Decommissioning Process*, MORGAN LEWIS (Sept. 24, 2020),

come from the plant's decommissioning trust fund, a fund that licensees would have been required to establish to ensure there is sufficient funding to complete the decommissioning process.<sup>88</sup> Decommissioning trust funds frequently have "limited" amounts of funds and experience shortfalls, casting doubt on a licensee's ability to provide sufficient funding to communities.<sup>89</sup>

Senator John Barrasso introduced the American Nuclear Infrastructure Act of 2020 in November 2020.<sup>90</sup> This act had broad goals of improving nuclear technology in the United States by streamlining the permitting process for new reactors, much like the ADVANCE Act.<sup>91</sup> In December 2020, an amendment to the original version of the bill added several provisions including one on nuclear closure communities.<sup>92</sup> This provision is identical to the nuclear closure communities section in the original ADVANCE Act draft, providing support to communities by funding economic development and CABs.<sup>93</sup> The Senate Committee on Environment and Public Works recognized the need to provide "maximum support to assist nuclear communities that have been hit hard by the closure of nuclear power plants."<sup>94</sup> This bill did not progress past being introduced to the Senate, although many of its provisions are similar to those in the ADVANCE Act.<sup>95</sup>

Senator Shelley Capito reintroduced the American Nuclear Infrastructure Act in July 2021 with many of the same provisions as Senator Barrasso's bill, including the nuclear closure communities provision.<sup>96</sup> In April of the same year, Senator Tammy Duckworth introduced the STRANDED Act of 2021, which aimed to compensate communities hosting stranded nuclear waste through a noncompetitive grant program.<sup>97</sup> Unlike the other bills discussed in this Part, the

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<https://www.morganlewis.com/blogs/upandatom/2020/09/proposed-bill-would-provide-grants-to-local-communities-and-change-decommissioning-process>.

88. *See id.*; *see also infra* Part IV.B.1 (providing an overview of nuclear plant decommissioning trust funds).

89. *See* Bessette & Clausen, *supra* note 87; *see also infra* Part IV.B.1 (noting that decommissioning trust funds commonly experience shortfalls).

90. American Nuclear Infrastructure Act of 2020, S. 4897, 116th Cong. (2020).

91. *See* *Senators Introduce Bipartisan Legislation to Revitalize America's Nuclear Infrastructure*, U.S. SENATE COMM. ON ENV'T & PUB. WORKS (Nov. 17, 2020), <https://www.epw.senate.gov/public/index.cfm/2020/11/senators-introduce-bipartisan-legislation-to-revitalize-america-s-nuclear-infrastructure>; *see also supra* notes 44-47 and accompanying text (discussing the ADVANCE Act's purpose of improving efficiency in the nuclear reactor licensing process).

92. S. 4897 § 504; *see also Business Meeting, Meeting Before the Comm. on Env't and Pub. Works*, 116th Cong. 1 (2020) (opening statement of Hon. John Barrasso, U.S. Sen. from the State of Wyo.) (noting that there was an amendment to the bill that he "believe[d] will improve the bill").

93. S. 4897 § 504; *see* ADVANCE Act of 2023, S. 1111, 118th Cong. § 601 (2023).

94. *Business Meeting, Meeting Before the Comm. on Env't and Pub. Works, supra* note 92, at 55 (statement of Hon. Chris Van Hollen, U.S. Sen. from the State of Md.).

95. *All Actions: S.4897 — 116th Congress (2019-2020)*, CONGRESS.GOV, <https://www.congress.gov/bill/116th-congress/senate-bill/4897/all-actions> (last visited Dec. 9, 2024).

96. American Nuclear Infrastructure Act of 2021, S. 2373, 117th Cong. § 503 (2021).

97. STRANDED Act of 2021, S. 1290, 117th Cong. (2021). Senator Duckworth previously introduced the STRANDED Act in 2017 and 2019. *See Duckworth Revives Nuclear-Waste Plan that could Provide Zion with More than \$15 Million in Aid — This Time with a Republican Ally*, TAMMY

STRANDED Act focused on compensating communities for hosting stranded nuclear waste, which is just one of many impacts nuclear closure communities experience.<sup>98</sup> Both bills were considered in a Senate Committee on Environment and Public Works hearing in February 2022.<sup>99</sup> The Committee emphasized the need to help communities “move past the legacy of their decommissioned nuclear plants” through federal support.<sup>100</sup> However, one Committee member, Senator Jim Inhofe, raised concerns that the STRANDED Act “pays the communities to tolerate long-term problems.”<sup>101</sup> While recognizing the “good faith effort” to support these communities, Senator Inhofe argued that lawmakers should “work together to secure a permanent solution” instead of sending taxpayer dollars to nuclear closure communities.<sup>102</sup> Taxpayers already paid

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DUCKWORTH, U.S. SENATOR FOR ILL. (July 27, 2019), [https://www.duckworth.senate.gov/news/in-the-news/duckworth-revives-nuclear-waste-plan-that-could-provide-zion-with-more-than-15-million-in-aid\\_-\\_this-time-with-a-republican-ally](https://www.duckworth.senate.gov/news/in-the-news/duckworth-revives-nuclear-waste-plan-that-could-provide-zion-with-more-than-15-million-in-aid_-_this-time-with-a-republican-ally); STRANDED Act of 2017, S. 1903, 115th Cong. (2017); STRANDED Act of 2019, S. 1985, 116th Cong. (2019). Representative Brad Schneider introduced House versions of the STRANDED Act the same three years. STRANDED Act of 2017, H.R. 3970, 115th Cong. (2017); STRANDED Act of 2020, H.R. 5608, 116th Cong. (2020); STRANDED Act of 2021, H.R. 3731, 117th Cong. (2021).

98. See *infra* Part III.A (discussing loss of tax revenue and jobs as additional impacts nuclear closure communities experience). The 2020 and 2021 House versions of the STRANDED Act, introduced by Representative Schneider, did include economic impact grants based on lost tax revenue, but both of these bills failed to progress past referral to House committees. H.R. 5608 § 6(c); H.R. 3731 § 6(c); *All Actions: H.R.5608 — 116th Congress (2019-2020)*, CONGRESS.GOV, <https://www.congress.gov/bill/116th-congress/house-bill/5608/all-actions> (last visited Apr. 22, 2025); *All Actions: H.R.3731 — 117th Congress (2021-2022)*, CONGRESS.GOV, <https://www.congress.gov/bill/117th-congress/house-bill/3731/all-actions> (last visited Apr. 22, 2025). In addition to the STRANDED Act, prior legislation has similarly introduced compensation programs or task forces for communities hosting stranded nuclear waste. See Stranded Nuclear Waste Accountability Act of 2016, H.R. 5632, 114th Cong. (2016) (compensation program); Stranded Nuclear Waste Accountability Act of 2017, H.R. 3929, 115th Cong. (2017) (reintroduced version of H.R. 5632 the following year); Nuclear Waste Policy Amendments Act of 2018, H.R. 3053, 115th Cong. (2017) (task force); Nuclear Waste Policy Amendments Act of 2019, S. 2917, 116th Cong. (2019) (task force); Nuclear Waste Policy Amendments Act of 2019, H.R. 2699, 116th Cong. (2019) (House version of S. 2917). These bills also stalled in Congress. *All Actions: H.R.5632 — 114th Congress (2015-2016)*, CONGRESS.GOV, <https://www.congress.gov/bill/114th-congress/house-bill/5632/all-actions> (last visited Apr. 22, 2025) (failing to progress past referral to committee); *All Actions: H.R.3929 — 115th Congress (2017-2018)*, CONGRESS.GOV, <https://www.congress.gov/bill/115th-congress/house-bill/3929/all-actions> (last visited Apr. 22, 2025) (failing to progress past referral to committees); *All Actions: H.R.3053 — 115th Congress (2017-2018)*, CONGRESS.GOV, <https://www.congress.gov/bill/115th-congress/house-bill/3053/all-actions> (last visited Apr. 22, 2025) (passing in the House but failing to progress past referral to committee in the Senate); *All Actions: S.2917 — 116th Congress (2019-2020)*, CONGRESS.GOV, <https://www.congress.gov/bill/116th-congress/senate-bill/2917/all-actions> (last visited Apr. 22, 2025) (failing to progress past referral to committee); *All Actions: H.R.2699 — 116th Congress (2019-2020)*, CONGRESS.GOV, <https://www.congress.gov/bill/116th-congress/house-bill/2699/all-actions> (last visited Apr. 22, 2025) (failing to progress past consideration by committee). See also *supra* note 72 (explaining why the bills listed in this footnote were not selected for deeper analysis in this Part).

99. *Hearing to Examine S. 2373 and S. 1290, supra* note 8, at 1 (opening statement of Hon. Thomas R. Carper, U.S. Sen. from the State of Del.).

100. *Id.* at 3.

101. *Id.* at 99.

102. *Id.*

liability costs for the government's inability to find a permanent nuclear waste storage solution, Senator Inhofe argued, and they should not have to keep paying for the government's failures.<sup>103</sup> Both the American Nuclear Infrastructure Act and the STRANDED Act failed to progress past hearings.<sup>104</sup>

Although none were extensively scrutinized after being introduced to Congress, these unsuccessful bills provide some insight into why the nuclear closure communities provision may have been removed from the ADVANCE Act. In each bill, members of Congress recognized that nuclear closure communities are detrimentally affected by the closure of a nuclear plant and are deserving of support, but this recognition was not enough to get the bills signed into law.<sup>105</sup> Funding was likely a source of contention for these bills.<sup>106</sup> While Senator Inhofe's opposition to the STRANDED Act focused on compensation for hosting stranded nuclear waste, which is just one of the several issues nuclear closure communities face, these remarks may demonstrate a broader mindset of lawmakers considering support programs for nuclear closure communities.<sup>107</sup> Lawmakers accountable to their constituents may be hesitant to force taxpayers to spend more money on an industry like nuclear energy that has already asked so much of taxpayers.<sup>108</sup> Although supporting nuclear closure communities may be a popular proposal in Congress, concerns about making taxpayers bear the burden of federal support programs may prevent such proposals from becoming law. Similar funding concerns may have prevented the inclusion of the nuclear closure communities provision in the final version of the ADVANCE Act.

### III. FACTORS WEIGHING IN FAVOR OF SUPPORT FOR NUCLEAR CLOSURE COMMUNITIES

The previous Part examined the inclusion of nuclear closure communities in past federal legislation, including the ADVANCE Act, and their ultimate failure to support these communities. This Part now analyzes the challenges that nuclear closure communities face in the process of nuclear power plant

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103. *See id.*

104. *All Actions: S.2373 — 117th Congress (2021-2022)*, CONGRESS.GOV, <https://www.congress.gov/bill/117th-congress/senate-bill/2373/all-actions> (last visited Mar. 15, 2025); *All Actions: S.1290 — 117th Congress (2021-2022)*, CONGRESS.GOV, <https://www.congress.gov/bill/117th-congress/senate-bill/1290/all-actions> (last visited Mar. 15, 2025).

105. *See Generating Equity*, *supra* note 76, at 72; *Hearing to Examine S. 2373 and S. 1290*, *supra* note 8, at 3 (opening statement of Hon. Thomas R. Carper, U.S. Sen. from the State of Del.).

106. Given that the discussed bills were all introduced in 2020 and 2021, it is also possible that COVID-19 relief spending eclipsed them. However, the EDA's Coal Communities Commitment program allocated funds from the American Rescue Plan of 2021, a COVID-19 relief bill, to coal communities. *Coal Communities Commitment*, *supra* note 25. COVID-19 relief funding and economic development funding for communities are not mutually exclusive, and this missed opportunity to similarly allocate federal funds from COVID-19 relief to nuclear closure communities suggests that lawmakers may be less willing to allocate federal funding to nuclear closure communities than to coal communities.

107. *See Hearing to Examine S. 2373 and S. 1290*, *supra* note 8, at 99.

108. *See, e.g., id.*

decommissioning, illustrating why they are deserving of support. First, this Part provides an overview of the hardships that nuclear closure communities endure, including job loss, environmental hazards, and economic effects. Next, this Part analyzes similar issues faced by coal communities, which have received much attention in energy transition literature, and discusses how their experiences compare to those of nuclear closure communities. This Part concludes that nuclear closure communities are thus deserving of the same recognition and support as coal communities.

#### A. Challenges that Nuclear Closure Communities Face

Some communities that host nuclear power plants welcome plants as providers of economic prosperity.<sup>109</sup> Others oppose plants being sited in their community in the first instance, but ultimately become economically reliant on the plant.<sup>110</sup> Nuclear plants pay significant amounts in taxes and provide hundreds of steady jobs with high wages to local residents.<sup>111</sup> An average nuclear plant pays \$16 million in taxes to state and local governments, and the median annual wages for nuclear power reactor operators and technicians as of 2024 were both over \$100,000.<sup>112</sup> Vernon, a small town in Vermont that hosted the now-decommissioned Vermont Yankee Power Station, was listed by the state as a “gold” town for several years because of the job prospects and tax revenue that the plant brought the town.<sup>113</sup> But when nuclear plants announce their closure, these benefits are taken away and the communities that have become reliant on the plant’s operation are left to pick up the pieces.

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109. See, e.g., Emma Derr, *Reverse NIMBY: Residents Say Nuclear is a “Good Neighbor”*, NUCLEAR ENERGY INST. (Sept. 1, 2022), <https://www.nei.org/news/2022/reverse-nimby-residents-say-nuclear-good-neighbor> (discussing a study finding that 91 percent of residents living near nuclear plants “view them favorably” because they “provide good jobs for local people and help the local economy”).

110. See Bessette & Clausen, *supra* note 87 (noting that some communities pushing for increased oversight and economic support in decommissioning “opposed operation of the same nuclear plants for decades”).

111. *Advantages and Challenges of Nuclear Energy*, *supra* note 34; see also Lydersen, *supra* note 9 (“[N]uclear plants typically pay far more in taxes and employ many more people at higher wages than coal plants.”).

112. Clifton Painter & Alex Muresianu, *Tax Treatment of Nuclear Energy Should Be Simplified, Neutral, with Renewable Energy Sources*, TAX FOUND. (Aug. 12, 2021), <https://taxfoundation.org/blog/nuclear-energy-tax-treatment>; *Occupational Employment and Wages, May 2023*, U.S. BUREAU OF LAB. STAT., <https://www.bls.gov/oes/2023/may/oes518011.htm> (last updated Apr. 3, 2024) (nuclear reactor operator average annual wage of over \$120,000); *Nuclear Technicians*, U.S. BUREAU OF LAB. STAT., <https://www.bls.gov/ooh/life-physical-and-social-science/nuclear-technicians.htm> (last updated Apr. 18, 2025) (nuclear reactor technician average annual wage of \$104,000).

113. Thomas C. Zambito, *Nuclear Plant Shutdowns a Crisis for Small Towns Across the USA*, LOHUD, <https://www.lohud.com/story/news/investigations/2017/07/12/nuclear-plant-shutdowns/403656001> (last updated July 24, 2017). The Vermont legislature identified the wealthiest communities in the state as “gold towns” as part of Act 60, enacted in 1997, which aimed to create a more equitable school funding system. See Joetta L. Sack, *In Vermont’s Funding Shakeup, A Bitter Pill for the ‘Gold Towns’*, EDUC. WK. (Oct. 28, 1998), <https://www.edweek.org/policy-politics/in-vermonts-funding-shakeup-a-bitter-pill-for-the-gold-towns/1998/10>. Apart from Vernon, these “gold towns” were largely ski resort towns. See *id.*; Zambito, *supra*.

The loss of tax revenue and jobs in the aftermath of a nuclear plant's closure has a major economic effect on local communities. As discussed in this Note's Introduction, the town of Zion, Illinois lost \$19 million in tax revenue after Zion Nuclear Power Station closed. As a result, property taxes skyrocketed.<sup>114</sup> Similarly, after Crystal River Nuclear Plant closed in Citrus County, Florida, the county lost its biggest taxpayer, pushing its local government to the brink of bankruptcy.<sup>115</sup> Local governments are forced to increase taxes due to this loss in tax revenue, which discourages new businesses that would stimulate the economy from moving in.<sup>116</sup> Often already understaffed and strained for resources, communities are also forced to cut their budgets. Vernon, Vermont cut its budget by half after the closure of Yankee Power Station.<sup>117</sup> As a result of these budget cuts, Vernon eliminated its maintenance and police departments, cut its library budget, and ceased offering free programs at the town's recreation center.<sup>118</sup> Similarly, the Hendrick Hudson School District in New York faced a \$20 million loss of its budget following the closure of the Indian Point Energy Center nuclear plant.<sup>119</sup> In Florida, Citrus County's gross domestic product declined by 7.4 percent in 2014 after the closure of Crystal River, the greatest loss in a major U.S. metropolitan area that year.<sup>120</sup>

Hundreds of residents in nuclear closure communities also lose employment at nuclear plants when they shut down. Losing a nuclear plant often means that a community loses its top employer.<sup>121</sup> Plant owners offer many

114. *Supra* Introduction.

115. Stephanie Finucane, *Lessons for Diablo Canyon: Florida County Turns to Manatees, Taxes After Nuclear Plant's Closure*, SAN LUIS OBISPO TRIB. (Aug. 29, 2016), <https://www.sanluisobispo.com/news/local/article98548657.html>.

116. See Kelly McGowan, *Zion Still Struggling 19 Years After Nuke Plant Shut Down*, LOHUD, <https://www.lohud.com/story/news/investigations/2017/07/12/zion-uke-plant-shut-down/439915001> (last updated July 12, 2017); Previti, *supra* note 9.

117. Zambito, *supra* note 113.

118. Bruce Gellerman, *This Vermont Town Took a Big Hit When Its Nuclear Plant Closed*, WBUR (Apr. 24, 2019), <https://www.wbur.org/news/2019/04/23/vermont-yankee-vernon-lessons>.

119. Zambito, *supra* note 113.

120. As reported in the U.S. Commerce Department report for 2014, which assessed the gross domestic product of the 382 largest major metropolitan areas in the country. Finucane, *supra* note 115; see also Robert Trigaux, *Nuclear Fallout: Crystal River Area Tops Nation in GDP Loss After Plant Closure*, TAMPA BAY TIMES (Sept. 24, 2015), <https://www.tampabay.com/news/business/energy/nuclear-fallout-crystal-river-area-tops-nation-in-gdp-loss-after-plant/2246899>.

121. See, e.g., Finucane, *supra* note 115 (noting that Duke Energy, owner of the Crystal River Nuclear Plant in Citrus County, Florida, was the largest employer in Citrus County and that those jobs were highly paid, with an industrywide average salary of over \$100,000); Gellerman, *supra* note 118 (noting that Vermont Yankee nuclear plant near Vernon, Vermont was the town's "biggest employer" with over six hundred workers paid an average salary over \$100,000); *10 Years After Plant Closed, Zion Slowly Regains its Glow*, CHI. TRIB., <https://www.chicagotribune.com/2008/01/20/10-years-after-plant-closed-zion-slowly-regains-its-glow> (last updated Aug. 22, 2021) ("[Zion Nuclear Power Station]'s closing marked a crushing blow to blue-collar Zion, where it had served as the city's largest employer and taxpayer."); see also *Our Community*, STP NUCLEAR OPERATING CO., <https://www.stpnoc.com/community-information> (last visited Oct. 20, 2025) (stating that South Texas Project nuclear plant, a currently operational nuclear reactor, is the "largest employer" in surrounding Matagorda County, Texas).

workers alternative employment at different nuclear plants, and the town's population declines as these workers relocate.<sup>122</sup> As a result, residential property values plummet, and fewer residents with disposable income are around to fund the community's small businesses.<sup>123</sup> Declining property values also attract large, non-local landlord groups that buy up homes as rental properties, pushing the percentage of rental stock in a nuclear closure community significantly higher than that of a healthy community.<sup>124</sup> The rental properties are often inadequately maintained, as the outside landlord groups prioritize "getting a monthly check" over providing quality housing to the community.<sup>125</sup> For workers who choose to stay, few jobs are available that utilize the specialized skills of nuclear plant workers and have comparably high wages.<sup>126</sup> Contractors, instead of plant owners, often carry out the decommissioning process itself, meaning little opportunity exists for workers to stay on with their employment.<sup>127</sup> Even if a contractor hires local workers, significantly fewer jobs are available for the decommissioning process than for the operating nuclear plant.<sup>128</sup> And

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122. See Lydersen, *supra* note 9 (describing how many employees left Zion, Illinois after the closure of Zion Nuclear Power Station, which contributed to Zion's housing crisis); see also *Nuclear Plant Closings: What About the Workers?*, POWER (Apr. 1, 2014), <https://www.powermag.com/nuclear-plant-closings-what-about-the-workers> (discussing how Duke Energy, owner of Crystal River Nuclear Plant, helped workers find employment at other nuclear power plant sites owned by Duke following the closure of Crystal River by holding onsite job fairs and giving Crystal River employees preference for employment at other sites).

123. Lydersen, *supra* note 9; Zambito, *supra* note 113; see also Barbara Behrendt, *Crystal River Nuclear Plant Closure Devastates Citrus County*, TAMPA BAY TIMES (Feb. 11, 2014), <https://www.tampabay.com/news/business/energy/fallout-from-crystal-river-nuclear-plants-closure-devastates-citrus-county/1273833> (discussing how the closure of Crystal River Nuclear Plant pushed a local restaurant in Citrus County towards closure as laid off plant workers no longer frequented the restaurant).

124. See, e.g., Lydersen, *supra* note 9; see also *Hearing to Examine S. 2373 and S. 1290*, *supra* note 8, at 10 (noting that in Zion, Illinois, landlord groups bought up to fifty homes at a time, pushing the percentage of rental housing stock in the city to three times that of a healthy community).

125. See, e.g., Lydersen, *supra* note 9.

126. *Id.* In addition to receiving "formal technical training" and completing a license exam from the NRC, nuclear power plant operators must continuously receive onsite training to keep them up to date with new systems, equipment, and emergency scenarios at a nuclear power plant. *How to Become a Power Plant Operator, Distributor, or Dispatcher*, U.S. BUREAU OF LAB. STAT., <https://www.bls.gov/ooh/production/power-plant-operators-distributors-and-dispatchers.htm#tab-4> (last visited Feb. 23, 2025).

127. Lydersen, *supra* note 9.

128. See, e.g., TOWN OF CORTLANDT, CITIZENS ADVISORY PANEL MEETING MINUTES, JANUARY 15, 2020 7-8 (2020), [https://www.townofcortlandt.com/documents/supervisor/2020-01-15\\_citizens\\_advisory\\_panel\\_meeting\\_minutes.pdf](https://www.townofcortlandt.com/documents/supervisor/2020-01-15_citizens_advisory_panel_meeting_minutes.pdf) (discussing the employment of three hundred workers for the decommissioning process, down from nine hundred workers employed at Indian Point); *Nuclear Plant Closings: What About the Workers?*, *supra* note 122 (noting that 585 employees worked at Crystal River Nuclear Plant in Florida at the time the plant's shutdown was announced, then decreased to 275 employees working on the plant's Decommissioning Transition Organization, a number that would "shrink over time"); Meredith Angwin, *A Hole in the Community: What Happens When a Nuclear Plant Shuts Down*, POLITICO (Jan. 2, 2018), <https://www.politico.com/sponsor-content/2018/01/02/a-hole-in-the-community> (discussing how nuclear plant shutdowns create a "jobs cliff" as "a closing plant must downsize its staff quickly and aggressively" during decommissioning); see also *Decommissioning FAQs*, HOLTEC INT'L, <https://holtecinternational.com/communications-and->

these jobs will also disappear when the decommissioning process ultimately ends.

Nuclear closure communities are also at the center of a complex debate regarding permanent storage of spent nuclear fuel. States and local communities frequently oppose becoming centralized locations for permanent nuclear waste storage because the transport and storage of nuclear materials presents significant public safety concerns.<sup>129</sup> These communities have often borne the burden of past environmental impacts and have not contributed to the nuclear waste pileup, raising valid fairness and environmental justice arguments against siting permanent nuclear waste storage facilities within their borders.<sup>130</sup> At the same time, nuclear closure communities feel betrayed by the prospect of indefinitely hosting nuclear waste, preventing critical redevelopment.<sup>131</sup> Communities believe there is an “understanding” that after a nuclear plant closes, the nuclear waste will be removed and the land returned to its original condition.<sup>132</sup> But in many communities, this has never become reality.

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outreach/decommissioning (last visited Oct. 19, 2025) (noting that decommissioning projects generally employ a maximum of three hundred employees).

129. See, e.g., *The Fight Against Yucca Mountain*, STATE OF NEV., [https://ag.nv.gov/Hot\\_Topics/Issue/Yucca](https://ag.nv.gov/Hot_Topics/Issue/Yucca) (last visited Dec. 9, 2024) (noting that the transportation of nuclear waste to Yucca mountain puts 123 million people at risk in the case of a transportation accident, and that the storage facility presents “attractive and vulnerable targets” to terrorists); Dean Kyne & Bob Bolin, *Emerging Environmental Justice Issues in Nuclear Power and Radioactive Contamination*, 13 INT’L J. ENV’T RSCH. PUB. HEALTH 1, 12-13 (2016) (noting that the “primary concern” of activists opposing Yucca Mountain is the potential for transportation accidents leading to “the release of highly toxic radioactive material in a population center”).

130. For example, Nevada Democratic Representative Dina Titus argues that it is unfair to site the Yucca Mountain permanent nuclear waste repository in the state as Nevada does not have any nuclear power plants. Nico Portuondo, *The Return of Yucca Mountain? GOP Floats Waste Site’s Revival*, E&E NEWS (Apr. 11, 2024), <https://www.eenews.net/articles/the-return-of-yucca-mountain-gop-floats-waste-sites-revival/> (“The bottom line is this: Nevada does not produce nuclear waste, we have not consented to storing it in our backyard, and we should not have it forced upon us,” Titus said.); see also *infra* note 133 (providing an overview of the background and controversy of Yucca Mountain). Nevada communities located near Yucca Mountain have also spent decades enduring the impacts of past nuclear testing at the Nevada Test Site. Kyne & Bolin, *supra* note 129, at 11 (noting that Nevada has “borne substantial environmental burdens” from past nuclear testing in the state); Michael Green, *Nevada as a Dumping Ground: It’s not Just Yucca Mountain*, UNIV. OF NEV., L.V. (June 4, 2018), <https://www.unlv.edu/news/article/nevada-dumping-ground-its-not-just-yucca-mountain> (describing that historical nuclear testing in Nevada included about one hundred aboveground and eight hundred underground atomic tests at the Nevada Testing Site); see also *Location of Yucca Mountain*, U.S. NUCLEAR REGUL. COMM’N, <https://www.nrc.gov/waste/hlw-disposal/yucca-lic-app/photo-loc.html> (last updated Aug. 8, 2017) (showing Yucca Mountain’s location adjacent to the Nevada Test Site).

131. See, e.g., Lydersen, *supra* note 9 (discussing how Zion still hosts 2.2 million pounds of nuclear waste on the site of now-decommissioned Zion Nuclear Power Station, since the waste was never sent to Yucca Mountain as planned, preventing redevelopment that could “offset the impact” of the plant’s closure).

132. See, e.g., Kari Lydersen, *Energy Department Seeks Public Process for Nuclear Waste Storage*, CANARY MEDIA (Mar. 30, 2016), <https://www.canarymedia.com/articles/enn/energy-department-seeks-public-process-for-nuclear-waste-storage> (discussing how Zion, Illinois “never intended” to host nuclear waste indefinitely and believed there was an “unwritten deal” that the land would be “returned to pristine condition” after the nuclear plant shut down).

In Zion, Illinois, the plant planned to transport its nuclear waste to Yucca Mountain repository in Nevada, a storage site for nuclear waste from plants across the country.<sup>133</sup> However, the state of Nevada has fought the project since its selection in 1987, and plans for Yucca Mountain have stalled indefinitely as little progress has been made in Congress towards a solution.<sup>134</sup> With a national repository stalled in Congress, Zion has been forced to host 2.2 million pounds of nuclear waste ever since. In Zion, the nuclear waste is stored in casks that occupy valuable lakefront property, interfering with Zion's plans to use the land for commercial and residential developments, which would have brought in tax revenue, increased employment, and attracted new businesses.<sup>135</sup> Zion has a lower average household income and higher poverty rate than that of both Illinois and the United States.<sup>136</sup> Development of the lakefront property after decades of hosting a nuclear power plant in the community would have provided much-needed economic growth opportunities for Zion.<sup>137</sup> Instead, the nuclear waste remains, and the economic development remains unrealized. Additionally, although soundly constructed and properly stored spent nuclear fuel storage casks are safe, some Zion residents expressed worries about health and safety issues stemming from thin-walled or damaged casks.<sup>138</sup> Given the contentious

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133. Lydersen, *supra* note 9. The Department of Energy selected Yucca Mountain as the repository site in 1987 after considering nine potential sites. *Yucca Mountain Research Collection: 1982-1987: The U.S. Settles on Yucca Mountain*, UNIV. OF NEV., RENO, <https://guides.library.unr.edu/yuccamountain/timeline1982to1987> (last visited Feb. 25, 2025). Yucca Mountain's isolated location and geologic features contributed to its selection as a suitable nuclear waste repository site. *History of Yucca Mountain, 1982-2018*, KTNV LAS VEGAS, <https://www.ktnv.com/news/history-of-yucca-mountain-1982-2018> (last visited Feb. 25, 2025). However, controversy has surrounded Yucca Mountain's selection as many believe that politics played a central role. *See id.* (identifying that two sites that were considered and rejected were located in Texas and Washington state, and the Speaker of the House and the House Majority Leader were from Texas and Washington state, respectively); *see also* Green, *supra* note 130 (noting that Nevada leaders blamed the Yucca Mountain selection on Nevada's "lack of political clout" and labeled the site's selection as a "Screw Nevada" bill).

134. Nevada has passed state laws to impede work on Yucca Mountain and filed several lawsuits opposing the project. Green, *supra* note 130. Multiple presidential administrations have declared Yucca Mountain "effectively dead," and Congressional "gridlock" persists to this day as legislators have failed to come to a consensus on alternative repository options. Nevada continues to firmly oppose any efforts to revive Yucca Mountain. Portuondo, *supra* note 130.

135. Lydersen, *supra* note 9.

136. As of 2023, Zion's poverty rate is 16.5 percent, and its average household income is \$62,574. *Quickfacts, Zion City, Illinois*, U.S. CENSUS BUREAU, <https://www.census.gov/quickfacts/fact/table/zioncityillinois/PST045223> (last visited Feb. 27, 2025). In Illinois, the average poverty rate is 11.6 percent, and the average household income is \$81,702. *Quickfacts, Illinois*, U.S. CENSUS BUREAU, <https://www.census.gov/quickfacts/fact/table/IL/AGE295223> (last visited Feb. 27, 2025). In the United States, the poverty rate is 11.1 percent, and the average household income is \$80,610. Emily A. Shrider, *Poverty in the United States: 2023*, U.S. CENSUS BUREAU (Sept. 10, 2024), <https://www.census.gov/library/publications/2024/demo/p60-283.html>; Gloria Guzman & Melissa Kollar, *Income in the United States: 2023*, U.S. CENSUS BUREAU (Sept. 10, 2024), <https://www.census.gov/library/publications/2024/demo/p60-282.html>.

137. *See* Lydersen, *supra* note 132 (noting that Zion had already hosted the plant for "half a century" before becoming stuck storing the spent nuclear fuel).

138. *See Backgrounder on Dry Cask Storage of Spent Nuclear Fuel*, U.S. NUCLEAR REGUL. COMM'N, <https://www.nrc.gov/reading-rm/doc-collections/fact-sheets/dry-cask-storage.html> (last

debate and uncertainty over spent nuclear fuel storage in the United States, nuclear closure communities are unlikely to be relieved of hosting spent nuclear fuel anytime soon, impeding opportunities for economic development.<sup>139</sup>

*B. Comparing Support for Nuclear Closure Communities with Support for Coal Communities in a Just Energy Transition*

The experiences of coal communities in the energy transition have been well documented in legal and policy-oriented literature. Nuclear closure communities are similar to coal communities as both have economies that are reliant on a single industry, resulting in economic devastation when plants close. Analyzing why coal communities are deserving of federal aid and whether that aid has been effective can thus provide insights into why nuclear closure communities should receive similar benefits.

Coal communities are a particularly strong case for support because of the historical exploitation of these communities at the hands of coal companies. In Appalachia, for example, coal companies developed “isolated Appalachian mono-economies” beginning in the late 1800s that encouraged community dependence on the companies.<sup>140</sup> Coal companies owned the majority of the land and built a “docile workforce” that lived in company towns, isolating them from industries other than coal mining.<sup>141</sup> While coal companies and entrepreneurs profited off the coal industry, coal communities did not profit equitably from their central role in it.<sup>142</sup> The extractive industry, including its destructive methods, continues to damage communities’ natural resources, pose risks to public health, and limit economic opportunity.<sup>143</sup> Further, workers have been regularly injured or killed in coal mines, and rates of black lung disease have only risen in recent years.<sup>144</sup> Explosives used in mountaintop removal also contaminate air and water with carcinogens, causing worker and non-worker

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visited Feb. 25, 2025) (stating that dry cask storage is “safe for people and the environment”); TOWN OF CORTLANDT, INDIAN POINT NUCLEAR DECOMMISSIONING CITIZENS ADVISORY PANEL MINUTES, JUNE 13, 2019 9-10 (2019), [https://www.townofcortlandt.com/documents/supervisor/indian\\_point\\_nuclear\\_decommissioning\\_citizens\\_advisory\\_panel\\_6\\_13\\_2019.pdf](https://www.townofcortlandt.com/documents/supervisor/indian_point_nuclear_decommissioning_citizens_advisory_panel_6_13_2019.pdf) (recording community members raising concerns that the spent nuclear fuel casks may have “problems” due to having thinner walls and being scratched, and noting that “a lot of people in the community are concerned” about the casks).

139. See, e.g., Portuondo, *supra* note 130.

140. Eisenberg, *supra* note 22, at 301; Shannon Elizabeth Bell & Richard York, *Community Economic Identity: The Coal Industry and Ideology Construction in West Virginia*, 75 RURAL SOCIOL. 111, 119-20 (2010) (noting that coal companies established insular company towns in the late 1800s and early 1900s).

141. Eisenberg, *supra* note 22, at 301.

142. McGinley, *supra* note 24, at 364-65.

143. See Eisenberg, *supra* note 22, at 301. Mountaintop removal methods used in the coal industry entail blasting mountaintops to access coal, filling in waterways with rubble and destroying forests. *Ecological Impacts of Mountaintop Removal*, APPALACHIAN VOICES, <https://appvoices.org/end-mountaintop-removal/mtr101/ecology> (last visited Feb. 24, 2025).

144. Eisenberg, *supra* note 22, at 301-02.

residents alike to suffer high morbidity rates from cancer and other respiratory and cardiovascular diseases.<sup>145</sup> All the while, the federal government “encouraged and actively supported” coal companies’ exploitative practices by consistently backing companies when coal communities tried to stand up for their rights, even in one instance mobilizing the U.S. Army to quell an uprising of coal miners.<sup>146</sup>

In the context of this history of suppressed economic diversification and exploitative mono-economies, the energy transition has further devastated coal communities. As climate change mitigation policies discouraged dependency on fossil fuel power plants and the price of natural gas dropped, the coal industry rapidly declined.<sup>147</sup> Suddenly, coal communities no longer had their “sole economic lifeline,” and economic ruin followed.<sup>148</sup> After enduring the destruction of their natural resources and risks to public health, communities lost “tax resources, businesses, population, and spirit” in the wake of coal plant closures.<sup>149</sup> Considering the past experiences of coal communities together with their current experiences as the coal industry declines, scholars have suggested that an “affirmative duty” exists to support coal communities.<sup>150</sup> Ann Eisenberg has suggested that coal communities engaged in a “quasi-public activity” because their contributions to coal power plants provided “fundamental public benefits” in fueling the electricity grid, though owned by private companies.<sup>151</sup> Communities contributed their “labor and losses” and suffered through “immeasurable externalized costs” in providing electricity to the public.<sup>152</sup> As a result, considerations of “fairness and equity” in a just energy transition suggest that coal communities should receive support.<sup>153</sup>

Recognizing the hardships that coal communities have and continue to face, the federal government has designated support programs for these communities. The EDA’s Assistance to Coal Communities (ACC) program is a competitive grant-based program that awards funds to coal communities on an annual basis

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145. *Id.* at 302; APPALACHIAN VOICES, THE HUMAN COST OF MOUNTAINTOP REMOVAL COAL MINING 3-5, [https://appvoices.org/resources/reports/2012\\_human\\_cost\\_report.pdf](https://appvoices.org/resources/reports/2012_human_cost_report.pdf) (last visited Dec. 9, 2024).

146. Eisenberg, *supra* note 22, at 302. Federal troops intervened on the side of coal companies to end the Battle of Blair Mountain in 1921, an armed conflict that stemmed from labor disputes between coal miners and coal companies. Evan Andrews, *The Battle of Blair Mountain*, HISTORY, <http://www.history.com/news/americas-largest-labor-uprising-the-battle-of-blair-mountain> (last updated May 28, 2025).

147. Mijin Cha, *supra* note 22, at 200-01.

148. Eisenberg, *supra* note 22, at 303.

149. *Id.* at 302-03.

150. Mijin Cha, *supra* note 22, at 199; *see also* Outka, *supra* note 22, at 818 (noting that “[t]o be sure there is more to do” to effectively assist coal communities); McGinley, *supra* note 24, at 405 (criticizing the Obama administration’s “failure to meaningfully engage on the issue of coalfield communities’ economic future”).

151. Eisenberg, *supra* note 22, at 304.

152. *Id.*

153. *Id.*

to revitalize their economies for a “prosperous future.”<sup>154</sup> ACC funding has increased each year from 2015 through 2024.<sup>155</sup> The Coal Communities Commitment (CCC) program was another EDA program that allocated funds from the American Rescue Plan of 2021 to support economic growth, capital investment, and workforce development in coal communities.<sup>156</sup> To meet “robust demand,” the EDA increased the allocated amount from \$300 million to over \$550 million.<sup>157</sup>

In considering the unique history of coal communities, a question arises concerning whether nuclear communities are deserving of support in the same way that coal communities are. The nuclear energy industry does not mirror the exploitative history of the coal industry: Nuclear plant companies did not build company towns in order to isolate their workforce from outside industries to nearly the same extent as coal companies. The federal government also did not intervene on behalf of companies to uphold unjust practices, as they did with coal companies, or use the military against workers.<sup>158</sup> Nuclear communities also may not be a mono-economy to the same extent as coal communities: For example, only twenty-three percent of workers at Kewaunee Power Station lived in all of Kewaunee County, Wisconsin, a far cry from the company towns that coal companies created primarily for workers to reside in.<sup>159</sup> Accordingly, there may be more economic diversity in nuclear closure communities than coal communities.

Further, nuclear power plants are not being forced to shut down for the energy transition. Nuclear power plants are already considered clean energy sources and more often shut down due to scheduled license expirations or market forces due to their high costs.<sup>160</sup> Scholars have likened the forced closure of a coal power plant due to government energy transition policies to a taking, providing a basis to compensate and support coal communities following the closure of a coal power plant.<sup>161</sup> But this analogy may not apply as neatly to

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154. *Assistance to Coal Communities (ACC)*, *supra* note 25.

155. JULIE M. LAWHORN, CONG. RSCH. SERV., R46991, ECONOMIC DEVELOPMENT ADMINISTRATION: AN OVERVIEW OF PROGRAMS AND APPROPRIATIONS (FY2011-FY2024) 36 (May 1, 2024).

156. *See Coal Communities Commitment*, *supra* note 25; U.S. ECON. DEV. ADMIN., COAL COMMUNITIES COMMITMENT FACT SHEET 3, <https://www.eda.gov/sites/default/files/2022-10/EDA-Coal-Communities-Commitment-Fact-Sheet.pdf> (last visited Dec. 9, 2024).

157. *Coal Communities Commitment*, *supra* note 25.

158. *See Eisenberg*, *supra* note 22, at 301-02.

159. *See* Richard Ryman, *Kewaunee County Ready to Move on After Nuclear Plant Closing*, LOHUD, <https://www.lohud.com/story/news/investigations/2017/07/12/kewaunee-nuclear-plant-closing/103598506> (last updated July 12, 2017); Eisenberg, *supra* note 22, at 301 (discussing how coal companies set up company towns for workers who became “hostage to desperate dependency relationships”).

160. *See U.S. Nuclear Electricity Generation Continues to Decline as More Reactors Retire*, *supra* note 28.

161. *See Eisenberg*, *supra* note 22, at 278 (discussing how the just transition invokes equitable principles that are “akin to” takings compensation).

nuclear plants that are not forced to shut down: If nuclear plant owners decide to shut a plant down for economic reasons rather than due to a forced closure, there is no such basis for compensation.<sup>162</sup> After all, it is not feasible for society to compensate those who suffer hardships every time a technological advancement or market factor renders their business obsolete.<sup>163</sup> Perhaps the government should not provide relief in these cases to encourage actors to prepare for change.<sup>164</sup>

But even without a history precisely mirroring that of the coal industry, the nuclear energy industry creates communities that are reliant on the jobs and tax revenue that nuclear plants bring.<sup>165</sup> And even in towns where the majority of residents do not work at the nuclear plant, workers still come through town to spend money and fund local businesses, and their families may find work in the community.<sup>166</sup> Nuclear closure communities also face particularly dire economic impacts after a plant's closure as nuclear plants pay significantly more in taxes and employ more workers at higher wages than coal plants.<sup>167</sup> As already articulated, in the wake of a nuclear plant shutdown, communities are forced to significantly increase property taxes and cut budgets to make up for the loss in tax revenue, and local businesses suffer when plant workers aren't there to fund them.<sup>168</sup> Regardless of the history of nuclear power, the current reality is that unique adverse economic impacts affect a community after a nuclear power plant's closure, and, much in the same way coal communities are supported, nuclear closure communities should likewise be supported as they deal with these hardships.

Also like coal communities, nuclear plant employees and communities have engaged in a "quasi-public activity."<sup>169</sup> Though the plant owners are private companies, nuclear power provides a "fundamental public benefit" by providing clean, reliable energy to the grid, and community residents facilitate that public benefit either by working to operate the reactor or simply hosting the plant in

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162. *See id.*

163. *See* Jonathan S. Masur & Jonathan Remy Nash, *The Institutional Dynamics of Transition Relief*, 85 N.Y.U. L. REV. 391, 397 (2010).

164. *Id.*

165. *See Advantages and Challenges of Nuclear Energy*, *supra* note 34 (noting that nuclear energy creates jobs and contributes significant tax revenue to local economies); *see also* Finucane, *supra* note 115 (noting that Crystal River Nuclear Plant was the biggest taxpayer and top supplier of jobs in Citrus County).

166. *See, e.g.,* Behrendt, *supra* note 123.

167. Lydersen, *supra* note 9; *see also* DOE Study Finds Replacing Coal Plants with Nuclear Plants Could Bring Hundreds More Local Jobs and Millions in Added Income and Revenue to Energy Communities, U.S. DEP'T OF ENERGY (Apr. 1, 2024), <https://www.energy.gov/ne/articles/doe-study-finds-replacing-coal-plants-nuclear-plants-could-bring-hundreds-more-local> (suggesting that nuclear power plants employ more higher paid workers than coal plants because transitioning from coal plants to nuclear power plants can "create additional higher paying jobs at the plant").

168. *Supra* Part III.A.

169. *See* Eisenberg, *supra* note 22, at 304.

their town.<sup>170</sup> When the nuclear plant closes, the communities suffer the “immeasurable externalized costs” that the plant leaves behind, including impacts to their tax base, diversity of economic activity, and land development.<sup>171</sup> Nuclear closure communities are thus deserving of support in the same way as coal communities because their hardships similarly emerged from contributions to a public benefit-oriented industry.

Although nuclear power is a carbon-free energy source and nuclear plants are not forced to shut down for the energy transition, nuclear plants are not free of external pressures to shut down. Environmental groups opposed to nuclear power plants, for example, can call for license renewals to be denied. Riverkeeper, an environmental organization that works to protect the Hudson River in New York, voiced concerns about fish kills and strongly opposed the license renewal for Indian Point Energy Center, a nuclear power plant located on the Hudson.<sup>172</sup> This opposition contributed to the plant owner’s decision to shut down earlier than planned.<sup>173</sup> Even where closures may be the result of market forces, considerations of “fairness, compassion, and equity” weigh in favor of aiding nuclear closure communities, particularly considering their “quasi-public function” in the energy industry.<sup>174</sup> Just like coal communities, nuclear closure communities suffer hardships after providing a public benefit, and an “affirmative duty” may therefore also exist to support these communities.<sup>175</sup>

#### IV. EFFECTIVE SUPPORT FOR NUCLEAR CLOSURE COMMUNITIES

The previous Part examined factors indicating that nuclear closure communities are deserving of robust aid, despite Congress’s historic failure to adequately support these communities. To meaningfully assist nuclear closure communities going forward, support programs must effectively engage communities and provide accessible funding. This Part first considers how the ADVANCE Act would have helped nuclear closure communities. Next, this Part analyzes the shortcomings of past support efforts for nuclear closure communities and provides recommendations for future improvement. Finally, this Part uses the closure of Indian Point Energy Center in New York as a case study to closely examine the shortcomings of government support that nearby

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170. *See id.*

171. *See id.*

172. *Beyond Indian Point*, RIVERKEEPER, <https://www.riverkeeper.org/our-work/campaigns/beyond-indian-point> (last visited Dec. 9, 2024).

173. *Id.*; *see also* N.Y. STATE ENERGY RSCH. & DEV. AUTH., GOVERNOR CUOMO ANNOUNCES SUCCESSFUL CLOSURE OF INDIAN POINT NUCLEAR POWER PLANT 1-2 (2021), <https://dps.ny.gov/system/files/documents/2022/10/governor-cuomo-announces-successful-closure-of-indian-point-nuclear-power-plant.pdf> (noting that environmentalists supported closing Indian Point and Riverkeeper was a party to the closure settlement agreement).

174. *See* Eisenberg, *supra* note 22, at 330.

175. *See* Mijin Cha, *supra* note 22, at 199.

communities received and consider how this Part's recommendations could improve this support in practice.

*A. What the ADVANCE Act Would Have Accomplished for Nuclear Closure Communities*

If the nuclear closure communities provision had remained in the final version of the ADVANCE Act, communities who have suffered economic impacts from the closure of a nearby nuclear power plant would have received much-needed aid. The provision would have funded economic development and community advisory boards (CABs) in nuclear closure communities, allocating \$35 million annually from 2023 to 2028 for economic development and \$5 million annually from 2023 to 2025 for CABs.<sup>176</sup> The grant program's structure, including whether the grants would be distributed on a competitive or noncompetitive basis, was not specified in the provision.<sup>177</sup>

In funding CABs, the ADVANCE Act would have improved community engagement with nuclear closure communities. CABs "foster communication and information exchange" between nuclear closure communities and nuclear plant owners through the decommissioning process.<sup>178</sup> While some CABs are state-sponsored and have state statutory authority over certain decommissioning decisions, many CABs do not have oversight authority over decommissioning because the NRC retains exclusive jurisdiction over the decommissioning process.<sup>179</sup> Accordingly, most CABs are formed on a voluntary basis to serve as a forum for community members to learn about decommissioning and engage in open dialogue with those involved in the process.<sup>180</sup>

The nuclear closure communities provision in the ADVANCE Act would have ensured that CABs were formed and funded in every community that received funding, instead of relying on communities to opt into forming

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176. ADVANCE Act of 2023, S. 1111, 118th Cong. § 601(b), (e)(A)(1) (2023).

177. *See id.* § 601.

178. *Id.* § 601(a)(1); U.S. NUCLEAR REGUL. COMM'N, BEST PRACTICES FOR ESTABLISHMENT AND OPERATION OF LOCAL COMMUNITY ADVISORY BOARDS ASSOCIATED WITH DECOMMISSIONING ACTIVITIES AT NUCLEAR POWER PLANTS 1 (2020) [hereinafter NRC REPORT].

179. *See* Paul M. Bessette & Scott D. Clausen, *NRC Issues Report on Best Practices for Local Community Decommissioning Advisory Boards*, MORGAN LEWIS (July 13, 2020), <https://www.morganlewis.com/blogs/upandatom/2020/07/nrc-issues-report-on-best-practices-for-local-community-decommissioning-advisory-boards>; NRC REPORT, *supra* note 178, at 3-4; *see, e.g.*, INDIAN POINT NUCLEAR DECOMMISSIONING CITIZENS ADVISORY PANEL MINUTES, JUNE 13, 2019, *supra* note 138, at 1 (emphasizing that "the NRC has exclusive jurisdiction over the decommissioning of nuclear facilities" and that the Indian Point Nuclear Decommissioning Citizens Advisory Panel "will not have the jurisdiction of the decommissioning process").

180. *See, e.g.*, TOWN OF CORTLANDT, FIRST MEETING OF INDIAN POINT NUCLEAR DECOMMISSIONING CITIZEN ADVISORY PANEL (NDCAP) TO CONVENE NEXT WEEK (2019), [https://www.townofcortlandt.com/images/supervisor/indian\\_point\\_ndcap\\_media\\_advisory.jpg](https://www.townofcortlandt.com/images/supervisor/indian_point_ndcap_media_advisory.jpg) (describing the purpose of the Indian Point CAB as providing a channel to "enhance open communication").

CABs.<sup>181</sup> The provision specified that, to the “maximum extent practicable” in funding the CABs, the Department of Commerce’s Economic Development Administration (EDA) must implement recommendations from a report prepared by the NRC that detailed best practices for CABs.<sup>182</sup> In its report, the NRC identified several key factors to forming an effective CAB for community members, including early CAB formation, consideration of the CAB’s operations and full life cycle in its charter, robust public engagement, use of technical experts and training, and dedicated funding.<sup>183</sup>

Funding from the ADVANCE Act’s EDA grant program would have helped with several of these key factors. An EDA grant would, for example, help fund a CAB’s “key expenses” including administrative costs, expert consultation, and website maintenance.<sup>184</sup> EDA grant money could also go towards funding access to technical experts and specialized training for CAB members, which the NRC identified as “vital to an effective CAB” to help community members understand topics discussed at CAB meetings.<sup>185</sup> Funding could further improve public engagement by paying for meeting livestream technology and reliable electronic communication to community members.<sup>186</sup> By removing the nuclear closure communities provision from the ADVANCE Act, Congress missed a valuable opportunity to facilitate effective CAB formation by implementing the NRC’s CAB recommendations.<sup>187</sup> CABs will instead remain voluntary efforts by nuclear plant owners and communities with “no formal protocol for their makeup or charter.”<sup>188</sup>

As a forward-looking piece of federal legislation that seeks to deploy more nuclear plants, the ADVANCE Act’s nuclear closure communities provision could have spotlighted how communities will be affected when plants inevitably shut down. One variety of new nuclear technology that the ADVANCE Act incentivizes is the small modular reactor (SMR), which has a smaller power output than traditional large reactors but can be sited at far more varied locations due to its small size.<sup>189</sup> Because of their lower power output, more SMRs will be

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181. According to the NRC CAB report, twelve nuclear reactor sites have CABs formed for decommissioning, and fourteen reactor sites do not have CABs formed. Thirteen of the fourteen reactors without CABs formed are currently undergoing decommissioning. NRC REPORT, *supra* note 178, at Attachment 2.

182. S. 1111 § 601(c); see *Agency Activities in Response to a Portion of the Nuclear Energy Innovation and Modernization Act*, U.S. NUCLEAR REGUL. COMM’N, <https://www.nrc.gov/waste/decommissioning/neima-section-108.html> (last updated Oct. 27, 2021); NRC REPORT, *supra* note 178, at 1-2.

183. NRC REPORT, *supra* note 178, at 3-6.

184. *See id.* at 5-6.

185. *See id.* at 6.

186. *See id.* at 5.

187. *See id.* at 1.

188. *See* Bessette & Clausen, *supra* note 179.

189. *See* Liou, *supra* note 42. SMRs are a “key part” of the U.S. Department of Energy’s nuclear power goals, as they offer advantages over traditional large reactors due to their smaller size, reduced cost, and ability to be sited in more versatile locations. *Advanced Small Modular Reactors (SMRs)*, U.S.

needed to meet increasing energy demands, meaning an increasing number of reactors will be sited closer to more communities.<sup>190</sup> All of these new reactors, both SMRs and traditional large reactors, will eventually need to be decommissioned at the end of their design lifespan, just as older nuclear reactors are being decommissioned now. Although the ADVANCE Act's nuclear closure communities provision would have only applied to reactors that provided notice of shutdown at the time of the Act's enactment, it would have acknowledged the need to support nuclear closure communities going forward.<sup>191</sup>

Even if the next generation of nuclear technology is expected to last a long time, the future is never certain.<sup>192</sup> As the town of Zion, Illinois experienced, unexpected events such as human error can cause an unexpectedly early closure of a nuclear plant.<sup>193</sup> Cost issues and opposition from environmental groups also threaten to shut a plant down ahead of schedule.<sup>194</sup> Indeed, due to cost concerns or settlements with states, all twelve nuclear reactors that closed between 2013 and 2021 shut down before their initial operating license expired or had planned on extending their license.<sup>195</sup> Nuclear plants will not last forever, and Congress should plan for the futures of nuclear closure communities while it seeks to revitalize the nuclear energy industry. The ADVANCE Act's nuclear closure communities provision would have accomplished that.

### *B. Lessons Learned from Past Efforts to Support Nuclear Closure Communities*

Past federal and state efforts to support nuclear closure communities have come with implementation issues and shortcomings. These limitations suggest

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DEP'T OF ENERGY, <https://www.energy.gov/ne/advanced-small-modular-reactors-smrs> (last visited Feb. 23, 2025).

190. Nuclear reactors are often sited close to population centers to efficiently deliver electricity and minimize energy lost to friction on transmission lines. Joseph Stromberg, *Do You Live Within 50 Miles of a Nuclear Power Plant?*, SMITHSONIAN MAG. (Mar. 13, 2014), <https://www.smithsonianmag.com/science-nature/do-you-live-within-50-miles-nuclear-power-plant-180950072>; see also *supra* note 33 and accompanying text (noting the rising energy demand in the United States and nuclear energy's role in meeting this demand).

191. See ADVANCE Act of 2023, S. 1111, 118th Cong. § 601(a)(5)(C) (2023).

192. See *What's the Lifespan for a Nuclear Reactor? Much Longer Than You Might Think*, U.S. DEP'T OF ENERGY (Apr. 16, 2020), <https://www.energy.gov/ne/articles/whats-lifespan-nuclear-reactor-much-longer-you-might-think> (suggesting that nuclear reactors currently operating may operate for up to eighty years); see also *Decommissioning Nuclear Facilities*, *supra* note 55 (noting that nuclear plants were historically designed for a thirty-year lifespan, whereas newer plants are designed for a forty- to sixty-year lifespan).

193. See Lydersen, *supra* note 9.

194. See, e.g., Mehdi Leman, *6 Reasons Why Nuclear Energy is Not the Way to a Green and Peaceful World*, GREENPEACE (Mar. 18, 2022), <https://www.greenpeace.org/international/story/52758/reasons-why-nuclear-energy-not-way-green-and-peaceful-world>.

195. HOLT, *supra* note 37, at 2; see also MARK HOLT & PHILLIP BROWN, CONG. RSCH. SERV., R46820, U.S. NUCLEAR PLANT SHUTDOWNS, STATE INTERVENTIONS, AND POLICY CONCERNS 4 (June 10, 2021) (showing primary reasons for all twelve reactor shutdowns, including factors such as operating losses, costs of repair, inability to compete in the electricity market, and agreements with the state).

that the nuclear closure communities provision of the ADVANCE Act would have had shortcomings, both because of its similarities to past flawed federal support efforts and its inability to foster support at the state level. Thus, there is room for improvement in future support efforts. This Subpart provides an overview of how federal and state support measures for nuclear closure communities have fallen short and gives recommendations for how this support can be improved.

### 1. Federal Funding

Recognizing that economic impacts from nuclear power plant closures are “substantial and difficult to address,” Congress directed the EDA to “identify and develop best practices” to aid nuclear closure communities in June 2014.<sup>196</sup> As part of the 2020 Consolidated Appropriations Act, Congress allocated \$15 million to the EDA’s new Assistance to Nuclear Closure Communities (NCC) program.<sup>197</sup> The EDA’s NCC program diverts federal funding to communities that are “significantly impacted” by nuclear plant closures.<sup>198</sup> Although it is a valuable source of financial support for nuclear closure communities that are selected to receive funding, the EDA’s NCC program is not a permanent program, despite some efforts at the federal level to make it permanent.<sup>199</sup> Congress only appropriated funds to the EDA’s NCC program from 2020 to 2023, and the EDA did not request NCC program funding for 2024 or 2025.<sup>200</sup> In comparison, the EDA’s Assistance to Coal Communities (ACC) program has been funded every year since 2015, and the EDA has requested ACC program funding for 2025.<sup>201</sup> When federal funding for nuclear closure communities is appropriated on a year-to-year basis, communities feel uncertain about whether there will be enough funding for the “long-term rebuilding required” after a

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196. S. REP. NO. 113-181, at 16 (2014).

197. H.R. COMM. ON APPROPRIATIONS, 116TH CONG., CONSOLIDATED APPROPRIATIONS ACT, 2020, 503 (Comm. Print. 2020); JULIE M. LAWHORN, CONG. RSCH. SERV., IN11303, THE ECONOMIC DEVELOPMENT ADMINISTRATION AND THE CARES ACT (P.L. 116-136) 2 (Apr. 2, 2020).

198. Dennis Alvord, *EDA Fuels the Coal & Energy Communities that Power American Growth*, U.S. ECON. DEV. ADMIN. (June 2, 2023), <https://www.eda.gov/news/blog/2023/06/02/eda-fuels-coal-energy-communities-power-american-growth>.

199. See Thomas C. Zambito, *Schumer Pushes for Ongoing Funding for Indian Point Communities after NY Plant Shutdown*, LOHUD, <https://www.lohud.com/story/news/2022/03/09/sen-schumer-funding-struggling-indian-point-ny-communities-schools/9431758002> (last updated Mar. 9, 2022); *Schumer Protects Funding for Lifeline “Nuclear Closure Communities” Program to Aid Hudson Valley Communities Facing Major Economic Loss from Shutdown of Indian Point – And Delivers New Fed \$\$\$ for Westchester to Launch Economic Recovery Plan to Spur New Investment, Create Good-Paying Jobs, and Energize the Hudson Valley Economy*, CHUCK SCHUMER, U.S. SENATOR FOR N.Y. (Jan. 18, 2023) [hereinafter *Schumer Protects Funding*], [https://www.schumer.senate.gov/newsroom/press-releases/schumer-protects-funding-for-lifeline-nuclear-closure-communities-program-to-aid-hudson-valley-communities-facing-major-economic-loss-from-shutdown-of-indian-point\\_and-delivers-new-fed--for-westchester-to-launch-economic-recovery-plan-to-spur-new-investment-create-good-paying-jobs-and-energize-the-hudson-valley-economy](https://www.schumer.senate.gov/newsroom/press-releases/schumer-protects-funding-for-lifeline-nuclear-closure-communities-program-to-aid-hudson-valley-communities-facing-major-economic-loss-from-shutdown-of-indian-point_and-delivers-new-fed--for-westchester-to-launch-economic-recovery-plan-to-spur-new-investment-create-good-paying-jobs-and-energize-the-hudson-valley-economy).

200. LAWHORN, *supra* note 155, at 37, 61.

201. *Id.*

plant's closure.<sup>202</sup> To more reliably provide a lifeline of support to nuclear closure communities, the NCC program, or future federal funding programs for nuclear closure communities, should become permanent.

Additionally, the EDA's NCC program's design may not be the most effective support for nuclear closure communities. The program requires communities applying for grants to match funds from their strained budgets and only provides funding for new construction projects.<sup>203</sup> Planning new projects is "of little use" to many communities that struggle with severe budget shortfalls and do not have the "luxury of thinking about new projects."<sup>204</sup> Communities also cannot afford to add to their budget deficits and risk layoffs of public service employees to match funding for a program that only builds new construction and does not "preserve the necessary public health services" they struggle to provide.<sup>205</sup>

Competitive grant-based funding programs like the NCC program also present the potential for inequitable allocation of funding, as the grant application process is a barrier for many disadvantaged communities. The EDA's Coal Communities Commitment (CCC) program, a competitive grant-based funding program, has shown symptoms of these equity issues.<sup>206</sup> Larger metropolitan counties received more CCC funding for human capital investments such as workforce development initiatives, whereas more rural counties received funding only for basic infrastructure projects.<sup>207</sup> Meanwhile, the majority of coal communities categorized as persistent poverty counties (counties with poverty rates of at least 20 percent since the 1980s) did not receive any funding from the CCC program.<sup>208</sup> Similar equity issues likely exist in the

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202. See *Schumer Reveals: Indian Point's Surrounding Communities Facing Millions in Post-Shutdown Economic Loss Yet Lifeline Federal Program Still Isn't Permanent; Schumer Launches Effort to Fully Authorize the Nuclear Closure Communities Program and Provide a New Infusion of Funds to Help Recover from the Closure of Indian Point*, CHUCK SCHUMER, U.S. SENATOR FOR N.Y. (Mar. 7, 2022) [hereinafter *Schumer Reveals*], <https://www.schumer.senate.gov/newsroom/press-releases/schumer-reveals-indian-points-surrounding-communities-facing-millions-in-post-shutdown-economic-loss-yet-lifeline-federal-program-still-isnt-permanent-schumer-launches-effort-to-fully-authorize-the-nuclear-closure-communities-program-and-provide-a-new-infusion-of-funds-to-help-recover-from-the-closure-of-indian-point>.

203. See, e.g., *Hearing to Examine S. 2373 and S. 1290*, *supra* note 8, at 11, 18 (statement of David Knabel, Dir. of Accts. and Fin., City of Zion, Ill.).

204. *Id.* at 7 (opening statement of Hon. Tammy Duckworth, U.S. Sen. from the State of Ill.), 11 (statement of David Knabel, Dir. of Accts. and Fin., City of Zion, Ill.).

205. *Id.* at 11, 18 (statement of David Knabel, Dir. of Accts. and Fin., City of Zion, Ill.) (explaining how Zion was already "desperately struggling to provide" necessary services and could not afford to match funds for the funding program by adding to its budget deficit as it may have accelerated layoffs of city employees).

206. See Anne N. Junod, *Coal Communities Need Deeper Investments in Capacity Building to Capitalize on Energy Transition Funding*, URBAN INST. (Aug. 29, 2024) <https://www.urban.org/urban-wire/coal-communities-need-deeper-investments-capacity-building-capitalize-energy-transition>.

207. *Id.*

208. *Id.*

EDA's NCC program, which is also a competitive grant program.<sup>209</sup> Since the ADVANCE Act's nuclear closure communities provision did not specify whether funds for economic development would be distributed as a competitive funding program, it is possible that it would have created a competitive grant program that invited these equity issues.<sup>210</sup>

To more effectively support nuclear closure communities, federal funding should be available to communities as part of a noncompetitive grant program. By allocating funds based on a set of predetermined criteria, a noncompetitive grant program would alleviate equity concerns as nuclear closure communities that meet the criteria could quickly receive guaranteed funding rather than completing burdensome competitive grant applications to access funding.<sup>211</sup> Compensation structures proposed in the STRANDED Act of 2021 and the Nuclear Plant Decommissioning Act of 2020, which both would have established noncompetitive grant programs based on the amount of spent nuclear fuel communities host, serve as templates for noncompetitive funding programs.<sup>212</sup> Future noncompetitive grant programs should also include lost tax revenue and jobs as criteria to determine grant recipients. By utilizing noncompetitive grants, federal funding can reach communities that may not have the knowledge or resources to complete a grant application.<sup>213</sup>

In designing federal funding programs, another important consideration is the source of the funding. Past federal support programs for nuclear closure communities have largely used government funding, rather than funding from nuclear plant owners.<sup>214</sup> However, lawmakers may be hesitant to use taxpayer dollars on nuclear closure communities, especially when taxpayers have already

209. See JULIE M. LAWHORN, CONG. RSCH. SERV., IN11648, THE ECONOMIC DEVELOPMENT ADMINISTRATION'S ASSISTANCE TO COAL AND NUCLEAR CLOSURE COMMUNITIES INITIATIVES FOR ECONOMIC TRANSITIONS 2 (Apr. 5, 2021).

210. See ADVANCE Act of 2023, S. 1111, 118th Cong. § 601(b)(2) (2023).

211. *Understanding Different Grant Models: Competitive vs. Non-Competitive*, FUNDSFORNGOS, <https://www2.fundsforngos.org/articles-searching-grants-and-donors/understanding-different-grant-models-competitive-vs-non-competitive> (last visited Apr. 22, 2025).

212. See STRANDED Act of 2021, S. 1290, 117th Cong. § 6 (2021).

213. See Junod, *supra* note 206 (concluding that disparities in EDA CCC funding may be due to the "strategic project planning and onerous federal application requirements" involved in a grant application that rural communities may find "prohibitively difficult").

214. For example, the EDA NCC program funded its competitive grant program by allocating federal funds from EDA's Public Works and Economic Adjustment Assistance and Research and National Technical Assistance programs. Alvord, *supra* note 198. Additionally, unenacted bills proposing support programs for nuclear closure communities have tended to propose funding these programs through allocation of government funds. See, e.g., S. 1290 §§ 6, 8(a) (allocating \$175 million in government funds to carry out the STRANDED Act, including a noncompetitive grant program for communities hosting spent nuclear fuel); Preserving Existing Nuclear Energy Generation Act, H.R. 9015, 116th Cong. § 3(b), (e)(1) (2020) (allocating \$30 million to "fund community advisory boards in nuclear closure communities," \$30 million to "assist with economic development in nuclear closure communities," and \$5 million to "fund community advisory boards in nuclear closure communities"); American Nuclear Infrastructure Act of 2020, S. 4897, 116th Cong. § 504(b), (e)(1) (2020) (allocating \$30 million to "assist with economic development in nuclear closure communities," and \$5 million to "fund community advisory boards in nuclear closure communities").

footed the bill for the nuclear energy industry's past high expenses.<sup>215</sup> Since the government does not force nuclear power plants to shut down for the energy transition, it also may not be the government's responsibility to fund nuclear closure communities.<sup>216</sup> As the ones ultimately deciding to close plants down and bring about the economic impacts that come with shutdowns, fairness suggests that nuclear plant owners pay for support programs. Future federal legislation could condition permitting or aspects of decommissioning on establishing sufficient funds to support nuclear closure communities. Senator Sanders's proposed Nuclear Plant Decommissioning Act of 2020, which required nuclear power plants to pay a fee towards funding CABs when submitting an NRC-required post-shutdown decommissioning activities report, could serve as a template for such future programs.<sup>217</sup>

But funding from nuclear plant owners may also be limited. The NRC requires plant owners to provide proof that they have sufficient funding to complete decommissioning by establishing a decommissioning trust fund.<sup>218</sup> Accordingly, payments from plant owners to nuclear closure communities as part of a federal support program would likely come from their decommissioning trust fund.<sup>219</sup> However, decommissioning trust funds commonly report shortfalls.<sup>220</sup> Though the shortfalls can be remedied by trust fund growth, the existence of shortfalls may suggest that plant owners already face uncertainties

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215. See, e.g., *Hearing to Examine S. 2373 and S. 1290*, *supra* note 8, at 99. Due to high construction costs and long construction timelines, the nuclear energy industry has relied on revenue guarantees and subsidies from the federal government to ensure that projects are viable. Nolan Mckendry, *Why Taxpayers Get Stuck With the Bill for Nuclear Power Plants*, GOVERNING (June 25, 2024), <https://www.governing.com/resilience/why-taxpayers-get-stuck-with-the-bill-for-nuclear-power-plants>.

216. In some situations, the government may play a role in pressuring nuclear power plants into shutting down for reasons other than the energy transition, such as public safety concerns. See, e.g., GOVERNOR CUOMO ANNOUNCES SUCCESSFUL CLOSURE OF INDIAN POINT NUCLEAR POWER PLANT, *supra* note 173, at 1 (discussing that former New York Governor Cuomo was "deeply concerned" with Indian Point due to safety risks for the major metropolitan area of New York, and worked with "federal, state, and local officials" to reach a settlement agreement shutting down Indian Point). In these cases, government funding to support nuclear closure communities affected by the shutdown would be appropriate.

217. See Nuclear Plant Decommissioning Act of 2020, S. 4890, 116th Cong. § 3(c) (2020). Nuclear plant licensees are required under NRC regulations to submit a post-shutdown decommissioning activities report, which must include a "description of the planned decommissioning activities" and the "projected cost of managing irradiated fuel." 10 C.F.R. § 50.82(a)(4)(i).

218. 10 C.F.R. § 50.75(e)(1)(i).

219. See Bessette & Clausen, *supra* note 87 (commenting that payments from plant owners towards CABs "would likely have to come from" decommissioning trust funds).

220. See, e.g., Peter Maloney, *Nuclear Plant Closures to Test Sufficiency of Decommissioning Funds*, UTIL. DIVE (Oct. 10, 2017), <https://www.utilitydive.com/news/nuclear-plant-closures-to-test-sufficiency-of-decommissioning-funds/506763> (noting that both investor-owned utilities and public utilities have shortfalls in decommissioning trust funds and discussing Exelon's reported decommissioning trust fund shortfalls for its Braidwood and Byron sites); Chris Schneidmiller, *Zion Decommissioning Trust Has \$15.2M Shortfall*, NRC SAYS, EXCH. MONITOR (May 31, 2019), <https://www.exchangemonitor.com/zion-decommissioning-trust-15-2m-shortfall-nrc-says> (discussing a \$15.2 million decommissioning trust fund shortfall reported by Zion Nuclear Power Station's owner).

surrounding funds before they contribute funds to nuclear closure community support programs.<sup>221</sup> NRC requirements for decommissioning trust funds also restrict use of the money to “decommissioning activities” as defined by the NRC, which is limited to activities that “remove a facility or site safely from service and reduce residual radioactivity” to a sufficiently low level.<sup>222</sup> Funding the economic growth of nuclear closure communities likely does not meet this requirement, so decommissioning trust fund money may not be usable for this purpose. Future legislation to support nuclear communities should contemplate amending the NRC requirements such that decommissioning trust funds can also be used to support communities economically impacted by decommissioning. Given the frequent shortfalls in trust funds, however, lawmakers may be hesitant to distract from devoting funds to adequately funding decommissioning safety measures.

Past examples demonstrate that the source of funding federal support for nuclear closure communities is a likely sticking point to designing future programs. Because of the limitations surrounding decommissioning trust funds, it may be difficult to require plant owners to fund federal support programs. On the other hand, government funding is a more straightforward way to provide funding, but lawmakers are likely hesitant to spend taxpayer dollars. A combination of both government spending and plant owner funding may provide an alternative, though it would not prevent scrutiny over the amount of funding provided by each party.

## 2. State Support

In addition to federal funding, state government funding can provide another effective way support to nuclear closure communities, as it allows a localized approach based on each community’s needs. Similar to federal funding programs, state programs have focused more on coal communities than nuclear closure communities.

For example, Illinois passed the Climate and Equitable Jobs Act (CEJA) in September 2021, which supports a just energy transition by funding communities affected by power plant closures.<sup>223</sup> CEJA primarily focuses on communities affected by fossil fuel power plant closures, as the law directs Illinois to close all fossil fuel plants by 2045, but both fossil fuel communities and nuclear closure

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221. See Maloney, *supra* note 220 (noting that decommissioning trust fund shortfalls are not “dire” because strong market performance and contributions can grow the trust fund).

222. 10 C.F.R. § 50.82(a)(1)(8)(i)(A); 10 C.F.R. § 50.2; Timothy P. Matthews, *NRC Guidance Limits Use of Decommissioning Trust Funds Prior to Plant Shutdown*, MORGAN & LEWIS (June 22, 2023), <https://www.morganlewis.com/blogs/upandatom/2023/06/nrc-guidance-limits-use-of-decommissioning-trust-funds-prior-to-plant-shutdown>.

223. See Kari Lydersen, *As Illinois Phases Out Fossil Fuels, Law Offers Support to Transition Workers*, CANARY MEDIA (Sept. 22, 2021), <https://www.canarymedia.com/articles/enn/as-illinois-phases-out-fossil-fuels-law-offers-support-to-transition-workers>; *Climate and Equitable Jobs Act*, ILL. EPA <https://epa.illinois.gov/topics/ceja> (last visited Dec. 9, 2024).

communities can apply for CEJA grant funding.<sup>224</sup> Zion received \$14 million as part of CEJA's grant program.<sup>225</sup> Funding for CEJA grants and support programs, such as worker retraining and community projects, comes from fees added to Illinois residents' electricity bills.<sup>226</sup> However, environmental advocates had hoped the law would establish more robust programs funded by fossil fuel companies.<sup>227</sup> Though this shortcoming shows there is room to improve state programs, states can support nuclear closure communities by passing laws like CEJA to establish state-level grant programs and funding opportunities for communities.

CEJA is an example of effective state support focusing on fossil fuel power plant communities, but state laws focused specifically on nuclear closure communities can better address the needs of those communities. Nuclear closure communities experience unique impacts in the wake of a plant's closure, including economic effects from hosting spent nuclear fuel and severe loss of tax revenue.<sup>228</sup> State legislatures should recognize these unique impacts and provide funding that will sufficiently compensate communities for both loss of tax revenue and hosting spent nuclear fuel. CEJA is also an example of how state support can provide much-needed funding to communities when federal funding falls through: CEJA successfully provided funds while the STRANDED Act, which aimed to compensate communities that host spent nuclear fuel, failed in Congress.<sup>229</sup> However, state funding may not always be combined with federal funding as there may be limitations on the amount of state funds available, particularly as state grants could be reduced or eliminated if communities receive funding from federal grant programs.<sup>230</sup> States could allocate permanent funding regardless of whether a community receives federal funding, but this may encounter opposition to using limited state funds on a community that has already received support from the federal government.

States can also designate broader resources to nuclear closure communities. The Colorado Office of Just Transition (OJT) works to support "communities and workers transitioning away from the mining and burning of coal as an energy source."<sup>231</sup> OJT identifies coal communities within Colorado and works with

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224. Lydersen, *supra* note 223.

225. *More than 50 Recipients Selected to Receive Energy Transition Community Grants*, ILLINOIS.GOV (Mar. 7, 2023), <https://www.illinois.gov/news/press-release.26142.html>.

226. Lydersen, *supra* note 223.

227. *Id.*

228. *See, e.g.*, Lydersen, *supra* note 9.

229. *See* Lydersen, *supra* note 223; *All Actions: S.1290 — 117th Congress (2021-2022)*, *supra* note 104 (failing to progress past hearings).

230. *See* Lydersen, *supra* note 223 (noting that the grant amount awarded to Zion under CEJA may be "reduced or eliminated" if Zion were to receive federal funding); Climate and Equitable Jobs Act, Ill. Pub. Act 102-0662 (2021) §10-20(j) (stating that communities hosting spent nuclear fuel will receive funding "less any payments made to such communities from the federal government based on the amount of waste stored at a decommissioned nuclear plant").

231. *The Office of Just Transition*, *supra* note 25.

those communities to “support long-term transition strategies” to improve their job prospects and economic diversity.<sup>232</sup> Through Community Assistance Grants, OJT has designated over \$15 million for investment in coal communities in Colorado since 2021.<sup>233</sup> OJT grant writing assistance programs are also available to eligible entities in coal communities applying for grants to fund economic development, workforce development, and infrastructure projects.<sup>234</sup> The Action Plan that guides OJT’s work emphasizes the need to effectively identify and align support for coal communities and attract funding to support economic growth.<sup>235</sup> Similar support should be organized for nuclear closure communities. Resources like OJT offer effective state-level strategies such as direct funding awards and grant writing assistance that would be valuable to nuclear closure communities.<sup>236</sup> Just like coal communities, nuclear closure communities are often underserved and would benefit from dedicated state-level assistance.

### 3. Community Engagement

Effective engagement with nuclear closure communities is another important aspect of successful support programs for these communities. As discussed in the previous Subpart, the ADVANCE Act’s nuclear closure communities provision would have encouraged transparency and communication between community members and nuclear plant owners by facilitating CABs.<sup>237</sup> However, many CABs that have formed have been informational forums for community members and would not have oversight authority over the decommissioning process itself.<sup>238</sup> This may not be the most effective form of engagement for communities that are concerned about

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232. *Programs for Coal Transition Communities*, COLO. DEP’T OF LAB. AND EMP., <https://cdle.colorado.gov/offices/the-office-of-just-transition/programs-for-coal-transition-communities> (last visited Feb. 24, 2025).

233. *Id.*

234. *Id.* Eligible entities include development districts, counties, municipalities, public K-12 schools, tribes, apprenticeship programs, higher education institutions, and nonprofit organizations. COLO. DEP’T OF LAB. AND EMP., OJT GRANT WRITING ASSISTANCE PROGRAM 1, <https://docs.google.com/document/d/1REGsgFv8Z67gIRCp4i48AZJbSOZBnb-w/edit>.

235. COLO. DEP’T OF LAB. AND EMP., COLORADO JUST TRANSITION ACTION PLAN 1 (2020), <https://cdle.colorado.gov/sites/cdle/files/documents/Colorado%20Just%20Transition%20Action%20Plan.pdf>.

236. *See Programs for Coal Transition Communities*, *supra* note 232.

237. *Supra* Part IV.A.

238. *See* NRC REPORT, *supra* note 178, at 3-4 (noting that while some CABs may have oversight authority over decommissioning decisions, either because they are state-sponsored or have charters establishing this authority, others serve as “advisory panel[s] for the community”); *see, e.g.*, INDIAN POINT NUCLEAR DECOMMISSIONING CITIZENS ADVISORY PANEL MINUTES, JUNE 13, 2019, *supra* note 138, at 1 (opening remarks of an Indian Point CAB meeting stating that the panel “will not have the jurisdiction of the decommissioning process”).

accountability throughout the decommissioning process.<sup>239</sup> Funding CABs to pay for administrative costs and technical experts may help with educational purposes, but does not address the frustration that communities feel about a lack of control over a shutdown that will affect their daily lives.<sup>240</sup> To address these concerns and meaningfully include nuclear closure communities in the decommissioning conversation, federal legislation should establish CABs that have oversight authority over substantive decisions in the decommissioning process. This can be achieved by adding a provision in a CAB's charter that establishes certain circumstances in which CAB input must hold sway over a plant owner's decommissioning decisions.<sup>241</sup>

Another opportunity for effective engagement with nuclear closure communities is technical support programs that work directly with communities to help them through the decommissioning process. Technical assistance creates a "community of practice" and assists small and underserved communities with planning activities prior to project implementation as they prepare for the closure of a nuclear plant.<sup>242</sup> The Technical Assistance for Nuclear Communities Program (TANC) was an EDA-funded technical assistance program that worked with nuclear communities to identify how to best prepare for the closure of a nuclear power plant.<sup>243</sup> In the program, Smart Growth America, a nonprofit organization focused on technical assistance services, provided direct technical assistance to the communities and catered assistance to the specific needs of a community.<sup>244</sup> Services included land use and zoning assessments, economic impact analyses, and federal funding application preparation.<sup>245</sup> TANC also compiled guidelines for nuclear closure communities, including a resource on what steps communities can take to diversify their economies in the aftermath of a nuclear plant's closure.<sup>246</sup>

Although the program has ended because the grant period is over, TANC demonstrates the value of technical assistance programs as community engagement tools.<sup>247</sup> Technical assistance enables nuclear closure communities to work directly with experts and prepare for the specific economic impacts that

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239. See INDIAN POINT NUCLEAR DECOMMISSIONING CITIZENS ADVISORY PANEL MINUTES, JUNE 13, 2019, *supra* note 138, at 11-12 (audience question raising concern over the CAB's lack of authority in decommissioning).

240. See *id.*

241. See NRC REPORT, *supra* note 178, at 3-4.

242. See LAWHORN, *supra* note 209, at 3.

243. *Nuclear Closure Assistance: Technical Assistance*, SMART GROWTH AM., <https://smartgrowthamerica.org/nuclear-closure-assistance> (last visited Dec. 9, 2024).

244. SMART GROWTH AM., TECHNICAL ASSISTANCE FOR NUCLEAR COMMUNITIES 1-2, [https://smartgrowthamerica.org/wp-content/uploads/2022/08/8.2022\\_Nuclear-Communities.pdf](https://smartgrowthamerica.org/wp-content/uploads/2022/08/8.2022_Nuclear-Communities.pdf) (last visited Dec. 9, 2024).

245. *Id.*

246. *Nuclear Closure Assistance: Diversification Roadmap*, SMART GROWTH AM., <https://smartgrowthamerica.org/nuclear-closure-assistance/community-economic-diversification-roadmap> (last visited Dec. 9, 2024).

247. See *Nuclear Closure Assistance: Technical Assistance*, *supra* note 243.

their community will experience. Federal funding should go towards lasting technical assistance programs similar to TANC to ensure that these programs can reach more communities. Even after technical assistance programs close out, guidelines and reports from the technical assistance organizations can be valuable resources for communities to look to when a nuclear plant announces a shutdown.

*C. Indian Point Case Study: Looking to Cortlandt and Buchanan to Examine the Effectiveness of Nuclear Closure Community Support Programs*

The previous Subpart considered the limitations of past support efforts and provided theoretical recommendations to remedy those limitations. This Subpart now uses Indian Point Energy Center's closure in Buchanan, New York as a case study to examine the support that two nearby communities received and consider how the given recommendations could improve that support in practice. Indian Point was the most recent nuclear plant decommissioned in the United States, ceasing operations on April 30, 2021.<sup>248</sup> Due to its proximity to New York City, significant concerns regarding national security and public safety ultimately led to Indian Point shutting down earlier than planned when the plant owner and the state of New York reached a settlement to not seek license renewal.<sup>249</sup> Pressure from environmental groups and cost concerns also contributed to the shutdown decision.<sup>250</sup>

Indian Point was a significant source of employment and revenue for nearby communities in Westchester County, employing one thousand workers and contributing \$30 million in property taxes to state and local governments.<sup>251</sup>

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248. HOLT & BROWN, *supra* note 195, at 1; *New York's Indian Point Nuclear Power Plant Closes After 59 Years of Operation*, U.S. ENERGY INFO. ADMIN. (Apr. 30, 2021), <https://www.eia.gov/todayinenergy/detail.php?id=47776>; *see also U.S. Nuclear Reactor Shutdown List*, U.S. ENERGY INFO. ADMIN., <https://www.eia.gov/nuclear/reactors/shutdown> (last visited Oct. 20, 2025) (showing Indian Point Unit 3 as the most recent shutdown in the list). Recently, the company in charge of decommissioning raised the possibility of restarting Indian Point. Marie J. French, *Indian Point Owner Floats Restart of Shuttered Nuclear Reactors*, POLITICO (Sept. 10, 2025), <https://www.politico.com/news/2025/09/10/indian-point-owner-floats-restart-of-shuttered-nuclear-reactors-00552865>. However, a restart of Indian Point would cost around \$10 billion, require reconstructing "major components" of the reactor, and face significant opposition from local government officials, making a restart unlikely in reality. *See id.* New York Governor Kathy Hochul has firmly rejected the idea of restarting Indian Point. Johan Sheridan, *New York to Appeal After Judge OKs Radioactive Indian Point Water in the Hudson*, WTEN, <https://www.news10.com/news/ny-news/holtec-wins-lawsuit-hudson-wastewater> (last updated Oct. 14, 2025).

249. *New York's Indian Point Nuclear Power Plant Closes After 59 Years of Operation*, *supra* note 248; Aaron Larson, *Deal Reached to Permanently Close Indian Point Nuclear Plant*, POWER (Jan. 9, 2017), <https://www.powermag.com/deal-reached-to-permanently-close-indian-point-nuclear-plant>; GOVERNOR CUOMO ANNOUNCES SUCCESSFUL CLOSURE OF INDIAN POINT NUCLEAR POWER PLANT, *supra* note 173, at 1-2.

250. *Beyond Indian Point*, *supra* note 172; Larson, *supra* note 249.

251. NUCLEAR ENERGY INST., ECONOMIC IMPACTS OF THE INDIAN POINT ENERGY CENTER, 5, 8 (2015), <http://large.stanford.edu/courses/2017/ph241/arguello1/docs/nei.pdf>; *see also Buchanan, NY*, HIST. HUDSON RIVER TOWNS, <https://www.hudsonriver.com/hhrt/river-towns/westchester-county/>

With the plant's closure came the loss of jobs and tax revenue. The village of Buchanan and the town of Cortlandt in Westchester County were two of the most heavily-impacted communities.<sup>252</sup> Buchanan lost half of its budget after the shutdown.<sup>253</sup> Indian Point was also the largest taxpayer for Cortlandt, and one school district within Cortlandt was projected to lose one-third of its revenue.<sup>254</sup> The lengthy decommissioning process and potential for nuclear waste to remain on the property also deterred development of new projects on the power plant site, despite Cortlandt's efforts to lobby for new development.<sup>255</sup> Meanwhile, Buchanan planned to rezone sixty acres of valuable property that Indian Point occupies, but a 2023 New York state law prohibiting the release of nuclear wastewater into the Hudson River may delay redevelopment of the property by eight years, stalling economic growth efforts.<sup>256</sup>

### 1. Federal Funding: EDA NCC Grants

Cortlandt and Buchanan both received federal funding through the EDA's past funding programs, though to varying degrees. In 2020, Cortlandt received a \$3.2 million grant from the EDA's NCC program to develop an educational recreational center on a municipally owned section of land.<sup>257</sup> However, Buchanan did not qualify for NCC funding as it did not have land open for a development project.<sup>258</sup> This demonstrates the limits of NCC funding, as

buchanan-ny (last visited Dec. 9, 2024) (noting that many residents of Buchanan were employees of Indian Point).

252. See Thomas C. Zambito, *Indian Point Shutdown Cost Local Jobs. Federal Funding Could Resurrect Them.*, LOHUD (Feb. 14, 2023), <https://www.lohud.com/story/news/2023/02/14/indian-point-nuclear-shutdown-cut-jobs-federal-money-westchester-biosciences/69886732007>.

253. *Id.*

254. Kevin Zawacki, *Life After Indian Point*, WESTCHESTER MAG. (Oct. 24, 2019) <https://westchestermagazine.com/life-style/life-after-indian-point>.

255. *Id.*

256. John Camera, *Company Says State Law Could Delay Dismantling Indian Point by 8 Years*, SPECTRUM NEWS, <https://spectrumlocalnews.com/nys/central-ny/news/2023/11/30/company-says-dismantling-indian-point-could-be-delayed-8-years> (last updated Dec. 1, 2023). On September 24, 2025, the United States District Court for the Southern District of New York struck down the New York law, finding that it preempted federal law. Jonathan Stempel, *New York Law Curbing Radioactive Indian Point Discharges Voided by US Judge*, REUTERS, <https://www.reuters.com/legal/litigation/new-york-law-curbing-radioactive-indian-point-discharges-voided-by-us-judge-2025-09-24> (last updated Sept. 24, 2025); *Holtec Int'l v. New York*, No. 24-CV-2929 (S.D.N.Y. Sept. 24, 2025). The state of New York intends to appeal the decision. Jesse King, *New York Challenges Federal Ruling Allowing Wastewater Dumping at Indian Point*, WAMC (Oct. 10, 2025), <https://www.wamc.org/2025-10-20/new-york-challenges-federal-ruling-allowing-wastewater-dumping-at-indian-point>.

257. Press Release, U.S. Department of Commerce Invests \$3.2 Million to Support Business Development and Economic Diversification Efforts in Cortlandt, New York, U.S. ECON. DEV. ADMIN. (Oct. 28, 2020), <https://www.eda.gov/archives/2021/news/press-releases/2020/10/28/cortlandt-ny.htm>; Thomas C. Zambito, *Cortlandt to Get \$3.2M in Federal Funding to Boost Economy After Indian Point Closes*, LOHUD (Sept. 30, 2020), <https://www.lohud.com/story/news/local/westchester/cortlandt/2020/09/30/cortlandt-gets-indian-point-closure-help/3586650001>.

258. Zambito, *supra* note 257.

Buchanan was ineligible for much-needed federal funding simply because it lacked capacity to develop a new project.<sup>259</sup> Three years later, Westchester County received \$344,000 from the same program.<sup>260</sup> This funding gave Cortlandt and Buchanan an opportunity to diversify their economies: Westchester County has the fifth-highest cluster of biotechnology jobs in the United States and plans to use the EDA grant to build up its biosciences industry.<sup>261</sup>

While EDA funding is important to economic growth in Cortlandt and Buchanan, their experiences highlight the limitations of federal support. Revitalizing their economies after a nuclear plant shutdown by building up the biosciences industry will be a long process for the two communities, and the non-permanent structure of the EDA's NCC program creates "uncertainty" about whether there will be enough money from the grant to support the "long-term rebuilding required" after Indian Point's closure.<sup>262</sup> Even while the NCC program is funded, Buchanan and Cortlandt's continued economic progress relies on their ability to apply for and obtain a competitive grant.

Buchanan and Cortlandt need a steady source of funding to see their economic growth and development projects through. A permanent federal funding program would eliminate uncertainty and provide consistent support for their redevelopment efforts. The ADVANCE Act's nuclear closure communities provision would have at least provided funding opportunities for Cortlandt and Buchanan annually from 2023 to 2028, although these may have been competitive grant-based funding opportunities.<sup>263</sup> Noncompetitive funding opportunities for Cortlandt and Buchanan would further reduce funding uncertainty as they rebuild and diversify their economies.

## 2. State Support: Indian Point Decommissioning Oversight Board

In December 2020, the New York Department of Public Service established the Indian Point Decommissioning Oversight Board (DOB), which assesses the decommissioning process and advises affected communities.<sup>264</sup> As part of this

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259. See *id.*; see also *Hearing to Examine S. 2373 and S. 1290*, *supra* note 8, at 18 (statement of David Knabel, Dir. of Accts. and Fin., City of Zion, Ill.) (discussing how federal programs that only fund new projects are inaccessible to communities in a "crisis for survival" that do not have the "luxury of thinking about new projects").

260. *Schumer Protects Funding*, *supra* note 199.

261. *Zambito*, *supra* note 252.

262. *Schumer Reveals*, *supra* note 202.

263. See ADVANCE Act of 2023, S. 1111, 118th Cong. § 601(e)(1) (2023); see also *supra* Part IV.A (analyzing ADVANCE Act EDA grant program structure).

264. *About the Indian Point DOB*, N.Y. STATE DEP'T OF PUB. SERV., <https://dps.ny.gov/about-indian-point-dob> (last visited Dec. 9, 2024). For clarity, the DOB is a New York Department of Public Service board composed largely of state and local government representatives, not a community advisory board. See *id.* The DOB is still active as of this writing, with updates posted and meetings held as recently as September 2025, and a meeting scheduled for December 2025. See *Indian Point*

process, DOB identifies New York State grant funds available to communities affected by Indian Point's closure.<sup>265</sup> One such source of funding was over \$6 million from a settlement agreement directed to Buchanan and Cortlandt to support a wastewater treatment project.<sup>266</sup> DOB also identified New York's Electric Generation Facility Cessation Mitigation Program, which provides communities and school districts that lose tax revenue due to the closure of an electric generation facility with funding over a seven-year period.<sup>267</sup> As of 2023, Buchanan has received two payments and Cortlandt has received one payment from this fund.<sup>268</sup>

DOB and the Electric Generation Facility Cessation Mitigation Program help identify and direct state funds to nuclear closure communities in New York. However, there are opportunities to improve state-level support efforts by creating direct assistance programs for nuclear closure communities' practical needs, such as grant writing assistance programs to help communities access more funding.<sup>269</sup> Cortlandt and Buchanan would benefit from state-level resources dedicated to nuclear closure communities to support them through the long rebuilding process in the wake of Indian Point's closure. Considering that the state still hosts four active nuclear power plants, many similarly situated communities in New York would likely benefit from such programs in the future.<sup>270</sup>

### 3. Community Engagement: Indian Point NDCAP

To prepare for the closure of Indian Point, Cortlandt and Buchanan officials formed a community advisory board to "enhance open communication, public

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*Decommissioning Oversight Board (DOB)*, N.Y. STATE DEP'T OF PUB. SERV., <https://dps.ny.gov/indian-point-decommissioning-oversight-board-dob> (last visited Oct. 20, 2025).

265. *DOB Frequently Asked Questions*, N.Y. STATE DEP'T OF PUB. SERV., <https://dps.ny.gov/dob-frequently-asked-questions> (last visited Dec. 9, 2024).

266. *Id.*; see also Thomas C. Zambito, *\$15M for Indian Point Communities Weathering Nuclear Power Plant's April Shutdown*, LOHUD, <https://www.lohud.com/story/news/2021/10/28/indian-point-towns-get-millions-sewer-upgrades-fish-school-air-monitoring/8575712002> (last updated Oct. 29, 2021) (discussing how Cortlandt and Buchanan received funds from a community and environmental fund created by the plant owner as part of its multi-party settlement agreement to shut down Indian Point).

267. *Electric Generation Facility Cessation Mitigation Program*, EMPIRE STATE DEV., <https://esd.ny.gov/electric-generation-facility-cessation-mitigation> (last visited Feb. 24, 2025). Entities qualify for funding if an electrical generation facility has closed on or after June 25, 2015, and the closure has caused at least a 20 percent reduction in tax liability owed by the facility. *Id.* Buchanan received payments of \$773,568 and \$1,095,303, and Cortlandt received a payment of \$348,240. INDIAN POINT CLOSURE TASK FORCE, ANNUAL UPDATE 5-6 (2023).

268. ANNUAL UPDATE, *supra* note 267, at 5-6.

269. See *Programs for Coal Transition Communities*, *supra* note 232.

270. See *Radiological Emergency Preparedness*, N.Y. STATE DIV. OF HOMELAND SEC. AND EMERGENCY SERVS. <https://www.dhss.ny.gov/radiological-emergency-preparedness> (last visited Dec. 9, 2024) (noting that New York has four nuclear power plants covering five counties).

involvement, and education” in the two municipalities.<sup>271</sup> The Indian Point Nuclear Decommissioning Citizens Advisory Panel (NDCAP) held its first meeting on June 13, 2019.<sup>272</sup> NDCAP members included local officials from Buchanan and Cortlandt as well as representatives from Entergy, the owner of Indian Point.<sup>273</sup> The panel served as an “informal channel” for Buchanan and Cortlandt community members to raise their concerns about the decommissioning process.<sup>274</sup> However, NDCAP members, including local officials, did not have oversight authority over decommissioning.<sup>275</sup> NDCAP attendees raised inquiries on a wide range of topics related to decommissioning, including the future of Indian Point’s workforce, the status of fish studies, and what the property would look like after the plant’s closure.<sup>276</sup> Several community members questioned Entergy representatives about the adequacy of the decommissioning company’s storage casks, emergency preparedness plans, and disposal of materials exposed to radiation.<sup>277</sup>

Indian Point NDCAP provides an example of the types of concerns that communities raise in CAB meetings and the value of having an open forum for residents to participate in the decommissioning process. Community members are concerned about public health and want to know how they will be kept safe throughout decommissioning.<sup>278</sup> The ADVANCE Act’s nuclear closure communities provision would have improved education and communication between communities and plant owners by funding CABs’ public outreach measures, including technical experts and administrative costs.<sup>279</sup>

However, Indian Point NDCAP also demonstrates how informational CABs with no oversight authority over the decommissioning process are ineffective at addressing the root of a community’s worries: the inability to control a years-long process that will directly affect them on a daily basis. One community member raised concerns that the plant owner would proceed through decommissioning “without having to yield to” NDCAP in their decisions.<sup>280</sup> Another community member expressed a desire to “give some feedback” due to concerns over spent nuclear fuel storage canister design.<sup>281</sup> The Entergy

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271. FIRST MEETING OF INDIAN POINT NUCLEAR DECOMMISSIONING CITIZEN ADVISORY PANEL (NDCAP) TO CONVENE NEXT WEEK, *supra* note 180.

272. INDIAN POINT NUCLEAR DECOMMISSIONING CITIZENS ADVISORY PANEL MINUTES, JUNE 13, 2019, *supra* note 138, at 1.

273. *Id.*

274. *Id.*

275. *Id.* (emphasizing in opening remarks that the NRC retains exclusive jurisdiction over the decommissioning process and NDCAP has no authority over decommissioning).

276. *Id.* at 8-9, 14.

277. *Id.* at 9-11.

278. *See id.*

279. *See* ADVANCE Act of 2023, S. 1111, 118th Cong. § 601(b)(2) (2023); NRC REPORT, *supra* note 178, at 5-6.

280. INDIAN POINT NUCLEAR DECOMMISSIONING CITIZENS ADVISORY PANEL MINUTES, JUNE 13, 2019, *supra* note 138, at 11.

281. *Id.* at 10.

representative NDCAP member responded that they would “certainly listen to the community” but ultimately any decisions for spent fuel management had to be “consistent with [Entergy’s] business plans,” as Entergy is ultimately the only party directly responsible to the NRC.<sup>282</sup>

These comments highlight how communities can become frustrated with a CAB’s lack of control over decommissioning.<sup>283</sup> Although the NRC has exclusive jurisdiction over the decommissioning process, Indian Point NDCAP could have fostered trust between the community and plant owner by requiring that NDCAP input would inform some of Entergy’s decommissioning decisions.<sup>284</sup> By elevating NDCAP’s oversight authority, Indian Point NDCAP could have ensured that community input would have power in the decommissioning and reassured Cortlandt and Buchanan residents that their health and safety would be prioritized. Because of their uniquely close proximity to nuclear power plants, nuclear closure communities like Cortlandt and Buchanan should have a meaningful voice in the decommissioning process, which will significantly affect their communities’ public health and economy. Although each nuclear closure community’s history and present context are unique, the story of Indian Point illustrates how policies to support nuclear closure communities should be improved.

#### CONCLUSION

Nuclear power plants have become a mainstay of nearby communities, providing millions of dollars in tax revenue and employing hundreds of residents. When the plant shuts down, this mainstay disappears, and nuclear closure communities are left to pick up the pieces and rebuild their economies. These communities suffer economic hardships and an uncertain future, mirroring the experiences of coal communities in many ways. Yet government support has not materialized for nuclear closure communities to a meaningful extent. They have been left behind in federal legislation as several past bills have tried and failed to provide federal funding to nuclear closure communities. And in July 2024, the ADVANCE Act became the most recent piece of federal legislation to follow this pattern, leaving out a provision that would have funded economic development and community engagement in nuclear closure communities. Recognizing and investigating this failure of the ADVANCE Act is an important first step in directing more support efforts towards nuclear closure communities.

It is equally important to consider that, even if the ADVANCE Act had included its provision supporting nuclear closure communities, the Act may not have provided the most effective form of support to communities. Past federal support programs for nuclear closure communities and coal communities

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282. *Id.*

283. *See id.*

284. This requirement could have been incorporated into NDCAP’s charter. *See* NRC REPORT, *supra* note 178, at 3-4 (discussing how the charter defines the authority of a CAB).

demonstrate that nonpermanent or competitive grant programs may not give communities sufficient economic support. Community advisory boards without oversight authority over the decommissioning process are also largely ineffective at fostering meaningful community engagement and easing local residents' concerns. These insights suggest that future support programs for nuclear closure communities should use permanent and noncompetitive federal grant programs and should form community advisory boards that have oversight authority over the decommissioning process. Robust state support is also important to providing nuclear closure communities with localized assistance that meets the specific needs of each community.

Future support programs should incorporate these recommendations, but more importantly, future support for nuclear closure communities must materialize. Congress should not remove provisions supporting these communities in future bills as with the ADVANCE Act. Nuclear power plants continue to operate in communities across the United States, and the ADVANCE Act endeavors to construct more plants in more communities. These plants will inevitably shut down, and nearby communities will face dire economic impacts in the wake of a plant's decommissioning. These communities should receive effective federal and state support to help them rebuild their economies and look to a brighter future. After playing a central role in providing a public benefit, nuclear closure communities deserve to feel that they are not forgotten.

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**We welcome responses to this Note. If you are interested in submitting a response for our online journal, *Ecology Law Currents*, please contact [cse.elq@law.berkeley.edu](mailto:cse.elq@law.berkeley.edu). Responses to articles may be viewed at our website, <http://www.ecologylawquarterly.org>.**

